



TFM Series

Time of flight miniaturized Sensor



Time of flight
miniaturized Sensor

features

- Completely filled with resin
- 2 Digital Outputs (Lon)
- Switching Frequency from 10 Hz to 80 Hz
- Infrared Laser emission (class 1)
- Wide angle emission
- Output selectable : PNP or Pushpull
- Resolution from 1 to 3 mm
- IP67 protection degree and complete protection against electrical damages

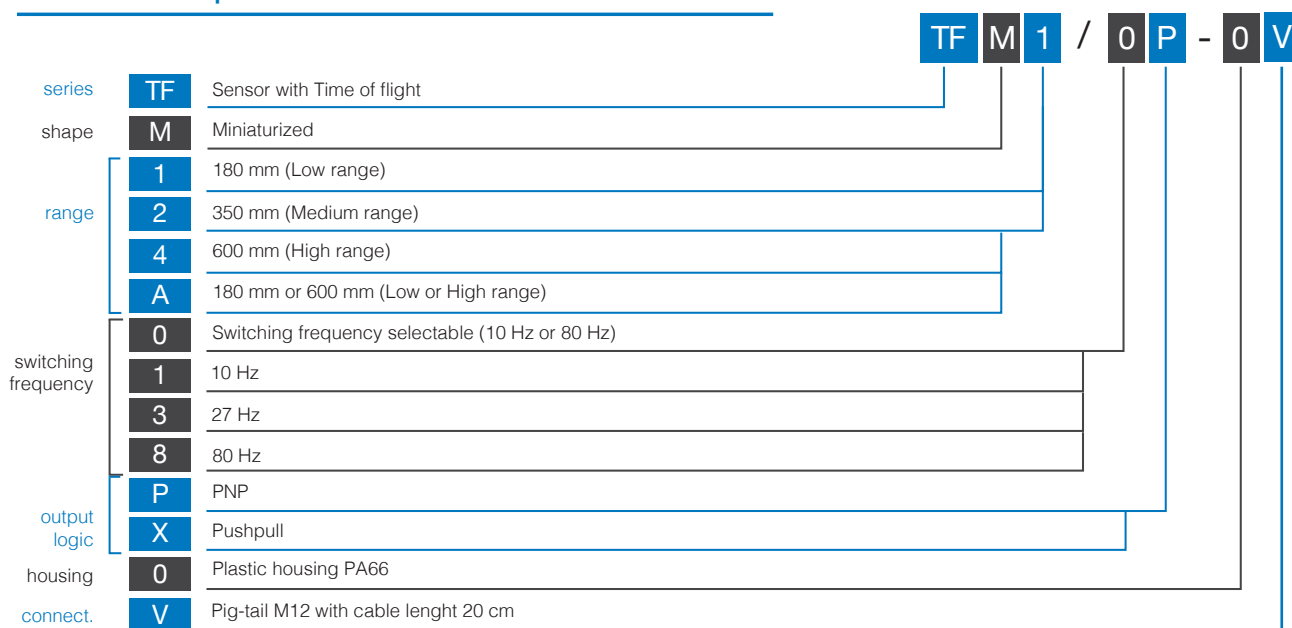
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code description



available models

distance	output type	switching frequency	code
0...180 mm (default) 0...600 mm	pushpull	810 (default) / 80 Hz	TFMA/0X-0V
	PNP		TFMA/0P-0V
0...180 mm	pushpull	10 Hz	TFM1/1X-0V
			TFM4/1X-0V
0...180 mm	PNP	80 Hz	TFM1/8X-0V
			TFM1/1P-0V
0...600 mm	PNP	10 Hz	TFM4/1P-0V
			TFM1/8P-0V
0...180 mm	pushpull	27 Hz	TFM2/3X-0V
			TFM2/3P-0V

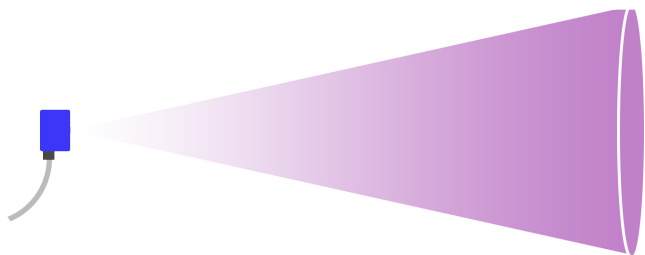


technical specifications

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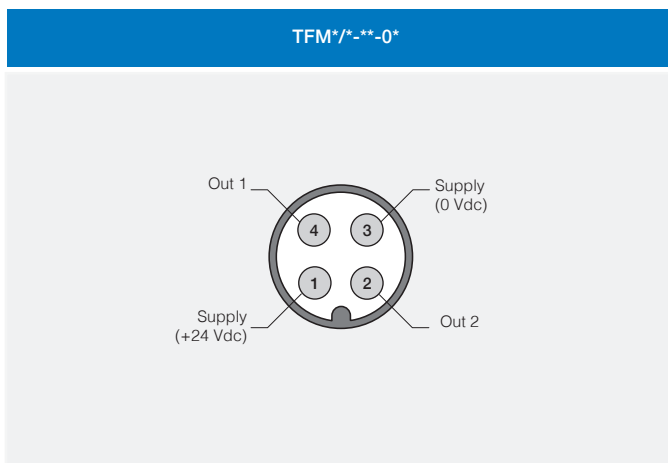
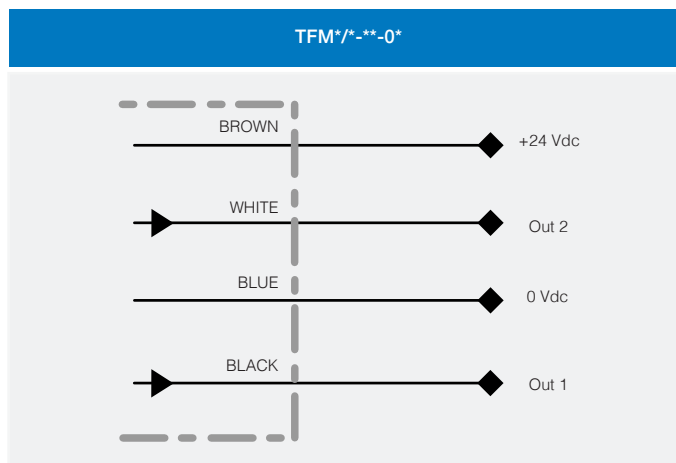
	TFM1/1*-0V	TFM4/1*-0V	TFM2/3*-0V	TFM1/8*-0V
detection range	0...180 mm (white 90% - gray 18% - black 6%)	0...600 mm (white 90%) 0...350 mm (gray 18%) 0...300 mm (black 6%)	0...360 mm (white 90%) 0...240 mm (gray 18%) 0...200 mm (black 6%)	0...180 mm (white 90%) 0...140 mm (gray 18%) 0...110 mm (black 6%)
resolution	1 mm	3 mm	2 mm	1 mm
hysteresis	± 4 mm	± 6 mm	± 12 mm	± 12 mm
emission	LASER infrared 850 nm (LASER class1)			
spot dimension	divergent (25°) wide angle			
operating voltage	24 Vdc ± 20%			
ripple	< 10%			
no-load current	< 40 mA			
output current	50 mA			
leakage current	≤ 10 µA (Vdc max.)			
output voltage drop	2.0 V max. (II = 50 mA)			
output type	2 outputs selectable: PNP / Pushpull			
switching frequency	≤ 10 Hz		≤ 27 Hz	≤ 80 Hz
supply electrical protections	polarity reversal, transient			
output electrical protections	short circuit (auto reset), over voltage pulses			
temperature range	-10°...+50° C			
temperature storage	-30°...+90° C			
umidity	< 80%			
interference to external light	TBD			
standard conformity	EN60947-5-2			
housing material	plastic (PA66) + ABS			
optic material	glass			
LED indicators	Green : RUN (sensor working, target inside the detection distance) Orange 1 : OUTPUT 1 Red: WARNING : target out of operative range Yellow 2 : OUTPUT 2			
protection degree	IP67			
weight	26 g (pig-tail version)			

spot diameter

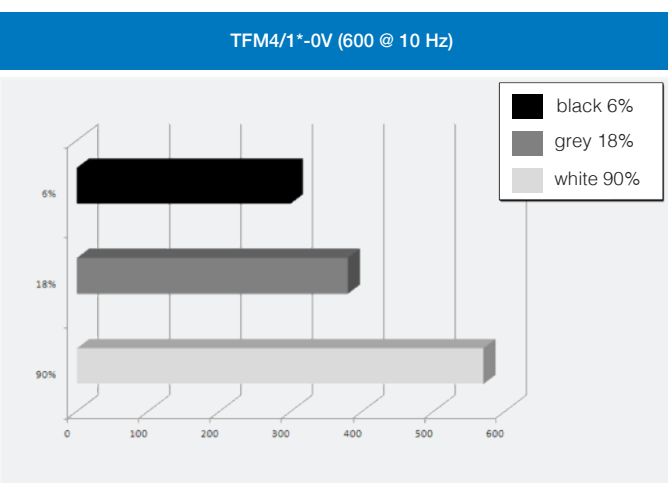
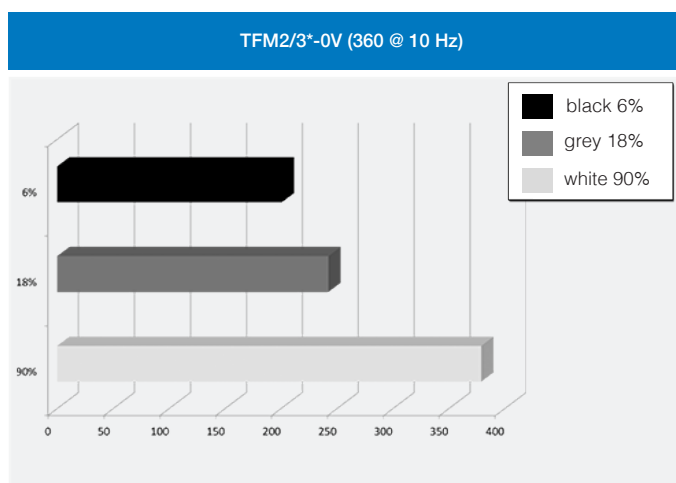
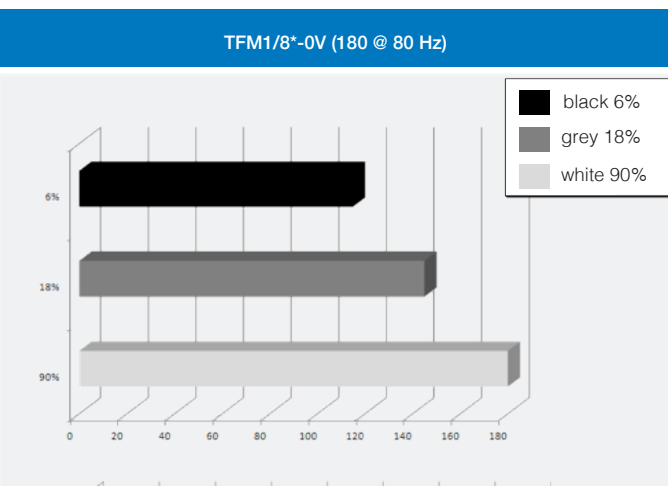
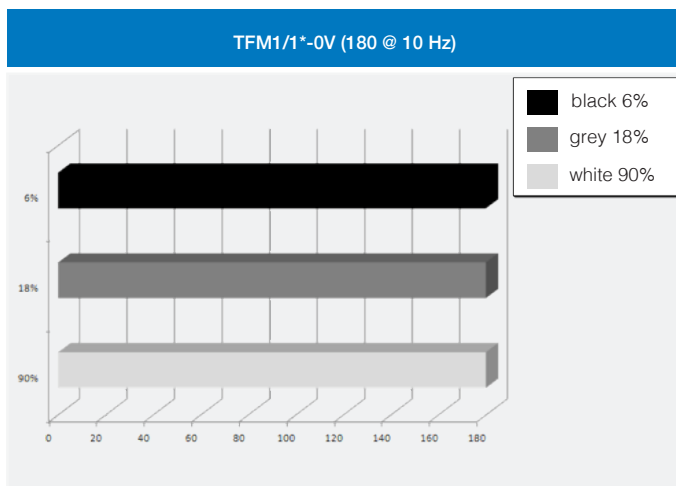


distance (mm)	spot dimension (mm)
50	22
100	44
200	88
300	133
400	177
500	222
600	240

electrical diagrams of the connections plug



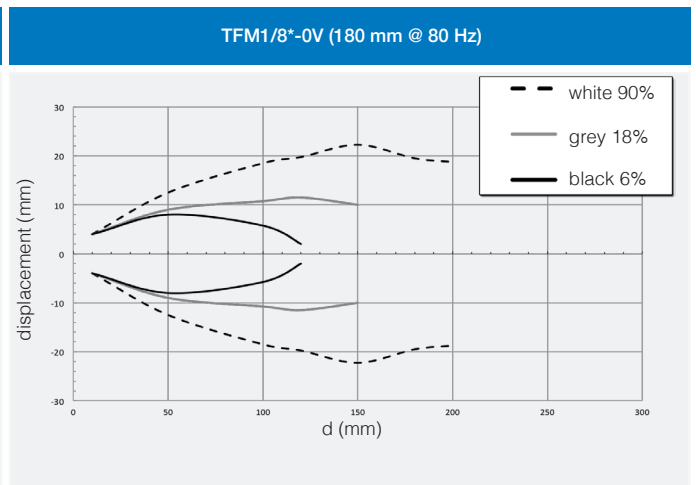
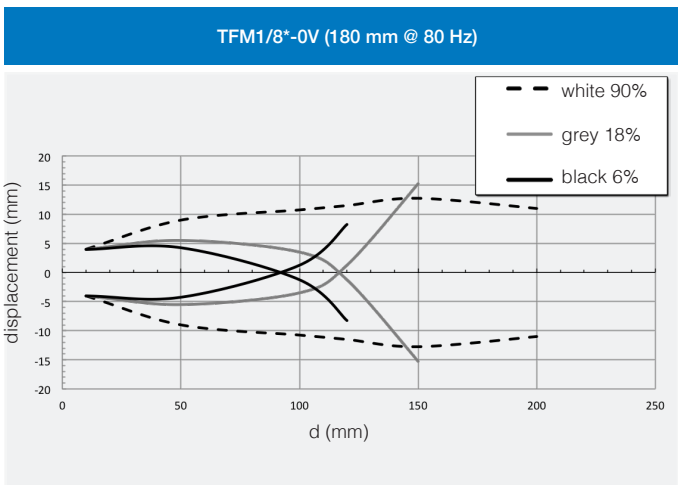
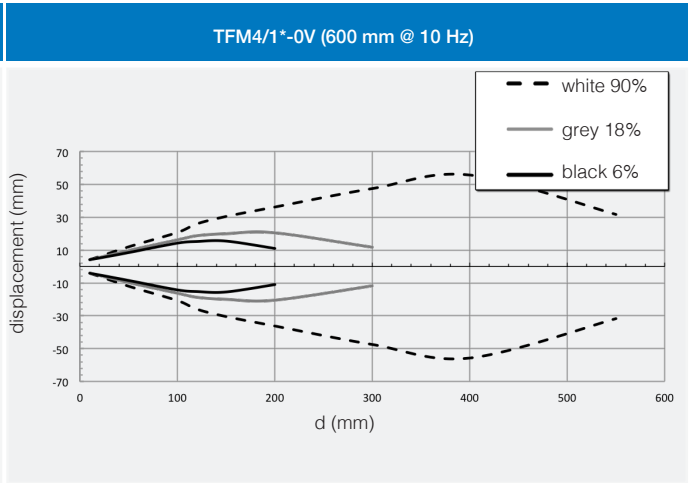
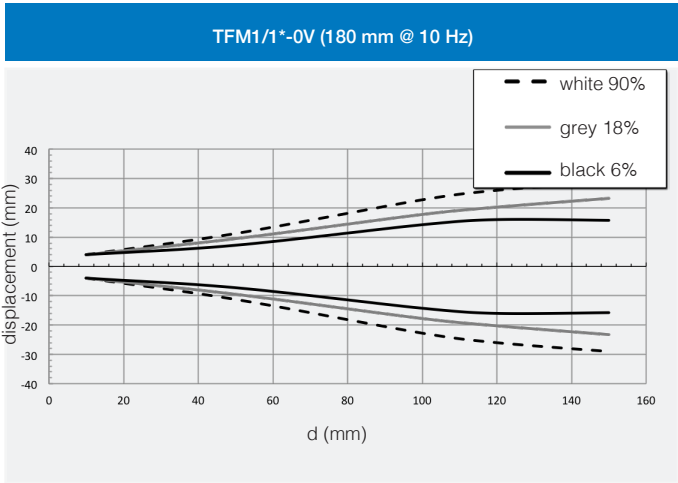
response diagrams





response diagrams

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dimensions (mm)

