LDG-AAB-HBA-OF LASER DISTANCE SENSOR

Zones 1, 2, 21, 22

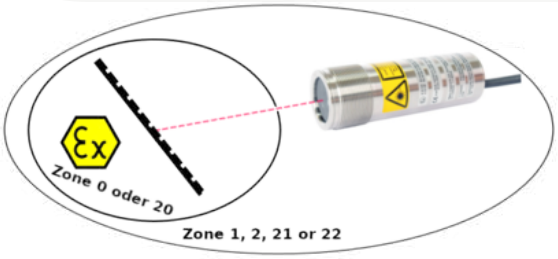
ATEX INSTRUMENTATION | **ZONES 1, 2 (gas) & 21, 22 (dust)**

Applications such as level measurement in hazardous areas, positioning, collision protection and others benefit from the reliable and accurate distance measurement of the explosion-proof laser measurement sensors of the LDx family.

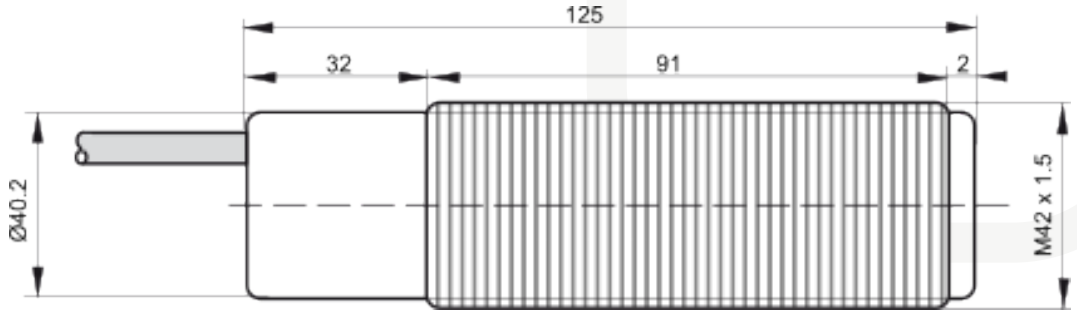
Whether in the chemical, automotive or pharmaceutical industry, these sensors are the right choice for safe working in hazardous areas. Applications can be found wherever precise measurement is required in potentially explosive areas, even over long distances, for example in the automotive industry, the pharmaceutical industry, the chemical industry, the biogas and methane gas industry, wastewater treatment and sewage technology, and much more...

- Time-of-flight based distance measurement (laser distance measurement, laser time of flight measurement or laser path measurement).
- Can be used directly in zones 1, 2, 21 and 22, and can radiate in zones 0 and 20.
- Displacement meter with 1 mm resolution via RS-485.
- Length measurement also via configurable 4-20 mA analogue interface.
- Complies with laser class 2 with red laser (635 nm).
- Explosion-proof housing made of stainless steel.

EU-Type Examination Certificate



ITEM REFERENCES			
Designation:	**Measurement range analog output:**	**Measurement range digital output:**	**Item No.:**
LDG-AAB-HBA-OF	50mm to 4000mm	0.05m to 30m	9D0102
If the analog output is used, the analog output is direct from 0.05m to 4m. Expected values: 50mm=4mA to 2000mm=12mA. If the RS485 digital output is used, the connection kit is always needed.			
Connection kit: - Software / - MOXA UPORT 1130 Converter / - MINI DB9F-TU-TB Adaptor			9D0103



LDG-AAB-HBA-OF LASER DISTANCE SENSOR

Zones 1, 2, 21, 22

TECHNICAL SPECIFICATIONS	
Marking:	II 2(1)G Ex db [op is Ga] IIB T4 Gb II 2(1)D Ex tb [op is Da] IIIC T135°C Db
Certificate:	EU-Type Examination Certificate
Housing / Fixing brackets:	Stainless steel 1.4404
Operating temperature:	-10°C up to +35°C [1] / -10°C up to +50°C [2] [1] The sensor can be operated continuously. [2] The sensor must be operated in pulsed mode via the START input, e.g.: 15s measurement, 45s pause
Storage temperature range:	-20°C to +70°C
Relative humidity:	15% ... 80%
Ingress protection:	IP67
Measurement methods:	Time-of-flight measuring
Light Source:	Laser Class 2, in accordance with EN 60825-1
Maximum optical radiant intensity:	<=1mW, wave length: 650nm
Response time:	min. 0.1s, max. 4.5s
Pollution degree:	4
Device designation according to EN 60947-5-1/2:	T3A42SS1
Supply voltage, U_e:	24VDC ±10%
Absolute maximum supply voltage, U_m:	30VDC
Current consumption:	70mA
Maximum power dissipation:	2.4W
Typical measuring accuracy:	±3.0 mm @ 2σ
Typical measuring repeatability:	±0.8 mm @ 2σ
Analog current output, type:	PNP, 4mA a 20mA, short circuit protected
Analog current outputs, operating range:	50mm to 4000mm (50mm = 4mA, 4000mm = 20mA)
Analog current output, error indication:	3.5mA: Measurement invalid 20.5mA: Object out of measurement range
Analog current output, resolution:	1mm = 0,004mA
Analog current output, load range:	500R <= R_L <= 1000R
Serial interface, type:	RS 485, Format: 9600 baud, 8 data bits, 1 stop bit, Parity none, Handshaking none
Serial interface, range:	0.05m to 30m
Serial interface, resolution:	1mm
Input type:	START Input, PNP compatible
Input function:	'H' +24VDC: Starts measurement, 'L' 0V: Stops measurement
Power up delay time:	500ms
Housing:	M42, Material: Stainless steel 1.4404
Laser lifetime:	Appr. 30000h, typically, at a housing temperature of +20°C. During continuous operation. Urgent recommendation: Apply 0V to the START-input, when no measurement is necessary
Connection cable:	Length: 10m, PUR jacket, 6+PE x 0.5mm2 , shielded, non-halogen, leads numbering marked, good chemical resistance, drag chain suitablee [3] [3] The maximum cable length of L_{max} = 100m from sensor to control cabinet must not be exceeded.
Accessories:	2x nuts M42 (included)
Electrical connection: Wire number Function 1 24VDC 2 0V 3 START-Input (+24VDC active) 4 Current output: PNP, 4mA to 20mA 5 RS 485 - Y 6 RS 485 - Z yellow-green PE white Cable shield