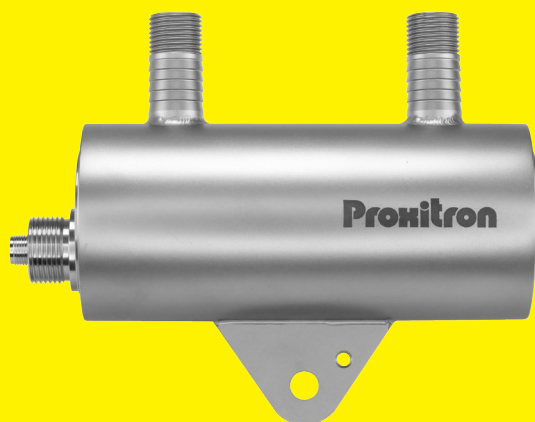


# Optical Distance Sensors

0 - 150 m measuring range

Optical distance measurement of hot and cold objects





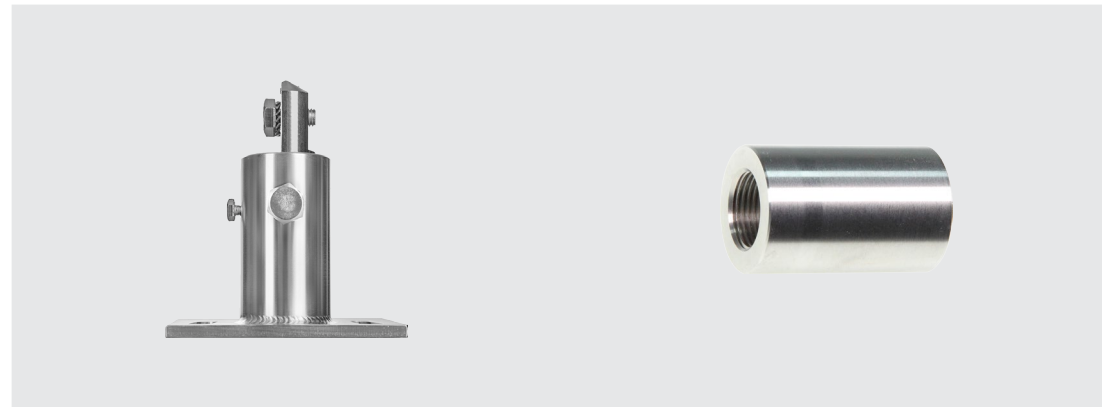
+40 °C



+200 °C

Measuring range max.	150 m		150 m	
Measuring range typically	0 - 50 m		0 - 50 m	
Accuracy	+/- 1 mm	+/- 3 mm	+/- 1 mm	+/- 3 mm
Repeatability	+/- 0,3 mm	+/- 0,8 mm	+/- 0,3 mm	+/- 0,8 mm
Measuring frequency max.	10 Hz	20 Hz	10 Hz	20 Hz
Type	<b>LMA 101</b>	<b>LMA 101A</b>	<b>LMB 101</b>	<b>LMB 101A</b>
Light source	LASER class 2		LASER class 2	
Parameterization	software		software	
Analog output	0/4-20 mA		0/4-20 mA	
Switching output	3 x PNP n.o. / n.c.		3 x PNP n.o. / n.c.	
Additional functions	teach; alarm		teach; alarm	
Digital interface	RS 485 (MODBUS RTU)		RS 485 (MODBUS RTU)	
Housing [mm]	Ø57 x 170		Ø76 x 170	
Housing material	stainless steel		stainless steel	
Ambient temperature	40 °C		200 °C, water-cooled	

Accessories for Optical Distance Sensors



Accessories for Optical Distance Sensors



Accessory	Swivel stand	Adapter for cable protection	Air purge adapter	Tube	Furnace window
Function	mounting	protection hose fixing	pollution control	maximize air purge effect,	temperature and flame protection
Material	stainless steel	stainless steel	stainless steel	stainless steel	stainless steel
Type	<b>HM 2</b>	<b>HG 2</b>	<b>OL 34</b>	<b>OL 46</b>	<b>HL 133</b>
Description	massive swivel stand	for M20 fitting	for LMA	for air purge adapter	furnace window big
Type	<b>HM 4</b>		<b>OL 35</b>		<b>HL 201</b>
Description	light mounting bracket		for LMB		furnace window small
Type					<b>HM 15</b>
Description					bracket for LMA
Type					<b>HM 16</b>
Description					bracket for LMB

# Optical Distance Sensors - General Information

Optical distance sensors send out a light signal which is reflected by the surface of an object. They use the time-of-flight principle (TOF) effectively to detect the object and calculate the distance.

Distance sensors based on LASER source provide high accuracy and can measure over large distances. A laser class 2 is used, so that these sensors do not require any LASER risk assessment.

These distance sensors are ideal for distance measurement on hot and cold objects and can be used also in hot areas, as for example for material positioning in furnaces. Proxitron distance sensors distinguish themselves as robust and maintenance-free. They withstand for years severe working conditions as vibrations, radiated heat as well as very high ambient temperatures. All distance sensors can be parametrized in a teaching mode and with a user-friendly software. They offer the possibility to set different switching outputs, as well as the desired measuring range. An alarm function provides also for warning of overheating. These sensors are equipped with a comfortable software interface to meet the needs of Industry 4.0.

The max measuring range for optical distance sensors always depend on the ability of the object to reflect light. The following table shows some typical objects and the related best possible distance.

- Distance measurement of hot and cold objects
- Sizing of slabs, blocks and billets at continuous casting, torch-cutting and deburring
- Measurement of object dimension at ring rolling
- Material positioning in furnaces
- Level control in melting pots
- Material detection over large distances



- Measurement distance up to 150 m
- Variable adjustable measuring range
- High accuracy ( $\pm 1$  mm)
- Ambient temperatures up to 200 °C
- Object temperatures up to 1350 °C
- Three freely adjustable digital outputs
- Configurable alarm signaling (e. g. overtemperature)
- Easy parameterization via software
- Time variable trigger function
- RS485 interface
- BUS capable (MODBUS RTU)
- Analog output (0/4 - 20 mA) with 16-bit resolution
- Extremely solid and maintenance-free
- Various accessories

Object	max measuring distance LMA/B
Reflective foil 3M 3279 special	150 m
High temperature reflector OR05 (up to 500°C)	125 m
Grey card 90% reflectivity	120 m
Grey card 10% reflectivity	35 m
Steel plate shiny	100 m
Steel plate slightly oxidized	50 m
Steel plate heavily oxidized	40 m
Steel annealed	25 m