Description

- Operation mode and max sensing range:
  Thru-beam: 0-20 m
  Diffuse proximity: 0-0,5 m
  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
- Available with optional Ex ATEX approval

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 output 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				
Current 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	–	–	20 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. 5-15 %		
Light source		Infrared (880 nm)	–		Infrared (880 nm)		
Opening angle		–	+/– 6°		+/– 4°		+/– 3,5°
Emission angle		+/– 2°	–				
Housing material	Sensor housing	Stainless Steel (AISI 316 / 1.4401) or Polycarbonate					
	Front lens	Polycarbonate					
Cable, PVC	ac	Ø 5,2 mm, 2 x 0,25 mm²					
	dc	Ø 4,0 mm, 3 x 0,14 mm²					

Environmental Data

		SMT	SMR		SMP	SMPF	SMRR
			8x20	8x00			
Vibration		10-55 Hz, 0,5 mm					
Shock		30 g					
Light immunity	@ 5° incidence	–	> 7 000 lux	> 10 000 lux	–		
	@ 15° incidence	–	–		> 40 000 lux		> 25 000 lux
Temperature, operation		–20 to +60 °C					
Temperature, storage		–40 to +80 °C					
Sealing class	ac	IP 60					
	dc	IP 67					
Approvals	ac	CE cULus					
	dc	CE					

Available Types

	Type	Power Supply	Control Feature	Output	Connection		5 m cable	3 pin, M8 plug	4 pin, M12 plug	Range
					Housing Material	Housing Type	Order Reference			
Transmitter	8000	10-30 V dc	Test Input	–	Polycarbonate	M18 x 1	SMT 8000 PG 5	SMT 8000 PG T3	SMT 8000 PG J	20 m
					Stainless Steel		SMT 8000 MG 5	SMT 8000 MG T3	SMT 8000 MG J	
	8600	20-250 V ac	–		Polycarbonate		SMT 8600 PG 5	–	–	7 m
					Stainless Steel		SMT 8600 MG 5	–	–	
Receiver	8400	10-30 V dc	Sensitivity pot. and light/dark switch	NPN	Polycarbonate	M18 x 1	SMR 8400 PG 5	SMR 8400 PG T3	SMR 8400 PG J	0-7 m
					Stainless Steel		SMR 8400 MG 5	SMR 8400 MG T3	SMR 8400 MG J	
	8500			PNP	Polycarbonate		SMR 8500 PG 5	SMR 8500 PG T3	SMR 8500 PG J	
					Stainless Steel		SMR 8500 MG 5	SMR 8500 MG T3	SMR 8500 MG J	
	8420			NPN	Polycarbonate		SMR 8420 PG 5	SMR 8420 PG T3	SMR 8420 PG J	0-20 m
					Stainless Steel		SMR 8420 MG 5	SMR 8420 MG T3	SMR 8420 MG J	
	8520			PNP	Polycarbonate		SMR 8520 PG 5	SMR 8520 PG T3	SMR 8520 PG J	
					Stainless Steel		SMR 8520 MG 5	SMR 8520 MG T3	SMR 8520 MG J	
	8800	20-250 V ac	Light/dark switch	SCR	Polycarbonate		SMR 8800 PG 5	–	–	7 m
					Stainless Steel		SMR 8800 MG 5	–	–	
Proximity	8400	10-30 V dc	Sensitivity pot. and light/dark switch	NPN	Polycarbonate	M18 x 1	SMP 8400 PG 5	SMP 8400 PG T3	SMP 8400 PG J	0-0,5 m
					Stainless Steel		SMP 8400 MG 5	SMP 8400 MG T3	SMP 8400 MG J	
	8500			PNP	Polycarbonate		SMP 8500 PG 5	SMP 8500 PG T3	SMP 8500 PG J	
					Stainless Steel		SMP 8500 MG 5	SMP 8500 MG T3	SMP 8500 MG J	
	8800	20-250 V ac		SCR	Polycarbonate		SMP 8800 PG 5	–	–	
					Stainless Steel		SMP 8800 MG 5	–	–	
Fibre Sensor	8400	10-30 V dc	Sensitivity pot. and light/dark switch	NPN	Polycarbonate	M18 x 1	SMPF 8400 PG 5	SMPF 8400 PG T3	SMPF 8400 PG J	Refer to page 154
					Stainless Steel		SMPF 8400 MG 5	SMPF 8400 MG T3	SMPF 8400 MG J	
	8500			PNP	Polycarbonate		SMPF 8500 PG 5	SMPF 8500 PG T3	SMPF 8500 PG J	
					Stainless Steel		SMPF 8500 MG 5	SMPF 8500 MG T3	SMPF 8500 MG J	
	8800	20-250 V ac		SCR	Polycarbonate		SMPF 8800 PG 5	–	–	
					Stainless Steel		SMPF 8800 MG 5	–	–	

Note: Glass fibre optic cable to be ordered separately.

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

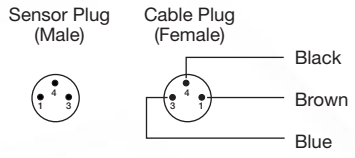
Note: Reflector to be ordered separately.

SM 8000 series with cable connection is available to comply with ATEX Ex II 3 GD T6 EEx nA II U. Add "/EX" after the series number e.g. SMT 8000/EX PG 5.

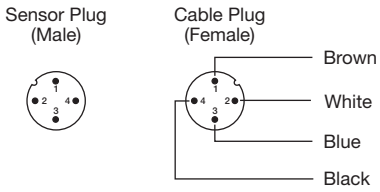
Connections

	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
SMT test intput	Black	Pin 4 / Black	Pin 4 / Black
Output	Black	Pin 4 / Black	Pin 4 / Black

3 pin, M8



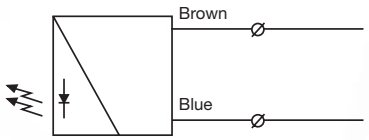
4 pin, M12



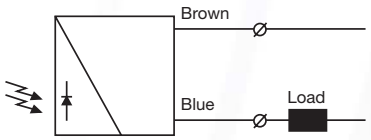
Refer to page 161 for extension cables

Wiring Diagrams

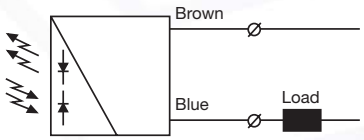
AC Models



SMT 8600

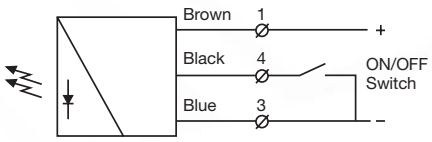


SMR 8800

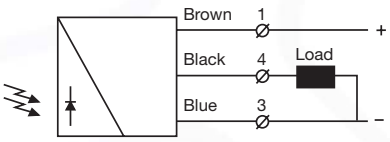


SMP / SMPF / SMRR 8800

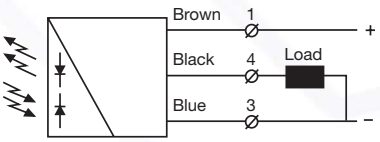
DC Models



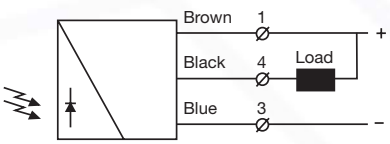
SMT 8000



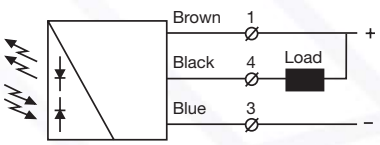
SMR 85xx



SMP / SMPF / SMRR 8500



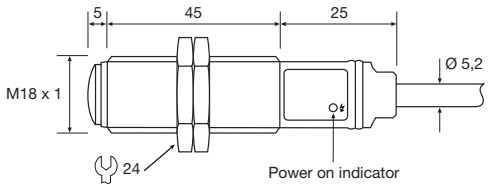
SMR 84xx



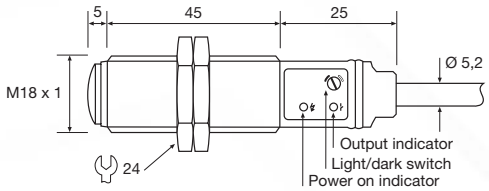
SMP / SMPF / SMRR 8400

Dimensions and Descriptions

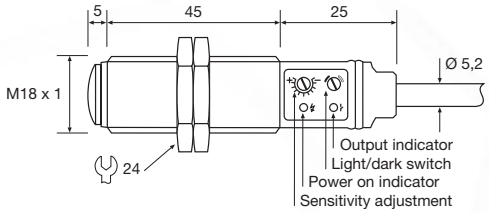
AC Models



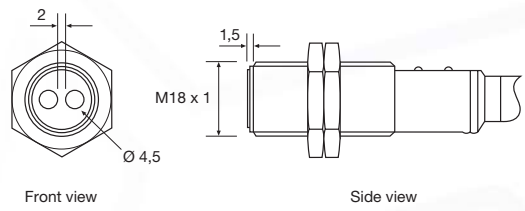
SMT PG/MG 5



SMR PG/MG 5

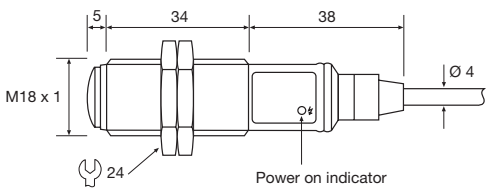


SMP / SMRR / SMPF* PG/MG 5

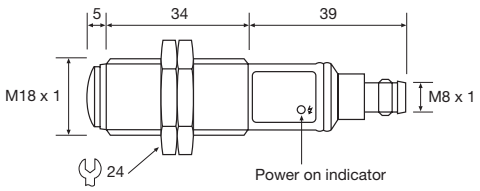


SMPF*

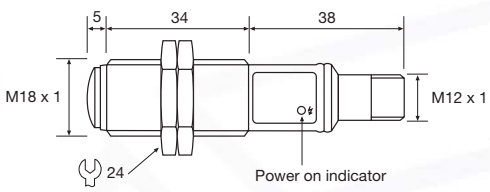
DC Models



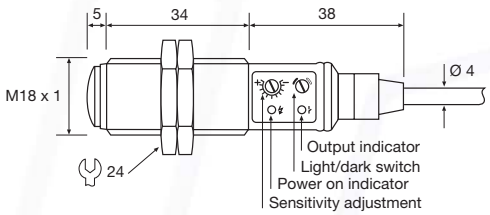
SMT PG/MG 5



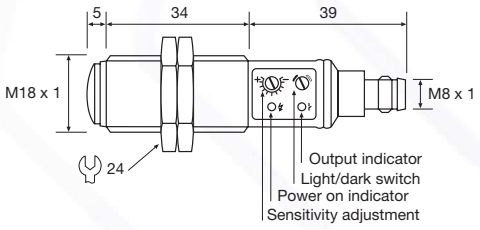
SMT PG/MG T3



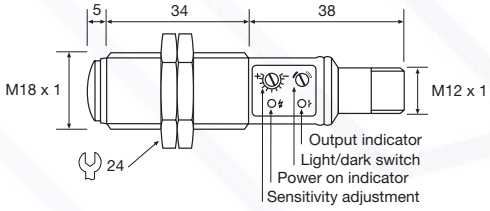
SMT PG/MG J



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



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

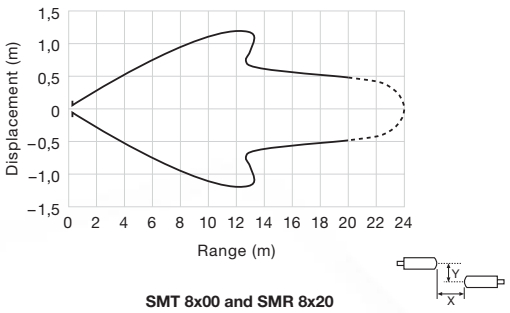


SMR / SMP / SMRR / SMPF* PG/MG J

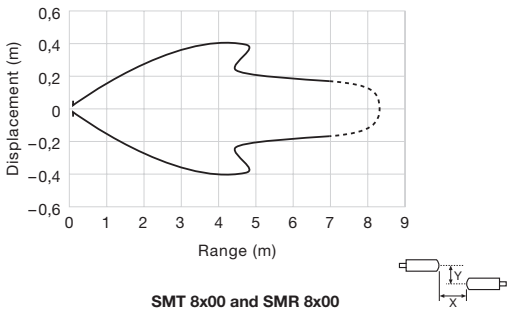
(Units in mm)

Sensing Characteristics

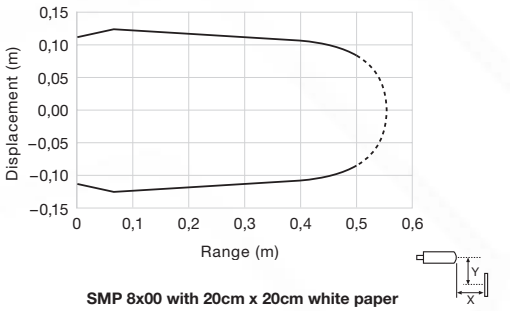
Parallel Displacement



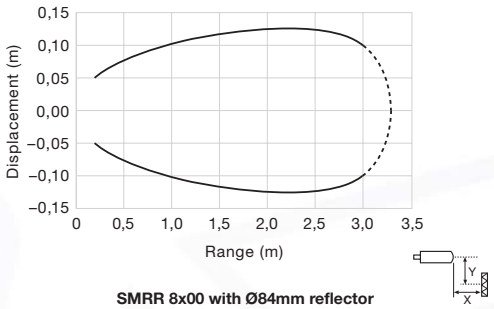
SMT 8x00 and SMR 8x20



SMT 8x00 and SMR 8x00

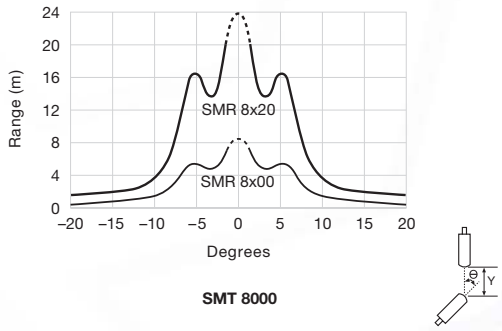


SMP 8x00 with 20cm x 20cm white paper

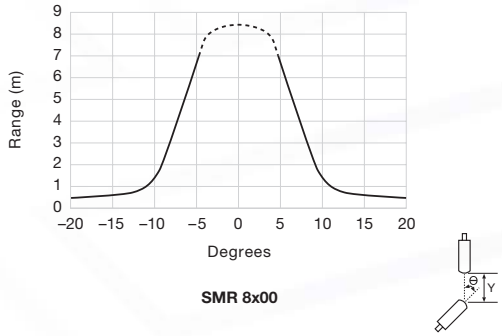


SMRR 8x00 with Ø84mm reflector

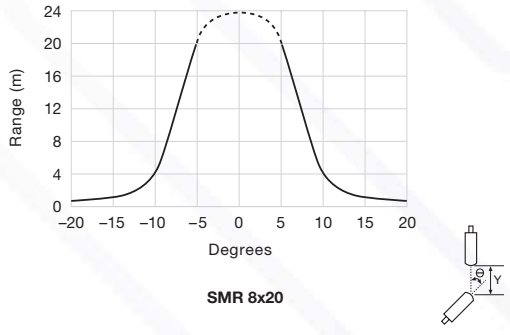
Angular Displacement



SMT 8000



SMR 8x00



SMR 8x20

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