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CIRCUTOR Profile

Since 1973, CIRCUTOR has specialised in the design, manufacture and marketing of energy efficiency equipment: measurement and control equipment for electricity, supply quality, industrial electrical protection, reactive energy compensation and harmonic filtration.

M Q P R U E

The production capacity of CIRCUTOR is based on six production centres throughout Spain and the Czech Republic.

CIRCUTOR has committed itself to following the latest technological advances in order to add them to its products. It has its own test technology and laboratories that enable it to guarantee the quality of all its products.

The company is present in more than 100 countries, with offices in Argentina, Mexico, Germany, China, Singapore, India, Portugal, Czech Republic, etc.

CIRCUTOR holds certification in:

- Quality (ISO 9001)
- Health and Environment (ISO 14001)
- Safety (OSHAS 18001)
- Management System (ISO 50001)



Head office of
CIRCUTOR, SA
in Viladecavalls



■ Two of the production centres of CIRCUTOR





Own technology

Team composed of more than 60 engineers

CIRCUTOR has an R+D+i team composed of more than 60 engineers that design new products to satisfy the market demand, incorporating the most advanced technologies.



Testing laboratory

Official metrological verification laboratory

CIRCUTOR has its own laboratories to perform electromagnetic compatibility tests (EMC/EMI), calibration tests and an official metrological verification laboratory to guarantee the quality of all its products and make sure they comply with the highest quality standards.



Innovation with new products

Innovating with new electrical energy efficiency solutions

CIRCUTOR has a commitment to innovation, in order to bring out products with the latest technology and the best added value.



Production capacity

All of our production centres use state-of-the-art technology to guarantee a high production capacity.

To meet market needs regarding energy efficiency, **CIRCUTOR** has a large team of engineers and production centres, equipped with the most up-to-date technology.

COMPLETE SOLUTIONS



**PHOTOVOLTAIC
ENERGY**
Page 6



**TRANSMISSION AND
DISTRIBUTION OF
ELECTRIC ENERGY**
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WIND ENERGY
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**INDUSTRIAL SECTOR /
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**CRITICAL
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**SMART CHARGE OF
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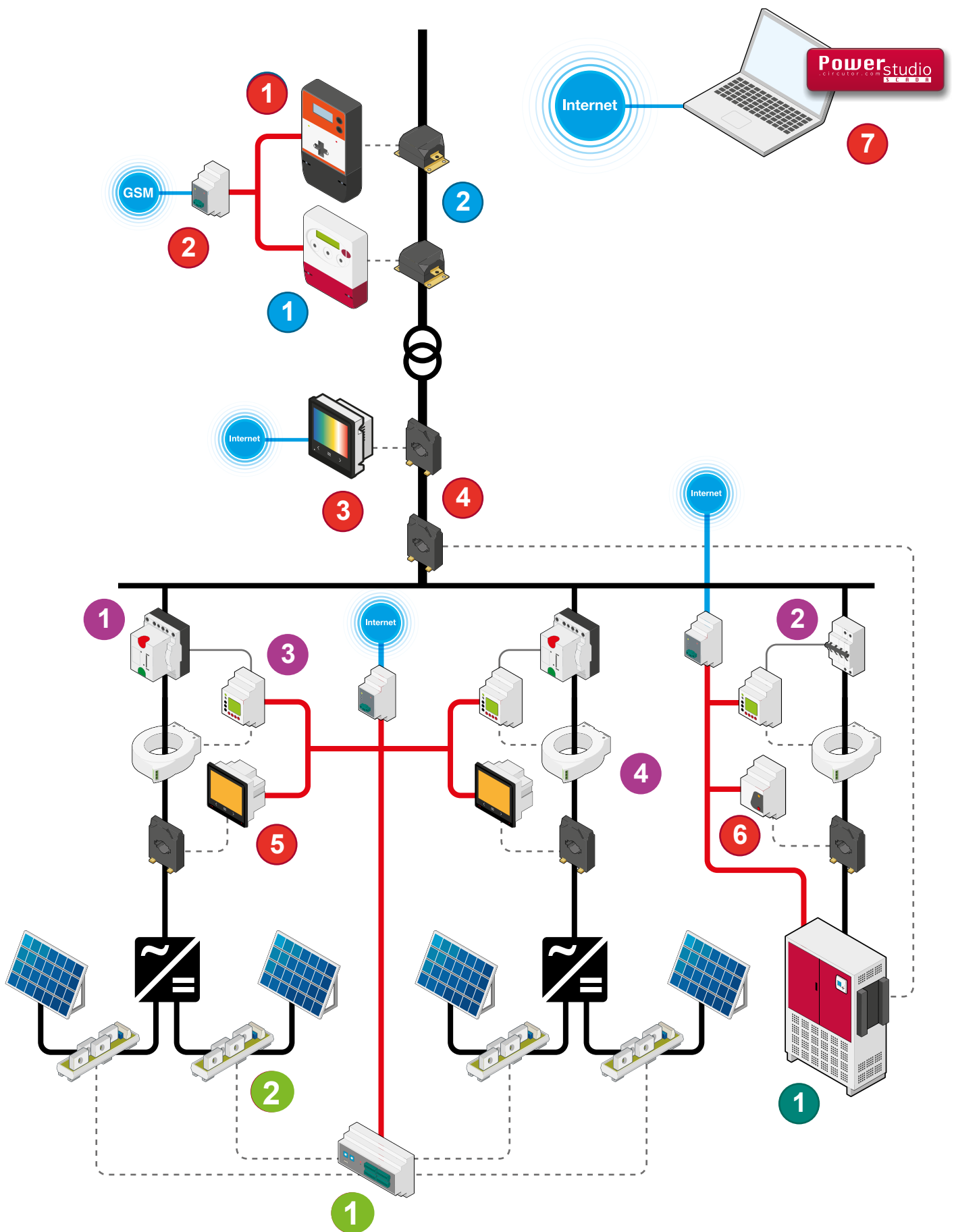


INFRASTRUCTURES
Page 18



SELF-CONSUMPTION
Page 20

Solutions for photovoltaic installations





Related Products

Measurement and electric control

No.	Type	Name
1	Power and quality analyzer	QNA 500
2	RS-485/RS-232 to Ethernet converter	TCP1RS+
3	Three-phase power analyzer	CVM-B150
4	Current measurement transformer	TC
5	Three-phase power analyzer	CVM C5
6	Three-phase power analyzer	CVM NET
7	Energy Management Software	PowerStudio SCADA

Electric protection and control

No.	Type	Name
1	Motorized circuit breaker for more than 63 A	MT-FDE
2	Motorized circuit breaker up to 63 A	RECmax P
3	Earth leakage relay	RGU-10 MT
4	Earth leakage transformer	WGC

Metering

No.	Type	Name
1	Multifunction three-phase energy meter	CIRWATT B 410 T
2	Current transformer	TRMC

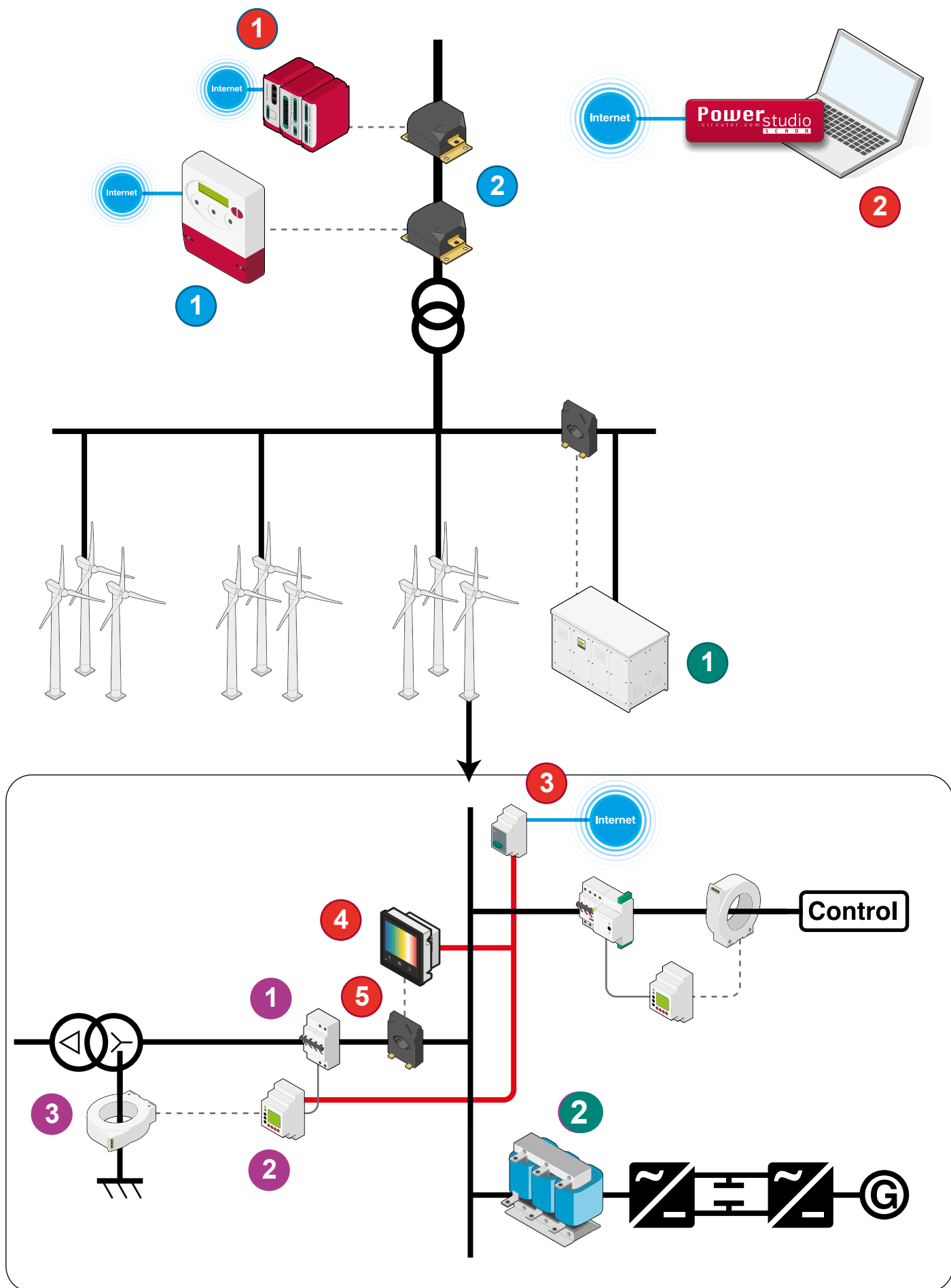
Power Factor correction and harmonic filtering

No.	Type	Name
1	LV Static automatic capacitor bank with detuned filters	OPTIM FRE

Renewable energies

No.	Type	Name
1	Measurement device for photovoltaic strings	TRH16
2	Measurement module for photovoltaic strings	MTR-25

Solutions for wind energy installations





Related Products

Measurement and electric control

No.	Type	Name
1	Power quality analyzer	QNA 500
2	Energy management software	PowerStudio SCADA
3	RS-485/RS-232 to Ethernet converter	TCP2RS+
4	Three-phase power and quality analyzer	CVM-A
5	Current measurement transformer	TC

Electric protection and control

No.	Type	Name
1	Motorized circuit breaker for more than 63 A	RECmax-MP
2	Earth leakage relay	RGU-10 MT
3	Earth leakage transformer	WGC

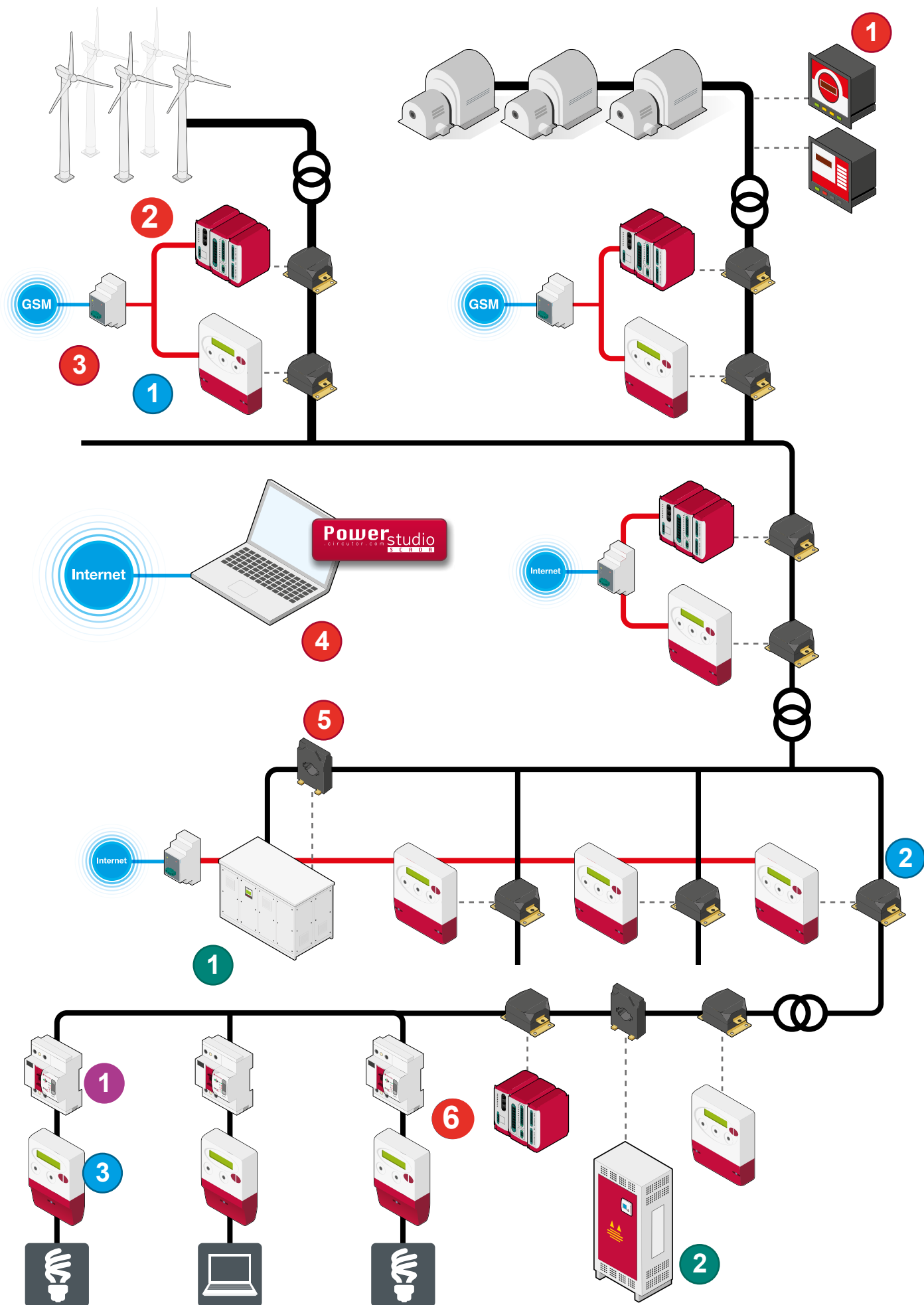
Metering

No.	Type	Name
1	Multifunction three-phase energy meter	CIRWATT B 410 T
2	Current transformer	TRMC

Power Factor correction and harmonic filtering

No.	Type	Name
1	MV Capacitor Bank	CIRKAP
2	Reactors for filtering	RBX

Solutions for Transmission and distribution of electric energy



Related Products

Measurement and electric control

No.	Type	Name
1	RS-485/RS-232 to Ethernet converter	Synchro MAX
2	Current measurement transformer	QNA 500
3	Synchronization device	TCP2RS+
4	Energy management software	PowerStudio SCADA
5	Power quality analyzer	TC
6	Modular power quality analyzer	QNA 500

Electric protection and control

No.	Type	Name
1	RCCB switch with automatic self reclosing system	REC3

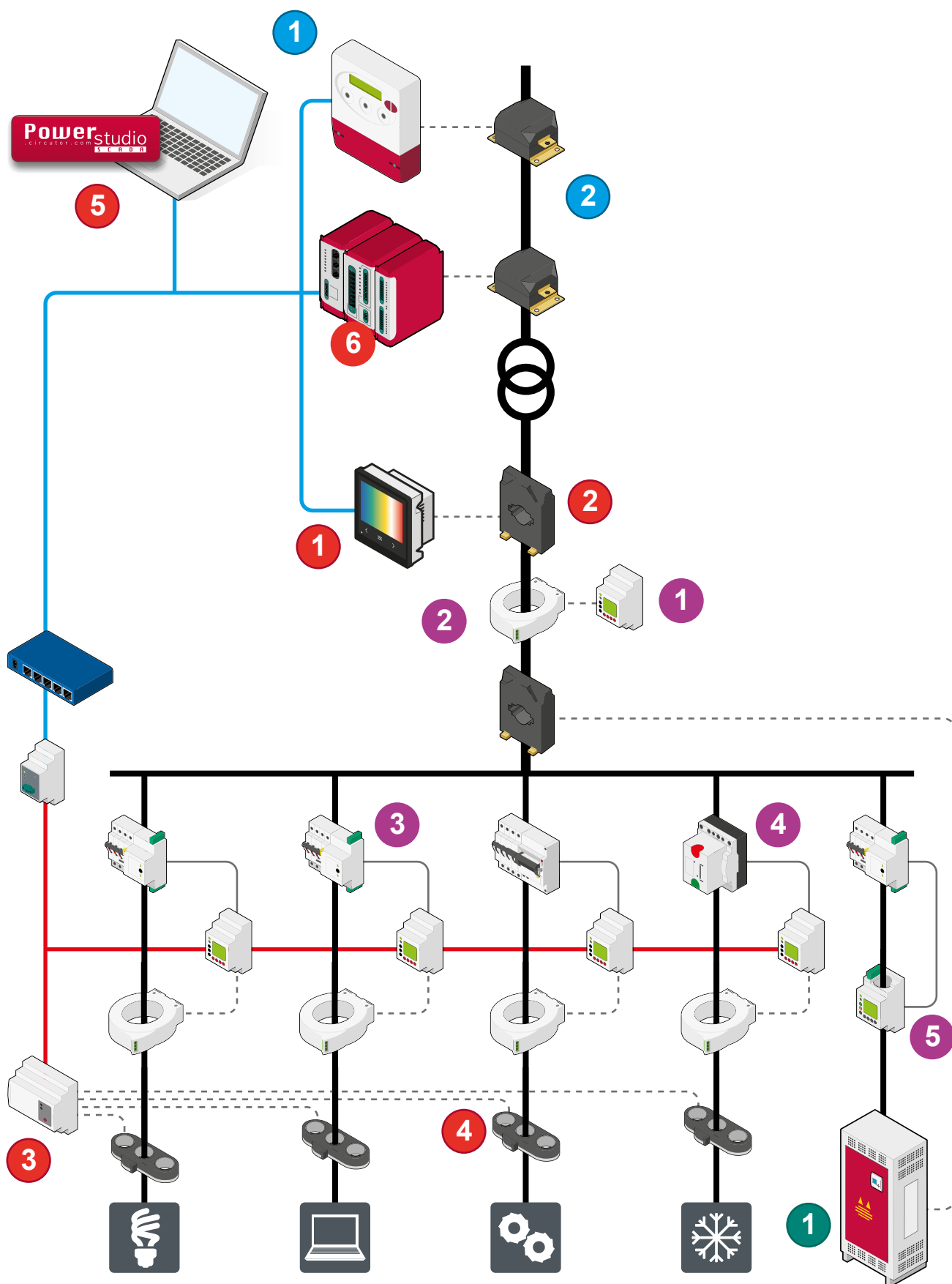
Metering

No.	Type	Name
1	Multifunction three-phase energy meter	CIRWATT B 410 T
2	Current transformer	TRMC
3	Single-phase energy meter	CIRWATT B 101

Power Factor correction and harmonic filtering

No.	Type	Name
1	MV Capacitor Bank	CIRKAP
2	LV Automatic capacitor bank	OPTIM P&P

Solutions for buildings and industry





Related Products

Measurement and electric control

No.	Type	Name
1	Three-phase power analyzer	CVM-B150
2	Current measurement transformer	TC
3	Power analyzer for 4 three-phase lines	CVM NET4+
4	Efficient current transformers	MC-3
5	Energy management software	PowerStudio SCADA
6	Modular power quality analyzer	QNA 500

Electric protection and control

No.	Type	Name
1	Earth leakage relay	RGU-10
2	Earth leakage transformer	WGC
3	Motorized circuit breaker up to 63 A	RECmax P
4	Motorized circuit breaker for more than 63 A	MT-FDE
5	Earth leakage relay with built-in transformer	WRU-10 MT + RECmax-MP

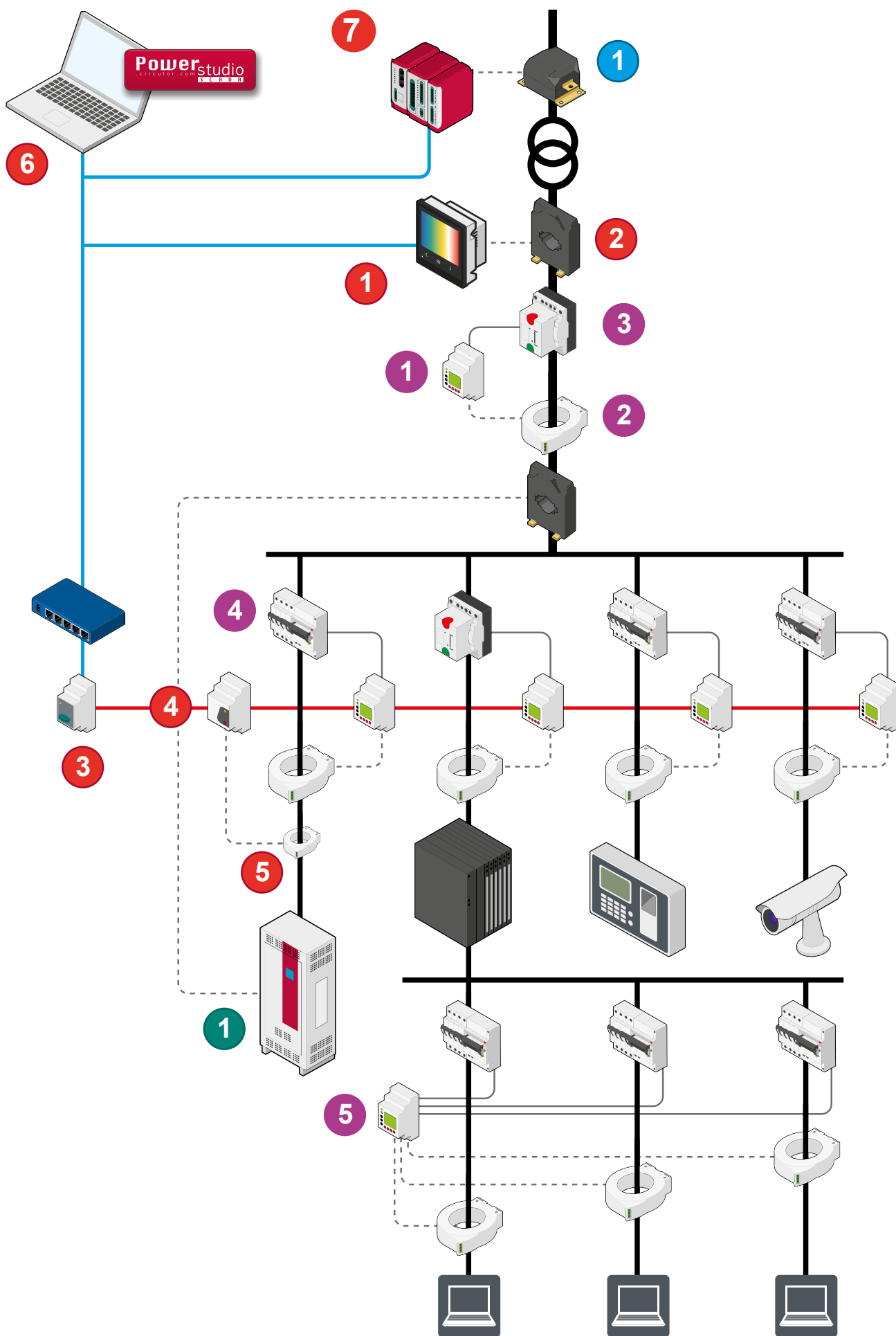
Metering

No.	Type	Name
1	Multifunction three-phase energy meter	CIRWATT B 410 T
3	Current transformer	TRMC

Power Factor correction and harmonic filtering

No.	Type	Name
1	LV Automatic capacitor bank	OPTIM P&P

Solutions for critical installations





Related Products

Measurement and electric control

No.	Type	Name
1	Three-phase power analyzer	CVM-B150
2	Current measurement transformer	TC
3	RS-485/RS-232 to Ethernet converter	TCP1RS+
4	Three-phase power analyzer	CVM NET
5	Efficient current transformer	MC-1
6	Energy management software	PowerStudio SCADA
7	Power and quality analyzer	QNA 500

Electric protection and control

No.	Type	Name
1	Earth leakage relay	RGU-10
2	Earth leakage transformer	WGC
3	Motorized circuit breaker for more than 63 A	MT-FDE
4	Motorized circuit breaker up to 63 A	RECmax P
5	Multipeint earth leakage scanning system	CBS4

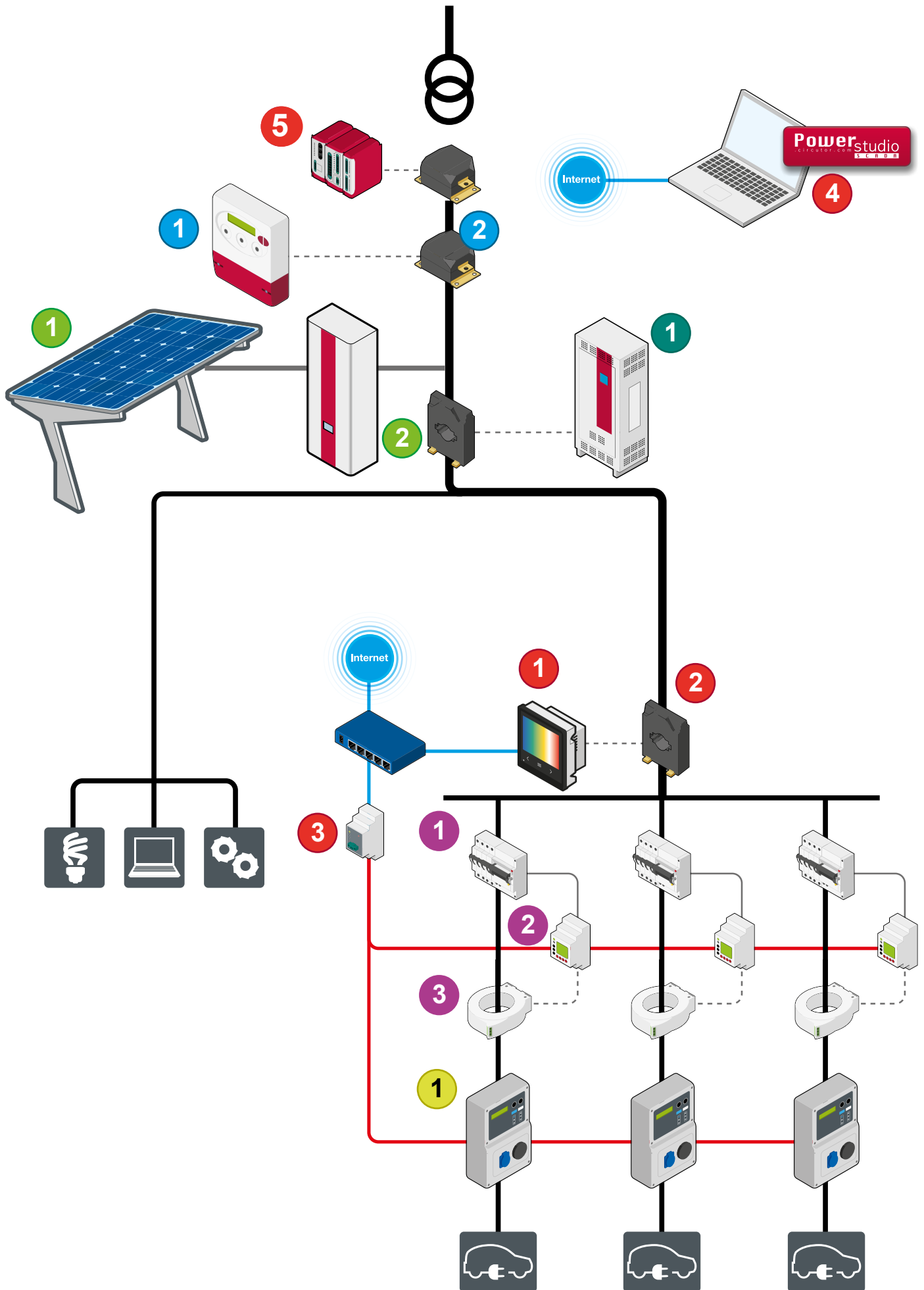
Metering

No.	Type	Name
1	Current transformer	TRMC

Power Factor correction and harmonic filtering

No.	Type	Name
1	Multifunction active filter	AFQevo

Solutions for smart charge of electric vehicles





Related Products

Measurement and electric control

No.	Type	Name
1	Three-phase power and quality analyzer	CVM-A
2	Current measurement transformer	TC
3	RS-485/RS-232 to Ethernet converter	TCP2RS+
4	Energy management software	PowerStudio SCADA
5	Power and quality analyzer	QNA 500

Electric protection and control

No.	Type	Name
1	Motorized circuit breaker for more than 63 A	RECmax P
2	Earth leakage relay	RGU-10
3	Earth leakage transformer	WGC

Metering

No.	Type	Name
1	Multifunction three-phase energy meter	CIRWATT B 410T
2	Current transformer	TRMC

Power Factor correction and harmonic filtering

No.	Type	Name
1	Multifunction active filter	AFQevo

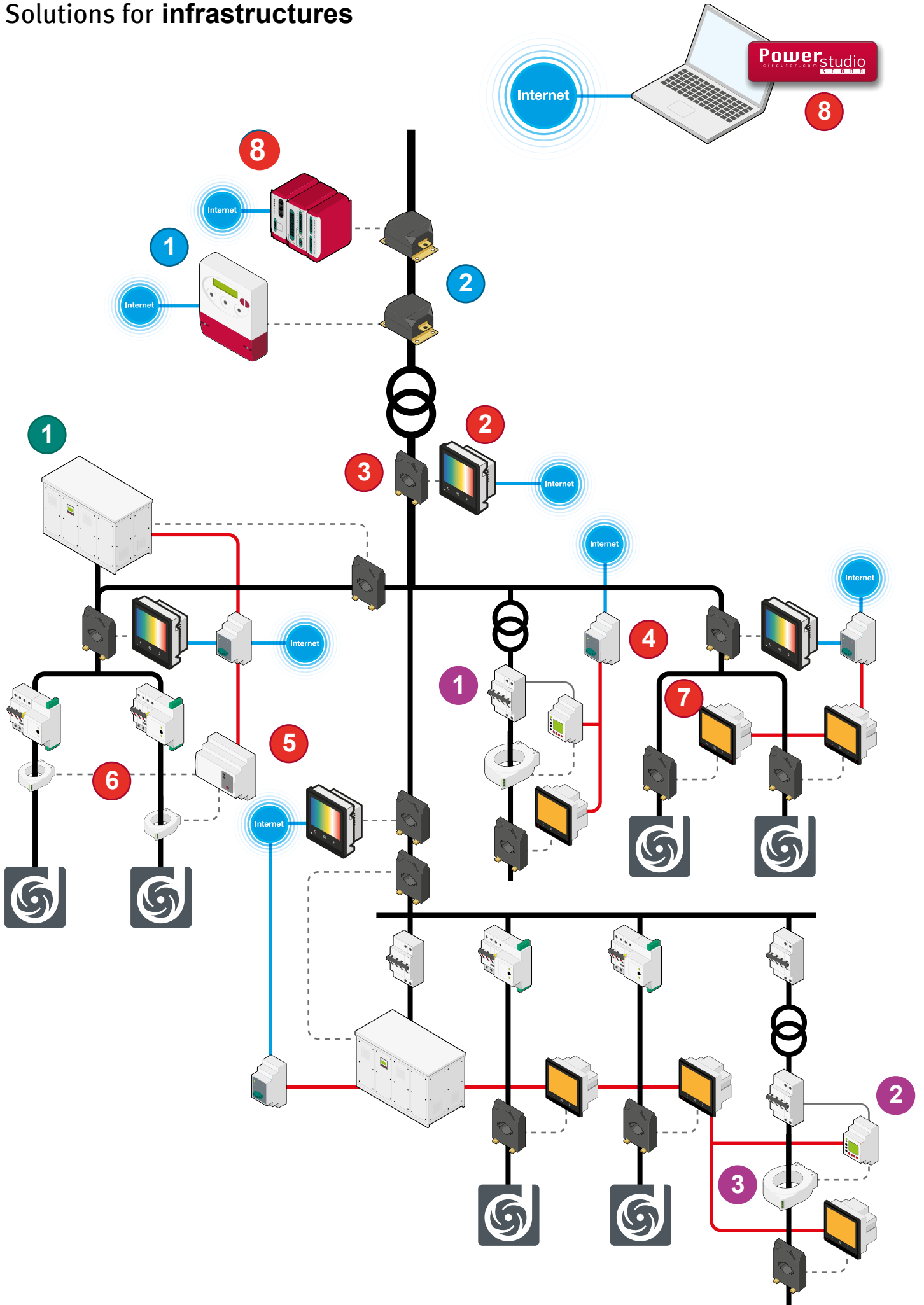
Smart charge for electric vehicles

No.	Type	Name
1	Electric vehicle charging box for car parking	RVE-WB / URBAN / RAPTION

Renewable energies

No.	Type	Name
1	Kits for instantaneous self-consumption on solar	PV
2	Hybrid inverters with battery charging	CirPower

Solutions for infrastructures





Related Products

Measurement and electric control

No.	Type	Name
1	Power and quality analyzer	QNA 500
2	Three-phase power and quality analyzer	CVM-A
3	Current measurement transformer	TC
4	RS-485/RS-232 to Ethernet converter	TCP1RS+
5	Power analyzer for 4 three-phase lines	CVM NET4+
6	Efficient current measurement transformer	MC-1
7	Three-phase power analyzer	CVM C10
8	Energy management software	PowerStudio SCADA

Electric protection and control

No.	Type	Name
1	Motorized circuit breaker up to 63 A	RECmax P
2	Earth leakage relay	RGU-10
3	Earth leakage transformer	WGC

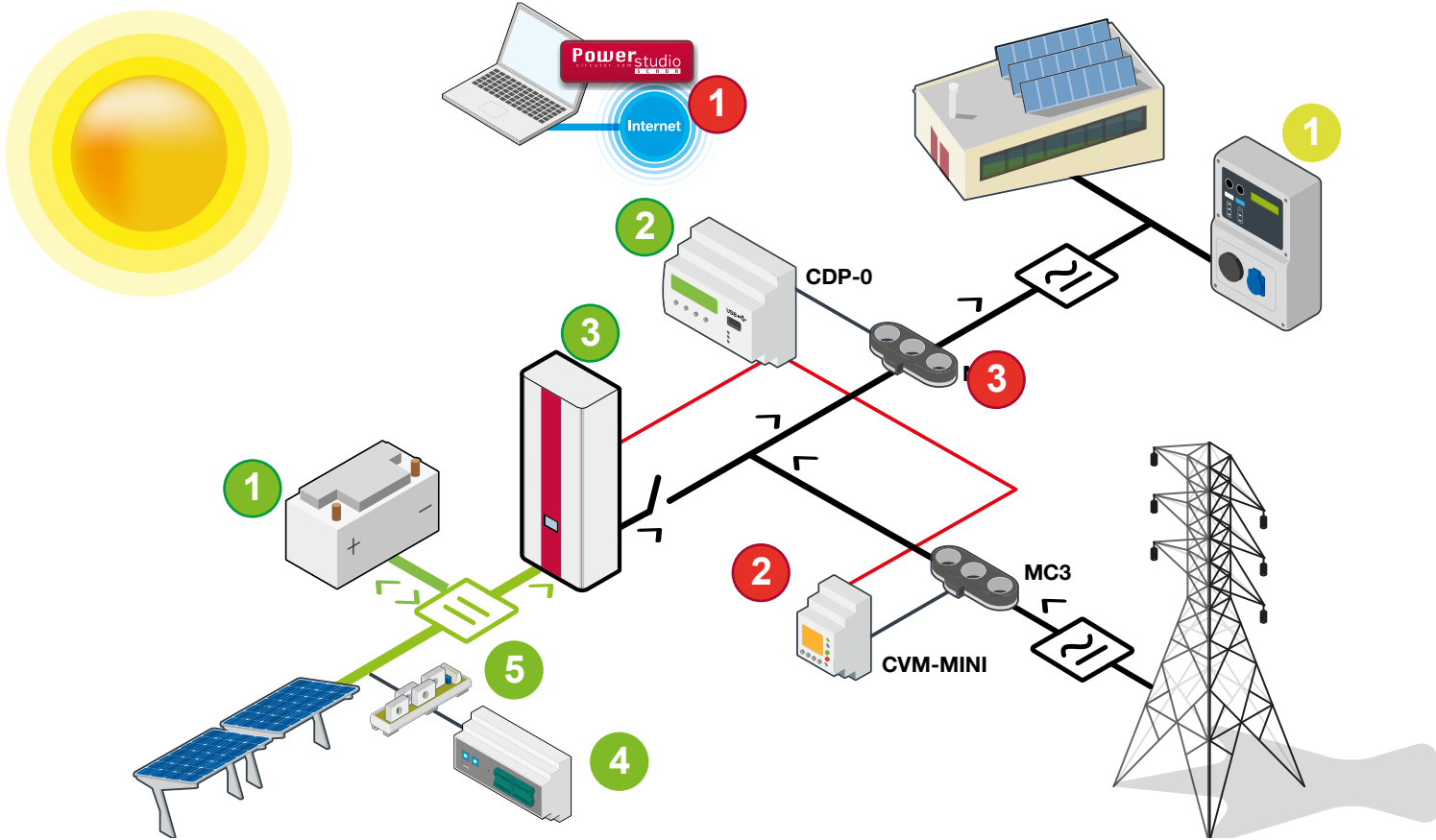
Metering

No.	Type	Name
1	Energy meter	CIRWATT B401T
2	Current transformer	TRMC

Power Factor correction and harmonic filtering

No.	Type	Name
1	MV Capacitor Bank	CIRKAP

Solutions for self-consumption



Related Products

Measurement and electric control

No.	Type	Name
1	Energy management software	PowerStudio SCADA
2	Three-phase power analyzer	CVM MINI
3	Measurement transformer	MC

Renewable energies

No.	Type	Name
Kit EMF-CDP (includes the following devices)		
1	Battery	
2	Battery and Conversion Supervisory Controller	CDP
3	Hybrid inverters with battery charging	CirPower
4	Measurement device for photovoltaic strings	TRH16
5	Measurement module for photovoltaic strings	MTR-25

Smart charge for electric vehicles

No.	Type	Name
1	Electric vehicle charging box for car parking	RVE-WB / URBAN / RAPTION

MEASUREMENT AND CONTROL

Fixed power analyzers

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CVM-A, Power quality analyzers, colour display, panel mounted.....	29
QNA500, Advanced power quality analyzers (according Standard EN-50160 and IEC-61000-4-30).....	29
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MC1, Triple scale single-phase efficient transformers.....	30
MC3, Three-phase current transformers.....	30
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Measuring transformers and shunts

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Control devices

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AIR, Wireless converters and probes.....	47
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Management Software

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Portable power analyzers

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CPG, Clamps	51
FLEX, Flexible Clamps	51
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CV, Transducer Voltage	56
CC, Current transducer	56
CW / CY, Power transducer	57
CPF / CCOS, Power Factor & Cos ϕ transducer	57
CF, Frequency transducers	57
Temp, Ohm, aislam, proceso, Transducers	57
TI, Current transformer with converter 4...20 mA	58
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Analogue instruments

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MC / MMC / EMC, maximeter ammeters	71
HC / HM / HZC / HLC, Frequency meters	72
WMC / WTC / YMC / YTC, Wattmeters and varmeters	73
FEMC / FETC / FMZ / FTC / PIC, Phasemeters	75
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2HC / 2HLC, Double frequency meters	77
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CH, Hour run meters	78
MEG-1000, Insulation resistance meter	78
Accessories / Options for analogue instruments	79
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Fixed power analyzers

			Page
Power analyzers	Panel	CVM A1500, CVM B150, CVM B100, CVM C10, CVM C5	25
	DIN rail	CVM 1D, CVM MINI, CVM NET, CVM NET4+, CVM BD, CEM-C6	
Power quality analyzers	Panel	CVM A1500	29
	DIN rail / Wall-mounted	QNA500	
Consumption analyzers	DIN zero	Wibeee	27
	Wall-mounted	Wibeee Max	

Table: Power analyzer selection

		CVM-A1500	CVM-B150 CVM-B100	CVM-C10	CVM-C5	CVM MINI	CVM NET	CVM NET4+	CEM-6	Wibeee	Wibeee MAX
Mounting	Panel (mm)	144x144	144x144 / 96x96	96x96	96x96	-	-	-	-	-	•
	DIN rail (modules)	-	-	-	-	3	3	6	1	0	•
AC Measurement	Three-phase 3/4 wires	Config	Config	Config	Config	•	•	•	-	T	•
	Single-phase	Config	Config	Config	Config	-	-	•	•	T	-
	Quadrants	4	4	4	4	4	4	4	2	2	2
	Hamonics	63	50	31	-	T(15)	-	15	-	-	•
	Phase parameters	•	•	•	•	•	•	•	•	•	•
	Maximum demand	•	•	•	•	•	•	•	-	-	-
	Tariffs	3	3	3	2	1	1	1	1	web	web
	Hours, cost, kgCO ₂	•	•	•	•	-	-	-	-	cost, kgCO ₂	cost, kgCO ₂
Voltage input	Direct (V)	600 V _{ph-n} * 1000 V _{ph-ph} *	600 V _{ph-n} * 1000 V _{ph-ph} *	300 V _{ph-n} 520 V _{ph-ph}	300 V _{ph-n} 520 V _{ph-ph}	300 V _{ph-n} 520 V _{ph-ph}	300 V _{ph-n} 520 V _{ph-ph}	300 V _{ph-n} 520 V _{ph-ph}	230 V _{ph-n}	85...265 V _{f-n} 147...459 V _{f-ph}	95...440 V _{f-n}
	Indirect (V)	Config.	Config.	Config.	Config.	Config.	Config.	Config.	-	-	-
Current Input	Direct	-	-	-	-	-	-	-	100 A	70 A max.	-
	Indirect (ITF)	•	•	•	T	T	T	-	-	-	-
	MC System (/250 mA)	•	•	T	T	T	T	•	-	-	-
	Rogowski sensors	-	-	T	-	-	-	-	-	-	•
Communications	RS-232	-	-	-	-	-	-	-	-	-	-
	RS-485	•	•	•	T	T	•	•	•	-	-
	TCP/IP	•	OP	-	-	T	-	-	-	-	-
	WIFI	-	-	-	-	-	-	-	-	•	•
Protocols	ModBus/RTU	•	•	•	T	T	•	•	•	-	-
	ModBus/TCP	OP	OP	-	-	T	-	-	-	•	•
	XML	•	OP	-	-	-	-	-	-	-	-
	MBUS	OP	OP	-	-	-	-	-	-	-	-
	BACnet	•	•	•	-	T	-	-	-	-	-
	Profibus	OP	OP	-	-	-	-	-	-	-	-
LonWorks	OP	OP	-	-	T	-	-	-	-	-	
Otthers	Display	colour graph	colour graph	custom LCD	LCD	LCD	-	-	LCD	APP	APP
	Expandible	•	•	-	-	-	-	-	-	-	-
Optional	Digital inputs (n.max)	•(2)	•(2)	•(2)	•1(T)	-	-	-	-	-	-
	Digital outputs (n.max)	•(4)	•(4)	•(4)	•1(T)	•(2)	•(2)	•(4)	•(1)	-	-
	Analogue inputs (n.max)	OP	OP	-	-	-	-	-	-	-	-
	Analogue outputs (n.max)	OP	OP	-	-	-	-	-	-	-	-
	Historical data record	•	OP	-	-	-	-	-	-	-	-
Standards	UL	•	•	•	•	T	-	-	-	-	-
	Measurement in acc. with MID	•	•	•	-	-	-	-	-	-	-
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(T) - depending on the type / (OP) - Optional

NEW
CVM-A, Power quality analyzers, colour display, panel mounted

Power supply 85...265 Vac / 120...300 Vdc, 600 Vp-n / 1000 Vp-p measurement



Type	Code	Size(mm)	Energy accuracy	Current input	Transistor output	Output relay	Digital inputs	Commu-nications	Protocol
CVM-A150-ITF-485-ICT2	[*] M56311.	144x144	0,2S (.../5A)	.../5A, .../1A, 250 mA	2	2	2	RS-485, Ethernet	Modbus/BACnet, webserver (HTTP), XML, HTML5

4-quadrant measuring unit with PowerStudio embedded. Built-in Datalogger module. Optional Modbus/TCP.
See expansion modules and accessories (Sealing gaskets) for CVM-A / CVM-B.
Energy accuracy for module... /5 A

CVM-B, Power analyzer, colour display, panel mounted

Power supply 85...265 Vac / 120...300 Vdc, 600 Vp-n / 1000 Vp-p measurement



Type	Code	Size(mm)	Energy accuracy	Current input	Transistor output	Output relay	Digital inputs	Commu-nications	Protocol
CVM-B150-ITF-485-ICT2	[*] M56111.	144x144	0,5 S (.../5A)	.../5A, .../1A, 250 mA	2	2	2	RS-485	Modbus / BACnet
CVM-B100-ITF-485-ICT2	[*] M56011.	96x96	0,5 S (.../5A)	.../5A, .../1A, 250 mA	2	2	2	RS-485	Modbus / BACnet

4-quadrant measuring unit.
See expansion modules and accessories (Sealing gaskets) for CVM-A / CVM-B

M-CVM-AB, Expansion modules for CVM-A and CVM-B


Type	Code	Transistor output	Output relay	Digital inputs	Analogue Inputs	Analog output	Commu-nications	Protocol	Memory
M-CVM-AB-8I-8OTR	[*] M56E01.	8	-	8	-	-	-	-	-
M-CVM-AB-8I-8OR	[*] M56E02.	-	8	8	-	-	-	-	-
M-CVM-AB-4AI-8AO	[*] M56E03.	-	-	-	4 (0/4 ... 20mA)	8 (0/4 ... 20mA)	-	-	-
M-CVM-AB-Modbus-TCP (bridge)	[*] M56E05.	-	-	-	-	-	Ethernet	Modbus/TCP (pasarela a RS485)	-
M-CVM-AB-Modbus-TCP (switch)	[*] M56E0A.	-	-	-	-	-	Ethernet	Modbus/TCP (pasarela a TCP)	-
M-CVM-B-DATALOGGER	[*] M56E06.	-	-	-	-	-	Ethernet	Webserver, Java, XML	200 MB
M-CVM-AB-MBUS	[*] M56E07.	-	-	-	-	-	M-BUS	MBUS	-
M-CVM-AB-LonWorks	[*] M56E08.	-	-	-	-	-	LonWorks	LonTalk, ISO/IEC 14908, ANSI/EIA 7091	-
M-CVM-AB-Profibus	[*] M56E09.	-	-	-	-	-	DB-9	Profibus	-

Optocoupled transistor output

Type	Code	Description
IP65-AB-96	[*] M5ZZ5U.	IP 65 airtight seal for CVM-AB (96x96)
IP65-AB-144	[*] M5ZZ5V.	IP 65 airtight seal for CVM-AB (144x144)



CVM-C10, Power analyzer, panel mounted 96 x96

96x96 panel - 85...265 Vac / 95...300 Vdc power supply, 300 Vp-n / 520 Vp-p measurement

Type	Code	Measuring Channels	Current input	Transistor output	Output relay	Digital inputs	Communications	Protocol	Harmonics
CVM-C10-ITF-485-ICT2	[*] M55911.	3	.../5A , .../1A	2	2	2	RS-485	ModBus/BACnet	31
CVM-C10-MC-485-ICT2	[*] M55921.	3	.../250mA	2	2	2	RS-485	ModBus/BACnet	31
CVM-C10-ITF-IN-485-IC2	[*] M55942.	4	.../5A , .../1 A	-	2	2	RS-485	ModBus/BACnet	31
CVM-C10-mV-485-ICT2	[*] M559210000V00	3	.../333mV	2	2	2	RS-485	ModBus/BACnet	31
CVM-C10-FLEX-IN-485-I2	[*] M55963.	4	Rogowski	-	-	2	RS-485	ModBus/BACnet	31

4-quadrant measuring unit.

Units with 4 measuring channels, 3 phase current inputs + neutral current input (configurable, 3 or 4 current channels)

Type	Code	Description
IP64-C10-96	[*] M5ZZ5T.	IP 64 airtight seal for CVM-C10 (96x96)

FLEX-MAG, Flexible sensors for CVM-C10-FLEX

Type	Code	Measurement Range (A)	A (max.)	Usefull diam.(mm)	Sensor lenght
FLEX-MAG70	[*] M818110041500	1000 A / 100 mV	2000	70	2 m
FLEX-MAG120	[*] M818120041500	1000 A / 100 mV	2000	120	2 m
FLEX-BAY70	[*] M8181100418BA	1000 A / 100 mV	2000	70	2.5 m
FLEX-BAY120	[*] M8181200418BY	1000 A / 100 mV	2000	120	2.5 m



CVM-C5, Power analyzer, panel mounted 96x96

96x96 panel - 85...265 Vac / 95...300 Vdc power supply, 300 Vp-n / 520 Vp-p measurement

Type	Code	Measuring Channels	Current input	Transistor output	Digital inputs	Communications Protocol
CVM-C5-IC	[*] M55853.	3	.../5A , .../1 A	1	1	-
CVM-C5-MC-IC	[*] M55873.	3	.../250mA	1	1	-
CVM-C5-ITF-485-C	[*] M55884.	3	.../5A , .../1 A	1	0	RS-485 Modbus/RTU
CVM-C5-MC-485-C	[*] M55894.	3	.../250mA	1	0	RS-485 Modbus/RTU
CVM-C5-mV-485-C	[*] M558940000V00	3	.../333mV	1	0	RS-485 Modbus/RTU
CVM-C5-ITF-485-I	[*] M55885.	3	.../5A , .../1 A	0	1	RS-485 Modbus/RTU
CVM-C5-MC-485-I	[*] M55895.	3	.../250mA	0	1	RS-485 Modbus/RTU
CVM-C5-mV-485-I	[*] M558950000V00	3	.../333mV	0	1	RS-485 Modbus/RTU

4-quadrant measuring unit. Can be used to program the voltage transformer ratio

CVM-B, CVM-A

Code	Internal code	Delivery time
M 5 X X X X 0 0 X X X X X	0	-
Power supply voltage	Standard (85...265 V _{ac} / 120...300 V _{dc})	-
	20...120 V _{dc}	1
Others	Metric fork terminals 3 - CAT III 300 V	-

CVM C10

Code	Internal code	Delivery time
M 5 X X X X 0 0 X	0	-
Power supply voltage	Standard (85...265 V _{ac} / 120...300 V _{dc})	-
	20...120 V _{dc}	1


CVM-MINI, Power analyzer, three-phase DIN rail

DIN Rail (3 modules) - 230 Vac Power supply

Type	Code	Insulated input	Current input	Transistor output	Communications Protocol	Harmonics
CVM-MINI	[*] M52000.	-	.../5 A, .../1 A	-	-	-
CVM MINI-ITF-C2	[*] M52011.	1	.../5 A, .../1 A	2	-	-
CVM MINI-MC-ITF-C2	[*] M52071.	1	.../250mA	2	RS-485	Modbus/RTU
CVM-MINI-ITF-RS485-C2	[*] M52021.	1	.../5 A, .../1 A	2	RS-485	Modbus/RTU
CVM-MINI-MC-ITF-RS485-C2	[*] M52081.	1	.../250mA	2	RS-485	Modbus/RTU
CVM-MINI-HAR-ITF-RS485-C2	[*] M52031.	1	.../5 A, .../1 A	2	RS-485	Modbus/RTU U e l (15°)
CVM-MINI-ITF-ETH-C2	[*] M520J1.	1	.../5 A, .../1 A	2	TCP/IP	Modbus/TCP
CVM MINI-MC-ITF-ETH-C2	[*] M520L1.	1	.../250mA	2	TCP/IP	Modbus/TCP
CVM-MINI-ITF-BACnet-C2	[*] M520F1.	1	.../5 A, .../1 A	2	RS-485	BACnet
CVM-MINI-MC-ITF-BACnet-C2	[*] M520H1.	1	.../250mA	2	RS-485	BACnet
CVM-MINI-ITF-LonWorks-C2	[*] M52091.	1	.../5 A, .../1 A	2	LonWorks	Lon Talk ISO/ IEC 14908 ANSI/ EIA 709,1
CVM-MINI-mV-ITF-RS485-C2	[*] M520810000V00	1	.../333mV	2	RS-485	Modbus/RTU

CVM-MINI-MC units require efficient MC series transformers, which are not included in the price.
CVM-MINI-xx-BACnet units are only available with a 230 Vac power supply

Type	Code	Description
ADP CVM-MINI/ RGU10/CBS4	[*] M5ZZF1.	Panel adapter CVM MINI / RGU-10 / CBS-4 (72 x 72)

CVM-NET, Power analyzer, three-phase DIN rail

Analyser w/o display, DIN rail (3 modules) - 230 Vac Power supply



Type	Code	Current input	Transistor output	Communications	Protocol
CVM-NET-ITF-485-C2	[*] M54B21.	.../5 A	2	RS-485	Modbus/RTU
CVM-NET-MC-ITF-485-C2	[*] M54B31.	.../250mA	2	RS-485	Modbus/RTU
CVM-NET-333-485-C2	[*] M54B310000V00	.../333mV	2	RS-485	Modbus/RTU

The CVM-NET-MC units require the use of efficient transformers of the MC series, which are not included in the price.

CVM-NET4, Power analyzer, 4 analyzers in a single unit, DIN rail

Unit w/o display, DIN rail (6 modules) - 85...265 Vac / 95...300 Vdc Power supply



Type	Code	Current input	Transistor output	Communications	Protocol	Harmonics
CVM-NET4+-ITF- MC-RS485-C4	[*] M55782.	.../250mA	4	RS-485	Modbus/RTU	15°

Requires the installation efficient transformers of the MC series. Not included in the price Configurable, 4 three-phase channels to 12 single-phase channels

CEM-6, Single-phase energy meter with basic analyser parameters

Type	Code	Current	System	Phases order	Transistor output	Communications	Protocol
CEM-C6	[*] Q26112.	10 (100) A	Single-phase	Direct	1	RS-485	ModbusRTU

Parameters: V, A, kW, kVA, kWh, cos φ



CVM MINI / CVM NET

Code	Internal code	Delivery time
M 5 X X X X 0 0 X		
Power supply voltage	Standard 230 V _{ac}	0 -
	(*) 85...265 V _{ac}	C 1
	95...300 V _{dc}	
	24...120 V _{dc} (Only Type M52021)	5 1

(*) Not available in LonWork and BACnet models

**Wibeee, Consumption analyzers**

Type	Code	A (max.)	System	Phases order	Communications	Protocol
Wibeee-M-L	[*] M57010.	70	Single-phase	N-L	Wifi	HTTP / ModbusTCP / XML
Wibeee-M-R	[*] M57011.	70	Single-phase	L-N	Wifi	HTTP / ModbusTCP / XML
Wibeee-T-L	[*] M57020.	70	Three-phase	N-LIII	Wifi	HTTP / ModbusTCP / XML
Wibeee-T-R	[*] M57021.	70	Three-phase	LIII-N	Wifi	HTTP / ModbusTCP / XML
Wibeee-3P	[*] M57022.	70	Three-phase	LIII	Wifi	HTTP / ModbusTCP / XML

NEW

**Wibeee Max, Consumption analyzers**

Type	Code	Clamp	A (max.)	System	Phases order	Communications	Protocol
Wibeee Max	[*] M57023.	FLEX Wibeee25	350 / 700	Three-phase	Config.	Wifi	HTTP / ModbusTCP / XML
Wibeee Max Plus	[*] M57024.	FLEX Wibeee54	100 / 1000 / 5000	Three-phase	Config.	Wifi	HTTP / ModbusTCP / XML




NEW

Current sensor included

Wibeee Max-accessor, Accessories for WibeeeMAX

Type	Code	Description	Current
FLEX Wibeee14	[*] M570B1.	Flexible clamp for Wibeee Max/Max Plus (14 cm length)	350-700 A
FLEX Wibeee25	[*] M570B2.	Flexible clamp for Wibeee Max/Max Plus (25 cm length)	350-700 A
FLEX Wibeee54	[*] M570B3.	Flexible clamp for Wibeee Max/Max Plus (54 cm length)	100-1000-5000 A
B-Wibeee	[*] M570A2.	Wibeee Max carrying case	-
DIN-Wibeee	[*] M570A3.	Wibeee Max DIN accessory	-

Table: Power quality analyzers selection

		CVM-A1500	QNA500	QNA500-A
				
Assembly	Panel (mm)	144 x 144	-	-
	DIN rail (modules)	-	•	•
	Wall-mounted	-	•	•
Connection	Three-phase 3/4-wire	Config.	•	•
	Quadrants	4	4	4
Power supply		85-265V _{ac} / 120-300V _{dc} 20-120V _{dc} (OP)	90-300V _{ac} / 100-300V _{dc}	90-300V _{ac} / 100-300V _{dc}
Parameters	Parameters per phase	•	•	•
	Power	0,2	0,2	0,2
	Active energy	0,2S (.../5A)	0,2S	0,2S
	Reactive energy	1	0,5	0,5
	Maximum demand	•	•	•
	Harmonics	63	50	50
	THD U / THD I	•	•	•
	Tariffs	3	9	9
	Hours, cost, kgCO2	•	-	-
	Quality parameter measurements	Events (overvoltages, gaps and interruptions)	•	•
EN50160 parameters		•	•	•
Transients		•	•	•
Voltage input	Direct	600 V _{ph-N} 1000 V _{ph-ph}	500 V _{ph-N} 866 V _{ph-ph}	500 V _{ph-N} 866 V _{ph-ph}
	Indirect	Config.	Config.	Config.
Input Current	.../5 A	•	•	•
	.../1 A	•	•	•
	.../250 mA	•	-	-
Inputs/outputs	Digital inputs	2	OP	OP
	Digital outputs	2	OP	OP
	Relay outputs	2	OP	OP
Communications	RS-232	-	•	•
	RS-485	•	•	•
	TCP/IP	•	•	•
Interface	Colour screen	•	-	-
Protocols	ModBus/RTU	•	•	•
	ModBus/TCP	OP	•	•
	XML	•	-	-
	MBUS	OP	-	-
	BACnet	OP	-	-
	Profibus	OP	-	-
	LonWorks	OP	-	-
	Web server	HTML5	HTTP	HTTP
	FTP	-	•	•
	Expansion modules	Digital inputs/outputs	OP (8 + 8)	OP (8 + 8)
Digital inputs / Relay outputs		OP (8 + 8)	OP (8 + 8)	OP (8 + 8)
Analogue inputs/outputs		OP (4 + 8)	-	-
Standards	Measuring in accordance with IEC 61000-4-30	Accordinging Class A	Accordinging Class S	Class A
	UL	certificated	•	•
	Measuring in accordance with MID	•	•	•
Page		29	29	29
		OP - Optional		



NEW

CVM-A, Power quality analyzers, colour display, panel mounted

Power supply 85...265 Vac / 120...300 Vdc, 600 Vp-n / 1000 Vp-p measurement



Type	Code	Size(mm)	Energy accuracy	Current input	Transistor output	Output relay	Digital inputs	Commu- nications	Protocol
CVM-A1500-ITF-485-ICT2	[*] M56311.	144x144	0,2S (.../5A)	.../5A, .../1A, 250 mA	2	2	2	RS-485, Ethernet	Modbus/BACnet, webserver (HTTP), XML, HTML5

4-quadrant measuring unit with PowerStudio embedded. Built-in Datalogger module. Optional Modbus/TCP.
See expansion modules and accessories (Sealing gaskets) for CVM-A / CVM-B.
Energy accuracy for module... /5 A

QNA500, Advanced power quality analyzers (according Standard EN-50160 and IEC-61000-4-30)

agrupador

Type	Code	Energy accuracy	Class	Transis- tor output	Output relay	Digital inputs	Commu- nications	Protocol	Harmonics	Memory
Power quality kits										
K-QNA500	[*] Q20911.	0,2S	S	-	-	-	RS-232, RS-485, Ethernet	Modbus/TCP, ZMODEM, FTP	50	8 GB
K-QNA500 8IO	[*] Q20912.	0,2S	S	8	-	8	RS-232, RS-485, Ethernet	Modbus/TCP, ZMODEM, FTP	50	8 GB
K-QNA500 8IOR	[*] Q20913.	0,2S	S	-	8	8	RS-232, RS-485, Ethernet	Modbus/TCP, ZMODEM, FTP	50	8 GB
K-QNA500-A	[*] Q20931.	0,2S	A	-	-	-	RS-232, RS-485, Ethernet	Modbus/TCP, ZMODEM, FTP	50	8 GB
K-QNA500-A 8IO	[*] Q20932.	0,2S	A	8	-	8	RS-232, RS-485, Ethernet	Modbus/TCP, ZMODEM, FTP	50	8 GB
K-QNA500-A 8IOR	[*] Q20933.	0,2S	A	-	8	8	RS-232, RS-485, Ethernet	Modbus/TCP, ZMODEM, FTP	50	8 GB
Additional modules										
QNA-500	[*] Q20901.	0,2S	S	-	-	-	TCP/IP	-	-	8 GB
QNA500-A	[*] Q20921.	0,2S	A	-	-	-	TCP/IP	-	-	8 GB
IO8	[*] Q20902.	-	-	8	-	8	TCP/IP	-	-	8 GB
IO8R	[*] Q20903.	-	-	-	8	8	TCP/IP	-	-	8 GB

Communications through the BASE module (mandatory). Check the maximum number of modules that can be connected for each BASE system. The QNA500 include the Power Vision+ software
Each unit is made up of a BASE module (power supply) + measuring module + inputs/outputs module (according to each type). Compatible with PowerStudio (version 4.02 and higher).

CVM-A

Code	Internal code	↑	↑	↑	Delivery time
Power supply voltage	Standard (85...265 V _{ac} / 120...300 V _{dc})	0			-
	20...120 V _{dc}	F			1
Others	Metric fork terminals 3 - CAT III 300 V		B	T	-

QNA500

Code	Internal code	↑	Delivery time
current input	Standard (.../5 A)	0	-
	.../1 A	1	1


RS/TCP/CMBUS, Communication converters

Type	Code	Description
RS2RS	[*] M62141.	RS-232/485 Intelligent converter and amplifier (RTS control) for PC
USB-RS 485	[*] M54040.	USB to RS-485 Converter
USB-RS 232	[*] M54050.	USB to RS-232 Converter
TCP1RS+	[*] M62121.	RS-485 / Ethernet modbus/TCP Converter
TCP2RS+	[*] M54033.	RS-232/485 Converter / Ethernet Modbus/TCP. Built-in web server and web set-up
CMBUS-8	[*] M540A0.	M-Bus to Modbus Converter, up to 8 Mbus slaves
CMBUS-24	[*] M540B0.	M-Bus to Modbus Converter, up to 24 Mbus slaves


AIR, Wireless converters and probes

Type	Code	Description
air GATEWAY	[*] M62001.	Router RS485 Modbus/RTU to Radio
air BRIDGE	[*] M62002.	Radio Router to RS485 Modbus/RTU
air REPEATER	[*] M62003.	Signal repeater
air THL	[*] M62004.	Wireless temperature, relative humidity and brightness analyzer
air HANDZER	[*] M62005.	Portable wireless signal coverage analyzer
air TIDCI	[1] M62006.	2 NTC sensor + 2 S0 impulse counter

Modems, Communication accessories

Type	Code	Description
M-GSM 10 BITS	[*] Q30213IB00000	GSM RS-232/485 Modem (includes antenna + cable). Parameterisation with even parity (10 bits)
M-GSM 11 BITS	[*] Q30213EN00000	GSM RS-232/485 Modem (includes antenna + cable). Parameterisation with even parity (11 bits)
SGE-3G/GPRS	[*] Q30230.	GPRS-3G Modem with Ethernet communications (includes PS + antenna + cable)
ANTENA GSM UT-35 9db	[1] Q4994E.	Antenna 9 db (for GSM modem)


MC1, Triple scale single-phase efficient transformers

Type	Code	Measurement Range (A)	A (max.)	Class 0,5 Power (VA)	System	Usefull diam.(mm)
MC1-15-75	[*] M73112.	75	75	0,25	Single-phase	15
MC1-20-50/100/150 A	[*] M73118.	50/100/150	150	0,25	Single-phase	20
MC1-35-50/100/150 A	[*] M73116.	50/100/150	150	0,25	Single-phase	35
MC1-20-150/200/250 A	[*] M73113.	150/200/250	250	0,25	Single-phase	20
MC1-30-250/400/500 A	[*] M73114.	250/400/500	500	0,25	Single-phase	30
MC1-55-500/1000/1500 A	[*] M73115.	500/1000/1500	1500	0,25	Single-phase	55
MC1-80 1000/1500/2000 A	[*] M73117.	1000/1500/2000	2000	0,25	Single-phase	80


MC3, Three-phase current transformers

Type	Code	A (max.)	Class 0,5 Power (VA)	System	Usefull diam.(mm)
MC3 - 63 A	[*] M73121.	63	0,1	Three-phase	7,1
MC3 - 125 A	[*] M73122.	125	0,1	Three-phase	14,6
MC3 - 250 A	[*] M73123.	250	0,1	Three-phase	26


SC3, Split three-phase current transformers

Type	Code	A (max.)	Class 0,5 Power (VA)	System	Usefull diam.(mm)
SC3-125	[*] M73602.	125	0,1	Three-phase	15



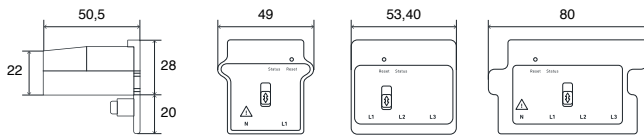
PowerStudio, Energy management software

Type	Code	Description
Software SCADA		
PowerStudio	[*] M90211.	Software with USB HASP licence. Configuration, monitoring in real time, display of graphs and tables
PowerStudio-Scada	[*] M90231.	Software with USB HASP licence. Configuration, monitoring in real time, display of graphs and tables, generation of reports, creation of SCADA screens and alarms
PowerStudio-Deluxe	[C] M90241.	Software with USB HASP licence. Software PowerStudio-Scada with Generic Modbus driver used to connect to other devices available in the market
OPC Server PS/PSS	[1] M91111.	Software with USB HASP licence. OPC Sever for PowerStudio is an integration platform that can easily integrate the parameters received from PowerStudio (or any of its versions) in any SCADA platform available in the market with a simple approach.
SQL DATA EXPORT	[1] M91301.	Software with USB HASP licence. SQL Data Export for PS/PSS is a software tool for the integration of data from PS/PSS to a new or existing SQL database.

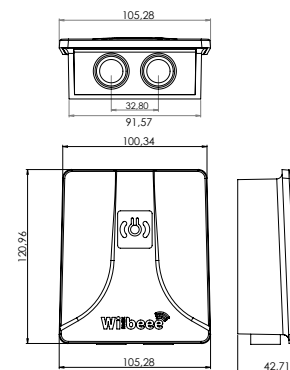
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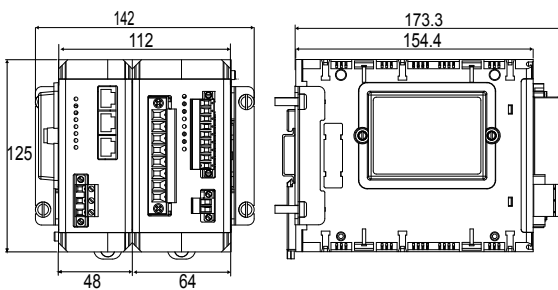
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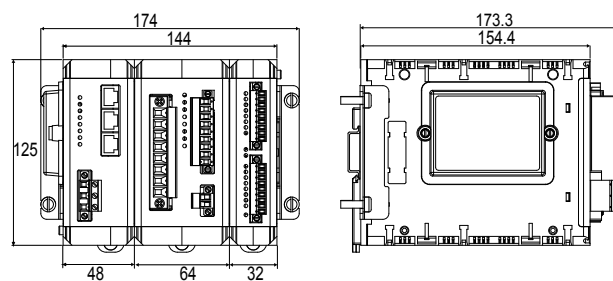
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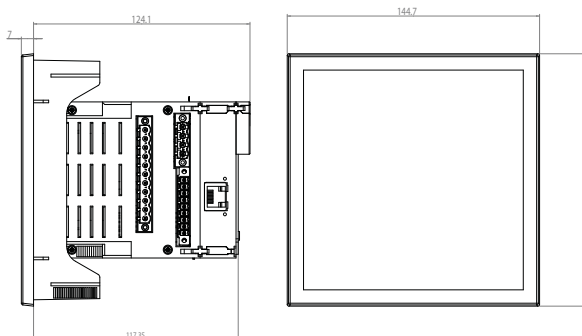
QNA 500



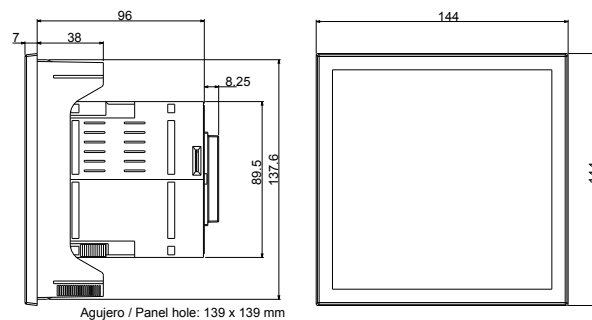
QNA 500 810



CVM A 1500

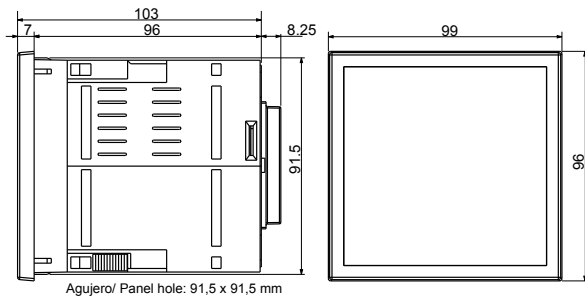


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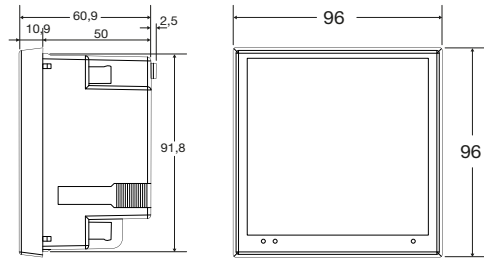


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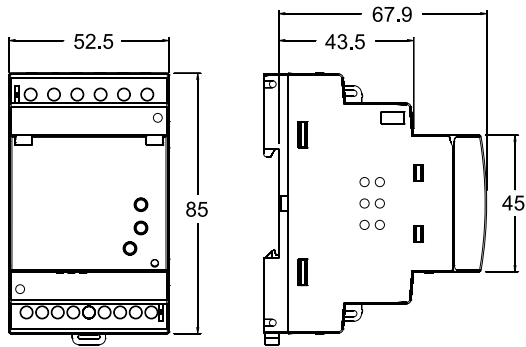
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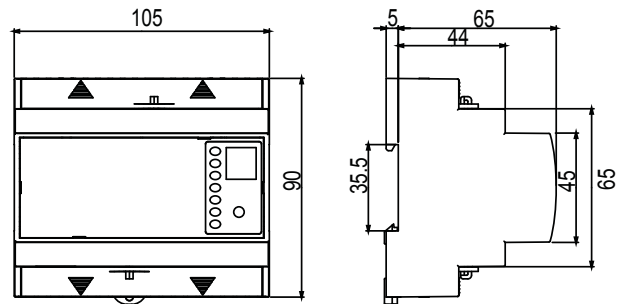
CVM C5 / CVM C10



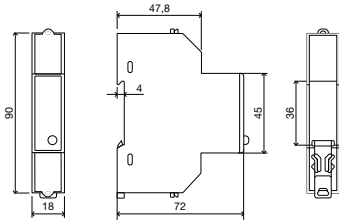
CVM MINI / CVM NET



CVM NET4+



CEM-6




Measuring transformers and shunts

Table: Current transformers and shunts selection

		TC	TCH	TA	TP	STP	MC	TM 45	TRMC	TRM	SH
AC Measurement	For measuring instruments	•	•	•	•	•	•	•	-	•	•
	For billing meters	-	-	-	-	-	-	-	•	-	-
	Wound primary	-	-	T	-	-	-	•	T	-	-
	Passing bar	•	•	T	•	-	•	-	T	•	-
	Split-core	-	-	-	•	•	-	-	-	-	-
	Minimum range (A)	40	50	5	50	100	50	1	100	75	-
	Maximum range (A)	4000	4000	5000	6000	300	2000	50	2000	5000	-
	High accuracy	-	•	-	-	-	-	-	-	-	-
	Three-phase	-	-	-	-	-	T	-	T	-	-
DC measurement	Minimum range (A)	-	-	-	-	-	-	-	-	-	1
	Maximum range (A)	-	-	-	-	-	-	-	-	-	20000
Other parameters	Secondary output	.../5	.../5	.../5	.../5	.../1	...250 mA	.../5	.../5	.../5	.../60 mV
	in resin	OP	OP	-	-	-	-	-	•	•	-
	Sealable	OP	OP	OP	•	-	-	-	•	-	-
	UL Certificate	-	T	T	-	-	-	-	-	-	-
	Individual certificate	OP	OP	OP	OP	-	-	-	OP	OP	-
	Page	33	35	38	36	37	37	37	39	40	41

T - Depending on the type
OP - Optional

TC, Current transformers narrow section


Type	TC4	TC5	TC5.2
	width x height x depth (mm) 50x77x56	width x height x depth (mm) 58x77x59	
Flat strip(mm)	30 x 10 20 x 10 25 x 5	20 x 10 25 x 5 15 x 5	20 x 12 25 x 10 30 x 10
A/V-A	Class 0.5 1 3 Code	Class 0.5 1 3 Code	Class 0.5 1 3 Code
40/5		- - 1,5 [*] M70311.	
50/5	- - 1 [*] M703D5.	- - 3 [*] M70312.	
60/5	- - 1,25 [*] M703D6.	- 1,25 3,5 [*] M70313.	
75/5	- - 1,25 [*] M703D7.	- 2 3,5 [*] M70314.	
100/5	- 2 3 [*] M703D8.	1,5 2,5 3,75 [*] M70315.	- 1 1,5 [*] M70321.
125/5	- 2,5 3,75 [*] M703D9.	1,75 3,5 5 [*] M70316.	- 1,5 2 [*] M70322.
150/5	1,5 2,5 4 [*] M703DA.	2,5 3,5 5 [*] M70317.	1 2 2,5 [*] M70323.
200/5	2,5 5 6 [*] M703DB.	3,75 5 5 [*] M70318.	2,5 3 3,5 [*] M70324.
250/5		5 7,5 7,5 [*] M70319.	3,5 3,75 5 [*] M70325.
300/5			3,5 3,75 5 [*] M70326.
400/5			3,5 5 7,5 [*] M70327.
500/5			5 7,5 10 [*] M70328.
600/5			5 7,5 10 [*] M70329.


For other parameter coding, see table at the end of this section

Type	TC6.2	TC6	TC8.3
	width x height x depth (mm) 64x87.5x71	width x height x depth (mm) 64x87.5x71.2	width x height x depth (mm) 84.5x109x78
Flat strip(mm)	20 x 20 25 x 12 30 x 10	30 x 15 20 x 10 40 x 10	20 x 25 30 x 20 40 x 10
A/V-A	Class 0.5 1 3 Code	Class 0.5 1 3 Code	Class 0.5 1 3 Code
100/5	1,75 3,75 7,5 [*] M70341.		
125/5	3,75 7,5 10 [*] M70342.		
150/5	5 7,5 10 [*] M70343.	1 3,5 5 [*] M70331.	
200/5	7,5 10 10 [*] M70344.	3,5 5 7,5 [*] M70332.	10 15 25 [*] M703B2.
250/5	7,5 10 15 [*] M70345.	5 7,5 10 [*] M70333.	10 15 20 [*] M703B1.
300/5	10 10 15 [*] M70346.	5 7,5 10 [*] M70334.	15 20 25 [*] M703B3.
400/5	10 10 15 [*] M70347.	5 7,5 10 [*] M70335.	15 20 25 [*] M703B4.
500/5	15 15 20 [*] M70348.	7,5 10 15 [*] M70336.	15 20 25 [*] M703B5.
600/5	15 20 25 [*] M70349.	7,5 10 15 [*] M70337.	15 20 25 [*] M703B6.
750/5		10 15 20 [*] M70338.	20 25 30 [*] M703B7.
800/5		10 15 20 [*] M70339.	25 30 35 [*] M703B8.
1000/5			25 30 35 [*] M703B9.

Type	TC8	TC10	TC12
	width x height x depth (mm) 84.5x109x78	width x height x depth (mm) 108x137x78	width x height x depth (mm) 129x155x78
Flat strip(mm)	50 x 30 60 x 12	50 x 50 60 x 30 80 x 30	3 x 100 x 10
A/V-A	Class 0.5 1 3 Code	Class 0.5 1 3 Code	Class 0.5 1 3 Code
200/5	1 2,5 5 [*] M7036C.	1 2,5 5 [*] M7037F.	
300/5	2,5 5 7,5 [*] M7036B.	2,5 5 7,5 [*] M7037D.	
400/5	5 7,5 10 [*] M70361.	2,5 5 7,5 [*] M7037G.	
500/5	7,5 10 15 [*] M70362.	5 7,5 10 [*] M7037B.	
600/5	10 15 20 [*] M70363.	7,5 10 15 [*] M7037C.	
750/5	15 20 25 [*] M70364.	7,5 10 15 [*] M7037H.	
800/5	15 20 30 [*] M70365.	7,5 10 15 [*] M70372.	10 15 20 [*] M7038B.
1000/5	15 20 30 [*] M70366.	10 15 20 [*] M70373.	10 15 20 [*] M70381.
1200/5	15 20 30 [*] M70367.	10 15 20 [*] M70374.	10 15 20 [*] M70382.
1250/5	15 20 30 [*] M7036A.	10 15 20 [*] M7037E.	10 15 20 [*] M7038D.
1500/5	15 20 30 [*] M70368.	15 20 25 [*] M70375.	15 20 30 [*] M70383.
1600/5	15 20 30 [*] M70369.	15 20 25 [*] M70376.	15 20 30 [*] M70384.
2000/5		15 20 25 [*] M70377.	15 20 30 [*] M70385.
2500/5		15 20 30 [*] M70378.	20 30 40 [*] M70386.
3000/5		15 20 30 [*] M70379.	30 40 60 [*] M70387.
3200/5			30 40 60 [*] M7038C.
4000/5			35 40 60 [*] M70388.


TCH, Current transformers narrow section and high accuracy

Type	TCH6.2	TCH6	TCH8
	width x height x depth (mm) 74x87.15x71.12	width x height x depth (mm) 64x87.5x71.2	width x height x depth (mm) 84.1x114x83
Flat strip(mm)	30 x 10	40 x 10	60 x 12
A/V-A	Class 0.2 0.2S 0.5S Code	Class 0.2 0.2S 0.5S Code	Class 0.2 0.2S 0.5S Code
50/5	0,5 - - [*] M7044B.		
60/5	0,5 - - [*] M7044C.		
100/5	1,5 1 2,5 [*] M70441.		
125/5	1,5 1 2,5 [*] M70442.		
150/5	3,5 2,5 3,5 [*] M70443.	1,25 1 1,5 [*] M70431.	
200/5	5 3,5 5 [*] M70444.	1,5 1,25 2 [*] M70432.	
250/5	5 5 5 [*] M70445.	1,75 1,5 2,25 [*] M70433.	
300/5	5 5 5 [*] M70446.	2 1,75 2,5 [*] M70434.	
400/5	7,5 7,5 7,5 [*] M70447.	5 1 5 [*] M70435.	
500/5		7,5 5 7,5 [*] M70436.	
600/5		7,5 5 7,5 [*] M70437.	10 5 10 [*] M70463.
750/5		10 7,5 10 [*] M70438.	10 7,5 10 [*] M70464.
800/5		10 7,5 10 [*] M70439.	10 7,5 10 [*] M70465.
1000/5			15 10 15 [*] M70466.
1200/5			15 10 15 [*] M70467.
1250/5			15 10 15 [*] M7046A.
1500/5			15 10 15 [*] M70468.
1600/5			15 10 15 [*] M70469.

Type	TCH10	TCH12
	width x height x depth (mm) 108x137x78	width x height x depth (mm) 129x155x78
Flat strip(mm)	50 x 50 60 x 30 80 x 30	3 x 100 x 10
A/V-A	Class 0.2 0.2S 0.5S Code	Class 0.2 0.2S 0.5S Code
800/5	10 7,5 10 [*] M70472.	
1000/5	10 7,5 10 [*] M70473.	
1200/5	10 10 10 [*] M70474.	15 10 15 [*] M70482.
1250/5	10 10 10 [*] M7047C.	15 10 15 [*] M7048C.
1500/5	10 10 15 [*] M70475.	15 10 15 [*] M70483.
1600/5	10 10 15 [*] M70476.	15 10 15 [*] M70484.
2000/5	10 10 15 [*] M70477.	15 10 15 [*] M70485.
2500/5	10 10 15 [*] M70478.	20 15 20 [*] M70486.
3000/5	10 10 15 [*] M70479.	25 20 25 [*] M70487.
3200/5		25 20 25 [*] M7048B.
4000/5		30 25 30 [*] M70488.

For other parameter coding, see table at the end of this section - Other primary ratios consult


TP, Current transformers, split core

Type	TP-23	TP-58	TP-88
	width x height x depth (mm) 110x89x89	width x height x depth (mm) 145x114x114	width x height x depth (mm) 145x144x144
Flat strip(mm)	20 x 30	50 x 80	80 x 80
A/V-A	Class 0.5 1 3 Code	Class 0.5 1 3 Code	Class 0.5 1 3 Code
50/5	- - 1,5 [*] M7011A.		
75/5	- - 1,5 [*] M70117.		
100/5	- - 1,5 [*] M70111.	- - 2 [*] M7012D.	
125/5	- - 1,5 [*] M70118.		
150/5	- - 2 [*] M70112.	- - 3 [*] M7012A.	
200/5	- 1,5 2,5 [*] M70113.	- - 3 [*] M7012B.	
250/5	- 2 4 [*] M70114.	- 2 4 [*] M70121.	- 2 4 [*] M70131.
300/5	1,5 4 6 [*] M70115.	1,5 3 6 [*] M70122.	1,5 3 6 [*] M70132.
400/5	2,5 6 10 [*] M70116.	1,5 3 10 [*] M70123.	1,5 3 10 [*] M70133.
500/5		2,5 5 15 [*] M70124.	2,5 5 15 [*] M70134.
600/5		2,5 5 17,5 [*] M70125.	2,5 5 17,5 [*] M70135.
700/5		2,5 - - [3] M7012C.	
750/5		3 6 18 [*] M70126.	3 6 18 [*] M70136.
800/5		3 7 18 [*] M70127.	3 7 18 [*] M70137.
1000/5		5 10 20 [*] M70128.	5 10 20 [*] M70138.

Type	TP-812	TP-816
	width x height x depth (mm) 185x144x144	width x height x depth (mm) 245x184x184
Flat strip(mm)	80 x 120	80 x 160
A/V-A	Class 0.5 1 3 Code	Class 0.5 1 3 Code
500/5	- 4 12 [*] M70141.	3 - - [3] M7015F.
600/5	- 5 14 [*] M70142.	3 - - [3] M7015H.
750/5	2,5 6 17 [*] M70143.	5 - - [3] M70158.
800/5	3 7 18 [*] M70144.	
1000/5	5 9 20 [*] M70145.	10 15 20 [*] M70151.
1200/5	6 11 24 [*] M70146.	
1250/5	7 15 28 [*] M70147.	8 - - [3] M7015A.
1500/5	8 17 30 [*] M70148.	15 20 25 [*] M70152.
1600/5	8 17 30 [*] M70149.	8 - - [3] M7015B.
2000/5		15 20 25 [*] M70153.
2500/5	10 17 25 [*] M7014A.	15 20 25 [*] M70154.
3000/5		20 25 30 [*] M70155.
3200/5		20 - - [3] M7015C.
4000/5		20 25 30 [*] M70156.
5000/5		20 25 30 [*] M70157.
6000/5		20 - - [3] M7015E.

For other parameter coding, see table at the end of this section - Other primary ratios consult

STP, Current transformers, split core

Type	STP-24								
	width x height x depth (mm) 55x66x24								
Flat strip(mm)	24 mm								
Secondary	5A			1A			250mA		
A/V-A	Class	VA	Code	Class	VA	Code	Class	VA	Code
100	3	1	[C] M73323.	3	1	[C] M733230010000	3	0,1	[C] M7332300G0000
150	3	1	[C] M73325.	3	1	[C] M733250010000	3	0,1	[C] M7332500G0000
200	3	1	[C] M73326.	3	0,5	[C] M733260010000	3	0,1	[C] M7332600G0000
250	3	1	[C] M73327.	1	1	[C] M733270010000	1	0,1	[C] M7332700G0000
300	3	1	[C] M73328.	1	1	[C] M733280010000	1	0,1	[C] M7332800G0000



MC1, Triple scale single-phase efficient transformers

Type	Code	Measurement Range (A)	A (max.)	Class 0,5 Power (VA)	System	Usefull diam.(mm)
MC1-15-75	[*] M73112.	75	75	0,25	Single-phase	15
MC1-20-50/100/150 A	[*] M73118.	50/100/150	150	0,25	Single-phase	20
MC1-35-50/100/150 A	[*] M73116.	50/100/150	150	0,25	Single-phase	35
MC1-20-150/200/250 A	[*] M73113.	150/200/250	250	0,25	Single-phase	20
MC1-30-250/400/500 A	[*] M73114.	250/400/500	500	0,25	Single-phase	30
MC1-55-500/1000/1500 A	[*] M73115.	500/1000/1500	1500	0,25	Single-phase	55
MC1-80 1000/1500/2000 A	[*] M73117.	1000/1500/2000	2000	0,25	Single-phase	80



MC3, Three-phase current transformers


Type	Code	A (max.)	Class 0,5 Power (VA)	System	Usefull diam.(mm)
MC3 - 63 A	[*] M73121.	63	0,1	Three-phase	7,1
MC3 - 125 A	[*] M73122.	125	0,1	Three-phase	14,6
MC3 - 250 A	[*] M73123.	250	0,1	Three-phase	26



SC3, Split three-phase current transformers

Type	Code	A (max.)	Class 0,5 Power (VA)	System	Usefull diam.(mm)
SC3-125	[*] M73602.	125	0,1	Three-phase	15

TM45, Current transformers, winding primary, DIN rail

Type					
					
Flat strip(mm)	Winding primary				
A/V-A	Class				Code
	0.5	1	3		
1/5	2,5	5	7	[C] M70609.	
5/5	2,5	5	7	[*] M70601.	
10/5	2,5	5	7	[*] M70602.	
15/5	2,5	5	7	[*] M70603.	
20/5	2,5	5	7	[*] M70604.	
25/5	2,5	5	7	[*] M70605.	
30/5	2,5	5	7	[*] M70606.	
40/5	2,5	5	7	[*] M70607.	
50/5	2,5	5	7	[*] M70608.	



TC-420 / TP-420 / TCM / TCB, Current transformers with 4 ... 20 mA transducer check section Digital instruments and transducers

TA 210, Current transformers, winding primary

Type




A/V-A	Flat strip(mm)			Winding primary	
	Class			Code	
	0.5	1	3		
5/5	15	20	30	[*] M70541.	
10/5	15	20	30	[*] M70542.	
15/5	15	20	30	[*] M70543.	
20/5	15	20	30	[*] M70544.	
25/5	15	20	30	[*] M70545.	
30/5	15	20	30	[*] M70546.	
40/5	15	20	30	[*] M70547.	
50/5	15	20	30	[*] M70548.	
60/5	15	20	30	[*] M70549.	
75/5	15	20	30	[*] M7054A.	
80/5	15	20	30	[1] M7054K.	
100/5	15	20	30	[*] M7054B.	
125/5	15	20	30	[*] M7054C.	
150/5	15	20	30	[*] M7054D.	
200/5	15	20	30	[*] M7054E.	
250/5	15	20	30	[*] M7054F.	
300/5	15	20	30	[*] M7054G.	
400/5	15	20	30	[*] M7054H.	


TA, Current transformers, winding primary

Type	TA400				TA500				TA600			
	width x height x depth (mm)				width x height x depth (mm)				width x height x depth (mm)			
	95x165x59				115x185x63				124x192x62			
Flat strip(mm)	100 x 20				100 x 30				125 x 60			
A/V-A	Class				Class				Class			
	0.5	1	3	Code	0.5	1	3	Code	0.5	1	3	Code
300/5	5	10	15	[3] M7059A.								
400/5	5	10	15	[3] M70591.								
500/5	15	20	30	[3] M70592.								
600/5	15	20	30	[3] M70593.								
750/5	15	20	30	[*] M70594.								
800/5	15	20	30	[*] M70595.					15	15	-	[3] M705BB.
1000/5	15	20	30	[*] M70596.	15	20	30	[3] M705A2.	15	20	30	[*] M705B1.
1200/5	15	20	30	[*] M70597.	15	20	30	[3] M705A3.	15	20	30	[3] M705B2.
1500/5	15	30	40	[*] M70598.	15	30	40	[*] M705A4.	15	20	30	[*] M705B3.
2000/5	20	40	50	[*] M70599.	20	40	50	[*] M705A6.	15	20	30	[*] M705B5.
2500/5	20	40	50	[C] M7059B.	20	40	50	[*] M705A7.	20	30	40	[*] M705B6.
3000/5					20	45	60	[*] M705A8.	30	40	60	[*] M705B7.
3200/5									30	40	60	[3] M705BA.
4000/5					35	50	70	[*] M705A9.	30	50	70	[*] M705B8.
5000/5									40	60	80	[*] M705B9.

kit3-TRMC210, Sets of 3 current transformers for energy meters class 0,5S

Type	kit3-TRMC210			kit3-TRMC210-05			kit3-TRMC210-05S-2		
	width x height x depth (mm) 145x111x80								
A/V-A	Class	VA	Code	Class	VA	Code	Class	VA	Code
100/5	0.5S	10	[3] Q309010100000	0.5	10	[3] Q309610100000	0.5S	2,5	[3] Q309810100000
150/5	0.5S	10	[3] Q309020100000	0.5	10	[3] Q309620100000	0.5S	2,5	[3] Q309820100000
200/5	0.5S	10	[3] Q309030100000	0.5	10	[3] Q309630100000	0.5S	2,5	[3] Q309830100000
300/5	0.5S	10	[3] Q309040100000	0.5	10	[3] Q309640100000	0.5S	2,5	[3] Q309840100000
400/5	0.5S	10	[3] Q309050100000	0.5	10	[3] Q309650100000	0.5S	2,5	[3] Q309850100000
500/5	0.5S	10	[3] Q309060100000	0.5	10	[3] Q309660100000	0.5S	2,5	[3] Q309860100000
600/5	0.5S	10	[3] Q309070100000	0.5	10	[3] Q309670100000	0.5S	2,5	[3] Q309870100000


kit3-TRMC400, Sets of 3 current transformers for energy meters class 0,5S


Type	kit3-TRMC400			kit3-TRMC400-05			kit3-TRMC400-05-2		
	width x height x depth (mm) 99x160x68								
Flat strip(mm)	100x20 mm								
A/V-A	Class	VA	Code	Class	VA	Code	Class	VA	Code
750/5	0.5S	10	[3] Q309110100000	0.5	10	[3] Q309710100000	0.5	2,5	[3] Q309A10100000
1000/5	0.5S	10	[3] Q309120100000	0.5	10	[3] Q309720100000	0.5	2,5	[3] Q309A20100000
1500/5	0.5S	10	[3] Q309130100000	0.5	10	[3] Q309730100000	0.5	2,5	[3] Q309A30100000
2000/5	0.5S	10	[3] Q309140100000	0.5	10	[3] Q309740100000	0.5	2,5	[3] Q309A40100000
3000/5							0.5	2,5	[3] Q309A60100000


**TRMCx3, Current transformers for energy meters**

Type	Code	Measurement Range (A)	Class 0,5S	Power (VA)	Usefull diam.(mm)	Cable (m)
Indoor						
TRMC-x3 100/5	[*] Q301T1.	100/5		2,5	38	1.5
TRMC-x3 200/5	[*] Q301T2.	200/5		2,5	38	1.5
TRMC-x3 300/5	[*] Q301T3.	300/5		2,5	38	1.5
TRMC-x3 400/5	[*] Q301T4.	400/5		2,5	38	1.5
Outdoor						
TRMC-X3 100/5 Ext	[C] Q301T1010E000	100/5		2,5	38	7
TRMC-X3 200/5 Ext	[C] Q301T2010E000	200/5		2,5	38	7
TRMC-X3 300/5-ext	[C] Q301T3010E000	400/5		2,5	38	7
TRMC-X3 400/5 Ext	[C] Q301T4010E000	300/5		2,5	38	7




TRM, Measuring transformers encapsulated in resin

Type	TRM30			TRM40			TRM60		
	width x height x depth (mm) 110x147x50			width x height x depth (mm) 135x168x38			width x height x depth (mm) 135x178x36		
Flat strip(mm)	30 mm			40 mm			60 mm		
A/V-A	Class	VA	Code	Class	VA	Code	Class	VA	Code
75/5	1	2	[4] P50101.						
100/5	1	5	[4] P50102.						
150/5	1	5	[4] P50103.	0.5	5	[4] P50111.			
200/5	0.5	10	[4] P50104.	0.5	7,5	[4] P50112.			
250/5	0.5	15	[4] P50105.	0.5	10	[4] P50113.	0.5	5	[4] P50121.
300/5	0.5	20	[4] P50106.	0.5	15	[4] P50114.	0.5	7,5	[4] P50122.
400/5	0.5	25	[4] P50107.	0.5	20	[4] P50115.	0.5	10	[4] P50123.
500/5				0.5	25	[4] P50116.	0.5	15	[4] P50124.
600/5				0.5	30	[4] P50117.	0.5	20	[4] P50125.
800/5				0.5	35	[4] P50118.	0.5	25	[4] P50126.
1000/5							0.5	30	[4] P50127.
1200/5							0.5	35	[4] P50128.

Type	TRM80			TRM100		
	width x height x depth (mm) 135x178x36			width x height x depth (mm) 175x228x38		
Flat strip(mm)	80 mm			100 mm		
A/V-A	Class	VA	Code	Class	VA	Code
500/5	0.5	5	[4] P50131.			
600/5	0.5	7,5	[4] P50132.			
750/5	0.5	10	[4] P50133.	0.5	15	[4] P50141.
1000/5	0.5	15	[4] P50134.	0.5	20	[4] P50142.
1500/5	0.5	20	[4] P50135.	0.5	20	[4] P50144.
2000/5	0.5	25	[4] P50136.	0.5	20	[4] P50145.
2500/5	0.5	30	[4] P50137.	0.5	20	[4] P50146.
3000/5				0.5	25	[4] P50147.

Type	TRM140				TRM180			
	width x height x depth (mm) 223x269x40				width x height x depth (mm) 223x306x40			
Flat strip(mm)	140 mm				180 mm			
A/V-A	Class	VA	Code	EUR	Class	VA	Code	EUR
1000/5	0.5	15	[4] P50151.					
1250/5	0.5	20	[4] P50152.		0.5	15	[4] P50161.	
1500/5	0.5	25	[4] P50153.		0.5	20	[4] P50162.	
2000/5	0.5	30	[4] P50154.		0.5	20	[4] P50163.	
2500/5	0.5	35	[4] P50155.		0.5	20	[4] P50164.	
3000/5	0.5	35	[4] P50156.		0.5	20	[4] P50165.	
4000/5	0.5	35	[4] P50157.		0.5	20	[4] P50166.	
5000/5					0.5	20	[4] P50167.	

SH, Shunts

Type	SHP		SHB		SH	
						
Accuracy	1		0.5			
Relation	Type	Code	Type	Code	Type	Code
1A/60mV			SHB 1A/60mV	[3] M71221.		
1.5A/60mV			SHB 1.5A/60mV	[3] M71222.		
2.5A/60mV			SHB 2.5A/60mV	[3] M71223.		
4A/60mV			SHB 4A/60mV	[3] M71224.		
5A/60mV			SHB 5A/60mV	[3] M71225.		
6A/60mV			SHB 6A/60mV	[3] M71226.		
10A/60mV			SHB 10A/60mV	[*] M71227.		
15A/60mV			SHB 15A/60mV	[*] M71228.		
25A/60mV			SHB 25A/60mV	[*] M71229.		
30A/60mV	SHP 30A/60mV	[3] M71211.	SHB 30A/60mV	[*] M7122A.	SH 30A/60mV	[*] M71231.
40A/60mV	SHP 40A/60mV	[3] M71212.	SHB 40A/60mV	[*] M7122B.	SH 40A/60mV	[2] M71232.
50A/60mV	SHP 50A/60mV	[3] M71213.	SHB 50A/60mV	[*] M7122C.	SH 50A/60mV	[*] M71233.
60A/60mV	SHP 60A/60mV	[3] M71214.	SHB 60A/60mV	[*] M7122D.	SH 60A/60mV	[*] M71234.
75A/60mV	SHP 75A/60mV	[3] M71215.				
80A/60mV			SHB 80A/60mV	[*] M7122E.	SH 80A/60mV	[*] M71235.
100A/60mV	SHP 100A/60mV	[3] M71216.	SHB 100A/60mV	[*] M7122F.	SH 100A/60mV	[*] M71236.
150A/60mV	SHP 150A/60mV	[3] M71217.			SH 150A/60mV	[*] M71237.
200A/60mV	SHP 200A/60mV	[3] M71218.	SHB 200A/60mV	[2] M7122N.	SH 200A/60mV	[*] M71238.
250A/60mV					SH 250A/60mV	[*] M71239.
300A/60mV					SH 300A/60mV	[*] M7123A.
400A/60mV					SH 400A/60mV	[*] M7123B.
500A/60mV					SH 500A/60mV	[*] M7123C.
600A/60mV					SH 600A/60mV	[*] M7123D.
750A/60mV					SH 750A/60mV	[2] M7123E.
800A/60mV					SH 800A/60mV	[2] M7123F.
1000A/60mV					SH 1000A/60mV	[*] M7123G.
1200A/60mV					SH 1200A/60mV	[3] M7123H.
1500A/60mV					SH 1500A/60mV	[*] M7123J.
2000A/60mV					SH 2000A/60mV	[3] M7123K.
2500A/60mV					SH 2500A/60mV	[3] M7123L.
3000A/60mV					SH 3000A/60mV	[3] M7123M.
4000A/60mV					SH 4000A/60mV	[3] M7123N.
5000A/60mV					SH 5000A/60mV	[3] M7123P.
6000A/60mV					SH 6000A/60mV	[3] M7123Q.
7500A/60mV					SH 7500A/60mV	[3] M7123R.
8000A/60mV					SH 8000A/60mV	[C] M7123S.
10000A/60mV					SH 10000A/60mV	[C] M7123T.
12500A/60mV					SH 12500A/60mV	[C] M7123U.
15000A/60mV					SH 15000A/60mV	[C] M7123V.
18000A/60mV					SH 18000A/60mV	[C] M7123Z.
20000A/60mV					SH 20000A/60mV	[C] M7123O.

Insulating base socket for type SHB (up to 100 A) All shunts are supplied with 1.5 m long cables with a 1.5 m² cross-section

FOR OTHER PARAMETER CODING see table at the end of below


VT, Measurement voltage transformers

Type	Code	Class 0,5 Power (VA)	Class 1 Power (VA)	Relation
VT2311 230V/110V	[3] M72311.	10	25	230/110V
VT3823 380V/230V	[3] M72352.	10	25	380/230V
VT4011 400V/110V	[3] M72321.	10	25	400/110V
VT4023 400V/230V	[3] M72322.	10	25	400/230V
VT4411 440V/110V	[3] M72331.	10	25	440/110V
VT4423 440V/230V	[3] M72332.	10	25	440/230V
VT4811 480V/110V	[3] M72341.	10	25	480/110V
VT4823 480V/230V	[3] M72342.	10	25	480/230V
VT7023 700V/110V	[3] M72381.	10	25	700/110V
VT7023 700V/230V	[3] M72382.	10	25	700/230V


TSR, Current adding transformer

Type	Code	Current	Class 0,5 Power (VA)	Class 1 Power (VA)	Measuring Channels
Current adding transformers fixed on a DIN rail					
TSR-2	[*] M70701.	5A	15	30	2
TSR-3	[*] M70702.	5A	15	30	3
TSR-4	[*] M70703.	5A	15	30	4
TSR-5	[*] M70704.	5A	15	30	5


TE, Impedance elevator transformer

Type	Code	Class 1 Power (VA)	Relation
TE-5/0.1	[*] M70911.	15	5 /0,1 A

FOR OTHER PARAMETER CODING see table at the end of below



For Protection current transformers SEE SECTION Protection and Control/Protection current transformers

CODIFICATION TABLE

TC, TP, TA, TCH, TM45, TSR

Code	Internal code	Delivery time
M 7 X X X X 0 0 X X		
Secondary	Standard (.../ 5 A)	0
	.../ 1 A(*)	1
Certificate	-	0
	Individual (**)	1

(*) Not available in TC4 type

(**) A certificate is attached for every transformer

TRM

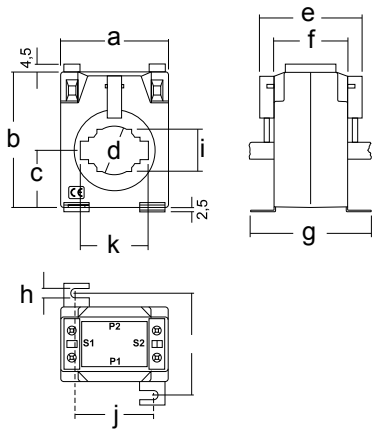
Code	Internal code	Delivery time
P 5 X X X X 0 0 X		
Secundario	Estándar (.../ 5 A)	0
	.../ 1 A	1

SH, SHB

Code	Internal code	Delivery time
M 7 X X X X 0 0 X		
Input	Standard .../60 mV	0
	.../50 mV	1
	.../75 mV	7
	.../100 mV	2
	.../150 mV	3
	.../200 mV	4
	.../250 mV	8
	.../300 mV	5
	.../400 mV	9
	.../600 mV	6

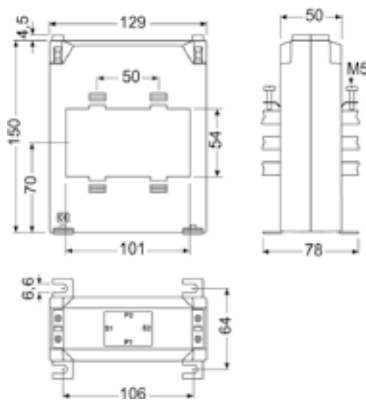
Dimensions

TC / TCH

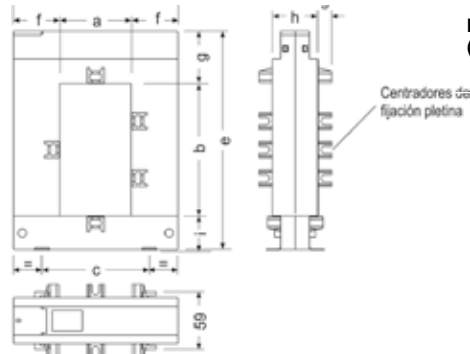


Dimensions (mm)	TC 4	TC 5 TCH 5	TC 5.2 TCH 5.2	TC 6.2 TCH 6.2	TC 6 TCH 6	TC 8 TCH 8	TC 10 TCH 10
a	50	58	58	64	64	84,5	108
b	70	70	70	80,5	80,5	102	130
c	29	29	29	34	34	46	61
d	21	20,3	22	26	28,5	44	63
e	43,5	45	45	60,5	66,5	69	---
f	30	32	32	44	44	50	50
g	56	59	59	71	71,2	78	78
h	5,5	5,6	5,6	5,6	5,6	6,6	6,6
i	45,5	48	48	60	60	64	64
j	31,6	39	39	46	46	62	86
k	30,5	25,6	30,6	20,6	40,6	60,6	80,6
l	30,5	15,6	15,6	30,6	25,2	30,6	50,8

TC 12



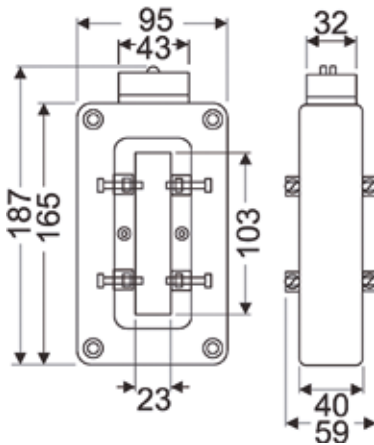
TP



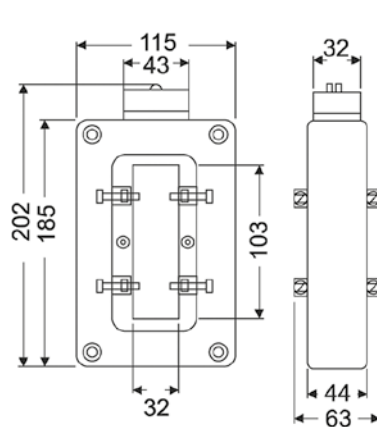
Dimensions (mm)	TP-23	TP-58	TP-88	TP-812	TP-816
a	20	50	80	80	80
b	30	80	80	120	160
c	51	78	108	108	120
d	89	114	144	144	184
e	110	145	145	185	245
f	34	32	32	32	52
g	47	32	32	32	47
h	40	32	32	32	52
i	32	32	32	32	38

Note: All types have fixing centering units, except for TP-23

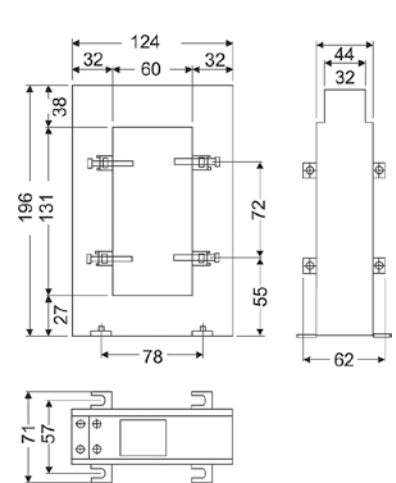
TA 400



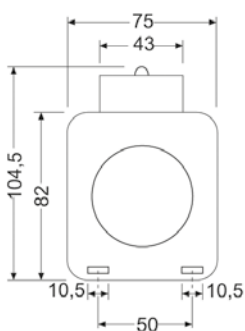
TA 500



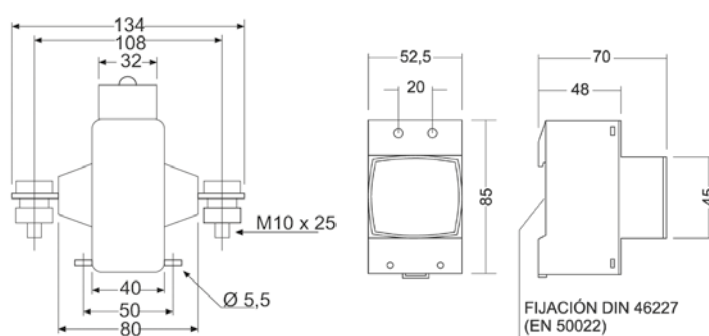
TA 600



TA 210

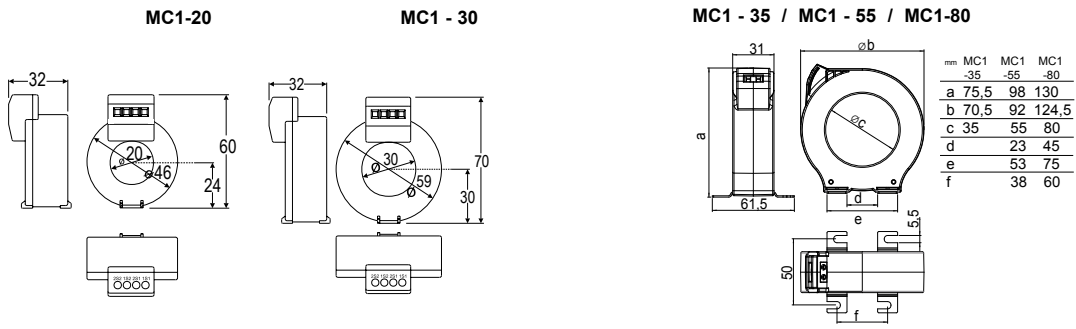


TM 45

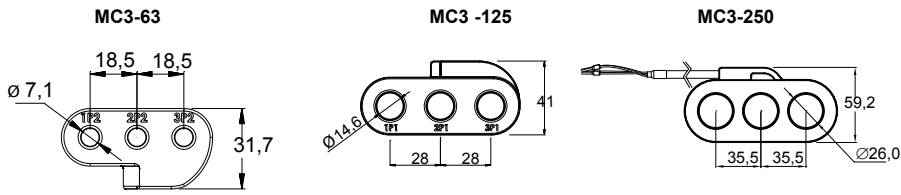


Dimensions

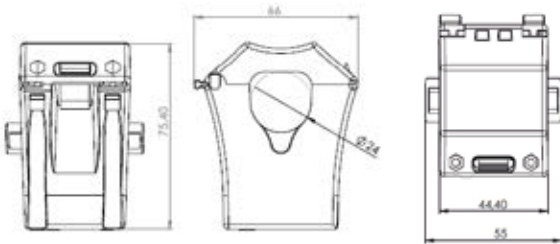
MC1



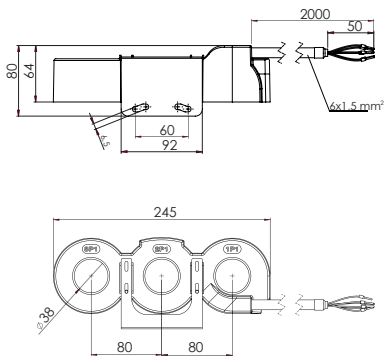
MC3



STP-24



TRMCx3



Control devices

		Page
Energy manager	EDS	45
Maximum demand control device	MDC-20	46
	MDC-4	46
Impulse and contact centralisers	LM	45
Public lighting control system	CIR-LAMP	46
Communication accessories	Cable communication converters	46
	Wireless converters and probes	47
	Modems	47

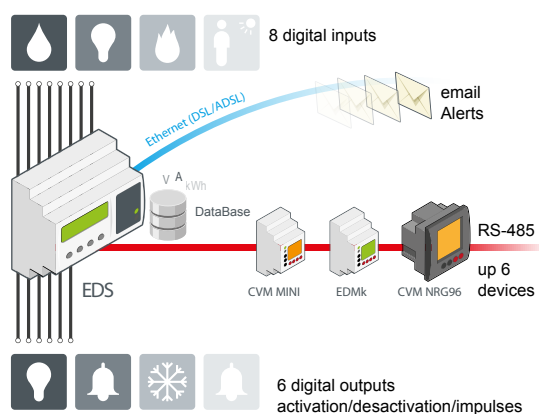


EDS, Energy manager with powerStudio and built-in web server

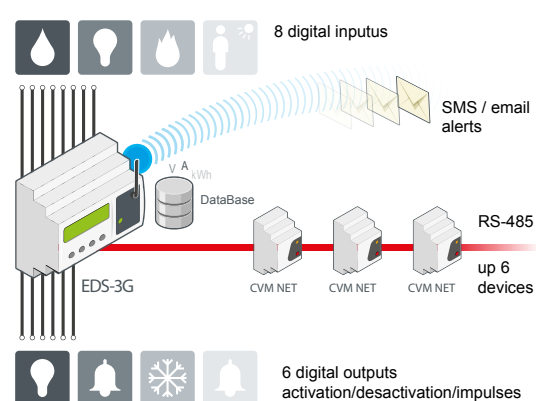
Type	Code	Output relay	Digital inputs	Communications	Protocol
EDS	[*] M61010.	6	8	Ethernet	Modbus Circutor
EDS -Deluxe	[*] M61020.	6	8	Ethernet	Modbus / XML
With 3G communications					
EDS-3G	[*] M61012.	6	8	Ethernet /3G	Modbus Circutor
EDS-3G_Deluxe	[C] M61022.	6	8	Ethernet /3G	Modbus / XML

Type	Code	Description
Accessories antennas		
GXS2	[*] M610A1.	Antenna 4 GHz, 2,14 dBi + cable 5 m
GC2	[*] M610A2.	Antenna 4 GHz, 2,2 dBi antibanda

EDS application example



EDS-3G application example



LM, Impulse and contact centralisers

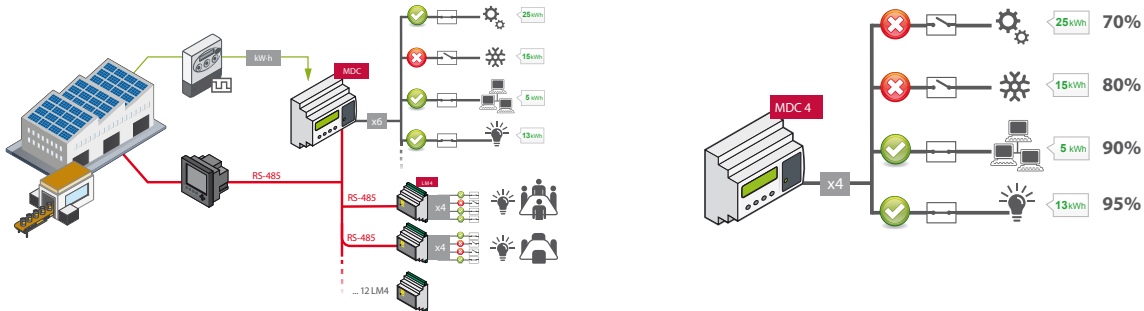
Type	Code	Modules	Output relay	Digital inputs	Analogue Inp.	Communications	Protocol
LM50-TCP+	[*] M31566.	8	-	50	-	RS-485	TCP y UDP, Modbus/TCP
LM25-M	[*] M31567.	8	-	25	-	RS-485	Modbus/RTU
LM4I-4O-M	[*] M31563.	4	4	4	-	RS-485	Modbus/RTU
LM4A-2IO-M	[*] M31565.	4	2	2	4 (4...20mA)	RS-485	Modbus/RTU

(*) Digital inputs (logic 0 / 1) or energy impulses




MDC, Maximum demand control devices

agrupador		
Type	Code	Description
MDC-20, 6 local Loads, expandable, predictive control		
MDC-20	[*] M61410.	8 digital inputs for logical states or counting impulse signals (electric energy meters, water meters, gas meters, etc.). Load status feedback (inputs/outputs). Expandable via auxiliary LM range units. Historical records of over one year with a log of up to 4500 electrical variables, averaged every 15 minutes, maximum and minimum values over the period (Period can be modified. Ring buffer). RS-485 BUS for connecting up to 12 LM4 i/o
MDC-4	[*] M61430.	Maximum demand control unit, by level. Includes a built-in three-phase power analyzer and 4 relay outputs of up to 6 A for controlling non-priority loads


CirLAMP, Public lighting control system

Type	Code	Description
CIRLAMP manager, master device to manage the light control devices (CIRLAMP nodo)		
CIRLAMP Manager	[*] M63001.	CIRLAMP has a configuration Web site, where the user can fully configure the configuration parameters of each light point. In addition, the device has an XML server, so that it can be integrated in any global control and maintenance platform
CirLAMP 8I8O	[C] M63002.	Input/Output module
CIRLAMP Nodos		
CIRLAMP NODO DN	[C] M63021.	For managing the lights with 2-level electronic ballasts / drivers (lamp power of up to 600 W)
CIRLAMP NODO 1...10	[C] M63011.	For managing the lights with electronic ballasts / drivers with 1...10V regulation (lamp power of up to 600 W)
CIRLAMP nodo DALI	[C] M63030.	For managing the lights with electronic ballasts/drivers with DALI protocol (lamp power of up to 600 W)

B-band PLC Communications in compliance with CENELEC regulations, with a DCSK system. Detection of operating errors in the light for maintenance purposes: Blown lamp, Flashing lamp, Open capacitor, Number of operating hours of the lamp.

TH-DG, Photovoltaic monitoring

Type	Code	Description
TH-DG-RS485	[*] M61310.	Temperature and humidity probe with RS-485 communications (Modbus/RTU).. Needs a 9...24 V ac/cc power supply. PowerStudio supported

ReadWatt, Impulse collection with communication

Type	Code	Description
ReadWatt	[*] M62311.	Impulse collector with RS232/RS485 Modbus communications. Built in transistor output. PowerStudio supported
PS 100...240Vcc	[*] M62331.	ReadWatt power supply

RS/TCP/CMBUS, Communication converters

Type	Code	Description
RS2RS	[*] M62141.	RS-232/485 Intelligent converter and amplifier (RTS control) for PC
USB-RS 485	[*] M54040.	USB to RS-485 Converter
USB-RS 232	[*] M54050.	USB to RS-232 Converter
TCP1RS+	[*] M62121.	RS-485 / Ethernet modbus/TCP Converter
TCP2RS+	[*] M54033.	RS-232/485 Converter / Ethernet Modbus/TCP. Built-in web server and web set-up
CMBUS-8	[*] M540A0.	M-Bus to Modbus Converter, up to 8 Mbus slaves
CMBUS-24	[*] M540B0.	M-Bus to Modbus Converter, up to 24 Mbus slaves



AIR, Wireless converters and probes

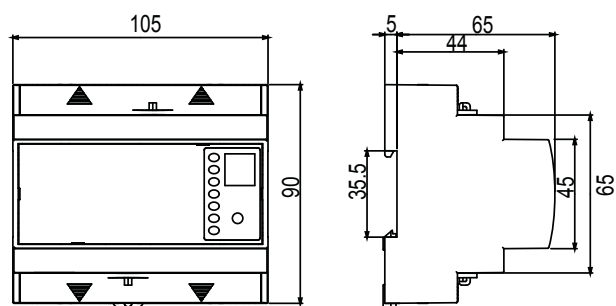
Type	Code	Description
air GATEWAY	[*] M62001.	Router RS485 Modbus/RTU to Radio
air BRIDGE	[*] M62002.	Radio Router to RS485 Modbus/RTU
air REPEATER	[*] M62003.	Signal repeater
air THL	[*] M62004.	Wireless temperature, relative humidity and brightness analyzer
air HANDZER	[*] M62005.	Portable wireless signal coverage analyzer
air TIDCI	[1] M62006.	2 NTC sensor + 2 S0 impulse counter

Modems, Communication accessories

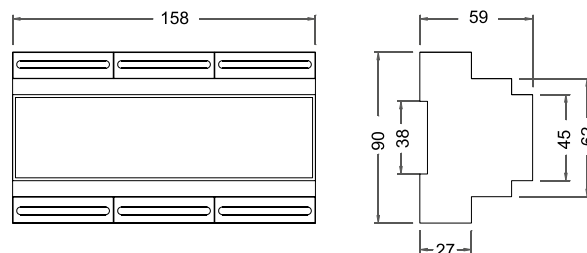
Type	Code	Description
M-GSM 10 BITS	[*] Q30213IB00000	GSM RS-232/485 Modem (includes antenna + cable). Parameterisation with even parity (10 bits)
M-GSM 11 BITS	[*] Q30213EN00000	GSM RS-232/485 Modem (includes antenna + cable). Parameterisation with even parity (11 bits)
SGE-3G/GPRS	[*] Q30230.	GPRS-3G Modem with Ethernet communications (includes PS + antenna + cable)
ANTENA GSM UT-35 9db	[1] Q4994E.	Antenna 9 db (for GSM modem)

Dimensions

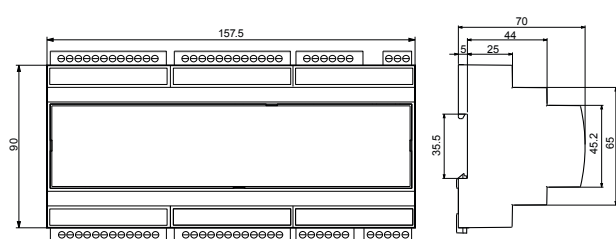
EDS / MDC-4 / MDC-20



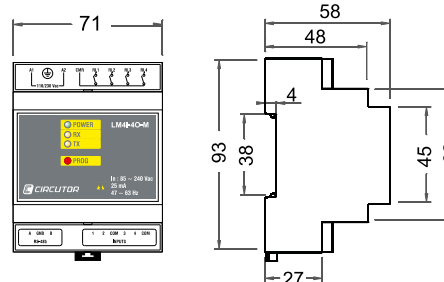
LM50-TCP



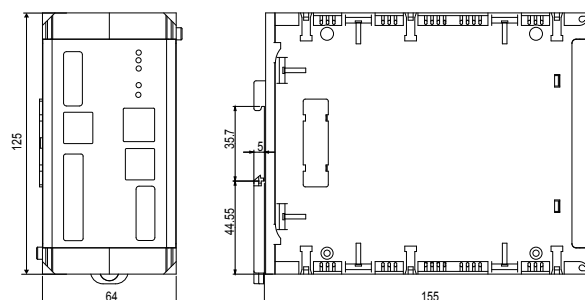
LM25-M



LM41/40-M / LM4A-210



CIRLAMP Manager



Management Software



PowerVision/CIR-ENERGY, Energy management software

Type	Code	Description
Data management software		
PowerVisionPlus	[*] M90413.	Software for reading, downloading and processing files for devices equipped with memories (depending on type). Elaboration of graphs and tables from information. Automatic downloading for QNA Power Quality Analyzers. Other related units: AR5, AR5-L, QNA, CLP, CVM-BD M, CIR-E3 and AR6 series



PowerStudio, Energy management software

Type	Code	Description
Software SCADA		
PowerStudio	[*] M90211.	Energy supervision software for buildings and industrial installations, with the possibility of viewing reports, layouts and single-line diagrams. Other functions include: <ul style="list-style-type: none"> • Remote parameterisation of the units • Real-time display of parameters • Recording and printout of logs in table or graphic format • Multi-station Web Server and integrated XML Server • Creation of access users and profiles for the application with user name and password • Great versatility and very simple use • Compatible with OPC software for PS/PSS • Custom event configuration (Alarms, Calculations, Sending Emails) • Construction of customised screens • Possibility of performing control actions on the units • Report generator and energy bill simulator module, Possibility to emulate tariffs or time periods • Parameterisation of custom calculations to obtain EnPIs • Comparison of historical data stored in the system • Management of multi-point remote systems in combination with EDS and EDS-3G data servers • Compatible with the 32 and 64-bit Windows 7 and 8 platforms
PowerStudio-Scada	[*] M90231.	Energy monitoring software for industrial buildings and installations. It allows each installation to be controlled, providing the power line status in real time and first-hand, as well as the general consumption of the installation both at low and medium voltage. Its main features are: <ul style="list-style-type: none"> • Configuring CIRCUTOR units connected to the communications network • Displaying the parameters from the measuring units installed on site in real time • Creating databases • Recording and searching the historical data stored on a computer in graphical or table format • Built-in XML server • Exporting to text files and spreadsheets • Access to information through a conventional Internet browser
PowerStudio-Deluxe	[C] M90241.	In addition to the performance features offered by the standard module, Power Studio Scada, Deluxe can: <ul style="list-style-type: none"> • Generic Modbus driver used to connect to other devices available in the market • RS485 with Modbus/RTU protocol (driver composition). • Transparent Ethernet connections with the UDP, TCP and Modbus/TCP protocols • Variables to be integrated must have a hexadecimal format. • Acquisition of data with the OPC/DA protocol (real-time data). • Connection and display of video surveillance cameras with an IP connection (no recording functions). • Connection of PSSDs in cascade. • Generic driver used to download meters with the IEC 870 protocol (standard ASDUS) • Global integration of remote PowerStudio applications in a single server • Compatible with 64-bit Windows platforms • Compatible with OPC software for PS/PSS
OPC Server PS/PSS	[1] M91111.	OPC Server for PowerStudio is an integration platform that can easily integrate the parameters received from PowerStudio (or any of its versions) in any SCADA platform available in the market with a simple approach. The format of requests that can be integrated will be DA real time data. It includes the Tunnelling function, establishing OPC connections over IP through a corporate network. In addition, it can establish decentralised or remote connections (routing). Therefore, any SCADA platform available in the market with an OPC/DA client function can immediately integrate all parameters received from the CIRCUTOR platform
SQL DATA EXPORT	[1] M91301.	SQL Data Export for PS/PSS is a software tool for the integration of data from PS/PSS to a new or existing SQL database. Main advantages of SQL Data Export: <ul style="list-style-type: none"> • Exporting historic data stored in SQL databases • Optional selection of devices or databases to be exported • Programming the download frequency • Multiple architectures

License 4.0 version 4.0

Databox, Energy management software

Type	Description
DataBox	Software with licence in the cloud (Databox cloud platform) for complete management of all parameters required for the optimum performance of Energy Audits. The Databox system combines data recording, display and operation from any location using any PC, smartphone or tablet.

SBOX, Gateway for DataBox platform






Type	Code	Description
SBOX 3G VPN	[*] M61920.	Gateway with 3G communications via VPN network (1) and SIM card fully configured to send data from the units connected to the RS-485 port or Ethernet to the Databox cloud platform in order to carry out energy audits and improvements related to electrical energy efficiency
SBOX 3G NET	[*] M61930.	Gateway with 3G communications (SIM card must be provided by the user) to send data from the units connected to the RS-485 port or Ethernet to the Databox cloud platform in order to carry out energy audits and improvements related to Electrical Energy Efficiency

Delivery time: [*] immediate
 [x] working weeks
 [c] consult



Portable power analyzers

Table: Portable power analyzers

		MYeBOX 1500	MYeBOX 150	CIR-e+	CAVA	VLOG-10
						
Connection	single-phase	•	•	–	•	•
	Three-phase	•	•	•	–	–
Parameters	Voltage	•	•	•	•	•
	Current	•	•	•	T	–
	Neutral current	•	•	–	–	–
	Leakage current	•	–	–	–	–
	Neutral-earth voltage	•	–	–	•	–
	Power	•	•	•	T	–
	Energy (active and reactive)	•	•	•	T	–
	Harmonics	•	•	•	T	–
	Flicker	•	•	•	–	–
	Quality parameter measurements	Events (overvoltages, gaps and interruptions)	•	•	•	•
EN50160 parameters		•	•	•	–	–
Transients		•	•	–	–	–
Inputs/outputs	Digital inputs	2	–	–	–	–
	Digital outputs	2	–	–	–	–
Other features	Memory	•	•	•	•	•
	Communications	WiFi 3G µUSB	WiFi µUSB	USB / SD CARD	–	USB
	Display	LCD	LCD	–	–	–
	Display of parameters	Display Smartphone & tablet (APP) Software	Display Smartphone & tablet (APP) Software	Display Software	Display Software	Software
	Display of files	Smartphone & tablet (APP) Software	Smartphone & tablet (APP) Software	Display Software	Display Software	Software
Standards	Measuring in accordance with IEC 61000-4-30	Class A (*)	Class S(*)	Class B	Class B	Class B
	Measuring in accordance with UL	• (certified)	• (certified)	–	–	–
	Page	50	50	51	52	52
	T - Depending on Type (*) See manual					


MYeBOX, Portable power analyzer with recording of quality events and transients in accordance with (IEC 61000-4-30 Ed.2) Class A

Type	Code	Clamp	Measuring Channels	Transistor output	Digital inputs	Communications
kit MYeBOX-150	[*] M84023.	-	4	-	-	WiFi
kit MYeBOX-1500	[*] M84033.	-	5	2	2	WiFi + 3G
Portable analyzer kits with current sensors						
MYeBOX150+3 FLEX-R45	[*] M8404B.	3 FLEX-R45	4	-	-	WiFi
MYeBOX1500+3 FLEX-R45	[*] M8405B.	3 FLEX-R45	5	2	2	WiFi + 3G
MYeBOX-150-4 FLEX-R45	[*] M8404C.	4 FLEX-R45	4	-	-	WiFi
MYeBOX-1500-4 FLEX-R45	[*] M8405C.	4 FLEX-R45	5	2	2	WiFi + 3G
MYeBOX-150-3 FLEX-R80	[*] M8404D.	3 FLEX-R80	4	-	-	WiFi
MYeBOX 1500+3 FLEX-R80	[*] M8405D.	3 FLEX-R80	5	2	2	WiFi + 3G
MYeBOX-150-4 FLEX-R80	[*] M8404E.	4 FLEX-R80	4	-	-	WiFi
MYeBOX-1500-4 FLEX-R80	[*] M8405E.	4 FLEX-R80	5	2	2	WiFi + 3G
MYeBOX150 + 3 CPG-100	[*] M84043.	3 CPG-100	4	-	-	WiFi
MYeBOX1500 + 3 CPG-100	[*] M84053.	3 CPG-100	5	2	2	WiFi + 3G
MYeBOX150 + 3 CPRG-500	[*] M84045.	3 CPRG-500	4	-	-	WiFi
MYeBOX1500 + 3 CPRG-500	[*] M84055.	3 CPRG-500	5	2	2	WiFi + 3G

Analysers with built-in SD memory and Cloud Includes voltage cables, alligator clips, USB cable, fastening strap, magnetic support, battery, power supply and carrying bag. Please contact us for other clamp or clamp length combinations


MYeBOX-A, Portable power analyzer with recording of quality events and transients Calibration Certificate (IEC 61000-4-30 Ed.2) Class A

Type	Code	Clamp	Measuring Channels	Transistor output	Digital inputs	Communications
kit MYeBOX-150	[*] M840230000A00	-	4	-	-	WiFi
kit MYeBOX-1500	[*] M840330000A00	-	5	2	2	WiFi + 3G
Portable analyzer kits with current sensors						
MYeBOX-150-3 FLEX-R45	[*] M8404B0000A00	3 FLEX-R45	4	-	-	WiFi
MYeBOX-1500-3 FLEX-R45	[*] M8405B0000A00	3 FLEX-R45	5	2	2	WiFi + 3G
MYeBOX-150- 4 FLEX-R45	[*] M8404C0000A00	4 FLEX-R45	4	-	-	WiFi
MYeBOX-1500- 4 FLEX-R45	[*] M8405C0000A00	4 FLEX-R45	5	2	2	WiFi + 3G
MYeBOX-150- 3 FLEX-R80	[*] M8404D0000A00	3 FLEX-R80	4	-	-	WiFi
MYeBOX-1500-3 FLEX-R80	[*] M8405D0000A00	3 FLEX-R80	5	2	2	WiFi + 3G
MYeBOX-150- 4 FLEX-R80	[*] M8404E0000A00	4 FLEX-R80	4	-	-	WiFi
MYeBOX-1500-4 FLEX-R80	[*] M8405E0000A00	4 FLEX-R80	5	2	2	WiFi + 3G
MYeBOX-150- 3 CPG-100	[*] M840430000A00	3 CPG-100	4	-	-	WiFi
MYeBOX-1500- 3 CPG-100	[*] M840530000A00	3 CPG-100	5	2	2	WiFi + 3G
MYeBOX-150- 3 CPRG-500	[*] M840450000A00	4 CPG-100	4	-	-	WiFi
MYeBOX-1500- 3 CPRG-500	[*] M840550000A00	4 CPG-100	5	2	2	WiFi + 3G

Analysers with built-in SD memory and Cloud Includes voltage cables, alligator clips, USB cable, fastening strap, magnetic support, battery, power supply and carrying bag. Please contact us for other clamp or clamp length combinations


CPG, Clamps

Type	I min - Measurement Range (A)	Nr Sensors	Code	Nr Sensors	Code	Nr Sensors	Code
CPG-5	0.05 - 0,5 ... 5 A	1	[*] M810B1.	3	[*] M810C1.	4	[*] M810D1.
CPG-100	1 - 10 ... 100 A	1	[*] M810B2.	3	[*] M810C2.	4	[*] M810D2.
CPRG-500	1 - 50 ... 500 A	1	[*] M810B3.	3	[*] M810C3.	4	[*] M810D3.
CPRG-1000	1 - 20 ... 1000 A	1	[*] M810B4.	3	[*] M810C4.	4	[*] M810D4.
CPG-2000/200	1 - 10 ... 200 A 10 - 150 ... 2000 A	1	[*] M810B5.	3	[*] M810C5.	4	[*] M810D5.

FLEX-RMG, Flexible Clamps

Type	I min - Measurement Range (A)	Sensor length	Nr Sensors	Code	Nr Sensors	Code	Nr Sensors	Code
kit 1 FLEX RMG70	1 - 10 ... 100 / 10 - 100 ... 1000	22 cm	1	[*] M81911.	3	[*] M81931.	4	[*] M81941.
kit 1 FLEX RMG120	50 - 1000 ... 10000	38 cm	1	[*] M81912.	3	[*] M81932.	4	[*] M81942.

FLEX-R, Flexible Clamps

Type	I min - Measurement Range (A)	Sensor length	Nr Sensors	Code	Nr Sensors	Code	Nr Sensors	Code
KIT 1 -FLEX-R45	1- 10 ... 100 /	45 cm	1	[*] M81611.	3	[*] M81631.	4	[*] M81641.
KIT 1-FLEX-R80	10 - 100 ... 1000	80 cm	1	[*] M81612.	3	[*] M81632.	4	[*] M81642.
KIT 1-FLEX-R120	50 - 1000 ... 10000	120 cm	1	[*] M81613.	3	[*] M81633.	4	[*] M81643.

MYeBOX Accessories

Type	Code	Description
MYeBOX BATTERY	[*] M84011.	MyEBOX battery
POWER SUPPLY MYeBOX	[*] M84012.	MYEBOX power cable
MARKER MYeBOX 9 COLOURS	[*] M84014.	Markers
MYeBOX 9 CARRYING BAG	[*] M84015.	Carrying bag
Belt MYeBOX	[*] M84016.	MyEBOX strap
Magnetic support MYeBOX	[*] M84017.	MyEBOX magnetic base



CIR-e+, Energy audit analyzer

Type	Code	Description	Device	Clamp
CIR-e+	[*] M85060.	CIR-e+ Portable energy audit analyzer without clamps	CIR-e+	-
CIR-e+ / 3 CPG-100	[*] M85070.	CIR-e+ energy audit analyser with three CPG100 sensors	CIR-e+	3 CPG-100
CIR-e+ / 3 EFLEX 54	[*] M85050.	CIR-e+ energy audit analyser with three 54 cm long E-FLEX sensors	CIR-e+	3 EFLEX 54

CPG, Clamps

Type	Code	Clamp	Measurement Range (A)	I min	Usefull diam.(mm)	Flat strip(mm)
KIT3 CPG-5	[*] M86019.	3 x CPG 5 CIR-e+	0,5 ... 5 A	0.05	20	20 x 5
KIT3 CPG-100	[*] M8601A.	3 x CPG 100 CIR-e+	10 ... 100 A	1	20	20 x 5
KIT3 CPRG-500	[*] M86016.	3 x CPRG 500 CIR-e+	50 ... 500 A	1	52	1 of 50 x 5 or 4 of 30 x 5
KIT3 CPRG-1000	[*] M86017.	3 x CPRG 1000 CIR-e+	20 ... 1000 A	1	52	1 of 50 x 5 or 4 of 30 x 5
KIT3 CPG-2000/200	[*] M86018.	3 x CPG 2000/200 CIR-e+	10 ... 200 A / 150 ... 2000 A	1 / 10	64	5 of 125 x 5 or 3 of 100 x 10

FLEX, Flexible Clamps

Type	Code	Clamp	Measurement Range (A)	I min	Sensor length
KIT3 AMS14-FLEX	[1] M86015.	3 x AMS14-FLEX	10 ... 100 A / 10 ... 200 A	1 / 2	14 cm
KIT3 CIRe3 FLEX 200..20kA 54	[1] M86010.	3 x FLEX 200..20kA 54	20 ... 200 A / 200 ... 2000 A / 2000 ... 20000 A	2 / 20 / 1000	54 cm
KIT3 CIRe3-FLEX 200..20kA 80	[1] M86013.	3 x FLEX 200..20kA 80	20 ... 200 A / 200 ... 2000 A / 2000 ... 20000 A	2 / 20 / 1000	80 cm
KIT3 CIRe3-FLEX 200..20kA 120	[1] M86014.	3 x FLEX 200..20kA 120	20 ... 200 A / 200 ... 2000 A / 2000 ... 20000 A	2 / 20 / 1000	120 cm
Kit 3 CIRE3-FLEX 100...10kA 54	[1] M8601B.	3 x FLEX 100...10kA 54	10 ... 100 A / 100 ... 1000 A / 1000 ... 10000 A	1 / 10 / 500	54 cm

Cire+ accessories

Type	Code	Description
Cables Comunicación RS-232	[2] M86030.	RS-232 Cable
Cables Tensión CIR-e+	[2] M86020.	Kit 6 cables (voltage measurement and power)
BOLSA TRANSPORTE CIR-e+	[*] M89931.	Carry bag


CAVA, Power Quality Single-Phase Analyzers

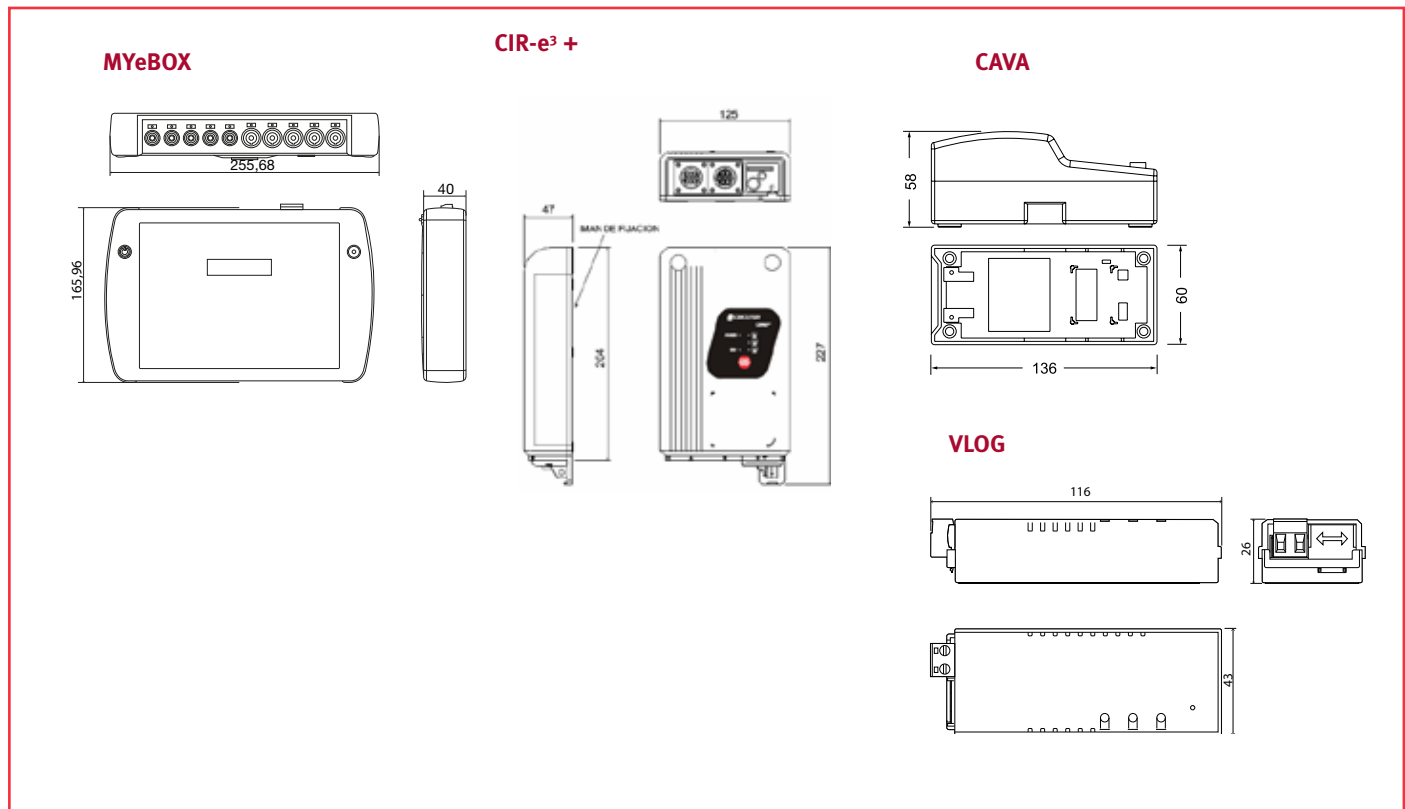
agrupador		
Type	Code	Description
CAVA 251	[C] Q20112.	Single-phase recorder of voltage, flicker and harmonics. RS-232 output
CAVA 252	[C] Q20122.	Single-phase recorder of voltage, current, flicker and harmonics. RS-232 output
CAVA 253	[C] Q20132.	Single-phase recorder of voltage, current, active power, flicker and harmonics. RS-232 output
Clamps		
CP-2000/200	[C] M81015.	Ammeter clamp 2000/200 A
CPR-1000	[C] M81014.	Ammeter clamp 1000 A
CPR-500	[C] M81013.	Ammeter clamp 500 A
CP-100	[C] M81012.	Ammeter clamp 100 A
CP-5	[C] M81011.	Ammeter clamp 5 A


VLOG, Power quality analyzer

Type	Code	Description
VLOG-10	[C] M84101.	Single-phase analyzer to collect and record outages, gaps, overvoltages and voltage load profile




Accessories

Type	Code	Description
Bridas 5 colores AM54-FLEX	[*] M82502.	AM54-flex clamps, 5 colours tie bars
VCC-1	[*] M89909.	Crocodile clamp (1 unit)
MAV-7	[*] M8990C.	Voltage magnetic adapter 7 x 10 mm
MAV-7x3	[*] M8990D.	3 x Voltage magnetic adapter 7 x 10 mm
MAV-7x4	[*] M8990E.	4 x Voltage magnetic adapter 7 x 10 mm
MAV-7x5	[*] M8990F.	5 x Voltage magnetic adapter 7 x 10 mm

Dimensions


Digital instruments

Table: Digital instruments selection

		DM45	DC B	DHB	
					
Mounting	Pannel	-	48 x 48 72 x 72	96 x 48	
	DIN rail	2 modules			
AC measurement	Single-phase	•	•	•	
AC measurement Parameters	Voltage	•	T	T (DHB-300)	
	Current	•	T	T (DHB-300)	
	Active power(W)	-	-	T (DHB-300)	
	Frequenz (Hz)	•	T	T (DHB-300)	
	Maximum demand (A)	•	-	-	
DC measurement Parameters	Voltage	-	T	T (DHB-200)	
	Current	-	T	T (DHB-200)	
	process signal	-	T	T (DHB-400)	
Accuracy	0,1	-	-	T	
	0,50%	-	•	•	
	1%	•	-	-	
No electric parameters	Hour run meter	-	-	T (DHB-100)	
	Temperature	-	T	T (DHB-400)	
	Chronometer, impulse meter	-	-	T (DHB-100)	
	Tachometer (r/min)	-	-	T (DHB-100)	
Other options	auxiliar output relay	•	•	2 (4 Opc.)	
	Analog output	-	-	T	
	communications port	-	-	T	
	Auxliar power supply	•	•	-	
	Frontal adapter	-	•	-	
		Page	53	54	55

T - Depending type / OP - Optional

DM45, Digital instruments

DM45 series, Rail DIN, 230 V, 40...70 Hz



Type	Code	Paramètre	Measure	Output relay
DM45-V	[*] M20901.	Voltmeter	50...600 Vac	1
DM45-A	[*] M20911.	Ammeter	... / 5 Aac	1
DM45-AD	[*] M20921.	Ammeter	0,5 ... 30 Aac	1
DM45-F	[*] M20931.	Frequencymeter	10 ... 600 Hz	1
DM45-CM	[*] M20941.	Analizer(V, A, Hz, THD)	600 Vac / .../5 A /10...600 Hz	1
DM45-CMD	[*] M20951.	Analizer(V, A, Hz, THD)	600 Vac / .../5 A /10...600 Hz	1

Size: 2 modules.

DM45

Code	Internal code		
M 2 X X X X 0 0 X			
		↑	Delivery time
Auxiliary supply	Standard (230 V)	0	-
	100 ... 115 V _{ca}	1	1
	18 ... 36 V _{cc}	7	1


DC-B, Digital instruments

DC B Series, 230 Vac, 40...70 Hz, 0.5% FE

Type	Code	System	Measure	Scale	Size(mm)
Voltmeters / Process indicators					
DC48B V (150,300,600V)	[*] M20210.	AC	Direct: 600 Vac Transformer: Programmable	150, 300, 600 Vca	48x48
DC72B V (150,300,600V)	[*] M20220.	AC	Direct: 600 Vac Transformer: Programmable	150, 300, 600 Vca	72x72
DC48B V (10,50,200V)	[*] M20213.	DC	Direct: -200 / +200 Vdc (Process: 0...10 Vdc)	10, 50, 200 Vcc	48x48
DC72B V (10,50,200V)	[*] M20223.	DC	Direct: -200 / +200 Vdc (Process: 0...10 Vdc)	10, 50, 200 Vcc	72x72
DC48B V (600V)	[1] M20214.	DC	-600V / + 600 Vdc	600 Vcc	48x48
DC72B V (600V)	[*] M20224.	DC	-600 / + 600 Vdc	600 Vcc	72x72
DC48B mV (60,150,200mV)	[1] M20217.	DC	Direct: -200 mVdc / +200 mVdc Shunt: .../60 mVdc , .../150 mVdc	60, 150, 200 mVcc	48x48
DC72B mV (60,150,200mV)	[*] M20227.	DC	Direct: -200 mVdc / +200 mVdc Shunt: .../60 mVdc , .../150 mVdc	60, 150, 200 mVcc	72x72
Ammeters / Process indicators					
DC48B A (.../5A)	[*] M20211.	AC	Direct: 5 Aac Transformer: .../ 5 Aac	... / 5 Aca	48x48
DC72B A (.../5A)	[*] M20221.	AC	Direct: 5 Aac Transformer: .../ 5 Aac	... / 5 Aca	72x72
DC72B MD	[*] M2022A.	AC	Direct: 5 Aac Transformer: .../ 5 Aac 1 Relay	... / 5 Aca	72x72
DC48B A (10A)	[1] M20212.	AC	Direct: 10 Aca	10 Aca	48x48
DC72B A (10A)	[*] M20222.	AC	Direct: 10 Aac	10 Aca	72x72
DC48B A (5,20,200mA)	[1] M20215.	DC	Direct: -200 mA / + 200 mAdc (Process: 0...20 mAdc/ 4...20 mcdc)	5, 20, 200 mAcc	48x48
DC72B A (5,20,200mA)	[*] M20225.	DC	Direct: -200 mA / + 200 mcdc (Process: 0...20 mAdc/4...20 mcdc)	5, 20, 200 mAcc	72x72
DC48B A (10A)	[1] M20216.	DC	Direct: 10 Adc	10 Acc	48x48
DC72B A (10A)	[*] M20226.	DC	Direct: 10 Adc	10 Acc	72x72

All AC instruments measure TRMS values Please see the code table for other power supply values (110 Vdc power supply not available)

Accessories digital instruments

Type	Code	Description
Adap.Frontal 72x72 -> 96x96	[*] M29914.	Frontal adapter 72x72 > 96x96
Adap.Frontal 48x48 -> 72x72	[4] M29911.	Frontal adapter 48x48 > 72x72
Adap.Frontal 48x48 -> 96x96	[4] M29912.	Frontal adapter 48x48 > 96x96
Adap.Frontal 48x96 -> 96x96	[*] M29913.	Frontal adapter 48x48 > 96x96

CODIFICATION TABLE
DC

Code	Internal code		
M 2 X X X X 0 0 X X			
		↑	Delivery time
	Standard (230 V)	0	-
Power Supply auxiliar	100 ... 120 V _{ac}	1	2
	480 ... 500 V _{ac}	4	2
	9...18 V _{dc}	6	2
	18 ... 36 V _{dc}	7	2
Current input	Standard (.../5A)	0	-
	.../1 A .../1 A	1	2

 110 V_{dc} auxiliary supply not possible



DHB, Digital instruments

85 ... 253 Vac /Vdc power supply voltage

Type	Code	Paramètre	Measure	Output relay	Analog output	Communications
DHB-102	[1] M22021.	Impulses, frequency, circular speed, periods, worktime, encoder position	imp., Hz.	1	-	-
DHB-124	[1] M22022.	Impulses, frequency, circular speed, periods, worktime, encoder position	imp., Hz.	3	1	RS-485
DHB-202	[1] M22023.	Voltmeter or ammeter ± 100...500 Vdc ± 1/5 Adc	± 100...500 Vdc ± 1/5 Adc	2	-	-
DHB-224	[1] M22024.	Voltmeter or ammeter ± 100...500 Vdc ± 1/5 Adc	± 100...500 Vdc ± 1/5 Adc	4	1	RS-485
DHB-302	[1] M22025.	Single-phase analyzer	± 100/400 Vac ± 1/5 Aac	2	-	-
DHB-324	[1] M22026.	Single-phase analyzer	± 100/400 Vac ± 1/5 Aac	4	1	RS-485
DHB-402	[1] M22027.	Process / Resistance/ Temperature	Pt100/500/1000 Thermocouple J,K,N,E,R,S, ±20 mA, ±10 V, 60 mV	2	-	-
DHB-424	[1] M22028.	Process / Resistance/ Temperature	Pt100/500/1000 Thermocouple J,K,N,E,R,S, ±20 mA, ±10 V, 60 mV	4	1	RS-485



DH96, DC multimeter

DH 96 series, 230 Vac, 45...65 Hz (panel installation 96 x 48 mm)

Type	Code	Accuracy	System	Paramètre	Measure	Communications
DH96CPM	[*] M20419.	0,2 % (± 1dig)	DC	V, A, kW, kWh	Programmable.Selec. V : 100 / 300 / 800 Vdc	-
DH96CPM	[*] M2043F.	0,2 % (± 1dig)	DC	V, A, kW, kWh	Programmable.Selec. V : 100 / 300 / 800 Vdc	RS-485

CODIFICATION TABLE

DH 96

Code		Internal Code							
M	2	X	X	X	X	0	0	X	
								↑	Delivery time
								0	-
								1	2
								3	
Auxiliary supply								4	2
								7	2
								8	
								9	

DHB

Code		Internal Code							
M	2	X	X	X	X	0	0	X	
								↑	Delivery time
								0	-
Auxiliary supply								1	-
								2	1



	CVE / CV-A	CPF
	CV-D	CCOS
	CCE / CC-A / TP-420 / TC-020 / TCB / TCM	CR2
	CC-D	CT-PT100
	CW	CUP
	CY	CFE / CF

CVE/CCE/CFE, Narrow section transducers

Narrow section transducers, 230 Vac, 45...65 Hz



Type	Code	System	Measure	Output type	Analog output
AC Voltage transducer					
CVE-A	[*] M25011.	-	Selecting 110 / 300 / 400 / 500 / 690 Vac	2	4...20mA
CVE-A-AP	[3] M25021.	-	Selecting 115 / 240 / 400 Vac	1	0...20mA
AC Current transducer					
CCE-A	[*] M25111.	-	Selecting 1 / 5 / 10 Aac	2	4...20mA
CCE-A-AP	[*] M25121.	-	Selecting 1 / 5 / 10 Aac	1, 3	0...20mA
Frequency transducers					
CFE	[3] M25511.	Network voltage: 50 ... 600 Vac	Selecting 0-100 / 45-55 / 55-65 / 45-65 / 47-53 / 380-240 / 360-440 / 340-460 Hz	2	4...20mA
CFE-AP	[3] M25521.	Selecting Network voltage: 115 / 240 / 400 Vac	Selecting 0-100 / 45-55 / 55-65 / 45-65 / 47-53 / 380-240 / 360-440 / 340-460 Hz	1	0...20mA

Specified AS PER THE CODE TABLE: 1. Code/ 2. Input range / 3. Output range / 4. Auxiliary power supply / 5. Specify grid voltage in CFE-AP See the code table at the end of the section xxx-AP types external auxiliary supply not required. 4...20 mA output not possible.

INPUTS

Current AC	1 or 5, ... / 1 A or ... / 5 A
Current DC	500 μ A ... 10 A
Voltage AC	0 ... 690 V
Voltage DC	10 mV ... 500 V

OUTPUTS

Output 1	0...5 V, 0...10 V, 0...10 mA, 0...20 mA (by default)
Output 2	0,2...2 V, 2...10 V, 4...20 mA (by default)
Output 3	-10...0...10 V, -5...0...5 V, -20 mA...0...20 mA (by default)

CV, Transducer Voltage


Type	Code	Measure	Output type	Analog output
AC Voltage. Accuracy: \pm 0,2 % reading, 40...90 Hz				
CV-A-AP Out1	[1] M25041.	0 ... 400 Vac	1	0...20mA
CV-A Out1	[1] M25031.	0 ... 690 Vac	1	0...20mA
CV-A Out2	[1] M25032.	0 ... 690 Vac	2	4...20mA
CV-A-RMS Out1	[1] M25051.	0 ... 690 Vac	1	0...20mA
CV-A-RMS Out2	[1] M25052.	0 ... 690 Vac	2	4...20mA
DC Voltage. Auxiliary supply 230 V, 40...90 Hz, Accuracy: \pm 0,5 % reading				
CV-D Out1,3	[1] M25061.	10 mV ... 500 Vdc	1, 3	0...20mA
CV-D Out2	[1] M25062.	10 mV ... 500 Vdc	2	4...20mA

-AP type: Accuracy: \pm 0,5 % reading, 40...90 Hz. External auxiliary supply not required. Specify: Zero value, full scale and output type. See table at the end of This section

CC, Current transducer


Type	Code	Measure	Output type	Analog output
AC Current. Accuracy: \pm 0,2 % reading, 40...90 Hz				
CC-A Out1	[1] M25131.	... / 1 Aac or ... / 5 Aac	1	0...20mA
CC-A Out2	[*] M25132.	... / 1 Aac or ... / 5 Aac	2	4...20mA
CC-A-AP	[*] M25141.	... / 1 Aac or ... / 5 Aac	1	0...20mA
CC-A-RMS Out1	[1] M25151.	... / 1 Aac or ... / 5 Aac	1	0...20mA
CC-A-RMS Out2	[*] M25152.	... / 1 Aac or ... / 5 Aac	2	4...20mA
Courant C.C. Alimentation auxiliaire 230 V, 40...90 Hz, Précision: \pm 0,5 % lecture				
CC-D Out1	[1] M25161.	500 μ A ... 10 Adc	1, 3	0...20mA
CC-D Out2	[1] M25162.	500 μ A ... 10 Adc	2	4...20mA

-AP type: Accuracy: \pm 0,5 % reading, 40...90 Hz. External auxiliary supply not required. Specify: Zero value, full scale and output type. See table at the end of This section

**CW / CY, Power transducer**

Type	Code	System	Output type	Analog output
Active power. Auxiliary supply 230 V, 40...90 Hz, Accuracy: $\pm 0,5$ % reading				
CW-M Out1,3	[1] M25211.	Single-phase	1, 3	0...20mA
CW-M Out2	[1] M25212.	Single-phase	2	4...20mA
CW-TE Out1,3	[1] M25221.	Balanced three-phase	1, 3	0...20mA
CW-TE Out2	[1] M25222.	Balanced three-phase	2	4...20mA
CW-TA Out1,3	[1] M25231.	Unbalanced three-phase ARON (3 wires)	1, 3	0...20mA
CW-TA Out2	[1] M25232.	Unbalanced three-phase ARON (3 wires)	2	4...20mA
CW-TAN Out1,3	[1] M25241.	Unbalanced three-phase (4 wires)	1, 3	0...20mA
CW-TAN Out2	[1] M25242.	Unbalanced three-phase (4 wires)	2	4...20mA
Reactive power. Auxiliary supply 230 V, 40...90 Hz, Accuracy: $\pm 0,5$ % reading				
CY-M Out1,3	[1] M25251.	Single-phase	1, 3	0...20mA
CY-M Out2	[1] M25252.	Single-phase	2	4...20mA
CY-TE Sal.1,3	[1] M25261.	Balanced three-phase	1, 3	0...20mA
CY-TE Sal.2	[1] M25262.	Balanced three-phase	2	4...20mA
CY-TA Out1,3	[1] M25271.	Unbalanced three-phase ARON (3 wires)	1, 3	0...20mA
CY-TA Out2	[1] M25272.	Unbalanced three-phase ARON (3 wires)	2	4...20mA
CY-TAN Sal1,3	[1] M25281.	Unbalanced three-phase (4 wires)	1, 3	0...20mA
CY-TAN Out2	[1] M25282.	Unbalanced three-phase (4 wires)	2	4...20mA

Specify: zero value, full scale, output type, Un (between phases), In and fn, see table at the end of This section

**CPF / CCOS, Power Factor & Cosφ transducer**

Type	Code	System	Output type	Analog output
Cos φ. Auxiliary supply 230 V, 40...90 Hz, Accuracy: $\pm 0,5$ % reading				
CCOS-M Out1,3	[1] M25341.	Single-phase	1, 3	0...20mA
CCOS-M Out 2	[1] M25342.	Single-phase	2	4...20mA
CCOS-TE Out1,3	[1] M25351.	Balanced three-phase (3 wires)	1, 3	0...20mA
CCOS-TE Out2	[1] M25352.	Balanced three-phase (3 wires)	2	4...20mA
CCOS-TEN Sal1,3	[1] M25361.	Balanced three-phase (4 wires)	1, 3	0...20mA
CCOS-TEN Out2	[1] M25362.	Balanced three-phase (4 wires)	2	4...20mA
Power factor. Auxiliary supply 230 V, 40...90 Hz, Accuracy: $\pm 0,5$ % reading				
CPF-M Out1,3	[1] M25311.	Single-phase	1, 3	0...20mA
CPF-M Out2	[1] M25312.	Single-phase	2	4...20mA
CPF-TE Out1,3	[1] M25321.	Balanced three-phase (3 wires)	1, 3	0...20mA
CPF-TE Out2	[1] M25322.	Balanced three-phase (3 wires)	2	4...20mA
CPF-TEN Out1,3	[1] M25331.	Balanced three-phase (4 wires)	1, 3	0...20mA
CPF-TEN Out2	[1] M25332.	Balanced three-phase (4 wires)	2	4...20mA

Specify: zero value, full scale, output type, Un (between phases), In and fn, see table at the end of This section

**CF, Frequency transducers**

Type	Code	Measure	Output type	Analog output
Auxiliary supply 230 V, 40...90 Hz, Accuracy: $\pm 0,2$ % reading				
CF Out1	[3] M25531.	10 ... 660 Vac 0 ... 10 kHz.	1	0...20mA
CF Out2	[1] M25532.	10 ... 660 Vac 0 ... 10 kHz.	2	4...20mA


Specify: zero value, full scale, output type, Un (between phases), In and fn, see table at the end of This section

**Temp, Ohm, aislam, proceso, Transducers**



Type	Code	Measure	Output type	Analog output
Galvanic insulator transducer				
CC-G	[*] M25610.	500 μ A ... 10 Adc	1	0...20mA
Leakage current				
CC-WG Out2	[3] M25631.	0 ... 3 Aac	2	4...20mA
Resistance				
CR2 Out 1	[1] M25641.	1 ... 200 k Ω	1, 3	0...20mA
CR2 Out 2	[1] M25642.	1 ... 200 k Ω	2	4...20mA
Process universal				
CUP Out 2	[1] M25612.	Configurable	1,2,3	0...20mA/4...20mA
CT-PT100 Out1,3	[1] M25651.	According probe PT-100	1, 3	0...20mA
CT-PT100 Out2	[*] M25652.	According probe PT-100	2	4...20mA

Specify: zero value, full scale, output type, Un (between phases), In and fn, see table at the end of This section

TI, Current transformer with converter 4...20 mA

Type	TI-420			TP-420		TCM-420	TCB-420	
	TI-420-35	TI-420-70	TI-420-105	TP-420-23	TP-420-58	TCM-420-25	TCB-420-35	TCB-420-70
								
ø (mm)	35	70	105	-	-	25	35	70
Flat strip(mm)	-	-	-	20 x 30	50 x 80	-	-	-
width xheight xdepth (mm)	100x79x33	130x110x33	170x146x33	110x89x89	145x114x114	70x87x70	166x79x33	196x110x33
	10...28 Vdc supply, Output 4...20 mA					Output internal supply 4...20 mA (230 Vac Auxiliary supply)		
A	Code	Code	Code	Code	Code	Code	Code	Code
2.5	[1] M70811.					[2] M71041.	[3] M71011.	
5	[*] M70812.			[*] M70211.		[*] M71042.	[*] M71012.	
10	[*] M70813.			[*] M70212.		[*] M71043.	[*] M71013.	
20	[*] M70814.			[*] M70213.		[*] M71044.	[*] M71014.	
50	[*] M70815.			[*] M70214.		[*] M71045.	[*] M71015.	
100	[*] M70816.	[*] M70821.		[*] M70215.	[*] M70221.	[*] M71046.	[*] M71016.	[1] M71021.
200				[*] M70216.		[*] M71047.		
250	[*] M70817.	[*] M70822.	[1] M70831.	[*] M70217.	[*] M70222.		[*] M71017.	[*] M71022.
500		[*] M70823.	[1] M70832.	[*] M70218.	[*] M70223.			[*] M71023.
750		[*] M70824.	[1] M70833.		[*] M70224.			[*] M71024.
1000			[1] M70834.					
1500			[1] M70835.					

TC-020, Current transformers with converter 4...20 mA or 0...20 mA

Type	TC5-420	TC6-420	TC8-420	TC6-020	TC8-020
					
ø (mm)	20	28	44	28	44
Flat strip(mm)	25 x 5	40 x 10	60 x 12	40 x 10	60 x 12
width xheight xdepth (mm)	58x70x32	64x80.5x44	84.5x102x50	64x80.5x44	84.5x102x50
	Output 4...20 mA, ext. supply 7,5...36 Vdc			Output 0...20 mA	
A	Code	Code	Code	Code	Code
5	[*] M72112.				
10	[*] M72113.				
20	[*] M72114.				
50		[*] M72131.		[*] M72031.	
100		[*] M72132.		[*] M72032.	
200		[*] M72134.		[*] M72034.	
300		[*] M72136.		[*] M72036.	
500			[*] M72151.		[3] M72051.
1000			[*] M72152.		[1] M72052.
1500			[*] M72153.		[*] M72053.



CODIFICATION TABLE

Narrow section transducers

Code	Internal code	X X X X				Delivery time
M 2 X X X X 0 0		X	X	X	X	
Voltage CVE-A	Standard (300 V)	0				-
	110 V	1				2
	400 V	2				2
	500 V	3				2
	690 V	4				2
Voltage CVE-A-AP	Standard (230 V)	0				-
	110 V	1				2
	400 V	2				2
Current	Standard (5 A)	0				-
	1 A	1				2
	10 A	4				2
Frequency	Standard (45...55 Hz)	0				-
	55...65 Hz	1				2
	47...53 Hz	2				2
	45...65 Hz	3				2
	0...100 Hz	4				2
	380...420 Hz	5				2
	360...440 Hz	6				2
340...460 Hz	7				2	
CVE-A, CCE-A, CFE	Standard (4...20 mA)	0				-
	0...20 mA	1				2
	0...10 V	2				2
	2...10 V	3				2
CVE-A-AP, CCE-A-AP, CFE-AP	Standard (0...20 mA)	0				-
	0...10 V	1				2
Auxiliary supply	Standard (220...240 V)	0				-
	380...400 Vca 40/60 Hz	3				2
Net. voltage CFE-AP)	18...36 Vdc	7				2
	Standard (230 V)	0	0	0	0	2
	110 V	0	1	0	0	2
	400 V	0	2	0	0	2

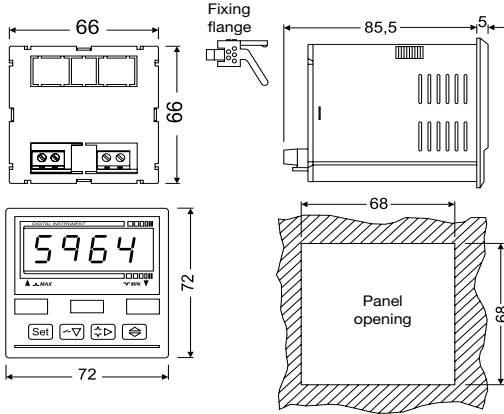
For other values consult

Transducers

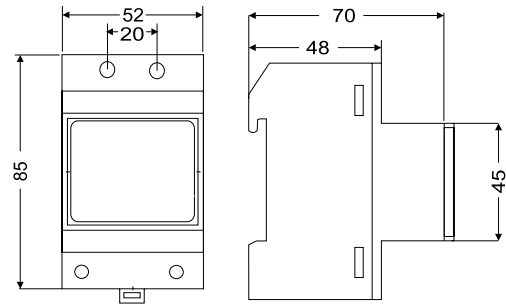
Code	Internal code	X X X			Delivery time
M 2 X X X X 0 0		X	X	X	
AC Voltage	Standard (300 V)	0			-
	110 V	1			1
	400 V	2			1
	500 V	3			1
	690 V	4			1
AC Current	Standard (5 A)	0			-
	1 A	1			1
	10 A	4			1
DC Voltage	Standard (10 V)	0			-
	60 mV	1			1
	1 V	2			1
	100 V	3			1
DC Current	500 V	4			1
	Standard (20 mA)	0			-
	200 mA	1			1
	1 A	2			1
	10 A	3			1
Power, power factor, cos φ (V, A)	300 V, .../5 A	N			1
	110 V, .../5 A	1			1
	400 V, .../5 A	2			1
	500 V, .../5 A	3			1
	600 V, .../5 A	4			1
	300 V, .../1 A	5			1
	110 V, .../1 A	6			1
	400 V, .../1 A	7			1
	500 V, .../1 A	8			1
600 V, .../1 A	9			1	
Leakage current, process universal	Standard (20 Ω)	0			-
	200 Ω	1			1
	2 kΩ	2			1
Resistance	20 kΩ	3			1
	Standard (-200...+200 °C)	0			-
	-200...+800 °C	1			1
Temperature	Standard (45...55 Hz)	0			-
	55...65 Hz	1			1
	47...53 Hz	2			1
	57...63 Hz	3			1
	0...100 Hz	4			1
Outputs 1, 3	Standard (20 mA)	0			-
	0...1 mA	1			1
	0...10 mA	2			1
	2 V	3			1
	5 V	4			1
	0...10 V	5			1
	-20...0...20 mA	6			1
	-10...0...10 V	7			1
-5...0...5 V	8			1	
Outputs 2	Standard (4...20 mA)	0			-
	2...10 V	2			1
Auxiliary supply	Standard (220...240 V)	0			-
	100...120 Vac	1			2
	380...400 Vca 40/60 Hz	3			2
	18...36 Vdc	7			2
	40...170 Vdc	9			2

Dimensions

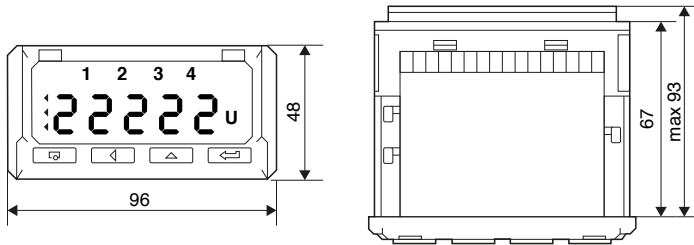
DC B 72



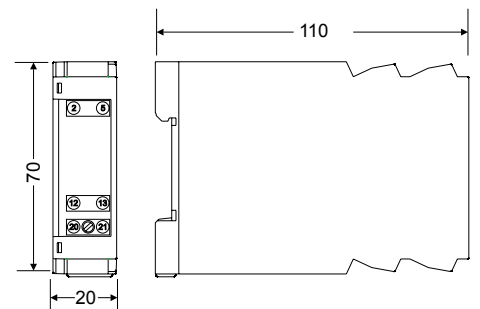
DM 45



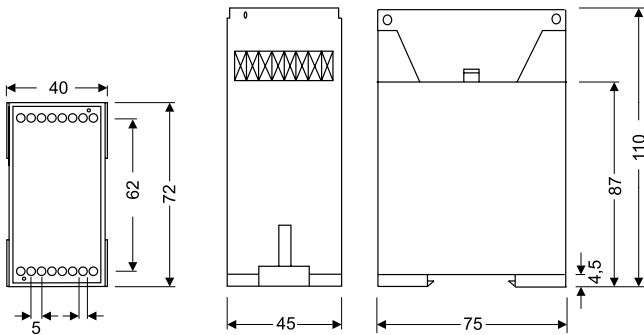
DHB



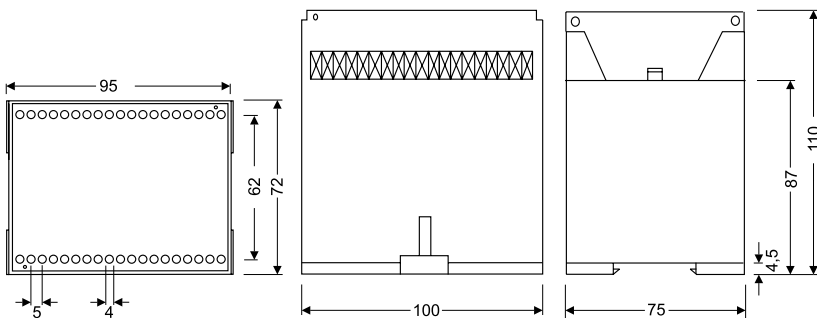
CVE / CEE / CCE / CFE



CV-A / CV-D / CC-A / CC-D / CR2 / CT-PT100 / CUP / CF



CW / CY / CPF / CCOS / CFD





Analogue instrument selection table

	Measurement system	Assembly	Specifications	Range	Size mm	Accuracy class	Scale angle	Scale extension	Type		
Ammeters	AC 	Panel	Miliammeter	100...600 mA	48 x 48, 72 x 72, 96 x 96, 144 x 144	1,5	90°		EC		
			-	5...100 A, .../5A			240°	P2	EC		
		/5A	72 x 72, 96 x 96					EZC	
			With switch	.../5A				P1	EC FA		
			With relays	.../5A	96 x 96					CEC	
			DIN rail	-	5...60 A, .../5A		85 x 52		P2	EM 45	
Ammeters	CC 	Panel	-	5...60 A, .../60 mV	48 x 48, 72 x 72, 96 x 96, 144 x 144	1,5	90°		BC		
			With relays	... / 60 mV	96 x 96			P1	CBC		
			DIN rail	-	5...60 A, .../60 mV		85 x 52			BM 45	
			Voltmeters	AC 	Panel		-	150 ... 600 V, .../110 V	48 x 48, 72 x 72, 96 x 96, 144 x 144	1,5	90°
250 V, 500 V	72 x 72, 96 x 96	240°				P1	EZC				
Voltmeters	AC 	Panel	With relays	150 ... 600 V, .../110 V	96 x 96				EC F		
			DIN rail	-	300 V, 500 V, .../110 V	85 x 52				CEC	
Voltmeters	CC 	Panel	-	0...600 V	48 x 48, 72 x 72, 96 x 96, 144 x 144	1,5	90°		EM 45		
			With relays	... / 60 mV	96 x 96			P1	BC		
Voltmeters	CC 	Panel	With relays	... / 60 mV	96 x 96				CBC		
			DIN rail	-	15...150 V	85 x 52				P1	
Process indicators	CC 	Panel	-	0...10 V, 0/4... 20 mA	48 x 48, 72 x 72, 96 x 96, 144 x 144	1,5	90°	P1	BC		
			0...10 V, 4... 20 mA, .../60 mV		240°		P1	ZC			
			DIN rail	-	0...10 V, 0/4... 20 mA		85 x 52		90°		BM
Maximeters	-	Panel	Bimetallic			3		P1,2	MC		
			Bimetallic + HM	.../5 A				P2	EMC		
			DIN rail	Bimetallic			85 x 52			P1,2	MMC 45
Sheet	Needle	Panel	-		48 x 48, 72 x 72, 96 x 96, 144 x 144	0,5	90°		HC		
			-		96 x 96, 144 x 144		240°		HZC		
		DIN rail	-	45...65 Hz depending type	85 x 52			90°	-	HM	
Sheet	Sheets	Panel	-		72 x 72, 96 x 96, 144 x 144				HLC		
Wattmeter	Panel	Single-phase		400 V, .../5 A	96 x 96, 144 x 144	1,5	90°	P1	WMC		
		Three-phase							WTC		
Varmeter	Panel	Single-phase		400 V, .../5 A	96 x 96, 144 x 144	1,5	90°	P1	YMC		
		Three-phase							YTC		
Phase-meters	Electronic	Panel	Single-phase			1,5	90°	P1	FEMC		
			Three-phase	cos φ 0,5 - 1 - 0,5					FETC		
			Single-phase						240°		FMZ
			Three-phase		96 x 96, 144 x 144						FTZ
	Induction	Panel	Single-phase		cos φ 0 - 1 - 0					PIC	
			Three-phase		cos φ 0 - 1 - 0			90°		PIC	

Analogue instruments

EC / EM / EZC / CEC, Moving Iron Milliampmeters and Ammeter



Milliampmeters and Ammeters, 90° - P2 - Class 1,5

Type						
	EC 48	EC 72	EC 96	EC 144	EM 45	
a	48	72	96	144	85	
b	48	72	96	144	52	
c	86,2	69,2	69,2	91,8	65	
mA						
100	[*] M10111	[*] M10121	[*] M10131	[*] M10141	[*] M10151	
150	[*] M10112	[*] M10122	[*] M10132	[*] M10142	[*] M10152	
250	[*] M10114	[*] M10124	[*] M10134	[*] M10144	[*] M10154	
300	[*] M10115	[*] M10125	[*] M10135	[*] M10145	[*] M10155	
400	[*] M10116	[*] M10126	[*] M10136	[*] M10146	[*] M10156	
500	[*] M10117	[*] M10127	[*] M10137	[*] M10147	[*] M10157	
600	[*] M10118	[*] M10128	[*] M10138	[*] M10148	[*] M10158	
A						
5	[*] M10212	[*] M10222	[*] M10232	[3] M10242	[1] M10252	
10	[*] M10213	[*] M10223	[*] M10233	[3] M10243	[*] M10253	
15	[*] M10214	[*] M10224	[*] M10234	[3] M10244	[*] M10254	
20	[*] M10215	[*] M10225	[*] M10235	[3] M10245	[1] M10255	
25	[*] M10216	[*] M10226	[*] M10236	[3] M10246	[*] M10256	
30	[*] M10217	[*] M10227	[1] M10237	[3] M10247	[*] M10257	
40	[*] M10218	[*] M10228	[*] M10238	[3] M10248	[*] M10258	
50	[*] M10219	[*] M10229	[*] M10239	[3] M10249	[3] M10259	
60	[*] M1021A	[*] M1022A	[*] M1023A	[3] M1024A	[3] M1025A	
75	-	[*] M1022B	[1] M1023B	[3] M1024B	-	
100	-	[*] M1022C	[*] M1023C	[3] M1024C	-	
.../5 A (*1)	[*] M10210	[*] M10220	[*] M10230	[3] M10240	[*] M10250	

(*1) Exchangeable scales. See next page.

	Ammeters, 240°		Ammeters with phase switch		Ammeters with 2 relays	
Type	EZC 72	EZC 96	EC 72 FA	EC 96 FA	CEC 96	
Class	5		1,5		1,5	
Scale	240°, P2		90°, P1		90°, P2	
a	72	96	72	96	96	
b	72	96	72	96	96	
c	69,2	69,2	69,2	69,2	85,3	96
A						
(*2) .../5 A (*1)	[3] M10920	[3] M10930	[*] M10521	[*] M10531	[*] M14810	

(*1) Exchangeable scales. See next page.

(*2) Specify primary current of the measuring transformer

Exchangeable scales, moving iron ammeters

Type	SEC 48	SEC 72	SEC 96	SEM 45	SEC 72 FA	SEC 96 FA	SEZC 72	SEZC 96
Equipment	EC 48	EC 72	EC 96	EM 45	EC 72 FA	EC 96 FA	EZC 72	EZC 96
A								
5/5	[*] M102Z2	[*] M102Y2	[*] M102X2	-	-	-	[2] M109Y2	[*] M109X2
10/5	[*] M102Z3	[*] M102Y3	[*] M102X3	-	-	-	[*] M109Y3	[*] M109X3
15/5	[*] M102Z4	[*] M102Y4	[*] M102X4	-	-	-	[*] M109Y4	[*] M109X4
20/5	[*] M102Z5	[*] M102Y5	[*] M102X5	-	-	-	[*] M109Y5	[*] M109X5
25/5	[*] M102Z6	[*] M102Y6	[*] M102X6	-	-	-	[*] M109Y6	[*] M109X6
30/5	[*] M102Z7	[*] M102Y7	[*] M102X7	-	-	-	[*] M109Y7	[*] M109X7
40/5	[*] M102Z8	[*] M102Y8	[*] M102X8	-	-	-	[*] M109Y8	[2] M109X8
50/5	[*] M102Z9	[*] M102Y9	[*] M102X9	[*] M102V9	[*] M105Y9	[*] M105X9	[*] M109Y9	[2] M109X9
60/5	[*] M102ZA	[*] M102YA	[*] M102XA	[*] M102VA	[2] M105YA	[*] M105XA	[*] M109YA	[*] M109XA
75/5	[*] M102ZB	[*] M102YB	[*] M102XB	[*] M102VB	[*] M105YB	[*] M105XB	[*] M109YB	[*] M109XB
100/5	[*] M102ZC	[*] M102YC	[*] M102XC	[*] M102VC	[*] M105YC	[*] M105XC	[2] M109YC	[2] M109XC
125/5	[*] M102ZD	[*] M102YD	[*] M102XD	[*] M102VD	[2] M105YD	[*] M105XD	[*] M109YD	[*] M109XD
150/5	[*] M102ZE	[*] M102YE	[*] M102XE	[*] M102VE	[*] M105YE	[2] M105XE	[2] M109YE	[2] M109XE
200/5	[*] M102ZF	[*] M102YF	[*] M102XF	[*] M102VF	[*] M105YF	[*] M105XF	[2] M109YF	[2] M109XF
250/5	[*] M102ZG	[*] M102YG	[*] M102XG	[1] M102VG	[*] M105YG	[*] M105XG	[2] M109YG	[2] M109XG
300/5	[*] M102ZH	[*] M102YH	[*] M102XH	[*] M102VH	[*] M105YH	[*] M105XH	[2] M109YH	[*] M109XH
400/5	[*] M102ZJ	[*] M102YJ	[*] M102XJ	[*] M102VJ	[*] M105YJ	[*] M105XJ	[*] M109YJ	[2] M109XJ
500/5	[2] M102ZK	[*] M102YK	[*] M102XK	[*] M102VK	[*] M105YK	[*] M105XK	[*] M109YK	[*] M109XK
600/5	[*] M102ZL	[*] M102YL	[*] M102XL	[*] M102VL	[*] M105YL	[*] M105XL	[*] M109YL	[2] M109XL
750/5	[*] M102ZM	[*] M102YM	[*] M102XM	[*] M102VM	[*] M105YM	[*] M105XM	[*] M109YM	[2] M109XM
800/5	[*] M102ZN	[*] M102YN	[*] M102XN	[*] M102VN	[*] M105YN	[*] M105XN	[*] M109YN	[*] M109XN
1 000/5	[*] M102ZP	[*] M102YP	[*] M102XP	[1] M102VP	[*] M105YP	[*] M105XP	[*] M109YP	[2] M109XP
1 200/5	[*] M102ZQ	[*] M102YQ	[*] M102XQ	[1] M102VQ	[*] M105YQ	[*] M105XQ	[*] M109YQ	[*] M109XQ
1 500/5	[*] M102ZR	[*] M102YR	[*] M102XR	[1] M102VR	[*] M105YR	[*] M105XR	[2] M109YR	[*] M109XR
2 000/5	[*] M102ZS	[*] M102YS	[*] M102XS	[1] M102VS	[*] M105YS	[*] M105XS	[*] M109YS	[2] M109XS
2 500/5	[*] M102ZT	[*] M102YT	[*] M102XT	[1] M102VT	[*] M105YT	[*] M105XT	[*] M109YT	[*] M109XT
3 000/5	[*] M102ZU	[*] M102YU	[*] M102XU	[1] M102VU	[*] M105YU	[*] M105XU	[*] M109YU	[2] M109XU
4 000/5	[*] M102ZV	[*] M102YV	[*] M102XV	[1] M102VV	[*] M105YV	[*] M105XV	[*] M109YV	[2] M109XV
5 000/5	[*] M102ZW	[2] M102YW	[*] M102XW	[1] M102VW	[*] M105YW	[*] M105XW	[*] M109YW	[*] M109XW

CODIFICATION TABLE

EC, EZC

Code		Internal code		
M 1 X X X X 0 0		X	X	X
		↑	↑	↑
		Delivery time		
Adjustment	Standard 2P	0		-
	1P	1		2
	5P	6		2
Current input	Standard (.../5 A)	0		-
	... / 1 A	1		1
Scales(*)	1		1	2
	5		2	2
	10		3	2
	15		4	2
	20		5	2
	25		6	2
	30		7	2
	40		8	2
	50		9	2
	60		A	2
	75		B	2
	100		C	2
	125		D	2
	150		E	2
	200		F	2
	250		G	2
	300		H	2
	400		J	2
	500		K	2
	600		L	2
750		M	2	
800		N	2	
1000		P	2	
1200		Q	2	
1500		R	2	
2000		S	2	
2500		T	2	
3000		U	2	
4000		V	2	
5000		W	2	

EC (mA), EM (mA)

Code		Internal code		
M 1 X X X X 0 0		X		
		↑		
		Delivery time		
Adjustment	Standard 2P	0		-
	1P	1		2
	5P	6		2

SEC, SEM, EM

Code		Internal code		
M 1 X X X X 0 0		X	X	
		↑	↑	
		Delivery time		
Adjustment	Standard 2P	0		-
	1P	1		2
	5P	6		2
Current input	Standard (.../5 A)	0		-
	... / 1 A	1		1

EC FA

Code		Internal code		
M 1 X X X X 0 0		X	X	
		↑	↑	
		Delivery time		
Adjustment	Standard 1P	0		-
	5P	6		2
Current input	Standard (.../5 A)	0		-
	... / 1 A	1		1

CEC

Code		Internal code		
M 1 X X X X 0 0		X	X	
		↑	↑	
		Delivery time		
Scales	60	A		-
	75	B		-
	100	C		-
	125	D		-
	150	E		-
	200	F		-
	250	G		-
	300	H		-
	400	J		-
	500	K		-
	600	L		-
	750	M		-
	800	N		-
	1000	P		-
	1200	Q		-
1500	R		-	
2000	S		-	
2500	T		-	
3000	V		-	
Current input	Standard (.../5 A)	0		-
	... / 1 A	1		1
	/10 A	4		1



EC / EM / EZC / CEC, Moving Iron Voltmeters

	Voltmeters, 90°				Voltmeters, 90°	Voltmeters, 240°	
Type	EC 48	EC 72	EC 96	EC 144	EM 45	EZC 72	EZC 96
Class	1,5				1,5	5	
Scale	90°, P1				90°, P1	240°, P1	
a	48	72	96	144	85	72	96
b	48	72	96	144	52	72	96
c	86,2	69,2	69,2	91,8	65	69,2	69,2
V							
250	[*] M10415	[*] M10425	[*] M10435	[3] M10445	-	[3] M11125	[3] M11135
300	[*] M10416	[*] M10426	[*] M10436	[3] M10446	[*] M10456	-	-
400	[1] M10417	[1] M10427	[1] M10437	[3] M10447	-	-	-
500	[*] M10418	[*] M10428	[*] M10438	[3] M10448	[*] M10458	[3] M11128	[3] M11138
600	[1] M10419	[*] M10429	[1] M10439	[3] M10449	-	-	-
.../110 V(*)	[1] M10410	[*] M10420	[*] M10430	[3] M10440	[1] M10450	-	-

(*) Exchangeable scales, Voltmeters 90°

	Voltmeters with phases switch					Voltmeters with 2 relays	
	Three-phase 3 wire		Three-phase 4 wire		with sequence meter		
Type	EC 72 F III	EC 96 F III	EC 72 F III +N	EC 96 F III +N	EC 96 FN-S	CEC 96	
Class	1,5					1,5	
Scale	90°, P1					90°, P1	
a	72	96	72	96	96	96	
b	72	96	72	96	96	96	
c	69,2	69,2	69,2	69,2	69,2	85,3	
V							
150	-	-	-	-	-	[3] M14821	
250	[*] M10625	[3] M10635	[3] M10725	[3] M10735	-	[3] M14822	
300	[*] M10626	[*] M10636	[*] M10726	[*] M10736	-	[3] M14823	
400	[*] M10627	[3] M10637	[*] M10727	[3] M10737	-	[3] M14824	
500	[*] M10628	[*] M10638	[*] M10728	[*] M10738	[2] M11038	[3] M14825	
600	[*] M10629	[3] M10639	[2] M10729	[3] M10739	-	[3] M14826	
(1).../110 V	-	[2] M10632	-	-	-	[3] M14820	

(1) Specify primary voltage of the measuring transformers

Exchangeable scales, moving iron voltmeters, 1,2P

Type	SEC 48	SEC 72	SEC 96	SEM 45
Equipment	EC 48	EC 72	EC 96	EM 45
V				
1 000/110	[1] M104Z1	[1] M104Y1	[1] M104X1	[1] M104V1
3 300/110	[1] M104Z2	[1] M104Y2	[1] M104X2	[1] M104V2
6 600/110	[1] M104Z3	[1] M104Y3	[1] M104X3	[1] M104V3
13 200/110	[1] M104Z4	[1] M104Y4	[1] M104X4	[1] M104V4
15 000/110	[1] M104Z5	[1] M104Y5	[1] M104X5	[1] M104V5
20 000/110	[1] M104Z6	[1] M104Y6	[1] M104X6	[1] M104V6
22 000/110	[1] M104Z7	[1] M104Y7	[1] M104X7	[1] M104V7
25 000/110	[1] M104Z8	[1] M104Y8	[1] M104X8	[1] M104V8

CODIFICATION TABLE

EC Voltmeters with external transformer and EZC

Code	Internal code		
M 1 X X X X 0 0 X X X			
		↑	↑
Adjustment	Standard 1,2P	0	-
	1P	1	2
	Standard (.../110 V)	0	-
Voltage input	... / 100 V	1	1
	... / 63,5 V	2	1
	... / 57,8 V	3	1
	1000	1	2
	3300	2	2
Scales (For equipments with external transformer and all EC)	6600	3	2
	13200	4	2
	15000	5	2
	20000	6	2
	22000	7	2
	25000	8	2

EC and EC-F direct Voltmeters

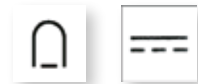
Code	Internal code		
M 1 X X X X 0 0 X			
		↑	↑
Adjustment	Standard 1P	0	-
	1,2P	2	2

EC scales and EM Voltmeters and scales

Code	Internal code		
M 1 X X X X 0 0 X X			
		↑	↑
Adjustment	Standard 1,2P	0	-
	1P	1	2
	Standard (.../110 V)	0	-
Voltage inputs	... / 100 V	1	1
	... / 63,5 V	2	1
	... / 57,8 V	3	1



BC / BM / CBC, Moving coil ammeters



Type	Ammeters, 90°				Ammeters, 90°		ammeters with 2 relays
	BC 48	BC 72	BC 96	BC 144	BM 45	CBC 96	
Class	1,5				1,5		1,5
Scale	90°, P1				90°, P1		90°, P1
a	48	72	96	144	85	96	
b	48	72	96	144	52	96	
c	86,2	69,2	69,2	91,8	65	85,3	
5	[3] M11412	[*] M11422	[3] M11432	[3] M11442	[3] M11452	-	
10	[3] M11413	[*] M11423	[3] M11433	[3] M11443	[*] M11453	-	
25	[*] M11416	[*] M11426	[*] M11436	[3] M11446	[3] M11456	-	
50	[3] M11419	[*] M11429	[3] M11439	[3] M11449	[*] M11459	-	
60	-	[3] M1142A	[3] M1143A	[3] M1144A	-	-	
.../60 mV(*)	[*] M11410	[*] M11420	[*] M11430	[3] M11440	[3] M11450	[3] M14830	

(*) Exchangeable scales. See M.7 for external shunts

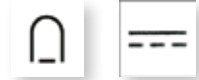
Exchangeable Scales

Type	SBC 48	SBC 72	SBC 96	SBM 45	Type	SBC 48	SBC 72	SBC 96	SBM 45
Device	BC 48	BC 72	BC 96	BM 45	Device	BC 48	BC 72	BC 96	BM 45
A / mV					A / mV				
50/60	[1] M114Z9	[*] M114Y9	[*] M114X9	[1] M114V9	300/60	[1] M114ZH	[1] M114YH	[1] M114XH	[1] M114VH
60/60	[1] M114ZA	[1] M114YA	[1] M114XA	[1] M114VA	400/60	[1] M114ZJ	[1] M114YJ	[*] M114XJ	[1] M114VJ
75/60	[1] M114ZB	[1] M114YB	[1] M114XB	[1] M114VB	600/60	[1] M114ZL	[*] M114YL	[*] M114XL	[1] M114VL
100/60	[1] M114ZC	[*] M114YC	[*] M114XC	[1] M114VC	1 000/60	[1] M114ZP	[1] M114YP	[*] M114XP	[1] M114VP
150/60	[1] M114ZE	[1] M114YE	[1] M114XE	[1] M114VE	1 500/60	[1] M114ZR	[1] M114YR	[1] M114XR	[1] M114VR
200/60	[1] M114ZF	[*] M114YF	[*] M114XF	[1] M114VF	2 500/60	[1] M114ZT	[1] M114YT	[1] M114XT	[1] M114VT
250/60	[1] M114ZG	[1] M114YG	[1] M114XG	[1] M114VG					

CODIFICATION TABLE

BC and BM ammeter				
Code	Internal code			Delivery time
M 1 X X X X 0 0	X	X	X	
Adjustment	Standard	0		-
	central zero	1		2
Shunt input range	Standard (.../60 mV)	0		-
	... / 50 mV	1		2
	... / 150 mV	3		2
	... / 300 mV	5		2
Scale	50	9		2
	60	A		2
	75	B		2
	100	C		2
	150	E		2
	200	F		2
	250	G		2
	300	H		2
	400	J		2
	500	K		2
600	L		2	
1000	P		2	
1500	R		2	
2500	T		2	

SBC, SBM45 scales				
Code	Internal code			Delivery time
M 1 X X X X 0 0	X	X	X	
Adjustment	Standard	0		-
	central zero	1		2
Shunt input range	Standard (.../60 mV)	0		-
	... / 50 mV	1		2
	... / 150 mV	3		2
	... / 300 mV	5		2

BC / BM / CBC, Moving coil voltmeters


	Voltmeters, 90°				Voltmeters, 90°	Voltmeters with relay
Type						
Type	BC 48	BC 72	BC 96	BC 144	BM 45	CBC 96
Class	1,5				1,5	1,5
Scale	90°, P1				90°, P1	90°, P1
a	48	72	96	144	85	96
b	48	72	96	144	52	96
c	86,2	69,2	69,2	91,8	65	85,3
V						
0...10 V (*1)	[*] M11813	[*] M11823	[*] M11833	[3] M11843	-	-
1	[3] M11711	[1] M11721	[1] M11731	[3] M11741	-	-
15	[*] M11714	[*] M11724	[*] M11734	[3] M11744	[3] M11754	-
30	[*] M11716	[*] M11726	[*] M11736	[3] M11746	[3] M11755	-
60	[*] M11718	[*] M11728	[*] M11738	[3] M11748	[3] M11756	-
100	[3] M11719	[*] M11729	[*] M11739	[3] M11749	[3] M11757	
150	[3] M1171A	[*] M1172A	[*] M1173A	[3] M1174A	[*] M11758	[3] M14841
250	[3] M1171B	[*] M1172B	[*] M1173B	[3] M1174B	-	[3] M14842
300	-	-	-	-	-	[3] M14843
400	[3] M1171D	[*] M1172D	[*] M1173D	[3] M1174D	-	[3] M14844
500	[3] M1171E	[*] M1172E	[1] M1173E	[3] M1174E	-	[3] M14845
600	[3] M1171F	[1] M1172F	[1] M1173F	[3] M1174F	[3] M1175F	[3] M14846

(*1) Scale NOT included

CODIFICATION TABLE

BC and BM equipment

Code	Internal code	
M 1 X X X X 0 0 X		
		↑ Delivery time
Adjustment	Standard	0 -
	Central zero	1 2

BC / BM / ZC, Process indicators



Process indicators, 90°

Type	BC 48	BC 72	BC 96	BC 144	BM 45
Class	1,5				1,5
Scale	90°, P1				90°, P1
	48 48 86,2	72 72 69,2	96 96 69,2	144 144 91,8	85 52 65
Scope					
0...10 V	[*] M11813	[*] M11823	[*] M11833	[3] M11843	[3] M11853
0...20 mA	[1] M11812	[1] M11822	[1] M11832	[3] M11842	[3] M11852
4...20 mA	[*] M11811	[*] M11821	[*] M11831	[3] M11841	[3] M11851

Scales NOT included

Exchangeable scales

Type	SIP 48	SIP 72	SIP 96	SIPM 45
Equipment	BC 48	BC 72	BC 96	BM 45
Scope				
0...10 V	[3] M118Z3	[3] M118Y3	[3] M118X3	[1] M118V3
0...20 mA	[3] M118Z2	[3] M118Y2	[3] M118X2	[1] M118V2
4...20 mA	[3] M118Z1	[3] M118Y1	[3] M118X1	[1] M118V1

Process indicators, 240°

Type			
	ZC 72	ZC 96	ZC 144
Class	1,5		
Scale	240°, P1		
	72 72 69,2	96 96 69,2	144 144 91,8
Scope			
0...10 V	[1] M12523	[1] M12533	[1] M12543
4...20 mA(*)	[1] M12521	[1] M12531	[1] M12541
.../60 mV	[1] M12520	[1] M12530	[1] M12540

(*) Scale included in the price

The 6-digit code already includes the 4...20 mA scale

CODIFICATION TABLE

BC and ZC process indicators

Code		Internal code			Delivery time
M	1	X	X	X	
				0 0 X X X	
Adjustment	Standard			0	-
	Central zero			1	2
Scale	1			1	2
	5			2	2
	10			3	2
	15			4	2
	20			5	2
	25			6	2
	30			7	2
	40			8	2
	50			9	2
	60			A	2
	75			B	2
	100			C	2
	125			D	2
	150			E	2
	200			F	2
	250			G	2
	300			H	2
	400			J	2
	500			K	2
	600			L	2
750			M	2	
800			N	2	
1000			P	2	
1200			Q	2	
1500			R	2	
2000			S	2	
2500			T	2	
3000			U	2	
4000			V	2	
5000			W	2	
Unit	-			0	2
	mA			1	2
	A			2	2
	kA			3	2
	mV			4	2
	V			8	2
	kV			9	2
	rpm			A	2
	rpm x 1000			B	2
	l (litros)			C	2
	m			G	2
	m ²			H	2
m ³			J	2	
%			K	2	

(*) Only for ZC equipments. 0 € for SIP scales



MC / MMC / EMC, maximeter ammeters

Bimetallic maximeter ammeter					Bimetallic maximeter ammeters + moving iron ammeters			
Type	MC 48	MC 72	MC 96	MC 144	MMC 45	EMC 72	EMC 96	EMC 144
Class	3					Bimetallic: 3 Moving iron:1,5		
Scale	90°, P1,2					Double Scale 90°, P1,2, moving iron P2		
a	48	72	96	144	85	72	96	144
b	48	72	96	144	52	72	96	144
c	86,2	69,2	69,2	91,8	65	69,2	69,2	91,8
A								
.../ 5 A	[1] M12211	[*] M12221	[*] M12231	[3] M12241	[*] M12651	[*] M12622	[*] M12632	[3] M12642

Scales NOT included	
Scale	120% 90°, P1,2
.../ 5 A	[3] M15521 [3] M15531

Scale included	
----------------	--

Exchangeable scales

Type	SMC 48	SMC 72	SMC 96	SMMC 45-A	SEMC 72	SEMC 96
Equipment	MC 48	MC 72	MC 96	MMC 45	EMC 72	EMC 96
A						
100/5	[1] M122ZC	[*] M122YC	[*] M122XC	[1] M126VC	[*] M126YC	[*] M126XC
200/5	[*] M122ZF	[*] M122YF	[*] M122XF	[1] M126VF	[*] M126YF	[*] M126XF
300/5	[*] M122ZH	[*] M122YH	[*] M122XH	[1] M126VH	[*] M126YH	[*] M126XH
400/5	[*] M122ZJ	[*] M122YJ	[*] M122XJ	[1] M126VJ	[*] M126YJ	[*] M126XJ
500/5	[*] M122ZK	[*] M122YK	[*] M122XK	[1] M126VK	[*] M126YK	[*] M126XK
600/5	[1] M122ZL	[3] M122YL	[*] M122XL	[1] M126VL	[3] M126YL	[*] M126XL
750/5	[1] M122ZM	[3] M122YM	[*] M122XM	[1] M126VM	[*] M126YM	[*] M126XM
800/5	[1] M122ZN	[*] M122YN	[*] M122XN	[1] M126VN	[*] M126YN	[*] M126XN
1 000/5	[1] M122ZP	[*] M122YP	[*] M122XP	[1] M126VP	[*] M126YP	[*] M126XP
1 500/5	[1] M122ZR	[*] M122YR	[*] M122XR	[1] M126VR	[*] M126YR	[*] M126XR
2 000/5	[1] M122ZS	[*] M122YS	[*] M122XS	[1] M126VS	[*] M126YS	[*] M126XS

CODIFICATION TABLE

MC and EMC maximeters and SMC and SEMC scales

Code	Internal code	Delivery time
M 1 X X X X 0 0 X X X		
Standard (15 minutes)	0	-
Adjustment		
8 minutes	1	1
30 minutes	2	2
Current input		
Standard (.../5 A)	0	-
.../ 1 A	1	1
Scale		
100	C	2
125	D	2
150	E	2
200	F	2
250	G	2
300	H	2
400	J	2
500	K	2
600	L	2
750	M	2
800	N	2
1000	P	2
1200	Q	2
1500	R	2
2000	S	2
2500	T	2
3000	U	2
4000	V	2
5000	W	2

MMC 45 Maximeter

Code	Internal code	Delivery time
M 1 X X X X 0 0 X		
Standard (15 minutes)	0	-
Adjustment		
8 minutes	1	1
30 minutes	2	2

Delivery time: [*] immediate
 [X] working weeks
 [c] consult

HC / HM / HZC / HLC, Frequency meters

	Pointer type frequency meters, 90°, 230 V				Pointer type frequency meters, 90° ^a , 230 V	Pointer type frequency meters, 240° ^a , 230 V	
	HC 48	HC 72	HC 96	HC 144	HM 45	HZC 96	HZC 144
Type							
Class	0,5				0,5	0,5	
Scale	90°				90°	240°	
a b c	48 48 86,2	72 72 69,2	96 96 69,2	144 144 91,8	85 52 65	96 96 121,2	144 144 122
45...55 Hz	[*] M12711	[*] M12721	[*] M12731	[3] M12741	[2] M12751	[1] M12831	[1] M12841

Reed type frequency meters

	HLC 72	HLC 96	HLC 144
Type			
Class	0,5		
a b c	72 72 69,2	96 96 69,2	144 144 91,8
Hz			
47...53, 13 reeds	[*] M12921	[*] M12931	[3] M12941

CODIFICATION TABLE
HC, HZC and HM frequency meters

Code	Internal code	
M 1 X X X X 0 0 X X		
	↑	↑ Delivery time
Frequency	Standard (45...55 Hz)	0 -
	57...63 Hz	1 2
	55...65 Hz	3 2
	45...65 Hz	4 2
	47...53 Hz	5 2
Voltage	Standard (230 V)	0 -
	100 ... 120 V	1 2
	380 ... 400 V	3 2
	440 V	4 2
	(*) 380 ... 440 V	6

(*) Only HC

HLC frequency meters

Code	Internal code	
M 1 X X X X 0 0 X X		
	↑	↑ Delivery time
Frequency / Num. reeds	Standard (47...53 Hz / 13 reed.)	0 -
	57...63 Hz / 13 reed.	1 2
	45...55 Hz / 11 reed.	2 2
	55...65 Hz / 11 reed.	3 2
	57...63 Hz / 7 reed.	4 2
	47...53 Hz / 7 reed.	5 2
	45...55 Hz / 21 reed.	6 2
	55...65 Hz / 21 reed.	7 2
Voltage	Standard (230 V)	0 -
	100 ... 120 V	1 2
	380 ... 400 V	3 2
	440 V	4 2

WMC / WTC / YMC / YTC, Wattmeters and varmeters



WATTMETERS, 45 ... 65 Hz

Type								
	Single-phase		Balanced three-phase		Three-phase 3 wire (ARON)		Three-phase 4 wire	
	WMC 96	WMC 144	WTC 96E	WTC 144E	WTC 96A	WTC 144A	WTC 96AN	WTC 144AN
Class	1,5							
Scale	90° P1							
	96	144	96	144	96	144	96	144
	96	144	96	144	96	144	96	144
	69,2	91,8	69,2	91,8	82,9	91,8	82,9	91,8
$U_{\text{phase-phase}}$	400 V		400 V		110 V (*)		400 V	
	[*] M13031	[4] M13041	[*] M13032	[4] M13042	[3] M13034	[3] M13044	[*] M13033	[4] M13043

Exchangeable scales for the WMC 96, WTC 96E and WTC 96AN equipment. Scales NOT included
 (*) Specify primary voltage and current of the measuring transformers, and power at full scale

Varmeters, 45 ... 65 Hz

Type								
	Single-phase		Balanced three-phase		Three-phase 3 wire (ARON)		Three-phase 4 wire	
	YMC 96	YMC 144	YTC 96E	YTC 144E	YTC 96A	YTC 144A	YTC 96AN	YTC 144AN
Class	1,5							
Scale	90 ° P1							
	96	144	96	144	96	144	96	144
	96	144	96	144	96	144	96	144
	69,2	91,8	69,2	91,8	82,9	91,8	82,9	91,8
$U_{\text{fase-fase}}$	400 V		400 V		110 V		400 V	
	[3] M13231	[3] M13241	[3] M13232	[3] M13242	[2] M13234	[3] M13244	[3] M13233	[3] M13243

Wattmeters and varmeters Exchangeable scales

Type	Single-phase			Three-phase				
		SWM 96	SYM 96		SWT 96E (*1)	SWT 96AN (*2)	SYT 96E (*1)	SYT 96AN(*2)
Equipment		WMC 96	YMC 96		WTC 96E	WTC 96AN	YTC 96E	YTC 96AN
A	Full scale	Code	Code	Full scale	Code	Code	Code	Code
50/5	20 kW	[1] M130J9	[1] M132J9	30 kW	[1] M130K9	[1] M130L9	[1] M132K9	[1] M132L9
75/5	-	-	-	50 kW	[1] M130KB	[1] M130LB	[1] M132KB	[1] M132LB
100/5	40 kW	[1] M130JC	[1] M132JC	60 kW	[1] M130KC	[1] M130LC	[1] M132KC	[1] M132LC
150/5	60 kW	[1] M130JE	[1] M132JE	90 kW	[1] M130KE	[1] M130LE	[1] M132KE	[1] M132LE
200/5	80 kW	[1] M130JF	[1] M132JF	120 kW	[1] M130KF	[1] M130LF	[1] M132KF	[1] M132LF
300/5	120 kW	[1] M130JH	[1] M132JH	180 kW	[1] M130KH	[1] M130LH	[1] M132KH	[1] M132LH
400/5	160 kW	[1] M130JJ	[1] M132JJ	240 kW	[1] M130KJ	[1] M130LJ	[1] M132KJ	[1] M132LJ
500/5	200 kW	[1] M130JK	[1] M132JK	300 kW	[1] M130KK	[1] M130LK	[1] M132KK	[1] M132LK
600/5	240 kW	[1] M130JL	[1] M132JL	360 kW	[1] M130KL	[1] M130LL	[1] M132KL	[1] M132LL
1 000/5	400 kW	[1] M130JP	[1] M132JP	600 kW	[1] M130KP	[1] M130LP	[1] M132KP	[1] M132LP
1 500/5	600 kW	[1] M130JR	[1] M132JR	900 kW	[1] M130KR	[1] M130LR	[1] M132KR	[1] M132LR
2 000/5	800 kW	[1] M130JS	[1] M132JS	1,2 MW	[1] M130KS	[1] M130LS	[1] M132KS	[1] M132LS
3 000/5	1,2 MW	[1] M130JU	[1] M132JU	1,8 MW	[1] M130KU	[1] M130LU	[1] M132KU	[1] M132LU
4 000/5	1,6 MW	[1] M130JV	[1] M132JV	2,4 MW	[1] M130KV	[1] M130LV	[1] M132KV	[1] M132LV
5 000/5	2,0 MW	[1] M130JW	[1] M132JW	3 MW	[1] M130KW	[1] M130LW	[1] M132KW	[1] M132LW

(*1) Balanced three-phase wattmeters and varmeters type WTC 93E and YTC 96E, 230 V, 400 V

(*2) Unbalanced three-phase wattmeters and varmeters type WTC 96AN and YTC 96AN, 400 V

CODIFICATION TABLE
Wattmeters and Varmeters

Code	Código interno			
M 1 X X X X 0 0 X X X				
				Delivery time
Current input	Standard ... / 5 A	0		-
	... / 1 A	1		2
Voltage	Standard (400 V _{ph-ph})	0		-
	110 V _{ph-ph} (a)	1		2
	230 V _{ph-ph}	2		2
	440 V _{ph-ph}	5		2
	460 V _{ph-ph}	6		2
	50	9		2
	75	B		2
	100	C		2
	150	E		2
	200	F		2
	300	H		2
Scale ranges	400	J		2
Primary current transformer	500	K		2
	600	L		2
	1000	P		2
	1500	R		2
	2000	S		2
	3000	U		2
	4000	V		2
	5000	W		2

(a) In ARON unbalanced three-phase Wattmeters an Varmeters (3 wires), the standard voltage is 110 V

Wattmeters and Varmeters scales

Code	Internal code			
M 1 X X X X 0 0 X X				
				Delivery time
Current input	Standard ... / 5 A	0		-
	... / 1 A	1		2
Voltages (V)	Standard (400 V)	0		-
	110 (a)	1		2
	230	2		2
	440	5		2
	460	6		2

(a) In ARON unbalanced three-phase Wattmeters an Varmeters (3 wires), the standard voltage is 110 V

FEMC / FETC / FMZ / FTC / PIC, Phasemeters

Electronic phasemeters, 90 °, 50 Hz					Electronic phasemeters, 240 °, 50 Hz			
	Single-phase		Balanced three-phase		Single-phase		Balanced three-phase	
Type	FEMC 96	FEMC 144	FETC 96	FETC 144	FMZ 96	FMZ 144	FTZ 96	FTZ 144
Class	1,5							
Scale	90° P1				240° P1			
	96	144	96	144	96	144	96	144
a	96	144	96	144	96	144	96	144
b	82,9	91,8	82,9	91,8	121,2	91,8	121,2	91,8
c								
V	cos φ 0,5-1-0,5							
100/√3	[1] M13431	[3] M13441	-	-	[4] M13531	[4] M13541	-	-
110/√3	[1] M13432	[3] M13442	-	-	[4] M13532	[4] M13542	-	-
100	[1] M13433	[3] M13443	[1] M1343C	[3] M1344C	[4] M13533	[4] M13543	[4] M1353C	[4] M1354C
110	[1] M13434	[3] M13444	[1] M1343D	[3] M1344D	[4] M13534	[4] M13544	[4] M1353D	[4] M1354D
230	[1] M13435	[3] M13445	[3] M1343E	[3] M1344E	[4] M13535	[4] M13545	[4] M1353E	[4] M1354E
400	[1] M13436	[3] M13446	[*] M1343F	[3] M1344F	[4] M13536	[4] M13546	[4] M1353F	[4] M1354F
440	[1] M13437	[3] M13447	[1] M1343G	[3] M1344G	[4] M13537	[4] M13547	[4] M1353G	[4] M1354G
500	[1] M13438	[3] M13448	[1] M1343H	[3] M1344H	[4] M13538	[4] M13548	[4] M1353H	[4] M1354H

Current range: from 0,1 to 1,2 In. To connect to .../ 5 A transformers. Electronic converter included.

Induction phasemeters 360°, 50 Hz, 4 quadrants						
	Single-phase		Balanced three-phase		Unbalanced three-phase	
Type	PIC 96 A	PIC 144 A	PIC 96 B	PIC 144 B	PIC 96 E	PIC 144 E
Class	1,5					
Scale	360°, P1					
	96	144	96	144	96	144
a	96	144	96	144	96	144
b	121,2	122	121,2	122	121,2	122
c						
V	cos φ 0-1-0					
110	[4] M13631	[4] M13641	[4] M13634	[4] M13644	[4] M13637	[4] M13647
230	[4] M13632	[4] M13642	[4] M13635	[4] M13645	[4] M13638	[4] M13648
400	[4] M13633	[4] M13643	[4] M13636	[4] M13646	[*] M13639	[4] M13649




Current range: from 0,1 to 1,2 In. To connect to .../ 5 A transformers.

CODIFICATION TABLE

Electronic phasemeters	
Code	Internal code
M 1 X X X X 0 0 X	
	↑ Delivery time
Secondary current	Standard .../ 5 A
	0 -
	.../ 1 A
	1 3

Induction phasemeters	
Code	Internal code
M 1 X X X X 0 0 X X	
	↑ Delivery time
Secondary current	Standard .../ 5 A
	0 -
	.../ 1 A
	1 3

PGR, Protection vatmeters
Protective dual bidirectional wattmeter, 230 V

				
Type	Single-phase	Balanced three-phase	Three-phase 3 wire (ARON)	Three-phase 4 wire
	PGR 96 M	PGR 96E	PGR 96A	PGR 96AN
Converter	CW-M	CW-TE	CW-TA	CW-TAN
Class	1,5			
Scale	90°, P2			
	96 96 110			
100/√3... 500 V .../ 5 A	[4] M14721	-	-	-
100...500 V .../5 A	-	[4] M14722	[4] M14724	[4] M14723

MUST SELECT THE REST OF PARAMETERS ON THE BELOW TABLE

The instrument includes the analogue converter and indicator.

Specify the primary voltage and current of the current transformers, the full scale power value and main voltage.

Included and exchangeable scales. Standardized scales.

CODIFICATION TABLE
PGR

Code		Internal code		
M 1 X X X X 0 0 X X X				
		↑	↑	↑ Delivery time
	50	9	-	-
	60	A	3	3
	75	B	3	3
	100	C	3	3
	125	D	3	3
	150	E	3	3
	200	F	3	3
	250	G	3	3
	300	H	3	3
	400	J	3	3
Scale	500	K	3	3
	600	L	3	3
	750	M	3	3
	800	N	3	3
	1000	P	3	3
	1200	Q	3	3
	1500	R	3	3
	2000	S	3	3
	2500	T	3	3
	3000	U	3	3
	4000	V	3	3
	5000	W	3	3
input current	Standard (.../ 5 A)	0	-	-
	.../ 1 A	1	3	3
Power Supply	Standard 220...240 V	0	2	2
	380 ... 400 V 40/60 Hz	3	3	3

2EC / 2HC / 2HLC / SMC / STC / UC / SynchroMAX, Synchronization and marine applications equipment

2EC, Double voltmeters

Type	2 EC 96	2 EC 144
Class	1,5	
Scale	90°	
	96 96 69,2	144 144 91,8
V		
2 x .../100	[3] M13831	[4] M13841
2 x .../110	[3] M13832	[4] M13842
2 x 220	[3] M13833	[4] M13843
2 x 380	[3] M13834	[*] M13844
2 x 440	[3] M13835	[4] M13845

Specify voltage transformers

2HC / 2HLC, Double frequencymeters

	Pointer type, 230 V		Reed type, 400 v	
Type	2 HC 96	2 HC 144		
Class	0,5		0,5	
Scale	90°		-	
	96 96 82,9	144 144 91,8	96 96 82,9	144 144 91,8
Hz			Hz	
45...55	[3] M12732	[4] M12742	47...53, 13 reeds	[*] M12932 [4] M12942

SMC / STC, Synchrosopes, 50 Hz

Type	Single-phase		Three-phase	
	SMC 96	SMC 144	STC 96	STC 144
Class	1,5		1,5	
	96 96 121,2	144 144 122	96 96 121,2	144 144 122
V				
110	[3] M14431	[4] M14441	[*] M14435	[4] M14445
230	[3] M14432	[4] M14442	[3] M14436	[4] M14446
400	[3] M14433	[4] M14443	[*] M14437	[4] M14447
500	[3] M14434	[4] M14444	[3] M14438	[4] M14448

UC / CUC, Phase sequence indicators, 50 Hz

Type	UC 72	UC 96	CUC 96
Control Relay	No		Yes
	72 72 82,9	96 96 82,9	96 96 82,9
V			
100...150	[1] M13726	[1] M13736	-
150...500	[1] M13721	[1] M13731	-
230	-	-	[3] M13754
400	-	-	[*] M13755

SynchroMAX, Synchronization equipment

Power Supply 400 V

Type		
	SynchroMAX	SynchroMAX PID
PID Control	No	Yes
	96 96 82,9	
Frequency	30 ... 70 Hz	
V Measurement		
30...150	[*] M14624	[*] M14634
110...600	[*] M14625	[4] M14635

Delivery time: [*] immediate
[x] working weeks
[c] consult

CH, Hour run meters
Hour run meters

Type	CH 48	CH 72	CH 96	CH 48
Display	5 + 2			
 a b c	48	72	96	
	48	72	96	
	86,2	69,2	69,2	
Code	[3] M14911	[3] M14921	[3] M14931	[3] M14951
EUR				

MEG-1000, Insulation resistance meter
Insulation resistance meter, 230 V (*), 50...60 Hz

Type	MEG-1000
Class	1,5
Scale	90°
Frequency	50...60 Hz
 a b c	96
	96
	132
Ω (double Scales)	0...500 kΩ 0.5...5 MΩ
Code	[*] M15051

CODIFICATION TABLE

2 EC	Internal code	
Code	M 1 X X X X 0 0 X	
		↑ Delivery time
Nominal scale value (Full scale)		
400 (640)	0	-
440 (700)	1	3
660 (1050)	2	3
1000 (1600)	3	3
1200 (1920)	4	3
2500 (4000)	5	3
3000 (4800)	6	3
3300 (5280)	7	3
4000 (6400)	8	3
5000 (8000)	9	3
5500 (8800)	A	3
6600 (10560)	B	3
7200 (11520)	C	3
9000 (14400)	D	3
10000 (16000)	E	3
11000 (17600)	F	3
12500 (20000)	G	3
15000 (24000)	H	3
20000 (32000)	J	3
22000 (35200)	K	3
24000 (38400)	L	3
25000 (40000)	M	3

2HC frequencymeters

Code	Internal code	
Code	M 1 X X X X 0 0 X X	
		↑ Delivery time
Frequency (Hz)		
Standard (45...55 Hz)	0	-
57...63	1	2
55...65	3	2
45...65	4	2
47...53	5	2
Voltage (V)		
Standard (230 V)	0	-
100 ... 120	1	3
380 ... 400	3	3
440	4	3

SMC, STC, UC

Code	Internal code	
Code	M 1 X X X X 0 0 X	
		↑ Delivery time
Frequency		
Standard (50 Hz)	0	-
60 Hz	1	3

SynchroMAX

Code	Internal code	
Code	M 1 X X X X 0 0 X	
		↑ Delivery time
Voltage supply		
Standard (400 V)	0	-
110 V	1	-
230 V	2	-
90...140 Vc.c	C	2

2HLC

Code	Internal code	
Code	M 1 X X X X 0 0 X X	
		↑ Delivery time
Frequency / No. reeds		
Standard (47...53 Hz / 13 reed.)	0	-
57...63 Hz / 13 reed.	1	2
45...55 Hz / 11 reed.	2	2
55...65 Hz / 11 reed.	3	2
Voltage		
Standard (400 V)	0	-
100 ... 120 V	1	2
440 V	4	2
380 ... 400 V	3	2
380 ... 440 V	6	2

CH

Code	Internal code	
Code	M 1 X X X X 0 0 X X	
		↑ Delivery time
Frequency		
Standard 50 Hz	0	-
60 Hz	1	2
Voltage		
Standard (230 V)	0	-
24 Vc.a.	6	2
110 Vc.a.	1	2
10...80 Vc.c.	8	2
80...200 Vc.c.	A	2



Accessories / Options for analogue instruments

GENERAL options for analogue instruments

Type	Code
IP 54 airtight seal , 48 x 48	[1] M1ZZ52
IP 54 airtight seal, 72 x 72	[1] M1ZZ53
IP 54 airtight seal, 96 x 96	[1] M1ZZ54
IP 54 airtight seal, 144 x 144	[1] M1ZZ55
Protection IP 65, 48 x 48	[1] M19941
Protection IP 65, 72 x 72	[1] M19942
Protection IP 65, 96 x 96	[1] M19943
Protection IP 65, 144 x 144	[1] M19944
Terminal covers (IP 20) 48 x 48	[3] M19921
Terminal covers (IP 20) 72x 72	[*] M19922
Terminal covers (IP 20) 96 x 96	[*] M19923

Code	Internal code		
M 1 X X X X 0 0 X X X X X			
	↑	↑	Delivery time
Tropical proof (assembly panel only)	0	1	2
Externally regulated pointer	0	2	2
Anti-reflection glass	0	3	2
Other options Makrolon glass	0	4	2
Interior lighting (6-12-48 V dc) panel only	0	5	2
Tropical proof + Anti-reflection glass	0	6	2
Tropical proof + Makrolon glass	0	7	2

Dimensions

EC / BC

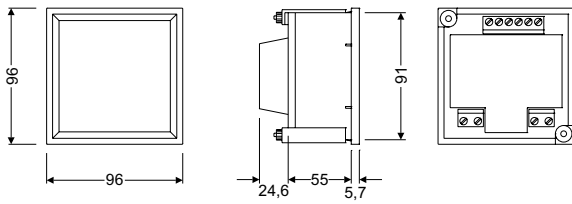
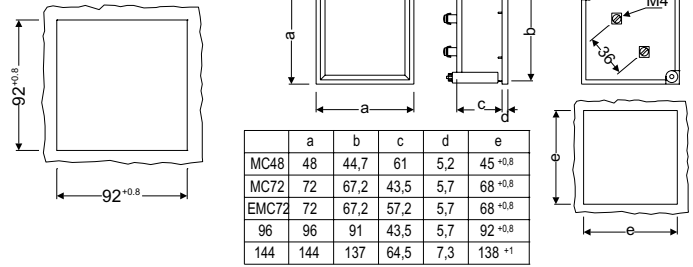
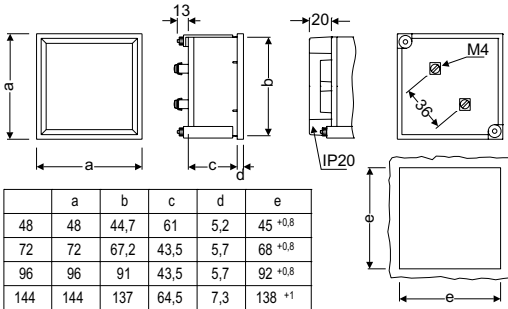
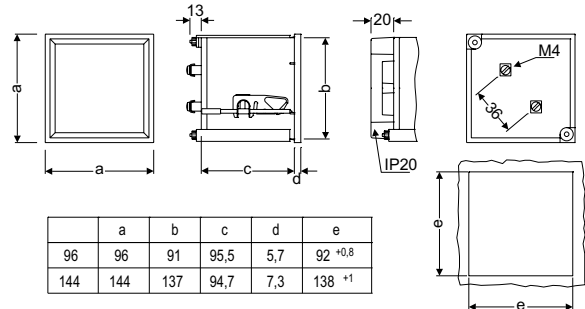
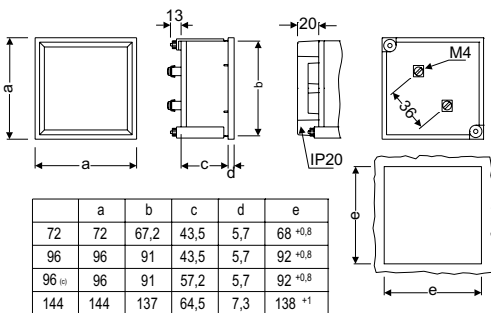
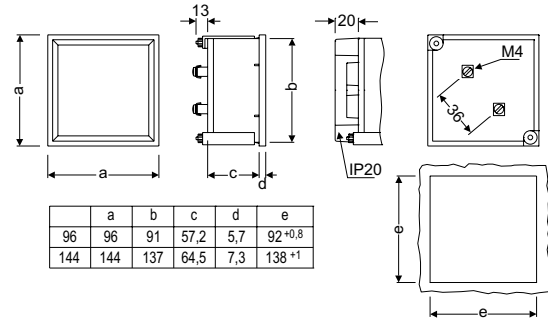
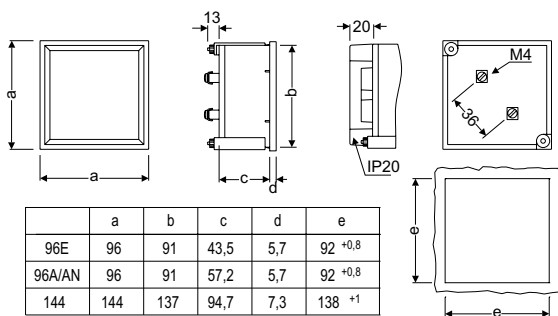
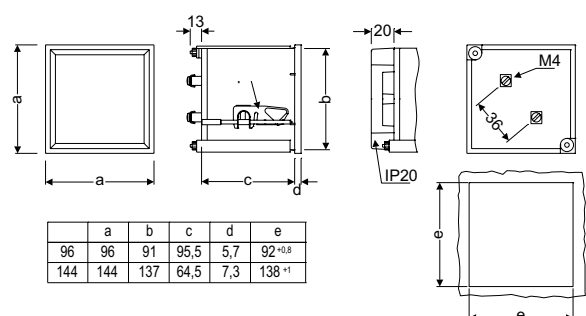
EZC / ZC

Typ	Fig. EC	Fig. BC	Fig. ZC	Fig. EZC	a	b	c	d	e
48	1-3	1-3	1	-	48	44,7	61	5,2	45
72	1-3-4	2-3-4	1	1	72	67,2	43,5	5,7	68
96	1-3-4	2-3-4	1	1	96	91	43,5	5,7	92
144	2-3-4	2-3-4	1	-	144	137	64,5	7,3	138

EC-FA, EC-F, EC-FN

Type	a	b	c	d	e
72	72	67,2	43,5	5,7	68 ^{+0,8}
96	96	91	43,5	5,7	92 ^{+0,8}

EM 45 / BM 45 / MMC 45 / HM 45

CEC / CBC / PGR

EMC / MC

HC

HZC

HLC

FEMC / FETC

WMC / YTC

FMZ / FTZ / PIC




METERING






Multifunction electrical energy meters

Table: multi-function electrical energy meters Selection	82
CIRWATT B III, Three-phase energy meters (Measuring, load profiling, multi configurable billing calendar)	83
CIRWATT B II, Single-phase energy meter	83
CIRWATT P, Prepayment energy meters	84
COMPACT DC, PRIME PLC Concentrator	84
CIRWATT B III PRIME, Three-phase energy meters with PLC system (measuring, load profiling, multi configurable billing calendar)	84
CIRWATT B II PRIME, Single-phase energy meters with PLC system (measuring, load profiling, multi configurable billing calendar)	84
CIRWATT-repeater, Repeater for amplification of the PLC signal for the PRIME system	84
PowerWat, Software for energy meters	85
LOC, Optical reader	85
ReadWatt, Impulse collection with communication	85
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Modems, Communication accessories	85
MyCLAMP, Portable clamp meter	85
kit3-TRMC210, Sets of 3 current transformers for energy meters class 0,5S	86
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Partial consumption energy meters

CirCAMP, Meters for managing multiple supplies	90
CIRMANAGER, Concentrator for managing the CirCAMP system	90
CirCAMP-BOX, Compact cabinets for the CirCAMP system	90
CEM, Single-phase and three-phase energy meters	91
CEM-M, Communication module	91
EDMk, Three-phase energy meters, external current transformer	91
MC3, Three-phase current transformers	91
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MK-DC, Direct current energy meter	92
RS/TCP/CMBUS, Communication converters	92
AIR, Wireless converters and probes	92
Modems, Communication accessories	92
PowerStudio, Energy management software	93

OUTSTANDING PRODUCTS

	CIRWATT B PRIME	COMPACT DC-S	CirCAMP	CEM-6	CEM-20 / CEM 30
					
	Three-phase energy meters	PLC PRIME Concentrator	Supply management solution	Single phase energy meter	Three-phase direct/indirect energy meters
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Multifunction electrical energy meters

Table: multi-function electrical energy meters Selection

		B502	B505	B410T	B410D	B410D RCP	B200 RCP	B100	B101	B102	P200RC	P410RC
Connection	2 wires	-	-	-	-	-	•	•	•	•	•	-
	4 wires Direct	-	-	-	•	•	-	-	-	-	-	•
	4 wires Indirect	•	•	•	-	-	-	-	-	-	-	-
	4 Quadrants	•	•	•	•	•	•	ABS	•	•	ABS	ABS
Voltage	1x230 V _{ca}	-	-	-	-	-	•	•	•	•	•	-
	3x63,5/110 V _{ca}	T	T	T	-	-	-	-	-	-	-	-
	3x127/220 V _{ca}	T	T	T	T	T	-	-	-	-	-	T
	3x230/400 V _{ca}	T	T	T	T	T	-	-	-	-	-	T
	3x127/220 V _{ca} ...3x230/400 V _{ca}	-	-	-	T	-	-	-	-	-	-	-
	3x57/100 V _{ca} ...3x230/400 V _{ca}	T	T	T	-	-	-	-	-	-	-	-
Frequency	50 Hz	T	T	T	T	T	T	T	T	T	-	-
	60 Hz	T	T	T	T	T	T	T	T	T	-	-
	50/60 Hz	-	T	T	T	-	-	-	-	-	•	•
Communications	RS-485	-	-	-	-	-	-	-	-	•	-	-
	PRIME	-	-	-	-	•	•	-	-	-	-	-
	RS-232/232	T	T	T	T	-	-	-	-	-	-	-
	RS-232/485	T	T	T	T	-	-	-	-	-	-	-
	RS-232/Ethernet	T	T	T	T	-	-	-	-	-	-	-
	RS-485/Ethernet	T	T	T	T	-	-	-	-	-	-	-
	RFID	-	-	-	-	-	-	-	-	-	•	•
Input / Output modules	Impulse output	-	-	-	-	-	-	-	T	T	-	-
	Relay output	-	-	-	-	T	T	-	-	T	-	-
	Tariff selection input	-	-	-	-	-	-	-	T	T	-	-
	Auxiliary power supply	OP	OP	OP	OP	-	-	-	-	-	-	-
	4 relay outputs	OP	OP	OP	OP	-	-	-	-	-	-	-
	4 I / 2 O relay	OP	OP	OP	OP	-	-	-	-	-	-	-
Circuit breaker	2 I / 2 O relay / 2 O	OP	OP	OP	OP	-	-	-	-	-	-	-
		-	-	-	-	•	•	-	-	-	•	•
Page		83	83	83	83	84	84	83	83	83	84	84

OP - Optional / T - According to type



CIRWATT B III, Three-phase energy meters (Measuring, load profiling, multi configurable billing calendar)

Type	Code	Class (Active/ Reactive)	Quadrants	Measurement Range (V)	Measurement Range (A)	Frequency (Hz)	Communications
CIRWATT B 502							
402-VT5A-90B10	[1] QBL10	0.2S/0.5	4	3x57/100 ... 3x230/400	.../ 5 A	50	RS-232 / RS-485
402-VT5A-A0B10	[1] QBL20	0.2S/0.5	4	3x57/100 ... 3x230/400	.../ 5 A	50	RS-232 / Ethernet
402-VT5B-90B10	[1] QBL50	0.2S/0.5	4	3x57/100 ... 3x230/400	.../ 5 A	60	RS-232 / RS-485
402-VT5B-A0B10	[1] QBL60	0.2S/0.5	4	3x57/100 ... 3x230/400	.../ 5 A	60	RS-232 / Ethernet
CIRWATT B 505							
405-VT5A-90B10	[1] QBK10	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 5 A	50	RS-232 / RS-485
405-VT5A-A0B10	[1] QBK20	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 5 A	50	RS-232 / Ethernet
405-VT5B-90B10	[1] QBK50	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 5 A	60	RS-232 / RS-485
405-VT5B-A0B10	[1] QBK60	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 5 A	60	RS-232 / Ethernet
405-VT7A-90B10	[1] QBN00	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 1 A	50	RS-232 / RS-485
405-VT7A-A0B10	[1] QBN10	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 1 A	50	RS-232 / Ethernet
405-VT7B-A0B10	[1] QBN30	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 1 A	60	RS-232 / RS-485
410-VT7B-A0B10	[1] QBN40	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 1 A	60	RS-232 / Ethernet
CIRWATT B 410T							
410-QT5A-90B10	[1] QB870	B (1) / 2	4	3x230/400	.../ 5 A	50	RS-232 / RS-485
410-QT5A-A0B10	[1] QB880	B (1) / 2	4	3x230/400	.../ 5 A	50	RS-232 / Ethernet
410-QT5A-90B10	[1] QBJ10	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 5 A	50	RS-232 / RS-485
410-VT5A-A0B10	[1] QBJ20	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 5 A	50	RS-232 / Ethernet
410-QT5B-90B10	[1] QB8D0	B (1) / 2	4	3x230/400	.../ 5 A	60	RS-232 / RS-485
410-QT5B-A0B10	[1] QB8E0	B (1) / 2	4	3x230/400	.../ 5 A	60	RS-232 / Ethernet
410-VT5B-90B10	[1] QBJ60	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 5 A	60	RS-232 / RS-485
410-VT5B-A0B10	[1] QBJ70	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 5 A	60	RS-232 / Ethernet
410-QT7A-90B10	[1] QBN0B	B (1) / 2	4	3x230/400	.../ 1 A	50	RS-232 / RS-485
410-QT7A-A0B10	[1] QBN1B	B (1) / 2	4	3x230/400	.../ 1 A	50	RS-232 / Ethernet
410-VT7A-90B10	[1] QBN0J	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 1 A	50	RS-232 / RS-485
410-VT7A-A0B10	[1] QBN1J	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 1 A	50	RS-232 / Ethernet
410-QT7B-90B10	[1] QBN2B	B (1) / 2	4	3x230/400	.../ 1 A	60	RS-232 / RS-485
410-QT7B-A0B10	[1] QBN3B	B (1) / 2	4	3x230/400	.../ 1 A	60	RS-232 / Ethernet
410-VT7B-90B10	[1] QBN2J	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 1 A	60	RS-232 / RS-485
410-VT7B-A0B10	[1] QBN3J	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 1 A	60	RS-232 / Ethernet
CIRWATT B 410D							
410-QD1A-90B00	[1] QB4B0	B (1) / 2	4	3x230/400	10 (100)	50	RS-232 / RS-485
410-QD1A-A0B00	[1] QB4C0	B (1) / 2	4	3x230/400	10 (100)	50	RS-232 / Ethernet
410-QD1B-A0B10	[1] QB4H0	B (1) / 2	4	3x230/400	10 (100)	60	RS-232 / RS-485
410-QD1B-A0B10	[1] QB4I0	B (1) / 2	4	3x230/400	10 (100)	60	RS-232 / Ethernet

Please contact us for other configurations (Inputs, outputs and other communications)

CIRWATT B II, Single-phase energy meter

Type	Code	Class (Active/ Reactive)	Qua- drants	Measu- ment Range (V)	Measu- ment Range (A)	Fre- quency (Hz)	Tariff	Impulse output	Output relay	Change tariff input	Certifi- cation	Communications
CIRWATT B100												
210-ES7A-00B20	[1] QBM00M20	B (1)	Abs.	230	5 (65)	50	1	-	-	0	MID	-
210-ES7A-00B20	[1] QBM00M21	1	Abs.	230	5 (65)	50	1	-	-	0	IEC	-
210-ES7A-00B20	[1] QBM00M23	1	Abs.	230	5 (65)	50	1	-	-	0	IEC	-
210-ES7B-00B20	[1] QBM20M20	B (1)	Abs.	230	5 (65)	60	1	-	-	0	MID	-
210-ES7B-00B20	[1] QBM20M21	1	Abs.	230	5 (65)	60	1	-	-	0	IEC	-
210-ES7B-00B20	[1] QBM20M23	1	Abs.	230	5 (65)	60	1	-	-	0	IEC	-
CIRWATT B101												
210-ES4A-01B20	[1] QBM03	B (1)	Abs.	230	5 (65)	50	3	1	-	0	IEC	-
210-ES4A-0EB20	[1] QBM07	B (1)	Abs.	230	5 (65)	50	2	-	-	1	IEC	-
CIRWATT B102												
212-ES7A-21B20	[1] QBM83	B (1) / 2	Abs.	230	5 (65)	50	3	1	-	0	IEC	RS-485 (IEC)
212-ES7A-23B20	[1] QBM85	B (1) / 2	Abs.	230	5 (65)	50	3	-	1	0	IEC	RS-485 (IEC)
212-ES7A-2EB20	[1] QBM87	B (1) / 2	Abs.	230	5 (65)	50	2	-	-	1	IEC	RS-485 (IEC)

ABS. Storage of generated and consumed energy. (*1) Laser engraved, in English / (*2) Laser engraved, in Spanish Please contact us for other configurations (inputs, outputs and other communications)

OPTIONAL
ACCESSORIES
(additional price)

Code	Model	Description
Consult	3	4 output relays 3 A, 250 Vac
Consult	5	4 impulse inputs, 2 output relays 3 A, 250 Vac
Consult	D	2 output relays 3 A 250 Vac, 2 impulse inputs, 2 impulse outputs
Consult	6	Auxiliary Power Supply 24-48Vdc
Consult	B	Earth leakage detection

Delivery time: [*] immediate
[x] working weeks
[c] consult

**CIRWATT P, Prepayment energy meters**

Type	Code	Class (Active/Reactive)	Quadrants	Measurement Range (V)	Measurement Range (A)	Frequency (Hz)	Discon. relay	Communications
212-WS4C-23P23	[C] QP102	1 / 2	4	110 ... 260	10 (60)	50 / 60	*	RFID
410-QD1C-20P22	[C] QP302	1 / 2	4	230 / 400	10 (100)	50 / 60	*	RFID

Type	Code	Description
PEM-SOFT_PLUS	[C] Q30501.	Management software + PEM-TERM
PEM-TERM	[C] Q31100.	PEM-CARD writer / reader
PEM-CARD	[C] E20001.	RFID card for universal dispenser

NEW**COMPACT DC, PRIME PLC Concentrator**

Type	Code	Digital inputs	Communications	LV supervisor	2° transformer connection	Measure VN-GND	Size (mm) width xheight xdepth
Compact DC-S 3G	[1] Q46210.	-	PRIME / 3G	*	-	-	203x120x130
Compact DC-S 4I	[1] Q46220.	4	PRIME	*	-	-	203x120x130
Compact DC-S SBT	[1] Q46230.	-	PRIME	*	-	-	165x120x130
Compact DC-S BASIC	[1] Q46240.	-	PRIME / 3G	-	-	-	165x120x130
Compact DC-S 2	[1] Q46250.	4	PRIME	*	*	-	279x120x130
Compact DC-S 3G VTN	[1] Q46211.	-	PRIME / 3G	*	-	1	241x120x130
Compact DC-S 4I VTN	[1] Q46221.	4	PRIME	*	-	1	241x120x130
Compact DC-S SBT VTN	[1] Q46231.	-	PRIME	*	-	1	203x120x130
Compact DC-S BASIC VTN	[1] Q46241.	-	PRIME / 3G	-	-	1	203x120x130
Compact DC-S 2 VTN	[1] Q46251.	4	PRIME / 3G	2	*	1	317x120x130

Isolated digital inputs, 10 kV/1 min

CIRWATT B III PRIME, Three-phase energy meters with PLC system (measuring, load profiling, multi configurable billing calendar)

Type	Code	Class (Active/Reactive)	Quadrants	Measurement Range (V)	Measurement Range (A)	Frequency (Hz)	Output relay	Discon. relay	Communications
CIRWATT B 410TP, indirect connection									
410-QT5A-B0B10	[1] QB810	B (1) / 2	4	3x230/400	... / 5 A	50	0	-	RS-232 / PRIME
CIRWATT B 410DP, direct connection									
410-QD1A-B0B10	[1] QB4N0	B (1) / 2	4	3x230/400	10 (100)	50	0	-	RS-232 / PRIME
CIRWATT B 410RCP, direct connection with internal disconnection relay									
410-QD1A-B0B16	[C] QB4P0	B (1) / 2	4	3x230/400	10 (100)	50	0	*	- / PRIME
410-QD1A-B3B16	[C] QB4P1	B (1) / 2	4	3x230/400	10 (100)	50	1	*	- / PRIME

CIRWATT B II PRIME, Single-phase energy meters with PLC system (measuring, load profiling, multi configurable billing calendar)

Type	Code	Class (Active/Reactive)	Quadrants	Measurement Range (V)	Measurement Range (A)	Frequency (Hz)	Output relay	Discon. relay	Communications
212-ES4A-B0B17	[1] QB3C0	B / 2	4	230	10 (60)	50	0	*	PRIME
212-ES4A-BFB-17	[1] QB3C3	B / 2	4	230	10 (60)	50	1	*	PRIME

Please contact us for other configurations (Inputs, outputs and other communications)

NEW**CIRWATT-repeater, Repeater for amplification of the PLC signal for the PRIME system**

Type	Code	Description
CIRWATT Repeater	[C] QM4011.	Three-phase repeater to amplify the PLC system of the PRIME system

**PowerWatt/SoftWatt, Software for energy meters**

Type	Code	Description
PowerWatt LT SQL	[*] Q30423.	Energy metering management information software

**LOC, Optical reader**

Type	Code	Description
Loc	[*] Q30301.	CIRWATT optical reader
Loc-USB	[*] Q30302.	CIRWATT optical reader with USB port

**ReadWatt, Impulse collection with communication**

Type	Code	Description
ReadWatt	[*] M62311.	Impulse collector with RS232/RS485 Modbus communications. Built in transistor output. PowerStudio supported
PS 100..240Vcc	[*] M62331.	ReadWatt power supply

**RS/TCP/CMBUS, Communication converters**

Type	Code	Description
RS2RS	[*] M62141.	RS-232/485 Intelligent converter and amplifier (RTS control) for PC
USB-RS 485	[*] M54040.	USB to RS-485 Converter
USB-RS 232	[*] M54050.	USB to RS-232 Converter
TCP1RS+	[*] M62121.	RS-485 / Ethernet modbus/TCP Converter
TCP2RS+	[*] M54033.	RS-232/485 Converter / Ethernet Modbus/TCP. Built-in web server and web set-up
CMBUS-8	[*] M540A0.	M-Bus to Modbus Converter, up to 8 Mbus slaves
CMBUS-24	[*] M540B0.	M-Bus to Modbus Converter, up to 24 Mbus slaves

Modems, Communication accessories


Type	Code	Description
M-GSM 10 BITS	[*] Q30213IB00000	GSM RS-232/485 Modem (includes antenna + cable). Parameterisation with even parity (10 bits)
M-GSM 11 BITS	[*] Q30213EN00000	GSM RS-232/485 Modem (includes antenna + cable). Parameterisation with even parity (11 bits)
SGE-3G/GPRS	[*] Q30230.	GPRS-3G Modem with Ethernet communications (includes PS + antenna + cable)
ANTENA GSM UT-35 9db	[1] Q4994E.	Antenna 9 db (for GSM modem)

**MyCLAMP, Portable clamp meter**


Type	Code	Description	Measurement Range (A)	Usefull diam.(mm)
MyCLAMP BT	[C] Q31400.	Portable current clamp for Low Voltage networks 50-60 Hz (air connection)	2...125 A	25
P-64	[C] Q39970.	Insulating pole for Low Voltage cables. 6,4 m (1,6 m refoated)	-	-

NEW

kit3-TRMC210, Sets of 3 current transformers for energy meters class 0,5S

Type	kit3-TRMC210			kit3-TRMC210-05			kit3-TRMC210-05S-2		
	width x height x depth (mm) 145x111x80								
A/V-A	Class	VA	Code	Class	VA	Code	Class	VA	Code
100/5	0.5S	10	[3] Q309010100000	0.5	10	[3] Q309610100000	0.5S	2,5	[3] Q309810100000
150/5	0.5S	10	[3] Q309020100000	0.5	10	[3] Q309620100000	0.5S	2,5	[3] Q309820100000
200/5	0.5S	10	[3] Q309030100000	0.5	10	[3] Q309630100000	0.5S	2,5	[3] Q309830100000
300/5	0.5S	10	[3] Q309040100000	0.5	10	[3] Q309640100000	0.5S	2,5	[3] Q309840100000
400/5	0.5S	10	[3] Q309050100000	0.5	10	[3] Q309650100000	0.5S	2,5	[3] Q309850100000
500/5	0.5S	10	[3] Q309060100000	0.5	10	[3] Q309660100000	0.5S	2,5	[3] Q309860100000
600/5	0.5S	10	[3] Q309070100000	0.5	10	[3] Q309670100000	0.5S	2,5	[3] Q309870100000

kit3-TRMC400, Sets of 3 current transformers for energy meters class 0,5S

Type	kit3-TRMC400			kit3-TRMC400-05			kit3-TRMC400-05-2		
	width x height x depth (mm) 99x160x68								
Flat strip(mm)	100x20 mm								
A/V-A	Class	VA	Code	Class	VA	Code	Class	VA	Code
750/5	0.5S	10	[3] Q309110100000	0.5	10	[3] Q309710100000	0.5	2,5	[3] Q309A10100000
1000/5	0.5S	10	[3] Q309120100000	0.5	10	[3] Q309720100000	0.5	2,5	[3] Q309A20100000
1500/5	0.5S	10	[3] Q309130100000	0.5	10	[3] Q309730100000	0.5	2,5	[3] Q309A30100000
2000/5	0.5S	10	[3] Q309140100000	0.5	10	[3] Q309740100000	0.5	2,5	[3] Q309A40100000
3000/5							0.5	2,5	[3] Q309A60100000

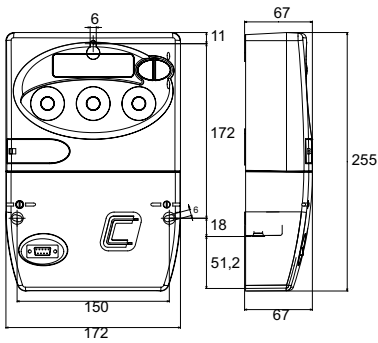

TRMCx3, Current transformers for energy meters

Type	Code	Measurement Range (A)	Class 0,5S Power (VA)	Usefull diam.(mm)	Cable (m)
Indoor					
TRMC-x3 100/5	[*] Q301T1.	100/5	2,5	38	1.5
TRMC-x3 200/5	[*] Q301T2.	200/5	2,5	38	1.5
TRMC-x3 300/5	[*] Q301T3.	300/5	2,5	38	1.5
TRMC-x3 400/5	[*] Q301T4.	400/5	2,5	38	1.5
Outdoor					
TRMC-X3 100/5 Ext	[C] Q301T1010E000	100/5	2,5	38	7
TRMC-X3 200/5 Ext	[C] Q301T2010E000	200/5	2,5	38	7
TRMC-X3 300/5-ext	[C] Q301T3010E000	400/5	2,5	38	7
TRMC-X3 400/5 Ext	[C] Q301T4010E000	300/5	2,5	38	7

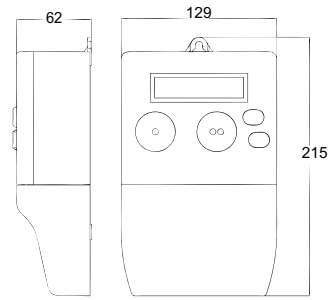
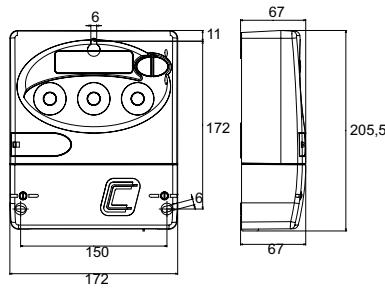


Dimensions

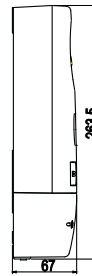
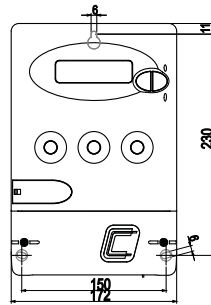
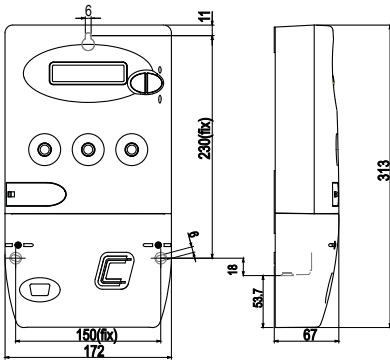
CIRWATT B502 /505 / 410T / 410D



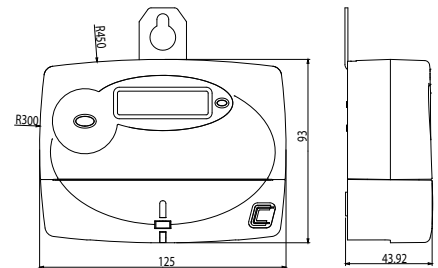
CIRWATT B 101 / 102 /200 RC / 200 RCP



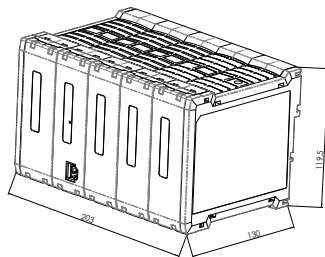
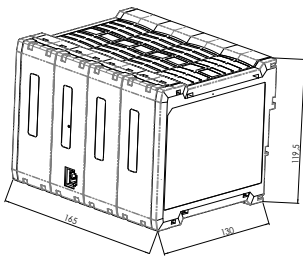
CIRWATT B 410 RCP



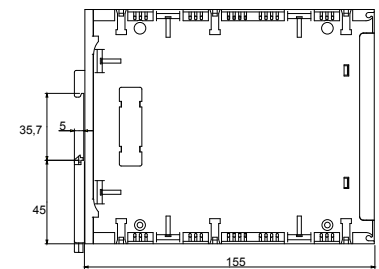
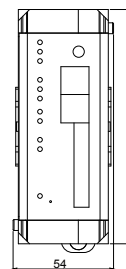
CIRWATT B100



Compact DC + SBT



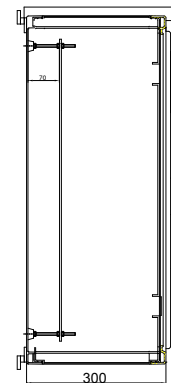
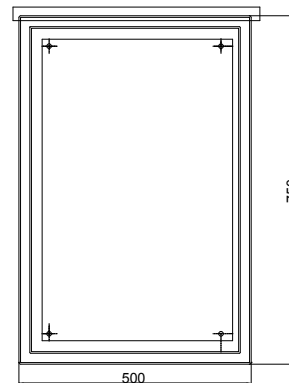
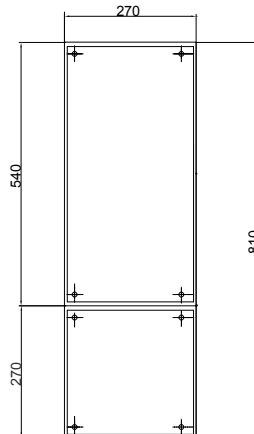
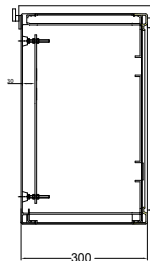
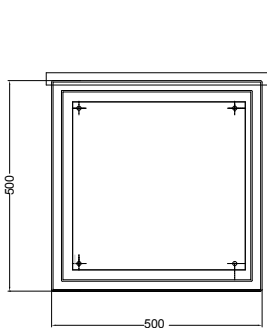
SGE 3G/GPRS



CMBT COMPACT PRIME CT6 / CT7 / 8D

CMBT COMPACT PRIME CT6A / CT7A

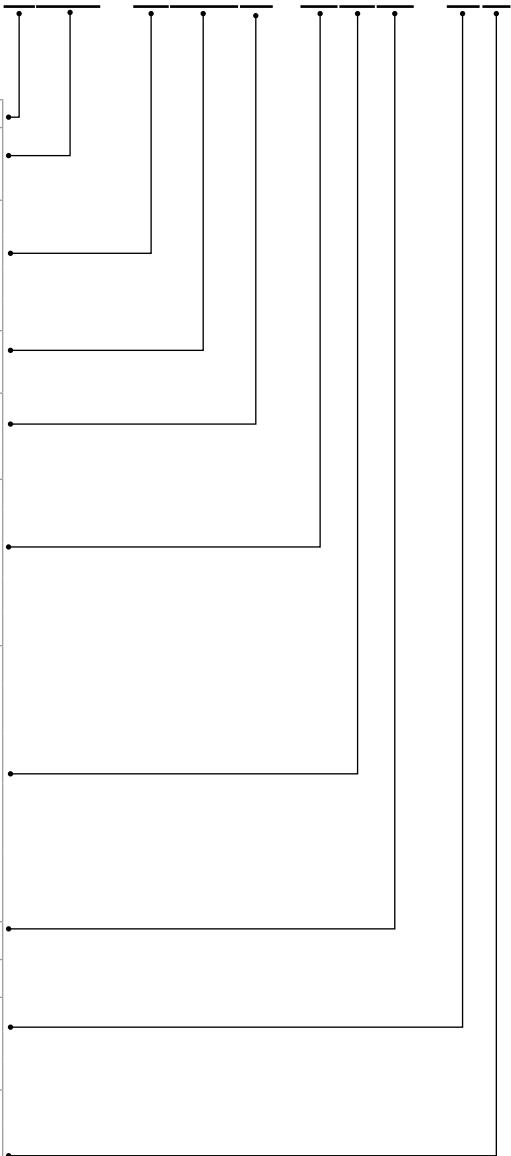
CMBT COMPACT PRIME CT8



SELECTION TABLE - SINGLE-PHASE ENERGY METERS

CIRWATT [] [] [] [] - [] [] [] [] - [] [] x [] - [] []

Energy Meter Type	CIRWATT B101/102	CIRWATT B200RC	CIRWATT B200RCP		
Asymmetric connection 2-wire	•	•	•	2	
Class B (1) active / not measure reactive	•	•	-	10	Accuracy
Class B (1) active / class 2.0 reactive	• (102)	-	•	12	
1x230 V _{ac}	•	-	•	E	Voltage measure
1x127 V _{ac}	•	-	•	B	
1x120 V _{ac}	•	-	•	1	
1X110...260 V _{ac}	-	•	-	W	
Shunt 10 (60) A	-	•	•	S4	Current measure
Shunt 5 (65) A	•	-	-	S7	
50 Hz	•	-	•	A	Frequency
60 Hz	•	-	•	B	
50 / 60 Hz	-	•	-	C	
Without communications	• (101)	-	-	0	Comm.
Port R1	RS-485 (102)	RS-485 /RFID	-	2	
Port R1	-	-	DCSK A	4	
Port R1	-	-	DCSK B	5	
Port R1	-	-	PRIME	B	
Without inputs / outputs	-	-	•	0	Expansion modules
Inputs / output	Input 100 to 240 VAC	-	-	E	
Inputs / output	Optomos output	-	-	1	
Inputs / output	1 relay output 3 A 250 V, potential-free	1 relay output 3 A 250 V, neutral potential	-	3	
Inputs / output	-	-	1 relay output 3 A 250 V, potential-free	F	
Domestic / residential / small industry	•	-	•	B	Type
Prepayment	-	•	-	P	
2 Quadrants	• (OP)	-	-	0	Register mode
4 Quadrants	•	-	•	1	
Bidirectional with always positive register	• (OP)	•	-	2	
Without other features	•	-	-	0	Other features
With omnipolar circuit breaker	-	•	•	3	
Neutral current measurement and magnetic detection	• (OP)	-	-	5	
With omnipolar cutting element and voltage fraud detection	-	-	•	7	













SELECTION TABLE - THREE-PHASE ENERGY METERS

TIPO DE CONTADOR	CIRWATT B410D	CIRWATT B502 / B505 / B410T / B410TP	CIRWATT B400RCP	CIRWATT B400RC		CIRWATT													
4-wire	•	•	•	•	4	Connection mode													
Class 0.2s Active	-	•	-	-	02	Accuracy													
Class 0.5 Reactive	-	•	-	-	05														
Class (C) 0.5s Active	-	•	-	-	10														
Class 1 Reactive	•	•	•	•															
Class (B) 1 Active	•	•	•	•		Voltage measure													
Class 2.0 Reactive	•	•	•	•															
3 x 57 / 100 V _{ac}	-	•	-	-	L														
3 x 63.5 / 110 V _{ac}	-	•	-	-	M														
3 x 127 / 220 V _{ac}	•	•	•	-	N														
3 x 230 / 400 V _{ac}	•	•	•	•	Q														
3 x 57/100 V _{ac} ... 3 x 230 / 400 V _{ac}	-	•	-	-	V														
Transformer 2,5 (10) A	-	•	-	-	T2	Current measure													
Transformer 5 (10) A	-	•	-	-	T5														
Transformer 1 (6) A	-	•	-	-	T7														
Transformer 1 (10) A	-	•	-	-	T8														
Direct 10 (100) A	•	•	•	-	D1														
Direct 15 (120) A	•	-	-	-	D5														
Direct 5 (100) A	•	-	-	-	D6														
50 Hz	•	•	•	-	A	Frequency													
60 Hz	•	•	•	-	B														
Automatic (50 / 60 Hz)	•	•	-	•	C														
Without communications	•	•	-	-	0	Comm.													
R1 / R2	RS485 / PLC A	RS485 / PLC A	-	RS485 / RFID	2														
R1 / R2	RS232 / PLC A	RS232 / PLC A	PLC A	-	4														
R1 / R2	RS232 / PLC B	RS232 / PLC B	PLC B	-	5														
R1 / R2	RS232 / RS232	RS232 / RS232	-	-	7														
R1 / R2	RS232 / RS485	RS232 / RS485	-	-	9														
R1 / R2	RS232 / Ether.	RS232 / Ether.	-	-	A														
R1 / R2	RS232 / PRIME	RS232 / PRIME	PRIME	-	B														
R1 / R2	RS485 / Ether.	RS485 / Ether.	-	-	C														
Without inputs / outputs	•	•	•	-	0	Expansion modules													
inputs / outputs	Relé 3A 250V libre potencial	Relé 3A 250V libre potencial	Relé 3A 250V libre potencial	-	3														
inputs / outputs	*1	*1	-	-	5														
inputs / outputs	Alim. auxiliar	Alim. auxiliar	-	-	6														
inputs / outputs	*2	*2	-	-	A														
inputs / outputs	Fuga Tierra	Fuga Tierra	-	-	B														
inputs / outputs	*3	*3	-	-	D														
Domestic / residential / small industry	•	•	•	-	B	Type													
Prepayment	-	-	-	•															
2 Quadrants	•	•	•	-	0	Quadrants													
4 Quadrants	•	•	•	-	1														
Accumulation in both ways	•	•	-	•	2														
No special features	•	•	•	-	0	Additional features													
With circuit breaker in the phase line	-	-	•	-	2														
With omnipolar circuit breaker	-	-	•	•	3														
With circuit breaker in the phase line and detection of tension fraud	-	-	•	-	6														
*1 - 2 Relay outputs, 4 optocoupled inputs																			
*2 - 4 optocoupled inputs																			
*3 - 2 Relay outputs, 2 pulse inputs, 2 optocoupled outputs																			



Partial consumption energy meters

Table: Selection of partial consumption electrical energy meters

		CEM-6	MK DC	CEM-10	CEM-20	CEM-30	EDMK	CirCAMP-4DP	CirCAMP-2IP
									
Mounting	DIN rail (modules)	1	2	2	4	4	3	11	11
DC measurement		-	•	-	-	-	-	-	-
AC measurement	Three-phase 3/4 wires	-	-	-	•	•	•	•	•
	Single-phase	•	•	•	-	-	-	•	-
	Quadrants	2	2	2, 4 or ABS	2, 4 or ABS	2, 4 or ABS	4	2	2
Parameters	Active energy (kWh)	•	•	•	•	•	•	•	•
	Reactive energy (kvarh)	•	-	•	•	•	•	-	-
	V, A, W, Hz,FP	•	•	•	•	•	-	•	•
	Tariffs	1	1	1	1	1	1 / 3 - ST	-	-
Current Input	Direct	5 (10) A	30 Acc - ST	5 (65) A	5 (65) A	-	-	5 (32) A	-
	Indirect	-	ST	-	-	/ 5 A	ST	-	/ 5 A
	MC System	-	-	-	-	-	ST	-	-
Communications	RS-485	•	-	OP	OP	OP	ST	-	-
	Ethernet	-	-	OP	OP	OP	-	-	-
	PLC (OFDM)	-	-	-	-	-	-	•	•
Inputs/outputs	Digital inputs	-	-	-	-	-	-	4	2
	Digital outputs	1	-	1	1	1	1/2	-	-
	Relay outputs	-	-	-	-	-	-	4	4
Optional	MID certification	-	-	ST	ST	ST	ST	-	-
	Auxiliary power supply	-	•	-	•	•	•	-	-
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DT - Depending on the type/ OP - Optional



CirCAMP, Meters for managing multiple supplies

Type	Code	Measurement Range (A)	System	Output relay	Digital inputs	Communications	Work mode
CirCAMP-4DP	[C] QM4000.	32	4 single-phase or 1 three-phase	4	4	PLC	Post-pay/prepay
CirCAMP-2IP	[C] QM4001.	.../5	2 indirect three-phase	4	2	PLC	Post-pay/prepay



CirMANAGER, Concentrator for managing the CirCAMP system

Type	Code	Energy measurement (SBT)	Measurement Range (A)	Communications	Size (mm) width xheight xdepth
CirMANAGER SBT	[C] Q47001.	kWh	.../5 A	-	165x120x130
CirMANAGER SBT 3G	[C] Q47009.	kWh	.../5 A	3G	203x120x130

Tipo	Código	Descripción
CirCAMP Repeater	[C] QM4010.	Repetidor trifásico para la amplificación de la señal PLC para sistema el CirCAMP

CirCAMP-BOX, Compact cabinets for the CirCAMP system

Type	Code	Electric supply	Water supply
CirCAMP-BOX 44	[C] QM4021.	4	4
CirCAMP-BOX 40	[C] QM4022.	4	-
CirCAMP-BOX 22	[C] QM4023.	2	2
CirCAMP-BOX 20	[C] QM4024.	2	-
CirCAMP-BOX-60	[C] QM4025.	6	-
CirCAMP-BOX-80	[C] QM4026.	8	-



CEM, Single-phase and three-phase energy meters

Type	Code	Measurement Range (V)	Input current	Frequency (Hz)	System	Power supply	Certification	Measure
CEM C10 212	[*] Q21112.	1 x 230	5 (65) A	50/60	Single-phase	-	IEC	Direct
CEM C10 212 MID	[*] Q21114.	1 x 230	5 (65) A	50/60	Single-phase	-	MID	Direct
CEM C20 312	[*] Q22312.	3x127/220... 3x 230/400	5 (65) A	50/60	Three-phase	230 Vac	IEC	Direct
CEM C20 312 MID	[*] Q22314.	3x127/220... 3x 230/400	5 (65) A	50/60	Three-phase	230 Vac	MID	Direct
CEM C30 312	[*] Q23422.	3x127/220... 3x 230/400	.../ 5 (6) A	50/60	Three-phase	230 Vac	IEC	Indirect
CEM C30 312 MID	[*] Q23424.	3x127/220... 3x 230/400	.../ 5 (6) A	50/60	Three-phase	230 Vac	MID	Indirect

CEM-M, Communication module

Type	Code	Communications	Protocol
CEM-M-RS485	[*] Q23100.	RS-485	Modbus
CEM-M-ETH	[C] Q23400.	Ethernet	Modbus-TCP



EDMk, Three-phase energy meters, external current transformer

Type	Code	Tariff	Transistor output	Communications	Módulos	Units
230 Vac supply - To other values see codification table						
EDMK-ITF-RS485-C2	[*] M31751.	1	2	RS-485	3	kWh, kvarLh, kvarCh
MID						
EDMk-MID-ITF-RS485-C	[*] M317C4.	1	1	RS-485	3	kWh, kvarLh, kvarCh
EDMK-MC-ITF-RS485-C2	[*] M31781.	1	2	RS-485	3	kWh, kvarLh, kvarCh



MC3, Three-phase current transformers

Type	Code	A (max.)	Class 0,5 Power (VA)	System	Usefull diam.(mm)
MC3 - 63 A	[*] M73121.	63	0,1	Three-phase	7,1
MC3 - 125 A	[*] M73122.	125	0,1	Three-phase	14,6
MC3 - 250 A	[*] M73123.	250	0,1	Three-phase	26



MC1, Triple scale single-phase efficient transformers

Type	Code	Measurement Range (A)	A (max.)	Class 0,5 Power (VA)	System	Usefull diam.(mm)
MC1-15-75	[*] M73112.	75	75	0,25	Single-phase	15
MC1-20-50/100/150 A	[*] M73118.	50/100/150	150	0,25	Single-phase	20
MC1-35-50/100/150 A	[*] M73116.	50/100/150	150	0,25	Single-phase	35
MC1-20-150/200/250 A	[*] M73113.	150/200/250	250	0,25	Single-phase	20
MC1-30-250/400/500 A	[*] M73114.	250/400/500	500	0,25	Single-phase	30
MC1-55-500/1000/1500 A	[*] M73115.	500/1000/1500	1500	0,25	Single-phase	55
MC1-80 1000/1500/2000 A	[*] M73117.	1000/1500/2000	2000	0,25	Single-phase	80

CODIFICATION TABLE

CEM		Q	2	X	X	X	X	0	0	X	X	X	X	X	Delivery time
Code	Internal code														
	Meas.V	Standard (1x230 V)	0												-
Current input	CEM10	1x127 V _{ac}	1												2
	CEM 10	Standard (5 (65) A)	0												-
	CEM 20	10 (60) A	1												2
Energy measure	CEM 30	Standard (5 (6) A)	0												-
		5 (10) A	1												2
Quadrants	Standard (Active+reactive)	0													-
	Active	1													2
Quadrants	Standard (ABS)	0	0												-
		2		0	1	2									2
Quadrants		4		0	2	2									2

EDMk		M	3	X	X	X	X	0	0	X	0	0	X	X	Delivery time
Code	Internal code														
	Power supply voltage	Standard (230 V _{ac})	0												-
Power supply voltage	85...265 V _{ac}									C					1
	95...300 V _{dc}														-
Others	Standard (without battery)									0	0				-
	With battery (it is used to read energy meters only in event of no mains supply)									3	0				1


NEW
CEM, Single-phase and three-phase energy meters

Type	Code	Measurement Range (V)	Input current	System	Transistor output	Communications	Measure
CEM-C6	[*] Q26112.	1 x 230	10 (100) A	Single-phase	1	RS-485	Direct


MK-DC, Direct current energy meter

Type	Code	Measurement Range (V)	Tariff	Módulos	Measure	Units	Display
MK30-DC	[3] M30300.	0...800	1	1	30 Adc	V, A, kW, kWh	LED
MK-SH-DC	[*] M30400.	0...800	1	1	.../ 60 mV (*)	V, A, kW, kWh	LED
MK-30-DC M:125Vcc	[3] M303000000D00	0...125	1	1	30 Adc	V, A, kW, kWh	LED
MK-SH-DC M:125Vcc	[3] M304000000D00	0...125	1	1	.../ 60 mV (*)	V, A, kW, kWh	LED


LM Impulse centralisers, see section Measurement/Control devices
RS/TCP/CMBUS, Communication converters


Type	Code	Description
RS2RS	[*] M62141.	RS-232/485 Intelligent converter and amplifier (RTS control) for PC
USB-RS 485	[*] M54040.	USB to RS-485 Converter
USB-RS 232	[*] M54050.	USB to RS-232 Converter
TCP1RS+	[*] M62121.	RS-485 / Ethernet modbus/TCP Converter
TCP2RS+	[*] M54033.	RS-232/485 Converter / Ethernet Modbus/TCP. Built-in web server and web set-up
CMBUS-8	[*] M540A0.	M-Bus to Modbus Converter, up to 8 Mbus slaves
CMBUS-24	[*] M540B0.	M-Bus to Modbus Converter, up to 24 Mbus slaves

AIR, Wireless converters and probes

Wi-fi converters and sensors



Type	Code	Description
air GATEWAY	[*] M62001.	Router RS485 Modbus/RTU to Radio
air BRIDGE	[*] M62002.	Radio Router to RS485 Modbus/RTU
air REPEATER	[*] M62003.	Signal repeater
air THL	[*] M62004.	Wireless temperature, relative humidity and brightness analyzer
air HANDZER	[*] M62005.	Portable wireless signal coverage analyzer
air TIDCI	[1] M62006.	2 NTC sensor + 2 S0 impulse counter

Modems, Communication accessories

Type	Code	Description
M-GSM 10 BITS	[*] Q30213IB00000	GSM RS-232/485 Modem (includes antenna + cable). Parameterisation with even parity (10 bits)
M-GSM 11 BITS	[*] Q30213EN00000	GSM RS-232/485 Modem (includes antenna + cable). Parameterisation with even parity (11 bits)
SGE-3G/GPRS	[*] Q30230.	GPRS-3G Modem with Ethernet communications (includes PS + antenna + cable)
ANTENA GSM UT-35 9db	[1] Q4994E.	Antenna 9 db (for GSM modem)

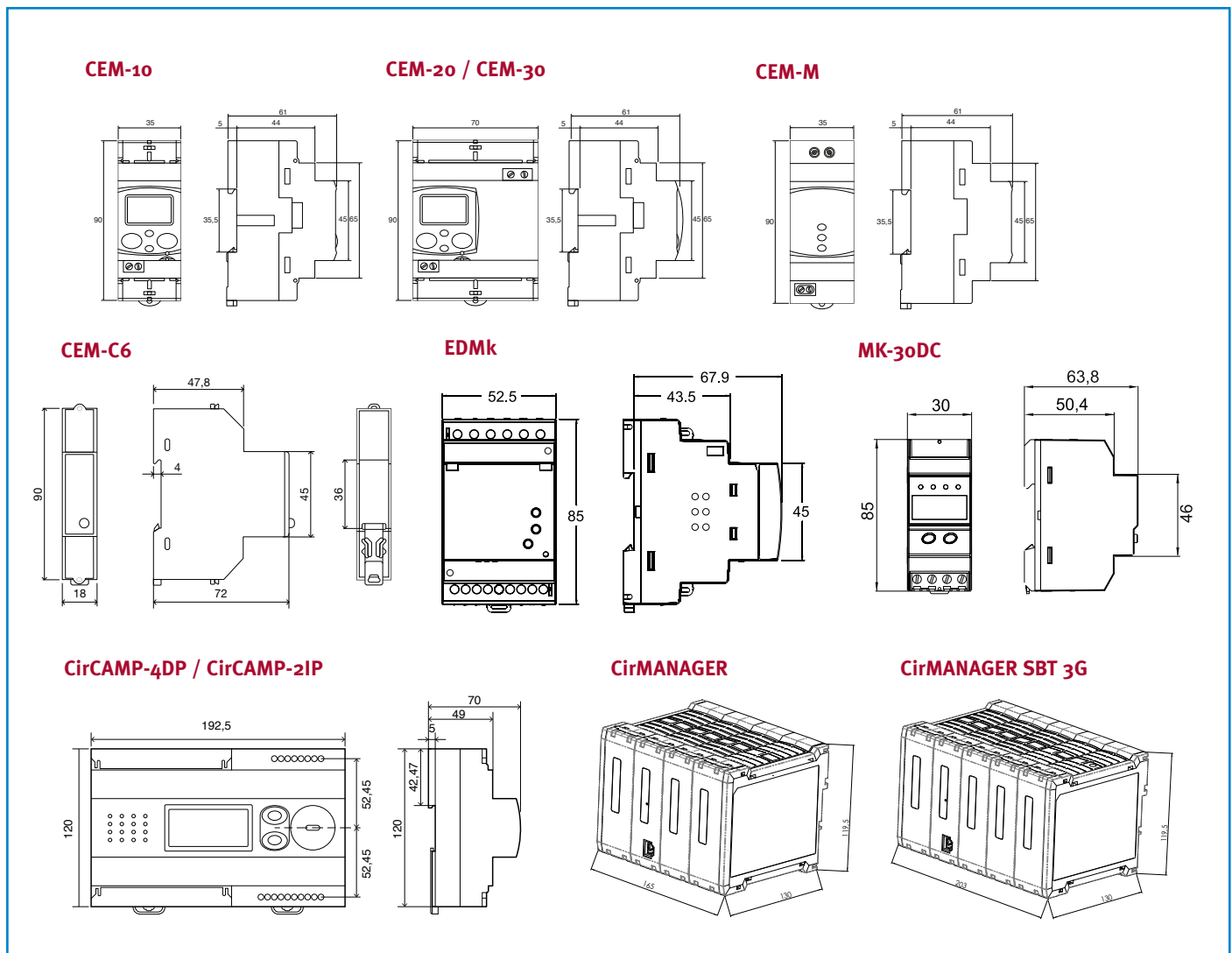


PowerStudio, Energy management software

Type	Code	Description
Software SCADA		
PowerStudio	[*] M90211.	Software with USB HASP licence. Configuration, monitoring in real time, display of graphs and tables
PowerStudio-Scada	[*] M90231.	Software with USB HASP licence. Configuration, monitoring in real time, display of graphs and tables, generation of reports, creation of SCADA screens and alarms
PowerStudio-Deluxe	[C] M90241.	Software with USB HASP licence. Software PowerStudio-Scada with Generic Modbus driver used to connect to other devices available in the market
OPC Server PS/PSS	[1] M91111.	Software with USB HASP licence. OPC Sever for PowerStudio is an integration platform that can easily integrate the parameters received from PowerStudio (or any of its versions) in any SCADA platform available in the market with a simple approach.
SQL DATA EXPORT	[1] M91301.	Software with USB HASP licence. SQL Data Export for PS/PSS is a software tool for the integration of data from PS/PSS to a new or existing SQL database.

License 4.0 version 4.0

Dimensions







PROTECTION AND CONTROL

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Self-reclosing overcurrent and Earth leakage protection

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OUTSTANDING PRODUCTS

	RG1M	RGU-2	RGU-10B	RGMD	REC3/REC3C	RECmax CVM
						
	Earth leakage relays 1 module	Earth leakage relays 2 modules	Type-B earth leakage current monitoring relay	Earth leakage protection assembly with built-in circuit breaker protection	RCCB with self-reclosing system and output contact	Self-reclosing earth leakage really with power analyzer functions
Page	97	97	99	99	103	104

Industrial earth leakage protection

Table: Selection of earth leakage relays

	RG1M	WRN-22	RGE-R	WGBU	RGU-2	RGU-10	CBS-4	WRU-10	RGU-10B	IDB4	WGB-35-TB
Client requirements											
Continuity of service Prevents unwanted tripping	•	•	•	•	•	•	•	•	•	•	•
Control, telemanagement	-	-	-	-	•	•	•	•	•	-	-
Monitoring (display/PC)	-	-	-	-	•	•	•	•	•	-	-
Preventive maintenance, prealarm	-	-	•	•	•	•	•	•	•	-	-
Installation											
Use in single-phase installations	•	•	•	•	•	•	•	•	•	•	•
Three-phase, with & without neutral	•	•	•	•	•	•	•	•	•	•	•
WGC External earth leakage transformers	•	-	•	-	•	•	•	-	WGC-TB	-	-
Useful section diameter ø (mm)	DET	22	DET	35...210	DET	DET	DET	28	DET	-	35
Size in modules	1	3	2	-	2	3	3	3	3	4	-
Model features											
Earth leakage protection type (IEC 60755)	A	A	A	A	A	A	A	A	B	B	B
Use as instantaneous protection	•	•	•	•	•	•	•	•	-	•	•
Use as selective protection / monitoring	-	-	•	•	•	•	•	•	•	-	•
Fixed sensitivity and trip delay	•	•	-	-	-	-	-	-	-	•	•
Adjustable sensitivity and trip delay	-	-	•	•	•	•	•	•	•	-	-
RS-485/Modbus communications protocol	-	-	-	-	•	•	•	-	-	-	-
External input, remote control	-	-	-	-	•	•	•	•	•	-	-
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DET - Depending on the external transformer

WGC, Earth leakage transformer


Type	Code	Usefull diam.(mm)	IΔn	weight (kg)
WGC-20-SC	[*] P10181.	20	acc. relay	0,08
WGC-30-SC	[*] P10182.	30	acc. relay	0,10
WGS-20	[*] P10131.	20	acc. relay	0,08
WGS-30	[*] P10132.	30	acc. relay	0,10
WGC-25	[*] P10151.	25	acc. relay	0,08
WGC-35	[*] P10152.	35	acc. relay	0,12
WGC-55	[*] P10153.	55	acc. relay	0,16
WGC-80	[*] P10154.	80	acc. relay	0,30
WGC-110	[*] P10155.	115	acc. relay	0,42
WGC-140	[*] P10156.	140	acc. relay	0,76
WGC-180	[*] P10157.	180	acc. relay	1,48
WGC-220x105	[*] P10158.	220 x 105	acc. relay	3,74
WGC-350x150	[*] P10159.	350 x 150	acc. relay	7,80
WGC-500x200	[*] P10160.	500 x 200	acc. relay	11,30

UL certification for all WGC and WGS models, on demand

Type	Code	Description
PA-TC/WG (kit 2 uds)	[*] P19921.	DIN rail mounting accessory for WGC-25, WGC-35 and WGC-55

**TP-WG, Split-core earth leakage transformers/core balanced**

Type	Code	Usefull diam.(mm)	I Δ n	I Δ n min.(A)	weight (kg)
TP58 WGC	[C] P11121.	80 x 50	acc. relay > 0,3A	0.3	1
TP88 WGC	[C] P11131.	80 x 80	acc. relay > 0,3A	0.3	1.3
TP812 WGC	[C] P11141.	120 x 80	acc. relay > 0,3A	0.3	1.6
TP816 WGC	[C] P11151.	160 x 80	acc. relay > 0,3A	0.3	4.1

Only for RGU-2, RGU-10/10C, CBS-4/4C

**RGU-10, Earth leakage relay for Type A ultra-immunised WGC Transformer, 3 modules with display and programmable pre-alarm output.**

Type	Code	I Δ n	Módulos	Delay	Communications	Power supply
Possibility UL on demand						
RGU-10	[*] P11941.	0,03 ... 3 A	0,03 ... 30 A 3	0,02 ... 10 s, INS, SEL (*1)(*2)	-	230 Vac
RGU-10C	[*] P11944.	0,03 ... 3 A	0,03 ... 30 A 3	0,02 ... 10 s, INS, SEL (*1)(*2)	RS-485	230 Vac

(*1) The delay is cancelled in all relays with a 0.03 A sensitivity adjustment, according to IEC 60947-2, annex M (*2) INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a tripping time < 0.02 s Requires a WGC earth leakage transformer To encode other parameters, such as the auxiliary power supply voltage, see the table at the end of the section

Type	Code	Description
ADP CVM-MINI/ RGU10/CBS4	[*] M5ZZF1.	Panel adapter CVM MINI / RGU-10 / CBS-4 (72 x 72)

**RGU-2, Programmable earth leakage relay, 2 modules with display and static prealarm output**

Type	Code	I Δ n	Módulos	Mounting	Delay	Power supply
RGU2	[*] P11A61.	0,03 ... 5A	2	DIN rail	0,1 ... 5 s, INS, SEL (*1)(*2)	120...230 Vac

(*1) The delay is cancelled in all relays with a 0.03 A sensitivity adjustment, according to IEC 60947-2, annex M (*2) INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a tripping time < 0.02 s Requires a WGC earth leakage transformer To encode other parameters, such as the auxiliary power supply voltage, see the table at the end of the section

RG1M, Earth leakage relays 1 module

Type	Code	I Δ n	Módulos	Mounting	Delay	Power supply
RG1M - 0,03	[*] P12204.	0,03 A	1	DIN rail	0,02 S	230 Vac
RG1M - 0,3	[*] P12214.	0,3 A	1	DIN rail	0,02 S	230 Vac

(*1) The delay is cancelled in all relays with a 0.03 A sensitivity adjustment, according to IEC 60947-2, annex M (*2) INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a tripping time < 0.02 s Requires a WGC earth leakage transformer To encode other parameters, such as the auxiliary power supply voltage, see the table at the end of the section

**RGE, Earth leakage relay for WGC transformer, type A, 2 modules with visual prealarm.**

Type	Code	I Δ n	Módulos	Mounting	Delay	Power supply
RGE-R1	[*] P12231.	0,03 ... 3 A	2	DIN rail	0,02 ... 1 s (*1)	230 Vac
RGE-RL	[*] P12A32.	0,03 ... 5 A	2	DIN rail	0,02 ... 5 s (*1)	230 Vac
RGE-R	[*] P122320040000	0,03 ... 5 A	2	DIN rail	0,02 ... 5 s (*1)	24...48 Vac / 24...125 Vdc

Requires a WGC earth leakage transformer To encode other parameters, such as the auxiliary power supply voltage, see the table at the end of the section




CBS-4, Station with 4 programmable earth leakage relays, 4 modules with display and a configurable prealarm output.

Type	Code	I Δ n	N° relays	Módulos	Delay	Communications	Power supply
CBS-4	[*] P12711.	0,03 ... 30 A	4	3	0,02 ... 10 s, INS, SEL	-	230 Vac
CBS-4C	[*] P12712.	0,03 ... 30 A	4	3	0,02 ... 10 s, INS, SEL	RS-485	230 Vac

The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2, annex M
 Delay: INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a trip time <0.02 s
 Optional UL certification in CBS-4 at 230 Vac (not available for other power supply values).
 To encode other parameters, such as the auxiliary power supply voltage, see the table at the end of the section

Type	Code	Description
ADP CVM-MINI/ RGU10/CBS4	[*] M5ZZF1.	Panel adapter CVM MINI / RGU-10 / CBS-4 (72 x 72)


WRU, Type A ultra-immunised earth leakage relay with built-in transformer

Programmable earth leakage relay, 3 modules with display and two configurable pre-alarm outputs. 230 Vac Auxiliary power supply

Type	Code	Usefull diam.(mm)	I Δ n	Módulos	Delay	Power supply
WRU-10	[*] P14035.	28	0,03 ... 3 A / 0,03 ... 30 A	3	0,02 ... 10s, INS, SEL	230 Vac

The delay is cancelled in all relays with a 0.03 A sensitivity adjustment, according to IEC 60947-2, annex M
 INS, SEL trip curves, according to IEC 61008-10, for trigger coils with a tripping time <0.02 s
 To encode other parameters, such as the auxiliary power supply voltage, see the table at the end of the section


WRN, Earth leakage relay with built-in transformer, Type A

Type	Code	Usefull diam.(mm)	I Δ n	Delay
WRN-22-0,03	[*] P14211.	22	0,03 A	0,02 s
WRN-22-0,3	[*] P14212.	22	0,3 A	0,02 s
WRN-22-0,01	[*] P14214.	22	0,01 A	0,02 s


WGBU, Transformer with built-in earth leakage relay, Type A.

Configurable earth leakage relay with visual pre-alarm. 230 Vac Auxiliary power supply

Type	Code	Usefull diam.(mm)	I Δ n	Delay
WGBU-35	[*] P16011.	35	0,03 ... 3 A	0,02...1 s
WGBU-70	[*] P16012.	70	0,03 ... 3 A	0,02...1 s
WGBU-105	[*] P16013.	105	0,03 ... 3 A	0,02...1 s
WGBU-140	[*] P16014.	140	0,03 ... 3 A	0,02...1 s
WGBU-210	[*] P16015.	210	0,03 ... 3 A	0,02...1 s
WGBU-90-35	[*] P16021.	35	0,03 ... 3 A	0,02...1 s
WGBU-90-70	[*] P16022.	70	0,03 ... 3 A	0,02...1 s
WGBU-90-105	[*] P16023.	105	0,03 ... 3 A	0,02...1 s
WGBU-90-140	[*] P16024.	140	0,03 ... 3 A	0,02...1 s
WGBU-90-210	[*] P16025.	210	0,03 ... 3 A	0,02...1 s

The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2, annex M

CODIFICATION TABLE

RGU-10, RGE, CBS-4, WRU-10		
Code	Internal code	
P 1 X X X X 0 0 X	X X	
	↑ ↑ ↑ Delivery time	
Standard (230 V _{ac})	0	--
Power supply voltage	1	1
110 V _{ac}	1	
400 V _{ac} (Only RGE, RGU-10)	3	1
24..48 V _{dc} , 24...125 V _{dc} (Only RGE, RGU-10)	4	1
Certificate UL (Only RGU10/10C - 230 V _{ac})	0 7	2
Certificate CCC (Only RGU10 - 230 V _{ac})	0 8	2

Delivery time: [*] immediate
 [x] working weeks
 [c] consult

**RGMD, Earth leakage protection assembly with miniature circuit breaker, ultra-immunised**

Type	Code	In (A)	Poles	Sensitivity
RGMD Series, type A - 2 poles				
RGMD-2-16-30	[1] P13231.	16 A	2	30 mA
RGMD-2-25-30	[1] P13251.	25 A	2	30 mA
RGMD-2-32-30	[1] P13261.	32 A	2	30 mA
RGMD-2-40-30	[1] P13271.	40 A	2	30 mA
RGMD-2-63-30	[1] P13291.	63 A	2	30 mA
RGMD-2-16-300	[1] P13233.	16 A	2	300 mA
RGMD-2-25-300	[1] P13253.	25 A	2	300 mA
RGMD-2-32-300	[1] P13263.	32 A	2	300 mA
RGMD-2-40-300	[1] P13273.	40 A	2	300 mA
RGMD-2-63-300	[1] P13293.	63 A	2	300 mA
RGMD Series, type A - 4 poles				
RGMD-4-16-30	[1] P13431.	16 A	4	30 mA
RGMD-4-25-30	[1] P13451.	25 A	4	30 mA
RGMD-4-32-30	[1] P13461.	32 A	4	30 mA
RGMD-4-40-30	[1] P13471.	40 A	4	30 mA
RGMD-4-63-30	[1] P13491.	63 A	4	30 mA
RGMD-4-16-300	[1] P13433.	16 A	4	300 mA
RGMD-4-25-300	[1] P13453.	25 A	4	300 mA
RGMD-4-32-300	[1] P13463.	32 A	4	300 mA
RGMD-4-40-300	[1] P13473.	40 A	4	300 mA
RGMD-4-63-300	[1] P13493.	63 A	4	300 mA

It features an RG1M earth leakage relay, WGS/WGC earth leakage transformer and C curve circuit breaker, 6 kA (EN 60898) with 230 Vac trigger coil

Earth leakage relay for Type B**WGC-TB, Earth leakage transformers for type-B earth leakage relays**

Type	Code	Usefull diam.(mm)	I Δ n min.(A)	weight (kg)
WGS-20-TB	[*] P11731.	20	0.1	0,08
WGC-25-TB	[*] P11751.	25	0.1	0,09
WGC-35-TB	[*] P11752.	35	0.1	0,13
WGC-55-TB	[*] P11753.	55	0.3	0,18
WGC-80-TB	[*] P11755.	80	0.5	0,32
WGC-110 TB	[*] P11756.	110	0.5	0,44
WGC-140TB	[*] P11757.	140	0.5	0,79
WGC-180 TB	[*] P11758.	180	0.5	1,53

RGU-10B, Earth leakage current monitoring relay, type-B

Programmable earth leakage relay, 3 modules with display and configurable pre-alarm output.



Type	Code	I Δ n	Módulos	Mounting	Delay	Power supply
RGU10B	[*] P11951.	0,1 ... 3 A	3	DIN rail	0,1 ... 10 s	230 Vac

Requires an earth leakage transformer, WGC-TB type

IDB-4, RCCB Type B

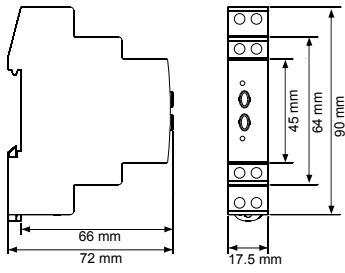
Type	Code	In (A)	Poles	Sensitivity
IDB-4 4P-40A-30 mA	[*] P17221.	40 A	4	30 mA
IDB-4 4P-40A-300 mA	[*] P17222.	40 A	4	300 mA
IDB-4 4P-63A -30 mA	[*] P17231.	63 A	4	30 mA
IDB-4 4P-63A -300mA	[*] P17232.	63 A	4	300 mA

WGB-35-TB, Relay Type B built-in earth leakage current transformer

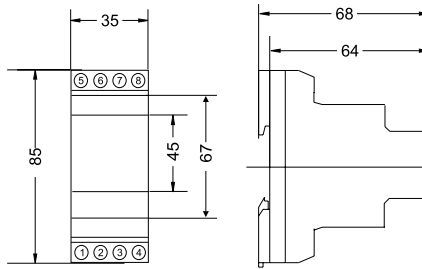
Type	Code	Delay	Sensitivity
WGB-35-TB30	[*] P16111.	INS	30 mA
WGB-35-TB300	[*] P16121.	INS	300 mA
WGB-35-TB300S	[*] P16131.	SEL	300 mA

Dimensions

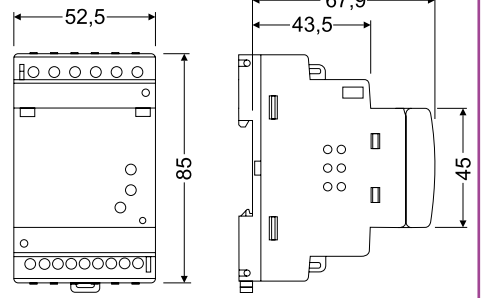
RG1M



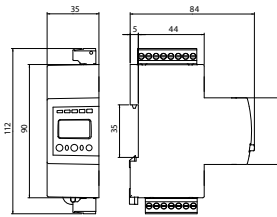
RGE



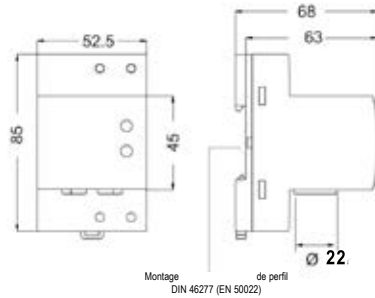
RGU-10 / CBS-4



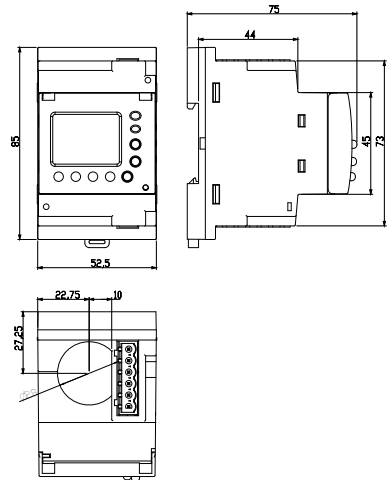
RGU2



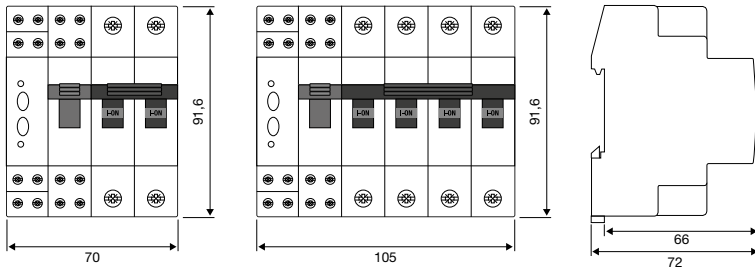
WRN-22



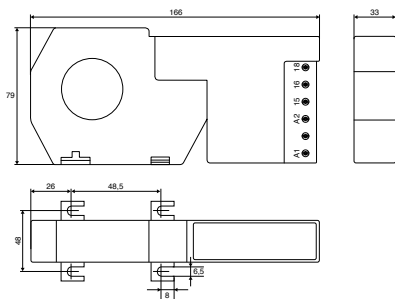
WRU-10



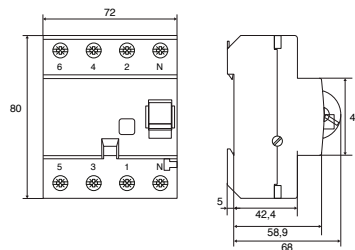
RGMD 2P / RGMD 4P



WGB-35-TB



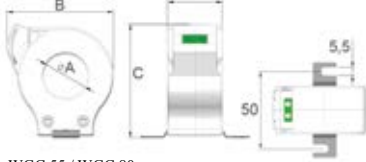
IDB-4



Dimensions

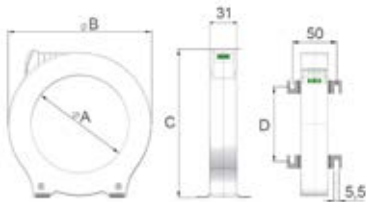
WGC / WGC-TB

WGC 25 / WGC 35

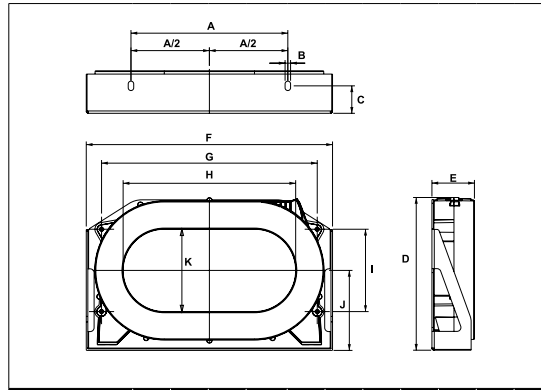


WGC 55 / WGC 80

WGC 110 / WGC 140

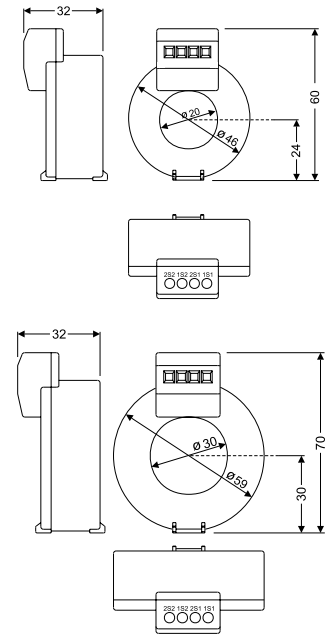


Modelo	A	B	C	D
WGC 25	25	60,5	64	
WGC 35	35	70,5	75,5	
WGC 55	55	92	98	38
WGC 80	80	124,5	130	60
WGC 110	110	163	168	84,5
WGC 140	140	201	206	110
WGC 180	180	252	256	144

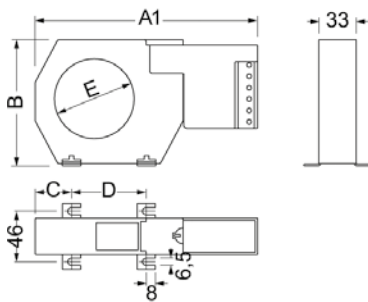


	A	B	C	D	E	F	G	H	I	J	K
WGC 220x105	200	7	35	195	54,2	314	275	220	105	102	105
WGC 350x150	340	7	30	279	50,2	479	430	350	165	143	150
WGC 500x200	460	7	40	306	64	614	550	500	180	155	200

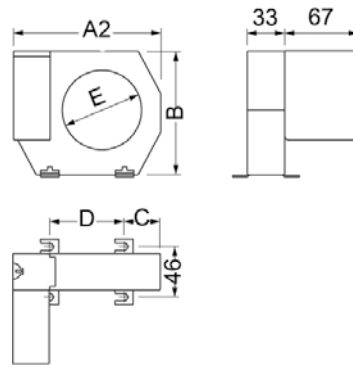
WGS



WGBU

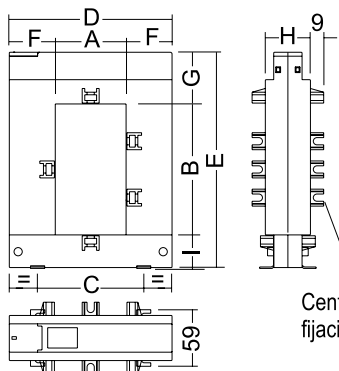


WGBU-90



Type	A1	A2	B	C	D	E
WGBU-35 (A1) / WGBU-90-35 (A2)	166	100	79	26	48,5	35
WGBU-70 (A1) / WGBU-90-70 (A2)	196	130	110	332	66	70
WGBU-105 (A1) / WGBU-90-105 (A2)	236	170	146	38	94	105
WGBU-140 (A1) / WGBU-90-140 (A2)	286	220	196	48,5	123	140
WGBU-210 (A1) / WGBU-90-210 (A2)	365	299	284	69	161	210

TP-WGC



Centradores de fijación pletina

dimensiones (mm)	TP-23	TP-58	TP-88	TP-812	TP-816
a	20	50	80	80	80
b	30	80	80	120	160
c	51	78	108	108	120
d	89	114	144	144	184
e	110	145	145	185	245
f	34	32	32	32	52
g	47	32	32	32	47
h	40	32	32	32	52
i	32	32	32	32	38

Nota: Todos los tipos llevan centradores de fijación, excepto el TP-23

Self-reclosing overcurrent and Earth leakage protection

Table: Selection of self-reclosing earth leakage and circuit breaker protection units

Protection	Reclosing	Solutions	Units	Page
Earth leakage	Earth leakage	Self-reclosing RCCB	REC2 / REC3C	103
		Programmable earth leakage relay + external transformer + contactor	RGU-10 RAL + WGC	105
			CBS-4 RA + WGC	103
		Programmable earth leakage relay with built-in transformer + contactor	WRU RAL	104
Earth leakage and circuit breaker	Earth leakage	Earth leakage relay with built-in transformer + Motorized circuit breaker	WRU-10k + MCB.P	105
		Programmable earth leakage relay with circuit breaker + external transformer	RECmax-LDP + WGC 25/30/35	104
	Earth leakage and circuit breaker	Programmable earth leakage relay with circuit breaker +MEASURE + external transformer	RECmax-CVM + WGC 20/30-SC + MC1	104
		Programmable earth leakage relay + external transformer + motorized circuit breaker	RGU-10 MT + WGC + RECmax MP + MT-FDE ($I_n > 63$ A)	105
		Earth leakage relay with built-in transformer + motorized circuit breaker	WRU-10 MT + RECmax MP	106
	Compact unit, ready to be installed	WRGU-10 MTT	107	
	Circuit breaker	Circuit breaker	Self-reclosing circuit breaker	RECmax P
Programmable reclosing relay + motorized switch			RRM + MT/RECmax MP (consult)	107

WGC, Earth leakage transformer


Type	Code	Usefull diam.(mm)	IΔn	weight (kg)
WGC-20-SC	[*] P10181.	20	acc. relay	0,08
WGC-30-SC	[*] P10182.	30	acc. relay	0,10
WGS-20	[*] P10131.	20	acc. relay	0,08
WGS-30	[*] P10132.	30	acc. relay	0,10
WGC-25	[*] P10151.	25	acc. relay	0,08
WGC-35	[*] P10152.	35	acc. relay	0,12
WGC-55	[*] P10153.	55	acc. relay	0,16
WGC-80	[*] P10154.	80	acc. relay	0,30
WGC-110	[*] P10155.	115	acc. relay	0,42
WGC-140	[*] P10156.	140	acc. relay	0,76
WGC-180	[*] P10157.	180	acc. relay	1,48
WGC-220x105	[*] P10158.	220 x 105	acc. relay	3,74
WGC-350x150	[*] P10159.	350 x 150	acc. relay	7,80
WGC-500x200	[*] P10160.	500 x 200	acc. relay	11,30

UL certification for all WGC and WGS models, on demand

Type	Code	Description
PA-TC/WG	[*] P19921.	DIN rail mounting accessory for WGC-25, WGC-35 and WGC-55

TP-WG, Split-core earth leakage transformers/core balanced


Type	Code	Usefull diam.(mm)	IΔn	IΔn min.(A)	weight (kg)
TP58 WGC	[C] P11121.	80 x 50	acc. relay > 0,3A	0.3	1
TP88 WGC	[C] P11131.	80 x 80	acc. relay > 0,3A	0.3	1.3
TP812 WGC	[C] P11141.	120 x 80	acc. relay > 0,3A	0.3	1.6
TP816 WGC	[C] P11151.	160 x 80	acc. relay > 0,3A	0.3	4.1

Only for RGU-2, RGU-10/10C, CBS-4/4C

 Delivery time: [*] immediate
 [x] working weeks
 [c] consult

EARTH LEAKAGE PROTECTION AND SELF-RECLOSING

**REC3, RCCB with self-reclosing system, type A**

Type	Code	In (A)	Poles	Sensitivity	Reclosing mode
REC3-2P-40-30M	[*] P26121.	40 A	2	30 mA	Isulation
REC3-2P-63-30M	[*] P26131.	63 A	2	30 mA	Isulation
REC3-2P-40-300T	[*] P26123.	40 A	2	300 mA	Time
REC3-2P-63-300T	[*] P26133.	63 A	2	300 mA	Time
REC3-4P-40-30M	[*] P26221.	40 A	4	30 mA	Isulation
REC3-4P-63-30M	[*] P26231.	63 A	4	30 mA	Isulation
REC3-4P-40-300T	[*] P26223.	40 A	4	300 mA	Time
REC3-4P-63-300T	[*] P26233.	63 A	4	300 mA	Time

RCCB with self-reclosing system and output contact

REC3C 2P-40-30M	[*] P26811.	40 A	2	30 mA	Isulation
REC3C 2P-63-30M	[*] P26814.	63 A	2	30 mA	Isulation
REC3C 2P-40-300T	[*] P26721.	40 A	2	300 mA	Time
REC3C 2P-63-300T	[*] P26724.	63 A	2	300 mA	Time
REC3C 4P-40-30M	[*] P26812.	40 A	4	30 mA	Isulation
REC3C 4P-63-30M	[*] P26815.	63 A	4	30 mA	Isulation
REC3C 4P-40-300T	[*] P26722.	40 A	4	300 mA	Time
REC3C 4P-63-300T	[*] P26725.	63 A	4	300 mA	Time

3 reconections: 3, 20, 180 s. Complies with the EN 50557 Standard

Programmable earth leakage relays, used with an external earth leakage transformer and contactor

Complete set formed by: Earth leakage relay + Contactor + WGC transformer

RGU-10 RAL, Reclosing protection relays and earth leakage reclosing with WGC external transformer

Type A ultra-immunised earth leakage relay, programmable, 3 modules with display and locking status release by reclosing. 230 Vac auxiliary power supply.



Type	Code	IΔn	Breaking element	Delay	Communications	Nr. reclosures
RGU-10 RAL	[*] P24622.	0,03 ... 30 A	Contactor	0,02...10 s, INS, SEL	-	Programmable
RGU-10C RAL	[*] P24662.	0,03 ... 30 A	Contactor	0,02...10 s, INS, SEL	RS-485	Programmable

The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2, annex M.

(*1) INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a trip time <0.02 s

Requires an earth leakage transformer, WGC type and contactor (not included)

To encode other parameters, see the table at the end of the section

CBS4-RA, Central protection and earth leakage reclosing with WGC external transformer

Station with 4 Type A ultra-immunised earth leakage relays, programmable, 4 modules with display and locking status release by reclosing. 230 Vac Auxiliary power supply



Type	Code	IΔn	Nº relays	Delay	Communications	Nr. reclosures
CBS-4 RA	[*] P24911.	0,03 ... 30 A	4	0,02 ... 10 INS, SEL	-	Programmable
CBS-4C-RA	[*] P24912.	0,03 ... 30 A	4	0,02 ... 10 INS, SEL	RS-485	Programmable

The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2, annex M

(*1) INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a trip time <0.02 s

Requires an earth leakage transformer, WGC type and contactor (not included)

To encode other parameters, see the table at the end of the section

Programmable earth leakage relays with built-in transformer, used with a contactor

Complete set formed by: Earth leakage relay + Contactor

WRU-10RAL, Protection relays and earth leakage reclosing, Type A ultra-immunised with built-in transformer

Relé diferencial programable, 3 módulos, display con salida de prealarma y bloqueo por reconexiones. Alimentación auxiliar 230 Vca



Type	Code	Usefull diam.(mm)	IΔn	Delay	Nr reclosures	Time between reclosures
WRU-10-RAL	[*] P24453.	28	0,03 ... 3 A 0,03 ... 30 A	0,02...10 s, INS, SEL (*1)	Programmable	Programmable

STREET LIGHTING WITH SIGN POSTING, contactor circuit breaker

WRU-10-RAL0,3-1	[*] P24457.	28	0,3 ... 1 A	0,02 INS	Programmable	Programmable
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The delay is cancelled in all relays with a 0.03 A sensitivity adjustment, according to IEC 60947-2, annex M (*2) INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a tripping time < 0.02 s The contactor is not supplied. To encode other parameters, see the table at the end of the section

OVERCURRENT AND EARTH LEAKAGE PROTECTION, EARTH LEAKAGE SELF-RECLOSING
Programmable earth leakage relays with built-in transformer and motorized circuit breaker

Complete set formed by: Earth leakage relay K Series + MCB circuit breaker


WRU-10k, Earth leakage relay with built-in transformer

Relé diferencial tipo A ultraimmunizado, programable en 3 módulos, display para funcionar con disyuntor MCB.P. Alimentación auxiliar 230 Vca

Type	Code	Usefull diam.(mm)	IΔn	Delay	Nr reclosures	Time between reclosures
WRU-10K	[C] P23261.	28	0,03 ... 3 A	0,02 ... 1 s	30	20 s, 40 s and all others every 5 min
WRU-10K	[C] P23262.	28	0,03 A	INS	15	20 s, 40 s then every 5 min

Certified and Approved by Telefónica The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2 annex M. Requires a motorised circuit breaker, MCB.P type (not included)

MCB, Motorized circuit breakers for overcurrent and earth leakage protection with reclosing by differential relay


Type	Code	In (A)	Poles	Type	Code	In (A)	Poles
2 Poles, C Curve				4 Poles, C Curve			
MCB.P C-2p-6A	[*] P20210.	6 A	2	MCB.P C-3p+N-10A	[*] P20221.	10 A	4
MCB.P C-2p-10A	[*] P20211.	10 A	2	MCB.P C-3p+N-16A	[*] P20223.	16 A	4
MCB.P C-2p-16A	[*] P20213.	16 A	2	MCB.P C-3p+N-20A	[*] P20224.	20 A	4
MCB.P C-2p-20A	[*] P20214.	20 A	2	MCB.P C-3p+N-25A	[*] P20225.	25 A	4
MCB.P C-2p-25A	[*] P20215.	25 A	2	MCB.P C-3p+N-32A	[*] P20226.	32 A	4
MCB.P C-2p-32A	[*] P20216.	32 A	2	MCB.P C-3p+N-40A	[*] P20227.	40 A	4
MCB.P C-2p-40A	[*] P20217.	40 A	2	MCB.P C-3p+N-50A	[*] P20228.	50 A	4
MCB.P C-2p-50A	[*] P20218.	50 A	2	MCB.P C-3p+N-63A	[*] P20229.	63 A	4
MCB.P C-2p-63A	[*] P20219.	63 A	2	Contacto aux.MCB/P/T	[*] P29001.	-	-

Only for operation with WRU-10K

C curve circuit breaker with a 6 kA cut off power (EN 60898); optional D curve (up to 32 A), for an additional charge of 10%

OVERCURRENT AND EARTH LEAKAGE PROTECTION AND RECLOSING
Programmable earth leakage relays with circuit breaker and external transformer

Set composed of: Earth leakage relay with built-in circuit breaker + WGC-SC Transformer + MC Measurement transformer


RECmax-CVM, Self-reclosing earth leakage really with power analyzer functions, transformers included

Type	Code	In (A)	Poles	Type	Code	In (A)	Poles
RECmax-CVM 2P C2-10	[2] P2B111.	10	2	RECmax-CVM 2P D2-10	[2] P2B131.	10	2
RECmax-CVM 2P C2-16	[2] P2B112.	16	2	RECmax-CVM 2P D2-16	[2] P2B132.	16	2
RECmax-CVM 2P C2-20	[2] P2B113.	20	2	RECmax-CVM 2P D2-20	[2] P2B133.	20	2
RECmax-CVM 2P C2-25	[2] P2B114.	25	2	RECmax-CVM 2P D2-25	[2] P2B134.	25	2
RECmax-CVM 2P C2-32	[2] P2B115.	32	2	RECmax-CVM 2P D2-32	[2] P2B135.	32	2
RECmax-CVM 2P C2-40	[2] P2B116.	40	2	RECmax-CVM 2P D2-40	[2] P2B136.	40	2
RECmax-CVM 2P C2-50	[2] P2B117.	50	2	RECmax-CVM 2P D2-50	[2] P2B137.	50	2
RECmax-CVM 2P C2-63	[2] P2B118.	63	2	RECmax-CVM 2P D2-63	[2] P2B138.	63	2
RECmax-CVM 4P C4-10	[2] P2B121.	10	4	RECmax-CVM 4P D4-10	[2] P2B141.	10	4
RECmax-CVM 4P C4-16	[2] P2B122.	16	4	RECmax-CVM 4P D4-16	[2] P2B142.	16	4
RECmax-CVM 4P C4-20	[2] P2B123.	20	4	RECmax-CVM 4P D4-20	[2] P2B143.	20	4
RECmax-CVM 4P C4-25	[2] P2B124.	25	4	RECmax-CVM 4P D4-25	[2] P2B144.	25	4
RECmax-CVM 4P C4-32	[2] P2B125.	32	4	RECmax-CVM 4P D4-32	[2] P2B145.	32	4
RECmax-CVM 4P C4-40	[2] P2B126.	40	4	RECmax-CVM 4P D4-40	[2] P2B146.	40	4
RECmax-CVM 4P C4-50	[2] P2B127.	50	4	RECmax-CVM 4P D4-50	[2] P2B147.	50	4
RECmax-CVM 4P C4-63	[2] P2B128.	63	4	RECmax-CVM 4P D4-63	[2] P2B148.	63	4

All models feature the WGC20/30-SC earth leakage transformer and MC-3 or MC-1 measuring transformer with connected terminal

Earth leakage relay with adjustable sensitivity (0.03 A, up to 1 A), adjustable delay (with curve, INS/SEL, or by time, from 0.1 to 1 s) and programmable automatic reclosing system

 The 0.03 A sensitivity adjustment cancels the delay for a specific period of time, IEC 60947-2, annex M
 C/D curve circuit breaker with 6 kA cut off power (EN 60898). Please contact us for other specifications.

 Delivery time: [*] immediate
 [x] working weeks
 [c] consult



Set composed of: Earth leakage relay with built-in circuit breaker + WG Transformer



RECmaxLPD, Self-reclosing earth leakage relay with circuit breaker, used with an external earth leakage transformer

Type	Code	IΔn	Poles
2 Poles, C Curve			
RECmaxLPd-C2-6	[1] P2A110.	6 A	2
RECmaxLPd-C2-10	[1] P2A111.	10 A	2
RECmaxLPd-C2-16	[1] P2A112.	16 A	2
RECmaxLPd-C2-20	[1] P2A113.	20 A	2
RECmaxLPd-C2-25	[1] P2A114.	25 A	2
RECmaxLPd-C2-32	[1] P2A115.	32 A	2
RECmaxLPd-C2-40	[1] P2A116.	40 A	2
RECmaxLPd-C2-50	[1] P2A117.	50 A	2
RECmaxLPd-C2-63	[1] P2A118.	63 A	2
4 Poles, C Curve			
RECmaxLPd-C4-6	[1] P2A120.	6 A	4
RECmaxLPd-C4-10	[1] P2A121.	10 A	4
RECmaxLPd-C4-16	[1] P2A122.	16 A	4
RECmaxLPd-C4-20	[1] P2A123.	20 A	4
RECmaxLPd-C4-25	[1] P2A124.	25 A	4
RECmaxLPd-C4-32	[1] P2A125.	32 A	4
RECmaxLPd-C4-40	[1] P2A126.	40 A	4
RECmaxLPd-C4-50	[1] P2A127.	50 A	4
RECmaxLPd-C4-63	[1] P2A128.	63 A	4

Type	Code	IΔn	Poles
2 Poles, D Curve			
RECmaxLPd-D2-6	[1] P2A130.	6 A	2
RECmaxLPd-D2-10	[1] P2A131.	10 A	2
RECmaxLPd-D2-16	[1] P2A132.	16 A	2
RECmaxLPd-D2-20	[1] P2A133.	20 A	2
RECmaxLPd-D2-25	[1] P2A134.	25 A	2
RECmaxLPd-D2-32	[1] P2A135.	32 A	2
RECmaxLPd-D2-40	[1] P2A136.	40 A	2
RECmaxLPd-D2-50	[1] P2A137.	50 A	2
RECmaxLPd-D2-63	[1] P2A138.	63 A	2
4 Poles, D Curve			
RECmaxLPd-D4-6	[1] P2A140.	6 A	4
RECmaxLPd-D4-10	[1] P2A141.	10 A	4
RECmaxLPd-D4-16	[1] P2A142.	16 A	4
RECmaxLPd-D4-20	[1] P2A143.	20 A	4
RECmaxLPd-D4-25	[1] P2A144.	25 A	4
RECmaxLPd-D4-32	[1] P2A145.	32 A	4
RECmaxLPd-D4-40	[1] P2A146.	40 A	4
RECmaxLPd-D4-50	[1] P2A147.	50 A	4
RECmaxLPd-D4-63	[1] P2A148.	63 A	4

Earth leakage relay with adjustable sensitivity (0.03 to 1 A), adjustable delay (by curve, INS/SEL, or defined time span from 0.1 to 1 s) and automatic programmable reclosing.

The 0.03 A sensitivity adjustment cancels the delay for a specific period of time, IEC 60947-2, annex M WGS-20/30 and WGC-25/35 earth leakage transformers

C/D curve circuit breaker with 6 kA cut off power (EN 60898). Please contact us for other specifications.

Programmable earth leakage relay with built-in transformer + motorized circuit breaker

Complete set formed by: Earth leakage relay + WG/WGC Transformer + RECmax MP / MT-FDE



RGU-10 MT, Reclosing earth leakage relay for motorized circuit breakers

Type	Code	IΔn	Delay	Communications	Nr. reclosures	Time between reclosures
RGU-10 MT	[*] P24642.	0,03 ... 30 A	0,02...10 s, INS, SEL	-	Programmable	Programmable
RGU-10C MT	[*] P24652.	0,03 ... 30 A	0,02...10 s, INS, SEL	RS-485	Programmable	Programmable

The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2, annex M.

(*1) INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a trip time <0.02 s

Requires a WGS/WGC earth leakage transformer (not included). To operate with RECmax MP (In≤63 A), with MT-FDE (In>63 A).

To encode other parameters, see the table at the end of the section

CODIFICATION TABLE

RGU-10/C RAL / RGU-10/C MT

Code	Internal code										Delivery time		
	P	2	X	X	X	X	0	0	X	0	0	X	X
Power supply voltage		Standard (230 V _{AC})											
		110 V _{AC} (WRU-10 RAL / MT)											
		24...48 V _{AC} / 24...125 V _{DC} (RGU-10/C RAL RGU-10/C MT)											
	Certificate UL (Only RGU-10C MT 230 V _{AC})										0 7 2		

Delivery time: [*] immediate
 [x] working weeks
 [c] consult

Programmable earth leakage relay with built-in transformer + motorized circuit breaker

Complete set formed by: Earth leakage relay + RECmax MP / MT


WRU-10MT, Earth leakage relay with built-in transformer

Type	Code	Usefull diam.(mm)	IΔn	Delay	Nr reclosures	Time between reclosures
WRU-10-MT	[C] P24275.	28	0,03 ... 3 A 0,03 ... 30 A	0,02...10 s, INS, SEL (*1)	Programmable	Programmable

The delay is cancelled in all relays with a sensitivity adjustment of 0.03 A, IEC 60947-2, annex M. (*1) INS, SEL trip curves, according to IEC 61008-1, for trigger coils with a trip time < 0.02 s
Requires a WGS/WGC earth leakage transformer (not included). To operate with RECmax MP (In≤63 A), with MT-FDE (In>63 A), To encode other parameters, see the table at the end of the section


RECmaxMP, Motorized circuit breakers (up to 63 A)

Type	Code	IΔn	Poles	Type	Code	IΔn	Poles
2 Poles, C Curve				2 Poles, D Curve			
RECmax MP-C2-6	[1] P27110.	6 A	2	RECmax MP-D2-6	[1] P27130.	6 A	2
RECmax MP-C2-10	[1] P27111.	10 A	2	RECmax MP-D2-10	[1] P27131.	10 A	2
RECmax MP-C2-16	[1] P27112.	16 A	2	RECmax MP-D2-16	[1] P27132.	16 A	2
RECmax MP-C2-20	[1] P27113.	20 A	2	RECmax MP-D2-20	[1] P27133.	20 A	2
RECmax MP-C2-25	[1] P27114.	25 A	2	RECmax MP-D2-25	[1] P27134.	25 A	2
RECmax MP-C2-32	[1] P27115.	32 A	2	RECmax MP-D2-32	[1] P27135.	32 A	2
RECmax MP-C2-40	[1] P27116.	40 A	2	RECmax MP-D2-40	[1] P27136.	40 A	2
RECmax MP-C2-50	[1] P27117.	50 A	2	RECmax MP-D2-50	[1] P27137.	50 A	2
RECmax MP-C2-63	[1] P27118.	63 A	2	RECmax MP-D2-63	[1] P27138.	63 A	2
4 Poles, C Curve				4 Poles, D Curve			
RECmax MP-C4-6	[1] P27120.	6 A	4	RECmax MP-D4-6	[1] P27140.	6 A	4
RECmax MP-C4-10	[1] P27121.	10 A	4	RECmax MP-D4-10	[1] P27141.	10 A	4
RECmax MP-C4-16	[1] P27122.	16 A	4	RECmax MP-D4-16	[1] P27142.	16 A	4
RECmax MP-C4-20	[1] P27123.	20 A	4	RECmax MP-D4-20	[1] P27143.	20 A	4
RECmax MP-C4-25	[1] P27124.	25 A	4	RECmax MP-D4-25	[1] P27144.	25 A	4
RECmax MP-C4-32	[1] P27125.	32 A	4	RECmax MP-D4-32	[1] P27145.	32 A	4
RECmax MP-C4-40	[1] P27126.	40 A	4	RECmax MP-D4-40	[1] P27146.	40 A	4
RECmax MP-C4-50	[1] P27127.	50 A	4	RECmax MP-D4-50	[1] P27147.	50 A	4
RECmax MP-C4-63	[1] P27128.	63 A	4	RECmax MP-D4-63	[1] P27148.	63 A	4

Please contact us for more information about impulse input options
C/D curve circuit breakers with 6 kA cut off power (EN 60898). Please contact us for other specifications.


MT-FDE, Motorized circuit breaker for currents exceeding than 63 A

Type	Code	In (A)	Poles	weight (kg)
3 poles				
MT-FDE 80AIII	[1] P20D60.	80 A	3	2.9
MT-FDE 100AIII	[1] P20D61.	100 A	3	2.9
MT-FDE 125AIII	[1] P20D62.	125 A	3	2.9
MT-FDE 160AIII	[1] P20D63.	160 A	3	2.9
MT-FEE 250AIII	[1] P20E64.	250 A	3	3.8
4 poles				
MT-FDE 80A IV	[1] P20D70.	80 A	4	3.4
MT-FDE 100A IV	[1] P20D71.	100 A	4	3.4
MT-FDE 125A IV	[1] P20D72.	125 A	4	3.4
MT-FDE 160A IV	[1] P20D73.	160 A	4	3.4
MT-FEE 250A IV	[1] P20E74.	250 A	4	4.6

**WRGU-10-MTT, Full earth leakage and circuit breaker reclosing and protection unit, panel**

2 Poles

Type	Code	IΔn	Poles
2 poles, C curve			
WRGU-10MTT-C-2-6A	[1] P21810.	6 A	2
WRGU-10MTT-C-2-10A	[1] P21811.	10 A	2
WRGU-10MTT-C-2-16A	[1] P21812.	16 A	2
WRGU-10MTT-C-2-20A	[1] P21813.	20 A	2
WRGU-10MTT-C-2-25A	[1] P21814.	25 A	2
WRGU-10MTT-C-2-32A	[1] P21815.	32 A	2
WRGU-10MTT-C-2-40A	[1] P21816.	40 A	2
WRGU-10MTT-C-2-50A	[1] P21817.	50 A	2
WRGU-10MTT-C-2-63A	[1] P21818.	63 A	2

Type	Code	IΔn	Poles
4 poles, C curve			
WRGU-10MTT-C-4-6A	[1] P21820.	6 A	4
WRGU-10MTT-C-4-10A	[1] P21821.	10 A	4
WRGU-10MTT-C-4-16A	[1] P21822.	16 A	4
WRGU-10MTT-C-4-20A	[1] P21823.	20 A	4
WRGU-10MTT-C-4-25A	[1] P21824.	25 A	4
WRGU-10MTT-C-4-32A	[1] P21825.	32 A	4
WRGU-10MTT-C-4-40A	[1] P21826.	40 A	4
WRGU-10MTT-C-4-50A	[1] P21827.	50 A	4
WRGU-10MTT-C-4-63A	[1] P21828.	63 A	4

Certified and Approved by Telefónica

Earth leakage relay with adjustable sensitivity (0.03 A, up to 1 A), adjustable delay (with curve, INS/SEL, or by time, from 0.1 to 1 s) and automatic reclosing system, 15 attempts by default (earth leakage) and 2 by the circuit breaker

OVERCURRENT SELF-RECLOSING**Self-reclosing circuit breaker****RECmaxP, Motorized circuit breakers, up to 63 A**

Type	Code	IΔn	Poles
2 Poles, C Curve			
RECmax P-C2-6	[1] P28110.	6 A	2
RECmax P-C2-10	[1] P28111.	10 A	2
RECmax P-C2-16	[1] P28112.	16 A	2
RECmax P-C2-20	[1] P28113.	20 A	2
RECmax P-C2-25	[1] P28114.	25 A	2
RECmax P-C2-32	[1] P28115.	32 A	2
RECmax P-C2-40	[1] P28116.	40 A	2
RECmax P-C2-50	[1] P28117.	50 A	2
RECmax P-C2-63	[1] P28118.	63 A	2
4 Poles, C Curve			
RECmax P-C4-6	[1] P28120.	6 A	4
RECmax P-C4-10	[1] P28121.	10 A	4
RECmax P-C4-16	[1] P28122.	16 A	4
RECmax P-C4-20	[1] P28123.	20 A	4
RECmax P-C4-25	[1] P28124.	25 A	4
RECmax P-C4-32	[1] P28125.	32 A	4
RECmax P-C4-40	[1] P28126.	40 A	4
RECmax P-C4-50	[1] P28127.	50 A	4
RECmax P-C4-63	[1] P28128.	63 A	4

Type	Code	IΔn	Poles
2 Poles, D Curve			
RECmax P-D2-6	[1] P28130.	6 A	2
RECmax P-D2-10	[1] P28131.	10 A	2
RECmax P-D2-16	[1] P28132.	16 A	2
RECmax P-D2-20	[1] P28133.	20 A	2
RECmax P-D2-25	[1] P28134.	25 A	2
RECmax P-D2-32	[1] P28135.	32 A	2
RECmax P-D2-40	[1] P28136.	40 A	2
RECmax P-D2-50	[1] P28137.	50 A	2
RECmax P-D2-63	[1] P28138.	63 A	2
4 Poles, D Curve			
RECmax P-D4-6	[1] P28140.	6 A	4
RECmax P-D4-10	[1] P28141.	10 A	4
RECmax P-D4-16	[1] P28142.	16 A	4
RECmax P-D4-20	[1] P28143.	20 A	4
RECmax P-D4-25	[1] P28144.	25 A	4
RECmax P-D4-32	[1] P28145.	32 A	4
RECmax P-D4-40	[1] P28146.	40 A	4
RECmax P-D4-50	[1] P28147.	50 A	4
RECmax P-D4-63	[1] P28148.	63 A	4

Please contact us for more information about impulse input options

C/D curve circuit breakers with 6 kA cut off power (EN 60898). Please contact us for other specifications.

Programmable reclosing relay + motorized switch

Complete set formed by: RRM + MT-E62/E64

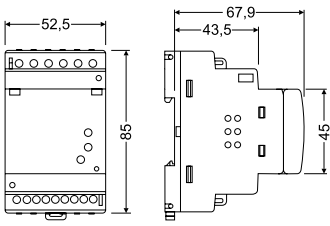
**RRM, Overcurrent tripping relay with self-reclosing system**

Type	Code	Communications	Nr. reclosures	Time between reclosures
RRM-P	[*] P25130.	-	Adjustable: 0,1,2,4,6,8	0.5,1,2,3,4,5 min
RRM-C	[*] P25131.	RS-485	Adjustable: 0,1,2,4,6,8	0.5,1,2,3,4,5 min

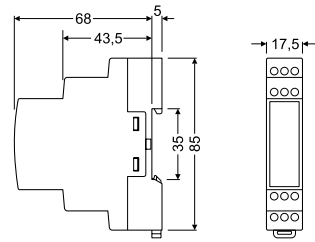
To operate with motorized circuit breaker. Please contact us for more information

Dimensions

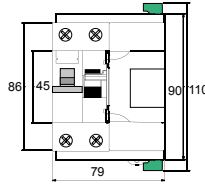
RGU-10 / CBS-4



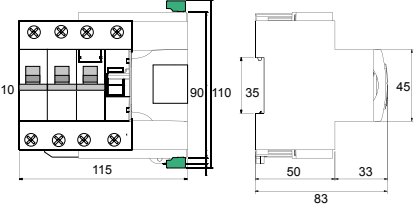
RRM



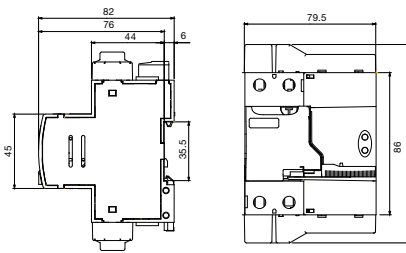
**RECmax
2 poles**



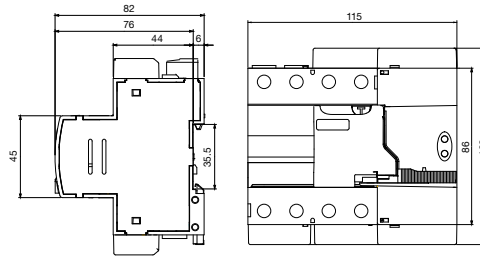
4 poles



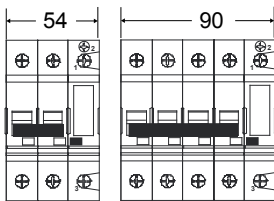
REC3 2P / REC3C 2P



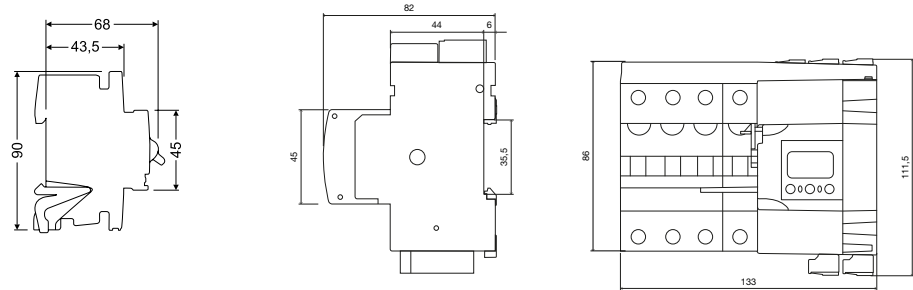
REC3 4P / REC3C 4P



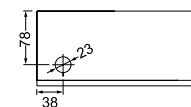
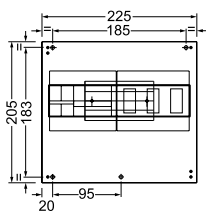
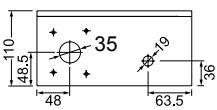
MCB.P



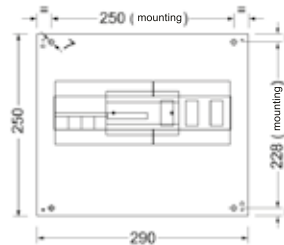
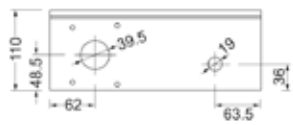
RECmax CVM



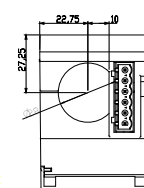
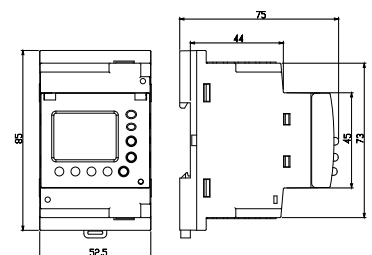
WRGU-10-MTT P2



WRGU-10-MTT P4



WRU-10



Relays and control elements



IMD-2R, Monitoring relay for offline insulation

Type	Code	Description
IMD-2R	[*] P33020.	Monitoring relay for offline insulation. It controls and monitors the insulation resistance of the receivers that are occasionally disconnected from the electrical network



TB, Bacon control equipment

Type	Code	Description
TB-3	[*] P30102.	Programmable power between 15 ... 225 W Control of one circuit (BACON). Luminosity level controlled by means of a photocell (included with the equipment). 1 alarm relay for failure of circuit or photocell



RV, Voltage detector relays (AC), DIN rail

Type	Code	System	Phase sequence
RV, Voltage detector relays (AC), DIN rail			
RV-M	[*] P30701.	Single-phase 230 V	-
RV-T	[*] P30702.	Three-phase 400/230 V	*
RV-TS	[*] P30704.	Three-phase 400/230 V	-



WI, Current detector relay (AC), DIN rail

Type	Code	Trip time (adjustable)	Margin of setting (adjustable)
WI, Current detector relay (AC), DIN rail			
WI/005-30	[*] P32011.	0,5 ... 30 s	0,5 ... 5 A
WI/010-30	[*] P32012.	0,5 ... 30 s	1 ... 10 A
WI/020-30	[*] P32013.	0,5 ... 30 s	2 ... 20 A
WI/050-30	[*] P32014.	0,5 ... 30 s	5 ... 50 A
WI/100-30	[*] P32015.	0,5 ... 30 s	10 ... 100 A
WI/TS	[*] P32010.	0,5 ... 30 s	s / transf. ... / 5 A



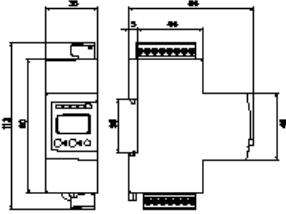
CDR, Station with 8 current relays, display and RS-485 communications

Type	Code	Description
CDR-8	[*] P32111.	8 current relays station, display, RS-485 communications. Measurement range 0,03 to 63 A

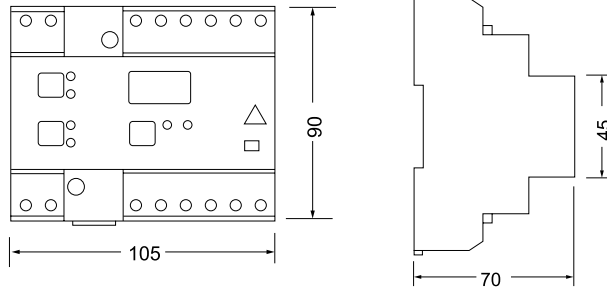
Measurement range 0.03 to 6.3 A with external transformer, model WGS/WG. Please contact us 0.3 to 63 A Measurement range with External transformer, model WGSP/WGP. Please contact us for more information

Dimensions

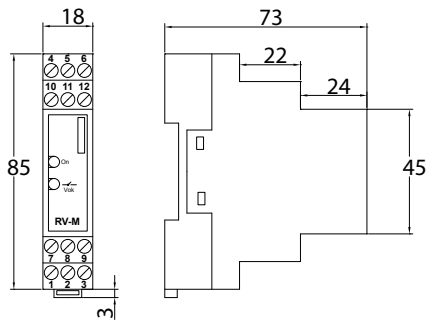
IMD-2R



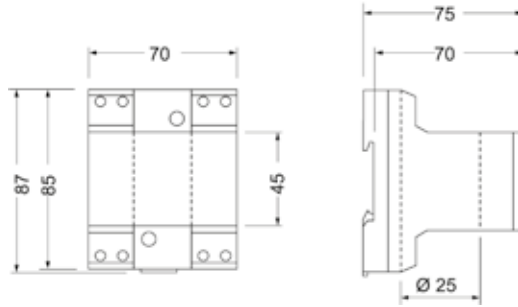
TB-3



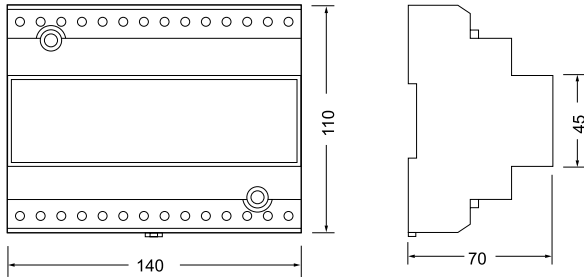
RV



WI



CDR-8



Protection current transformer

TRP model selection table, according to:
 Primary current intensity
 Maximum wiring diameter
 Assigned VA power
 Assigned accuracy/protection class

	TRP 40	TRP 60	TRP 80	TRP 100	TRP 140	TRP 180
	5P10-5P20	5P10-5P20	5P10-5P20	5P10-5P20	5P10-5P20	5P10-5P20
	Potencia (VA)			Power (VA)		
100/5	5					
150/5	5	2.5				
200/5	10	2.5				
250/5	10	5	5			
300/5	15	5	5			
400/5	20	7.5	7.5			
500/5	25	10	10			
600/5	inner	10	10	inner Ø 100 mm		
750/5	Ø 40 mm	15	15	5	inner	
800/5		15	15	5	Ø 140 mm	
1 000/5		20	20	7.5	5	
1 200/5		Cable inner	25	10	5	inner
1 250/5		Ø 60 mm	25	10	5	Ø 180 mm
1 500/5			30	10	10	5
1 600/5			30	15	10	5
1 800/5			35	15	10	5
2 000/5			inner	15	10	7.5
2 500/5			Ø 80 mm	20	10	10
3 000/5				25	15	10
4 000/5					15	15
5 000/5						15

TRP, Protection transformers encapsulated in resin

Type	TRP40-5P10	TRP40-5P20	TRP60-5P10	TRP60-5P20								
Usefull diam. (mm)	Ø 40 mm		Ø 60 mm									
Accuracy	5P10		5P20									
A	VA	Code	kg	VA	Code	kg	VA	Code	kg			
100	5	[4] P50311.	5,00	5	[4] P50211.	9,00						
150	5	[4] P50312.	5,00	5	[4] P50212.	9,00	2.5	[4] P50321.	2,60	2.5	[4] P50221.	4,20
200	10	[4] P50313.	5,00	10	[4] P50213.	9,00	2.5	[4] P50322.	2,70	2.5	[4] P50222.	4,20
250	10	[4] P50314.	5,00	10	[4] P50214.	9,00	5	[4] P50323.	2,70	5	[4] P50223.	4,30
300	15	[4] P50315.	5,10	15	[4] P50215.	9,10	5	[4] P50324.	2,70	5	[4] P50224.	4,70
400	20	[4] P50316.	5,10	20	[4] P50216.	9,20	7.5	[4] P50325.	2,80	7.5	[4] P50225.	4,90
500	25	[4] P50317.	5,20	25	[4] P50217.	9,30	10	[4] P50326.	2,80	10	[4] P50226.	5,10
600							10	[4] P50327.	2,90	10	[4] P50227.	5,20
750							15	[4] P50328.	3,00	15	[4] P50228.	5,30
1000							20	[4] P50329.	3,20	20	[4] P50229.	5,50

Type	TRP80-5P10	TRP80-5P20	TRP100-5P10	TRP100-5P20								
Usefull diam. (mm)	ø 80 mm		ø 100 mm									
Acuracy	5P10		5P20									
A	VA	Code	kg	VA	Code	kg	VA	Code	kg			
250	5	[4] P50331.	3,20	5	[4] P50231.	5,60						
300	5	[4] P50332.	3,30	5	[4] P50232.	5,70						
400	7,5	[4] P50333.	3,30	7,5	[4] P50233.	5,80						
500	10	[4] P50334.	3,40	10	[4] P50234.	5,90						
600	10	[4] P50335.	3,50	10	[4] P50235.	6,10						
750				5	[4] P50341.	3,40	5	[4] P50241.	5,60			
800	15	[4] P50336.	3,60	15	[4] P50236.	6,20						
1000	20	[4] P50337.	3,70	20	[4] P50237.	6,30	7,5	[4] P50342.	3,40	7,5	[4] P50242.	5,80
1200	25	[4] P50338.	3,80	25	[4] P50238.	6,60	10	[4] P50343.	3,40	10	[4] P50243.	5,90
1500	30	[4] P50339.	4,00	30	[4] P50239.	6,90	10	[4] P50344.	3,50	10	[4] P50244.	6,10
2000							15	[4] P50346.	3,70	15	[4] P50246.	6,40
2500							15	[4] P50347.	3,90	15	[4] P50247.	6,80
3000							20	[4] P50348.	4,30	20	[4] P50248.	7,30

Type	TRP140-5P10	TRP140-5P20	TRP180-5P10	TRP180-5P20								
Usefull diam. (mm)	ø 140 mm		ø 180 mm									
Acuracy	5P10		5P20									
A	VA	Code	kg	VA	Code	kg	VA	Code	kg			
1000	5	[4] P50351.	3,70	5	[4] P50251.	6,20						
1250	5	[4] P50352.	3,80	5	[4] P50252.	6,40						
1500	10	[4] P50353.	3,90	10	[4] P50253.	6,60	5	[4] P50361.	4,50	5	[4] P50261.	7,60
2000	10	[4] P50354.	4,20	10	[4] P50254.	7,10	7,5	[4] P50362.	4,50	7,5	[4] P50262.	7,60
2500	10	[4] P50355.	4,50	10	[4] P50255.	7,50	10	[4] P50363.	5,00	10	[4] P50263.	8,50
3000	15	[4] P50356.	4,60	15	[4] P50256.	8,00	10	[4] P50364.	5,20	10	[4] P50264.	8,90
4000	15	[4] P50357.	5,20	15	[4] P50257.	8,90	15	[4] P50365.	5,70	15	[4] P50265.	9,70
5000							15	[4] P50366.	6,20	15	[4] P50266.	10,60

TRP

Code	Internal code					
P 5 X X X X 0 0 X						
					Delivery time	+ €
Secondary current	Standard (.../ 5 A)	0	-			-
	... / 1A	1	5			+20 %



TRM, Measure current transformers encapsulated in resin, see section Measurements and control / Measuring current transformers and shunts

Measuring and testing equipments for substations



GETEST, Indirect earth contact simulator

Type	Code	Description
GETEST 5...50A	[C] P6012300A0000	Indirect earth contact simulator 5 ...50 A, GETEST, includes PDA
Trolley GETEST	[C] P6990A.	Transport trolley GETEST

Includes the CIRCUTOR laboratory certificate



CR, Relay tester

Type	Code	Description
Relay tester		
CR-50	[C] P6021100A0000	Relay tester 50 A (carrying case version)
CR-100	[C] P6021200A0000	Relay tester 100 A (carrying case version)
CR-250	[C] P6021300A0000	Relay tester 250 A

Accessories

Trafo 2500 para CR-250	[C] P69903.	Transformer 2500 A for CR-250
Cable 1,5M/2500A	[C] P69902.	Cable: Lenght 1,5 m / 2500 A
MPC-CR	[C] P69901.	Transport trolley CR250

Includes the CIRCUTOR laboratory certificate



OT2, Dielectric strenght tester

Type	Code	Description
OT2-60 D	[C] P6031200A0000	Dielectric strenght tester for insulating oil 60 kV

Includes the CIRCUTOR laboratory certificate



MH, Microohmmeter

Type	Code	Description
MH-10	[C] P6071100A0000	Microohmmeter (Thomson Bridge)
MH-10/100u	[C] P6071400A0000	Microohmmeter 10 / 100 A

Includes the CIRCUTOR laboratory certificate

MD, Megaohmmeters

Type	Code	Description
MD-5060e	[C] P6052100A0000	Digital megaohmmeter 5 kV (with memory and communications)
MD-10kVe	[C] P6052200A0000	Digital megaohmmeter 10 kV

TL, Earth resistance meter

Type	Code	Description
TL-6e	[C] P6062200A0000	4-way earth resistance meter

Code	Internal Code	
P 6 X X X X 0 0 X		
	↑	Delivery time + €
Certificate	ENAC calibration certificate	E C Consult

Delivery time: [*] immediate
 [x] working weeks
 [c] consult


PI-23, High voltage clamps

Type	Code	Description	A (max.)	Usefull diam.(mm)
PI-23 50HZ	[*] M80132.	PI-23 + case	400	25
PI-23 60HZ	[*] M801320010000	PI-23 + case	400	25



Reactors for filtering, see section **Reactive energy compensation and harmonic filtering/**

Low voltage capacitors and reactors

In-line reactors **Reactive energy compensation and harmonic filtering/Harmonic filters**

Power factor correction and harmonic filtering

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OUTSTANDING PRODUCTS

computer SMART III



Power factor regulator

OPTIM P&P



Automatic capacitor bank with Plug&Play regulator

OPTIM HYB



Hybrid automatic capacitor bank, phase-by-phase compensation

OPTIM FRES / OPTIM FRE



Automatic capacitor banks with rejection filters (static contactor)

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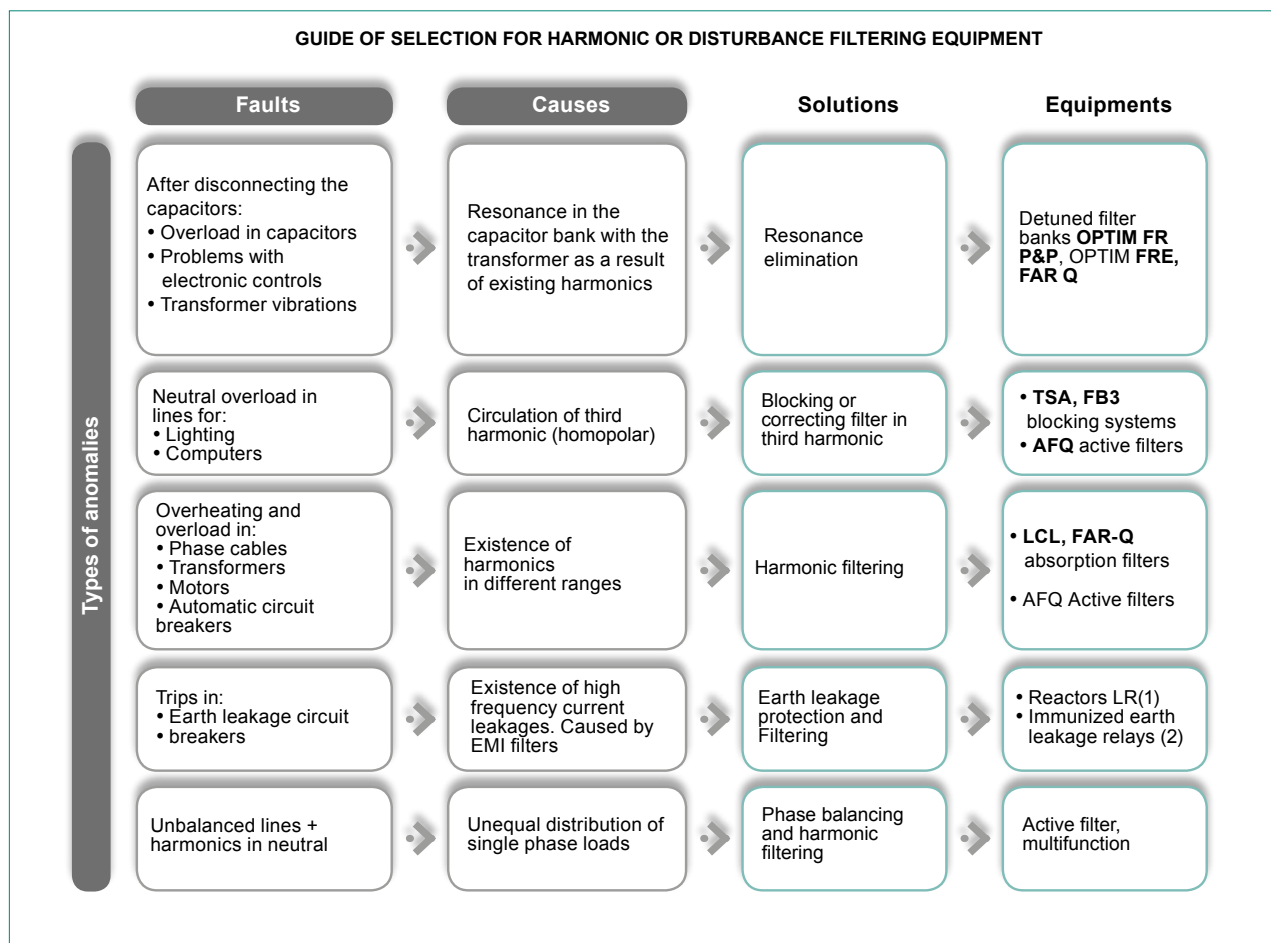
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Table: Selection of the reactive energy compensation unit

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Reactive energy regulators



computer Smart III, Three-phase power factor regulators. Regulation, measurement, leakage control and communications

Type	Code	Power supply	Measurement Range (V)	I Δ n/Icap.	Nr steps	Alarm relay	Communi-cations	Size (mm) width xheight xdepth
computer Smart III 6	[*] R13851.	100...520 Vac	100...520	yes	6	1	RS-485	144x144x71
computer Smart III 12	[*] R13862.	100...520 Vac	100...520	yes	12	1	RS-485	144x144x71
computer SMARTIII 14	[*] R13864.	150...400 Vac	100...520	yes	14	1	RS-485	144x144x71



computer Max P&P, Power factor regulators

Type	Code	Power supply	Measurement Range (V)	Nr steps	Alarm relay	Size (mm) width xheight xdepth
computer Max P&P 6	[*] R10871.	400 Vac	400	6	1	144x144x62
computer Max P&P 12	[*] R10872.	400 Vac	400	12	1	144x144x62
computer Max P&P 6	[*] R108710020000	230 Vac	230	6	1	144x144x62
computer Max P&P 12	[*] R108720020000	230 Vac	230	12	1	144x144x62
computer Max P&P 6	[*] R108710040000	480 Vac	480	6	1	144x144x62
computer Max P&P 12	[*] R108720040000	480 Vac	480	12	1	144x144x62

* Associated with the last contactor relay.



computer one, Power factor relay 1 step, IP 00

Type	Code	Power supply	Measurement Range (V)	Input current	Nr steps	Alarm relay	Size (mm) width xheight xdepth
Computer One	[*] R13810.	230 Vac	400	.../250 mA	1	0	90x90x5

Requires the use of MC transformers (not included). See section M - Measuring current transformers and shunts



computer two, Power factor regulator 2 step, IP 00

Type	Code	Power supply	Measurement Range (V)	Input current	Nr steps	Alarm relay	Programa	Size (mm) width xheight xdepth
Computer two	[*] R13820.	230 Vac	400	.../250 mA	2	0	1.1	90x90x5
Computer two	[*] R13821.	230 Vac	400	.../250 mA	2	0	1.1,5	90x90x5
Computer two	[*] R13822.	230 Vac	400	.../250 mA	2	0	1.2	90x90x5
Computer two	[*] R13823.	230 Vac	400	.../250 mA	2	0	1.2,5	90x90x5

Requires the use of MC transformers (not included). See section M - Measuring current transformers and shunts



DIR2, Power factor relay 1 step, din rail

Type	Code	Power supply	Input current	Nr steps	Alarm relay	Size (mm) width xheight xdepth
DIR2	[*] R11211.	400 Vac	.../250 mA	1	0	35x85x73

Requires the use of MC transformers (not included). See section M - Measuring current transformers and shunts

FAST POWER FACTOR REGULATOR (STATIC SWITCHING)



Computer SMART III-Fast, Power factor regulators for static switching

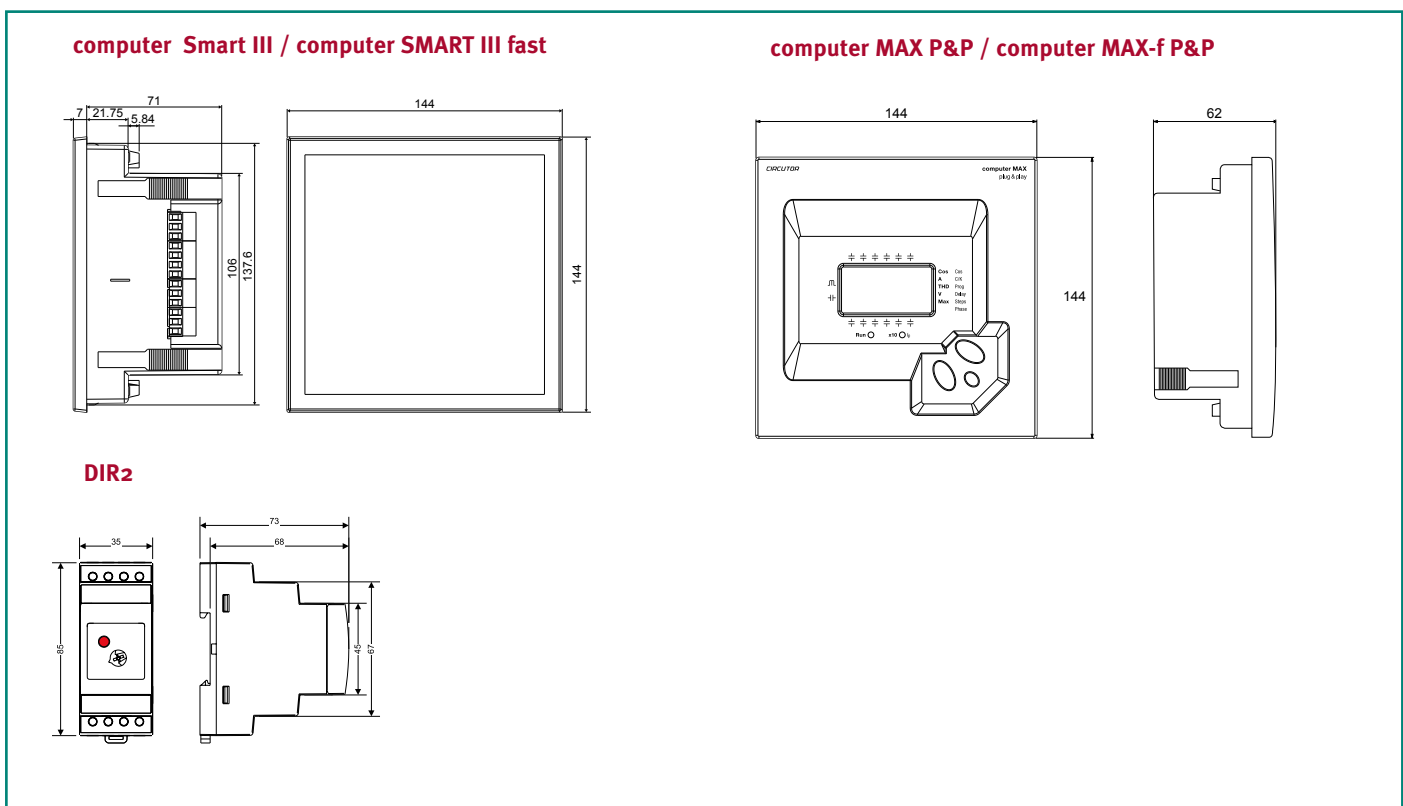
Type	Code	Power supply	Measurement Range (V)	Switching unit	I Δ n/Icap.	Nr steps	Alarm relay	Communications	Size (mm) width x height x depth
computer SMART III F6-12Vdc	[*] R13953.	100...520 Vac	100...520	EMB-2PH	yes	6	1	RS-485	144x144x71
computer SMART III F12-12Vdc	[*] R13964.	100...520 Vac	100...520	EMB-2PH	yes	12	1	RS-485	144x144x71
Computer Smart III Fast 6	[*] R13951.	100...520 Vac	100...520	EMF / EMB	yes	6	1	RS-485	144x144x71
Computer Smart III Fast 12	[*] R13962.	100...520 Vac	100...520	EMF / EMB	yes	12	1	RS-485	144x144x71



computer Max-f, Power factor regulators for static switching

Type	Code	Power supply	Measurement Range (V)	Switching unit	Nr steps	Alarm relay	Size (mm) width x height x depth
Computer Max 6f	[*] R10851.	400 Vac	400	EMF / EMB	6	0	144x144x62
Computer Max 12f	[*] R10862.	400 Vac	400	EMF / EMB	12	0	144x144x62
computer MAX 6f_12Vdc	[*] R10853.	400 Vac	400	EMB-2PH	6	0	144x144x62
computer MAX 12f_12Vdc	[*] R10864.	400 Vac	400	EMB-2PH	12	0	144x144x62

DIMENSIONS



Low voltage power capacitors

TCLZ, IP 54 covers for CLZ-FP

Type	Code
TCLZ-FPT65	[*] R29915.
TCLZ-FPT50	[*] R29916.
TCLZ-FP85	[*] R29911.
TCLZ-FP116	[*] R29917.
TCLZ-FP100	[*] R29918.

CLZ-FP-M, Single-phase tubular power capacitor

230 V, con regleta de conexión

Type	Code	230 V kvar	240 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)
CLZ-FP-M-23/2,5	[1] R205C4.	2.5	2.7	50	85 x 245	1,00	1
CLZ-FP-M-23/5	[1] R205C8.	5	5.4	50	85 x 245	1,20	1
CLZ-FP-M-23/7,5	[1] R205CM.	7.5	8.2	50	116 x 245	1,70	2
CLZ-FP-M-23/10	[1] R205CN.	10	10.9	50	116 x 245	2,00	2



CLZ-FP23 HD, Tubular power capacitor

Type	Code	220 V kvar	230 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
CLZ-FPT-23/1,25-HD	[C] R2H511.	1.15	1.25	50	63,5 x 127	0,44	-	F
CLZ-FPT-23/2,5-HD	[C] R2H812.	2.3	2.5	50	63,5 x 175	0,90	-	F
CLZ-FP-23/5-HD	[C] R2H516.	4.6	5	50	85 x 175	1,10	1	A
CLZ-FP-23/6,25-HD	[C] R2H517.	5.7	6.25	50	85 x 245	1,20	1	A
CLZ-FP-23/7,5-HD	[C] R2H518.	6.8	7.5	50	85 x 245	1,30	1	A
CLZ-FP-23/10-HD	[C] R2H51B.	9.15	10	50	100 x 245	2,00	7	A
CLZ-FP-23/12,5-HD	[C] R2H51D.	11.4	12.5	50	100 x 245	2,30	7	A
CLZ-FP-23/15-HD	[C] R2H51E.	13.75	15	50	116 x 245	2,40	2	B



Type	Code	400 V kvar	440 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
CLZ-FPT-44/1,25-HD	[C] R2H541.	1	1.25	50	63,5 x 98	0,34	-	F
CLZ-FPT-44/2,5-HD	[*] R2H542.	2	2.5	50	63,5 x 127	0,44	-	F
CLZ-FPT-44/3-HD	[C] R2H543.	2.5	3	50	63,5 x 127	0,44	-	F
CLZ-FPT-44/3,75-HD	[C] R2H544.	3	3.75	50	63,5 x 127	0,44	-	F
CLZ-FPT-44/5-HD	[*] R2H546.	4	5	50	63,5 x 175	0,50	-	F
CLZ-FPT-44/6,25-HD	[*] R2H547.	5	6.25	50	63,5 x 175	0,70	-	F
CLZ-FPT-44/7,5-HD	[*] R2H848.	6.25	7.5	50	63,5 x 202	0,90	-	F
CLZ-FP-44/10-HD	[*] R2H54B.	8	10	50	85 x 245	1,00	1	A
CLZ-FP-44/12,5-HD	[*] R2H54D.	10	12.5	50	85 x 245	1,20	1	A
CLZ-FP-44/15-HD	[*] R2H54E.	12.5	15	50	85 x 245	1,40	1	A
CLZ-FP-44/18,2-HD	[C] R2H54G.	15	18.2	50	100 x 245	1,90	7	A
CLZ-FP-44/20-HD	[*] R2H54J.	16	20	50	100 x 245	2,00	7	A
CLZ-FP-44/25-HD	[*] R2H54L.	20	25	50	100 x 245	2,20	7	B
CLZ-FP-44/30-HD	[*] R2H54N.	25	30	50	116 x 245	2,50	2	B
CLZ-FP-44/28-HD	[] R2H54M.	23	28	50	116 x 245	2,40	2	B
CLZ-FP-44/40-HD	[C] R2H54R.	32	40	50	136 x 261	3,80	-	B
CLZ-FP-44/50-HD	[*] R2H54S.	40	50	50	136 x 355	5,90	-	C

Type	Code	440 V kvar	460 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
CLZ-FPT-46/6,25-HD	[*] R2H857.	5.7	6	50	63,5 x 127	0,70	-	F
CLZ-FP-46/12,5-HD	[*] R2H55D.	11.4	12.5	50	85 x 245	1,40	1	A
CLZ-FP-46/15-HD	[*] R2H55E.	13.7	15	50	85 x 245	1,60	1	A
CLZ-FP-46/19-HD	[*] R2H55H.	17.4	19	50	100 x 245	2,20	7	A
CLZ-FP-46/25-HD	[*] R2H55L.	22.9	25	50	116 x 245	2,50	2	B
CLZ-FP-46/30-HD	[*] R2H55N.	27.4	30	50	136 x 220	3,80	-	B

All models are of the inert gas type, except for those with a 63.5 mm diameter and 136x355 mm size. The dimensions (dxh) are shown for the tube only. Please consult the dimensions drawing at the end of this section for more information about the actual dimensions. Terminal: maximum cross-section of type A cables: 16 mm², type B: 25 mm², type C: 35 mm², F: Faston 6.3x0.8 mm and 12 A maximum current

CLZ-FP48 HD, Tubular power capacitor

Type	Code	460 V kvar	480 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
CLZ-FPT-48/2,5-HD	[] R2H862.	2.3	2.5	50	63,5 x 127	0,90	-	F
CLZ-FPT-48/5-HD	[] R2H866.	4.6	5	50	63,5 x 175	1,10	-	F
CLZ-FPT-48/7,5-HD	[] R2H868.	6.9	7.5	50	63,5 x 202	1,30	-	F
CLZ-FP-48/10-HD	[] R2H56B.	9.2	10	50	85 x 245	1,10	1	A
CLZ-FP-48/12,5-HD	[] R2H56D.	11.5	12.5	50	85 x 245	1,30	1	A
CLZ-FP-48/15-HD	[] R2H56E.	13.8	15	50	85 x 245	1,50	1	A
CLZ-FP-48/20-HD	[] R2H56J.	18.4	20	50	100 x 245	2,20	7	A
CLZ-FP-48/25-HD	[] R2H56L.	23	25	50	116 x 245	2,40	2	B
CLZ-FP-48/30-HD	[] R2H56N.	27.6	30	50	116 x 245	2,60	2	B
CLZ-FP-48/40-HD	[] R2H56R.	36.75	40	50	136 x 261	4,50	-	B

Type	Code	500 V kvar	525 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
-	[C] R2H578.	-	-	-	-	-	-	-
CLZ-FPT-52/2,5-HD	[C] R2H872.	2.3	2.5	50	63,5 x 127	0,70	-	F
CLZ-FPT-52/3-HD	[C] R2H873.	2.7	3	50	63,5 x 127	0,70	-	F
CLZ-FPT-52/4-HD	[C] R2H875.	3.6	4	50	63,5 x 175	0,70	-	F
CLZ-FPT-52/5-HD	[*] R2H876.	4.5	5	50	63,5 x 175	0,80	-	F
CLZ-FPT-52/6,25-HD	[C] R2H877.	5.7	6.25	50	63,5 x 202	0,80	-	F
CLZ-FPT-52/7,5-HD	[C] R2H878.	6.8	7.5	50	63,5 x 202	0,90	-	F
CLZ-FP-52/8-HD	[C] R2H579.	7.25	8	50	85 x 175	1,10	1	A
CLZ-FP-52/10-HD	[*] R2H57B.	9.1	10	50	85 x 245	1,20	1	A
CLZ-FP-52/12,5-HD	[*] R2H57D.	11.3	12.5	50	85 x 245	1,40	1	A
CLZ-FP-52/15-HD	[*] R2H57E.	13.6	15	50	85 x 245	1,50	1	A
CLZ-FP-52/20-HD	[*] R2H57J.	18.15	20	50	100 x 245	2,30	7	A
CLZ-FP-52/25-HD	[*] R2H57L.	22.7	25	50	116 x 245	2,50	2	B
CLZ-FP-52/30-HD	[*] R2H57N.	27.2	30	50	116 x 245	3,10	2	B
CLZ-FP-52/40-HD	[C] R2H57R.	36.3	40	50	136 x 261	3,20	-	B
CLZ-FP-52/50-HD	[C] R2H57S.	45.4	50	50	136 x 355	5,90	-	C

Type	Code	660 V kvar	690 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
CLZ-FPT-69/2,5-HD	[C] R2H892.	2.3	2.5	50	63,5 x 127	0,70	-	F
CLZ-FPT-69/5-HD	[C] R2H896.	4.6	5	50	63,5 x 175	0,80	-	F
CLZ-FP-69/7,5-HD	[C] R2H598.	6.9	7.5	50	85 x 175	1,10	1	A
CLZ-FP-69/10-HD	[C] R2H59B.	9.15	10	50	85 x 245	1,20	1	A
CLZ-FP-69/12,5-HD	[C] R2H59D.	11.4	12.5	50	85 x 245	1,40	1	A
CLZ-FP-69/15-HD	[C] R2H59E.	13.7	15	50	85 x 245	1,60	1	A
CLZ-FP-69/20-HD	[C] R2H59J.	18.3	20	50	100 x 245	2,40	7	A
CLZ-FP-69/25-HD	[C] R2H59L.	22.9	25	50	116 x 245	2,50	2	B
CLZ-FP-69/30-HD	[C] R2H59N.	27.5	30	50	136 x 220	3,80	-	B
CLZ-FP-69/40-HD	[C] R2H59R.	36.6	40	50	136 x 355	5,90	-	C
CLZ-FP-69/50-HD	[C] R2H59S.	45.75	50	50	136 x 355	5,90	-	C

All models are of the inert gas type, except for those with a 63.5 mm diameter and 136x355 mm size. The dimensions (dxh) are shown for the tube only. Please consult the dimensions drawing at the end of this section for more information about the actual dimensions. Terminal: maximum cross-section of type A cables: 16 mm², type B: 25 mm², type C: 35 mm², F: Faston 6.3x0.8 mm and 12 A maximum current

CLZ-FP24-60 HD, Three-phase tubular power capacitor, 60 Hz

Type	Code	230 V kvar	240 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
Un = 3 x 240 V / 60 Hz								
CLZ-FPT-24/2,5-60Hz-HD	[C] R2H622.	2.3	2.5	60	63,5 x 127	0,44	-	F
CLZ-FP-24/5-60Hz-HD	[C] R2H626.	4.6	5	60	85 x 175	1,00	1	A
CLZ-FP-24/6,25-60Hz-HD	[C] R2H627.	5.75	6.25	60	85 x 175	1,10	1	A
CLZ-FP-24/7,5-60Hz-HD	[C] R2H628.	6.9	7.5	60	85 x 245	1,10	1	A
CLZ-FP-24/10-60Hz-HD	[C] R2H62B.	9.2	10	60	85 x 245	1,10	1	A
CLZ-FP-24/12,5-60Hz-HD	[C] R2H62D.	11.5	12.5	60	85 x 245	1,60	1	A
CLZ-FP-24/15-60Hz-HD	[C] R2H62E.	13.8	15	60	100 x 245	2,10	7	A

Type	Code	400 V kvar	440 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
Un = 3 x 440 V / 60 Hz								
CLZ-FPT-44/1,25-60Hz-HD	[C] R2H641.	1	1.25	60	63,5 x 98	0,34	-	F
CLZ-FPT-44/2,5-60Hz-HD	[C] R2H642.	2.1	2.5	60	63,5 x 127	0,44	-	F
CLZ-FPT-44/3-60Hz-HD	[C] R2H643.	2.5	3	60	63,5 x 127	0,44	-	F
CLZ-FPT-44/3,75-60Hz-HD	[C] R2H644.	3.1	3.75	60	63,5 x 127	0,44	-	F
CLZ-FPT-44/5-60Hz-HD	[C] R2H646.	4.15	5	60	63,5 x 127	0,44	-	F
CLZ-FP-44/6,25-60Hz-HD	[C] R2H647.	5.2	6.25	60	85 x 175	0,80	1	A
CLZ-FP-44/7,5-60Hz-HD	[C] R2H648.	6.2	7.5	60	85 x 175	0,90	1	A
CLZ-FP-44/10-60Hz-HD	[C] R2H64B.	8.3	10	60	85 x 175	1,00	1	A
CLZ-FP-44/12,5-60Hz-HD	[C] R2H64D.	10.3	12.5	60	85 x 245	1,10	1	A
CLZ-FP-44/15-60Hz-HD	[C] R2H64E.	12.4	15	60	85 x 245	1,20	1	A
CLZ-FP-44/20-60Hz-HD	[C] R2H64J.	16.5	20	60	85 x 245	1,50	1	A
CLZ-FP-44/25-60Hz-HD	[C] R2H64L.	20.7	25	60	100 x 245	2,00	7	A
CLZ-FP-44/30-60Hz-HD	[C] R2H64N.	24.8	30	60	116 x 245	2,30	2	B
CLZ-FP-44/40-60Hz-HD	[C] R2H64R.	33.1	40	60	136 x 220	2,80	2	B
CLZ-FP-44/50-60Hz-HD	[C] R2H64S.	41.3	50	60	136 x 355	5,60	-	C

Type	Code	460 V kvar	480 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
Un = 3 x 480 V / 60 Hz								
CLZ-FPT-48/2,5-60Hz-HD	[C] R2H762.	2.3	2.5	60	63,5 x 127	0,80	-	F
CLZ-FPT-48/5-60Hz-HD	[C] R2H766.	4.6	5	60	63,5 x 175	0,80	-	F
CLZ-FPT-48/6,25-60Hz-HD	[C] R2H767.	5.75	6.25	60	63,5 x 175	0,90	-	F
CLZ-FPT-48/7,5-60Hz-HD	[C] R2H768.	6.9	7.5	60	63,5 x 175	0,90	-	F
CLZ-FP-48/10-60Hz-HD	[C] R2H66B.	9.2	10	60	85 x 175	1,10	1	A
CLZ-FP-48/12,5-60Hz-HD	[C] R2H66D.	11.5	12.5	60	85 x 245	1,20	1	A
CLZ-FP-48/15-60Hz-HD	[C] R2H66E.	13.8	15	60	85 x 245	1,30	1	A
CLZ-FP-48/20-60Hz-HD	[C] R2H66J.	18.4	20	60	100 x 245	1,90	7	A
CLZ-FP-48/25-60Hz-HD	[C] R2H66L.	23	25	60	100 x 245	2,20	2	B
CLZ-FP-48/30-60Hz-HD	[C] R2H66N.	27.6	30	60	116 x 245	2,40	2	B
CLZ-FP-48/40-60Hz-HD	[C] R2H66R.	36.75	40	60	136 x 220	3,80	-	B
CLZ-FP-48/50-60Hz-HD	[C] R2H66S.	46	50	60	136 x 355	5,90	-	C

Type	Code	480 V kvar	525 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
CLZ-FP-52/7,5-60Hz-HD	[C] R2H678.	-	-	-	-	-	-	-
Un = 3 x 525 V / 60 Hz								
CLZ-FPT-52/2,5-60Hz-HD	[C] R2H772.	2.1	2.5	60	63,5 x 127	0,80	-	F
CLZ-FPT-52/5-60Hz-HD	[C] R2H776.	4.2	5	60	63,5 x 175	0,90	-	F
CLZ-FPT-52/6,25-60Hz-HD	[C] R2H777.	5.2	6.25	60	63,5 x 175	1,10	-	F
CLZ-FPT-52/7,5-60Hz-HD	[C] R2H778.	6.25	7.5	60	63,5 x 202	1,30	-	F
CLZ-FP-52/8,5-60Hz-HD	[C] R2H67A.	7.1	8.5	60	85 x 175	1,00	1	A
CLZ-FP-52/10-60Hz-HD	[C] R2H67B.	8.4	10	60	85 x 175	1,10	1	A
CLZ-FP-52/11,5-60Hz-HD	[C] R2H67C.	9.6	11.5	60	85 x 245	1,20	1	A
CLZ-FP-52/12,5-60Hz-HD	[C] R2H67D.	10.5	12.5	60	85 x 245	1,20	1	A
CLZ-FP-52/15-60Hz-HD	[C] R2H67E.	12.5	15	60	85 x 245	1,40	1	A
CLZ-FP-52/17-60Hz-HD	[C] R2H67I.	14.2	17	60	85 x 245	1,50	1	A
CLZ-FP-52/20-60Hz-HD	[C] R2H67J.	16.7	20	60	100 x 245	2,00	7	A
CLZ-FP-52/22,5-60Hz-HD	[C] R2H67K.	18.8	22.5	60	100 x 245	2,20	7	A
CLZ-FP-52/25-60Hz-HD	[C] R2H67L.	20.9	25	60	100 x 245	2,40	7	A
CLZ-FP-52/30-60Hz-HD	[C] R2H67N.	25	30	60	116 x 245	2,50	2	B
CLZ-FP-52/34-60Hz-HD	[C] R2H67P.	28.4	34	60	116 x 245	2,60	2	B
CLZ-FP-52/40-60Hz-HD	[C] R2H67R.	33.4	40	60	136 x 261	3,80	-	B

CLZ-FP60-60 HD, Three-phase tubular power capacitor, 60 Hz

Type	Code	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
Un = 3 x 600 V / 60 Hz						
CLZ-FP-60/2,5-60Hz-HD	[C] R2H782.	60	63,5 x 127	0,70	-	F
CLZ-FPT-60/5-60Hz-HD	[C] R2H786.	60	63,5 x 175	0,80	-	F
CLZ-FPT-60/6,25-60Hz-HD	[C] R2H787.	60	63,5 x 175	0,90	-	F
CLZ-FPT-60/7,5-60Hz-HD	[C] R2H788.	60	63,5 x 175	1,00	-	F
CLZ-FP-60/10-60Hz-HD	[C] R2H68A.	60	85 x 175	1,10	1	A
CLZ-FP-60/12,5-60Hz-HD	[C] R2H68B.	60	85 x 245	1,20	1	A
CLZ-FP-60/15-60Hz-HD	[C] R2H68E.	60	85 x 245	1,30	1	A
CLZ-FP-60/17,5-60Hz-HD	[C] R2H68I.	60	85 x 245	1,40	1	A
CLZ-FP-60/20-60Hz-HD	[C] R2H68J.	60	100 x 245	1,90	7	A
CLZ-FP-60/21-60Hz-HD	[C] R2H68K.	60	100 x 245	2,00	7	A
CLZ-FP-60/25-60Hz-HD	[C] R2H68L.	60	100 x 245	2,20	7	A
CLZ-FP-60/30-60Hz-HD	[C] R2H68N.	60	116 x 245	2,40	2	B
CLZ-FP-60/34,5-60Hz-HD	[C] R2H68P.	60	116 x 245	2,60	2	B

Type	Code	660 V kvar	690 V kvar	Hz	dia.x alt. (mm)	weight (kg)	Cover (opc.)	Terminal
Un = 3 x 690 V / 60 Hz								
CLZ-FPT-69/2,5-60Hz-HD	[C] R2H792.	2.3	2.5	60	63,5 x 127	0,90	-	F
CLZ-FPT-69/5-60Hz-HD	[C] R2H796.	4.6	5	60	63,5 x 175	1,00	-	F
CLZ-FPT-69/7,5-60Hz-HD	[C] R2H798.	6.9	7.5	60	63,5 x 202	1,10	-	F
CLZ-FP-69/10-60Hz-HD	[C] R2H69B.	9.15	10	60	85 x 245	1,10	1	A
CLZ-FP-69/12,5-60Hz-HD	[C] R2H69D.	11.4	12.5	60	85 x 245	1,20	1	A
CLZ-FP-69/15-60Hz-HD	[C] R2H69E.	13.7	15	60	85 x 245	1,40	1	A
CLZ-FP-69/20-60Hz-HD	[C] R2H69J.	18.3	20	60	100 x 245	2,00	7	A
CLZ-FP-69/25-60Hz-HD	[C] R2H69L.	22.9	25	60	116 x 245	2,30	2	B
CLZ-FP-69/30-60Hz-HD	[C] R2H69N.	27.5	30	60	116 x 245	2,50	2	B
CLZ-FP-69/40-60Hz-HD	[C] R2H69R.	36.6	40	60	136 x 220	3,80	-	B
CLZ-FP-69/50-60Hz-HD	[C] R2H69S.	45.75	50	60	136 x 355	5,90	-	C

CMC, Contactors with fast discharge resistor

Type	Code	220 V kvar	240 V kvar	480 V kvar	660 V kvar	690 V kvar	kvar 200-240V	kvar 400-440-480 V	kvar 500-550V	kvar 660-690 V	Hz	Coil voltage (Vac)
CMC 7.5 B	[C] R281A5.	5	5	7.5	11	11	5	7.5	9	11	50/60	230
CMC 12 B	[C] R281A6.	6.7	6.7	12.5	18	18	6.7	12.5	15	18	50/60	230
CMC 20 B	[C] R281A4.	11	11	20	30	30	11	20	24	30	50/60	230
CMC 32 B	[C] R281A8.	14	14	25	35	35	14	25	30	35	50/60	230
CMC 40 B	[C] R281A1.	20	20	30	40	40	20	30	35	40	50/60	230
CMC 75 B	[C] R281A9.	29	29	50	70	70	29	50	60	70	50/60	230
CMC 85 B	[C] R281A3.	32	32	60	80	80	32	60	70	80	50/60	230
CMC 150 B	[C] R281AD.	45	45	80	115	115	45	80	100	115	50/60	230

RD,,Fast discharging resistors

Type	Code	Impedance (Ω)	Dissipated power (w)
RD-25 2X1500	[1] R3Z210.	2 x 1500	10
RD-60 2X1000	[*] R3Z220.	2 x 1000	10
RD-100 2X1000	[*] R3Z230.	2 x 1000	15

IR, current limiting impedances

Type	Code	Cable section (mm2)
IR-6	[*] R3Z310.	6
IR-10	[*] R3Z320.	10
IR-25	[*] R3Z330.	25
IR-35	[*] R3Z340.	35
IR-50	[*] R3Z350.	50

ELEB, CSB coils

Type	Code	Use voltage (V)	μF
ELEB10100PCA	[1] R213A8.	230	100
ELEB10150PCA	[1] R213AE.	230	150
ELEB14055PCA	[1] R2139D.	400/440/690(*)	55
ELEB14069PCA	[1] R2139H.	400/440/690(*)	69
ELEB14082PCA	[1] R2139R.	400/440/690(*)	82
Type	Code	Use voltage (V)	μF
ELEB18027PCA	[1] R2137T.	460	27.4
ELEB18035PCA	[1] R2137A.	460	35
ELEB18050PCA	[1] R2137P.	460	50
ELEB20019PCA	[1] R2138D.	480/525/550	19.2
ELEB20038PCA	[1] R2138G.	480/525/550	38.4

CSB, Power capacitors for LV

Type	Code	kvar 50 Hz	kvar 60 Hz	Size (mm) width xhei- ght xdepth	weight (kg)
230 Vac					
CSB-23/10	[*] R2321C.	10	12.5	359x330x120	3,30
CSB-23/12,5	[2] R2321D.	12.5	15	360x330x120	3,30
CSB-23/15	[*] R2321E.	15	17.5	360x330x120	3,30
CSB-23/20	[*] R2321F.	20	25	360x330x120	4,20
CSB-23/25	[2] R2321G.	25	30	360x330x120	5,00
CSB-23/30	[2] R2321H.	30	35	360x330x120	5,00
CSB-23/40	[*] R2321J.	40	50	360x520x120	7,30
CSB-23/50	[*] R2321K.	50	60	360x520x120	8,20
400 Vac					
CSB-40/15	[*] R2323E.	15	17.5	360x330x120	3,30
CSB-40/20	[*] R2323F.	20	25	360x330x120	3,30
CSB-40/25	[*] R2323G.	25	30	360x330x120	3,30
CSB-40/30	[*] R2323H.	30	35	360x330x120	4,20
CSB-40/40	[*] R2323J.	40	50	360x330x120	5,00
CSB-40/50	[*] R2323K.	50	60	360x330x120	5,00
CSB-40/60	[*] R2323L.	60	70	360x520x120	6,60
CSB-40/80	[*] R2323Q.	80	95	360x520x120	8,20
CSB-40/100	[*] R2323R.	100	120	360x520x120	9,00
440 Vac					
CSB-44/15	[*] R2324E.	15	17.5	360x330x120	2,60
CSB-44/20	[*] R2324F.	20	25	360x330x120	3,30
CSB-44/25	[2] R2324G.	25	30	360x330x120	3,30
CSB-44/30	[*] R2324H.	30	35	360x330x120	3,50
CSB-44/40	[*] R2324J.	40	50	360x330x120	4,20
CSB-44/50	[*] R2324K.	50	60	360x330x120	5,00
CSB-44/60	[*] R2324L.	60	70	360x330x120	5,00
CSB-44/80	[*] R2324Q.	80	95	360x520x120	7,30
CSB-44/100	[*] R2324R.	100	120	360x520x120	8,20
460 Vac					
CSB-46/15	[2] R2325E.	15	17.5	360x330x120	3,30
CSB-46/20	[*] R2325F.	20	25	360x330x120	3,30
CSB-46/25	[2] R2325G.	25	30	360x330x120	4,20
CSB-46/30	[*] R2325H.	30	35	360x330x120	4,20
CSB-46/40	[*] R2325J.	40	50	360x330x120	5,00
CSB-46/50	[*] R2325K.	50	60	360x520x120	6,60
CSB-46/60	[*] R2325L.	60	70	360x520x120	7,30
CSB-46/80	[*] R2325Q.	80	95	360x520x120	9,00
CSB-46/100	[*] R2325R.	100	120	360x610x120	10,90

CSB-2V, Power capacitors for LV dual voltage

Type	Code	kvar 50 Hz	kvar 60 Hz	Size (mm) width xhei- ght xdepth	weight (kg)
230 / 400 Vac					
CSB-2340/5	[2] R23288.	5	6	360x330x120	3,30
CSB-2340/7,5	[2] R2328A.	7.5	9	360x330x120	3,90
CSB-2340/10	[2] R2328C.	10	12.5	360x330x120	3,90
CSB-2340/12,5	[2] R2328D.	12.5	15	360x330x120	3,90
CSB-2340/15	[2] R2328E.	15	17.5	360x330x120	4,60
CSB-2340/20	[2] R2328F.	20	25	360x330x120	4,60
CSB-2340/25	[2] R2328G.	25	30	360x330x120	4,60
CSB-2340/30	[2] R2328H.	30	35	360x330x120	6,20
CSB-2340/40	[2] R2328J.	40	50	360x520x120	8,30

Type	Code	kvar 50 Hz	kvar 60 Hz	Size (mm) width xhei- ght xdepth	weight (kg)
480 Vac					
CSB-48/10	[C] R277AC.	8	10	360x330x120	2,80
CSB-48/15	[C] R277AE.	12.5	15	360x330x120	3,50
CSB-48/20	[C] R277AF.	16.7	20	360x330x120	3,50
CSB-48/25	[C] R277AG.	20.8	25	360x330x120	4,20
CSB-48/30	[C] R277AH.	25	30	360x330x120	4,20
CSB-48/40	[C] R277AJ.	33.3	40	360x330x120	5,00
CSB-48/50	[C] R277AK.	41.7	50	360x520x120	6,80
CSB-48/60	[C] R277AL.	50	60	360x520x120	7,50
525 Vac					
CSB-52/10	[C] R2326C.	10	12.5	360x330x120	2,60
CSB-52/15	[C] R2326E.	15	17.5	360x330x120	3,30
CSB-52/20	[C] R2326F.	20	25	360x330x120	3,30
CSB-52/25	[C] R2326G.	25	30	360x330x120	4,20
CSB-52/30	[C] R2326H.	30	35	360x330x120	4,20
CSB-52/40	[C] R2326J.	40	50	360x330x120	5,00
CSB-52/50	[C] R2326K.	50	60	360x520x120	6,60
CSB-52/60	[C] R2326L.	60	70	360x520x120	7,30
CSB-52/70	[C] R2326M.	70	85	360x520x120	8,20
690 Vac					
CSB-69/10	[3] R232BC.	10	12.5	360x330x120	2,60
CSB-69/15	[3] R232BE.	15	17.5	360x330x120	3,30
CSB-69/20	[3] R232BF.	20	25	360x330x120	3,30
CSB-69/25	[3] R232BG.	25	30	360x330x120	3,30
CSB-69/30	[3] R232BH.	30	35	360x330x120	4,20
CSB-69/40	[3] R232BJ.	40	50	360x330x120	5,00
CSB-69/50	[3] R232BK.	50	60	360x330x120	5,00
CSB-69/60	[3] R232BL.	60	70	360x520x120	6,60
CSB-69/80	[3] R232BQ.	80	95	360x520x120	8,20
CSB-69/100	[3] R232BR.	100	0	360x520x120	9,00
1100 Vac for LV networks					
CSB-110/10	[1] R2327C.	10	12	360x330x120	3,50
CSB-110/20	[1] R2327F.	20	24	360x330x120	5,00
CSB-110/30	[1] R2327H.	30	36	360x330x120	5,00
CSB-110/40	[1] R2327J.	40	48	360x520x120	7,50
CSB-110/50	[1] R2327K.	50	60	360x520x120	9,00
CSB-110/60	[1] R2327L.	60	72	360x520x120	9,00
CSB-110/70	[1] R2327M.	70	84	360x610x120	10,90

Dual voltage capacitors are used for fixed compensation purposes in motors



CFB, Power capacitors for harmonic filtering (for FR)

Type	Code	230 V kvar		For reactor	Size (mm) width xheight xdepth	weight (kg)
CFB 260						
CFB-26/6,3	[1] R2412A.	5		RX-5-230	360x330x120	2,60
CFB-26/12,5	[1] R2412D.	10		RX-10-230	360x330x120	3,30
CFB-26/18	[1] R2412E.	15		RBX-15-230	360x330x120	3,30
CFB-26/25	[1] R2412G.	20		RBX-20-230	360x330x120	4,20
CFB-26/30	[1] R2412H.	25		RBX-25-230	360x330x120	5,00
CFB-26/37	[1] R2412J.	30		RBX-30-230	360x330x120	5,00
CFB-26/48	[1] R2412K.	40		RBX-40-230	360x520x120	7,30
CFB-26/60	[1] R2412L.	50		RBX-50-230	360x520x120	8,20

Type	Code	400 V kvar	440 V kvar	For reactor	Size (mm) width xheight xdepth	weight (kg)
CFB 460						
CFB-46/6	[1] R2415A.	5	6.25	RX-6,25-460	360x330x120	3,30
CFB-46/12,5	[1] R2415D.	10	12.5	RX-10-400 / 12,5-460	360x330x120	3,90
CFB-46/15	[1] R2415E.	12.5	15	RX-12,5-400 / 15-460	360x330x120	3,90
CFB-46/19	[1] R2415F.	15	18.5	RX-15-400 / 19-460	360x330x120	3,90
CFB-46/25	[1] R2415G.	20	25	RBX-20-400 / 25-460	360x330x120	4,60
CFB-46/30	[1] R2415H.	25	30	RBX-25-400 / 30-460	360x330x120	4,60
CFB-46/37	[1] R2415J.	30	40	RBX-30-400 / 37-460	360x330x120	6,20
CFB-46/50	[*] R2415K.	40	50	RBX-40-400 / 50-460	360x520x120	7,00
CFB-46/62	[*] R2415L.	50	60	RBX-50-400 / 62-460	360x520x120	9,20
CFB-46/74	[*] R2415P.	60	75	RBX-60-400 / 74-460	360x520x120	9,90
CFB-46/100	[*] R2415R.	80	100	RBX-80-400 / 100-460	360x610x120	11,30

Type	Code	690 V kvar		For reactor	Size (mm) width xheight xdepth	weight (kg)
CFB 790						
CFB-79/6	[C] R241DA.	5		RE-5-400 / 6-460	360x330x120	2,60
CFB-79/12,5	[C] R241DD.	10		RE-10-400 / 12,5-460	360x330x120	2,60
CFB-79/19	[C] R241DF.	15		RE-15-400 / 19-460	360x330x120	3,30
CFB-79/25	[C] R241DG.	20		RE-20-400 / 25-460	360x330x120	3,30
CFB-79/30	[C] R241DH.	25		RE-25-400 / 30-460	360x330x120	4,20
CFB-79/37	[C] R241DI.	30		RE-30-400 / 37-460	360x330x120	4,20
CFB-79/50	[C] R241DK.	40		RE-40-400 / 50-460	360x520x120	5,00
CFB-79/62	[C] R241DL.	50		RBE-50-400 / 62-460	360x520x120	6,60
CFB-79/74	[C] R241DP.	60		RBE-60-400 / 74-460	360x520x120	7,30
CFB-79/100	[C] R241DR.	80		RBE-80-400 / 100-460	360x610x120	9,00

Supplement selection table to adapt CSB / CFB capacitor height to a capacitor bank equipped with CS / CF capacitors

CS / CF Capacitor TO REPLACE		CSB / CFB NEW capacitor			
Total capacitor height (box + terminals) (mm)	Height box capacitor (mm)	Total height of capacitor (box+terminals) (mm)	Capacitor box height (mm)		
390	330	330	270	SP-60	[*] R2ZZZ1
610	550	520	460	SP-90	[*] R2ZZZ2
760	700	610	550	SP-150	[*] R2ZZZ3

Delivery time: [*] immediate
[x] working weeks
[c] consult


RX / RBX, Reactors III for detuned static filters

Type	Code	400 V kvar	440 V kvar	Hz	For capacitor	In (A)	L(mH)	Losses	Size (mm) width xheight xdepth	weight (kg)
400 Vac, 50 Hz, f resonance = 189 Hz / p= 7%										
RX-5-400	[*] P72110.	5	-	50	CLZ-FP-46/6,25 - CFB-46/6	7,6	7.66	25	155x165x92	5,00
RX-6,25-400	[*] P72112.	6.25	-	50	CLZ-FP-52/10 - CFB-46/7,75	10	6.12	36	180x190x100	8,00
RX-10-400	[*] P72115.	10	-	50	CLZ-FP-46/12,5 - CFB-46/12,5	15,5	3.83	50	180x190x100	7,50
RX-12,5-400	[*] P72117.	12.5	-	50	CLZ-FP-46/15 - CFB-46/15	19	3.06	53	180x192x110	8,00
RX-15-400	[*] P72120.	15	-	50	CLZ-FP-46/19 - CFB-46/19	23	2.55	57	180x190x110	8,50
RBX-20-400	[*] P72125.	20	-	50	CLZ-FP-46/25 - CFB-46/25	30	1.92	69	235x165x125	14,00
RBX-25-400	[*] P72130.	25	-	50	CLZ-FP-46/30 - CFB-46/30	37	1.53	106	235x165x125	14,00
RBX-30-400	[*] P72135.	30	-	50	2 x CLZ-FP-46/19 - CFB-46/37	45	1.27	102	255x200x125	19,00
RBX-40-400	[*] P72140.	40	-	50	2 x CLZ-FP-46/25 - CFB-46/50	60	0.95	137	255x200x125	20,00
RBX-50-400	[*] P72145.	50	-	50	2 x CLZ-FP-46/30 - CFB-46/62	75	0.76	153	255x220x145	25,00
RBX-60-400	[*] P72150.	60	-	50	3 x CLZ-FP-46/25 - CFB-46/74	90	0.63	168	280x240x145	28,00
RBX-80-400	[*] P72155.	80	-	50	4 x CLZ-FP-46/25 - CFB-46/100	120	0.47	246	305x235x155	31,00
400 Vac, 50 Hz, f resonance = 134 Hz / p= 14%										
RX-5-400-14%	[C] P71021.	5	-	50	CLZ-FP-52/7,5-HD - CFB-52/7,5	-	16.31	-	-	-
RX-10-400-14%	[C] P71022.	10	-	50	CLZ-FP-52/15-HD - CFB-52/15	-	8.15	-	-	-
RX-12,5-400-14%	[C] P71023.	12.5	-	50	CLZ-FP-52/20-HD - CFB-52/19	-	6.52	-	-	-
RX-15-400-14%	[C] P71024.	15	-	50	CLZ-FP-52/25-HD - CFB-52/23	-	5.43	-	-	-
RX-20-400-14%	[C] P71025.	20	-	50	CLZ-FP-52/30-HD - CFB-52/30	-	4.07	-	-	-
RBX-25-400-14%	[C] P72330.	25	-	50	CLZ-FP-52/12,5-HD + CLZ-FP-52/30-HD - CFB-52/38	-	3.26	-	-	-
RBX-30-400-14%	[C] P72335.	30	-	50	CLZ-FP-52/25-HD + CLZ-FP-52/20-HD - CFB-52/46	-	2.71	-	-	-
RBX-40-400-14%	[C] P72340.	40	-	50	2 x CLZ-FP-52/30-HD - CFB-52/60,5	-	2.03	-	-	-
RBX-50-400-14%	[C] P72345.	50	-	50	3 x CLZ-FP-52/25-HD - CFB-52/76	-	1.63	-	-	-
RBX-60-400-14%	[C] P72350.	60	-	50	3 x CLZ-FP-52/30-HD - CFB-52/91	-	1.35	-	-	-
400 Vac, 50 Hz, f resonance = 210 Hz / p= 5,67%										
RX-5-400-5,67%	[C] P72210.	-	5	50	CLZ-FP-46/6,25-HD - CFB-46/6	-	6.11	-	-	-
RX-6,25-400-5,67%	[C] P72212.	-	6.25	50	CLZ-FP-52/10-HD - CFB-46/7,75	-	4.88	-	-	-
RX-10-400-5,67%	[C] P72215.	-	10	50	CLZ-FP-46/12,5-HD - CFB-46/12,5	-	3.05	-	-	-
RX-12,5-400-5,67%	[C] P72217.	-	12.5	50	CLZ-FP-46/15-HD - CFB-46/15	-	2.44	-	-	-
RX-15-400-5,67%	[C] P72220.	-	15	50	CLZ-FP-46/19-HD - CFB-46/19	-	2.04	-	-	-
RBX-20-400-5,67%	[C] P72225.	-	20	50	CLZ-FP-46/25-HD - CFB-46/25	-	1.53	-	-	-
RBX-25-400-5,67%	[C] P72230.	-	25	50	CLZ-FP-46/30-HD - CFB-46/30	-	1.22	-	-	-
RBX-30-400-5,67%	[C] P72235.	-	30	50	2 x CLZ-FP-46/19-HD - CFB-46/37	-	1.02	-	-	-
RBX-40-400-5,67%	[C] P72240.	-	40	50	2 x CLZ-FP-46/25-HD - CFB-46/50	-	0.76	-	-	-
RBX-50-400-5,67%	[C] P72245.	-	50	50	2 x CLZ-FP-46/30-HD - CFB-46/62	-	0.61	-	-	-
RBX-60-400-5,67%	[C] P72250.	-	60	50	3 x CLZ-FP-46/25-HD - CFB-46/74	-	0.51	-	-	-
RBX-80-400-5,67%	[C] P72255.	-	80	50	4 x CLZ-FP-46/25-HD - CFB-46/100	-	0.38	-	-	-

RX / RBX-60Hz, Reactors III for detuned static filters

Type	Code	480 V kvar	Hz	For capacitor	L(mH)
480 Vac, 60 Hz, f resonance = 227 Hz / p= 7%					
RX-7,5-480-60 Hz-7%	[C] P721130017000	7.5	60	CLZ-FP-52/8,5-60Hz-HD -	6.12
RX-10-480-60Hz-7%	[C] P721150017000	10	60	CLZ-FP-52/11,5-60Hz-HD -	4.58
RX-12,5-480-60 Hz-7%	[C] P721170017000	12.5	60	CLZ-FP-52/15-60Hz-HD -	3.66
RX-15-480-60 Hz-7%	[C] P721200017000	15	60	CLZ-FP-52/17-60Hz-HD -	3.06
RBX-20-480-60Hz-7%	[C] P721250017000	20	60	CLZ-FP-52/22,5-60Hz-HD -	2.29
RBX-25-480-60 Hz-7%	[C] P721300017000	25	60	CLZ-FP-52/30-60Hz-HD -	1.83
RBX-30-480-60 Hz-7%	[C] P721350017000	30	60	CLZ-FP-52/34-60Hz-HD -	1.53
RBX-40-480-60Hz-7%	[C] P721400017000	40	60	2 x CLZ-FP-52/22,5-60Hz-HD -	1.15
RBX-50-480-60 Hz-7%	[C] P721450017000	50	60	2 x CLZ-FP-52/30 -60Hz-HD -	0.92
RBX-60-480-60 Hz-7%	[C] P721500017000	60	60	2 x CLZ-FP-52/34-60Hz-HD -	0.76
RBX-80-480-60Hz-7%	[C] P721550017000	80	60	3 x CLZ-FP-52/30-60Hz-HD -	0.58
480 Vac, 60 Hz, f resonance = 160 Hz / p= 14%					
RX-12,5-480-60Hz-14%	[C] P710230017000	12.5	60	CLZ-FP-60/17,5-60Hz-HD -	7.81
RX-15-480-60Hz-14%	[C] P710240017000	15	60	CLZ-FP-60/21-60Hz-HD -	6.52
RX-25-480-60Hz-14%	[C] P723300017000	25	60	CLZ-FP-60/34,5-60Hz-HD -	3.91
RBX-30-480-60Hz-14%	[C] P723500017000	30	60	2 x CLZ-FP-60/21-60Hz-HD -	3.26
RBX-50-480-60Hz-14%	[C] P724200017000	50	60	2 x CLZ-FP-60/34,5-60Hz-HD -	1.95

 Delivery time: [*] immediate
 [x] working weeks
 [c] consult



CFB-6B, Power capacitors for harmonics filters with static switching operation of the FRE series

Type	Code	400 V kvar	440 V kvar	For reactor	Size (mm) width xheight xdepth	weight (kg)
CFB-46/6-6B	[C] R2425A.	5	6.25	RE-5-400 / 6-460	360x330x120	3,30
CFB-46/12,5-6B	[C] R2425D.	10	12.5	RE-10-400 / 12,5-460	360x330x120	3,90
CFB-46/19-6B	[C] R2425F.	15	18.5	RE-15-400 / 19-460	360x330x120	3,90
CFB-46/25-6B	[C] R2425G.	20	25	RE-20-400 / 25-460	360x330x120	4,60
CFB-46/30-6B	[C] R2425H.	25	30	RE-25-400 / 30-460	360x330x120	4,60
CFB-46/37-6B	[C] R2425J.	30	40	RE-30-400 / 37-460	360x330x120	6,20
CFB-46/50-6B	[C] R2425K.	40	50	RE-40-400 / 50-460	360x520x120	7,00
CFB-46/62-6B	[C] R2425L.	50	60	RBE-50-400 / 62-460	360x520x120	9,20
CFB-46/74-6B	[C] R2425P.	60	75	RBE-60-400 / 74-460	360x520x120	9,90
CFB-46/100-6B	[C] R2425R.	80	100	RBE-80-400 / 100-460	360x610x120	11,30

NOTE: The capacitor has been sized for 460/260 V and a power that is 25% higher than that indicated in all columns to compensate for the overvoltage effect of the reactor.

Type	Code	230 V kvar	For reactor	Size (mm) width xheight xdepth	weight (kg)
CFB-26/6,3-6B	[C] R2422A.	5	RE-5-230	360x330x120	3,20
CFB-26/12,5-6B	[C] R2422D.	10	RE-10-230	360x330x120	3,90
CFB-26/18-6B	[C] R2422E.	15	RE-15-230	360x330x120	4,60
CFB-26/25-6B	[C] R2422G.	20	RBE-20-230	360x330x120	6,20
CFB-26/30-6B	[C] R2422H.	25	RBE-22-230	360x330x120	7,00
CFB-26/37-6B	[C] R2422J.	30	RBE-30-230	360x330x120	6,20
CFB-26/48-6B	[C] R2422K.	40	RBE-40-230	360x520x120	8,30

RE-RBE, Reactors III for detuned static filters with FRE static switching

For capacitors with 6 terminals



Type	Code	400 V kvar	Hz	For capacitor	In (A)	L(mH)	Losses	Size (mm) width xheight xdepth	weight (kg)
RE-5-400	[4] P70210.	5	50	CFB 46 / 6-6B	5 A	23.67	25	92x165x155	6,00
RE-10-400	[4] P70215.	10	50	CFB 46 / 12,5-6B	9 A	11.27	50	102x190x180	8,00
RE-15-400	[4] P70220.	15	50	CFB 46 / 19-6B	13 A	7.5	57	112x190x180	9,50
RE-20-400	[4] P70225.	20	50	CFB 46 / 25-6B	17 A	5.68	76	122x190x180	11,50
RE-25-400	[4] P70230.	25	50	CFB 46 / 30-6B	21 A	4.68	90	122x250x240	17,00
RE-30-400	[4] P70235.	30	50	CFB 46 / 37-6B	26 A	3.84	120	132x250x240	20,50
RE-40-400	[4] P70240.	40	50	CFB 46 / 50-6B	35 A	2.84	145	147x250x240	25,50
RBE-50-400	[4] P70245.	50	50	CFB 46 / 62-6B	42 A	2.29	185	154x233x310	29,00
RBE-60-400	[4] P70250.	60	50	CFB 46 / 74-6B	51 A	1.89	205	154x234x338	30,00
RBE-80-400	[4] P70255.	80	50	CFB 46 / 100-6B	68 A	1.42	235	154x254x338	41,00

CODIFICATION TABLE

RX, RBX, RE, RBE

Code	Internal code					
P	7	X	X	X	X	0 0 X X X
						↑ ↑ ↑
						Delivery time
Frequency	Standard (50 Hz)				0	-
	60 Hz				1	C
Voltage	Standard (400 V _{c.a.})				0	-
	230 V _{c.a.}				1	C
	Other voltages				C	C
factor P %	Standard (7 %)				0	-
	6 %				1	C
	12,5 %				2	C
	14 %				3	C

Delivery time: [*] immediate
[x] working weeks
[c] consult

CV, Power capacitors for LV

Type	Code	kvar 50 Hz	kvar 60 Hz	Size (mm) width x height x depth	weight (kg)
230 Vac					
CV-23/2,5	[*] R20114.	2.5	3	204x435x75	3,00
CV-23/3,75	[*] R20116.	3.75	4.5	204x435x75	3,50
CV-23/5	[*] R20118.	5	6	204x435x75	3,50
CV-23/7,5	[*] R2011A.	7.5	9	204x435x75	4,00
CV-23/10	[*] R2011C.	10	12.5	204x435x75	4,00
CV-23/12,5	[*] R2011D.	12.5	15	204x435x75	4,50
CV-23/15	[*] R2011E.	15	17.5	204x435x75	4,50
400 Vac					
CV-40/2,5	[*] R20134.	2.5	3	204x435x75	2,50
CV-40/5	[*] R20138.	5	4.5	204x435x75	2,50
CV-40/7,5	[*] R2013A.	7.5	9	204x435x75	3,00
CV-40/10	[*] R2013C.	10	12.5	204x435x75	3,00
CV-40/12,5	[*] R2013D.	12.5	15	204x435x75	3,50
CV-40/15	[*] R2013E.	15	17.5	204x435x75	4,50
CV-40/20	[*] R2013F.	20	25	204x435x75	4,50
CV-40/25	[*] R2013G.	25	30	204x435x75	6,50

Type	Code	kvar 50 Hz	kvar 60 Hz	Size (mm) width x height x depth	weight (kg)
440 Vac					
CV-44/2,5	[*] R20144.	2.5	3	204x435x75	2,00
CV-44/5	[*] R20148.	5	4.5	204x435x75	2,00
CV-44/7,5	[*] R2014A.	7.5	9	204x435x75	2,50
CV-44/10	[*] R2014C.	10	12.5	204x435x75	2,50
CV-44/12,5	[*] R2014D.	12.5	15	204x435x75	3,00
CV-44/15	[*] R2014E.	15	17.5	204x435x75	4,00
CV-44/20	[*] R2014F.	20	25	204x435x75	4,00
CV-44/25	[*] R2014G.	25	30	204x435x75	6,00
CV-44/30	[*] R2014J.	30	35	204x435x75	6,50
460 Vac					
CV-46/2,5	[1] R20154.	2.5	3	204x435x75	1,00
CV-46/5	[1] R20158.	5	6	204x435x75	1,00
CV-46/7,5	[1] R2015A.	7.5	9	204x435x75	1,50
CV-46/10	[1] R2015C.	10	12.5	204x435x75	1,50
CV-46/12,5	[1] R2015D.	12.5	15	204x435x75	2,00
CV-46/15	[*] R2015E.	15	17.5	204x435x75	3,00

CQ, Power capacitors for LV

Type	Code	kvar 50 Hz	kvar 60 Hz	Size (mm) width x height x depth	weight (kg)
230 Vac					
CQ-23/10	[*] R2031C.	10	12.5	360x520x75	4,90
CQ-23/12,5	[*] R2031D.	12.5	15	360x520x75	4,90
CQ-23/15	[*] R2031E.	15	17.5	360x520x75	4,90
CQ-23/20	[*] R2031F.	20	25	360x520x75	6,40
CQ-23/25	[*] R2031G.	25	30	360x520x75	7,90
CQ-23/30	[*] R2031H.	30	35	360x520x75	7,90
400 Vac					
CQ-40/10	[*] R2033C.	10	12.5	360x520x75	4,00
CQ-40/12,5	[*] R2033D.	12.5	15	360x520x75	4,50
CQ-40/15	[*] R2033E.	15	17.5	360x520x75	5,00
CQ-40/20	[*] R2033F.	20	25	360x520x75	6,00
CQ-40/25	[*] R2033G.	25	30	360x520x75	6,00
CQ-40/30	[*] R2033H.	30	35	360x520x75	6,00
CQ-40/40	[*] R2033J.	40	50	360x520x75	7,00
CQ-40/50	[*] R2033K.	50	60	360x520x75	9,00

Type	Code	kvar 50 Hz	kvar 60 Hz	Size (mm) width x height x depth	weight (kg)
440 Vac					
CQ-44/15	[*] R2034E.	15	17.5	360x520x75	4,10
CQ-44/20	[*] R2034F.	20	25	360x520x75	4,90
CQ-44/25	[*] R2034G.	25	30	360x520x75	4,90
CQ-44/30	[*] R2034H.	30	35	360x520x75	4,90
CQ-44/40	[*] R2034J.	40	50	360x520x75	6,00
CQ-44/50	[*] R2034K.	50	60	360x520x75	7,90
460 Vac					
CQ-46/10	[C] R2035C.	10	12.5	360x520x75	4,10
CQ-46/12,5	[C] R2035D.	12.5	15	360x520x75	4,10
CQ-46/15	[C] R2035E.	15	17.5	360x520x75	4,10
CQ-46/20	[C] R2035F.	20	25	360x520x75	4,90
CQ-46/25	[C] R2035G.	25	30	360x520x75	4,90
CQ-46/30	[C] R2035H.	30	35	360x520x75	4,90
CQ-46/40	[C] R2035J.	40	50	360x520x75	7,90
CQ-46/50	[C] R2035K.	50	60	360x520x75	7,90
CQ-46/60	[C] R2035L.	60	0	360x520x75	8,10

CSB-A, Fixed capacitors with automatic protection 50 Hz

Type	Code	400 V kvar	440 V kvar	Cut off power	Aut.Switch (A)	Cable section (mm ²)	Size (mm) width x height x depth	weight (kg)
CSB-A- 25 - 440	[2] R2473H.	21	25	50 kA	63	16	360x814x196	15,00
CSB-A- 37,5 - 440	[2] R2473G.	31	37.5	50 kA	80	25	360x814x196	11,00
CSB-A- 50 - 440	[2] R2473J.	42	50	50 kA	100	25	360x814x196	16,00
CSB-A- 60 - 440	[2] R2473K.	50	60	50 kA	125	35	360x814x196	20,00
CSB-A- 75 - 440	[2] R2473L.	62	75	50 kA	160	50	360x100x196	21,00
CSB-A- 100 - 440	[2] R2473M.	83	100	50 kA	200	70	360x100x196	26,00
CSB-A- 120 - 440	[2] R2473N.	100	120	50 kA	250	95	360x100x196	28,00



CSB-M, Power capacitors with circuit breaker protection

CSB-M 230 Vac / 50 Hz. - 440 Vac / 50 Hz.

Type	Code	230 V kvar	Cut off power	Aut.Switch (A)	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)	
230 Vac, 50 Hz								
CSB-M - 5 - 230	[1] R23718.	5	6 kA	20	6	140x381x280	9,00	
CSB-M - 7,5 - 230	[1] R2371A.	7.5	6 kA	32	6	140x381x280	9,20	
CSB-M - 10 - 230	[1] R2371C.	10	6 kA	40	10	140x381x280	9,50	
CSB-M - 12,5 - 230	[1] R2371D.	12.5	6 kA	50	10	140x381x280	9,50	
CSB-M - 15 - 230	[1] R2371E.	15	6 kA	63	16	140x381x280	11,30	
CSB-M - 20 - 230	[1] R2371F.	20	10 kA	80	25	140x381x280	11,80	
CSB-M - 25 - 230	[1] R2371G.	25	10 kA	100	35	140x381x280	10,80	
CSB-M - 30 - 230	[1] R2371H.	30	10 kA	125	50	140x381x280	10,80	
Type	Code	400 V kvar	440 V kvar	Cut off power (A)	Aut.Switch (A)	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)
440 Vac, 50 Hz								
CSB-M- 5 - 440	[1] R23948.	4	5	6 kA	10	6	140x381x280	8,00
CSB-M- 7,5 - 440	[1] R2394A.	6	7.5	6 kA	16	6	140x381x280	8,00
CSB-M- 10 - 440	[1] R2394C.	8	10	6 kA	20	6	140x381x280	8,00
CSB-M- 12,5 - 440	[*] R2394D.	10	12.5	6 kA	25	6	140x381x280	8,50
CSB-M- 15 - 440	[1] R2394E.	12.5	15	6 kA	32	6	140x381x280	8,50
CSB-M- 20 - 440	[*] R2394F.	17	20	6 kA	40	10	140x381x280	9,50
CSB-M- 25 - 440	[*] R2394G.	21	25	6 kA	50	10	140x381x280	9,50
CSB-M- 30 - 440	[*] R2394H.	25	30	6 kA	63	16	140x381x280	11,00
CSB-M- 37,5 - 440	[*] R2394J.	31	37.5	10 kA	80	25	140x381x280	12,50
CSB-M- 50 - 440	[*] R2394K.	42	50	10 kA	100	35	140x381x280	15,00
CSB-M- 60 - 440	[*] R2394L.	50	60	10 kA	125	50	140x571x280	16,00
CSB-M- 75 - 440	[*] R2394M.	66	75	10 kA	160	50	140x571x280	18,00



CSB-F, Power capacitors with fuse protection

CSB-F 230 Vac / 50 Hz. - 440 Vac / 50 Hz.

Type	Code	230 V kvar	Cut off power	Fuses (A)	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)	
230 V, 50 Hz								
CSB-F - 5 - 230	[1] R23618.	5	50 kA	20	6	140x381x280	9,00	
CSB-F - 7,5 - 230	[1] R2361A.	7.5	50 kA	35	6	140x381x280	9,20	
CSB-F - 10 - 230	[1] R2361C.	10	50 kA	50	10	140x381x280	9,50	
CSB-F - 12,5 - 230	[1] R2361D.	12.5	50 kA	63	10	140x381x280	9,50	
CSB-F - 15 - 230	[1] R2361E.	15	50 kA	80	16	140x381x280	11,30	
CSB-F - 20 - 230	[1] R2361F.	20	50 kA	100	25	140x381x280	11,80	
CSB-F - 25 - 230	[1] R2361G.	25	50 kA	125	35	140x381x280	10,80	
CSB-F - 30 - 230	[1] R2361H.	30	50 kA	160	50	140x381x280	10,80	
CSB-F - 40 - 230	[1] R2361J.	40	50 kA	160	70	140x571x280	14,50	
Type	Code	400 V kvar	440 V kvar	Cut off power	Fuses (A)	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)
440 V, 50 Hz								
CSB-F- 5 - 440	[1] R23958.	4	5	50 kA	16	6	140x381x280	8,00
CSB-F- 7,5 - 440	[1] R2395A.	6	7.5	50 kA	20	6	140x381x280	8,00
CSB-F- 10 - 440	[1] R2395C.	8	10	50 kA	25	6	140x381x280	8,00
CSB-F- 12,5 - 440	[1] R2395D.	10	12.5	50 kA	35	6	140x381x280	8,50
CSB-F- 15 - 440	[1] R2395E.	12.5	15	50 kA	50	6	140x381x280	8,50
CSB-F- 20 - 440	[1] R2395F.	17	20	50 kA	50	10	140x381x280	9,50
CSB-F- 25 - 440	[1] R2395G.	21	25	50 kA	50	10	140x381x280	9,50
CSB-F- 30 - 440	[1] R2395H.	25	30	120 kA	80	16	140x381x280	11,00
CSB-F- 37,5 - 440	[1] R2395J.	31	37.5	120 kA	100	25	140x381x280	12,50
CSB-F- 50 - 440	[1] R2395K.	42	50	120 kA	125	35	140x381x280	15,00
CSB-F- 60 - 440	[1] R2395L.	50	60	120 kA	160	50	140x571x280	16,00
CSB-F- 75 - 440	[1] R2395P.	63	75	120 kA	160	70	140x571x280	18,00
CSB-F- 100 - 440	[1] R2395Q.	80	100	120 kA	160	70	140x571x280	18,50

OPTIM-FRF, Fixed capacitors with rejection reactance of p = 7%

Protección por fusibles APR, 440 V, 50 Hz

Type	Code	400 V kvar	440 V kvar	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)
OPTIM FRF, fuse protection APR, 440 V, 50 Hz						
OPTIM FRF-25-440	[2] R5X350.	21	25	10	650x1060x420	78,00
OPTIM FRF-37,5-440	[2] R5X370.	31	37.5	16	650x1060x420	82,00
OPTIM FRF-50-440	[2] R5X380.	42	50	25	650x1060x420	85,00
OPTIM FRF-60-440	[2] R5X390.	50	60	35	650x1060x420	90,00
OPTIM FRF-75-440	[2] R5X3A0.	62	75	50	650x1060x420	96,00
OPTIM FRF-100-440	[2] R5X3B0.	83	100	70	650x1060x420	110,00

OPTIM-FRM, Fixed capacitors with rejection reactance of p = 7%

Protección por automático tripolar, 440 V, 50 Hz

Type	Code	400 V kvar	440 V kvar	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)
OPTIM FRM, automatic tricolor protection, 440 V, 50 Hz						
OPTIM FRM-25-440	[2] R5Y350.	21	25	10	650x1060x420	78,00
OPTIM FRM-37,5-440	[2] R5Y370.	31	37.5	16	650x1060x420	82,00
OPTIM FRM-50-440	[2] R5Y380.	42	50	25	650x1060x420	85,00
OPTIM FRM-60-440	[2] R5Y390.	50	60	35	650x1060x420	90,00
OPTIM FRM-75-440	[2] R5Y3A0.	62	75	50	650x1060x420	96,00
OPTIM FRM-100-440	[2] R5Y3B0.	83	100	70	650x1060x420	110,00


CLP-C, CLZ Capacitor with circuit breaker and contactor

Type	Code	440 V kvar	Cut off power	IP	Size (mm) width xheight xdepth	weight (kg)
440 Vac / 50Hz						
CLP-C-44/2,5	[C] R22574.	2.5	6 kA	20	215x490x147	3,28
CLP-C-44/3	[C] R22575.	3	6 kA	20	215x490x147	3,94
CLP-C-44/5	[C] R22578.	5	6 kA	20	215x490x147	6,57
CLP-C-44/6,25	[C] R22579.	6.25	6 kA	20	215x490x147	8,21
CLP-C-44/7,5	[C] R2257A.	7.5	6 kA	20	215x490x147	9,85
CLP-C-44/10	[C] R2257C.	10	6 kA	20	215x490x147	13,00
CLP-C-44/12,5	[C] R2257D.	12.5	6 kA	20	215x490x147	16,00
CLP-C-44/15	[C] R2257E.	15	6 kA	20	215x490x147	20,00
CLP-C-44/20	[C] R2257F.	20	6 kA	20	215x490x147	26,00
CLP-C-44/25	[C] R2257G.	25	6 kA	20	215x490x147	33,00


CLP, Power capacitor with circuit breaker

Type	Code	440 V kvar	Cut off power	IP	Size (mm) width xheight xdepth	weight (kg)
440 Vac / 50Hz						
CLP-44/2,5	[2] R21574.	2.5	6 kA	20	80x350x85	3,28
CLP-44/3	[2] R21575.	3	6 kA	20	80x350x85	3,94
CLP-44/5	[2] R21578.	5	6 kA	20	80x350x85	6,57
CLP-44/6,25	[2] R21579.	6.25	6 kA	20	80x350x85	8,21
CLP-44/7,5	[2] R2157A.	7.5	6 kA	20	80x350x85	9,85



ACF, CSB capacitor with contactor and fuses

Type	Code	230 V kvar	Cut off power	Fuses (A)	Cable section (mm ²)	IP	Size (mm) width xheight xdepth	weight (kg)
230 V / 50 Hz								
ACF-20-230	[1] R3S141.	20	120 kA	125	25	50	360x814x196	17,00
ACF-25-230	[1] R3S151.	25	120 kA	125	35	63	360x1004x196	21,00
ACF-30-230	[1] R3S161.	30	120 kA	160	50	75	360x1004x196	22,00
ACF-40-230	[1] R3S181.	40	120 kA	160	70	100	360x1004x196	27,00

Type	Code	400 V kvar	440 V kvar	Cut off power	Fuses (A)	Cable section (mm ²)	IP	Size (mm) width xheight xdepth	weight (kg)
440 V / 50 Hz									
ACF-12,5-440	[1] R3S421.	10	12.5	120 kA	35	6	16	360x814x196	12,00
ACF-15-440	[1] R3S431.	12.5	15	120 kA	35	10	20	360x814x196	13,00
ACF-20-440	[1] R3S441.	17	20	120 kA	50	10	26	360x814x196	14,00
ACF-25-440	[1] R3S451.	21	25	120 kA	63	10	33	360x814x196	15,00
ACF-30-440	[1] R3S461.	25	30	120 kA	80	16	39	360x814x196	16,00
ACF-37,5-440	[1] R3S481.	31	37.5	120 kA	80	25	49	360x814x196	17,00
ACF-50-440	[1] R3S491.	42	50	120 kA	125	35	66	360x814x196	21,00
ACF-60-440	[1] R3S4A1.	50	60	120 kA	160	50	79	360x1004x196	22,00
ACF-75-440	[1] R3S4B1.	63	75	120 kA	160	70	99	360x1004x196	24,00
ACF-100-440	[1] R3S4D1.	80	100	120 kA	160	70	131	360x1004x196	29,00

Switch and cable cross-section for installations with Un= 400 V. The installation company must ensure compliance with the low voltage directive at all times, in accordance with the particularities of each installation and type of cable

Supplement selection table to adapt CSB / CFB capacitor height to a capacitor bank equipped with CS / CF capacitors

CS / CF Capacitor TO REPLACE		CSB / CFB NEW capacitor			
Total capacitor height (box + terminals) (mm)	Height box capacitor (mm)	Total heigh of capacitor (box+terminals) (mm)	Capacitor box height (mm)		
390	330	330	270	SP-60	[*] R2ZZZ1
610	550	520	460	SP-90	[*] R2ZZZ2
760	700	610	550	SP-150	[*] R2ZZZ3

Dimensions

CSB / CFB

CLZ-FP

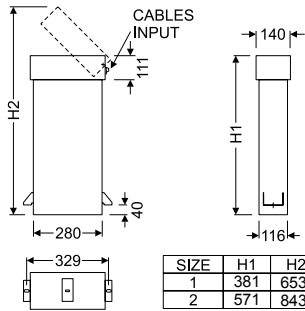
mm	d Ø	h	B	A Ø
85x175	85	175	31	90
85x245	85	245	31	90
100x245	100	245	31	105
116x245	116	245	35	121
136x220	136	220	35	141
136x261	136	261	35	141
136x355	136	355	46	141

CLZ-FPT

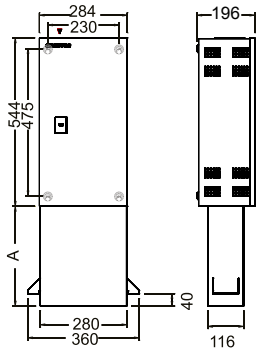
mm	d Ø	h	B	A Ø
63,5x98	63,5	98	13	68,5
63,5x127	63,5	127	13	68,5
63,5x175	63,5	175	13	68,5
63,5x202	63,5	202	13	68,5

Dimensions

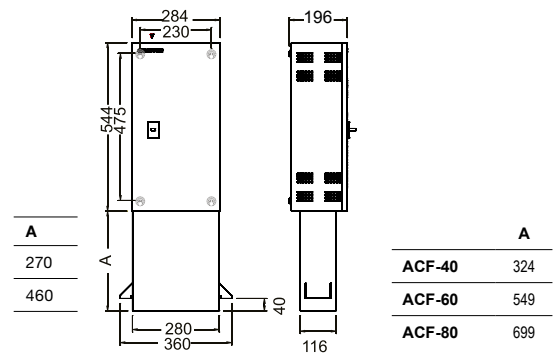
CSB-F / CSB-M



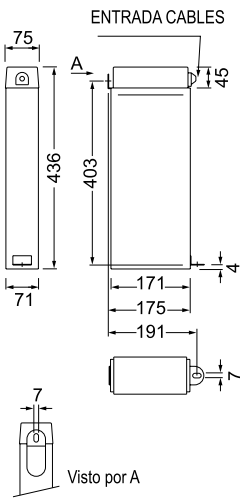
CSB-A



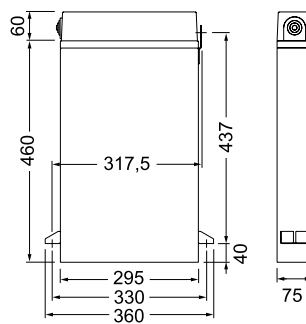
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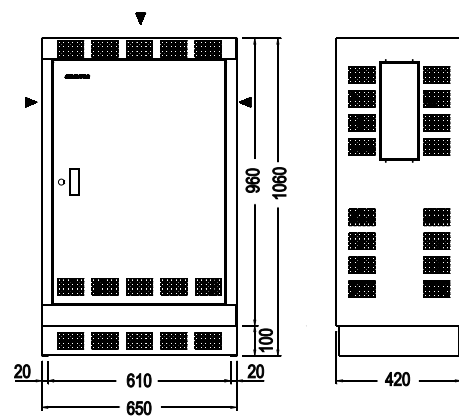
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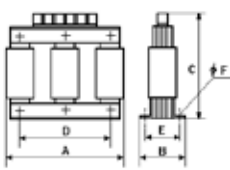
CQ



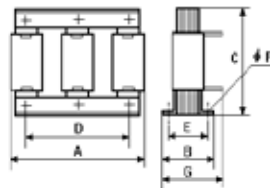
OPTIM FRF / OPTIM FRM



RX / RE



RBX / RBE



Type	A mm	B mm	C mm	D* mm	E* mm	F mm	G mm	kg
RX-5-400	155	90	165	75	70	7	--	5
RX-6,24-400	180	100	190	90	75	7	--	7
RX-10-400	180	100	190	90	75	7	--	7,5
RX-12,5-400	180	110	190	90	85	7	--	8
RX-15-400	180	110	190	90	85	7	--	8,5
RBX-20-400	235	125	165	150	95	9	145	14
RBX-25-400	235	125	165	150	95	9	145	14
RBX-30-400	255	125	200	160	95	9	150	19
RBX-40-400	255	125	200	160	95	9	150	20
RBX-50-400	255	145	220	160	115	9	175	25
RBX-60-400	280	145	240	180	115	9	175	28
RBX-80-400	305	155	235	180	121	11	190	31

Type	A mm	B mm	C mm	D* mm	E* mm	F mm	G mm	kg
RE-05-400	155	92	165	75	70	7	-	6
RE-10-400	180	102	190	90	75	7	-	8
RE-15-400	180	112	190	90	85	7	-	9,5
RE-20-400	180	122	190	90	95	7	-	11,5
RE-25-400	240	122	250	130	90	9	-	17
RE-30-400	240	132	250	130	100	9	-	20,5
RE-40-400	240	147	250	130	115	9	-	25,5
RBE-50-400	310	154	233	160	120	9	185	29
RBE-60-400	338	154	234	180	120	9	185	30
RBE-80-400	338	154	254	180	120	11	190	41

* Distance between fixings

Low voltage capacitor banks

Table: Selection of the reactive energy compensation unit

				Page
Multiple loads	Slow variations	without harmonics	OPTIM 2 / OPTIM P&P	134
		with harmonics	OPTIM FR P&P	136
			FAR-Q	147
	Semi-quick variations		OPTIM HYB	compensación fase a fase redes desequilibradas 135
Quick variations		without harmonics	OPTIM EMS-C / OPTIM EMK	139
		with harmonics	OPTIM FRE	Elimination of resonances 140

Table: Selection of the OPTIM






	OPTIM 1	OPTIM 2	OPTIM 3 P&P / 5 P&P	OPTIM 9 P&P / 8 P&P	OPTIM 8L / 14L / 16L
					
Rated voltage	440 V	440 V	440 V	440 V	440 V
Service voltage	400 V	400 V	400 V	400 V	400 V
Power range at rated voltage	2,5 ... 30 kvar	7,5 ... 30 kvar	OPTIM 3: 12,5 ... 62,5 kvar OPTIM 5: 55 ... 150 kvar	OPTIM 9: 165 ... 270 kvar OPTIM 8: 300 ... 480 kvar	OPTIM 8L: 450 a 800 kvar OPTIM 14L: 900 a 1400 kvar OPTIM 16L: 1500 a 1600 kvar
Contactor switching	•	•	•	•	•
No. Steps (maximum)	1	2	3 / 5	9 / 8	8 / 14 / 16
Enclosure	Thermoplastic IP 21	•	–	–	–
	Metallic IP 21	–	–	•	•
Installation (indoor)	•	•	•	•	•
Assembly	Wall-mounted	•	•	–	–
	Floor-mounted	–	–	o	o
Regulator	•	–	–	–	–
	–	•	–	–	–
	–	–	•	•	•
	–	–	Optional	Optional	Optional
Capacitor	Cylindrical CLZ	•	•	•	•
Built-in protection	General circuit breaker	•	•	–	–
	APR NH-00 Fuses	–	–	–	•

Table: Recommended capacitor bank power ratings - 7.5 to 105 kvar

kvar	Recommended capacitor bank	Electrical steps (kvar)
De 7,5 kvar a 17,5 kvar	OPTIM 3-P&P-17,5-440	7 x 2,5
De 17,5 kvar a 31,25 kvar	OPTIM 3-P&P-31,25-440	5 x 6,25
De 31,25 kvar a 43,75 kvar	OPTIM 3-P&P-43,75-440	7 x 6,25
De 43,75 kvar a 55 kvar	OPTIM 5-P&P-55-440	11 x 5
De 55 kvar a 70 kvar	OPTIM 5-P&P-70-440	7 x 10
De 75 kvar a 105 kvar	OPTIM 5-P&P-105-440	15 + 3 x 30



OPTIM P&P, Automatic capacitor banks, 2.5 to 1600 kvar

Type	Code	400 V kvar	440 V kvar	Composition	Aut. Switch (A)	Man. Switch (A)	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)
OPTIM 1, automatic capacitor bank with reactive relay. Requires one measuring transformer - MC series 250 mA (see Measuring current Transformers)									
OPTIM 1-2,5-440	[*] R3Q631EN00000	2	2.5	1 x 2,5	-	Included	6	215x500x166	4,00
OPTIM 1-5-440	[*] R3Q641EN00000	4	5	1 x 5	-	Included	6	215x500x166	4,50
OPTIM 1-6,25-440	[*] R3Q651EN00000	5	6.25	1 x 6,25	-	Included	6	215x500x166	5,00
OPTIM 1-10-440	[*] R3Q671EN00000	8	10	1 x 10	-	Included	6	215x500x166	5,00
OPTIM 1-12,5-440	[*] R3Q681EN00000	10	12.5	1 x 12,5	-	Included	6	215x500x166	5,00
OPTIM 1-15-440	[*] R3Q691EN00000	12.5	15	1 x 15	-	Included	6	215x500x166	5,00
OPTIM 1A-18,2-440	[*] R3Q6E1EN00000	15	18.2	1 x 18,2	-	Included	6	270x500x166	6,00
OPTIM 1A-25-440	[*] R3Q6F1EN00000	20	25	1 x 25	-	Included	10	270x500x166	7,00
OPTIM 1A-30-440	[*] R3Q6D1EN00000	25	30	1 x 30	-	Included	10	270x500x166	7,00
OPTIM 2, automatic capacitor banks with regulator without display. Requires one measuring transformer - MC series 250 mA (see Measuring current Transformers)									
OPTIM 2-7,5-440	[*] R3Q761EN00000	6.25	7.5	2,5 + 5	-	Included	6	362x500x166	7,00
OPTIM 2-10,5-440	[1] R3Q771EN00000	8.5	10.5	3 + 7,5	-	Included	6	362x500x166	7,00
OPTIM 2-12,5-440	[*] R3Q781EN00000	10	12.5	5 + 7,5	-	Included	6	362x500x166	7,00
OPTIM 2-17,5-440	[1] R3Q7E1EN00000	14	17.5	5 + 12,5	-	Included	6	362x500x166	7,00
OPTIM 2-20-440	[1] R3Q7F1EN00000	16.5	20	7,5 + 12,5	-	Included	6	362x500x166	7,00
OPTIM 2-22,5-440	[*] R3Q7G1EN00000	18.5	22.5	7,5 + 15	-	Included	6	362x500x166	7,00
OPTIM 2-25-440	[1] R3Q7H1EN00000	21	25	10 + 15	-	Included	10	362x500x166	8,00
OPTIM 2-30-440	[1] R3Q7J1EN00000	25	30	15 + 15	-	Included	10	362x500x166	8,00
OPTIM 3 P&P, automatic capacitor banks with computer Max P&P regulator									
OPTIM 3 P&P-12,5-440	[*] R3L110.	10	12.5	2,5+5+5	-	Included	6	400x600x260	22,00
OPTIM 3 P&P-17,5-440	[*] R3L120.	14	17.5	2,5+5+10	-	Included	6	400x600x260	23,00
OPTIM 3 P&P-25-440	[*] R3L130.	20	25	5+10+10	-	Included	10	400x600x260	23,00
OPTIM 3 P&P-31,25-440	[*] R3L140.	26	31.25	6,25+12,5+12,5	-	Included	10	400x600x260	23,00
OPTIM 3 P&P-37,5-440	[*] R3L150.	31.25	37.5	7,5+15+15	-	Included	16	400x600x260	24,00
OPTIM 3 P&P-43,75-440	[*] R3L160.	36	43.75	6,25+12,5+25	-	Included	25	400x600x260	25,00
OPTIM 3 P&P-52,5-440	[1] R3L170.	43	52.5	7,5+15+30	-	Included	25	400x600x260	27,00
OPTIM 3 P&P-62,5-440	[1] R3L180.	51	62.5	12,5+25+25	-	Included	35	400x600x260	29,00
OPTIM 5 P&P, automatic capacitor banks with computer Max P&P regulator									
OPTIM 5 P&P-55-440	[*] R3L210.	45	55	5+10+20+20	125	200	35	600x740x260	37,00
OPTIM 5 P&P-70-440	[*] R3L220.	58	70	10+3x20	125	200	50	600x740x260	38,00
OPTIM 5 P&P-90-440	[1] R3L230.	74	90	15+15+30+30	200	200	70	600x740x260	40,00
OPTIM 5 P&P-105-440	[*] R3L240.	87	105	15+30+30+30	200	200	70	600x740x260	41,00
OPTIM 5 P&P-135-440	[1] R3L250.	112	135	15+30+30+30+30	250	250	95	600x740x260	45,00
OPTIM 5 P&P-150-440	[1] R3L260.	124	150	30+30+30+30+30	250	250	120	600x740x260	46,00
OPTIM 9 P&P, automatic capacitor banks with computer Max P&P regulator. Built-in power supply autotransformer									
OPTIM 9 P&P-165-440	[*] R3L310.	136	165	15+5x30	400	400	120	700x1350x440	81,00
OPTIM 9 P&P-195-440	[1] R3L320.	161	195	15+6x30	400	400	150	700x1350x440	86,00
OPTIM 9 P&P-225-440	[*] R3L330.	186	225	15+7x30	400	400	185	700x1350x440	92,00
OPTIM 9 P&P-255-440	[1] R3L340.	211	255	15+8x30	630	630	240	700x1350x440	98,00
OPTIM 9 P&P-270-440	[1] R3L350.	223	270	9x30	630	630	240	700x1350x440	100,00
OPTIM 8 P&P, automatic capacitor banks with computer Max P&P regulator. Built-in power supply autotransformer									
OPTIM 8 P&P-300-440	[1] R3L410.	248	300	2x30+4x60	630	630	2x150	1000x1750x440	135,00
OPTIM 8 P&P-330-440	[1] R3L420.	273	330	30+5x60	630	630	2x150	1000x1750x440	140,00
OPTIM 8 P&P-390-440	[1] R3L430.	322	390	30+6x60	800	800	2x185	1000x1750x440	150,00
OPTIM 8 P&P-450-440	[1] R3L440.	372	450	30+7x60	800	800	2x240	1000x1750x440	160,00
OPTIM 8 P&P-480-440	[1] R3L450.	396	480	8x60	1000	1000	2x240	1000x1750x440	163,00
OPTIM 8L P&P, automatic capacitor banks with computer Max P&P regulator. Built-in power supply autotransformer									
OPTIM 8L P&P-550-440	[1] R35L10.	454	550	50+5x100	1000	1000	2x240	1200x1900x650	220,00
OPTIM 8L P&P-650-440	[1] R35L20.	537	650	50+6x100	1250	1600	3x150	1200x1900x650	255,00
OPTIM 8L P&P-750-440	[1] R35L30.	620	750	50+7x100	1600	1600	3x185	1200x1900x650	280,00
OPTIM 8L P&P-800-440	[1] R35L40.	661	800	8x100	1600	1600	3x185	1200x1900x650	290,00
OPTIM 14L P&P, automatic capacitor banks with computer Max P&P regulator. Built-in power supply autotransformer									
OPTIM 14L P&P-900-440	[2] R36L10.	743	900	2x50+8x100	1250+400	1600+400	3x150/185	2100x1900x650	435,00
OPTIM 14L P&P-950-440	[2] R36L20.	785	950	50+9x100	1600+400	1600+400	3x185/185	2100x1900x650	445,00
OPTIM 14L P&P-1050-440	[2] R36L30.	867	1050	50+10x100	1600+630	1600+630	3x185/240	2100x1900x650	470,00
OPTIM 14L P&P-1150-440	[2] R36L40.	950	1150	50+11x100	1600+1000	1600+1000	3x185/2x150	2100x1900x650	495,00
OPTIM 14L P&P-1200-440	[2] R36L50.	991	1200	12x100	1600+800	1600+800	3x185/2x185	2100x1900x650	505,00
OPTIM 14L P&P-1300-440	[2] R36L60.	1074	1300	100+6x200	1250+1250	1600+1600	3x185/2x240	2100x1900x650	535,00
OPTIM 14L P&P-1400-440	[2] R36L70.	1156	1400	100+100+6x200	1600+1250	1600+1600	3x185/3x120	2100x1900x650	560,00
OPTIM 16L P&P-1500-440	[2] R37L30.	1239	1500	100+7x200	1600+1600	1600+1600	3x185/3x150	2400x1900x650	570,00
OPTIM 16L P&P-1600-440	[2] R37L40.	1322	1600	100+100+7x200	1600+1600	1600+1600	3x185/3x185	2400x1900x650	580,00

Switch and cable cross-section for installations with Un= 400 V. The installation company must ensure compliance with the low voltage directive at all times, in accordance with the characteristics of each installation and type of cable.

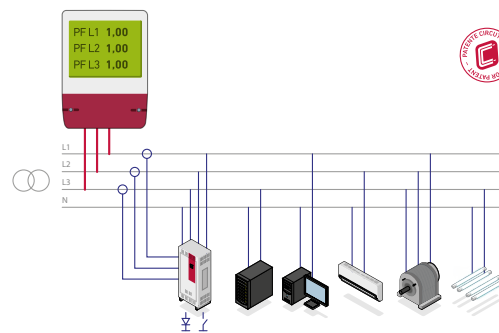
Delivery time: [*] immediate
[x] working weeks
[c] consult

OPTIM HYB, Semi-fast hybrid automatic capacitor banks with phase-by-phase compensation for unbalanced networks

OPTIM HYB



Rated voltage	3 x 440 V + 1 x 254 V
Power range at rated voltage (50 Hz)	90...540 kvar
switching	Contactor + thyristor
No. Steps (maximum)	6 + 9
Enclosure	Metallic IP 21
Installation	Indoor
Assembly	floor-mounted
Regulator	computer HYB
Capacitor	Cylindrique CLZ
Built-in protection	Circuit breaker for step



OPTIM HYB, Semi-fast hybrid automatic capacitor banks with phase-by-phase compensation for unbalanced networks



Type	Code	400 V kvar	440 V kvar	Composition 230V/50Hz (Single-phase)	Composition 400V/50Hz (Three-phase)	Man. Switch (A)	Cable section (mm2)	Size (mm) width xheight xdepth	weight (kg)
OPTIM HYB1-90-440	[C] R4E103.	75	90	(3 x 2 x 5) +	(3 x 15)	Included	1 x 95	685x970x340	67,00
OPTIM HYB1-110-440	[C] R4E104.	90	110	(3 x 2 x 5) +	(4 x 15)	Included	1 x 95	685x970x340	71,00
OPTIM HYB2-160-440	[C] R4E105.	135	165	(3 x 3 x 5) +	(3 x 30)	Included	1 x 120	800x1840x640	146,00
OPTIM HYB2-200-440	[C] R4E106.	165	200	(3 x 3 x 5) +	(4 x 30)	Included	1 x 185	800x1840x640	152,00
OPTIM HYB2-270-440	[C] R4E108.	225	270	(3 x 3 x 5) +	(6 x 30)	Included	1 x 240	800x1840x640	163,00
OPTIM HYB2-325-440	[C] R4E113.	270	325	(3 x 3 x 10) +	(3 x 60)	Included	2 x 150	800x1840x640	229,00
OPTIM HYB3-400-440	[C] R4E114.	330	400	(3 x 3 x 10) +	(4 x 60)	Included	2 x 240	1000x1840x640	304,00
OPTIM HYB3-470-440	[C] R4E115.	390	470	(3 x 3 x 10) +	(5 x 60)	Included	2 x 240	1000x1840x640	325,00
OPTIM HYB3-540-440	[C] R4E116.	450	540	(3 x 3 x 10) +	(6 x 60)	Included	2 x 240	1000x1840x640	336,00

Table: selection capacitor banks with rejection filters

	OPTIM FRM /OPTIM FRF	OPTIM FRS P&P	OPTIM FR P&P
Rated voltage	440 V	440 V	440 V
Service voltage	400 V	400 V	400 V
Power range at rated voltage (50 Hz)	25... 100 kvar	31,25 ... 120 kvar	OPTIM FR4 P&P: 150 a 400 kvar OPTIM FR6 P&P: 400 a 600 kvar OPTIM FR8 P&P: 600 a 800 kvar OPTIM FR10 P&P: 800 a 1000 kvar OPTIM FR12 P&P: 1050 a 1200 kvar
Contactor switching	-	•	•
No. Steps (maximum)	1	4	4 / 6 / 8 / 10 / 12
Enclosure	Metallic IP 21	•	•
Installation (indoor)	•	•	•
Assembly (floor-mounted)	•	•	•
Regulator	Computer Max P&P	•	•
	Computer Smart III	Optional	Optional
Capacitor	Cylindrical CLZ	•	•
Reactors tuned to 189 Hz (ask if you require other tuning values)	•	•	•
Built-in protection	General circuit breaker	Depending on type	•
	APR NH-00 Fuses	Depending on type	-
Autotransformer for aux. supply	-	•	•

OPTIM FRF, Fixed capacitors with rejection reactance of p = 7%

Type	Code	400 V kvar	440 V kvar	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)
OPTIM FRF, fuse protection APR, 440 V, 50 Hz						
OPTIM FRF-25-440	[2] R5X350.	21	25	10	650x1060x420	78,00
OPTIM FRF-37,5-440	[2] R5X370.	31	37.5	16	650x1060x420	82,00
OPTIM FRF-50-440	[2] R5X380.	42	50	25	650x1060x420	85,00
OPTIM FRF-60-440	[2] R5X390.	50	60	35	650x1060x420	90,00
OPTIM FRF-75-440	[2] R5X3A0.	62	75	50	650x1060x420	96,00
OPTIM FRF-100-440	[2] R5X3B0.	83	100	70	650x1060x420	110,00

OPTIM FRM, Fixed capacitors with rejection reactance of p = 7%

Mounted on a metal cabinet. Floor mounted

Type	Code	400 V kvar	440 V kvar	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)
OPTIM FRM, automatic tricolor protection, 440 V, 50 Hz						
OPTIM FRM-25-440	[2] R5Y350.	21	25	10	650x1060x420	78,00
OPTIM FRM-37,5-440	[2] R5Y370.	31	37.5	16	650x1060x420	82,00
OPTIM FRM-50-440	[2] R5Y380.	42	50	25	650x1060x420	85,00
OPTIM FRM-60-440	[2] R5Y390.	50	60	35	650x1060x420	90,00
OPTIM FRM-75-440	[2] R5Y3A0.	62	75	50	650x1060x420	96,00
OPTIM FRM-100-440	[2] R5Y3B0.	83	100	70	650x1060x420	110,00

See CFB capacitor and RX /RBX reactor components in the Low Voltage Capacitor and Reactor Section

OPTIM FR P&P, Automatic capacitor banks with rejection filters (contactors switching)

Type	Code	400 V kvar	440 V kvar	Composition	Aut.Switch (A)	Man. Switch (A)	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)
OPTIM FRS P&P									
OPTIM FRS-P&P-31,25-440	[2] R54R64.	26	31.25	6,25 + 2 x 12,5	-	-	10	800x1200x500	102,00
OPTIM FRS-P&P-43,75-440	[2] R54R74.	36	43.75	6,25 + 12,5 + 25	-	-	25	800x1200x500	108,00
OPTIM FRS-P&P-62,5-440	[2] R54R81.	52	62.5	12,5 + 2 x 25	-	-	35	800x1200x500	115,00
OPTIM FRS-P&P-90-440	[2] R54R88.	74	90	2 x 15 + 2 x 30	-	-	70	800x1200x500	133,00
OPTIM FRS-P&P-105-440	[2] R54R92.	87	105	15 + 3 x 30	-	-	70	800x1200x500	138,00
OPTIM FRS-P&P-120-440	[2] R54R95.	99	120	4 x 30	-	-	95	800x1200x500	143,00
OPTIM FR4 P&P									
OPTIM FR4-P&P-150-440	[2] R54S24.	125	150	30 + 2 x 60	400	400	95	900x1900x650	220,00
OPTIM FR4-P&P-175-440	[2] R54S25.	145	175	25 + 50 + 100	400	400	120	900x1900x650	225,00
OPTIM FR4-P&P-200-440	[2] R54S28.	165	200	50 + 50 + 100	400	400	150	900x1900x650	235,00
OPTIM FR4-P&P-250-440	[2] R54S29.	207	250	50 + 2 x 100	630	630	185	900x1900x650	250,00
OPTIM FR4-P&P-300-440	[2] R54S30.	248	300	50 + 50 + 2 x 100	630	630	240	900x1900x650	290,00
OPTIM FR4-P&P-350-440	[2] R54S32.	289	350	50 + 3 x 100	630	630	2x150	900x1900x650	310,00
OPTIM FR4-P&P-400-440	[2] R54S34.	331	400	4 x 100	800	800	2x150	900x1900x650	335,00
OPTIM FR6 P&P									
OPTIM FR6-P&P-400-440	[2] R54T25.	331	400	50 + 50 + 3 x 100	800	800	2x185	1200x1900x650	370,00
OPTIM FR6-P&P-450-440	[2] R54T30.	372	450	50 + 4 x 100	800	800	2x185	1200x1900x650	400,00
OPTIM FR6-P&P-500-440	[2] R54T35.	413	500	5 x 100	1000	1000	2x240	1200x1900x650	440,00
OPTIM FR6-P&P-550-440	[2] R54T40.	455	550	50 + 5 x 100	1000	1000	2x240	1200x1900x650	465,00
OPTIM FR6-P&P-600-440	[2] R54T45.	496	600	6 x 100	1250	1600	2x240	1200x1900x650	490,00
OPTIM FR8 P&P									
OPTIM FR8-P&P-600-440	[2] R54U36.	496	600	50 + 50 + 5 x 100	1250	1600	2x240	1500x1900x650	525,00
OPTIM FR8-P&P-650-440	[2] R54U38.	537	650	50 + 6 x 100	1250	1600	3x150	1500x1900x650	540,00
OPTIM FR8-P&P-700-440	[2] R54U40.	579	700	7 x 100	1250	1600	3x150	1500x1900x650	555,00
OPTIM FR8-P&P-750-440	[2] R54U42.	620	750	50 + 7 x 100	1600	1600	3x185	1500x1900x650	580,00
OPTIM FR8-P&P-800-440	[2] R54U44.	661	800	8 x 100	1600	1600	3x185	1500x1900x650	605,00
OPTIM FR10 P&P									
OPTIM FR10-P&P-800-440	[2] R54V25.	661	800	8 x 100	1250+400	1600+400	2x240/ 240	2100x1900x650	695,00
OPTIM FR10-P&P-850-440	[2] R54V30.	702	850	50 + 8 x 100	1000+630	1000+630	2x240/ 240	2100x1900x650	735,00
OPTIM FR10-P&P-900-440	[2] R54V35.	744	900	9 x 100	1250+630	1600+630	2x240/ 240	2100x1900x650	775,00
OPTIM FR10-P&P-950-440	[2] R54V40.	785	950	50 + 9 x 100	1000+800	1000+800	2x240/ 2x185	2100x1900x650	800,00
OPTIM FR10-P&P-1000-440	[2] R54V45.	826	1000	10 x 100	1250+800	1600+800	2x240/ 2x185	2100x1900x650	825,00
OPTIM FR12-P&P-1050-440	[2] R54W50.	868	1050	50 + 10 x 100	1250+800	1600+800	2x240/ 2x240	2400x1900x650	890,00
OPTIM FR12-P&P-1100-440	[2] R54W55.	909	1100	11 x 100	1250+1000	1600+1000	2x240/ 2x240	2400x1900x650	930,00
OPTIM FR12-P&P-1150-440	[2] R54W60.	950	1150	50 + 11 x 100	2x1250	2x1600	2x240/ 2x240	2400x1900x650	955,00
OPTIM FR12-P&P-1200-440	[2] R54W65.	992	1200	12 x 100	2x1250	2x1600	2x240/ 2x240	2400x1900x650	980,00

Switch and cable cross-section for installations with Un= 400 V. The installation company must ensure compliance with the low voltage directive at all times, in accordance with the particularities of each installation and type of cable.

 Delivery time: [*] immediate
 [x] working weeks
 [c] consult

CODIFICATION TABLE

Code		Internal code									
R	3	X	X	X	X	0	0	X	X	X	
								↑	↑	↑	Delivery time
Options	Standard (*)							0			-
	Autotransformer for aux. supply							1			-
	Fan							2			-
	Policarbonate							3			-
	Autotransf. + Fan							4			-
	Autotransf. + Policarbonate							5			-
	Policarbonate + Fan							6			-
	Autotransf. +Policarbonate + Fan							7			-
Regulator	Standard							0			-
	computer SMART III 6								S		-
	computer SMART III 12								T		-
	computer PLUS 8T - CDI(*)								E		-
	computer PLUS 14T - CDI(*)								F		-
Switch	without switch								0		-
	Manual switch 200 A								3		-
	Manual switch 250A								4		-
	Manual switch 400 A								5		-
	Manual switch 630 A								6		-
	Manual switch 800 A								7		-
	Manual switch 1000 A								8		-
	Manual switch 1600 A								9		-
	Automatic switch 63 A								A		-
	Automatic switch 125 A								B		-
	Automatic switch 160 A / 200 A								C		-
	Automatic switch 250A								D		-
	Automatic switch 400 A								E		-
	Automatic switch 630 A								F		-
	Automatic switch 800 A								G		-
	Automatic switch 1000 A								H		-
	Automatic switch 1250 A								I		-
	Automatic switch 1600 A								J		-
	Automatic switch 63 A + Earth leakage								K		-
	Automatic switch 125 A + Earth leakage								L		-
	Automatic switch 160 A + Earth leakage								M		-
	Automatic switch 250 A + Earth leakage								N		-
	Automatic switch 400 A + Earth leakage								O		-
	Automatic switch 630 A + Earth leakage								P		-
Automatic switch 800 A + Earth leakage								Q		-	
Automatic switch 1000 A + Earth leakage								R		-	
Automatic switch 1250 A + Earth leakage								S		-	
Automatic switch 1600 A + Earth leakage								T		-	

(*) With communications, earth leakage current and capacitor current

computer MAX Plug&Play

Series

Choose the regulator that is most suited to your needs

Performance, accuracy and technology at the best price

- Simple and intuitive installation and programming
- Test functions
- High-accuracy regulation
- Basic electrical parameter measurement
- Built-in alarms



computer *smart* III

Optional

**All-in-one three-phase regulator and analyzer
A new concept in compensation**

- Measures and compensates over three phases,
- Carries out the functions of a powerful power analyzer.
- Easy to use
- Serial communications
- built-in leakage control system
- Plug & Play
- AUTO-ON-OFF function
- Safety and maintenance

Table: Selection of automatic capacitor banks with a static contactor

	OPTIM EMS-C	OPTIM EMK
		
Rated voltage	440 V	440 V
Power range at rated voltage (50 Hz)	18,75...120 kvar	OPTIM EMK4: 175...400 kvar OPTIM EMK6: 400...600 kvar OPTIM EMK8: 600...800 kvar OPTIM EMK10: 850...1000 kvar OPTIM EMK12: 1050...1200 kvar
Thyristor operation	•	•
No. Steps (maximum)	8	4 / 6 / 8 / 10/ 12
Enclosure	Metallic IP 21	•
Installation (indoor)	•	•
Assembly	Wall-mounted Floor-mounted	- •
Regulator	computer Max Fast computer Smart III Fast	• Optional
Capacitor	Cilindric CLZ	•
Built-in protection	General circuit breaker APR NH-00 Fuse	- •

OPTIM EMS, Automatic capacitor banks with static contactor


Type	Code	400 V kvar	440 V kvar	Composition	Man.Switch (A)	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)
OPTIM EMS-C-18,75-440	[C] R4A300.	15.5	18.75	(6,25 + 12,5)	Included	1 x 6	545x710x220	29,00
OPTIM EMS-C-31,25-440	[C] R4A304.	26	31.25	(6,25 + 2 x 12,5)	Included	1 x 16	545x710x220	33,00
OPTIM EMS-C-43,75-440	[C] R4A309.	36	43.75	(6,25 + 12,5 + 25)	Included	1 x 25	545x710x220	34,00
OPTIM EMS-C-68,75-440	[C] R4A318.	57	68.75	(6,25 + 12,5 + 2 x 25)	Included	1 x 50	545x710x220	38,00
OPTIM EMS-C-82,50-440	[C] R4A321.	68	82.5	(7,5 + 15 + 2 x 30)	Included	1 x 70	545x710x220	39,00
OPTIM EMS-C-105-440	[C] R4A330.	87	105	(15 + 3 x 30)	Included	1 x 70	545x710x220	40,00
OPTIM EMS-C-120-440	[C] R4A336.	99	120	(4 x 30)	Included	1 x 95	545x710x220	41,00

Switch and cable cross-section recommended for installations with Un= 400 V. Installers must confirm that this meets everything established in the Low Voltage Directive according to the special characteristics of each installation and cable type, completely relieving CIRCUTOR S.A. of all breaches of the pertinent regulations as a result of an incorrect choice of the type and cross-section of the cabling.



NEW

OPTIM EMK, Automatic capacitor banks with static contactor

Type	Code	400 V kvar	440 V kvar	Composition	Aut.Switch (A)	Man. Switch (A)	Cable section (mm ²)	Size (mm) width x height x depth	weight (kg)
OPTIM EMK4-175-440	[2] R46420.	175	147	25 + 50 + 100	400	400	400	900x1900x650	170,00
OPTIM EMK4-250-440	[2] R46422.	250	207	50 + 2x100	630	630	630	900x1900x650	183,00
OPTIM EMK4-300-440	[2] R46424.	300	248	50 + 50 + 2x100	630	630	630	900x1900x650	208,00
OPTIM EMK4-350-440	[2] R46425.	350	289	50 + 3x100	630	630	630	900x1900x650	217,00
OPTIM EMK4-400-440	[2] R46426.	400	331	4x100	800	800	800	900x1900x650	231,00
OPTIM EMK6-400-440	[2] R46431.	400	331	50 + 50 + 3x100	800	800	800	1200x1900x650	262,00
OPTIM EMK6-450-440	[2] R46435.	450	372	50 + 4x100	800	800	800	1200x1900x650	281,00
OPTIM EMK6-550-440	[2] R46437.	550	455	50 + 5x100	1000	1000	1000	1200x1900x650	320,00
OPTIM EMK6-600-440	[2] R46438.	600	496	6x100	1250	1600	1250	1200x1900x650	334,00
OPTIM EMK8-600-440	[2] R46442.	600	496	50 + 50 + 5x100	1250	1600	1250	1500x1900x650	365,00
OPTIM EMK8-650-440	[2] R46444.	650	537	50 + 6x100	1250	1600	1250	1500x1900x650	384,00
OPTIM EMK8-750-440	[2] R46450.	750	620	50 + 7x100	1600	1600	1600	1500x1900x650	359,00
OPTIM EMK8-800-440	[2] R46455.	800	661	8x100	1600	1600	1600	1500x1900x650	373,00
OPTIM EMK10-850-440	[2] R46505.	850	702	50 + 8x100	1250+250	1600+250	1250/250	2100x1900x650	512,00
OPTIM EMK10-950-440	[2] R46604.	950	785	50 + 9x100	1250+400	1600+400	1250/400	2100x1900x650	551,00
OPTIM EMK10-1000-440	[2] R46605.	1000	826	10x100	1600+400	1600+400	1600/400	2100x1900x650	565,00
OPTIM EMK12-1050-440	[2] R46606.	1050	868	50 + 10x100	1250+800	1600+800	1250/800	2400x1900x650	615,00
OPTIM EMK12-1150-440	[2] R46608.	1150	950	50 + 11x100	2x1250	2x1600	2x1250	2400x1900x650	654,00
OPTIM EMK12-1200-440	[2] R46609.	1200	992	12x100	2x1250	2x1600	2x1250	2400x1900x650	668,00

Switch and cable cross-section for installations with Un= 400 V. The installation company must ensure compliance with the low voltage directive at all times, in accordance with the particularities of each installation and type of cable.

Table: Selection of Static automatic capacitor banks with rejection filters

	OPTIM FRES	OPTIM FRE
		
Rated voltage	440 V	440 V
Service voltage	400 V	400 V
Power range at rated voltage (50 Hz)	31,25 a 120 kvar	OPTIM FRE4: 150 ... 400 kvar OPTIM FRE6: 400 ... 600 kvar OPTIM FRE8: 600 ... 800 kvar OPTIM FRE10: 800 ... 1000 kvar OPTIM FRE12: 1050 ... 1200 kvar
Thyristor operation	•	•
No. Steps (maximum)	4	4 / 6 / 8 / 10 / 12
Enclosure	Metallic IP 21	•
Installation (indoor)	•	•
Assembly (floor-mounted)	•	•
Regulator	Computer Max F-12DC	•
	Computer Smart Fast III-12DC	Optional
Capacitor	Cilindrico CLZ	•
Reactors tuned to 189 Hz (please ask about other tuning values)	•	•
Built-in protection	General circuit breaker	–
	APR NH-00 Fuses	•


OPTIM FRE, Automatic capacitor banks with rejection filters (static contactor)

Optional installation of a mains switch, f resonance =189 Hz

Type	Code	400 V kvar	440 V kvar	Composition	Aut.Switch (A)	Man. Switch (A)	Cable section (mm ²)	Size (mm) width xheight xdepth	weight (kg)
FRES									
OPTIM FRES-31,25-440	[2] R64R64.	26	31.25	6,25 + 2 x 12,5	-	Included	10	800x1200x500	102,00
OPTIM FRES-43,75-440	[2] R64R74.	36	43.75	6,25 + 12,5 + 25	-	Included	25	800x1200x500	108,00
OPTIM FRES-62,5-440	[2] R64R81.	52	62.5	12,5 + 2 x 25	-	Included	35	800x1200x500	115,00
OPTIM FRES-90-440	[2] R64R88.	74	90	2 x 15 + 2 x 30	-	Included	70	800x1200x500	133,00
OPTIM FRES-105-440	[2] R64R92.	87	105	15 + 3 x 30	-	Included	70	800x1200x500	138,00
OPTIM FRES-120-440	[2] R64R95.	99	120	4 x 30	-	Included	95	800x1200x500	143,00
FRE4									
OPTIM FRE4-150-440	[2] R64E24.	125	150	30 + 2 x 60	400	400	95	900x1900x650	220,00
OPTIM FRE4-175-440	[2] R64E25.	145	175	25 + 50 + 100	400	400	120	900x1900x650	225,00
OPTIM FRE4-200-440	[2] R64E28.	165	200	50 + 50 + 100	400	400	150	900x1900x650	235,00
OPTIM FRE4-250-440	[2] R64E29.	207	250	50 + 2 x 100	630	630	185	900x1900x650	250,00
OPTIM FRE4-300-440	[2] R64E30.	248	300	50 + 50 + 2 x 100	630	630	240	900x1900x650	290,00
OPTIM FRE4-350-440	[2] R64E32.	289	350	50 + 3 x 100	630	630	240	900x1900x650	310,00
OPTIM FRE4-400-440	[2] R64E34.	331	400	4 x 100	800	800	240	900x1900x650	335,00
FRE6									
OPTIM FRE6-400-440	[2] R64J25.	331	400	50 + 50 + 3 x 100	800	800	2x185	1200x1900x650	370,00
OPTIM FRE6-450-440	[2] R64J30.	372	450	50 + 4 x 100	800	800	2x185	1200x1900x650	400,00
OPTIM FRE6-500-440	[2] R64J35.	413	500	5 x 100	1000	1000	2x240	1200x1900x650	440,00
OPTIM FRE6-550-440	[2] R64J40.	455	550	50 + 5 x 100	1000	1000	2x240	1200x1900x650	465,00
OPTIM FRE6-600-440	[2] R64J45.	496	600	6 x 100	1250	1600	2x240	1200x1900x650	490,00
FRE8									
OPTIM FRE8-600-440	[2] R64K36.	496	600	50 + 50 + 5 x 100	1250	1600	2x240	1500x1900x650	525,00
OPTIM FRE8-650-440	[2] R64K38.	537	650	50 + 6 x 100	1600	1600	3x150	1500x1900x650	540,00
OPTIM FRE8-700-440	[2] R64K40.	579	700	7 x 100	1600	1600	3x150	1500x1900x650	555,00
OPTIM FRE8-750-440	[2] R64K42.	620	750	50 + 7 x 100	1600	1600	3x185	1500x1900x650	580,00
OPTIM FRE8-800-440	[2] R64K44.	661	800	8 x 100	1600	1600	3x185	1500x1900x650	605,00
FRE10									
OPTIM FRE10-800-440	[2] R64C25.	661	800	8 x 100	1250+400	1600+400	2x240 / 240	2100x1900x650	695,00
OPTIM FRE10-850-440	[2] R64C30.	702	850	50 + 8 x 100	1000+630	1000+630	2x240 / 240	2100x1900x650	735,00
OPTIM FRE10-900-440	[2] R64C35.	744	900	9 x 100	1250+630	1600+630	2x240 / 240	2100x1900x650	775,00
OPTIM FRE10-950-440	[2] R64C40.	785	950	50 + 9 x 100	1000+800	1000+800	2x240 / 2x185	2100x1900x650	800,00
OPTIM FRE10-1000-440	[2] R64C45.	826	1000	10 x 100	1250+800	1600+800	2x240 / 2x185	2100x1900x650	825,00
OPTIM FRE12-1050-440	[2] R64L50.	868	1050	50 + 10 x 100	1250+800	1600+800	2x240 / 2x240	2400x1900x650	890,00
OPTIM FRE12-1100-440	[2] R64L55.	909	1100	11 x 100	1250+1000	1600+1000	2x240 / 2x240	2400x1900x650	930,00
OPTIM FRE12-1150-440	[2] R64L60.	950	1150	50 + 11 x 100	2x1250	2x1600	2x240 / 2x240	2400x1900x650	955,00
OPTIM FRE12-1200-440	[2] R64L65.	992	1200	12 x 100	2x1250	2x1600	2x240 / 2x240	2400x1900x650	980,00

Switch and cable cross-section for installations with Un= 400 V. The installation company must ensure compliance with the low voltage directive at all times, in accordance with the particularities of each installation and type of cable.



<p>Choose the regulator that is most suited to your needs</p>	<p>computer MAX-F (Series) for EMK computer MAX-F 12 VDC (Series) for OPTIM EMS-C & OPTIM FRES / FRE</p>	<p>computer SMART FAST III 12 VDC (Optional) for OPTIM FRES / FRE</p>
	<p>Performance, accuracy and technology at the best price</p> <ul style="list-style-type: none"> > Simple and intuitive installation and programming > Test functions > High-accuracy regulation > Basic electrical parameter measurement > Built-in alarms 	<p>Regulation, measurement and protection within your reach</p> <ul style="list-style-type: none"> > Built-in power analyzer > Plug & Play > Serial communications > AUTO-ON-OFF function > Open programming > Built-in leakage control > Safety and maintenance

CODIFICATION TABLE

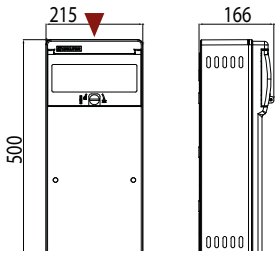
OPTIM EMK, OPTIM FRE

Code		Internal Code								
R	X	X	X	X	0	0	X	X	X	
										Delivery time
Options										-
										-
										-
										-
Choose the most suitable regulator for your needs										-
										-
										-
										-
Switch										-
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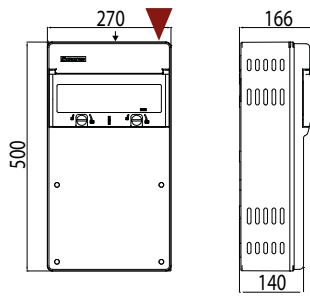
⁽¹⁾ Only in EMK series. With communications, earth leakage current and capacitor current Accessories not available for EMS-C series

Dimensions

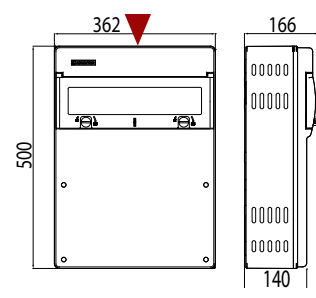
OPTIM 1



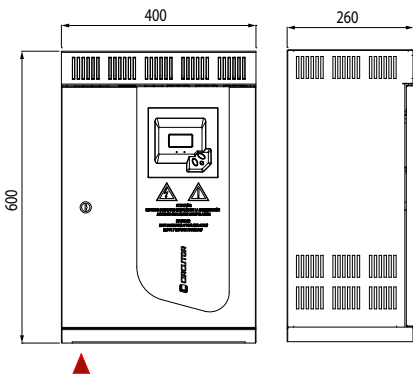
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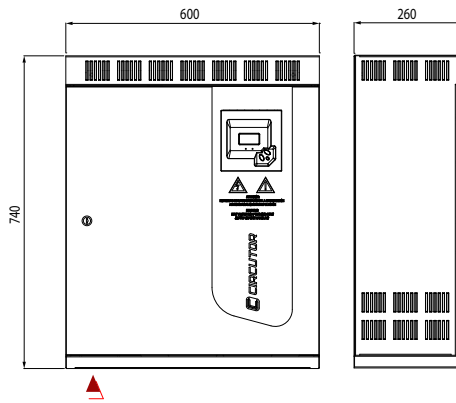
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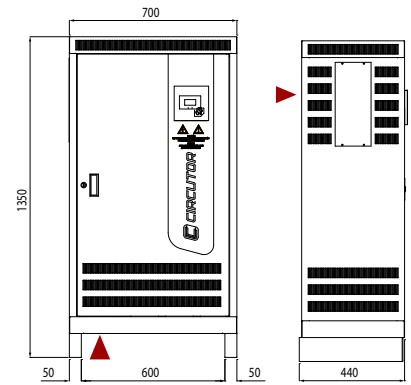
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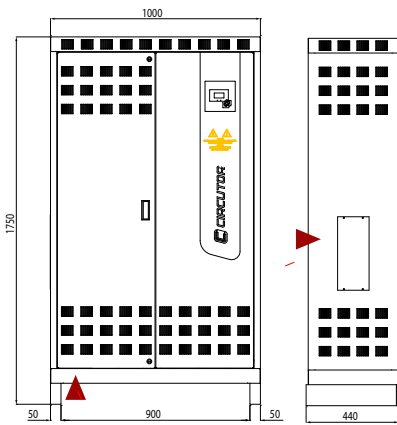
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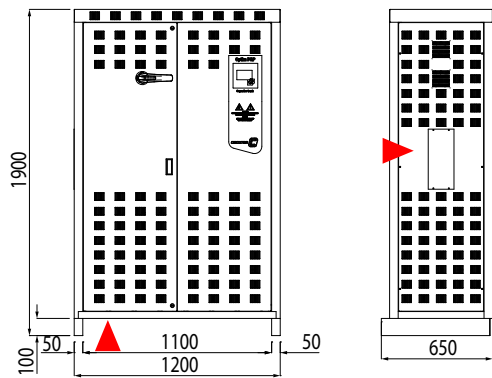
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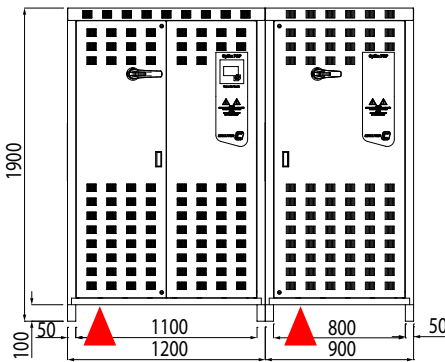
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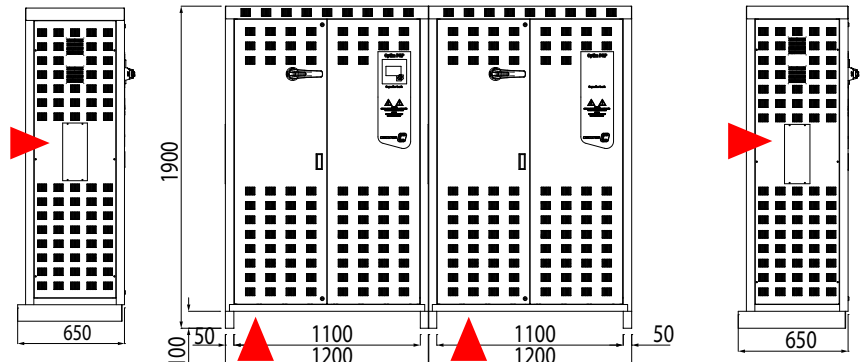
OPTIM 8L



OPTIM 14L



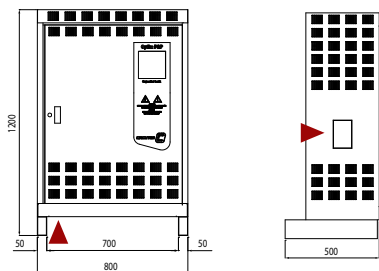
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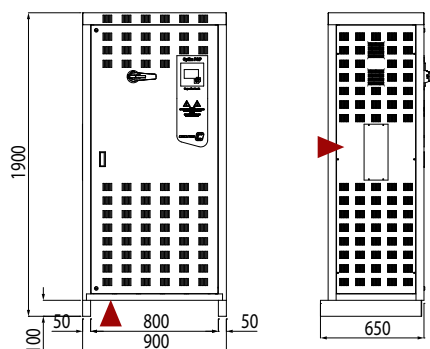
▲ Entrada cable

Dimensions

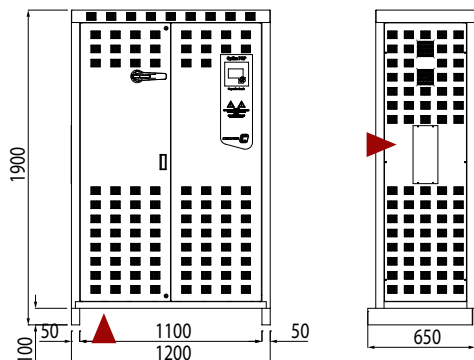
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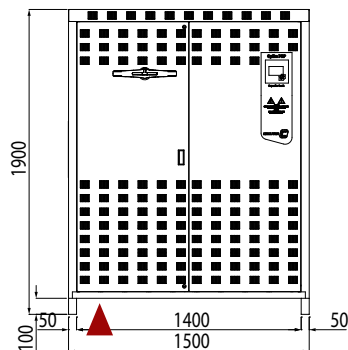
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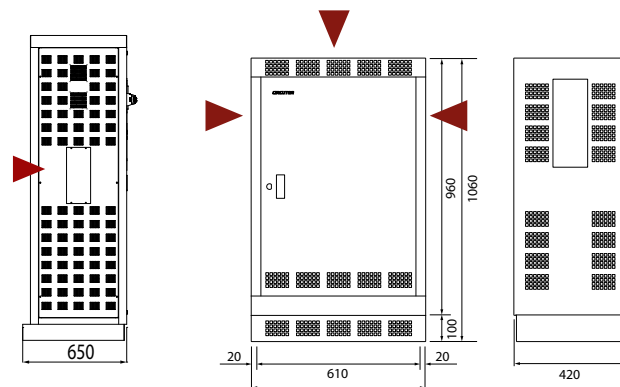
OPTIM EMK₆ / OPTIM FR₆ / OPTIM FRE₆



OPTIM EMK₈ / OPTIM FR₈ / OPTIM FRE₈



FRF / FRM



▲ Entrada cable

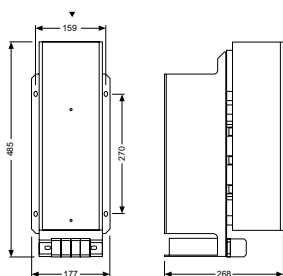
OPTIM EMK₁₀ / OPTIM FR₁₀ / OPTIM FRE₁₀

OPTIM FR10 = OPTIM FR4 + OPTIM FR6. / Ancho: OPTIM FR4+ OPTIM FR6+100 mm

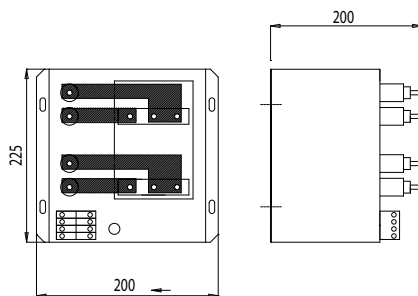
OPTIM EMK₁₂ / OPTIM FR₁₂ / OPTIM FRE₁₂

OPTIM FR12 = 2 x OPTIM FR6. / Ancho= 2 x OPTIM FR6+100 mm

EMB / EMF

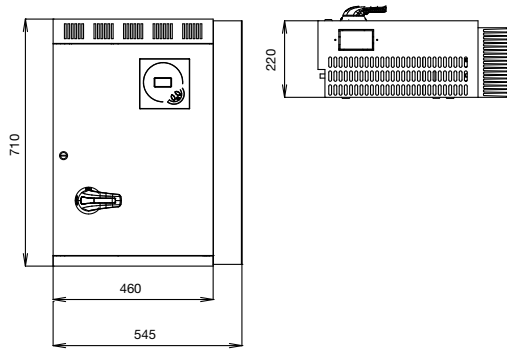


EMB-2PH

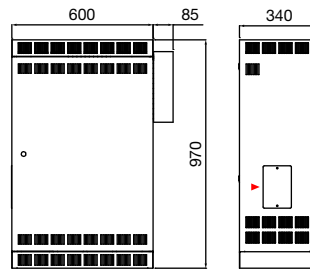


Dimensions

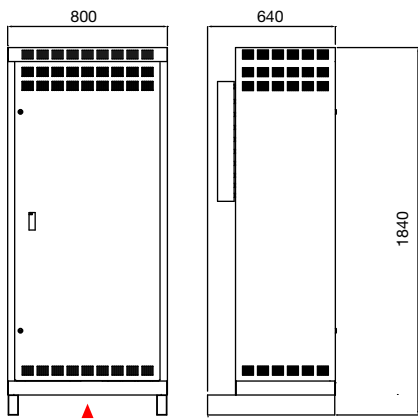
Optim EMS-C



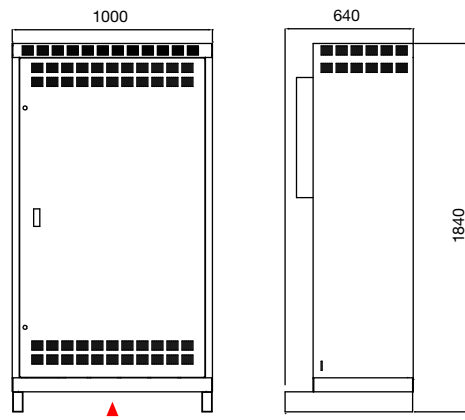
OPTIM HYB 1



OPTIM HYB 2



OPTIM HYB 3



Entrada cable

▲ Entrada cable



Harmonic filters

NEW

AFQevo, Active multifunction filter

50/60 Hz - Harmonic filtering, phase balancing and power factor correction



Type	Code	System	Phase current	Peak current	Max. neutral current	EMI filter	Size (mm) width xheight xdepth	weight (kg)
Wall-mounted cabinet								
AFQe-3WS-030M-480	[C] R7LM7B.	3 wires, 480 V	30	60	0	-	435x600x257	31,00
AFQe-3WF-030M-480	[C] R7LM73.	3 wires, 480 V	30	60	0	1	435x710x257	32,00
AFQe-4WS-030M-400	[C] R7QM0B.	4 wires, 400 V	30	60	90	-	435x600x257	31,00
AFQe-4WF-030M-400	[C] R7QM03.	4 wires, 400 V	30	60	90	1	435x708x257	32,00
Floor-mounted cabinet								
AFQe-3WF-100C-480	[C] R7LF75.	3 wires, 480 V	100	200	0	1	600x1836x822	206,00
AFQe-3WF-200C-480	[C] R7LF77.	3 wires, 480 V	200	400	0	1	600x1836x822	276,00
AFQe-4WF-100A-400	[C] R7QF05.	4 wires, 400 V	100	200	300	1	600x1836x822	206,00
AFQe-4WF-200A-400	[C] R7QF07.	4 wires, 400 V	200	400	600	1	600x1836x822	276,00
Rack module								
AFQe - 3WS - 100R - 480	[C] R7LR7D.	3 wires, 480 V	100	200	0	-	260x480x500	70,00
AFQe - 4WS - 100R - 400	[C] R7QR0D.	4 wires, 400 V	100	200	300	-	260x480x500	70,00

Please contact our technical department for networks with high THD(V) levels



LR, Filter reactors for power converters (network side)

Type	Code	In (A)	Motor P. (kW)	Motor P. (CV)	L(mH)	Losses	Size (mm) width xheight xdepth	weight (kg)
LR 04-003	[2] P70301.	2,5	0.75	1	14.8	6	120x125x60	1,80
LR 04-004	[2] P70302.	4	1.5	2	7.9	8	120x125x60	1,80
LR 04-006	[2] P70303.	5,5	2.2	3	5.9	10	120x125x60	2,00
LR 04-008	[2] P70304.	7,5	3	4	4.3	12	120x125x60	2,00
LR 04-010	[2] P70305.	10	4	5	3.2	15	120x125x70	2,30
LR 04-013	[2] P70306.	13	5.5	7	2.5	18	120x125x70	2,30
LR 04-017	[2] P70307.	17	7.5	10	1.85	25	150x150x75	3,50
LR 04-022	[2] P70308.	22	11	15	1.47	30	150x152x90	4,60
LR 04-033	[2] P70309.	32	15	20	0.98	45	150x152x90	5,00
LR 04-050	[2] P7030B.	47	22	30	0.67	64	180x197x110	9,00
LR 04-066	[2] P7030D.	64	30	41	0.49	88	180x197x120	11,00
LRB 04-080	[2] P7030E.	76	37	50	0.4	110	180x160x135	13,00
LRB 04-115	[2] P7030G.	110	55	75	0.28	145	237x195x131	21,00
LRB 04-185	[C] P7030J.	180	90	122	0.17	230	242x256x154	32,00
LRB 04-200	[C] P7030K.	200	110	150	0.15	245	245x256x154	36,00
LRB 04-300	[C] P7030M.	300	160	220	0.1	355	280x300x164	48,00

LR, LRB

Code	Internal code	Delivery time
P 7 X X X X 0 0 X X X		
Code	Standard (4 %)	0
Voltage drop	3 %	1
	2 %	2
Frequency	Estandard (50 Hz)	0
	60 Hz	1
System	Standard (three-phase)	0
	Single-phase	1

Delivery time: [*] immediate
 [x] working weeks
 [c] consult


SINUS, Filter for PWM

Sinus filter without enclosure (IP00), 400 V

Type	Code	In (A)	Switching Frequency (kHz)	Size (mm) width xheight xdepth
SINUS-10A-400-IP00	[4] R7S002.	10	10	191x180x120
SINUS-25-40-00	[4] R7S004.	25	10	244x301x248
SINUS-80-40-00	[4] R7S006.	80	10	290x422x360
SINUS-155-40-00	[4] R7S008.	155	10	390x503x360
SINUS-270-40-00	[4] R7S00A.	270	2	415x557x360


LCL, Harmonic filters for power converters

Type	Code	Q (kvar)	Load current	Frequency (Hz)	Size (mm) width xheight xdepth
400 V					
LC L35-9A-400	[4] R73105.	1,76	9	50	365x570x217
LC L35-12A-400	[4] R73106.	2,51	12	50	365x570x217
LC L35-16A-400	[4] R73107.	3,27	16	50	365x570x217
LC L35-22A-400	[4] R73108.	4,42	22	50	460x930x230
LC L35-32A-400	[4] R73109.	6,63	32	50	460x930x230
LC L35-40A-400	[4] R73110.	8,29	40	50	460x930x230
LC L35-47A-400	[4] R73111.	9,14	47	50	650x1060x420
LC L35-54A-400	[4] R73112.	10,8	54	50	650x1060x420
LC L35-64A-400	[4] R73113.	13,26	64	50	650x1060x420
LC L35-76A-400	[4] R73114.	14,92	76	50	650x1060x420
LC L35-90A-400	[4] R73115.	18,24	90	50	800x1900x650
LC L35-110A-400	[4] R73116.	23,21	110	50	800x1900x650
LC L35-150A-400	[4] R73117.	29,84	150	50	800x1900x650
LC L35-180A-400	[4] R73118.	36,48	180	50	800x1900x650
LC L35-220A-400	[4] R73119.	46,42	220	50	800x1900x650
LC L35-260A-400	[4] R73120.	53,06	260	50	800x1900x650
LC L35-320A-400	[4] R73121.	66,32	320	50	1100x1900x650
LC L35-400A-400	[4] R73122.	79,58	400	50	1100x1900x650
460 - 480 V					
LC L36-9A-480	[4] R732050070000	2,73	9	60	365x570x217
LC L36-16A-480	[4] R732070070000	4,55	16	60	365x570x217
LC L36-22A-480	[4] R732080070000	6,21	22	60	460x930x230
LC L36-32A-480	[4] R732090070000	7,59	32	60	460x930x230
LC L36-40A-480	[4] R732100070000	11,38	40	60	460x930x230
LC L36-47A-480	[4] R732110070000	15,18	47	60	650x1060x420
LC L36-54A-480	[4] R732120070000	15,18	54	60	650x1060x420
LC L36-64A-480	[4] R732130070000	18,97	64	60	650x1060x420
LC L36-76A-480	[4] R732140070000	22,77	76	60	650x1060x420
LC L36-90A-480	[4] R732150070000	26,56	90	60	800x1900x650
LC L36-110A-480	[4] R732160070000	30,36	110	60	800x1900x650
LC L36-150A-480	[4] R732170070000	45,53	150	60	800x1900x650
LC L36-180A-480	[4] R732180070000	53,12	180	60	800x1900x650
LC L36-220A-480	[4] R732190070000	60,71	220	60	800x1900x650
LC L36-260A-480	[4] R732200070000	68,3	260	60	800x1900x650
LC L36-320A-480	[4] R732210070000	91,07	320	60	1100x1900x650
LC L36-400A-480	[4] R732220070000	121,42	400	60	1100x1900x650

Please contact us for other current, frequency and/or voltage values Optional: Overcompensation kit


LCL-TH, Filter for elevators

Type	Code	Q (kvar)	Load current	Frequency (Hz)	Size (mm) width xheight xdepth
400 - 415 V					
LCL-TH 35-7A-400	[4] R7K104.	1,76	7	50	365x570x217
LCL-TH 35-9A-400	[4] R7K105.	1,51	9	50	365x570x217
LCL-TH 35-12A-400	[4] R7K106.	2,51	12	50	365x570x217
LCL-TH 35-16A-400	[4] R7K107.	3,27	16	50	532x930x235
LCL-TH 35-22A-400	[4] R7K108.	4,42	22	50	532x930x235

 Delivery time: [*] immediate
 [x] working weeks
 [c] consult



FB3, Third harmonic blocking filter for 50 Hz network

Type	Code	System	Max.neutral current	Frequency (Hz)	Size (mm) width xheight xdepth	weight (kg)
Single-phase						
FB3-5-06	[*] R78101.	Single-phase	6	50	204x310x233	8,00
Without box (IP 00)						
FB3T-5-06-00	[4] R78131.	Three-phase	6	50	300x200x200	-
FB3T-5-10-00	[4] R78132.	Three-phase	10	50	300x200x200	-
FB3T-5-16-00	[4] R78133.	Three-phase	16	50	300x200x200	-
FB3T-5-25-00	[4] R78134.	Three-phase	25	50	370x280x300	-
FB3T-5-32-00	[4] R78135.	Three-phase	32	50	370x280x300	-
FB3T-5-50-00	[4] R78136.	Three-phase	50	50	370x280x300	-
FB3T-5-63-00	[4] R78137.	Three-phase	63	50	370x420x370	-
FB3T-5-100-00	[4] R78138.	Three-phase	100	50	370x420x370	-
With box (IP 21)						
FB3T-5-6-21	[C] R78121.	Three-phase	6	50	300x200x200	-
FB3T-5-10-21	[C] R78122.	Three-phase	10	50	300x200x200	-
FB3T-5-16-21	[C] R78123.	Three-phase	16	50	300x200x200	-
FB3T-5-25-21	[C] R78124.	Three-phase	25	50	300x200x200	-
FB3T-5-32-21	[C] R78125.	Three-phase	32	50	370x280x300	-
FB3T-5-50-21	[C] R78126.	Three-phase	50	50	370x280x300	-
FB3T-5-63-21	[C] R78127.	Three-phase	63	50	370x420x370	-
FB3T-5-100-21	[C] R78128.	Three-phase	100	50	370x420x370	-



FAR-Q, Hybrid absorption filters

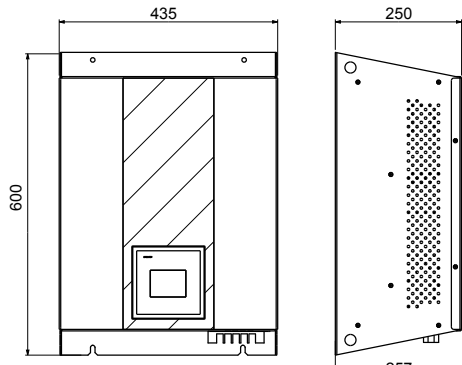
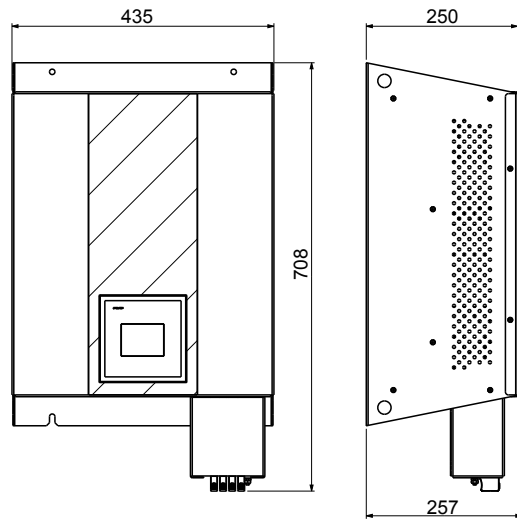
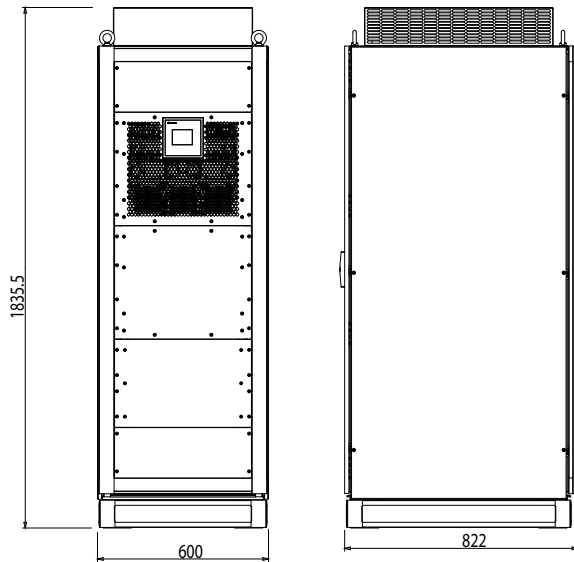
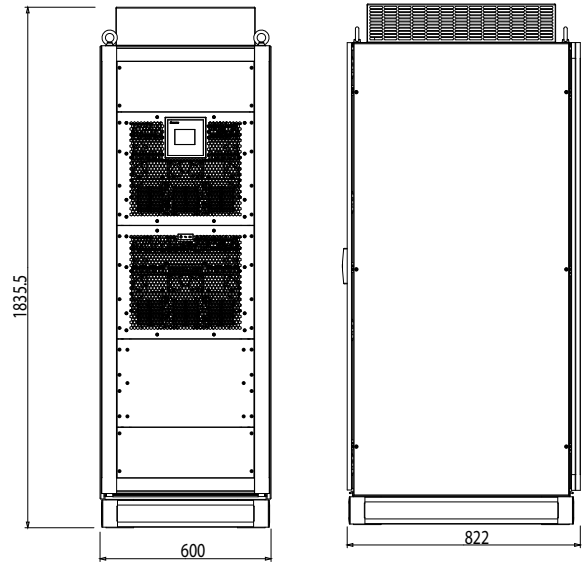
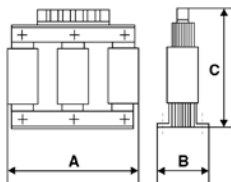
Type	Code	Q (kvar)	Composition	In (A)	Size (mm) width xheight xdepth	weight (kg)
FAR5-Q6 400 V / 50 Hz						
FAR5-Q6-112,5-400	[C] R7C101.	112,5	3 x 37,5	176	1100x1900x650	436,00
FAR5-Q6-187,5-400	[C] R7C103.	187,5	5 x 37,5	293	1100x1900x650	460,00
FAR5-Q6-262,5-400	[C] R7C105.	262,5	37,5 + (3 x 75)	410	1100x1900x650	460,00
FAR5-Q6-337,5-400	[C] R7C107.	337,5	37,5 + (4 x 75)	527	1100x1900x650	523,00
FAR5-Q6-375-400	[C] R7C108.	375	5 x 75	586	1100x1900x650	550,00
FAR5-Q8 400 V / 50 Hz						
FAR5-Q8-412,5-400	[C] R7C109.	412,5	37,5 + (5 x 75)	644	1500x1900x650	687,00
FAR5-Q8-525-400	[C] R7C112.	525	7 x 75	820	1500x1900x650	740,00
FAR5-Q12 400 V / 50 Hz						
FAR5-Q12-562,5-400	[C] R7C113.	562,5	37,5 + (7 x 75)	878	2200x1900x650	950,00
FAR5-Q12-637,5-400	[C] R7C115.	637,5	37,5 + (8 x 75)	996	2200x1900x650	1.009,00
FAR5-Q12-712,5-400	[C] R7C117.	712,5	37,5 + (9 x 75)	1113	2200x1900x650	1.073,00
FAR5-Q12-750-400	[C] R7C118.	750	10 x 75	1171	2200x1900x650	1.100,00

Maximum current in the installation

FB3

FB3T

TYPE	A	B	C
FB3T-16	300	200	200
FB3T-50	370	280	300
FB3T-100	370	480	370

Dimensions
AFQe-4WS

AFQe-4WF

AFQe-100

AFQe-200

LR / LRB


Tipo	A mm	B mm	C mm	kg
LR 04-003	120	60	125	1,8
LR 04-004	120	60	125	1,8
LR 04-006	120	60	125	2
LR 04-008	120	60	125	2
LR 04-010	120	70	125	2,3
LR 04-013	120	70	125	2,3
LR 04-017	150	75	150	3,5
LR 04-022	150	90	152	4,6
LR 04-033	150	90	152	5
LR 04-041	180	100	193	7,5
LR 04-050	180	110	197	9
LR 04-058	180	110	197	9,5
LR 04-066	180	120	197	11

Tipo	A mm	B mm	C mm	kg
LRB 04-080	180	135	160	13
LRB 04-095	237	120	195	18
LRB 04-115	237	131	195	21
LRB 04-150	237	131	215	26
LRB 04-185	242	154	256	32
LRB 04-200	245	154	256	36
LRB 04-250	285	154	300	44
LRB 04-300	280	164	300	48

Capacitor and MV accessories



The prices for medium-voltage capacitors are valid for orders for a minimum of 4 units of each type.

Price supplement for orders with 3 or fewer units (by type): +10%

The prices that appear in the price list correspond to capacitors with indoor/outdoor installation, with internal fuses (according to type) and frequency of 50 Hz.



CHV-M, Single-phase MV power capacitors (indoor and outdoor use)

Type	Code	Q (kvar)	Frequency (Hz)	Size (mm) width xheight xdepth	weight (kg)
BIL 20/60 kV (50 Hz) - 3,81 kV					
CHV-M 50/3,81	[C] R8A0500003810	50	50	350x487x160	18,20
CHV-M 75/3,81	[C] R8A0750003810	75	50	350x487x160	18,50
CHV-M 100/3,81	[C] R8A1000003810	100	50	350x537x160	21,90
CHV-M 150/3,81	[C] R8A1500003810	150	50	350x637x160	29,10
CHV-M 167/3,81	[C] R8A1670003810	167	50	350x637x160	29,30
CHV-M 200/3,81	[C] R8A2000003810	200	50	350x697x160	33,50
CHV-M 250/3,81	[C] R8A2500003810	250	50	350x867x160	44,80
CHV-M 300/3,81	[C] R8A3000003810	300	50	350x867x160	45,80
CHV-M 333/3,81	[C] R8A3330003810	333	50	350x957x160	52,30
CHV-M 400/3,81	[C] R8A4000003810	400	50	350x927x175	55,30
CHV-M 500/3,81	[C] R8A5000003810	500	50	350x1097x175	68,30
CHV-M 600/3,81	[C] R8A6000003810	600	50	350x1247x175	80,20
BIL 28/75 kV (50 Hz) - 6,35 kV					
CHV-M 50/6,35	[C] R8B0500006350	50	50	350x487x160	17,90
CHV-M 75/6,35	[C] R8B0750006350	75	50	350x537x160	21,80
CHV-M 100/6,35	[C] R8B1000006350	100	50	350x537x160	21,80
CHV-M 150/6,35	[C] R8B1500006350	150	50	350x637x160	28,60
CHV-M 167/6,35	[C] R8B1670006350	167	50	350x637x160	29,10
CHV-M 200/6,35	[C] R8B2000006350	200	50	350x697x160	33,20
CHV-M 250/6,35	[C] R8B2500006350	250	50	350x757x160	37,80
CHV-M 300/6,35	[C] R8B3000006350	300	50	350x867x160	45,30
CHV-M 333/6,35	[C] R8B3330006350	333	50	350x857x175	49,40
CHV-M 400/6,35	[C] R8B4000006350	400	50	350x927x175	54,50
CHV-M 500/6,35	[C] R8B5000006350	500	50	350x1067x175	65,60
CHV-M 600/6,35	[C] R8B6000006350	600	50	350x1247x175	79,20
CHV-M 750/6,35	[C] R8B7500006350	750	50	350x1217x200	90,40
BIL 38/95 kV (50 Hz) - 9,53 kV					
CHV-M 50/9,53	[C] R8C0500009530	50	50	350x530x160	19,50
CHV-M 75/9,53	[C] R8C0750009530	75	50	350x530x160	20,20
CHV-M 100/9,53	[C] R8C1000009530	100	50	350x580x160	23,60
CHV-M 150/9,53	[C] R8C1500009530	150	50	350x680x160	31,00
CHV-M 167/9,53	[C] R8C1670009530	167	50	350x740x160	34,90
CHV-M 200/9,53	[C] R8C2000009530	200	50	350x740x160	35,40
CHV-M 250/9,53	[C] R8C2500009530	250	50	350x910x160	46,90
CHV-M 300/9,53	[C] R8C3000009530	300	50	350x910x160	48,00
CHV-M 333/9,53	[C] R8C3330009530	333	50	350x1000x160	54,70
CHV-M 400/9,53	[C] R8C4000009530	400	50	350x1000x175	59,70
CHV-M 500/9,53	[C] R8C5000009530	500	50	350x1140x175	71,00
CHV-M 600/9,53	[C] R8C6000009530	600	50	350x1290x175	83,10
CHV-M 750/9,53	[C] R8C7500009530	750	50	350x1257x200	90,40
BIL 50/125 kV (50 Hz) - 12,7 kV					
CHV-M 50/12,7	[C] R8D0500012700	50	50	350x615x160	19,70
CHV-M 75/12,7	[C] R8D0750012700	75	50	350x665x160	23,40
CHV-M 100/12,7	[C] R8D1000012700	100	50	350x715x160	26,80
CHV-M 150/12,7	[C] R8D1500012700	150	50	350x765x160	31,20
CHV-M 167/12,7	[C] R8D1670012700	167	50	350x825x160	35,10
CHV-M 200/12,7	[C] R8D2000012700	200	50	350x885x160	39,20
CHV-M 250/12,7	[C] R8D2500012700	250	50	350x995x160	47,00
CHV-M 300/12,7	[C] R8D3000012700	300	50	350x995x160	48,10
CHV-M 333/12,7	[C] R8D3330012700	333	50	350x1055x175	56,90
CHV-M 400/12,7	[C] R8D4000012700	400	50	350x1085x175	59,60
CHV-M 500/12,7	[C] R8D5000012700	500	50	350x1225x175	70,90
CHV-M 600/12,7	[C] R8D6000012700	600	50	350x1375x175	83,00
CHV-M 750/12,7	[C] R8D7500012700	750	50	350x1405x200	98,80



The prices for medium-voltage capacitors are valid for orders for a minimum of 4 units of each type.

Price supplement for orders with 3 or fewer units (by type): **+10%**

The prices that appear in the price list correspond to capacitors with indoor/outdoor installation, with internal fuses (according to type) and frequency of 50 Hz.

Type	Code	Q (kvar)	Frequency (Hz)	Size (mm) width xheight xdepth	weight (kg)
BIL 70/170 kV (50 Hz) - 19,05 kV					
CHV-M 50/19,05	[C] R8E0500019050	50	50	350x644x160	23,30
CHV-M 75/19,05	[C] R8E0750019050	75	50	350x644x160	23,60
CHV-M 100/19,05	[C] R8E1000019050	100	50	350x694x160	27,00
CHV-M 150/19,05	[C] R8E1500019050	150	50	350x804x160	35,00
CHV-M 167/19,05	[C] R8E1670019050	167	50	350x804x160	35,30
CHV-M 200/19,05	[C] R8E2000019050	200	50	350x864x160	39,40
CHV-M 250/19,05	[C] R8E2500019050	250	50	350x964x175	50,80
CHV-M 300/19,05	[C] R8E3000019050	300	50	350x1034x175	56,50
CHV-M 333/19,05	[C] R8E3330019050	333	50	350x1034x175	57,10
CHV-M 400/19,05	[C] R8E4000019050	400	50	350x1134x175	64,40
CHV-M 500/19,05	[C] R8E5000019050	500	50	350x1244x175	73,70
CHV-M 600/19,05	[C] R8E6000019050	600	50	350x1264x200	84,10
CHV-M 750/19,05	[C] R8E7500019050	750	50	350x1454x200	104,20

CHV-T, Three-phase MV power capacitors

Type	Code	Q (kvar)	Frequency (Hz)	Size (mm) width xheight xdepth	weight (kg)
BIL 20/60 kV (50 Hz) - 3,3 kV					
CHV-T 50/3,3	[C] R8K0500003300	50	50	350x422x160	18,80
CHV-T 75/3,3	[C] R8K0750003300	75	50	350x472x160	22,40
CHV-T 100/3,3	[C] R8K1000003300	100	50	350x472x160	22,80
CHV-T 150/3,3	[C] R8K1500003300	150	50	350x572x160	30,00
CHV-T 200/3,3	[C] R8K2000003300	200	50	350x632x160	34,40
CHV-T 250/3,3	[C] R8K2500003300	250	50	350x802x160	45,70
CHV-T 300/3,3	[C] R8K3000003300	300	50	350x802x160	46,70
CHV-T 333/3,3	[C] R8K3330003300	333	50	350x862x175	55,60
CHV-T 400/3,3	[C] R8K4000003300	400	50	350x892x175	58,30
CHV-T 500/3,3	[C] R8K5000003300	500	50	350x1032x175	69,40
CHV-T 600/3,3	[C] R8K6000003300	600	50	350x1182x175	81,20
CHV-T 750/3,3	[C] R8K7500003300	750	50	350x1252x200	97,30
BIL 20/60 kV (50 Hz) - 6,6 kV					
CHV-T 50/6,6	[C] R8K0500006600	50	50	350x422x160	19,20
CHV-T 75/6,6	[C] R8K0750006600	75	50	350x472x160	22,60
CHV-T 100/6,6	[C] R8K1000006600	100	50	350x472x160	23,00
CHV-T 150/6,6	[C] R8K1500006600	150	50	350x572x160	30,20
CHV-T 200/6,6	[C] R8K2000006600	200	50	350x692x160	38,30
CHV-T 250/6,6	[C] R8K2500006600	250	50	350x802x160	45,90
CHV-T 300/6,6	[C] R8K3000006600	300	50	350x802x160	46,90
CHV-T 333/6,6	[C] R8K3330006600	333	50	350x862x175	55,90
CHV-T 400/6,6	[C] R8K4000006600	400	50	350x892x175	58,60
CHV-T 500/6,6	[C] R8K5000006600	500	50	350x1032x175	69,70
CHV-T 600/6,6	[C] R8K6000006600	600	50	350x1182x175	81,20
CHV-T 750/6,6	[C] R8K7500006600	750	50	350x1252x200	97,60
BIL 28/75 kV (50 Hz) - 11 kV					
CHV-T 50/11	[C] R8L0500011000	50	50	350x422x160	19,30
CHV-T 75/11	[C] R8L0750011000	75	50	350x472x160	22,70
CHV-T 100/11	[C] R8L1000011000	100	50	350x472x160	23,00
CHV-T 150/11	[C] R8L1500011000	150	50	350x572x160	30,10
CHV-T 200/11	[C] R8L2000011000	200	50	350x632x160	34,40
CHV-T 250/11	[C] R8L2500011000	250	50	350x802x160	45,70
CHV-T 300/11	[C] R8L3000011000	300	50	350x802x160	46,50
CHV-T 333/11	[C] R8L3330011000	333	50	350x892x175	53,00
CHV-T 400/11	[C] R8L4000011000	400	50	350x862x175	56,10
CHV-T 500/11	[C] R8L5000011000	500	50	350x1002x175	67,00
CHV-T 600/11	[C] R8L6000011000	600	50	350x1182x175	80,70
CHV-T 750/11	[C] R8L7500011000	750	50	350x1192x200	92,10

LVC, Three-phase contactor for MV capacitors

400 A - 6.6 kV AC



Type	Code	Max. voltage	Max. Current (A)	auxiliary voltage
VC-6Z44ED 6,6kV 220V	[*] R80921.	6,6 kVca	3 x 400	220 Vac
VC-6Z44ED 6,6kV 110V	[*] R809210010000	6,6 kVca	3 x 400	110 Vdc

RMV, Choke reactors for MV capacitor banks



Type	Code	In (A)	L(mH)	Size (mm) width xheight xdepth	weight (kg)
RMV-260					
RMV-260-50-350	[2] R80628.	50	350	370x290x110	13,00
RMV-260-60-250	[2] R80637.	60	250	370x290x110	14,00
RMV-260-100-100	[*] R80664.	100	100	370x290x110	16,00
RMV-260-125-50	[2] R80672.	125	50	370x290x110	14,00
RMV-260-175-30	[2] R80691.	175	30	370x290x110	14,00
RMV-330					
RMV-330-60-450	[2] R80739.	60	450	470x355x110	20,00
RMV-330-75-350	[2] R80748.	75	350	470x355x110	21,00
RMV-330-90-250	[2] R80757.	90	250	470x355x110	26,00
RMV-330-125-100	[2] R80774.	125	100	470x355x110	22,00
RMV-330-200-50	[2] R807A2.	200	50	470x355x110	22,00
RMV-330-250-30	[2] R807B1.	250	30	470x355x110	23,00

Dimensions

CHV-M

CHV-T

RMV

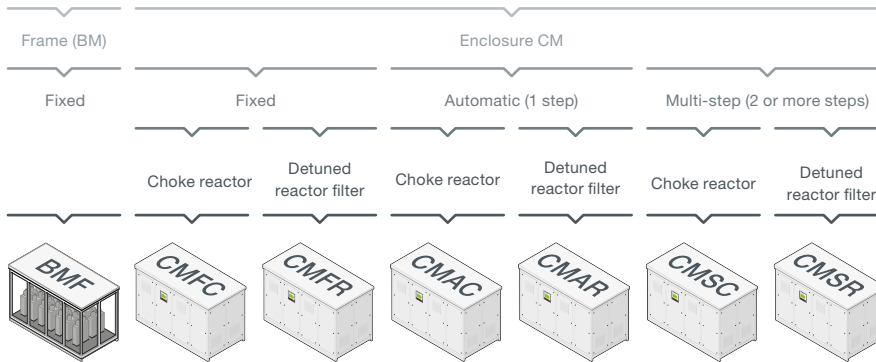
Tipo	A Ø mm	B Ø mm	C mm	D mm	E mm	F mm	Insertos
RMV-260	260	130	370	160	370	290	M12
RMV-330	330	150	470	190	355	210	M12/M16

MV Automatic capacitor banks

CIRKAP. Easy to choose complete products

Selection of capacitor banks

CIRKAP capacitor banks are divided in two main groups: Capacitor banks in a **CM** frame and capacitor banks in open **BM** frames.



References for CIRKAP BM

Code											
B	M	X	X	X	X	X	X	X	X	X	X
		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Fixed (step 1)	F										
Without choke reactor	-										
With choke reactor	C										
Number of steps (1)			n°								
Rated voltage (3 figures) 3.3 kV											033
Rated voltage (3 figures) 4.2 kV											042
Rated voltage (3 figures) 5.5 kV											055
Rated voltage (3 figures) 6.0 kV											060
Rated voltage (3 figures) 6.3 kV											063
Rated voltage (3 figures) 6.6 kV											066
Rated voltage (3 figures) 11 kV											110
Rated voltage (3 figures) 13.2 kV											132
Rated voltage (3 figures) 15 kV											150
Rated voltage (3 figures) 16.5 kV											165
Rated voltage (3 figures) 22 kV											220
Rated voltage (3 figures) 33 kV											330
Nominal capacitor bank power in kvar (5 figures)											n°

References for CIRKAP CM

Code											
C	M	X	X	X	X	X	X	X	X	X	X
		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Fixed (step 1)	F										
Automatic (1 step)	A										
Multistep	S										
Without choke reactor	-										
With choke reactor	C										
With detuned filter	R										
Number of steps (1...9)				n°							
Rated voltage (3 figures) 3.3 kV											033
Rated voltage (3 figures) 4.2 kV											042
Rated voltage (3 figures) 5.5 kV											055
Rated voltage (3 figures) 6.0 kV											060
Rated voltage (3 figures) 6.3 kV											063
Rated voltage (3 figures) 6.6 kV											066
Rated voltage (3 figures) 11 kV											110
Rated voltage (3 figures) 13.2 kV											132
Rated voltage (3 figures) 15 kV											150
Rated voltage (3 figures) 16.5 kV											165
Rated voltage (3 figures) 22 kV											220
Rated voltage (3 figures) 33 kV											330
Nominal capacitor bank power in kvar (5 figures)											n°

Application examples



Water treatment installation

Automatic multi-step capacitor bank with detuned filter, model **CMSR**, 2250 kvar at 6,6 kV, 50 Hz, 5x650 kvar composition, tuned to 189 Hz (p:7%), outdoor installation and IP44 protection degree. Details of the step with fuse protection, vacuum contactor, filtering reactor and three-phase capacitor.



Paper industry

Automatic multi-step capacitor bank with detuned filter, model **CMSR**, 6750 kvar at 22 kV, 50 Hz, 750+4x1500 kvar composition, tuned to 189 Hz (p:7%), outdoor installation and IP54 protection degree. Voltage presence indicator, ON/OFF step, manual or automatic step selection, reactive energy regulator with three-phase measurement and overcurrent, short-circuit and step offset protection relays.



Road infrastructures

Automatic multi-step capacitor banks with detuned filter, model **CMAR**, 100 kvar at 3.3 kV, 50 Hz, 1x100 kvar composition, indoor installation and IP23 protection degree, tuned to 189 Hz. Details of the structure adapted to the space available in the tunnel and corporate colour requested by the client.

Additional components of MV capacitor banks



Pressure switch

Disconnects the step/capacitor bank with the pressure generated after a serious fault inside a capacitor, in order to prevent greater damage. It enables the power circuit to be disconnected and signals the fault when the pressure reaches the maximum value.



Voltage presence indicator

A unit that lights up permanently when the power circuit is powered to provide greater safety during operations carried out on the unit.



Smoke detector

Smoke detectors are devices that warn about the possibility of internal combustion in the capacitor bank and that send a signal to activate an alarm (in the unit or at the discretion of the user), disconnecting the of the battery if necessary.



Electric circuit with opening delay for doors

For units that are ordered with doors in the power modules, Circutor offers the possibility of including a solenoid electrical interlock system in order to prevent access to the capacitor bank's interior if the necessary time has not elapsed.



SVacuum off-load and/or earthing switch

The cut-off and/or earthing switch enables the unit to be visually disconnected and isolated at the capacitor bank input.



Ventilation

In the case of capacitor banks installed in environmental conditions where natural convection cooling is insufficient, an auxiliary thermostat-controlled forced air system is essential for evacuating the internal heat of the capacitor bank.



Anti-condensation heating resistors

These are used to avoid condensation due to temperature gradients during the day, under saline environmental conditions, high relative humidity and low temperatures. Heating resistors controlled by thermostat and/or hygrometer.

Step dimensions

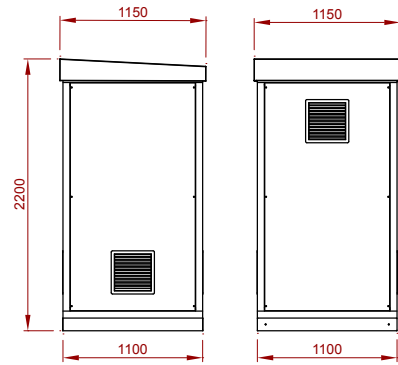
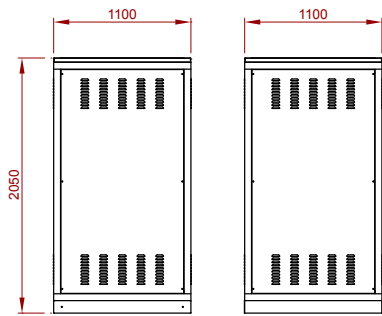
Power	7,2 kV	12 kV	24 kV	36 kV
≤250 kvar	A	A	B	C
21-500 kvar	A	A	B	C
501-750 kvar	A	B	B	C
751-1000 kvar	A, B	B	B	C
1001-1500 kvar	B	B	C	C
1501-2000 kvar	B	B	C	C
201-2500 kvar	B	B	C	C
2501-3000 kvar	B	C	C	C
3001-4000 kvar	C	C	C	C
4001-5000 kvar	C	C	C	
5001-6000 kvar	C	C	C	
6001-7000 kvar	C	C	C	

Dimensions are approximate and may differ depending on the specifications for each team.

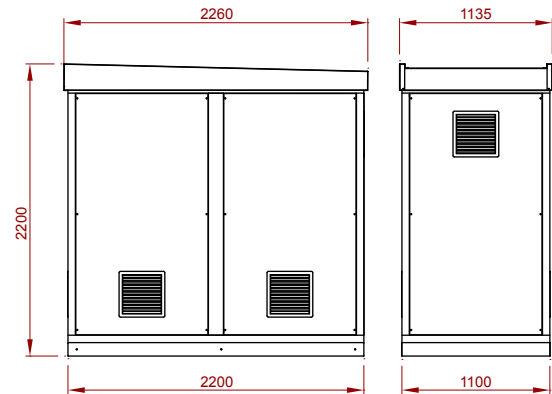
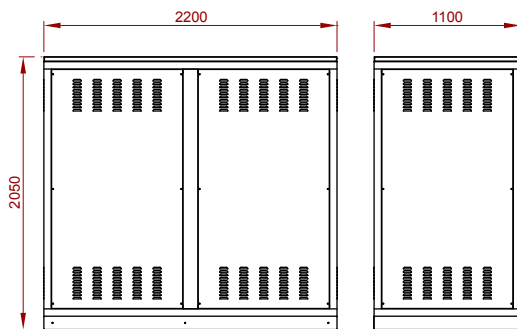
INDOOR

OUTDOOR

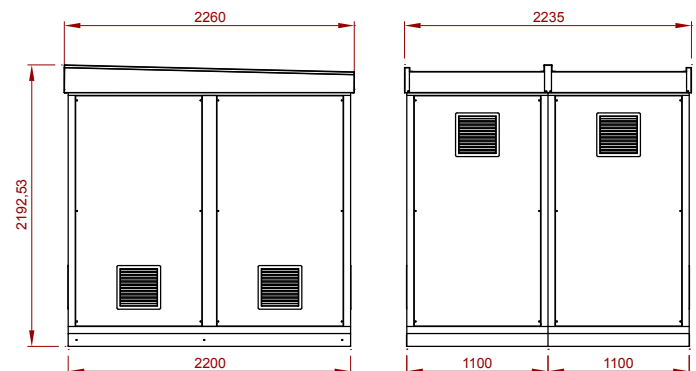
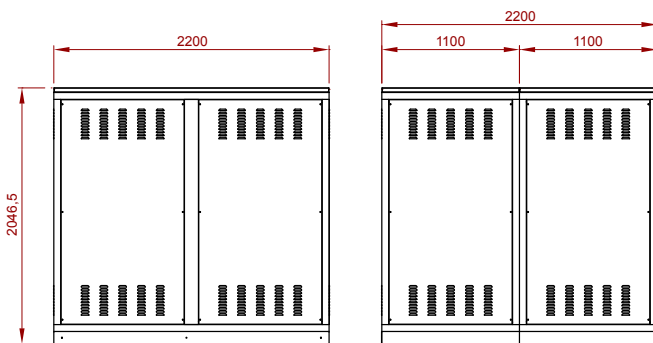
A



B



C





Smart electric vehicle charging

Smart electric vehicle charging

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Outdoor charging station

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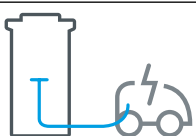
Car park boxes indoor

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PRODUCTOS DESTACADOS

	URBAN	RAPTION 22 / 50	RVE-WB	eHome	CirBEON
					
	Outdoor post	Fast charging Station	Smart car park box	Domestic car park box	Sensor for dynamic control
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Charging modes

MODE 1	MODE 2	MODE 3	MODE 4
			
Direct vehicle-to-grid connection. > Non-dedicated socket. > Single cable. > Overheating risk. > Suitable for small and 2-wheel EV	Direct vehicle-to-grid connection. > Non-dedicated socket. > Cable with communication device and monitoring of charging. > Suitable for small EV up to 2.8 kW	Direct vehicle-to-grid connection. > Dedicated socket with monitoring of charging. > Dedicated cable. > Charging 3.7...22 kW	Indirect vehicle-to-grid connection through an external charger. > External direct current socket with monitoring of charging. > Dedicated cable. > Quick charging 22...50 kW

Connector type

CA	Type 1		CC	JEVS G105 / CHAdeMO	
	Type 2			CCS Combo 2	



Outdoor charging station



NEW

URBAN, Outdoor slow charging posts - mode 1, 2 and 3

Type	Code	No. Sockets	Output type	Connector type	Network type	Communications
URBAN 10						
URBAN M11	[C] V10610.	1	230 V - 32 A - 7,4 kW	Type 2 socket	Single-phase	-
URBAN T11	[C] V10611.	1	400 V - 32 A - 22 kW	Type 2 socket	Three-phase	-
URBAN M12	[C] V10612.	2	230 V - 32 A - 7,4 kW	Type 2 socket	Single-phase	-
URBAN T12	[C] V10613.	2	400 V - 32 A - 22 kW	Type 2 socket	Three-phase	-
URBAN T14-MIX	[C] V10617.	4 (2)	400 V - 32 A - 22 kW; 230 V - 16 A - 3,6 kW	Type 2 socket Schuko	Three-phase	-
URBAN 20						
URBAN M21	[C] V10620.	1	230 V - 32 A - 7,4 kW	Type 2 socket	Single-phase	Ethernet
URBAN T21	[C] V10621.	1	400 V - 32 A - 22 kW	Type 2 socket	Three-phase	Ethernet
URBAN M22	[C] V10622.	2	230 V - 32 A - 7,4 kW	Type 2 socket	Single-phase	Ethernet
URBAN T22	[C] V10623.	2	400 V - 32 A - 22 kW	Type 2 socket	Three-phase	Ethernet
URBAN M22-C1	[C] V10625.	2	230 V - 32 A - 7,4 kW	Cable Type 1	Single-phase	Ethernet
URBAN T22-C2	[C] V10626.	2	400 V - 32 A - 22 kW	Type 2 cable	Three-phase	Ethernet
URBAN T24-MIX	[C] V10627.	4 (2)	400 V - 32 A - 22 kW; 230 V - 16 A - 3,6 kW	Type 2 socket; Schuko	Three-phase	Ethernet

Type A circuit breaker and earth leakage protection, independent on each connection, LED indicator of the state of charge. Aluminium and ABS plastic casing (IP 54 / IK 10). Dimensions: 446 x 1544 x 234 mm For 3G communications, see the code table



NEW

RAPTION 22, Compact fast charging stations, mode 3 and 4

Type	Code	No. Sockets	Output type	Connector type	Network type	Communications
RAPTION 22 CCS	[8] V17010.	1	50-550 Vcc - 56 A - 22 kW	CCS Combo 2	Three-phase	Ethernet + 3G
RAPTION 22 CHA	[8] V17015.	1	50-550 Vcc - 56 A - 22 kW	JEVS G105 - CHAdeMO	Three-phase	Ethernet + 3G
RAPTION 22 DUO	[8] V17020.	2	50-550 Vcc - 56 A - 22 kW	JEVS G105 - CHAdeMO CCS Combo2	Three-phase	Ethernet + 3G
RAPTION 22 TRIO	[8] V17030.	3	50-550 Vcc - 56 A - 22 kW 400 Vca - 32 A - 22 kW	CCS Combo 2; JEVS G105 - CHAdeMO Type 2 socket	Three-phase	Ethernet + 3G

Built-in energy measurement system, RFID reader, vandal-proof 8" TFT touchscreen, Ethernet and 3G and data storage connection, OCPP & XML, communication protocol, C-curve circuit breaker protection, resettable Type A 30 mA earth leakage protection, galvanised steel and stainless steel enclosure - IP54 - IK10, dimensions: 900 x 1710 x 310 mm



NEW

RAPTION 50, Compact fast charging stations, mode 3 and 4

Type	Code	No. Sockets	Output type	Connector type	Communications
RAPTION 50 CCS	[8] V17110.	1	50-500 Vcc - 125 A - 50 kW	CCS Combo 2	Ethernet + 3G
RAPTION 50 CHA	[8] V17115.	1	50-500 Vcc - 125 A - 50 kW	JEVS G105 - CHAdeMO	Ethernet + 3G
RAPTION 50 DUO	[8] V17120.	2	50-500 Vcc - 125 A - 50 kW	CCS Combo 2 JEVS G105 - CHAdeMO	Ethernet + 3G
RAPTION 50 TRIO	[8] V17130.	3	50-500 Vcc - 125 A - 50 kW 400 Vca - 32 A - 22 kW	CCS Combo 2 JEVS G105 - CHAdeMO; Type 2 socket	Ethernet + 3G
RAPTION 50 TRIO 63	[8] V17131.	3	50-500 Vcc - 125 A - 50 kW 400 Vca - 63 A - 43 kW	CCS Combo 2 JEVS G105 - CHAdeMO Type 2 cable	Ethernet + 3G

Built-in energy measurement system, RFID reader, vandal-proof 8" TFT touchscreen, Ethernet and 3G and data storage connection, OCPP & XML, communication protocol, C-curve circuit breaker protection, resettable Type A 30 mA earth leakage protection, galvanised steel and stainless steel enclosure - IP54 - IK10, dimensions: 940 x 1710 x 520 mm

CODIFICATION TABLE

URBAN20						
Code	Internal code					
V	1	X	X	X	0	X
					0	0
						↑ Delivery time
Additional communications	-				0	-
	+ 3G				1	1

Delivery time: [*] immediate
[x] working weeks
[c] consult



Car park boxes indoor



eHome, Car park boxes, mode 3

Type	Code	No. Sockets	Output type	Connector type	Key	Earth leakage protection	circuit breaker protection	MID meter	Charge mode
eHome T2C16	[3] V25020.	1	230 V - 16 A - 3,6 kW	Type 2 cable	-	-	-	-	3
eHome T2C32	[3] V25030.	1	230 V - 32 A - 7,4 kW	Type 2 cable	-	-	-	-	3
eHome T1C16	[3] V25000.	1	230 V - 16 A - 3,6 kW	Type 1 cable	-	-	-	-	3
eHome T1C32	[3] V25010.	1	230 V - 32 A - 7,4 kW	Type 1 cable	-	-	-	-	3
eHome T2C32-A	[3] V25031.	1	230 V - 32 A - 7,4 kW	Type 2 cable	1	Type A	-	-	3
eHome T2C32-A MID	[3] V25032.	1	230 V - 32 A - 7,4 kW	Type 2 cable	1	Type A	-	MID	3
eHome T2C32-B	[3] V25033.	1	230 V - 32 A - 7,4 kW	Type 2 cable	1	Type B	-	-	3
eHome T2C32-AM	[3] V25034.	1	230 V - 32 A - 7,4 kW	Type 2 cable	1	Type A	40A	-	3
eHome T1C32-A	[3] V25011.	1	230 V - 32 A - 7,4 kW	Type 1 cable	1	Type A	-	-	3
eHome T1C32-A MID	[3] V25012.	1	230 V - 32 A - 7,4 kW	Type 1 cable	1	Type A	-	MID	3
eHome T1C32-B	[3] V25013.	1	230 V - 32 A - 7,4 kW	Type 1 cable	1	Type B	-	-	3
eHome T1C32-AM	[3] V25014.	1	230 V - 32 A - 7,4 kW	Type 1 cable	1	Type A	40A	-	3

Please check the CirBEON unit in the accessories section for the dynamic power control functions. Cable support included



RVE-WB, Car park boxes

Type	Code	No. Sockets	Output type	Connector type	Charge mode	Keyboard	Communications
RVE-WBM-SMART	[3] V23015.	1	230 V - 32 A - 7,4 kW	Type 2 socket	3	-	Ethernet
RVE-WBM-SMART-TRI	[3] V23025.	1	400 V - 32 A - 22 kW	Type 2 socket	3	-	Ethernet
RVE-WBMC-SMART	[3] V23032.	1	230 V - 32 A - 7,4 kW	Type 2 cable	3	-	Ethernet
RVE-WBMC-SMART-TRI	[3] V23035.	1	400 V - 32 A - 22 kW	Type 2 cable	3	-	Ethernet
RVE-WB2M-SMART	[3] V23500.	2	230 V - 32 A - 7,4 kW	Type 2 socket	3	-	Ethernet
RVE-WB2M-SMART-TRI	[3] V23530.	2	400 V - 32 A - 22 kW	Type 2 socket	3	-	Ethernet
RVE-WBM-TOUCH-TRI	[3] V23045.	1	400 V - 32 A - 22 kW	Type 2 cable	3	*	Ethernet
RVE-WBMC-TOUCH-TRI	[3] V23050.	1	400 V - 32 A - 22 kW	Type 2 cable	3	*	Ethernet
RVE-WBC-SMART	[3] V23115.	1	230 V - 16 A - 3,6 kW	Type 1 cable	3	-	Ethernet
RVE-WBC-SMART-32	[3] V23116.	1	230 V - 32 A - 7,4 kW	Type 1 cable	3	-	Ethernet
RVE-WBCS-SMART	[3] V23121.	2	230 V - 32 A - 7,4 kW 230 V - 16 A - 3,6 kW	Type 1 cable Schuko	1, 2, 3	-	Ethernet
RVE-WBC-TOUCH	[3] V23125.	1	230 V - 16 A - 3,6 kW	Type 1 cable	3	*	Ethernet
RVE-WBC-TOUCH-32	[3] V23126.	1	230 V - 32 A - 7,4 kW	Type 1 cable	3	*	Ethernet
RVE-WBS-SMART	[3] V23215.	1	230 V - 16 A - 3,6 kW	Schuko	1, 2	-	Ethernet
RVE-WB-MIX-SMART	[3] V23315.	2	230 V - 32 A - 7,4 kW; 230 V - 16 A - 3,6 kW	Type 2 socket Shuko	1, 2, 3	-	Ethernet
RVE-WB-MIX-SMART-TRI	[3] V23325.	2	400 V - 32 A - 22 kW; 230 V - 16 A - 3,6 kW	Type 2 socket Shuko	1, 2, 3	-	Ethernet

Built-in energy measurement system, RFID reader, two-line LCD display, internal measurement, LED indicator of the state of charge, OCPP & XML communication protocol. (*1) Support for 4 m cable and direct type 2 connector, car side, according to IEC 61196-2 (*2) Support for 5 m cable and direct type 1 SAE J-1772 connector, car side, according to IEC 61196-2 Please check the encoding table for 3G communications



WB-eBasic, Car park boxes

Type	Code	No. Sockets	Output type	Connector type	Key	Earth leakage protection	Charge mode
WB-eBasic T2C32	[3] V26030.	1	400 V - 32 A - 22 kW	Type 2 cable	-	-	3
WB-eBasic T2S32	[3] V26040.	1	400 V - 32 A - 22 kW	Type 2 socket	-	-	3
WB-eBasic T2S32 A	[3] V26041.	1	230 V - 32 A - 7,4 kW	Type 2 socket	1	Type A	3
WB-eBasic MIX	[3] V26050.	2	400 V - 32 A - 22 kW; 230 V - 32 A - 3,6 kW	Type 2 socket Schuko	-	-	1, 2, 3

Self-extinguishing ABS plastic box, IP 54-IK 10. Dimensions: 320x225x130 mm. Compatible with the CirBEON power manager. (*1) Cable support included Type 2 casings can be powered and have a single or three-phase output. If they are powered with a single-phase power supply, they will have a single-phase output. Similarly, if they are powered with a three-phase power supply, they will have a three phase output

CODIFICATION TABLE

RVE-WB							
V	2	X	X	X	X	0	0
							X
Code						Internal code	Delivery time
Additional communications						-	0
+ 3G							1

Delivery time: [*] immediate
[x] working weeks
[c] consult

**NEW****CirBEON, Sensor for dynamic control of charging power**

Type	Code	Contracted power (kW)
CirBEON-20	[*] V42002.	4.6
CirBEON-25	[*] V42003.	5.75
CirBEON-30	[*] V42004.	6.9
CirBEON-35	[*] V42005.	8.05
CirBEON-40	[*] V42006.	9.2
CirBEON-50	[*] V42008.	11.5
CirBEON-63	[*] V42009.	14.49

Compatible with units of the eHome and WB-eBasic series Maximum distance to the charging unit of 200 m. Polyester encapsulation, IP 20. Dimensions: 30x15 mm

COFRET, Protection box for charging points

Type	Code	Earth leakage protection	MID meter	Surge Protection (SPD)	circuit breaker protection	Size (mm) width x height x depth	weight (kg)
2 poles							
COFRET-VE6-2P-20A	[3] V41231.	30 mA, Type A	-	-	20 A	170x200x115	1,00
COFRET-VE6-2P-20AS	[3] V41232.	30 mA, Type A	-	1	20 A	170x200x115	1,00
COFRET-VE8-2P-20A MID	[3] V41233.	30 mA, Type A	MID	-	20 A	215x200x115	1,00
COFRET-VE6-2P-40A	[3] V41261.	30 mA, Type A	-	-	40 A	170x200x115	1,00
COFRET-VE6-2P-40AS	[3] V41262.	30 mA, Type A	-	1	40 A	170x200x115	1,00
COFRET-VE8-2P-40A MID	[3] V41263.	30 mA, Type A	MID	-	40 A	215x200x115	1,00
4 poles							
COFRET-VE12-4P-40A	[3] V41461.	30 mA, Type A	-	-	40 A	270x250x160	-
COFRET-VE12-4P-40AS	[3] V41462.	30 mA, Type A	-	1	40 A	270x250x160	-
COFRET-VE12-4P-40A MID	[3] V41463.	30 mA, Type A	MID	-	40 A	270x250x160	-

Electrical protection elements, in compliance with the ITC-BT-52 Standard, C-curve circuit breaker protection, Class A 30 mA earth leakage protection, polycarbonate and polystyrene enclosure, IP 65 - IK10

**PD, Pedestal for RVE-WB and eHome**

Type	Code	Description	Device
PD-WB1	[3] V40321.	Aluminium pedestal 5754, dimensions 1500 x 344 x 273 mm	1 x WBM
PD-WBC1	[3] V40323.	Aluminium pedestal 5754, dimensions 1500 x 344 x 273 mm	1 x (WBC / WBMC)
PD-WB2	[3] V40322.	Aluminium pedestal 5754, dimensions 1500 x 542 x 288 mm	2 x WBM
PD10-WM	[3] V40310.	Aluminium pedestal 5754, dimensions 1500 x 344 x 273 mm	1 x eHOME
PD10-FM1	[3] V40311.	Aluminium pedestal 5754, dimensions 1500 x 344 x 273 mm	1 x eHOME
PD10-FM2	[3] V40312.	Aluminium pedestal 5754, dimensions 1500 x 542 x 288 mm	2 x eHOME

CONNEX, Other accessories

Type	Code	Description
CONNEX T1-T2	[*] V40125.	Type 1 to Type 2 adaptor charging cable, Full compatibility with Mode 3 IEC 61851-1, Connector Type 1- SAE J1772 on the side of the vehicle, Connector Type 2 on the side of the charger, maximum permissible current of 32 A, length of 5 m
CONNEX T2-T2	[*] V40126.	Type 2 charging cable, Full compatibility with Mode 3 IEC 61851-1, Connector Type 2 on the side of the charger, maximum permissible current of 32 A, length of 5 m

RVE-CARD, Prepayment system

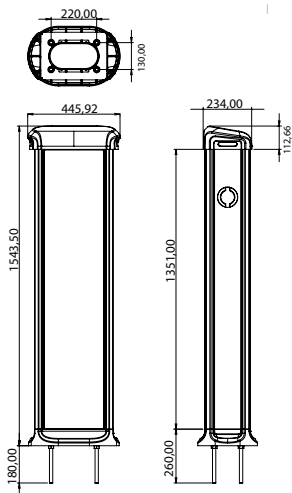
Type	Code	Description
RVE-CARD	[3] V30012.	Proximity card.

Delivery time: [*] immediate
[x] working weeks
[c] consult

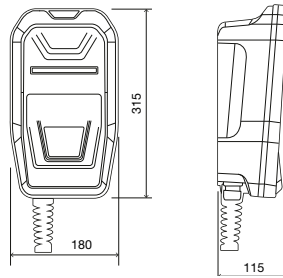


Dimensions

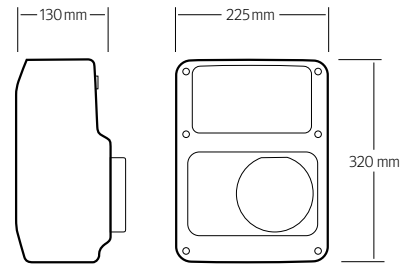
URBAN



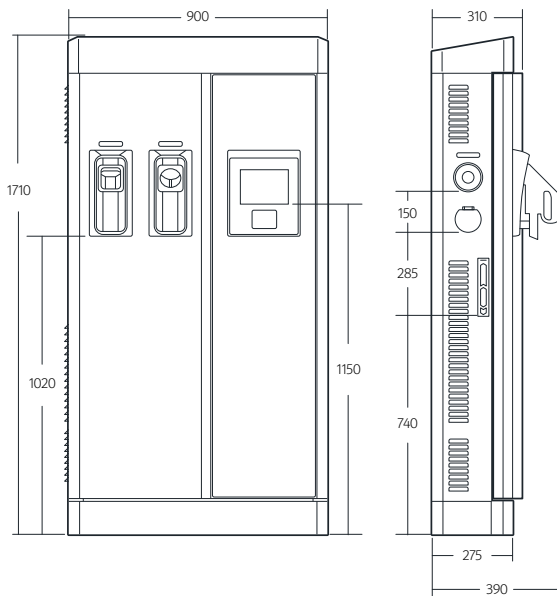
eHome



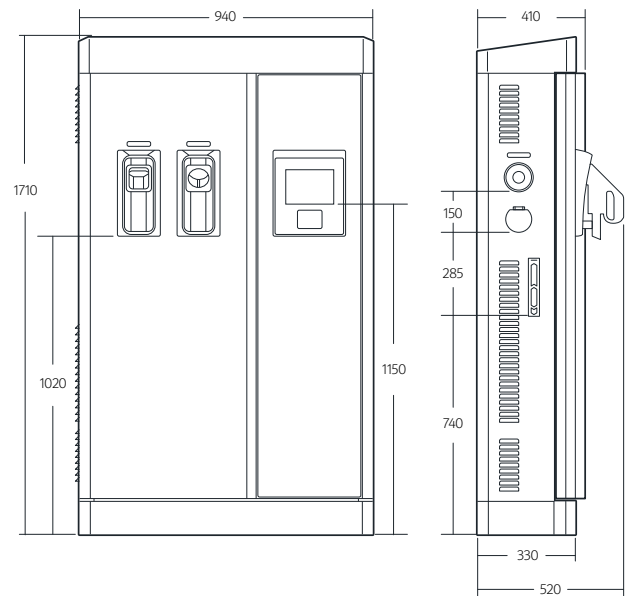
RVE-WB / WB-eBasic



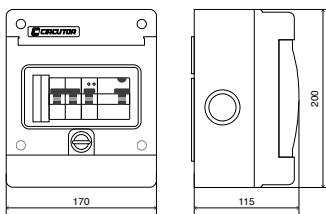
RAPTION 22



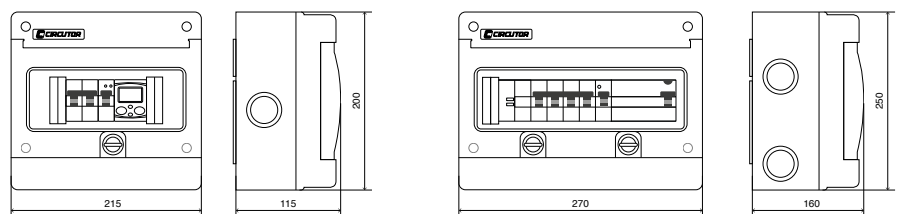
RAPTION 50



COFRET-2P

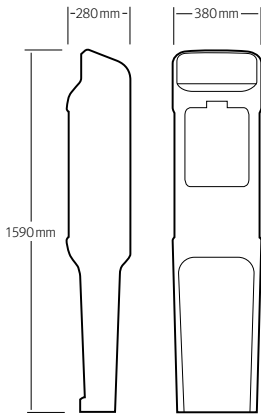


COFRET-4P

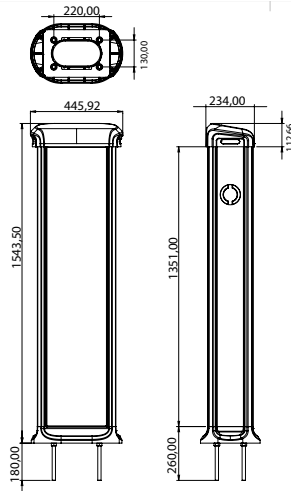


Dimensions

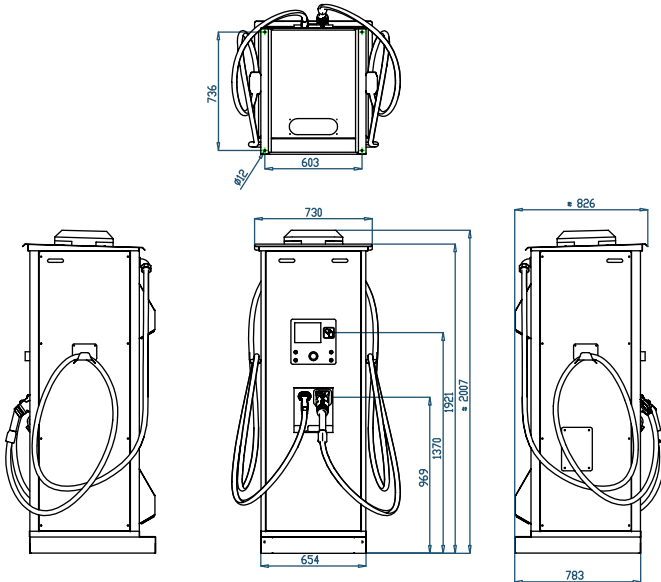
RVE2-P



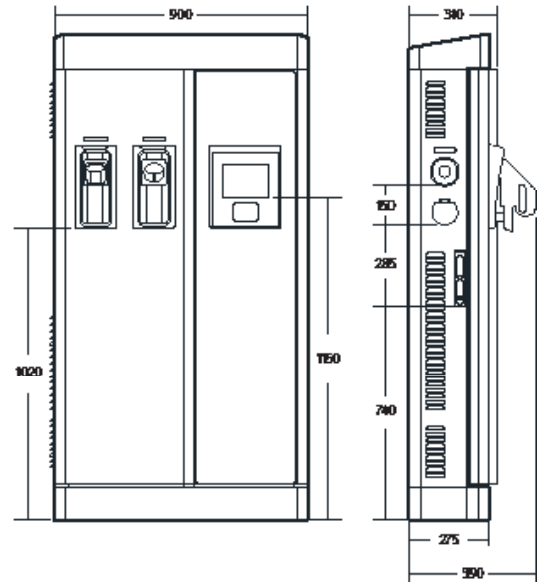
URBAN



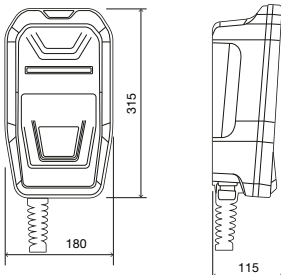
RVE-QPC



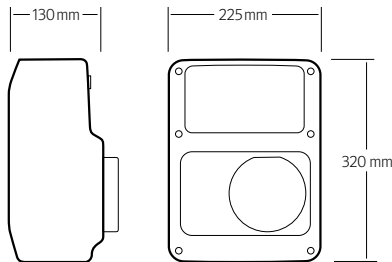
RAPTION



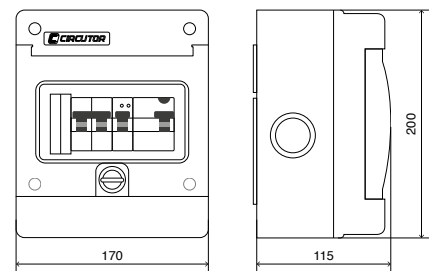
eHome



RVE-WB







COFRET



Renewable energies

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OUTSTANDING PRODUCTS

	Kits-FV	PV	TRH16	PV-MONITOR
				
	On-grid Kits for instantaneous self-consumption in installations	Solar canopy kits	String monitoring supervision devices	Photovoltaic monitoring datalogger
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Kits for instantaneous self-consumption



CDP, Dynamic Power Controller

Type	Code	Description
CDP-0	[C] E51001.	Dynamic power controller, zero injection
CDP-DUO	[C] E51002.	Dynamic power controller with dual configuration
CDP-G	[C] E52001.	Dynamic power controller with demand management

Requires MC (.../250 mA) series current transformers



NEW

Kits FV, On-grid Kits for instantaneous self-consumption in installations

Type	Code	PV power (Wp)	Grid type	Nr inverters	Inverters power (kW)	TOTAL power (kW)
KIT FV 1.5-S	[2] E5K011.	1,4	Single-phase 230V	1	15,0	15,0
KIT FV 1.5-S-PRO	[2] E5K012.	1,9	Single-phase 230V	1	15,0	15,0
KIT FV 2,5-S	[2] E5K021.	3,0	Single-phase 230V	1	25,0	25,0
KIT FV 2.5-S-PRO	[2] E5K022.	3,2	Single-phase 230V	1	25,0	25,0
KIT FV 3-S-T	[2] E5K123.	3,2	Three-phase 3x230/400V	1	3,0	3,0
KIT FV 4.5-M	[2] E5K130.	4,1	Three-phase 3x230/400V	3	15,0	45,0
KIT FV 5-S	[2] E5K031.	5,4	Single-phase 230V	1	5,0	5,0
KIT FV 5-S-PRO	[2] E5K032.	5,9	Single-phase 230V	1	5,0	5,0
KIT FV 5-S-T	[2] E5K131.	5,4	Three-phase 3x230/400V	1	5,0	5,0
KIT FV 5-S-PRO-T	[2] E5K132.	5,9	Three-phase 3x230/400V	1	5,0	5,0
KIT FV 6-M	[2] E5K134.	7,3	Three-phase 3x230/400V	3	2,0	6,0
KIT FV 6-S	[2] E5K033.	7,0	Three-phase 3x230/400V	1	6,0	6,0
KIT FV 6-S-PRO	[2] E5K034.	7,6	Three-phase 3x230/400V	1	6,0	6,0
KIT FV 7.5-M	[2] E5K133.	8,1	Three-phase 3x230/400V	3	25,0	75,0
KIT FV 9-M	[2] E5K037.	9,7	Three-phase 3x230/400V	3	3,0	9,0
KIT FV 9-S	[2] E5K038.	9,2	Three-phase 3x230/400V	1	8,0	8,0
KIT FV 9-S-PRO	[2] E5K039.	9,7	Three-phase 3x230/400V	1	8,0	8,0
KIT FV 11-S	[2] E5K043.	11,3	Three-phase 3x230/400V	1	10,0	10,0
KIT FV 11-S-PRO	[2] E5K044.	11,9	Three-phase 3x230/400V	1	10,0	10,0
KIT FV 15-M	[2] E5K051.	16,2	Three-phase 3x230/400V	3	5,0	15,0
KIT FV 15-M-PRO	[2] E5K052.	17,8	Three-phase 3x230/400V	3	5,0	15,0
KIT FV 15-S	[2] E5K054.	16,2	Three-phase 3x230/400V	1	15,0	15,0
KIT FV 20-S	[2] E5K061.	22,7	Three-phase 3x230/400V	1	20,0	20,0
KIT FV 20-S-PRO	[2] E5K062.	23,8	Three-phase 3x230/400V	1	20,0	20,0
KIT FV 25-M	[2] E5K071.	25,9	Three-phase 3x230/400V	2	125,0	25,0
KIT FV 25-M-PRO	[2] E5K072.	29,2	Three-phase 3x230/400V	2	125,0	25,0
KIT FV 30-M	[2] E5K081.	34,0	Three-phase 3x230/400V	2	15,0	30,0
KIT FV 30-M-PRO	[2] E5K082.	35,6	Three-phase 3x230/400V	2	15,0	30,0
KIT FV 40-M-PRO	[2] E5K200.	47,5	Three-phase 3x230/400V	2	20,0	40,0
KIT FV 60-M-PRO	[2] E5K210.	71,3	Three-phase 3x230/400V	3	20,0	60,0
KIT FV 80-M-PRO	[2] E5K220.	95,0	Three-phase 3x230/400V	4	20,0	80,0
KIT FV 100-M-PRO	[2] E5K230.	118,8	Three-phase 3x230/400V	5	20,0	100,0

FV KITS (tariff) are supplied with the following:

270 Wp Modules
Secondary support structure
Inverter(s)

In addition, FV KITS can be supplied with two electric panel models, which include the DC protection elements (StringBox) and AC protection elements at the inverter output (CombinerBox):

CDP Protection and control panels

StringBox

CombinerBox CDP (includes CDP-DUO and CVM-Mini analyser)

CDP Protection and control and PV-Monitor-M monitoring panels

StringBox TR (includes TRH16 and M/TR current measuring modules)

CombinerBox PV (includes CDP-DUO, CVM-Mini analyser and PV-Monitor-M)

Environmental sensors (radiation and temperature panels/ambient)

The support structure types must be specified before the order for the FV KIT is accepted.

The use of MC Current transformers must be specified if the FV KIT is supplied with electric protection panels.



Kits FV		E	5	X	X	X	X	0	0	X	X	X	X	X
Code														
Current transformers	MC3-63A													
	MC3-125A													
	MC3-250A													
	MC1-20-150/200/250													
	MC1-30-250/400/500													
	MC1-55-500/1000/1500													
	MC1-80-1000/1500/2000													
	Ninguno*													
Protection	Cutting power 15 kA													
	Cutting power 55 kA													
Electrical Panels. Protection and control complement CDP-0	CDP CB S-1-1-1-16-30 (compatible with Kits FV 1.5-S / 1.5-S-PRO / 2.5-S / 2.5-S-PRO)												1	0
	CDP CB S-1-1-1-16-300 (compatible with Kits FV 1.5-S / 1.5-S-PRO / 2.5-S / 2.5-S-PRO)												2	0
	CDP CB S-2-1-1-25-30 (compatible with Kits FV 5-S / 5-S-PRO)												3	0
	CDP CB S-2-1-1-25-300 (compatible with Kits FV 5-S / 5-S-PRO)												4	0
	CDP CB T-2-2-1-25-300 (compatible with Kits FV 3-S-T / FV 5-S-T / 5-S-PRO-T / 6-S / 6-S-PRO)												5	0
	CDP CB T-0-0-1-25-300 + 1 CDP SB 2-1-1 (compatible with Kits FV 9-S / 9-S-PRO / 11-S / 11-S-PRO)												6	0
	CDP CB T-0-0-1-25-300 + 1 CDP SB 4-2-2 (compatible with Kits FV 15-S)												7	0
	CDP CB T-0-0-2-25-300 + 2 CDP SB 4-2-2 (compatible with Kits CDP 25-M / 25-M-PRO)												8	0
	CDP CB C-0-0-3-25-300 + 3 CDP SB 2-1-1 (compatible with Kits CDP 15-M / 15-M-PRO)												9	0
	CDP CB C-1-3-3-16-300 (compatible with kit CDP 4.5-M / 6-M / 7.5-M / 9-M)												A	0
	CDP CB T-0-0-2-40-300 + 2 CDP SB 4-2-2 (compatible with kits CDP 40-M-PRO)												B	0
	CDP CB T-0-0-3-40-300 + 3 CDP SB 4-2-2 (compatible with kits CDP 60-M-PRO)												C	0
	CDP CB T-0-0-4-40-300 + 4 CDP SB 4-2-2 (compatible with kits CDP 80-M-PRO)												D	0
	CDP CB T-0-0-5-40-300 + 5 CDP SB 4-2-2 (compatible with kits CDP 100-M-PRO)												E	0
	CDP CB T-0-0-1-40-300 + 1 CDP SB 4-2-2 (compatible with kits CDP 20-S / CDP 20-S-PRO)												I	0
Electrical Panels. Protection & Control complement CDP-0 and PV-MONITOR for monitoring	CDP PV T-0-0-1-40-300 + 1 CDP SB 4-2-2-TRH16 + environmental sensors (compatible with Kits CDP 30-M / 30-M-PRO)												0	1
	CDP PV T-0-0-2-25-300 + 1 CDP SB 8-4-4-TRH16 + environmental sensors (compatible with Kits CDP 15-S / 20-S / 20-S-PRO)												0	2
	CDP PV T-0-0-2-40-300 + 1 CDP SB 8-4-4-TRH16 + environmental sensors (compatible with kits CDP 40-M-PRO)												0	3
	CDP PV T-0-0-3-40-300 + 1 CDP SB 12-3-3-TRH16 + environmental sensors (compatible with kits CDP 60-M-PRO)												0	4
	CDP PV T-0-0-4-40-300 + 1 CDP SB 16-4-4-TRH16 + environmental sensors (compatible with kits CDP 80-M-PRO)												0	5

In case the measurement of installation consumption requires the use of split-core transformers .../5 A (due to the presence of busbars .../5 A), or larger cross-section diameters) must be accounted for separately from the KIT together with 1 power analyser type **CVM-MINI-ITF-RS485-C2**.

Units for photovoltaic applications

TRH, String monitoring supervision devices

230 Vac / 24 Vdc Power supply voltage

agrupador

NEW

Type	Code	Description
TRH16-RS485	[*] E80005.	16 configurable channels, 25/100/200 A 1500 Vdc voltage measurement Three voltage-free digital inputs 1 Pt100 / Pt1000 probe input 1 Input 0...20 mA
Measuring module		
M/TR-25 Acc X 2	[*] E80010.	Measuring module for 2 current circuits. Maximum current: 25 Adc
M/TR-25 Acc X 4	[*] E80011.	Measuring module for 4 current circuits. Maximum current: 25 Adc
M/TR-100 Acc	[*] E80012.	Measuring module for 1 current circuit. Maximum current: 100 Adc
M/TR - 200 Acc	[*] E80013.	Measuring module for 1 current circuit. Maximum current: 200 Adc

NOTE: Complete unit: 25 A TR8-RS485-25 (E80000) + (1 or 2) M/TR-25x4 (E80011) 100 A TR8-RS485-100/200(E80001) + (1 ... 8) M/TR-100 (E80012) 200 A TR8-RS485-100/200 (E80001) + (1 ... 8) M/TR-200 (E80013)

PV-Monitor, Photovoltaic monitoring datalogger

Type	Code	Description
PV-Monitor	[2] E8100*.	Datalogger for photovoltaic installations
PV-Monitor-M	[2] E8110*.	Datalogger for photovoltaic installations with meteorological monitoring system

* 1=Spanish / 2= French / 3=English Examples: E81001=Spanish / E81102= French

Type	Code	Description
MET-485	[*] EX0095.	Temperature sensor for photovoltaic panels
RT-N150	[1] EX0056.	CIRCUTOR Router

Delivery time: [*] immediate
[x] working weeks
[c] consult

Solar canopy



NEW

PV, Solar canopy kits

Type	Code	PV power (Wp)	Nr inverters	Spaces	No. of Blinding concrete plates	Size (mm) width xheight xdepth
PV2, Single solar canopy						
PV2 C2PS	[C] E6P202.	4,1	1 x 3,7 kW	2	2	5000x3500x4800
PV2 C3PS	[C] E6P203.	6,5	1 x 5 kW	3	2	8000x3500x4800
PV2 C4PS	[C] E6P204.	8,1	1 x 7 kW	4	3	10000x3500x4800
PV2 C6PS	[C] E6P206.	12,2	1 x 10 kW	6	3	15000x3500x4800
PV2 C8PS	[C] E6P208.	16,2	1 x 15 kW	8	4	20000x3500x4800
PV2 C10PS	[C] E6P210.	20,3	1 x 20 kW	10	5	25000x3500x4800
PV2 C12PS	[C] E6P212.	24,3	1 x 20 kW	12	5	30000x3500x4800
PV2 C16PS	[C] E6P216.	32,4	2 x 15 kW	16	7	40000x3500x4800
PV2 C18PS	[C] E6P218.	36,5	3 x 12,5 kW	18	7	45000x3500x4800
PV2 C20PS	[C] E6P220.	40,5	2 x 15 kW	20	8	50000x3500x4800
PV2 C22PS	[C] E6P222.	44,6	3 x 15 kW	22	9	55000x3500x4800
PV2 C24PS	[C] E6P224.	48,6	3 x 15 kW	24	9	60000x3500x4800
PV2 C26PS	[C] E6P226.	52,7	3 x 17,5 kW	26	10	65000x3500x4800
PV2 C28PS	[C] E6P228.	56,7	3 x 20 kW	28	11	70000x3500x4800
PV2 C30PS	[C] E6P230.	60,8	3 x 20 kW	30	11	75000x3500x4800
PV2 C32PS	[C] E6P232.	64,8	3 x 20 kW	32	12	80000x3500x4800
PV2 C34PS	[C] E6P234.	68,9	3 x 20 kW	34	13	85000x3500x4800
PV2 C36PS	[C] E6P236.	72,9	3 x 20 kW	36	13	90000x3500x4800
PV2 C38PS	[C] E6P238.	77,0	3 x 20 kW	38	14	95000x3500x4800
PV2 C40PS	[C] E6P240.	81,0	4 x 20 kW	40	15	100000x3500x4800
PV2 C42PS	[C] E6P242.	85,1	4 x 20 kW	42	15	105000x3500x4800
PV4, Double solar canopy						
PV4 C4PD	[C] E6P404.	8,1	1 x 7 kW	4	2	5000x3600x9700
PV4 C6PD	[C] E6P406.	13,0	1 x 10 kW	6	2	8000x3600x9700
PV4 C8PD	[C] E6P408.	16,2	1 x 15 kW	8	3	10000x3600x9700
PV4 C12PD	[C] E6P412.	24,3	1 x 20 kW	12	4	15000x3600x9700
PV4 C16PD	[C] E6P416.	32,4	2 x 15 kW	16	4	20000x3600x9700
PV4 C20PD	[C] E6P420.	40,5	2 x 20 kW	20	5	25000x3600x9700
PV4 C24PD	[C] E6P424.	48,6	3 x 15 kW	24	5	30000x3600x9700
PV4 C28PD	[C] E6P428.	56,7	3 x 20 kW	28	6	35000x3600x9700
PV4 C32PD	[C] E6P432.	64,8	3 x 20 kW	32	7	40000x3600x9700
PV4 C36PD	[C] E6P436.	72,9	3 x 20 kW	36	7	45000x3600x9700
PV4 C40PD	[C] E6P440.	81,0	4 x 20 kW	40	8	50000x3600x9700
PV4 C44PD	[C] E6P444.	89,1	4 x 20 kW	44	9	55000x3600x9700

PV KITS (tariff) are supplied with the following material: • 270 Wp Modules • Canopy structure • Inverter(s) In addition, PV KITS can be supplied with two electric panel modules, which include the DC protection elements (StringBox) and AC protection elements at the inverter output (CombinerBox); • CDP Protection and control panels - StringBox - CombinerBox CDP (includes CDP-DUO and CVM-MINI analyser) • CDP Protection and control and PV-Monitor-M monitoring panels - StringBox TR (includes TRH16 and M/ TR current measuring modules) - CombinerBox PV (includes CDP-DUO, CVM-Mini analyser and PV-Monitor-M) - Environmental sensors (radiation and temperature panels/ ambient) The canopy is supplied by default in all PV KITS. As an option, 2 WallBox electric vehicle charging units can be supplied; these will be integrated on the canopy's legs, one on the start foot and the other on the end foot. Compatible CIRCUTOR WallBox units: - WB-eBasic Range - RVE-WB Range (single connection) In addition, the price includes the templates and RAL colour paint selected by the customer. The use of MC Current transformers must be specified if the FV KIT is supplied with electric protection panels.

FREIGHT NOT INCLUDED

MC CURRENT TRANSFORMERS NOT INCLUDED

NEW

PVS, Single-post solar canopy kits

Type	Code	PV power (Wp)	Grid type	Nr inverters	Spaces	No. of Blinding concrete plates	Size (mm) width xheight xdepth
PVS M2M	[C] E6P102.	4,1	Single-phase	1 x 3,6 kW	2	1	5040x3488x4784
PVS M2T	[C] E6P120.	4,1	Three-phase	1 x 3,7 kW	2	1	5040x3488x4784

Available options: • Colour of the canopy structure, marked with the company logo • Other options and configurations available on special order FREIGHT NOT INCLUDED MC CURRENT TRANSFORMERS NOT INCLUDED

Delivery time: [*] immediate
[x] working weeks
[c] consult



Kits PV													
E	5	P	X	X	X	0	0	0	X	X		X	X
Code													
Current transformers	MC3-63A								0				
	MC3-125A								1				
	MC3-250A								2				
	MC1-20-150/200/250								3				
	MC1-30-250/400/500								4				
	MC1-55-500/1000/1500								5				
	MC1-80-1000/1500/2000								6				
Protection													
Cutting power for AC protections CombinerBox up to 15 kA								0					
Cutting power for AC protections CombinerBox up to 55 kA								1					
Electrical Panels. Protection and control complement CDP-0													
CDP CB T-0-0-1-10-300 + 1 CDP SB 2-1-1 (compatible with Kits C2PS)								1	0				
CDP CB T-0-0-1-16-300 + 1 CDP SB 2-1-1 (compatible with Kits C3PS)								2	0				
CDP CB T-0-0-1-16-300 + 1 CDP SB 2-2-2 (compatible with Kits C4PS y C4PD)								3	0				
CDP CB T-0-0-1-25-300 + 1 CDP SB 4-2-2 (compatible with Kits C6PS, C8PS, C6PD y C8PD)								4	0				
CDP CB T-0-0-1-40-300 + 1 CDP SB 6-2-2 (compatible with Kits C10PS, C12PS y C12PD)								5	0				
CDP CB T-0-0-2-25-300 + 1 CDP SB 6-2-2 (compatible with Kits C16PS y C16PD)								6	0				
CDP CB T-0-0-2-25-300 + 2 CDP SB 6-2-2 (compatible with Kits C20PS)								7	0				
CDP CB T-0-0-3-25-300 + 3 CDP SB 4-2-2 (compatible with Kits C18PS, C22PS, C24PS, C24PD)								8	0				
CDP CB T-0-0-2-40-300 + 1 CDP SB 4-2-2 + 1 CDP SB 6-2-2 (compatible with Kits C20PD)								9	0				
CDP CB T-0-0-3-40-300 + 2 CDP SB 4-2-2 + 1 CDP SB 6-2-2 (compatible with Kits C26PS)								A	0				
CDP CB T-0-0-3-40-300 + 3 CDP SB 4-2-2 (compatible with Kits C28PS, C30PS, C32PS, C28PD y C32PD)								B	0				
CDP CB T-0-0-3-40-300 + 3 CDP SB 6-2-2 (compatible with Kits C34PS, C36PS, C38PS, C36PD)								C	0				
CDP CB T-0-0-4-40-300 + 4 CDP SB 6-2-2 (compatible with Kits C40PS, C42PS, C40PD y C44PD)								D	0				
Electrical Panels. Protection & Control complement CDP-0 and pv-monitor for monitoring													
CDP PV T-0-0-1-16-300 + 1 CDP SB 2-1-1-TRH16 + environmental sensors (compatible with Kits C4PS y C4PD)								0	3				
CDP PV T-0-0-1-25-300 + 1 CDP SB 2-1-1-TRH16 + environmental sensors (compatible with Kits C6PS, C8PS, C6PD y C8PD)								0	4				
CDP PV T-0-0-1-40-300 + 1 CDP SB 2-2-2-TRH16 + environmental sensors (compatible with Kits C10PS, C12PS y C12PD)								0	5				
CDP PV T-0-0-2-25-300 + 1 CDP SB 4-2-2-TRH16 + environmental sensors (compatible with Kits C16PS y C16PD)								0	6				
CDP PV T-0-0-2-25-300 + 1 CDP SB 6-2-2-TRH16 + environmental sensors (compatible with Kits C16PS y C16PD)								0	7				
CDP PV T-0-0-3-25-300 + 1 CDP SB 15-3-3-TRH16 + environmental sensors (compatible with Kits C22PS, C28PS)								0	8				
CDP PV T-0-0-3-40-300 + 1 CDP SB 15-3-3-TRH16 + environmental sensors (compatible with Kits C26PS, C30PS, C34PS, C36PS, C38PS y C36PD)								0	9				
CDP PV T-0-0-3-25-300 + 1 CDP SB 12-4-4-TRH16 + environmental sensors (compatible with Kits C24PS, C24PD)								0	A				
CDP PV T-0-0-2-40-300 + 1 CDP SB 15-3-3-TRH16 + environmental sensors (compatible with Kits C20PD)								0	B				
CDP PV T-0-0-3-40-300 + 1 CDP SB 12-3-3-TRH16 + environmental sensors (compatible with Kits C32PS, C28PD, C32PD)								0	C				
CDP PV T-0-0-4-40-300 + 1 CDP SB 16-4-4-TRH16 + environmental sensors (compatible with Kits C40PS, C42PS, C40PD y C44PD)								0	D				

In case the measurement of installation consumption requires the use of split-core transformers .../5 A (due to the presence of busbars .../5 A) or larger cross-section diameters) must be accounted for separately from the KIT together with 1 power analyser type **CVM-MINI-ITF-RS485-C2**.

Isolated network kits

NEW

FV-ISLAND, Kits for electrification

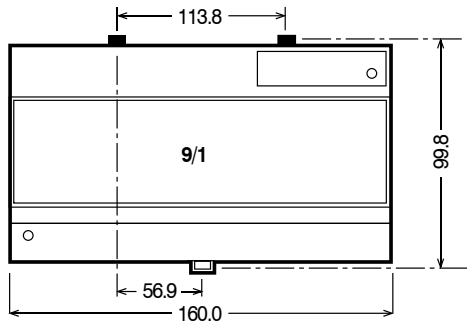


Type	Code	PV power (Wp)	Grid type	Inverters power (kW)	Daily consumption (Wh/day)	Battery (V/Ah)
FV-ISLAND S-3000	[C] E4K394.	1,560,0	1 x 230 V	3,0	3640	24 / 575
FV-ISLAND S-3500	[C] E4K4C5.	2,340,0	1 x 230 V	35,0	4680	48 / 360
FV-ISLAND S-5000	[C] E4K5D6.	3,120,0	1 x 230 V	5,0	6240	48 / 575
FV-ISLAND S-7000	[C] E4K6E7.	4,680,0	1 x 230 V	7,0	9360	48 / 850
FV-ISLAND S-10000	[C] E4K7F8.	6,240,0	1 x 230 V	10,0	12480	48 / 1130
FV-ISLAND T-10500	[C] E4K8G8.	7,800,0	3 x 230 / 400 V	105,0	14144	48 / 1695
FV-ISLAND T-21000	[C] E4K9H9.	14,040,0	3 x 230 / 400 V	21,0	28288	48 / 2600

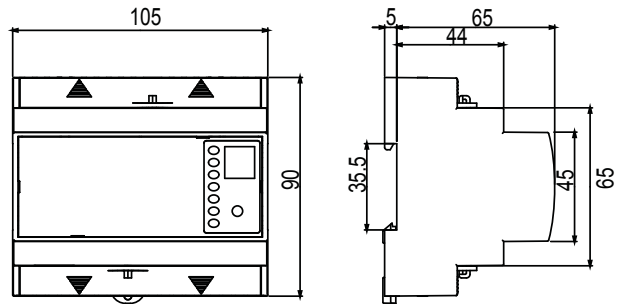
The FV-ISLAND kits consist of: - Modules - Structure - Load regulator - Investor - Batteries (lead OPzV acid) -DC and AC Protection Boards Please contact us to receive further information about other configurations.

Dimensions

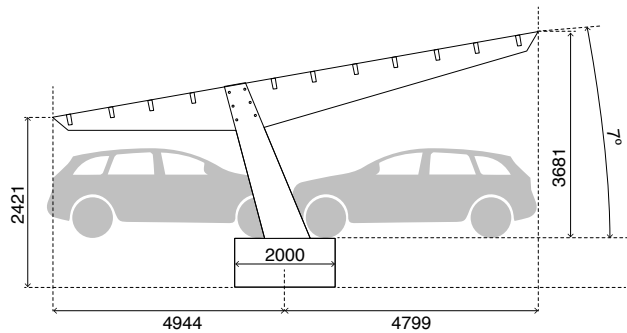
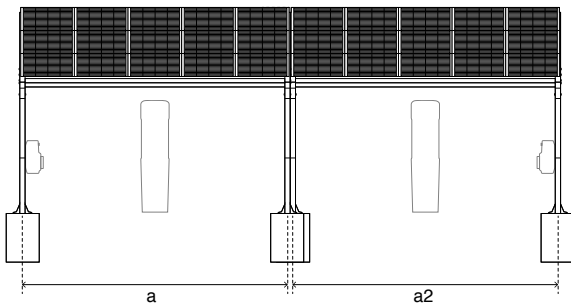
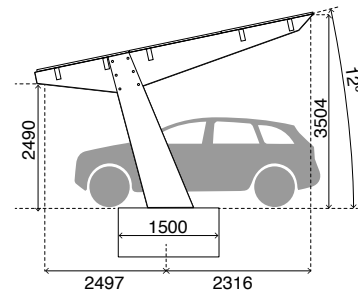
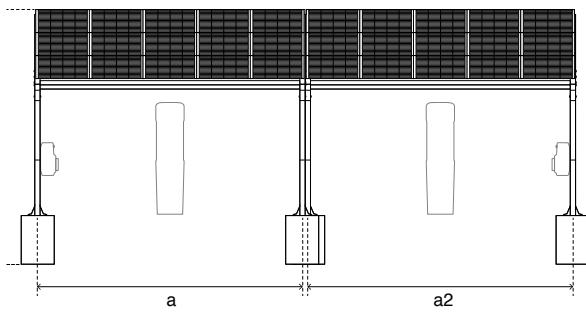
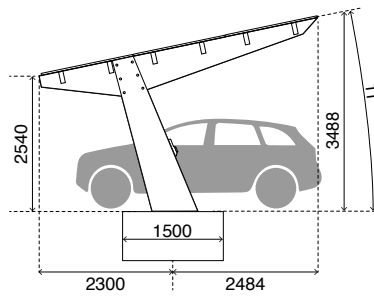
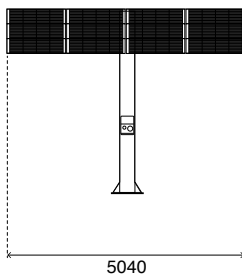
TRH16



CDP / PV-MONITOR



PV



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[C] R2H56D.	121	[C] R2H67L.	122	[*] R3L120.	134	[2] R46424.	139	[2] R54W65.	136
[C] R2H56E.	121	[C] R2H67N.	122	[*] R3L130.	134	[2] R46425.	139	[2] R5X350.	130
[C] R2H56J.	121	[C] R2H67P.	122	[*] R3L140.	134	[2] R46426.	139	[2] R5X350.	136
[C] R2H56L.	121	[C] R2H67R.	122	[*] R3L150.	134	[2] R46431.	139	[2] R5X370.	130
[C] R2H56N.	121	[C] R2H68A.	123	[*] R3L160.	134	[2] R46435.	139	[2] R5X370.	136
[C] R2H56R.	121	[C] R2H68B.	123	[1] R3L170.	134	[2] R46437.	139	[2] R5X380.	130
[C] R2H578.	121	[C] R2H68E.	123	[1] R3L180.	134	[2] R46438.	139	[2] R5X380.	136
[C] R2H579.	121	[C] R2H68I.	123	[*] R3L210.	134	[2] R46442.	139	[2] R5X390.	130
[*] R2H57B.	121	[C] R2H68J.	123	[*] R3L220.	134	[2] R46444.	139	[2] R5X390.	136
[*] R2H57D.	121	[C] R2H68K.	123	[1] R3L230.	134	[2] R46450.	139	[2] R5X3A0.	130
[*] R2H57E.	121	[C] R2H68L.	123	[*] R3L240.	134	[2] R46455.	139	[2] R5X3A0.	136
[*] R2H57J.	121	[C] R2H68N.	123	[1] R3L250.	134	[2] R46505.	139	[2] R5X3B0.	130
[*] R2H57L.	121	[C] R2H68P.	123	[1] R3L260.	134	[2] R46604.	139	[2] R5X3B0.	136
[*] R2H57N.	121	[C] R2H69B.	123	[*] R3L310.	134	[2] R46605.	139	[2] R5Y350.	130
[C] R2H57R.	121	[C] R2H69D.	123	[1] R3L320.	134	[2] R46606.	139	[2] R5Y350.	136
[C] R2H57S.	121	[C] R2H69E.	123	[*] R3L330.	134	[2] R46608.	139	[2] R5Y370.	130
[C] R2H598.	121	[C] R2H69J.	123	[1] R3L340.	134	[2] R46609.	139	[2] R5Y370.	136
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[C] R2H59E.	121	[C] R2H69R.	123	[1] R3L420.	134	[C] R4A309.	138	[2] R5Y390.	130
[C] R2H59J.	121	[C] R2H69S.	123	[1] R3L430.	134	[C] R4A318.	138	[2] R5Y390.	136
[C] R2H59L.	121	[C] R2H762.	122	[1] R3L440.	134	[C] R4A321.	138	[2] R5Y3A0.	130
[C] R2H59N.	121	[C] R2H766.	122	[1] R3L450.	134	[C] R4A330.	138	[2] R5Y3A0.	136
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[C] R2H59S.	121	[C] R2H768.	122	[*] R3Q641EN00000	134	[C] R4E103.	135	[2] R5Y3B0.	136
[C] R2H622.	122	[C] R2H772.	122	[*] R3Q651EN00000	134	[C] R4E104.	135	[2] R64C25.	140
[C] R2H626.	122	[C] R2H776.	122	[*] R3Q671EN00000	134	[C] R4E105.	135	[2] R64C30.	140
[C] R2H627.	122	[C] R2H777.	122	[*] R3Q681EN00000	134	[C] R4E106.	135	[2] R64C35.	140
[C] R2H628.	122	[C] R2H778.	122	[*] R3Q691EN00000	134	[C] R4E108.	135	[2] R64C40.	140
[C] R2H62B.	122	[C] R2H782.	123	[*] R3Q6D1EN00000	134	[C] R4E113.	135	[2] R64C45.	140
[C] R2H62D.	122	[C] R2H786.	123	[*] R3Q6E1EN00000	134	[C] R4E114.	135	[2] R64E24.	140
[C] R2H62E.	122	[C] R2H787.	123	[*] R3Q6F1EN00000	134	[C] R4E115.	135	[2] R64E25.	140
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[C] R2H643.	122	[C] R2H796.	123	[*] R3Q781EN00000	134	[2] R54R74.	136	[2] R64E30.	140
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[C] R2H64E.	122	[C] R2H868.	121	[1] R3S151.	131	[2] R54S28.	136	[2] R64J45.	140
[C] R2H64J.	122	[C] R2H872.	121	[1] R3S161.	131	[2] R54S29.	136	[2] R64K36.	140
[C] R2H64L.	122	[C] R2H873.	121	[1] R3S181.	131	[2] R54S30.	136	[2] R64K38.	140
[C] R2H64N.	122	[C] R2H875.	121	[1] R3S421.	131	[2] R54S32.	136	[2] R64K40.	140
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[C] R2H66B.	122	[C] R2H878.	121	[1] R3S451.	131	[2] R54T30.	136	[2] R64L50.	140
[C] R2H66D.	122	[C] R2H892.	121	[1] R3S461.	131	[2] R54T35.	136	[2] R64L55.	140
[C] R2H66E.	122	[C] R2H896.	121	[1] R3S481.	131	[2] R54T40.	136	[2] R64L60.	140
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[C] R2H66L.	122	[1] R35L20.	134	[1] R3S4A1.	131	[2] R54U36.	136	[2] R64R64.	140
[C] R2H66N.	122	[1] R35L30.	134	[1] R3S4B1.	131	[2] R54U38.	136	[2] R64R74.	140
[C] R2H66R.	122	[1] R35L40.	134	[1] R3S4D1.	131	[2] R54U40.	136	[2] R64R81.	140
[C] R2H66S.	122	[2] R36L10.	134	[1] R3Z210.	123	[2] R54U42.	136	[2] R64R88.	140
[C] R2H678.	122	[2] R36L20.	134	[*] R3Z220.	123	[2] R54U44.	136	[2] R64R92.	140
[C] R2H67A.	122	[2] R36L30.	134	[*] R3Z230.	123	[2] R54V25.	136	[2] R64R95.	140
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[4] R73119.	146	[4] R7S006.	146	[C] R8D4000012700	149	[C] V10627.	156	[*] V42006.	158
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[C] R7C118.	147	[C] R8C2500009530	149	[C] R8L3330011000	150	[3] V40321.	158		
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DELIVERY TIME

- [*] Immediate delivery
- [1/2] Delivery within 2-3 working days
- [1] Delivery in 1 week – 5 working days
- [2] Delivery in 2 weeks – 10 working days
- [c] Consult delivery time

Delivery time are orientation (exworks) and are conditioned by the availability of material in the moment that the order is actually placed; delivery time is understood to be delivery in our warehouses, ready to be sent.

Once the order has been expedited, it can not be lengthened or modified. A new option will correspond to a new order with all of the pertinent requirements and conditions.

RETURNS

Any claim must be made within fifteen days from the reception of the merchandise; after this period no returns will be accepted.

The return must be made according to the terms duly laid out by CIRCUTOR out by CIRCUTOR, and in any case, merchandise that is accepted will be depreciated by a minimum of 15% of the net value billed.