

# Remote sensor series

## DATASHEET

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
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**REMOTE SENSOR SERIES**

**Description**

- Operation mode and max sensing range:  
**Thru-beam:** Dependent on amplifier (up to 70m)  
**Diffuse proximity:** Dependent on amplifier (up to 5m)
- Optional sensor monitor LED
- Wide variety of housings
- High tolerance to hostile environments
- Cable or plug connections
- Available with optional  ATEX approval



The remote sensor series, which consists of a transmitter LT and receiver LR, is made to operate in conjunction with a Telco photoelectric amplifier from the PA, MPA or PAB programmes.

The series is available with optional power-(LR) and output-(LT) monitor LEDs for use with any Telco photoelectric amplifier which has the sensor LED drive feature incorporated.

The remote sensors are available in a wide range of housings, with either cable or plug connection, and may be used in thru-beam or diffuse proximity mode.

Technical Data		
	LT	LR
Transmitter diode	Ga Al As, (880 nm)	-
Photo transistor	-	Silicon NPN
Housing material	Refer to Available Types	
Sensor housing	Polycarbonate	
Front lens	Polycarbonate	
Cable, PVC Ø 4,0 mm	2 x 0,25 mm <sup>2</sup>	1 x 0,25 mm <sup>2</sup> + shield
Min. cable bending radius	45 mm	

Environmental Data		
Vibration	10 – 55 Hz, 0,5 mm	
Shock	30 g	
Light immunity, @ 20° incidence	101 Series 100 Series 110/120 Series	> 50 000 lux > 80 000 lux > 100 000 lux
Temperature, operation	- 25 to +65 °C	
Temperature, storage	- 40 to +80 °C	
Sealing class	IP 67	
Approvals	CE	

## REMOTE SENSOR SERIES

Available Types									
	Series	Optical Angle	Connection		5 m cable	15 m cable	3 pin, M8 plug	4 pin, M12 plug	
			Housing Material	Housing Type					Order Reference
Transmitter	101	+/- 10°	Polycarbonate	Ø10	LT 101 AP25 5	LT 101 AP25 15	LT 101 AP25 T3 <sup>3</sup>	-	
					LT 101 TP25 5	LT 101 TP25 15	LT 101 TP25 T3 <sup>3</sup>	-	
			Nickel Plated Brass	M12 x 1	LT 101 TB25 5	LT 101 TB25 15	LT 101 TB25 T3 <sup>3</sup>	-	
					LT 101 TS25 5	LT 101 TS25 15	LT 101 TS25 T3 <sup>3</sup>	-	
			Stainless Steel (V4A)		LT 101 SG 5 <sup>2,3</sup>	LT 101 SG 15 <sup>2,3</sup>	LT 101 SG T3 <sup>3</sup>	-	
Polyester		□ 9,5 x 11,5	LT 101 S22 5 <sup>2,3</sup>	LT 101 S22 15 <sup>2,3</sup>	-	-			
ABS		Ø12,7 Snap							
Receiver		101	+/- 6°	Polycarbonate	Ø10	LR 101 AP25 5	LR 101 AP25 15	LR 101 AP25 T3 <sup>3</sup>	-
						LR 101 TP25 5	LR 101 TP25 15	LR 101 TP25 T3 <sup>3</sup>	-
				Nickel Plated Brass	M12 x 1	LR 101 TB25 5	LR 101 TB25 15	LR 101 TB25 T3 <sup>3</sup>	-
	LR 101 TS25 5					LR 101 TS25 15	LR 101 TS25 T3 <sup>3</sup>	-	
	Stainless Steel (V4A)				LR 101 SG 5 <sup>2,3</sup>	LR 101 SG 15 <sup>2,3</sup>	LR 101 SG T3 <sup>3</sup>	-	
Polyester	□ 9,5 x 11,5		LR 101 S22 5 <sup>2,3</sup>	LR 101 S22 15 <sup>2,3</sup>	-	-			
ABS	Ø12,7 Snap								

Transmitter	100	+/- 12° (High Power)	Polycarbonate	Ø10	LT 100H AP38 5	LT 100H AP38 15	LT 100H AP38 T3 <sup>3</sup>	-		
					LT 100H TP38 5	LT 100H TP38 15	LT 100H TP38 T3 <sup>3</sup>	-		
			Nickel Plated Brass	M12 x 1	LT 100H TB38 5	LT 100H TB38 15	LT 100H TB38 T3 <sup>3</sup>	LT 100H TB58 J <sup>3</sup>		
					LT 100H TS38 5	LT 100H TS38 15	LT 100H TS38 T3 <sup>3</sup>	LT 100H TS58 J <sup>3</sup>		
			Stainless Steel (V4A)		LT 100H SG 5 <sup>2,3</sup>	LT 100H SG 15 <sup>2,3</sup>	LT 100H SG T3 <sup>3</sup>	-		
		Polyester	□ 9,5 x 11,5	LT 100H S30 5 <sup>2,3</sup>	LT 100H S30 15 <sup>2,3</sup>	-	-			
		Polycarbonate	Ø12,7 Snap							
		Receiver	100	+/- 6°	Polycarbonate	Ø10	LR 100 AP38 5	LR 100 AP38 15	LR 100 AP38 T3 <sup>3</sup>	-
							LR 100 TP38 5	LR 100 TP38 15	LR 100 TP38 T3 <sup>3</sup>	-
					Nickel Plated Brass	M12 x 1	LR 100 TB38 5	LR 100 TB38 15	LR 100 TB38 T3 <sup>3</sup>	LR 100 TB58 J <sup>3</sup>
LR 100 TS38 5	LR 100 TS38 15						LR 100 TS38 T3 <sup>3</sup>	LR 100 TS58 J <sup>3</sup>		
Stainless Steel (V4A)					LR 100 SG 5 <sup>2,3</sup>	LR 100 SG 15 <sup>2,3</sup>	LR 100 SG T3 <sup>3</sup>	-		
Polyester	□ 9,5 x 11,5	LR 100 S30 5 <sup>2,3</sup>		LR 100 S30 15 <sup>2,3</sup>	-	-				
Polycarbonate	Ø12,7 Snap									
Receiver	100	+/- 7°		Polycarbonate	Ø10	LR 100 AP38 5	LR 100 AP38 15	LR 100 AP38 T3 <sup>3</sup>	-	
						LR 100 TP38 5	LR 100 TP38 15	LR 100 TP38 T3 <sup>3</sup>	-	
				Nickel Plated Brass	M12 x 1	LR 100 TB38 5	LR 100 TB38 15	LR 100 TB38 T3 <sup>3</sup>	LR 100 TB58 J <sup>3</sup>	
			LR 100 TS38 5			LR 100 TS38 15	LR 100 TS38 T3 <sup>3</sup>	LR 100 TS58 J <sup>3</sup>		
			Stainless Steel (V4A)		LR 100 SG 5 <sup>2,3</sup>	LR 100 SG 15 <sup>2,3</sup>	LR 100 SG T3 <sup>3</sup>	-		
Polyester		□ 9,5 x 11,5	LR 100 S30 5 <sup>2,3</sup>	LR 100 S30 15 <sup>2,3</sup>	-	-				
Polycarbonate		Ø12,7 Snap								

Transmitter	110	+/- 5°	Polycarbonate	Ø10	LT 110 AP38 5	LT 110 AP38 15	LT 110 AP38 T3 <sup>3</sup>	-	
					LT 110 TP38 5	LT 110 TP38 15	LT 110 TP38 T3 <sup>3</sup>	-	
			Nickel Plated Brass	M12 x 1	LT 110 TB38 5	LT 110 TB38 15	LT 110 TB38 T3 <sup>3</sup>	LT 110 TB58 J <sup>3</sup>	
LT 110 TS38 5		LT 110 TS38 15			LT 110 TS38 T3 <sup>3</sup>	LT 110 TS58 J <sup>3</sup>			
Receiver		110	+/- 3°	Polycarbonate	Ø10	LR 110 AP38 5	LR 110 AP38 15	LR 110 AP38 T3 <sup>3</sup>	-
						LR 110 TP38 5	LR 110 TP38 15	LR 110 TP38 T3 <sup>3</sup>	-
	Nickel Plated Brass			M12 x 1	LR 110 TB38 5	LR 110 TB38 15	LR 110 TB38 T3 <sup>3</sup>	LR 110 TB58 J <sup>3</sup>	
LR 110 TS38 5			LR 110 TS38 15		LR 110 TS38 T3 <sup>3</sup>	LR 110 TS58 J <sup>3</sup>			
Stainless Steel (V4A)									

Transmitter	120	+/- 4°	Nickel Plated Brass	M18 x 1	LT 120 TB45 5	LT 120 TB45 15	-	-
Receiver		+/- 2,5°			LR 120 TB45 5	LR 120 TB45 15	-	-

Note: 1. Photo amplifiers to be ordered separately.

2. Remote sensors are available with optional power (LR) and output (LT) monitor LEDs for use with the applicable Telco photoelectric amplifier, which has the sensor LED drive. Add 'L' after the series number for sensor monitor LED e.g. LT/LR 101L AP 25 5. Sensors marked <sup>2</sup> are not available with this optional feature.

3. Remote Sensor 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. LT/LR 100/EX TS38 5. Sensors marked <sup>3</sup> are not available to comply with ATEX approval.



## REMOTE SENSOR SERIES

### Applicable Photoelectric Amplifiers and Maximum Ranges

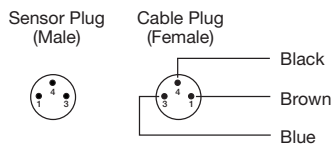
Remote Sensor Series Amplifier Series	101		100		110		120	
	Thru-beam	Diffuse Proximity	Thru-beam	Diffuse Proximity	Thru-beam	Diffuse Proximity	Thru-beam	Diffuse Proximity
<b>Photoelectric Amplifier Series</b>								
PA 01	8 m	0,6 m	10 m	0,7 m	23 m	1,6 m	45 m	3,5 m
PA 09	5 m	0,4 m	-	-	-	-	-	-
PA 10 A B	11 m	0,9 m	-	-	-	-	-	-
	-	-	15 m	1,1 m	35 m	2 m	60 m	4 m
PA 11	-	-	18 m	1,1 m	40 m	2 m	70 m	5 m
<b>Multiplexed Amplifier Series</b>								
MPA 21	-	-	10 m	0,7 m	25 m	1,6 m	45 m	3,5 m
MPA 41 A/B C/D	-	-	8 m	0,6 m	18 m	1,3 m	35 m	2 m
	-	-	4 m	0,4 m	9 m	0,7 m	18 m	1,3 m
MPA 81 A/B C/D	-	-	8 m	0,6 m	18 m	1,3 m	35 m	2 m
	-	-	4 m	0,4 m	9 m	0,7 m	18 m	1,3 m
<b>Photoelectric Amplifier Bus Series</b>								
PAB 10	-	-	18 m	1,3 m	40 m	2 m	70 m	5 m
PAB 20	-	-	12 m	0,8 m	27 m	1,7 m	47 m	3,6 m
PAB 30	-	-	12 m	0,8 m	27 m	1,7 m	47 m	3,6 m

Note: Sensing ranges using glass fibre optics, please refer to page 149.

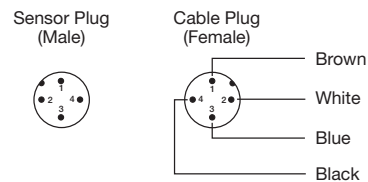
### Connections

	Cable	M8 Plug / Cable	M12 Plug / Cable
Transmitter Signal	Red	Pin 1 / Brown	Pin 1 / Brown
Transmitter Ground	Black	Pin 3 / Blue	Pin 3 / Blue
Receiver Signal	Yellow	Pin 4 / Black	Pin 4 / Black
Receiver Ground	Shield	Pin 3 / Blue	Pin 3 / Blue

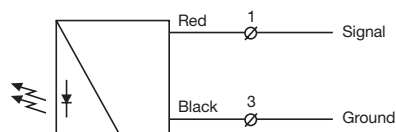
#### 3 pin, M8



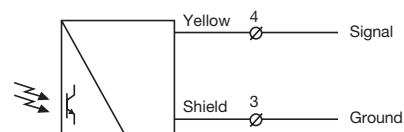
#### 4 pin, M12



### Wiring Diagrams



LT

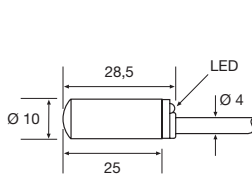


LR

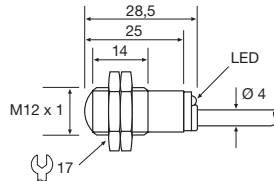
**REMOTE SENSOR SERIES**

**Dimensions and Descriptions**

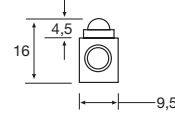
**Series 101**



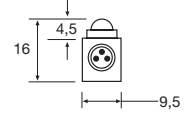
**AP25 5/15**



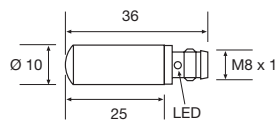
**TP/TB/TS25 5/15**



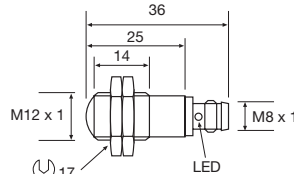
**SG 5/15**



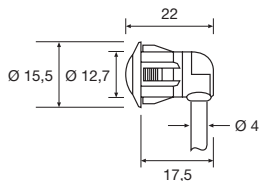
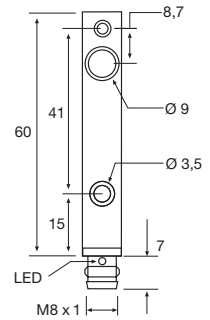
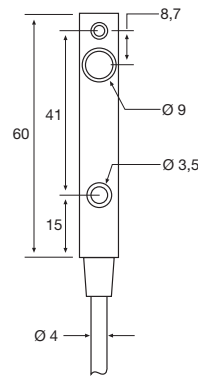
**SG T3**



**AP25 T3**



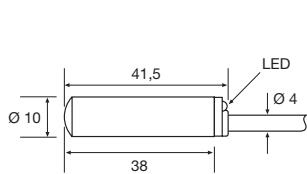
**TP/TB/TS25 T3**



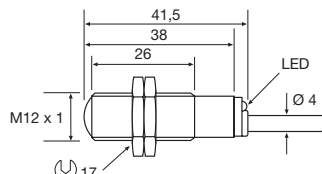
**S22 5/15**

(Units in mm)

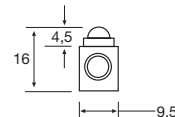
**Series 100**



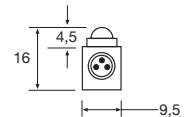
**AP38 5/15**



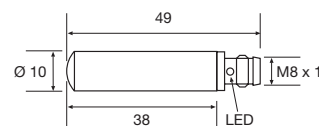
**TP/TB/TS38 5/15**



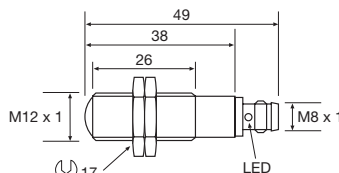
**SG 5/15**



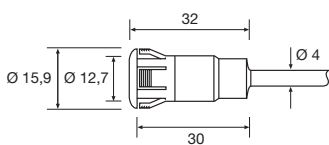
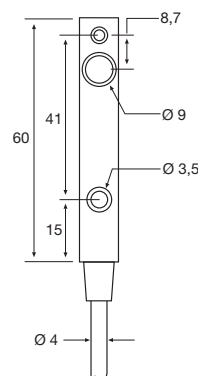
**SG T3**



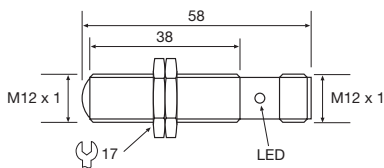
**AP38 T3**



**TP/TB/TS38 T3**



**S30 5/15**



**TB/TS58 J**

(Units in mm)

**REMOTE SENSOR SERIES**

**Series 110**

**AP38 5/15**:  $\text{Ø} 10$ , 41,5, 38, LED,  $\text{Ø} 4$   
**TP/TB/TS38 5/15**: 41,5, 38, 26, LED,  $\text{Ø} 4$ , M12 x 1, 17  
**TB/TS58 J**: 58, 38, LED, M12 x 1, 17  
**AP38 T3**: 49, 38, LED, M8 x 1,  $\text{Ø} 10$   
**TP/TB/TS38 T3**: 49, 38, 26, LED, M8 x 1, M12 x 1, 17

(Units in mm)

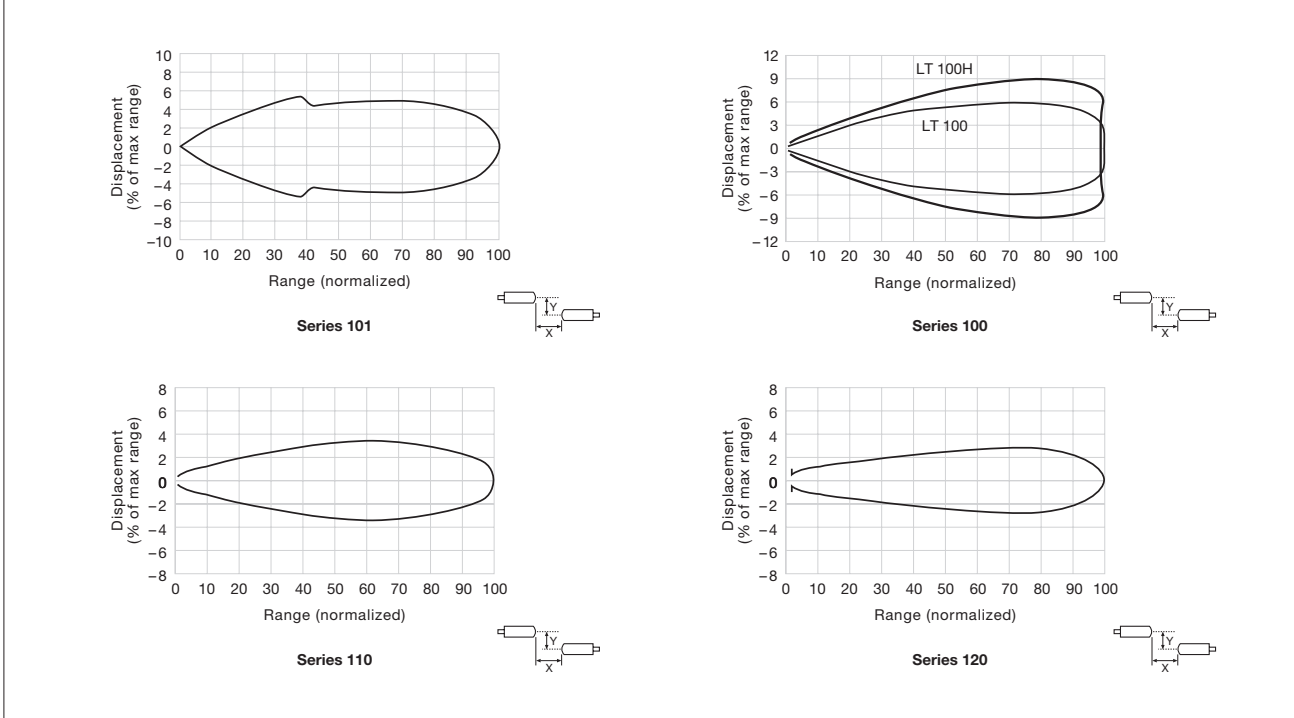
**Series 120**

**TB45 5/15**: 55, 45, 28, LED,  $\text{Ø} 4$ , M18 x 1, 24

(Units in mm)

**Sensing Characteristics**

**Parallel Displacement (Thru-beam)**



## REMOTE SENSOR SERIES

Description
<ul style="list-style-type: none"> <li>▪ Operation mode and max sensing range:  <b>Thru-beam:</b> Dependent on amplifier (up to 70m)  <b>Diffuse proximity:</b> Dependent on amplifier (up to 5m)</li> <li>▪ Optional sensor monitor LED</li> <li>▪ Wide variety of housings</li> <li>▪ High tolerance to hostile environments</li> <li>▪ Cable or plug connections</li> <li>▪ Available with optional  ATEX approval</li> </ul>



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	LT	LR
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Photo transistor	-	Silicon NPN
Housing material	Refer to Available Types	
Sensor housing	Polycarbonate	
Front lens	Polycarbonate	
Cable, PVC Ø 4,0 mm	2 x 0,25 mm <sup>2</sup>	1 x 0,25 mm <sup>2</sup> + shield
Min. cable bending radius	45 mm	

Environmental Data		
Vibration	10 – 55 Hz, 0,5 mm	
Shock	30 g	
Light immunity, @ 20° incidence	101 Series 100 Series 110/120 Series	> 50 000 lux > 80 000 lux > 100 000 lux
Temperature, operation	- 25 to +65 °C	
Temperature, storage	- 40 to +80 °C	
Sealing class	IP 67	
Approvals	CE	

**REMOTE SENSOR SERIES**

**Series 110**

**AP38 5/15**: Ø 10, 41,5, 38, LED, Ø 4  
**TP/TB/TS38 5/15**: 41,5, 38, 26, M12 x 1, LED, Ø 4, 17  
**TB/TS58 J**: 58, 38, M12 x 1, LED, M12 x 1, 17  
**AP38 T3**: Ø 10, 49, 38, LED, M8 x 1  
**TP/TB/TS38 T3**: 49, 38, 26, M12 x 1, LED, M8 x 1, 17

(Units in mm)

**Series 120**

**TB45 5/15**: 55, 45, 28, M18 x 1, LED, Ø 4, 24

(Units in mm)

**Sensing Characteristics**

**Parallel Displacement (Thru-beam)**

