mm FDRF600 Series

Description

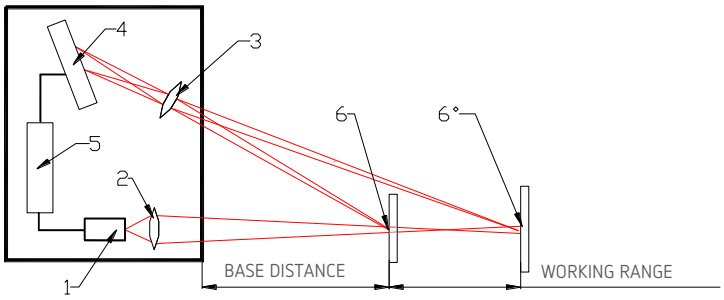
The sensors are intended for non-contact measuring and checking of position, displacement, dimensions, surface profile, deformation, vibrations, sorting and sensing of technological objects as well as for measuring levels of liquid and bulk materials.

The series includes 13 sensors with the measurement range, from10 to 2500 mm and the base distance from 230 to 1 mm. The Series is divided into 3 groups. The first group includes the sensors with large bases and short measurement ranges, second group includes sensors with medium bases and ranges and the third group is the sensors with long ranges.

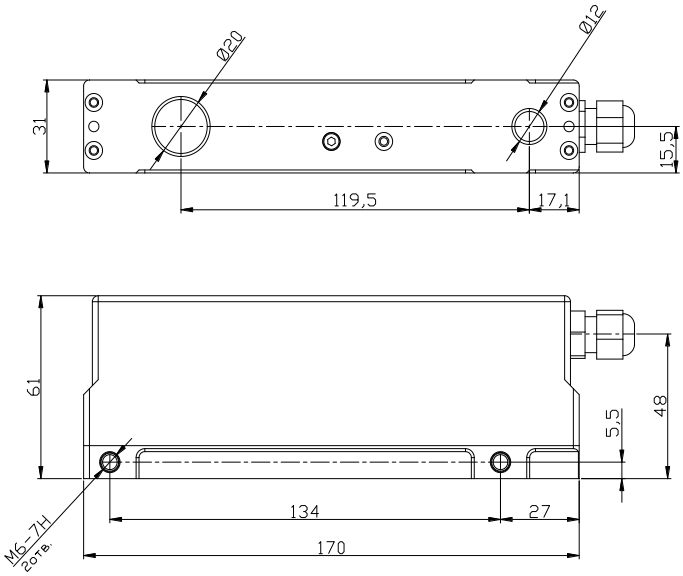
There are two options of laser mounted in the sensor, RED or BLUE laser. The use of blue lasers instead of conventional red lasers greatly enhances capabilities of the sensors, in particular, for such uses as control of high-temperature objects and organic materials. Custom-ordered configurations are possible with parameters different from those shown below.

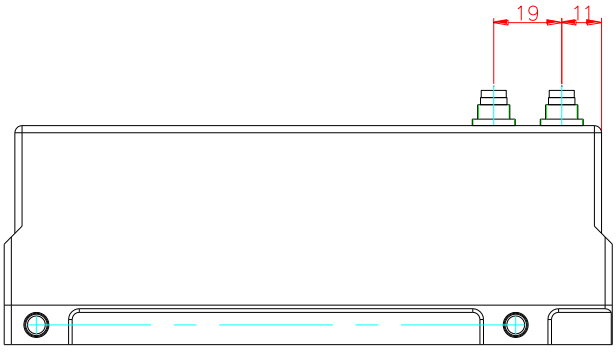
Features

- Up to 2.5 m range in a compact sensor
- Varied offset distances for custom applications
- Available in Blue diode wavelength for measuring hot objects



Dimensions





10.2015 | version 20130430

Basic technical data

FDRF600-	X/10	X/30	X/40	X/100	X/250	X/500	X/600	X/1000	X/1000	X/1500	X/2000	X/2500
Base distance X, mm	230	300	330	500	230	300, 1000	230	1300	380	390	410	420
Measurement range, mm	10	30	40	100	250	500	600	1000	1000	1500	2000	2500
Linearity, %	±0.05 of the range										±0.1	
Resolution, %	0.01 of the range (for the digital output only)										0.03	
Temperature drift	0,02% of the range/ °C											
Max. measurement frequency, Hz	9400											
Light source	red semiconductor laser, 660 nm wavelength or UV semiconductor laser 405 nm wavelength (BLUE version)											
output power	≤4,8 mW										≤20 mW	
laser safety Class	3R (IEC60825-1)										3 (IEC60825-1)	
Output interface: digital	RS232 (max. 460,8 kbit/s) or RS485 (max. 921,6 kbit/s) or RS232 and CAN V2.0B (max 1Mbit/s) or Ethernet and (RS32 or RS485)											
Output interface: analog	4...20 mA (500 Ω load) or 0...10 V											
Synchronization input	2,4 – 5 V (CMOS, TTL)											
Logic output	programmed functions, NPN: 100 mA max; 40 V max for output											
Power supply, V	9 ...36											
Power consumption, W	1,5..2											
Environment resistance: Enclosure rating	IP67 (for the sensors with cable connector only)											
Environment resistance: Vibration	20g/10...1000Hz, 6 hours, for each of XYZ axes											
Environment resistance: Shock	30 g / 6 ms											
Environment resistance: Operation temperature, °C	-10...+60, (-30...+60 for the sensors with in-built heater)											
Environment resistance: Permissible ambient light, lx	30000											
Environment resistance: Relative humidity	5-95% (no condensation)											
Environment resistance: Storage temperature	20...+70 , °C											
Housing material	Aluminum											
Weight (without cable)	500 gram											

10.2015 | version 20130430

Ordering information

FDRF600(BLUE)(-X/D(R)-SERIAL-ANALOG-IN-AL-CC(90X)(R)-M-H

Symbol	Description
(BLUE)	Blue (405 nm) laser option
X	Base distance (beginning of the range), mm
D	Measurement range, mm
SERIAL	The type of serial interface: RS232-232 or RS485-485 or (CAN and RS232) - CAN, or (Ethernet and RS232) – ET-232 or (Ethernet and RS485) - -485
ANALOG	Attribute showing the presence of 4...20 mA (I) or 0...10V (U) Note: 1) I output – only for sensors with RS232 or RS485 2) U output – only for sensors with RS232 or RS485 or CAN
IN	Trigger input (input of synchronization) presence
AL	User programmed signal, which has several purposes. It can be used as 1) logical output (indication of run-out beyond the range); 2) line of mutual synchronization of two and more sensors 3) line of hardware zero setting 4) hardware laser switch ON/OFF
CC(90X)(R)	Cable gland - CG, or cable connector - CC (Binder 712, IP67) Note 1: sensors with CAN or Ethernet interfaces have 2 connectors and are available with cable connectors only (CC only). Note 2: 90(X) option – angle cable connector Note 3: R option – robot cable
M	Cable length, m
H	Sensor with in-built heater

Example. FDRF600-380/1000-232-I-IN-AL-CCR90A-3 – sensor with base distance – 380 mm, range – 1000mm, RS232 serial port, 4...20mA analog output, trigger input and AL input are available, cable connector, angle type, position "A", robot cable, 3 m cable length.

10.2015 | version 20130430