Description

- Operation mode and max sensing range:
  Thru-beam: 0-20 m
  Diffuse proximity: 0-1 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 supply voltage
- 4 wire, NPN/PNP transistor output or
  4 wire, ambivalent PNP/PNP transistor output
- Test input

The 7000 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 4 wire, NPN/PNP transistor output or 4 wire ambivalent PNP/PNP output, and with a 10-30 V dc supply voltage, both offering switch selectable light or dark function.

The SMR is available with either a 0.5 ms response time and a 7 metre range or with a 2 ms response time and a 20 metre range. The control input in the SMT is intended to be used for disabling or enabling the transmitting power temporarily for test purpose or for multiplexing applications.

The complete 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
		7x07	7x20			
Supply voltage	10-30 V dc					
Voltage ripple	Max. 15 %					
Reverse polarity protected	Yes					
Short circuit protected	–	Yes				
Current consumption	25 mA	15 mA		20 mA		
Maximum output load	–	120 mA / 30 V dc				
Maximum residual voltage	–	2 V				
Maximum operation frequency	–	1000 Hz	250 Hz			
Response time t_{ON} / t_{OFF}	–	0,5 ms / 0,5 ms	2 ms / 2 ms			
Power on indicator	Green LED					
Output indicator	–	Yellow LED				
Hysteresis	–	Approx. 15-20 %		Approx. 3-10 %		
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					
Housing material – Front lens	Polycarbonate					
Cable, PVC Ø 4,0 mm	3 x 0,14 mm²	4 x 0,14 mm²				

Environmental Data

		SMT	SMR		SMP	SMPF	SMRR
			7x07	7x20			
Vibration		10-55 Hz, 0,5 mm					
Shock		30 g					
Light immunity	@ 5° incidence	–	20 000 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		CE					

Available Types

	Type	Power Supply	Control Feature	Output	Connection		5 m cable	4 pin, M8 plug	4 pin, M12 plug	Range
					Housing Material	Housing Type	Order Reference			
Transmitter	7000	10-30 V dc	Test Input	–	Polycarbonate	M18 x 1	SMT 7000 TP 5	SMT 7000 TP T4	SMT 7000 TP J	20 m
					Stainless Steel		SMT 7000 TS 5	SMT 7000 TS T4	SMT 7000 TS J	
Receiver	7607	10-30 V dc	Sensitivity pot. and light/dark switch	NPN/PNP	Polycarbonate	M18 x 1	SMR 7607 TP 5	SMR 7607 TP T4	SMR 7607 TP J	0-7 m
					Stainless Steel		SMR 7607 TS 5	SMR 7607 TS T4	SMR 7607 TS J	
	7620				Polycarbonate		SMR 7620 TP 5	SMR 7620 TP T4	SMR 7620 TP J	0-20 m
					Stainless Steel		SMR 7620 TS 5	SMR 7620 TS T4	SMR 7620 TS J	
	7707		Sensitivity pot.	PNP/PNP	Polycarbonate		SMR 7707 TP 5	SMR 7707 TP T4	SMR 7707 TP J	0-7 m
					Stainless Steel		SMR 7707 TS 5	SMR 7707 TS T4	SMR 7707 TS J	
	7720				Polycarbonate		SMR 7720 TP 5	SMR 7720 TP T4	SMR 7720 TP J	0-20 m
					Stainless Steel		SMR 7720 TS 5	SMR 7720 TS T4	SMR 7720 TS J	
Proximity	7600	10-30 V dc	Sensitivity pot. and light/dark switch	NPN/PNP	Polycarbonate	M18 x 1	SMP 7600 TP 5	SMP 7600 TP T4	SMP 7600 TP J	0-0,5 m
					Stainless Steel		SMP 7600 TS 5	SMP 7600 TS T4	SMP 7600 TS J	
	7601				Polycarbonate		SMP 7601 TP 5	SMP 7601 TP T4	SMP 7601 TP J	0,15-1 m
					Stainless Steel		SMP 7601 TS 5	SMP 7601 TS T4	SMP 7601 TS J	
Fibre Sensor	7600	10-30 V dc	Sensitivity pot. and light/dark switch	NPN/PNP	Polycarbonate	M18 x 1	SMPF 7600 TP 5	SMPF 7600 TP T4	SMPF 7600 TP J	Refer to Glass Fibre Optics datasheet
					Stainless Steel		SMPF 7600 TS 5	SMPF 7600 TS T4	SMPF 7600 TS J	

Note: Glass fibre optic cable to be ordered separately.

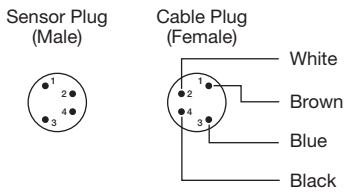
Retro Reflective	7600	10-30 V dc	Sensitivity pot. and light/dark switch	NPN/PNP	Polycarbonate	M18 x 1	SMRR 7600 TP 5	SMRR 7600 TP T4	SMRR 7600 TP J	0,1-3 m
					Stainless Steel		SMRR 7600 TS 5	SMRR 7600 TS T4	SMRR 7600 TS J	

Note: Reflector to be ordered separately.

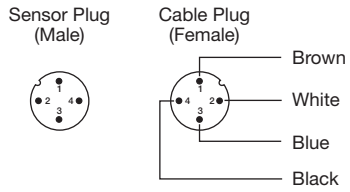
Connections

	Cable	M8 Plug / Cable	M12 Plug / Cable
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
Output	White	Pin 2 / White	Pin 2 / White

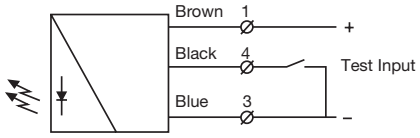
4 pin, M8



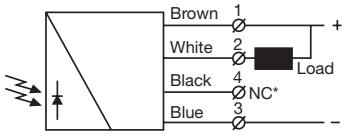
4 pin, M12



Wiring Diagrams

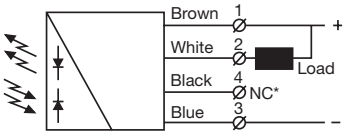


SMT 7000



*Do not connect black wire

SMR 76xx
Load as NPN



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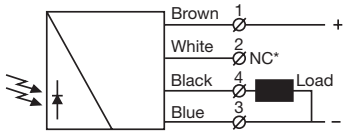
SMP / SMPF / SMRR 76xx
Load as NPN



*Do not connect white wire

SMR 76xx
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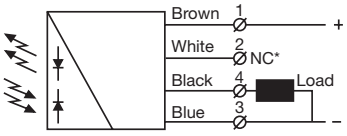

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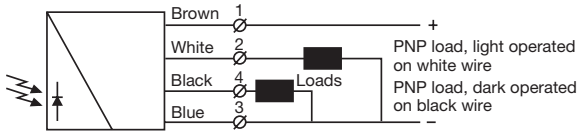
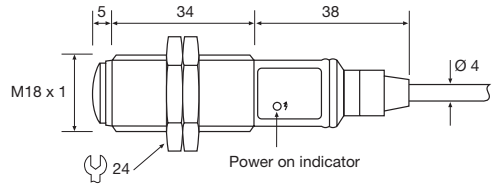
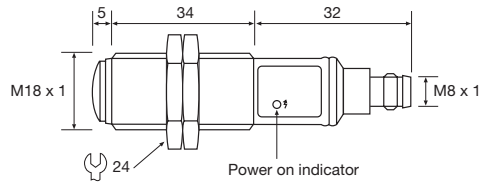


SMR 77xx

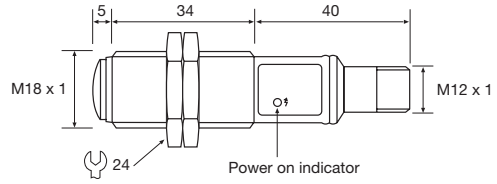
Dimensions and Descriptions



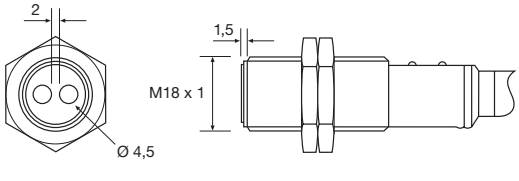
SMT 7000 TP/TS 5



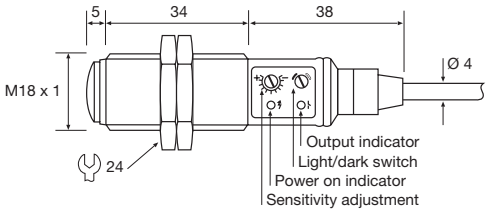
SMT 7000 TP/TS T4



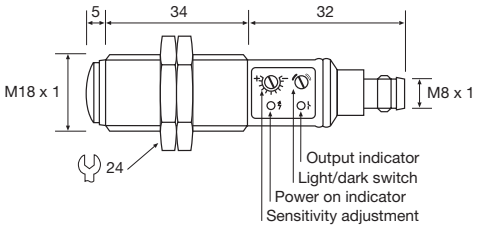
SMT 7000 TP/TS J



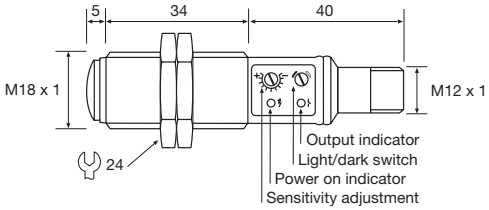
SMPF*



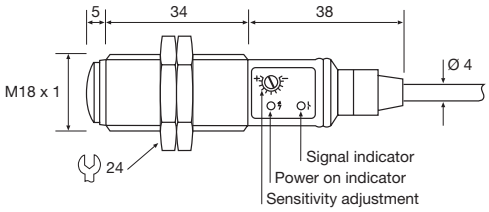
SMR / SMP / SMRR / SMPF* 76xx TP/TS 5



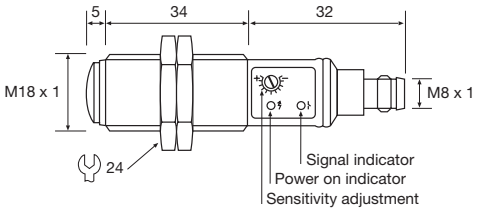
SMR / SMP / SMRR / SMPF* 76xx TP/TS T4



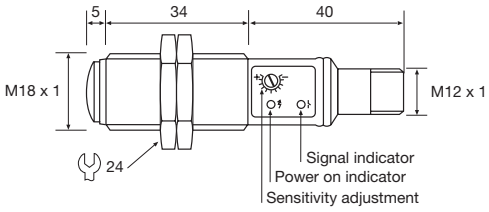
SMR / SMP / SMRR / SMPF* 76xx TP/TS J



SMR 77xx TP/TS 5



SMR 77xx TP/TS T4

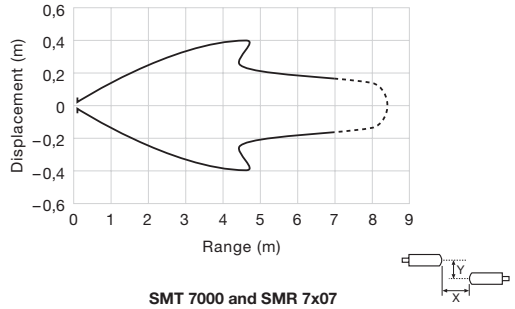


SMR 77xx TP/TS J

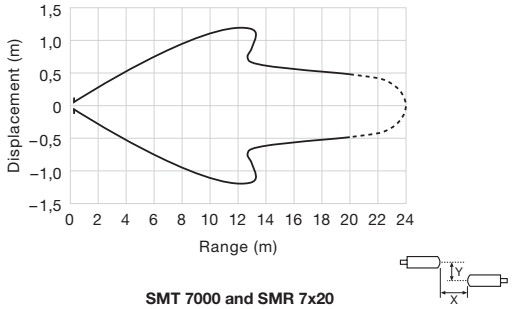
(Units in mm)

Sensing Characteristics

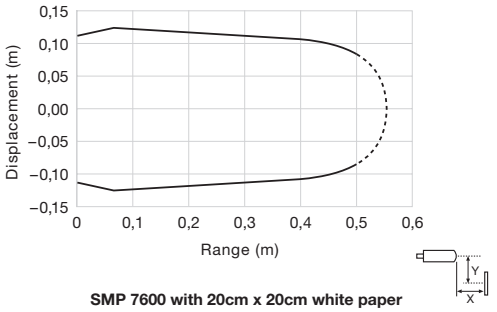
Parallel Displacement



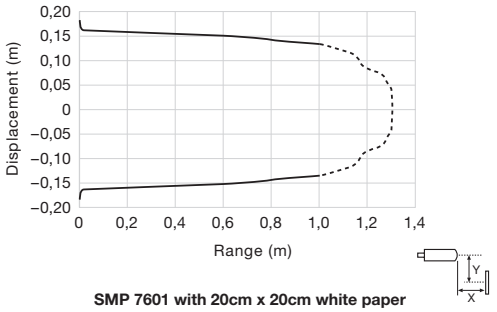
SMT 7000 and SMR 7x07



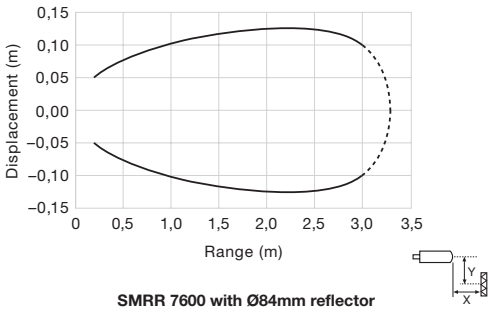
SMT 7000 and SMR 7x20



SMP 7600 with 20cm x 20cm white paper



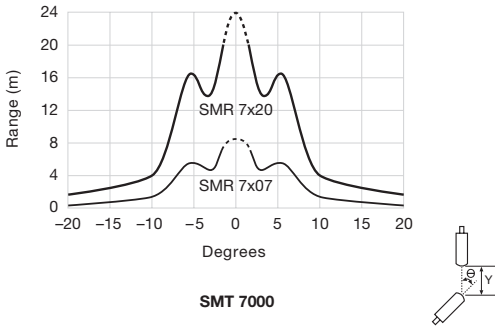
SMP 7601 with 20cm x 20cm white paper



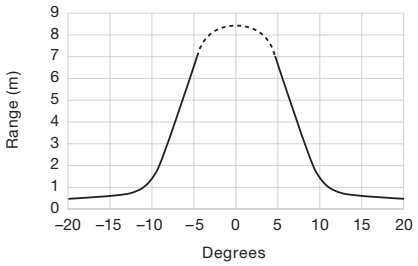
SMRR 7600 with Ø84mm reflector

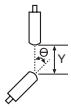
Sensing Characteristics

Angular Displacement

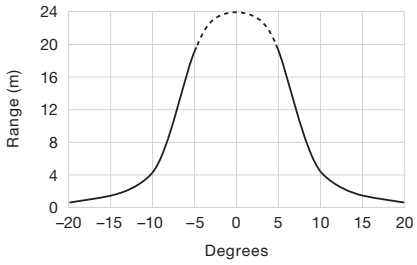


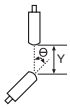
SMT 7000





SMR 7x07





SMR 7x20

Telco reserves the right to change specifications without notice.