

FT 50 RLA 70 / 100 / 220

Distance sensor



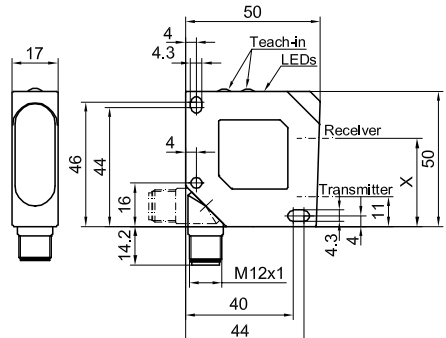
PRODUCT HIGHLIGHTS

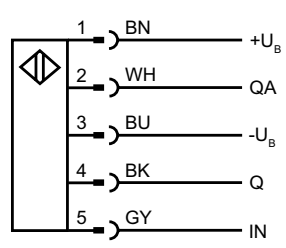
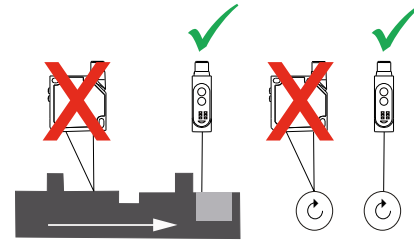
- Precise distance measurement
- Largely independent of target object reflectivity (highly reflective and glossy objects)
- High long-term stability and low temperature effects
- High resolution
- Very high update rate of analogue output (response time)
- One switching output, one analogue output 4 ... 20 mA
- Simple adjustment via teach-in button

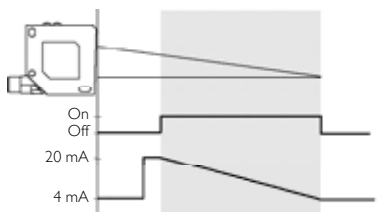
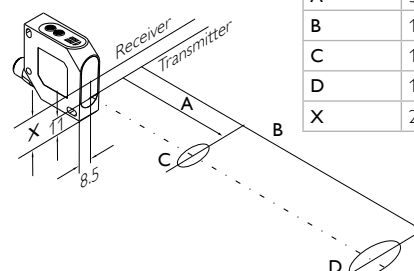
Optical data		Functions	
Operating range	30 ... 100 mm / 70 ... 170 mm / 80 ... 300 mm ¹	Indicator LED, green	Operating voltage indicator
Measurement range	70 mm, 100 mm, 220 mm	Indicator LED, yellow	Switching output indicator
Type of light	Laser, red, 650 nm	Scanning distance adjustment	Via Teach-in button and control input
Laser Class (IEC 60825-1)	1	Adjustment possibilities	N.O. / N.C. via Teach-in button and control input
Resolution	< 0.1 % of operating range end-value ² (see selection table)		Button lock via control input
Linearity	< 0.25 % of operating range end-value (see selection table)		
Repeatability	< 0.25 % of measurement value		
Electrical data		Mechanical data	
Operating voltage, +U _B	18 ... 30V DC	Dimensions	50 x 50 x 17 mm
No-load current, I ₀	≤ 40 mA	Enclosure rating	IP 67 ³
Output current, I _e	≤ 100 mA	Material, housing	ABS, impact-resistant
Protective circuits	Reverse-polarity protection, U _B / short-circuit protection, Q	Material, front screen	PMMA
Protection Class	2	Type of connection	See selection table
Power On Delay	< 300 ms	Ambient temperature: operation	-10 ... +60 °C
Switching output, Q	PNP	Ambient temperature: storage	-20 ... +80 °C
Output function	N.O./N.C.	Weight	43 g
Max. capacitive load, Q	< 100 nF	Vibration and impact resistance	EN 60947-2
Analogue output	4 ... 20 mA		
Temperature drift	< 0.02 % of operating range end-value / K		
Load	≤ 500 Ω (recommended)		
Switching frequency, f (ti/tp 1:1)	≤ 1 kHz (speed mode) ≤ 10 Hz (averaging mode)		
Response time	0.4 ms (speed mode) 40 ms (averaging mode)		
Control input, IN	When High (+U _B) = laser disable When Low (-U _B) = button lock When open = free-running		

¹ Reference material: Kodak grey, 18 % ² Smallest measurable change ³ With connected IP 67 plug

Operating range	Measurement range	Resolution	Linearity	Type of connection	Part number	Article number
30 ... 100 mm	70 mm	0.1 mm	0.25 mm	Plug, M12x1, 5-pin	FT 50 RLA-70-PL5	574-41027
70 ... 170 mm	100 mm	0.17 mm	0.42 mm	Plug, M12x1, 5-pin	FT 50 RLA-100-PL5	574-41032
80 ... 300 mm	220 mm	0.3 mm	0.75 mm	Plug, M12x1, 5-pin	FT 50 RLA-220-PL5	574-41029

Plug connection	Type	X (distance, receiver)
	FT 50 RLA 70	29.4 mm
	FT 50 RLA 100	32.5 mm
	FT 50 RLA 220	32.5 mm

Connection, 5-pin	Installation
	

Characteristic analogue curve		Light spot geometry																																		
Operating range (default setting)  OK LED (green) (Good Target) Analogue output (invertible) 20 mA 4 mA <table><tr><td>FT 50 RLA 70</td><td>30 mm</td><td>100 mm</td></tr><tr><td>FT 50 RLA 100</td><td>70 mm</td><td>170 mm</td></tr><tr><td>FT 50 RLA 220</td><td>80 mm</td><td>300 mm</td></tr></table>		FT 50 RLA 70	30 mm	100 mm	FT 50 RLA 100	70 mm	170 mm	FT 50 RLA 220	80 mm	300 mm	155-00271 <table><tr><th>FT 50 RLA</th><th>70 ...</th><th>100 ...</th><th>220 ...</th></tr><tr><td>A</td><td>30</td><td>70</td><td>80</td></tr><tr><td>B</td><td>100</td><td>170</td><td>300</td></tr><tr><td>C</td><td>1.5 x 3</td><td>1.5 x 3.5</td><td>1.5 x 3.5</td></tr><tr><td>D</td><td>1.5 x 3.25</td><td>1.7 x 3.9</td><td>2 x 4.5</td></tr><tr><td>X</td><td>29.4</td><td>32.5</td><td>32.5</td></tr></table> 155-00269		FT 50 RLA	70 ...	100 ...	220 ...	A	30	70	80	B	100	170	300	C	1.5 x 3	1.5 x 3.5	1.5 x 3.5	D	1.5 x 3.25	1.7 x 3.9	2 x 4.5	X	29.4	32.5	32.5
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Accessories	
Connection cables	From Page A-38
Brackets	From Page A-4