


**Description**

**Operation mode and max sensing range:**  
 Thru-beam: 0-20 m  
 Diffuse proximity: 0-1,0 m  
 Retro reflective: 0,1-3 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  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, and 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					
	dc	10-30 V dc					
Voltage ripple		Max. 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 tON/ tOFF	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 ac	Polycarbonate					
Cable, PVC	dc	Ø 5,2 mm, 2 x 0,25 mm2					
		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		IP 67				
Approvals	ac			a	UK CA e AU US	
	dc			a	UK CA	

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 52	SMT 8000 MG T3	SMT 8000 MG J	
	20-250 V ac	-	-		Polycarbonate		SMT 8600 PG 5	-	-	7 m
					Stainless Steel		SMT 8600 MG 5	-	-	
					Polycarbonate		SMT 8600H PG 5	-	-	20 m
					Stainless Steel		SMT 8600H MG 5	-	-	

Receiver	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													
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 52	SMR 8400 MG T3	SMR 8400 MG J					
				PNP	Polycarbonate		SMR 8500 PG 5	SMR 8500 PG T3	SMR 8500 PG J					
					Stainless Steel		SMR 8500 MG 52	SMR 8500 MG T3	SMR 8500 MG J					
				20-250 V ac	Light/dark switch		SCR	NPN	Polycarbonate		SMR 8420 PG 5	SMR 8420 PG T3	SMR 8420 PG J	0-20 m
									Stainless Steel		SMR 8420 MG 52	SMR 8420 MG T3	SMR 8420 MG J	
	PNP	Polycarbonate	SMR 8520 PG 5			SMR 8520 PG T3		SMR 8520 PG J						
		Stainless Steel	SMR 8520 MG 52			SMR 8520 MG T3		SMR 8520 MG J						
	8800	20-250 V ac	-	-	SCR	Polycarbonate	SMR 8800 PG 5	-	-	7 m				
						Stainless Steel	SMR 8800 MG 5	-	-					
	8820	20-250 V ac	-	-	-	Polycarbonate	SMR 8820 PG 5	-	-	20 m				
						Stainless Steel	SMR 8820 MG 5	-	-					

Proximity	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										
8400	10-30 V dc	-	-	-	NPN	M18 x 1	SMP 8400 PG 5	SMP 8400 PG T3	SMP 8400 PG J	0-0,5 m	
							Stainless Steel	SMP 8400 MG 52	SMP 8400 MG T3		SMP 8400 MG J
							Polycarbonate	SMP 8500 PG 5	SMP 8500 PG T3		SMP 8500 PG J
	20-250 V ac	Sensitivity pot. and light/dark switch	SCR		Polycarbonate		SMP 8800 PG 5	-	-		
					Stainless Steel		SMP 8800 MG 5	-	-		
					Stainless Steel		SMP 8801 MG 52	-	-		
8401	10-30 V dc	-	-	NPN	-	SMP 8401 PG T3	SMP 8401 PG J	0-1,0 m			
					-	SMP 8501 MG T3	SMP 8501 MG J				
8501	10-30 V dc	-	-	PNP	-	-	-				
					-	-	-				
8801	20-250 V ac	-	-	SCR	-	-	-				
					-	-	-				

Note:1.Reflector to be ordered separately.  
 2.SM 8000 Series with stainless steel housing and cable connection is available to comply with ATEX II 3 G Ex nA IIC T6 Gc and II 3D Ex tc IIIC T100 °C Dc.  
 Add "/EX" after the series number e.g. SMT 8000/EX MG 5. Sensors marked 2are available to comply with ATEX approval.

**Available Types**

Fibre Sensor	Type	Power Supply	Control Feature	Output	Connection		5 m cable	3 pin, M8 plug	4 pin, M12 plug	Range
					Housing Material	Housing Type				
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 Glass Fibre Optics datasheet
					Stainless Steel		SMPF 8400 MG 52	SMPF 8400 MG T3	SMPF 8400 MG J	
	PNP			Polycarbonate	SMPF 8500 PG 5		SMPF 8500 PG T3	SMPF 8500 PG J		
				Stainless Steel	SMPF 8500 MG 52		SMPF 8500 MG T3	SMPF 8500 MG J		
	SCR			Polycarbonate	SMPF 8800 PG 5		-	-		
				Stainless Steel	SMPF 8800 MG 5		-	-		

Note: Glass fibre optic cable to be ordered separately.

Retro Reflective	Type	Power Supply	Control Feature	Output	Housing Material	Housing Type	5 m cable	3 pin, M8 plug	4 pin, M12 plug	Range
8500	20-250 V ac	Stainless Steel	SMRR 8400 MG 52	SMRR 8400 MG T3	SMRR 8400 MG J					
		PNP	Polycarbonate	SMRR 8500 PG 5	SMRR 8500 PG T3	SMRR 8500 PG J				
SCR	Stainless Steel		SMRR 8800 PG 5	-	-					
	8800	20-250 V ac	Polycarbonate	SMRR 8800 MG 5	-	-				
Stainless Steel			-	-	-					

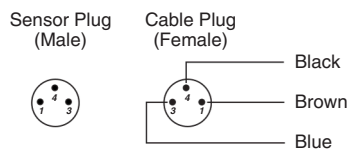
Note:1.Reflector to be ordered separately.

2.SM 8000 Series with stainless steel housing and cable connection is available to comply with ATEX II 3 G Ex nA IIC T6 Gc and II 3D Ex tc IIIC T100 °C Dc. Add "/EX" after the series number e.g. SMT 8000/EX MG 5. Sensors marked 2are available to comply with ATEX approval.

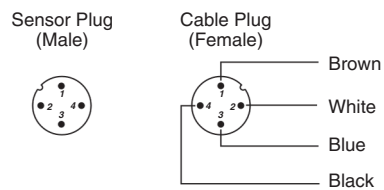
**Connections**

	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 input	Black	Pin 4 / Black	Pin 4 / Black
Output	Black	Pin 4 / Black	Pin 4 / Black

**3 pin, M8**

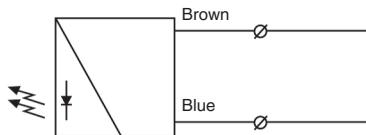


**4 pin, M12**



Wiring Diagrams

AC Models



SMT 8600

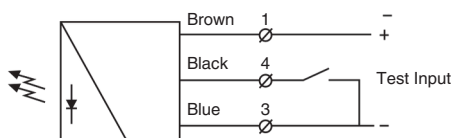


SMR 88xx

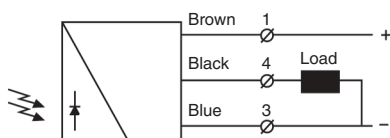


SMP / SMPF / SMRR 880x

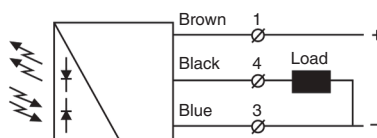
DC Models



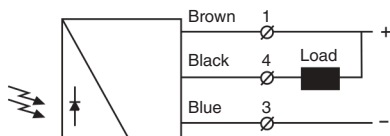
SMT 8000



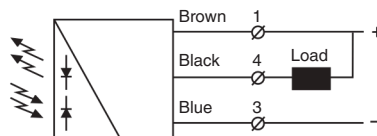
SMR 85xx



SMP / SMPF / SMRR 850x



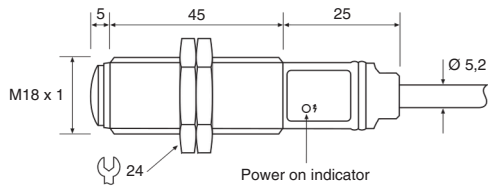
SMR 84xx



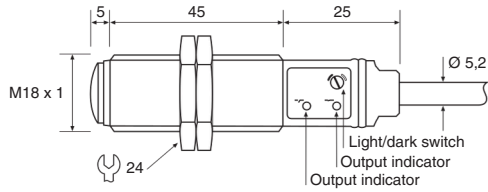
SMP / SMPF / SMRR 840x

Dimensions and Descriptions

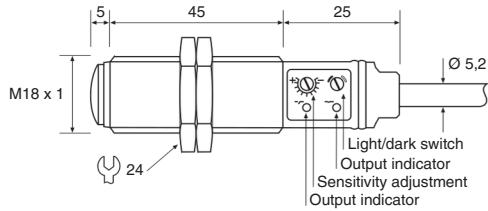
AC Models



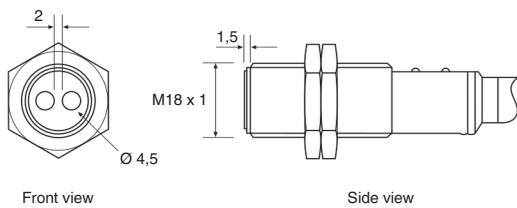
SMT PG/MG 5



SMR PG/MG 5

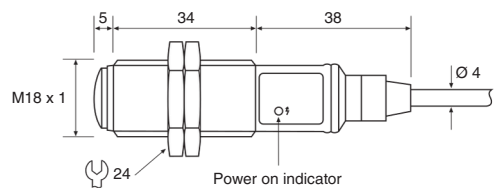


SMP / SMRR / SMPF\* PG/MG 5

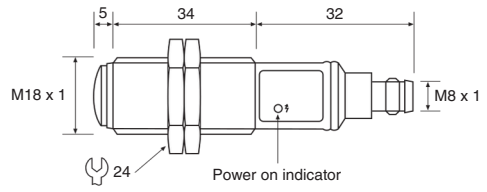


SMPF\*

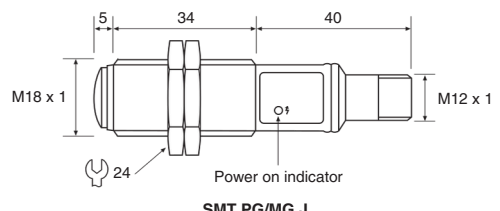
DC Models



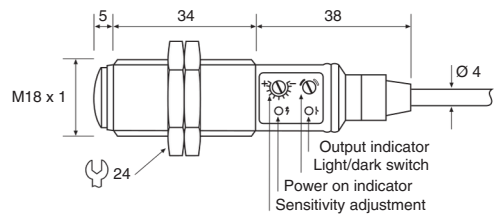
SMT PG/MG 5



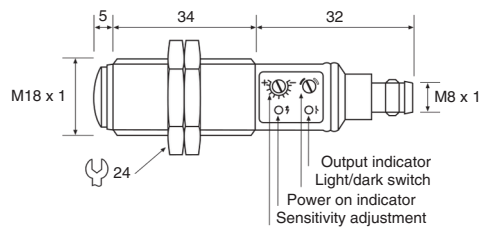
SMT PG/MG T3



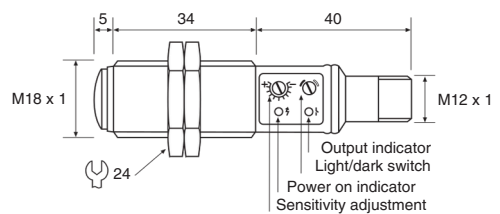
SMT PG/MG J



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



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

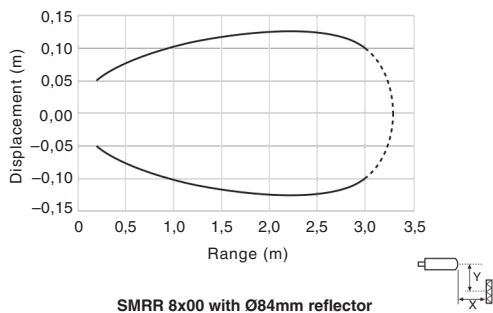
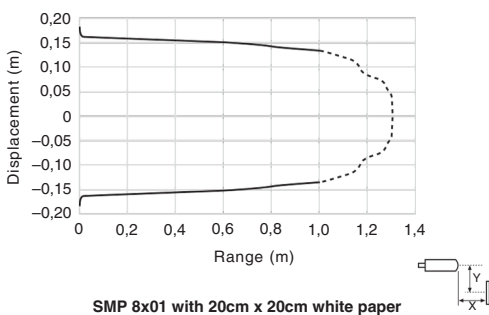
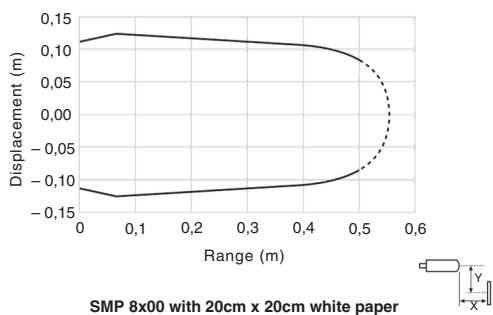
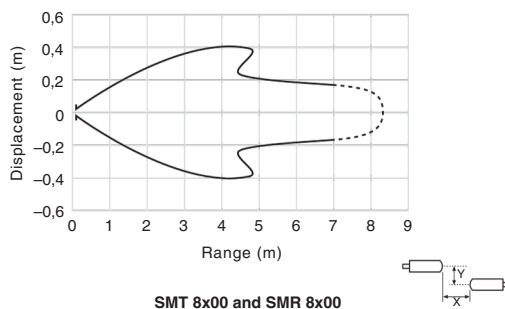
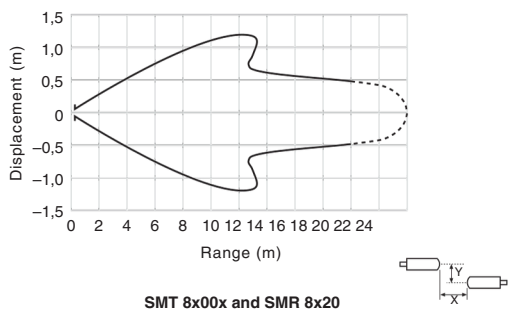


SMR / SMP / SMRR / SMPF\* PG/MG J

(Units in mm)

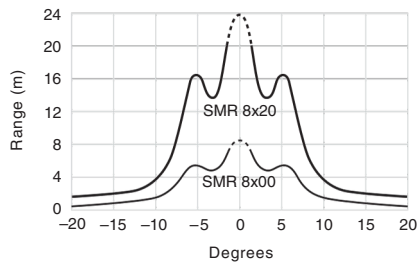
Sensing Characteristics

Parallel Displacement

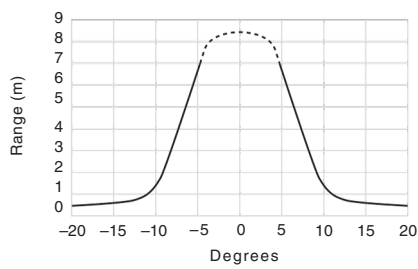
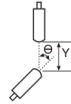


Sensing Characteristics

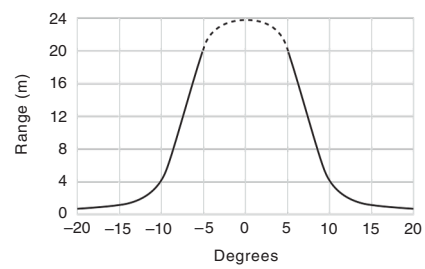
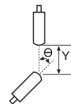
Angular Displacement



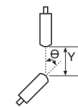
SMT 8x00x



SMR 8x00



SMR 8x20



Telco reserves the right to change specifications without notice.

