Laser Distance Meter LASER CLASS 2

ANALOG OUTPUT and SWITCHING PROGRAMMABLE RS232 - RS422 - Profibus DP

other models: LS112FA - LS121FA - LS122FA





LS11 - 12 FA series has been designed and manufactured for distance measurements ranging from 0,1m up to 100m on natural targets and ranging from 50 to 150 m on retro-reflectors. The measurement is based on the comparative phase principle, using the shift between emission phase and the back-reflection phase.

Installation and mounting are extremely user-friendly. Power supply can range from 10 to 30 VDC, with very low consumption. Four 6.6 mm \emptyset holes are provided for the mounting. The red visible laser spot guarantees an immediate alignment.

RS422 interface is purposely used to take the digital signal over greater distances. On the back cover a connector is designated for power supply and signal connection.

This laser series is equipped with 4-20 mA analogue output and a threshold alarm, adjustable on the whole measuring range.

Main Characteristics:

Laser class 2, visible red, 1 mW

Measuring range 100 m

Minimum distance 100 mm

Resolution 0,1 mm

Repeatability: ±0,5 mm for the first 7meter at 6Hz

±1,5 mm from 7 to 100 meter at 6Hz

Measurement frequency: 50 Hz for LS121FA - LS122FA,

10 Hz for LS111FA - LS112FA

Aluminum housing, IP65

Trigger input for external control of measurement

Interface RS232 / RS422

Interface Profibus DP on request

Programmable analog output, 4 – 20mA

Digital output 1 x 0,5 A with programmable hysteresis

Power supply 10 - 30 Vdc

Main technical features:

Laser class	650 nm, visible, laser class 2, conforming to standard IEC825-1/EN60825, class II (FDA21 CFR)
Laser power	<1mW
Laser divergence	0,6mrad
Diameter of spot laser	<6mm at 10m
	<30mm at 50m
	<60mm at 100m
Measuring range ¹	0.2 m to 50 m with natural surfaces
	more than 100 m if target reflectance high enough
Resolution	0,1mm
	\pm 3 mm (15 °C35 °C), \pm 2 mm for distance range from 0.1 m
Measuring accuracy:	to 30 m under defined measuring conditions.
	Max.: ± 4 mm (across full temp. range and for any type of
	surfaces)
Repeatability	±0,5mm
Sample frequency	6Hz in standard mode measuring any type of surface.
	10Hz on light surface (LS111FA - LS112FA)
	50Hz on light surface (LS121FA - LS122FA)
Max. target motion speed	5m/s (only for LS121FA - LS122FA)
Max acceleration of target	2,5m/s2 (only for LS121FA - LS122FA)
Connector	12-pole M18 flange-mount connector (Binder series 723)
Power supply	10 - 30Vcc
Power consumption	<1,5W
Serial interfaces	RS232 for LS111FA - LS121FA
	RS422 for LS122FA - LS112FA
	9600 / 38400 8,n,1 ASCII
Baud rate	9,6 kBaud (2,4/4,8/19,2/ 38,4 kBaud selectable)
Data bits	8
Parity	none
Stop bit	1
Handshake	none
Protocol	ASCII
Digital output	HIGH = UV - 2 V, LOW < 2 V, rated for loads up to 0.5 A,
	switching threshold and hysteresis selectable, can be
	inverted
Analog output	4 mA20 mA, distance range limits can be set, behavior on
	error report can be preselected
	Load resistance: <t 500="" against="" gnd<="" ohm="" td=""></t>
	Accuracy: ± 0.15 %
	Max. temperature drift: 50 ppm/K

	Trigger voltage 3 V 24 V
	Trigger threshold + 1.5 V,
	Trigger flank to start of measurement preset at 5 ms + delay
Trigger input	time
	Trigger pulse length >1ms
	Delay time (trigger delay) selectable from 0 ms to 9999 ms
	Trigger flank selectable
Operating temperature	-10 °C +60 °C
Storage temperature	-20 °C +70 °C
Internal protection class	IP65

¹ conditional on target reflectance, ambient light influences and atmospheric conditions

Dimensions

The laser distance meter type LS111FA is supplied with a M18 connector, corresponding 2 m long interface cable and English instruction manual in a rugged foam-padded cardboard box suitable for transport.

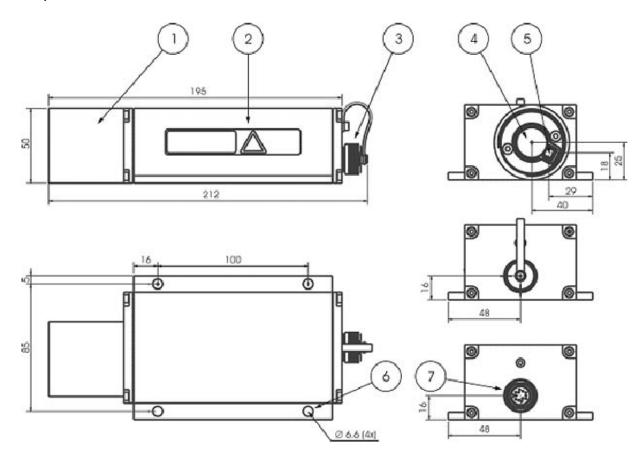


Fig. 2 - technical drawing

- **1** Equalizer tube at front cover
- 2 Casing
- **3** Protective cap for flange-mount connector
- **4** Receiver optics
- **5** Sender optics
- **6** Mechanical mounting holes (four)
- **7** 12-pole M18 flange-mount connector (Binder series 723)

Accessories

• LS-Xx

Software of parameterization with graphical functions



• CRA-LS111

Cooling jacket with air



• CRF-LS111

Cooling jacket with air + water



• CRX_3-LS

Cooling jacket with air + water for extreme environments



• LS111FA Ex

Execution EExd II CT6.
EN 50014, EN 50018, EN 50281-1-1 (approved ATEX)



• AB7000/LS111

Interface PROFIBUS- DP



CABLES

Cables 5 and 10 meters are available with 12-pin female connector M16.