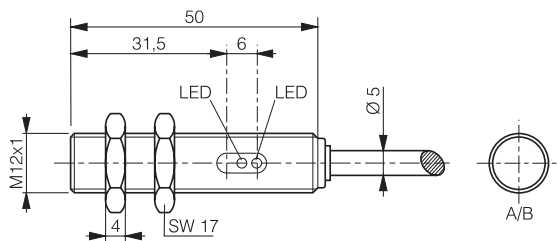
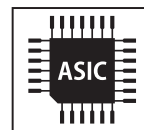
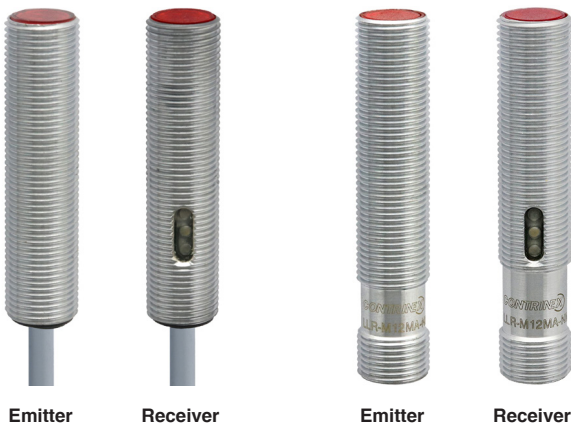


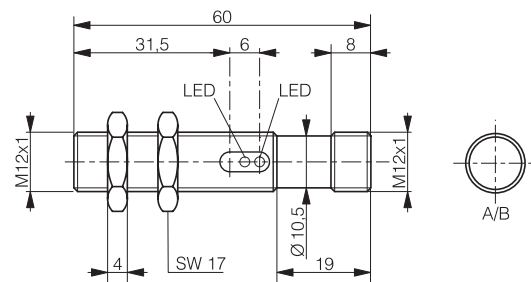
10000 mm

- ✓ M12 metal housing
- ✓ Sensitivity adjustment via IO-Link
- ✓ Focused RED light source
- ✓ Calibrated range
- ✓ Emitting sequence selection via IO-Link
- ✓ IO-Link v1.0



A: emitter axis B: receiver axis

LLR-M12MA-NMK-xxx



A: emitter axis B: receiver axis

LLR-M12MA-NMS-xxx

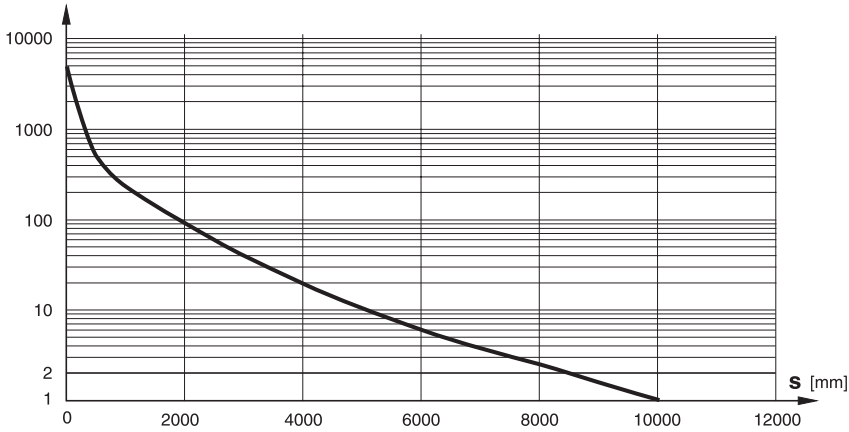
OPTICAL DATA		INTERFACE	
Sensing range typ. max.	0...10000 mm	Sensitivity adjustment	2000...10000 mm, IO-Link only
Operating range	0...8000 mm	Indicator LED, green	Excess gain
Light source	LED, red 630 nm	Indicator LED, yellow	Sensing state
Light spot size (distance)	□ 6 mm (2 m) / □ 15 mm (5 m)	IO-Link	✓
		MTTF (@40°C)	420

<sup>1</sup>Object with 90% reflectance (standard white paper)

ELECTRICAL DATA		MECHANICAL DATA	
Supply voltage range (U <sub>b</sub> )	10...30 VDC	Enclosure rating	IP 67
Residual ripple	≤ 10% V <sub>pp</sub>	Ambient temperature operation	-25...+65 °C
Output current	≤ 200 mA	Shock and vibration	IEC 60947-5-2
Signal PNP high/low	≤ (U <sub>b</sub> -2.0 V)/approx. 0 V	Housing material	Chrome-plated brass
Signal NPN high/low	Approx. U <sub>b</sub> /≤ 2.0 V	Window material	PMMA
Power consumption (no load)	≤ 10mA		
Response time <sup>1</sup>	≤ 500 μs (normal) / ≤ 1 ms / ≤ 250 μs		
Switching frequency <sup>1</sup>	≤ 1 kHz (normal) / ≤ 500 Hz / ≤ 2 kHz		
Short circuit protection	✓		
Voltage reversal protection	✓		

<sup>1</sup>By default, "Normal" mode. "Fine" and "Fast" modes selectable via IO-Link.

## EXCESS GAIN

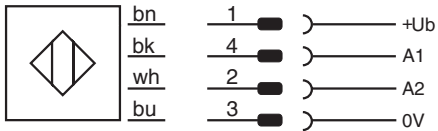


## IO-LINK FUNCTIONALITIES

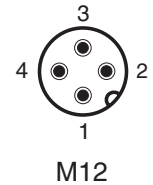
IO-Link version	1.0
SIO mode	Supported
Process data	Detection state & stability alarm
Baudrate	COM2 (38.4 kBaud)
Special functions	Output configuration, output timing, sensor mode, detection counter, event flags, maximum and actual sensor temperature

IO-Link specifications and IODD files may be downloaded from [www.contrinex.com](http://www.contrinex.com) (Download section)

## WIRING DIAGRAM



## PIN ASSIGNMENT



## AVAILABLE TYPES

Part number	Part reference	Polarity	Connection	Output (A1)	Output (A2)	Weight
620-600-413	LLR-M12MA-NMS-400	Emitter	M12 4-pin	IO-Link	-	14.3 g
620-600-412	LLR-M12MA-NMK-400	Emitter	PVC, 2m, 4 wire	IO-Link	-	79 g
620-600-416	LLR-M12MA-NMS-603	PNP	M12 4-pin	Light-on/IO-Link	Dark-on	14.3 g
620-600-417	LLR-M12MA-NMS-101	NPN	M12 4-pin	Light-on	Dark-on	14.3 g
620-600-414	LLR-M12MA-NMK-603	PNP	PVC, 2m, 4 wire	Light-on/IO-Link	Dark-on	79 g
620-600-415	LLR-M12MA-NMK-101	NPN	PVC, 2m, 4 wire	Light-on	Dark-on	79 g

Note: additional suffix can appear to indicate a revision version or a special version.

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