


**Description**

- Operation mode and max sensing range:  
**Thru-beam:** 0-20 m  
**Diffuse proximity:** 0-0,5 m  
**Retro reflective:** 0-3 m  
**Fiber:** Dependent on fiber 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  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 fiber 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 <sub>ON</sub> / t <sub>OFF</sub>	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 mm <sup>2</sup>					
	dc	Ø 4,0 mm, 3 x 0,14 mm <sup>2</sup>					

**Environmental Data**

	SMT	SMR		SMP	SMPF	SMRR
		8x20	8x00			
Vibration	10-55 Hz, 0,5 mm					
Shock	30 g					
Light immunity	@ 5° incidence	-	> 7000 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 				
	dc	CE				

**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 Type								
					Order Reference									
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	-	SMT 8600 PG J	7 m
										Stainless Steel	SMT 8600 MG 5	-	SMT 8600 MG J	

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		Polycarbonate	PNP	SMR 8500 PG 5		SMR 8500 PG T3	SMR 8500 PG J
									Stainless Steel		SMR 8500 MG 5	SMR 8500 MG T3
					8520		Polycarbonate	NPN	SMR 8520 PG 5		SMR 8520 PG T3	SMR 8520 PG J
									Stainless Steel		SMR 8520 MG 5	SMR 8520 MG T3
	8420	Polycarbonate	PNP	SMR 8420 PG 5	SMR 8420 PG T3	SMR 8420 PG J						
				Stainless Steel	SMR 8420 MG 5	SMR 8420 MG T3	SMR 8420 MG J					
	8800	20-250 V ac	Light/dark switch	SCR	Polycarbonate	SMR 8800 PG 5	-	SMR 8800 PG J	7 m			
					Stainless Steel	SMR 8800 MG 5	-	SMR 8800 MG J				

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

Fiber Sensor	8500	10-30 V dc	Sensitivity pot. and light/dark switch	NPN	Polycarbonate	M18 x 1	SMPF 8500 PG 5	SMPF 8500 PG T3	SMPF 8500 PG J	Refer to page 154	
					Stainless Steel		SMPF 8500 MG 5	SMPF 8500 MG T3	SMPF 8500 MG J		
	8400			Polycarbonate	PNP		SMPF 8400 PG 5	SMPF 8400 PG T3	SMPF 8400 PG J		
							Stainless Steel	SMPF 8400 MG 5	SMPF 8400 MG T3		SMPF 8400 MG J
	8800			20-250 V ac	SCR		Polycarbonate	SMPF 8800 PG 5	-		SMPF 8800 PG J
							Stainless Steel	SMPF 8800 MG 5	-		SMPF 8800 MG J

Note: Glass fiber optic cable to be ordered separately.

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

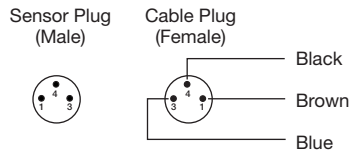
Note: Reflector to be ordered separately.

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

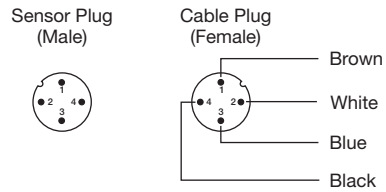
**Connections**

	Cable	M8 Plug / Cable	M12 Plug / Cable
AC supply	Brown	-	Pin 1 / Brown
	Blue	-	Pin 3 / Blue
Supply +	Brown	Pin 1 / Brown	Pin 1 / Brown
Supply -	Blue	Pin 3 / Blue	Pin 3 / Blue
SMT control	Black	Pin 4 / Black	Pin 4 / Black
SMR output	Black	Pin 4 / Black	Pin 4 / Black

**3 pin, M8**



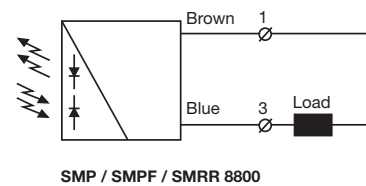
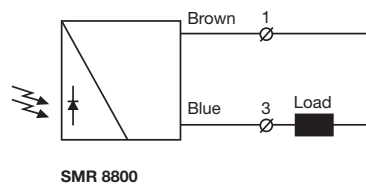
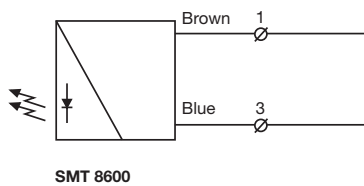
**4 pin, M12**



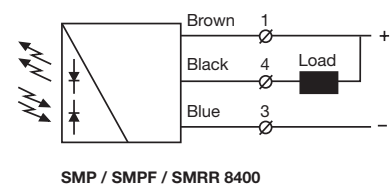
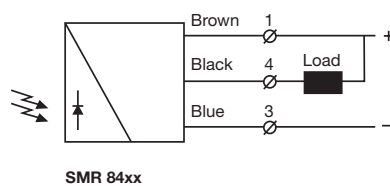
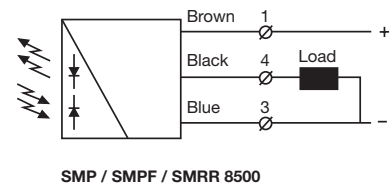
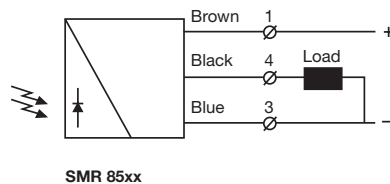
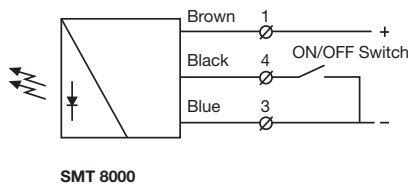
Refer to page 161 for extension cables

**Wiring Diagrams**

**AC Models**

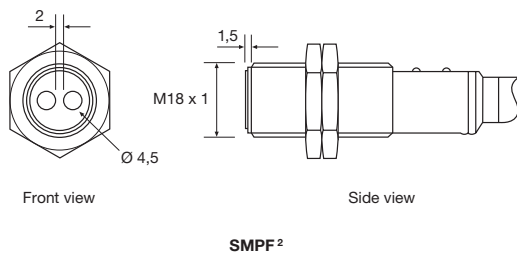
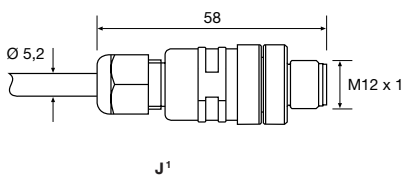
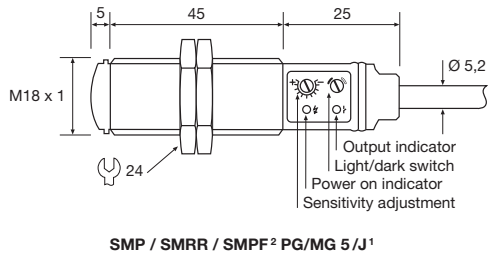
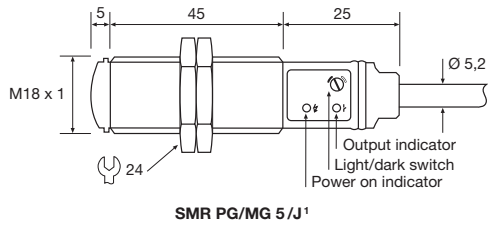
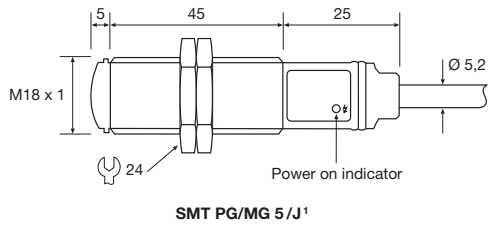


**DC Models**

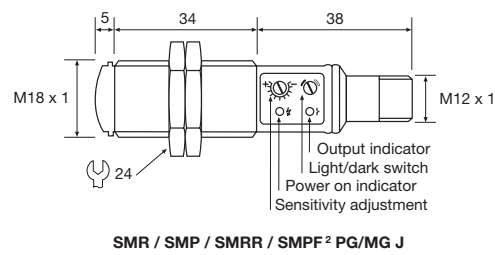
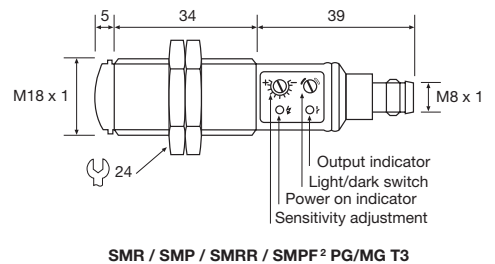
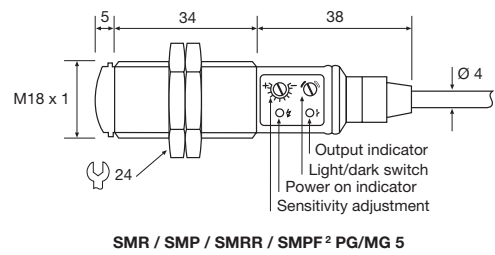
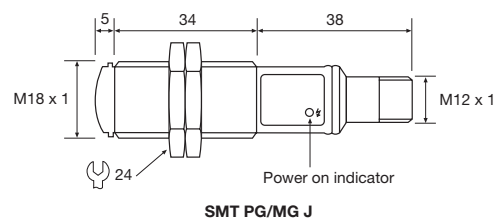
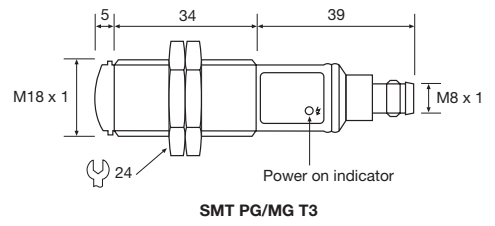
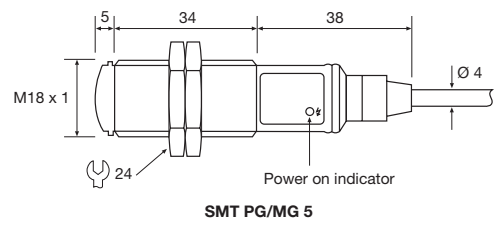


Dimensions and Descriptions

AC Models



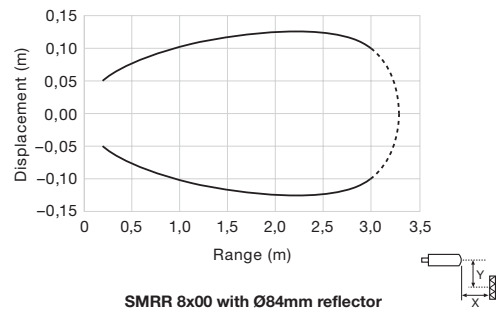
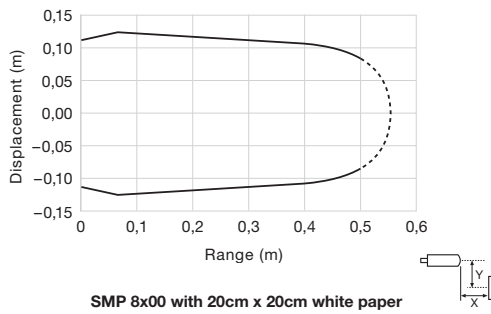
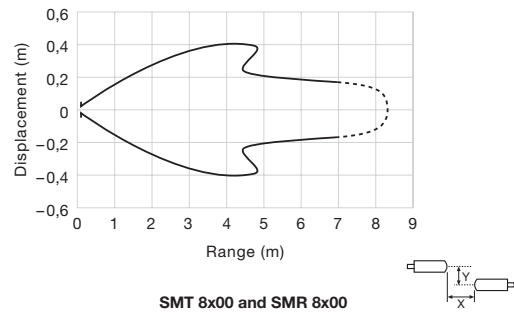
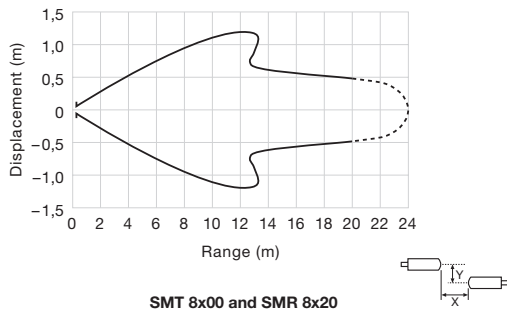
DC Models



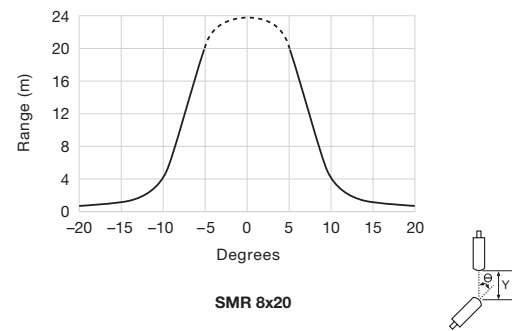
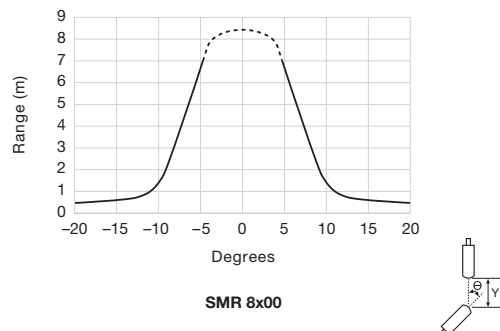
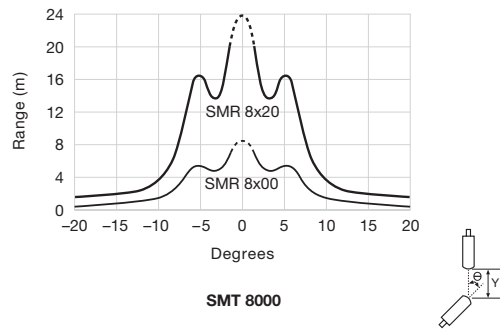
(Units in mm)

Sensing Characteristics

Parallel Displacement



Angular Displacement



Telco reserves the right to change specifications without notice.