SENSOR WITH RGB LED EMISSION AND PLASTIC HOUSING

- *High resolution and RGB LED emission with automatic colour selection*
- *Very fast switching frequency and low response time*
- *Easy sensor setting by means of two pushbuttons Mark/Bkgd*
- *Sturdy plastic housing with standard dimensions and fixing holes*

CONTRAST SENSORS

TL50 SERIES

TL50 contrast sensor line offers the best solution for all the applications where a cost reduction is requested, without compromising the excellent detection performances.

The optimised optics of these sensors, the RGB LED emission with automatic colour selection and the very fine resolution, allow the detection of the weakest contrast of colours or grayscale between mark and background, or between different objects or surfaces.

The high resolution is not a limit for the detection speed, reaching 33 ms response time and 15 kHz switching frequency.

Thanks to only two pushbuttons 'Mark' and 'Bkgd' for the different signals acquisition, the automatic threshold setting is very easy and accurate.

TL50 sensors can find typical applications on packaging machinery for food, cosmetic or pharmaceutical goods, for the detection of print registration marks, labels or other references on plastic films or packages, even on transparent material.

Thanks to the compact dimensions and multiple fixing holes with metallic inserts present in standard positions, the sturdy ABS plastic housing is fully compatible and can replace the most of traditional contrast sensors, also offering an appreciable cost reduction.

The special PMMA plastic lens, fixable either in axial or lateral position, is suitable for the sensor use in the food industry, where the presence of glass parts must be avoided.

DATASENSOR
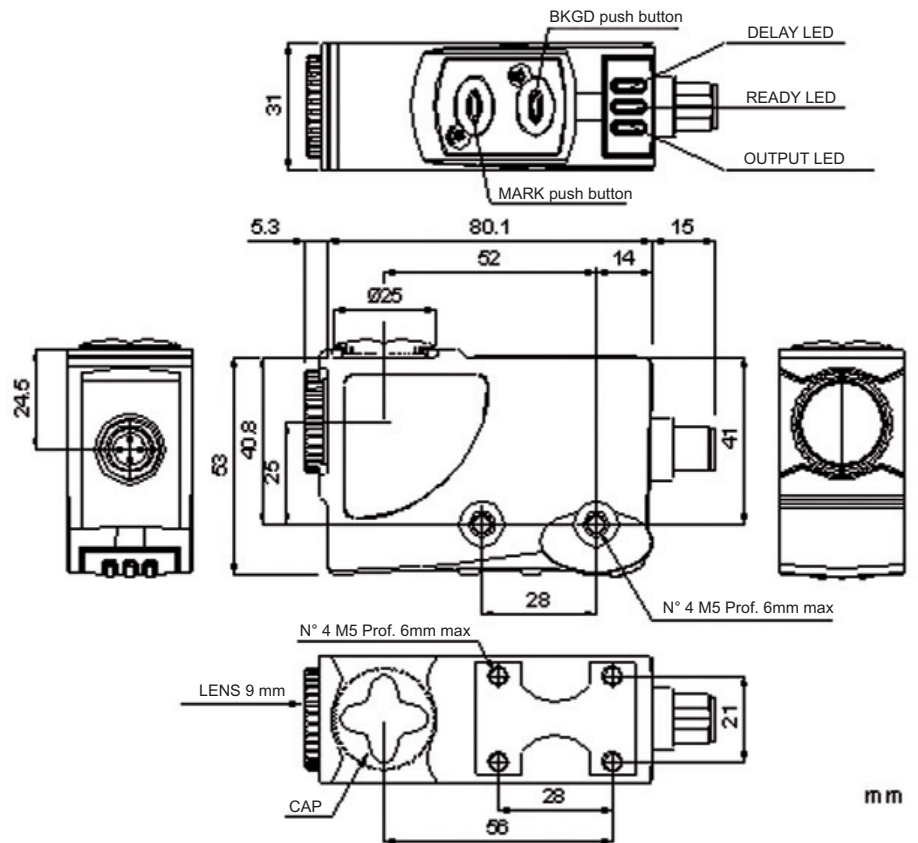value through detection

SETTING

The acquisition of the mark and background signals is made by pressing the MARK and BKGD pushbuttons.

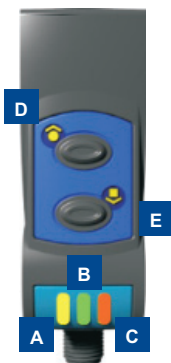The switching threshold level is set automatically between the mark and background values.

The Dark/Light operating mode is selected by the sensor on the ground of the lower or higher mark reflectivity with respect to the background.

When the green LED turns on the setting has been successfully completed and the sensor is ready, whereas the LED blinking indicates a setting failure or an insufficient contrast between mark and background.
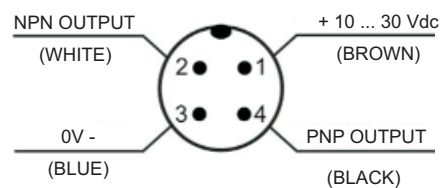
DIMENSIONS

BKGD push button
DELAY LED
READY LED
OUTPUT LED
MARK push button

5.3   80.1   15
52   14
Ø25

24.5   53   40.8   25   41

28   N° 4 M5 Prof. 6mm max

N° 4 M5 Prof. 6mm max

LENS 9 mm

CAP   28   21

56   mm

INDICATORS AND PUSH-BUTTONS

A	yellow OUTPUT LED	D	MARK push button
B	green READY LED	E	BKGD push button
C	orange DELAY LED		

ACCESSORIES

For dedicated accessories refer to the ACCESSORIES section of this catalogue.

Refer also to Connectors of the General Catalogue.

CONNECTIONS

NPN OUTPUT (WHITE)   + 10 ... 30 Vdc (BROWN)

2   1

3   4

0V - (BLUE)   PNP OUTPUT (BLACK)

DATASENSOR

TECHNICAL DATA

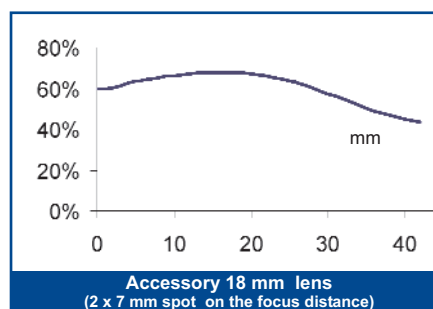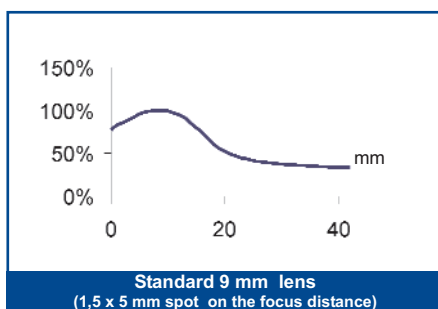|	
Power supply:	10…30 Vdc [1], reverse polarity protection
Consumption :	50 mA max @ 24 Vdc
Light emission:	RGB LED (465 nm blue, 520 nm green, 630 nm red)
Spot dimension:	1.5 x 5 mm @ 9 mm
Operating distance:	9 mm
	± 3 mm
Setting:	Automatic (MARK push button, BKGD push button)
Indicators:	OUTPUT LED (yellow) / READY RED (green) / DELAY LED (orange)
Output type:	PNP and NPN bipolar outputs
Output current:	100 mA max.
Saturation voltage:	≤2 V
Response time:	33 µs
Switching frequency:	15 kHz
Dark/Light selection	Automatic
Timing function:	0 ... 20 ms selectable
Connections:	connector M12 4 poles [2]
Insulation:	>20 MΩ 500 Vdc
Mechanical protection:	IP67
Protection devices:	A, B [3]
Housing material:	ABS
Lens material:	PMMA
Weight:	90 g. max.
Operating temperature:	-10 … 55 °C
Storage temperature:	-20 … 70 °C
Reference standard:	EN 60947-5-2

TECHNICAL NOTES

[1] *Average life of 100.000 h with T_A = +25 ºC*

[2] *Connector block rotatable on 4 positions*

[3] *A - reverse polarity protection*
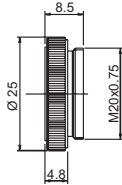   *B - overload and short-circuit protection*

DETECTION DIAGRAMS

Standard 9 mm lens
(1,5 x 5 mm spot on the focus distance)

Accessory 18 mm lens
(2 x 7 mm spot on the focus distance)

DATASENSOR

MODEL SELECTION AND ORDER INFORMATION
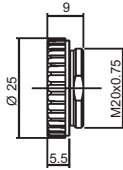
MODEL	OPERATING DISTANCE	ORDER N°
TL50-W-815	10 - 20 mm	954651000

ACCESSORY LENSES
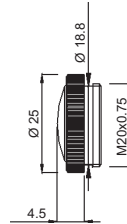
DIMENSIONS

Lens No.9 glass   Lens No.9 PMMA   Lens 18 mm glass

mm

ACCESSORY SELECTION AND ORDER INFORMATION

MODEL	DESCRIPTION	ORDER N°
Lens No.9 glass	glass lens with 9 mm focus	95ACC1020
Lens No.9 PMMA	plastic lens with 9 mm focus	95ACC2540
Lens No.18 glass	glass lens with 18 mm focus	95ACC1030

Please refer also to Sensor Accessories

CONTRAST SENSORS

Distributed by:

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 m