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Quality - made in Germany

RSM 58 - SSI

Absolute multi-turn encoder

- Shockproof up to 200 g
- Electronical adjustment
- Diagnosis output (DV)
- Up to 25 Bit resolution

Technical data

Total resolution	24, 25 or 26 Bit
Steps per turnurn	4.096 / 12 Bit 8.192 / 13 Bit 16.384 / 14 Bit
Number of turns	4.096 / 12 Bit
Code	Gray, Binary
Code sequence	CW/CCW programmable
Interface	SSI incremental A 90° B (optional)
Incremental output (optional)	2048 pulses A 90° B + inverted

Electrical data

Operating voltage	10...30 VDC
Reserve polarity protection	Yes
Consumption w/o load	≤ 50 mA (24 VDC)
Initializing Time (typ.)	20 ms after power on
Accuracy	± 0,025°
Sensing method	optical

Inputs

	SSI clock Control signals CW/CCW and zero
Input level High	> 0,7 UB
Input level Low	< 0,3 UB
Input resistance	10 kÙ

Circuit

SSI-Clock	Optocoupler
SSI-Data	Linedriver RS485

Outputs

SSI-Data	Linedriver RS485
Diagnostic outputs	Push-pull

Incremental-Outputs
Push-pull short-circuit-proof

Level High	> UB - 3,5 V (with I = -20 mA)
Level Low	< 0,3 V (with I = 20 mA)
Load High/Low	< 20 mA

Linedriver RS422

Level High	> 2,5 V (I = -20 mA)
Level Low	< 0,5 V (I = 20 mA)
Load High/Low	< 20 mA

Sine/Cosine

Input level	1 Vpp ± 10 %
Load	< 10 mA

Mechanical data

Speed	≤ 10.000 rpm (mechanical)
Speed	≤ 6.000 rpm (electrical)
Start-up torque	≤ 0,03 Nm
Shaft loading	≤ 40 N radial ≤ 20 N axial
Rotor moment of inertia	20 gcm²

Housing data

Material	Housing: Steel Flange: Aluminium
Housing	Ø 58 mm
Shaft	Ø 10 mm Clamping flange Ø 6 mm Synchro flange
Weight	approx. 400 g

Ambient conditions

Vibration	DIN EN 60068-2-6 10 g (16...2000 Hz)
Shock	DIN EN 600068-2-27 200 g, 6 ms
Operate temperature	- 25... + 85° C - 40... + 85° C (optional)
Humidity	Max. relative humidity 95 % no-condensing
Protection type	IP 65
Interference resistance	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4

Description of diagnostic functions

- Self-diagnosis
- Code continuity check
- Multiturn sensing

Terminal description

1 UB — Encoder voltage supply.

2 GND — Encoder ground connection relating to UB.

3 Clock+ — Positive SSI clock input. Clock+ together with clock- forms a current loop. A current of approx. 7 mA towards clock+ input means logic 1 in positive logic.

4 Data+ — Positive, serial data output of differential linedriver.

5 Zero setting — Input for setting a zero point anywherewithin the programmed encoder resolution. The zero setting operation is triggered by a High impulse and has to be in line with the selected direction of rotation (CW/CCW). Connect to GND after setting operation for maximum interference immunity. Impulse duration >100 ms.

6 Data- — Negative, serial data output of differential linedriver.

7 Clock- — Negative SSI clock input. Clock- together with clock+ forms a current loop. A current of approx. 7 mA towards clock- input means logic 0 in positive logic.

8 DV — Diagnostic output. An error warning is given at level Low. Important: Interferences must be filtered by the downstram electronics.

9 CW/CCW — CW/CCW counting direction input. This input is standard on High. CW/CCW means ascending output data with clockwise shaft rotation when looking at flange. CW/CCW-Low means ascending values with counterclockwise shaft rotation when looking at flange.

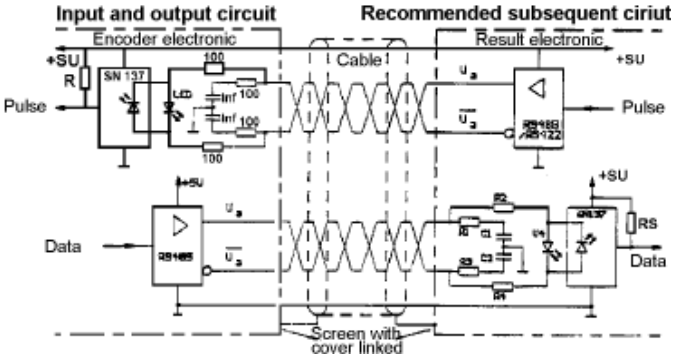
10 DV/MT — Diagnostic output for monitoring the multiturn sensor voltage supply. Upon dropping below a defined voltage level the DV MT output is switched to Low.

11/12 — not connected

Incremental Outputs — Incremental tracks A 90° B and inverted.
F = 2.048 I/U, push pull (HTL signals)
FR = 2.048 I/U, RS422
FS = 2.048 P/T, Sine/Cosine, 1 Vpp

Data transfer

Clock frequency f	62,5 ... 1500 kHz
Scan ratio of T	40...60 %
Time lag tv	150 ns
Monoflop time tm	25 µs + T/2
Clock interval tp	30 µs



PIN - assignment RSM 58 - SSI

Signal	PIN	Cable colour
UB	1	brown
GND	2	black
Pulse+	3	blue
Data +	4	beige
Adjustment	5	green
Data -	6	yellow
Pulse-	7	violett
DV single	8	brown-yellow
CW/CCW	9	pink
DV multi	10	black-yellow
not in use	11	-
not in use	12	-

With inkremental tracks

Signal	PIN	Cable colour
UB	1	brown
GND	2	white
Pulse+	3	blue
Data +	4	green
Adjustment	5	gray
Data -	6	yellow
Pulse-	7	red
Track B inv.	8	red-blue
CW/CCW	9	pink
Track A inv.	10	violett
Track A	11	black
Track B	12	gray-pink

Instructions:

CW/CCW controls the direction of rotation. For the shaft, CW indicates a rising code for rotation to the right. In GND the code changes to CCW (falling code). The unit comes to you in the CW mode.

Zero adjustment for setting a zero point at any desired point within the entire resolution. The zeroing process is triggered by a High pulse (pulse duration ≥ 100 ms) and must take place after the rotating direction selection (CW/CCW). For maximum interference immunity, the input must be connected to GND after zeroing.

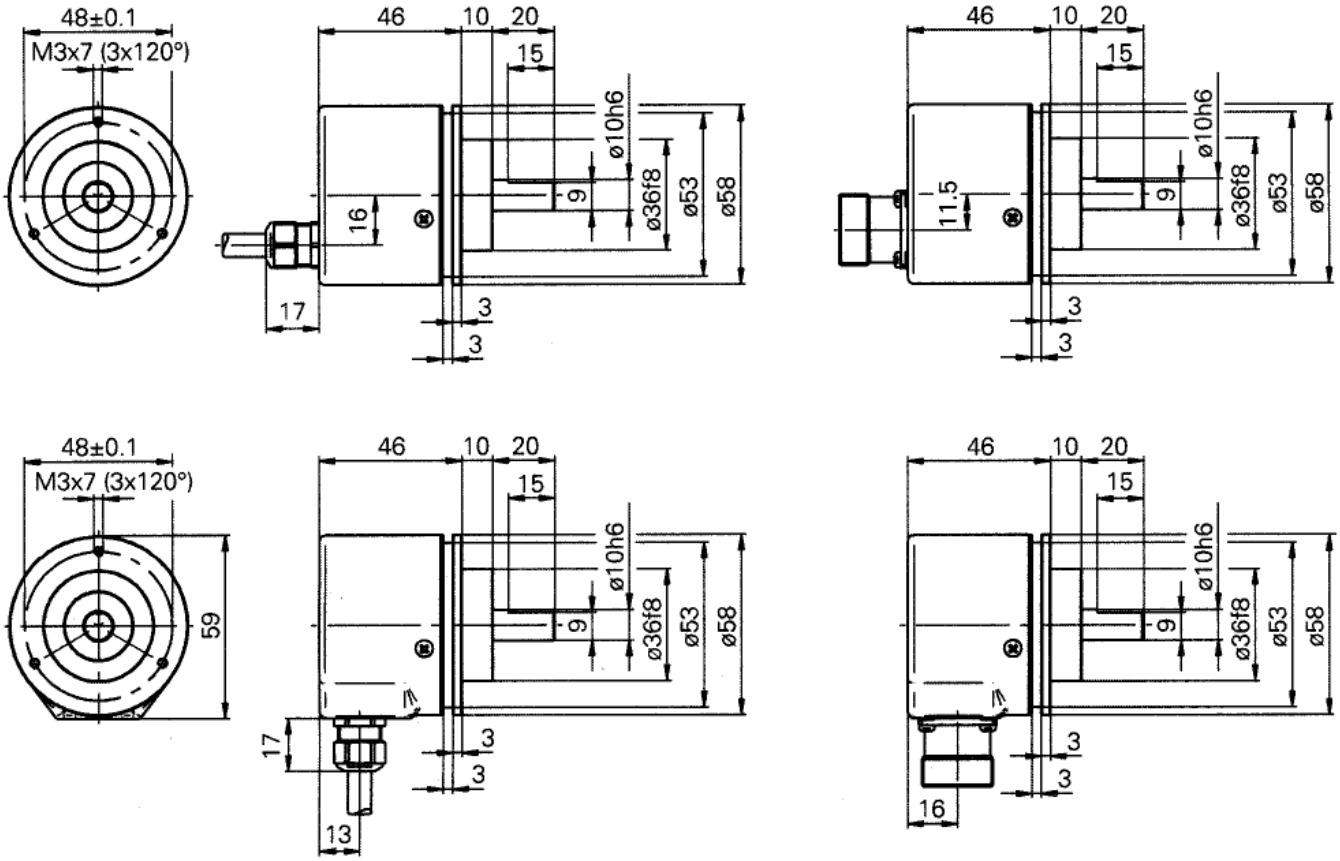
DV single is the diagnosis output of single-turn.
DV multi is the output of multi-turn.
Please refer to the supply voltage stated on the nameplate.
Do not occupy any signals which are not required.
Incremental Outputs
F = 2.048 P/T, push pull (HTL signals)
FR = 2.048 P/T, RS422
FS = 2.048 P/T, Sine/Cosine, 1 Vpp

Type key of encoder

Encoder type	Bit/Turn	Turns	Code	Voltage	Flange	Output	Optional
RSM 58	**12** = 4096 S/T singleturn	12 = 4096 T multiturn	**G** = Gray	3 = 10 - 30 VDC	**W1** = 10 mm shaft clamping flange	**KG** = Cable axial	**F** = 2048 Pulse /T push-pull
RSM 58	**13** = 8192 S/T singleturn		**B** = Binary		**V6** = 6 mm shaft servo flange	**KS** = Cable radial	**FR** = 2048 Pulse /T RS 422
RSM 58	**14** = 16.384 S/T singleturn					**SG** = 12pol. plug axial	**FS** = 2048 Pulse /T Sine/Cosine
RSM 58						**SS** = 12pol. plug radial	
RSM 58	_____	**12**	_____	**3**	_____	_____	_____

Dimension and cutout RSM 58 - SSI

10 mm shaft, clamping flange



optional: 6 mm shaft, servo flange