



- *Incandescent lamp emission*
- *Optic adjustment of the sensitivity*
- *8, 28, 50 mm lenses and fibre-optics available*
- *Dark/light mode selector*

## TL10 SERIES

The **TL10** series is composed of analog contrast sensors with incandescent lamp emission with long life and easy interchangeability.

The sensors present a mechanical multi-turn optic adjuster for the sensitivity regulation, a switch for the dark/light operating mode selection and a red LED that signals the NPN transistor output activation.

Different models are available with 8, 28 and 50 mm lenses, or with an adapter for the different fibre-optics supplied as accessories.

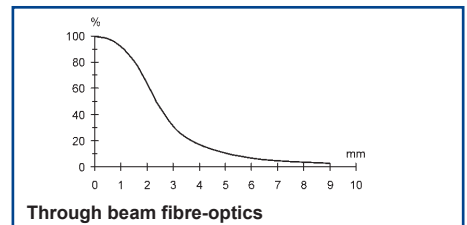
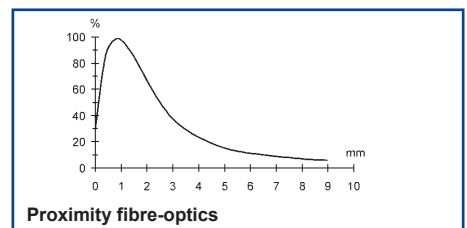
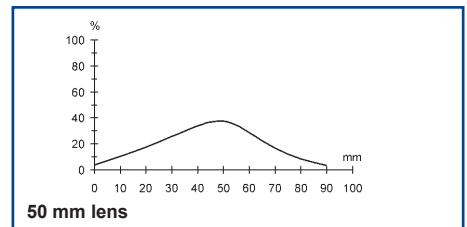
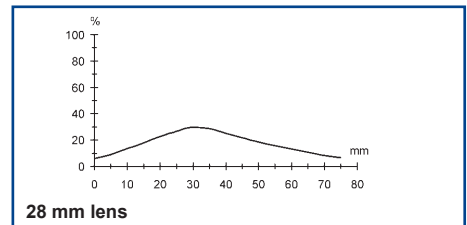
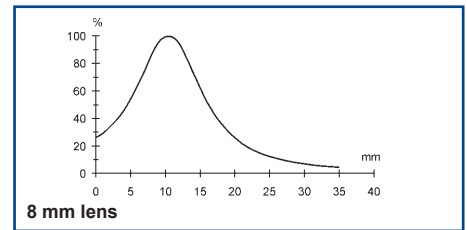
Cable or Amphenol connector versions are available.

The sensors of the **TL10** series and relative accessories are available as spare parts. Contrast sensors of the **TL $\mu$**  series are recommended for replacements, new applications and improved performances (sec. 2.22).

## TECHNICAL DATA

<b>Power supply:</b> .....	10 ... 30 Vdc, reverse polarity protection 4.5 Vac for lamp emission
<b>Consumption:</b> .....	50 mA max.
<b>Light emission:</b> .....	4.5 V (0,8 A) incandescent lamp
<b>Spot dimension:</b> .....	5 x 1 mm (8 mm lens) 6 x 2.5 mm (28 mm lens) 8 x 2.5 mm (50 mm lens)
<b>Operating distance:</b> .....	8 ... 12 mm (8 mm lens) 28 ... 36 mm (28 mm lens) 46 ... 54 mm (50 mm lens)
<b>Operating distance with fibre-optics:</b> .....	0.3 ... 1.5 mm proximity 0 ... 2.5 mm through beam
<b>Depth of field:</b> .....	±2 mm (8 mm lens) ±4 mm (28 and 50 mm lenses)
<b>Setting:</b> .....	mechanical multi-turn actuator
<b>Indicators:</b> .....	red OUTPUT LED
<b>Output type:</b> .....	NPN
<b>Saturation voltage:</b> .....	1.4 V max.
<b>Output current:</b> .....	100 mA max., short-circuit protection
<b>Response time:</b> .....	50 µs max.
<b>Switching frequency:</b> .....	10 KHz max.
<b>Operating mode :</b> .....	dark/light selectable
<b>Connection:</b> .....	3 m Ø 5.5 mm cable cable with Amphenol connector
<b>Electrical protection:</b> .....	class 1
<b>Mechanical protection:</b> .....	IP67
<b>Housing material:</b> .....	ZAMA
<b>Lens material:</b> .....	glass
<b>Fibre-optic material:</b> .....	fibre in PMMA plastic / sheath in PE
<b>Weight:</b> .....	600 g max.
<b>Operating temperature:</b> .....	-10 ... +55°C
<b>Storage temperature:</b> .....	-20 ... +70°C
<b>Fibre operating temperature:</b> .....	-30 ... +60°C
<b>Reference standard:</b> .....	EN 60947-5-2
<b>Certifications:</b> .....	CE

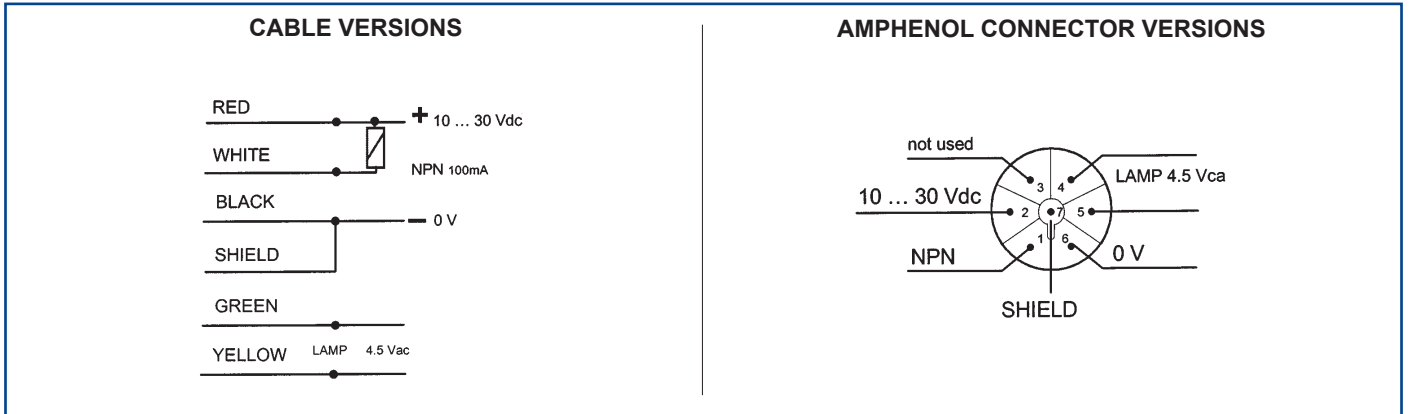
## DETECTION DIAGRAMS



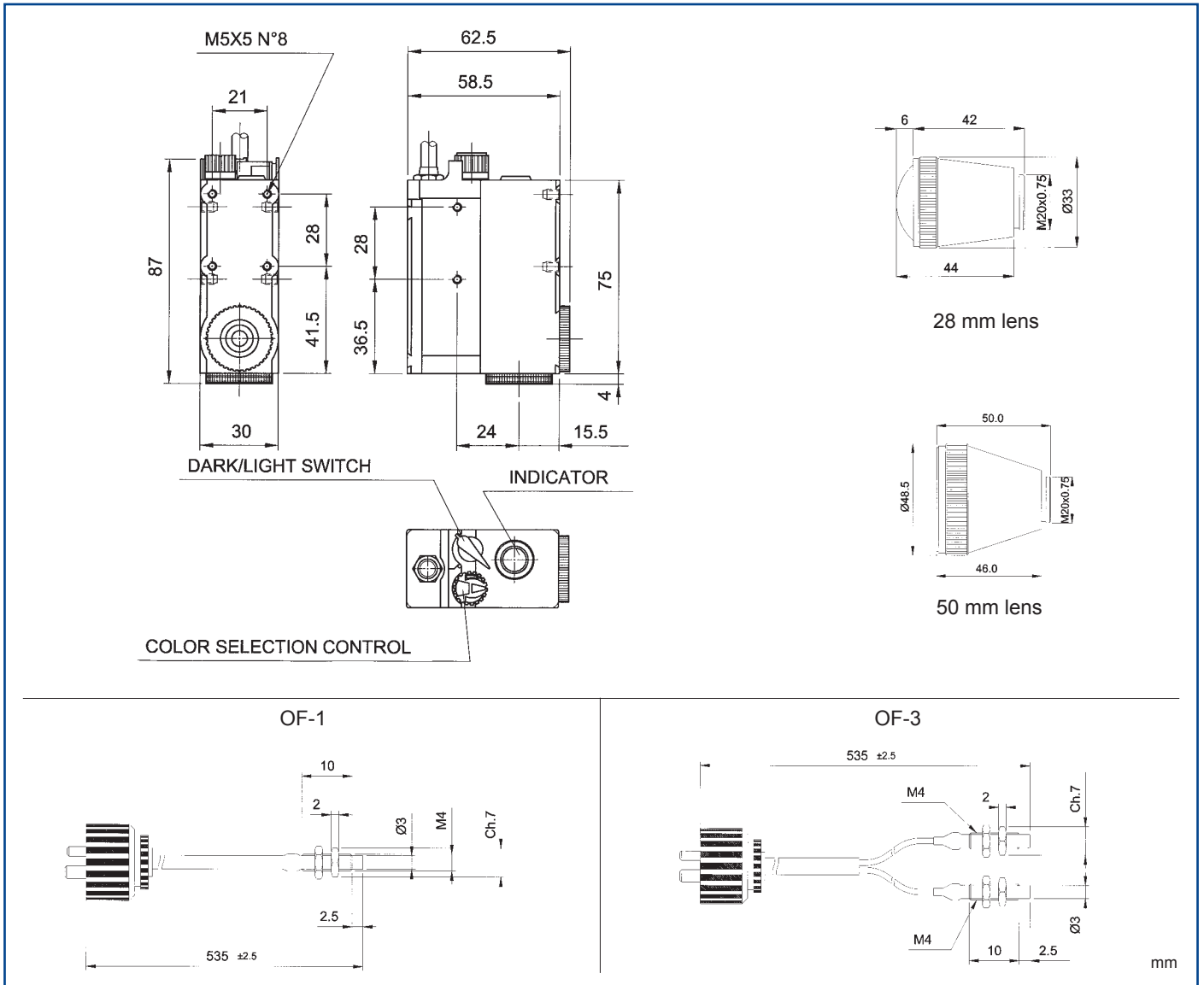
The operating distances indicate the detection distance with excess gain 2.

The detection diagrams indicate the typical operating distance with excess gain 1.

## CONNECTIONS



## DIMENSIONS



## MODELS

MODEL	OPTICS	SPOT	CONNECTION	OUTPUT	CODE N°
TL10-011	8 mm	vertical	cable	NPN	S917660100
TL10-012	8 mm	vertical	Amphenol connector	NPN	S917660105
TL10-011L	8 mm	horizontal	cable	NPN	S917660102
TL10-012L	8 mm	horizontal	Amphenol connector	NPN	S917660107
TL10-021	28 mm	vertical	cable	NPN	S917660101
TL10-022	28 mm	vertical	Amphenol connector	NPN	S917660106
TL10-031	50 mm	vertical	cable	NPN	S917660103
TL10-032	50 mm	vertical	Amphenol connector	NPN	S917660108
TL10-041	optic fibre	circular	cable	NPN	S917660104
TL10-042	optic fibre	circular	Amphenol connector	NPN	S917660109

## ACCESSORIES

MODEL	DESCRIPTION	CODE N°
OF-1-5	plastic fibre-optic L 50 cm - 1.5 mm coaxial proximity	S76020100
OF-3-5	plastic fibre-optic L 50 cm - 3 mm through beam	S76020300
010066	6V/6W lamp vertical spot (standard vers.)	S2600030
010067	6V/6W lamp horizontal spot (90° vers.)	S2610300

Please refer also to **Sensor Accessories**

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### HEADQUARTERS

#### DATASENSOR SpA

via Lavino, 265 - 40050 Monte San Pietro, BO - Italy  
 Tel. +39 051/6765611 • Fax +39 051/6759324  
 www.datasensor.com • e-mail info@datasensor.com

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