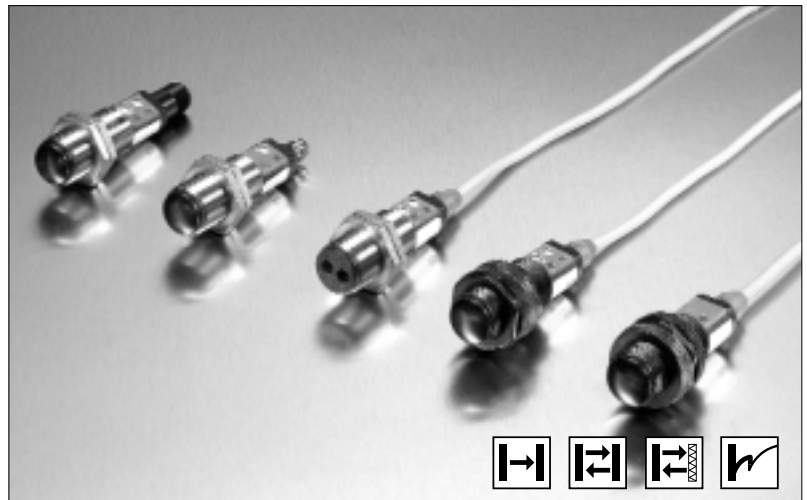


**Description**

- Operation mode and max sensing range:  
**Thru beam:** 0-20 m  
**Diffuse proximity:** 0-50 cm  
**Retro reflective:** 0-3 m  
**Fibre:** Dependent on fibre optic
- Cable or plug connection
- Sensitivity adjustment via potentiometer
- Switch selectable light or dark function
- Power and output indicators
- High tolerance to hostile environments
- 10-30 V dc or 20-250 V ac supply voltage
- 3 wire, NPN or PNP transistor output  
or 2 wire, SCR output
- Test input




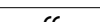
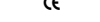

The 8000 series consists of a self-contained transmitter SMT, and a receiver SMR which are to be used in thru beam mode, an SMP for diffuse proximity, SMRR for retro reflective and an SMPF for use with fibre optic cables. All are offered with sensitivity adjustment via integral potentiometer with either cable or plug connection.

The complete series is available either as 3 wire, NPN or PNP transistor output with a 10-30 V dc supply voltage, or as 2 wire, SCR with a

20-250 V ac supply voltage both offering switch selectable light or dark function. The control input in the 10-30 V dc SMT is intended to be used for disabling or enabling the transmitting power temporarily for test purpose or for multiplexing applications.

The dc series is protected against reverse polarity of power supplies, control input and output signals. The output is protected against short circuit and inductive loads.

		Technical Data				
		SMT	SMR		SMP/SMPF	SMRR
			8x20	8x00		
Supply voltage	ac	20 – 250 V ac	-	20 – 250 V ac		
	dc			10 – 30 V dc		
Voltage ripple				15 %		
Reverse polarity protected	dc			Yes		
Short circuit protected	dc	-		Yes		
Power consumption	ac	3 mA	-	2 mA		
	dc	15 mA	5 mA		14 mA	
Maximum output load	ac	-	-	200 mA		
	dc		120 mA @ 30 V dc			
Maximum residual voltage	ac	-	-	8 V		
	dc		1,5 V			
Max. operation frequency	ac	-	-	25 Hz		
	dc		100 Hz	250 Hz		
Response time $t_{ON} / t_{OFF}$	ac	-	-	25 ms / 25 ms		
	dc		5 ms / 5 ms	2 ms / 2 ms		
Power on indicator			Green LED			
Output indicator		-	Yellow LED			
Hysteresis		-	Approx. 10 – 30 %		Approx. 3 – 10 %	
Transmitter diode		Ga Al As (880 nm)		-		
Opening angle		-	+/- 5°		+/- 4°	+/- 1,5°
Emission angle		+/- 4°	-			

Environmental Data					
	SMT	SMR		SMP	SMRR/SMPF
		8x20	8x00		
Vibration	10 – 55 Hz, 0,5 mm				
Shock	30 g				
Light immunity, @ 5° incidence	-	> 7000 lux	> 10 000 lux		
Temperature, operation	- 20 to +60 °C				
Temperature, storage	- 40 to +80 °C				
Sealing class	ac	IP 60			
	dc	IP 67			
Approvals	ac	  			
	dc				

Available Types										
Transmitter	Type	Power Supply	Control Feature	Output	Connection		5 m Cable	3 pin, M8 Plug	4 pin, M12 Plug	Range
					Housing Material	Housing Size				
	8000	10 – 30 V dc	Test Input			Polycarbonate	M18 x 1	<b>SMT 8000 PG 5</b>	<b>SMT 8000 PG T3</b>	<b>SMT 8000 PG J</b>
Stainless Steel						<b>SMT 8000 MG 5</b>		<b>SMT 8000 MG T3</b>	<b>SMT 8000 MG J</b>	
20 – 250 V ac		-	Polycarbonate			<b>SMT 8600 PG 5</b>		-	-	7 metres
			Stainless Steel			<b>SMT 8600 MG 5</b>		-	-	

Receivers	8400	10 – 30 V dc	Sensitivity pot. and light/dark switch	NPN	Polycarbonate	M18 x 1	<b>SMR 8400 PG 5</b>	<b>SMR 8400 PG T3</b>	<b>SMR 8400 PG J</b>	0-7 metres		
					Stainless Steel		<b>SMR 8400 MG 5</b>	<b>SMR 8400 MG T3</b>	<b>SMR 8400 MG J</b>			
	8500			PNP	Polycarbonate		<b>SMR 8500 PG 5</b>	<b>SMR 8500 PG T3</b>	<b>SMR 8500 PG J</b>	0-20 metres		
					Stainless Steel		<b>SMR 8500 MG 5</b>	<b>SMR 8500 MG T3</b>	<b>SMR 8500 MG J</b>			
	8520			PNP	Polycarbonate		<b>SMR 8520 PG 5</b>	<b>SMR 8520 PG T3</b>	<b>SMR 8520 PG J</b>			
					Stainless Steel		<b>SMR 8520 MG 5</b>	<b>SMR 8520 MG T3</b>	<b>SMR 8520 MG J</b>			
	8420			NPN	Polycarbonate		<b>SMR 8420 PG 5</b>	<b>SMR 8420 PG T3</b>	<b>SMR 8420 PG J</b>	7 metres		
					Stainless Steel		<b>SMR 8420 MG 5</b>	<b>SMR 8420 MG T3</b>	<b>SMR 8420 MG J</b>			
	8800			20 – 250 V ac	Light/dark switch		SCR	Polycarbonate	<b>SMR 8800 PG 5</b>	-	-	-
								Stainless Steel	<b>SMR 8800 MG 5</b>	-	-	

Proximity	8500	10 – 30 V dc	Sensitivity pot. and light/dark switch	PNP	Polycarbonate	M18 x 1	<b>SMP 8500 PG 5</b>	<b>SMP 8500 PG T3</b>	<b>SMP 8500 PG J</b>	0-50 cm	
					Stainless Steel		<b>SMP 8500 MG 5</b>	<b>SMP 8500 MG T3</b>	<b>SMP 8500 MG J</b>		
	8400			NPN	Polycarbonate		<b>SMP 8400 PG 5</b>	<b>SMP 8400 PG T3</b>	<b>SMP 8400 PG J</b>		
					Stainless Steel		<b>SMP 8400 MG 5</b>	<b>SMP 8400 MG T3</b>	<b>SMP 8400 MG J</b>		
	8800			20 – 250 V ac	SCR		Polycarbonate	<b>SMP 8800 PG 5</b>	-		-
							Stainless Steel	<b>SMP 8800 MG 5</b>	-		-

Fibre Sensors	8500	10 – 30 V dc	Sensitivity pot. and light/dark switch	PNP	Polycarbonate	M18 x 1	<b>SMPF 8500 PG 5</b>	<b>SMPF 8500 PG T3</b>	<b>SMPF 8500 PG J</b>	For ranges refer to page 44	
					Stainless Steel		<b>SMPF 8500 MG 5</b>	<b>SMPF 8500 MG T3</b>	<b>SMPF 8500 MG J</b>		
	8400			NPN	Polycarbonate		<b>SMPF 8400 PG 5</b>	<b>SMPF 8400 PG T3</b>	<b>SMPF 8400 PG J</b>		
					Stainless Steel		<b>SMPF 8400 MG 5</b>	<b>SMPF 8400 MG T3</b>	<b>SMPF 8400 MG J</b>		
	8800			20 – 250 V ac	SCR		Polycarbonate	<b>SMPF 8800 PG 5</b>	-		-
							Stainless Steel	<b>SMPF 8800 MG 5</b>	-		-

Note: Fibre optic cable to be ordered separately.

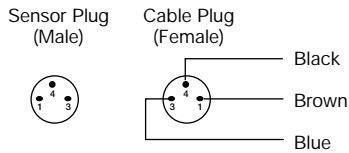
Retro Reflective	8500	10 – 30 V dc	Sensitivity pot. and light/dark switch	PNP	Polycarbonate	M18 x 1	<b>SMRR 8500 PG 5</b>	<b>SMRR 8500 PG T3</b>	<b>SMRR 8500 PG J</b>	0-3 metres	
					Stainless Steel		<b>SMRR 8500 MG 5</b>	<b>SMRR 8500 MG T3</b>	<b>SMRR 8500 MG J</b>		
	8400			NPN	Polycarbonate		<b>SMRR 8400 PG 5</b>	<b>SMRR 8400 PG T3</b>	<b>SMRR 8400 PG J</b>		
					Stainless Steel		<b>SMRR 8400 MG 5</b>	<b>SMRR 8400 MG T3</b>	<b>SMRR 8400 MG J</b>		
	8800			20 – 250 V ac	SCR		Polycarbonate	<b>SMRR 8800 PG 5</b>	-		-
							Stainless Steel	<b>SMRR 8800 MG 5</b>	-		-

Note: Reflector to be ordered separately.

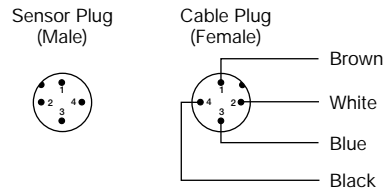
**Connections**

	Cable	M8 Plug/Cable	M12 Plug/Cable
AC supply	Blue & Brown	-	-
Supply +	Brown	Pin 1/Brown	Pin 1/Brown
Supply -	Blue	Pin 3/Blue	Pin 3/Blue
Control	Red	Pin 4/Black	Pin 4/Black
SMR output	Black	Pin 4/Black	Pin 3/Black

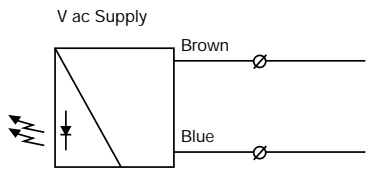
**3 pin, M8**



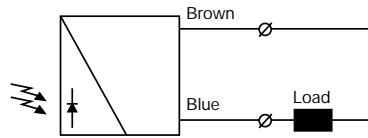
**4 pin, M12**



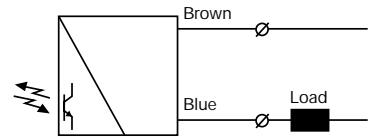
**Wiring Diagrams**



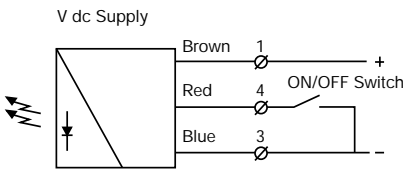
SMT 8600



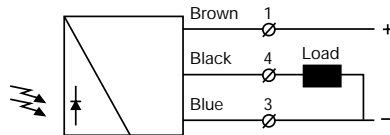
SMR 8800



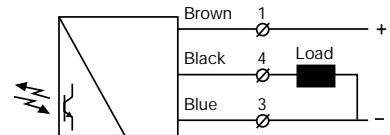
SMR / SMPF / SMRR 8800



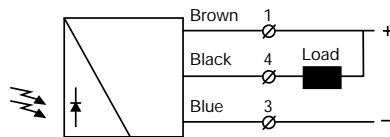
SMT 8000



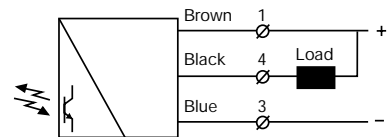
SMR 85XX



SMP / SMPF / SMRR 8500



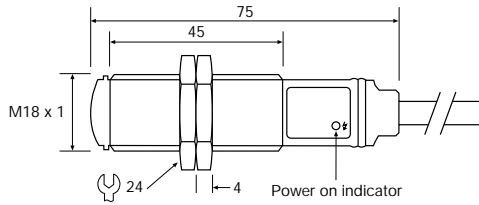
SMR 84XX



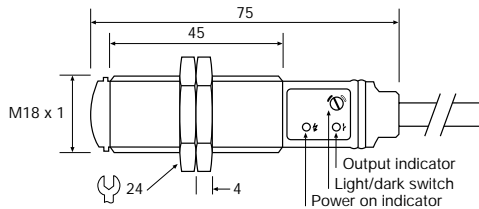
SMP / SMPF / SMRR 8400

**Dimensions and Descriptions**

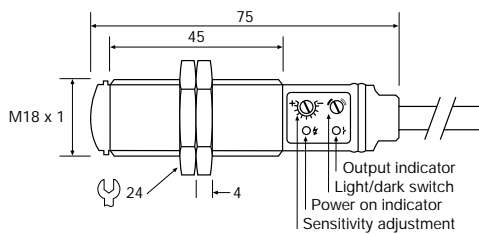
**AC Models**



**SMT PG/MG 5**

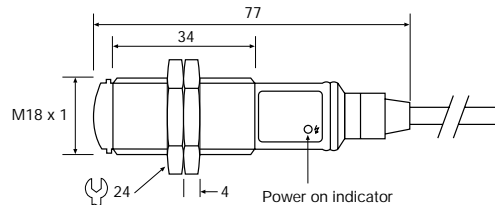


**SMR PG/MG 5**

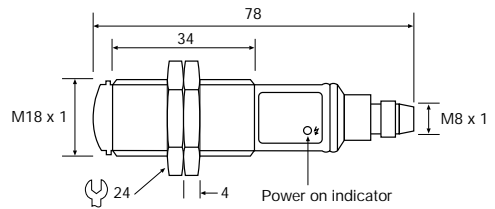


**SMP/SMPF/SMRR PG/MG 5**

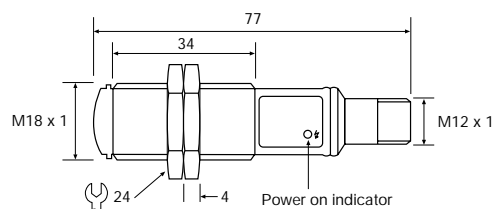
**DC Models**



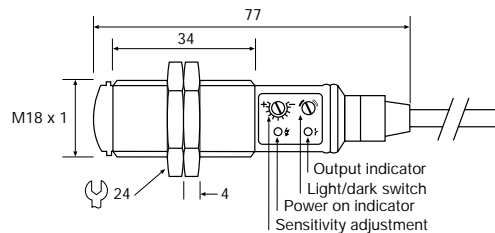
**SMT PG/MG 5**



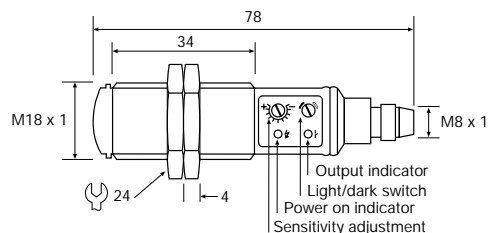
**SMT PG/MG T3**



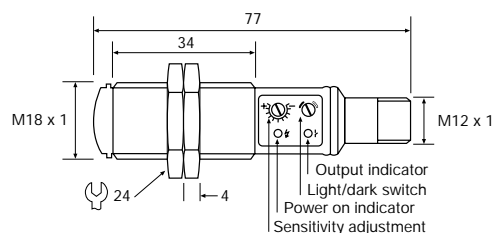
**SMT PG/MG J**



**SMR/SMP/SMRR PG/MG 5**



**SMR/SMP/SMPF/SMRR PG/MG T3**



**SMR PG/MG J**

(Units in mm)

(Units in mm)