



# TFM Series

Time of flight miniaturized Sensor



Time of flight  
miniaturized Sensor



## features

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

## web contents



- Application notes
- Photos
- Catalogue / Manuals



## code description

			TF	M	1	/	0	P	-	0	V
series	TF	Sensor with Time of flight									
shape	M	Miniaturized									
range	1	180 mm (Low range)									
	4	600 mm (High range)									
	A	180 mm or 600 mm (Low or High range)									
switching frequency	0	Switching frequency selectable (10 Hz or 80 Hz)									
	1	10 Hz									
	8	80 Hz									
output logic	P	PNP									
	N	NPN									
	X	Pushpull									
housing	0	Plastic housing PA66									
connect.	V	Pig-tail M12 with cable lenght 20 cm									

## available models

distance	output type	switching frequency	code
0...180 mm (default) 0...600 mm	pushpull	10 (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		80 Hz	

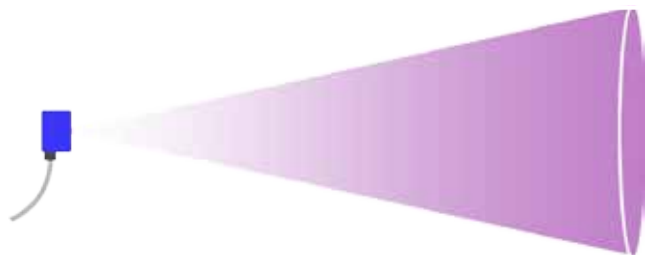


## technical specifications

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	TFM1/1*-0V	TFM4/1*-0V	TFM1/4*-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...180 mm (white 90%) 0...140 mm (gray 18%) 0...110 mm (black 6%)
resolution	1 mm	3 mm	1 mm
hysteresis	± 4 mm	± 6 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 / NPN / Pushpull		
switching frequency	≤ 10 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%		
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)		

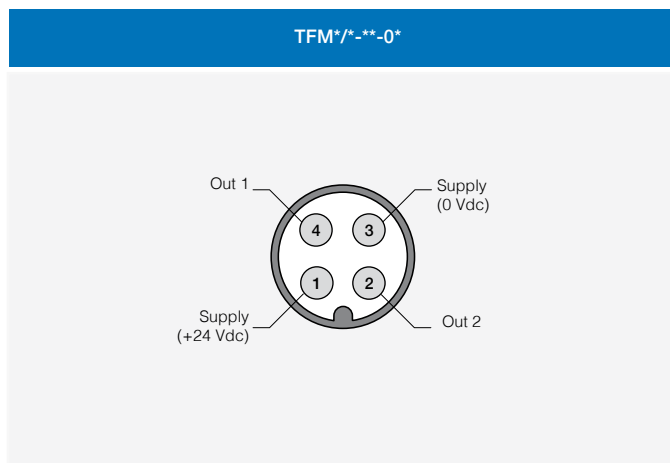
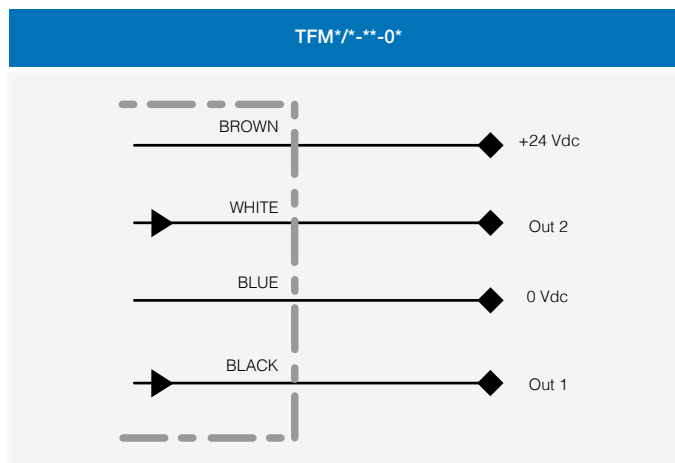
## spot diameter



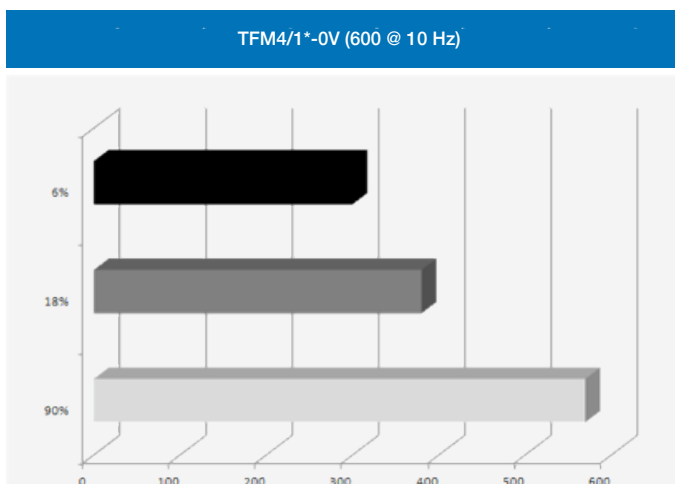
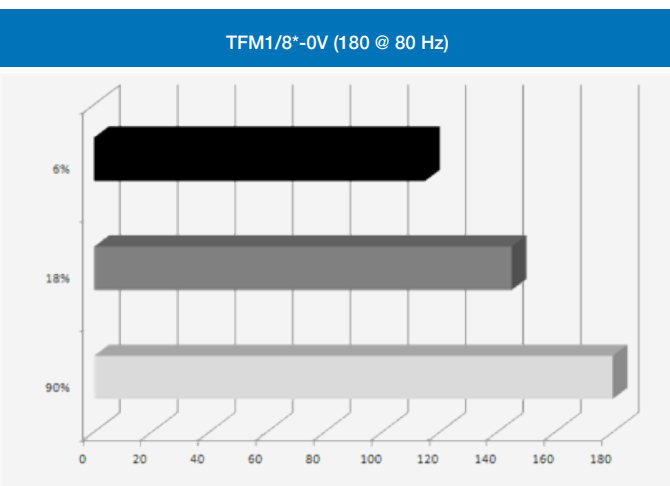
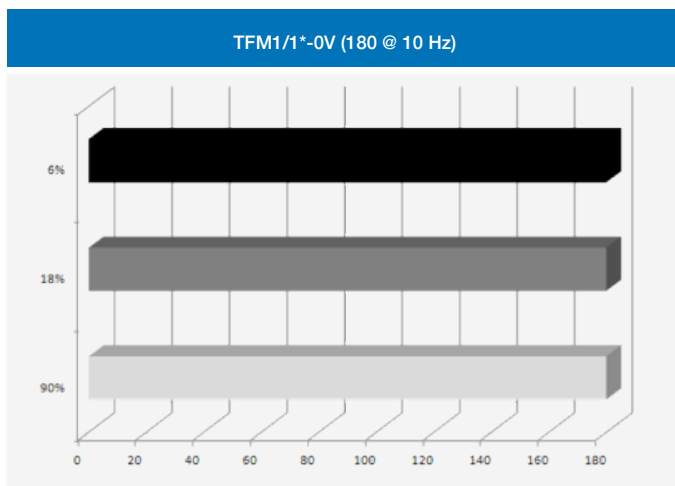
distance (mm)	spot dimension (mm)
50	22
100	44
200	88
300	133
400	177
500	222
600	240

## wiring diagrams

## plug



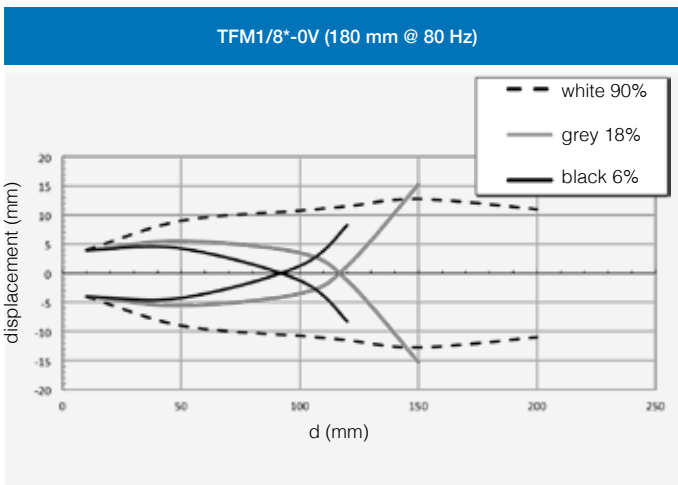
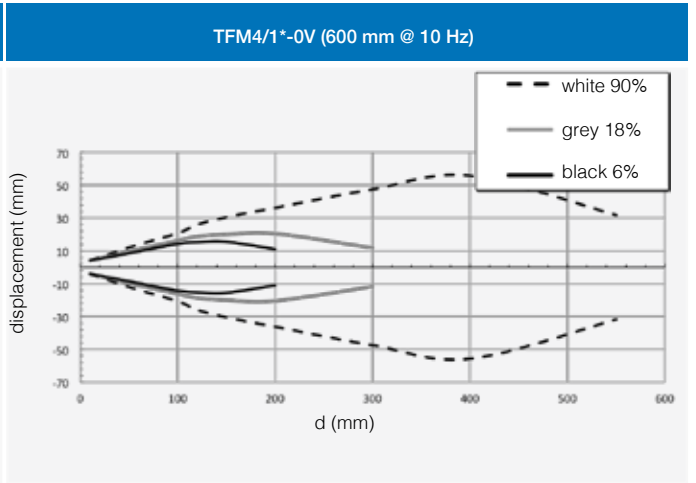
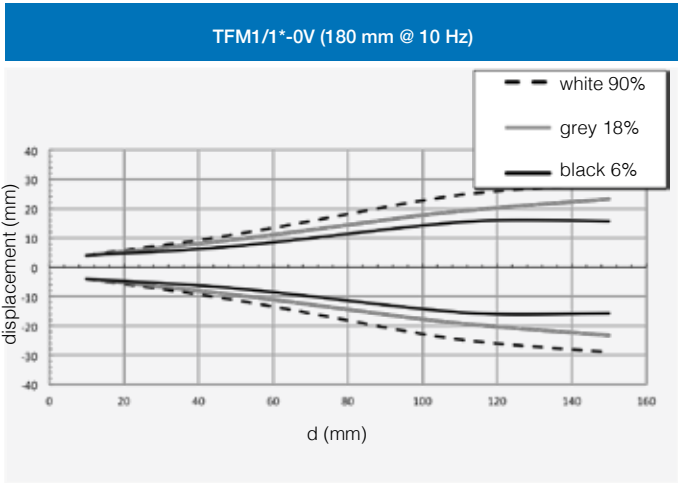
## response diagrams





# response diagrams

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# dimensions (mm)

