Description

- Operation mode and max sensing range: **Thru-beam: 1-15 m**
- Cable or plug connection
- Sensitivity adjustment via control input
- Wide variety of housings
- Power and output indicator
- High tolerance to hostile environments
- 10-30 V dc supply voltage
- 3 wire, NPN or PNP transistor output
- Test input

The 3000 series consists of a self-contained transmitter SMT, and a receiver SMR, which are to be used in thru-beam mode. The complete series is available in a wide range of housings with either cable or plug connection.

The SMR is supplied with a 10-30 V dc supply voltage with a 3 wire, NPN or PNP transistor output with a choice between light or dark function.

The control input in the SMT may be used for either disabling or enabling the transmitting power temporarily for test purpose, multiplexing applications or as a gradual regulation of the transmitting power level.

Both the transmitter and receiver are protected against reverse polarity of power supplies, control input and output signals. The output is also protected against short circuit and inductive loads.

Technical Data

		SMT			SMR		
		3000C	3012C	3000HC	3x06	3x12	3x15
Supply voltage		10-30 V dc					
Voltage ripple		Max. 15 %					
Reverse polarity protected		Yes					
Short circuit protected		–			Yes		
Current consumption		Max. 30 mA			Max. 8 mA		
Maximum output load		–			100 mA		
Maximum residual voltage		–			2,5 V		
Maximum operation frequency		–			> 90 Hz		> 40 Hz
Response time t_{ON} / t_{OFF}		–			< 4 ms / < 6 ms		< 13 ms / < 6 ms
Power on indicator		Green LED			–		
Output indicator		–			Yellow LED		
Hysteresis		–			Approx. 25 %		Approx. 30 %
Light source		Infrared (880 nm)			–		
Opening angle		–			+/– 7°	+/– 3°	+/– 7°
Emission angle		+/– 10°	+/– 5°	+/– 12°	–		
Housing material	Sensor housing	Nickel Plated Brass, Polycarbonate or Polyester					
	Front lens	Polycarbonate					
Cable, PVC Ø 3,4 mm		3 x 0,14 mm²					

Environmental Data

	SMT	SMR		
		3x06	3x12	3x15
Vibration	10-55 Hz, 0,5 mm			
Shock	30 g			
Light immunity, @ 5° incidence	–	35 000 lux	12 000 lux	35 000 lux
Temperature, operation	–20 to +50 °C			
Temperature, storage	–40 to +80 °C			
Sealing class	IP 67			
Approvals	CE			

Available Types

	Type	Control Feature	Output	Connection		5 m cable	3 pin, M8 plug	4 pin, M12 plug	Range
				Housing Material	Housing Type	Order Reference			
Transmitter	3000C	Adjustable range and test input	–	Polycarbonate	Ø10	SMT 3000C AP 5	SMT 3000C AP T3	–	1-6 m
					M12 x 1	SMT 3000C TP 5	SMT 3000C TP T3	–	
				Nickel Plated Brass		SMT 3000C TB 5	SMT 3000C TB T3	SMT 3000C TB J	
				Polyester	□ 9,5 x 11,5	SMT 3000C SG 5 [1]	SMT 3000C SG T3	–	
				Polycarbonate	Ø12,7 Snap	SMT 3000C S30 5 [1]	–	–	
					M18 x 1	SMT 3000C TP18 5	–	SMT 3000C TP18 J	
Receiver	3006	–	NPN LO (NC)	Polycarbonate	Ø10	SMR 3006 AP 5	SMR 3006 AP T3	–	6 m
					M12 x 1	SMR 3006 TP 5	SMR 3006 TP T3	–	
				Nickel Plated Brass		SMR 3006 TB 5	SMR 3006 TB T3	SMR 3006 TB J	
				Polyester	□ 9,5 x 11,5	SMR 3006 SG 5 [1]	SMR 3006 SG T3	–	
				Polycarbonate	Ø12,7 Snap	SMR 3006 S30 5 [1]	–	–	
					M18 x 1	SMR 3006 TP18 5	–	SMR 3006 TP18 J	
	3106		NPN DO (NO)	Polycarbonate	Ø10	SMR 3106 AP 5	SMR 3106 AP T3	–	
					M12 x 1	SMR 3106 TP 5	SMR 3106 TP T3	–	
				Nickel Plated Brass		SMR 3106 TB 5	SMR 3106 TB T3	SMR 3106 TB J	
				Polyester	□ 9,5 x 11,5	SMR 3106 SG 5 [1]	SMR 3106 SG T3	–	
				Polycarbonate	Ø12,7 Snap	SMR 3106 S30 5 [1]	–	–	
					M18 x 1	SMR 3106 TP18 5	–	SMR 3106 TP18 J	
	3206		PNP LO (NC)	Polycarbonate	Ø10	SMR 3206 AP 5	SMR 3206 AP T3	–	
					M12 x 1	SMR 3206 TP 5	SMR 3206 TP T3	–	
				Nickel Plated Brass		SMR 3206 TB 5	SMR 3206 TB T3	SMR 3206 TB J	
				Polyester	□ 9,5 x 11,5	SMR 3206 SG 5 [1]	SMR 3206 SG T3	–	
				Polycarbonate	Ø12,7 Snap	SMR 3206 S30 5 [1]	–	–	
					M18 x 1	SMR 3206 TP18 5	–	SMR 3206 TP18 J	
	3306		PNP DO (NO)	Polycarbonate	Ø10	SMR 3306 AP 5	SMR 3306 AP T3	–	
					M12 x 1	SMR 3306 TP 5	SMR 3306 TP T3	–	
				Nickel Plated Brass		SMR 3306 TB 5	SMR 3306 TB T3	SMR 3306 TB J	
				Polyester	□ 9,5 x 11,5	SMR 3306 SG 5 [1]	SMR 3306 SG T3	–	
				Polycarbonate	Ø12,7 Snap	SMR 3306 S30 5 [1]	–	–	
					M18 x 1	SMR 3306 TP18 5	–	SMR 3306 TP18 J	

Note: Sensors marked [1] do not have power on or output indicators incorporated.

	Type	Control Feature	Output	Connection		5 m cable	3 pin, M8 plug	4 pin, M12 plug	Range
				Housing Material	Housing Type	Order Reference			
Transmitter	3012C	Adjustable range and test input	–	Polycarbonate	Ø10	SMT 3012C AP 5	SMT 3012C AP T3	–	2-12 m
					M12 x 1	SMT 3012C TP 5	SMT 3012C TP T3	–	
				Nickel Plated Brass		SMT 3012C TB 5	SMT 3012C TB T3	SMT 3012C TB J	
Receiver	3012	–	NPN LO (NC)	Polycarbonate	Ø10	SMR 3012 AP 5	SMR 3012 AP T3	–	12 m
					M12 x 1	SMR 3012 TP 5	SMR 3012 TP T3	–	
				Nickel Plated Brass		SMR 3012 TB 5	SMR 3012 TB T3	SMR 3012 TB J	
	3112		NPN DO (NO)	Polycarbonate	Ø10	SMR 3112 AP 5	SMR 3112 AP T3	–	
					M12 x 1	SMR 3112 TP 5	SMR 3112 TP T3	–	
				Nickel Plated Brass		SMR 3112 TB 5	SMR 3112 TB T3	SMR 3112 TB J	
	3212		PNP LO (NC)	Polycarbonate	Ø10	SMR 3212 AP 5	SMR 3212 AP T3	–	
					M12 x 1	SMR 3212 TP 5	SMR 3212 TP T3	–	
				Nickel Plated Brass		SMR 3212 TB 5	SMR 3212 TB T3	SMR 3212 TB J	
	3312		PNP DO (NO)	Polycarbonate	Ø10	SMR 3312 AP 5	SMR 3312 AP T3	–	
					M12 x 1	SMR 3312 TP 5	SMR 3312 TP T3	–	
				Nickel Plated Brass		SMR 3312 TB 5	SMR 3312 TB T3	SMR 3312 TB J	

Available Types

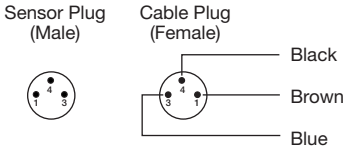
	Type	Control Feature	Output	Connection		5 m cable	3 pin, M8 plug	4 pin, M12 plug	Range
				Housing Material	Housing Type	Order Reference			
Transmitter	3000HC	Adjustable range and test input	–	Polycarbonate	Ø10	**SMT 3000HC AP 5**	**SMT 3000HC AP T3**	–	2-15 m
					M12 x 1	**SMT 3000HC TP 5**	**SMT 3000HC TP T3**	–	
				Nickel Plated Brass		**SMT 3000HC TB 5**	**SMT 3000HC TB T3**	**SMT 3000HC TB J**	
				Polyester	□ 9,5 x 11,5	**SMT 3000HC SG 5** [1]	**SMT 3000HC SG T3**	–	
				Polycarbonate	Ø12,7 Snap	**SMT 3000HC S30 5** [1]	–	–	
					M18 x 1	**SMT 3000HC TP18 5**	–	**SMT 3000HC TP18 J**	
Receiver	3015	–	NPN LO (NC)	Polycarbonate	Ø10	**SMR 3015 AP 5**	**SMR 3015 AP T3**	–	15 m
					M12 x 1	**SMR 3015 TP 5**	**SMR 3015 TP T3**	–	
				Nickel Plated Brass		**SMR 3015 TB 5**	**SMR 3015 TB T3**	**SMR 3015 TB J**	
				Polyester	□ 9,5 x 11,5	**SMR 3015 SG 5** [1]	**SMR 3015 SG T3**	–	
				Polycarbonate	Ø12,7 Snap	**SMR 3015 S30 5** [1]	–	–	
					M18 x 1	**SMR 3015 TP18 5**	–	**SMR 3015 TP18 J**	
	3115		NPN DO (NO)	Polycarbonate	Ø10	**SMR 3115 AP 5**	**SMR 3115 AP T3**	–	
					M12 x 1	**SMR 3115 TP 5**	**SMR 3115 TP T3**	–	
				Nickel Plated Brass		**SMR 3115 TB 5**	**SMR 3115 TB T3**	**SMR 3115 TB J**	
				Polyester	□ 9,5 x 11,5	**SMR 3115 SG 5** [1]	**SMR 3115 SG T3**	–	
				Polycarbonate	Ø12,7 Snap	**SMR 3115 S30 5** [1]	–	–	
					M18 x 1	**SMR 3115 TP18 5**	–	**SMR 3115 TP18 J**	
	3215		PNP LO (NC)	Polycarbonate	Ø10	**SMR 3215 AP 5**	**SMR 3215 AP T3**	–	
					M12 x 1	**SMR 3215 TP 5**	**SMR 3215 TP T3**	–	
				Nickel Plated Brass		**SMR 3215 TB 5**	**SMR 3215 TB T3**	**SMR 3215 TB J**	
				Polyester	□ 9,5 x 11,5	**SMR 3215 SG 5** [1]	**SMR 3215 SG T3**	–	
				Polycarbonate	Ø12,7 Snap	**SMR 3215 S30 5** [1]	–	–	
					M18 x 1	**SMR 3215 TP18 5**	–	**SMR 3215 TP18 J**	
	3315		PNP DO (NO)	Polycarbonate	Ø10	**SMR 3315 AP 5**	**SMR 3315 AP T3**	–	
					M12 x 1	**SMR 3315 TP 5**	**SMR 3315 TP T3**	–	
				Nickel Plated Brass		**SMR 3315 TB 5**	**SMR 3315 TB T3**	**SMR 3315 TB J**	
				Polyester	□ 9,5 x 11,5	**SMR 3315 SG 5** [1]	**SMR 3315 SG T3**	–	
				Polycarbonate	Ø12,7 Snap	**SMR 3315 S30 5** [1]	–	–	
					M18 x 1	**SMR 3315 TP18 5**	–	**SMR 3315 TP18 J**	

Note: Sensors marked [1] do not have power on or output indicators incorporated.

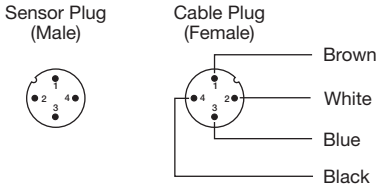
Connections

	Cable	M8 Plug / Cable	M12 Plug / Cable
Supply +	Brown	Pin 1 / Brown	Pin 1 / Brown
Supply –	Blue	Pin 3 / Blue	Pin 3 / Blue
SMT control input	Black	Pin 4 / Black	Pin 4 / Black
SMR output	Black	Pin 4 / Black	Pin 4 / Black

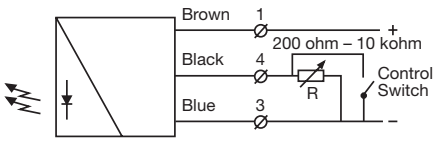
3 pin, M8



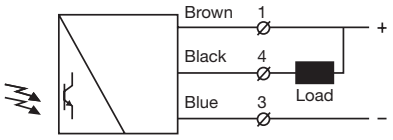
4 pin, M12



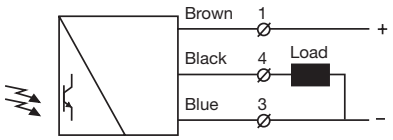
Wiring Diagrams



SMT 30xxC
Variable range and ON/OFF switch
for transmitting power

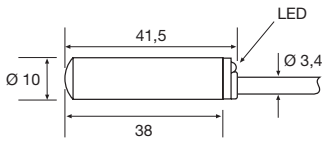


SMR 30xx / 31xx

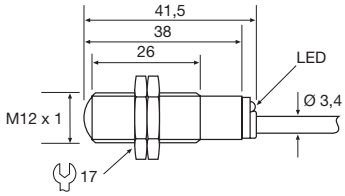


SMR 32xx / 33xx

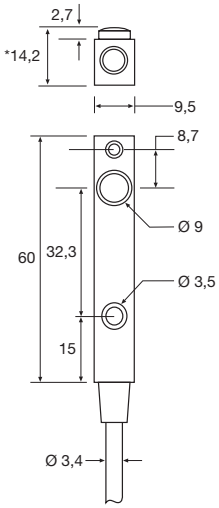
Dimensions and Descriptions



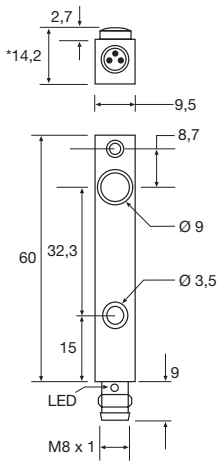
AP 5



TP/TB 5

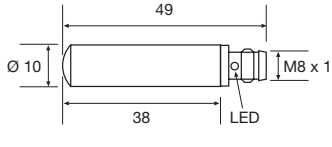


SG 5

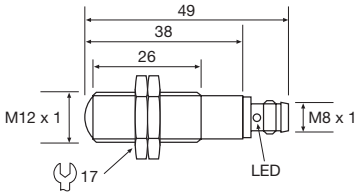


SG T3

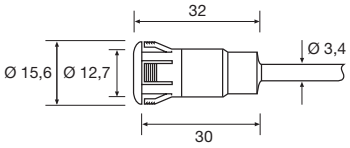
* SMT 3000HC: 16



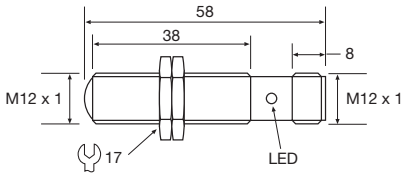
AP T3



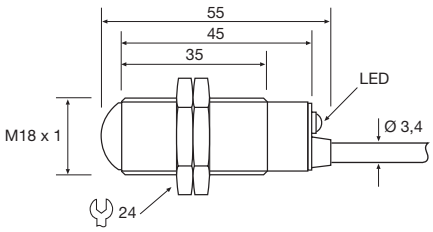
TP/TB T3



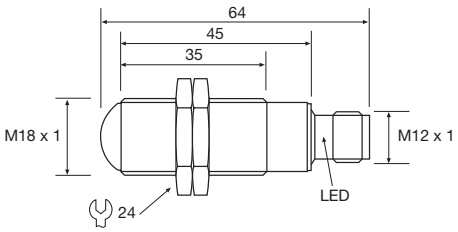
S30 5



TB J



TP18 5

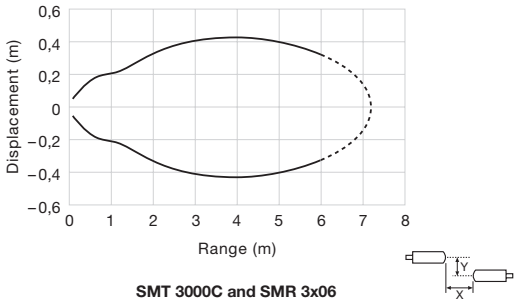


TP18 J

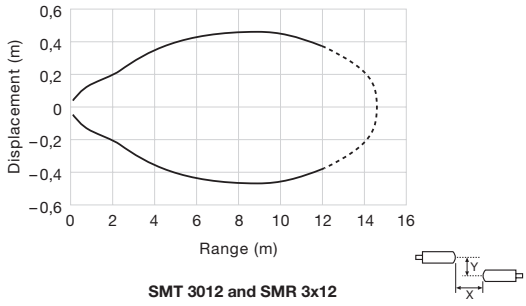
(Units in mm)

Sensing Characteristics

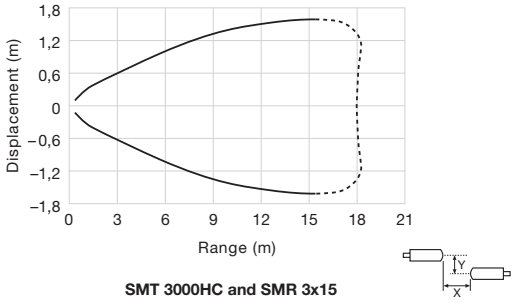
Parallel Displacement



SMT 3000C and SMR 3x06

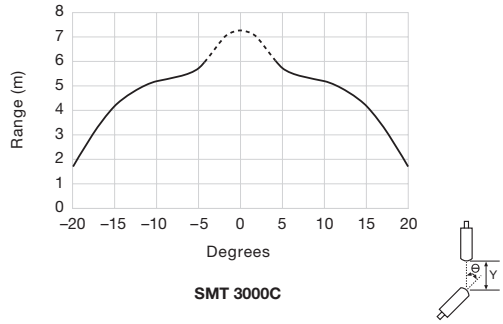


SMT 3012 and SMR 3x12

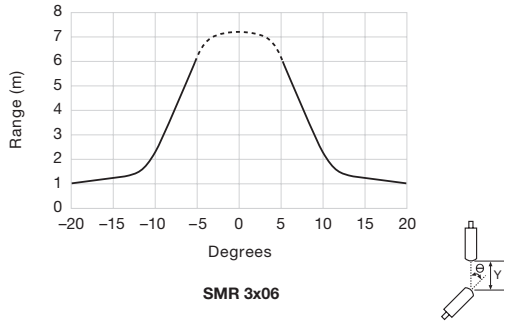


SMT 3000HC and SMR 3x15

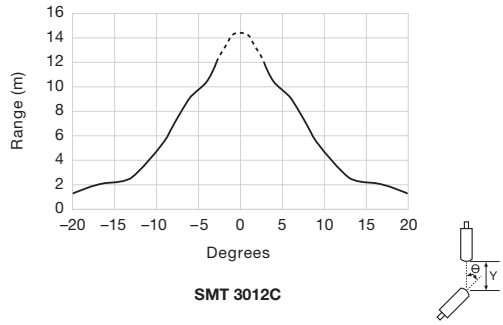
Angular Displacement



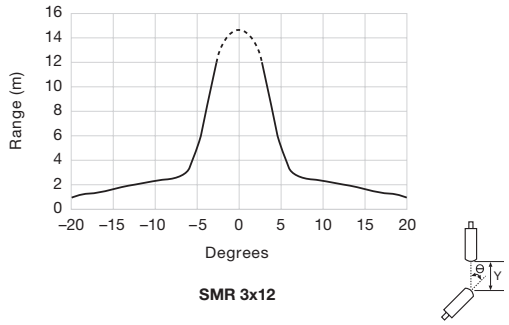
SMT 3000C



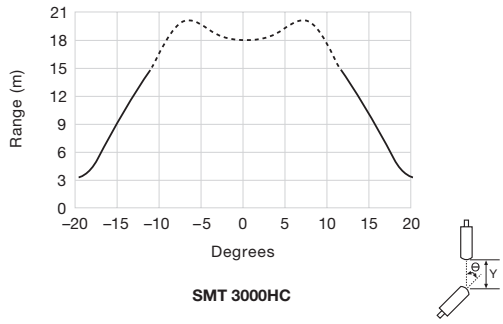
SMR 3x06



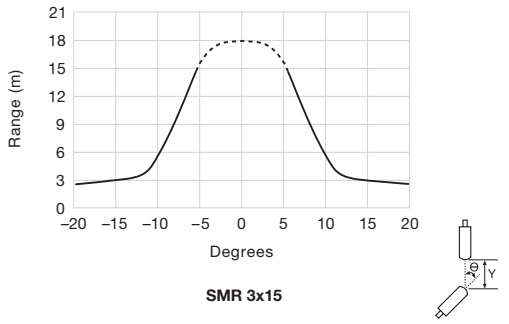
SMT 3012C



SMR 3x12



SMT 3000HC



SMR 3x15

Telco reserves the right to change specifications without notice.