FDRF600 Series Laser Displacement Sensors

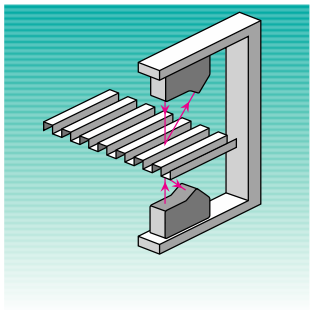
Laser displacement sensors are used for non-contact measurement of displacement, speed, acceleration, vibrations, deformation and profiles in static and dynamic applications in the research and industry to improve quality and save costs.

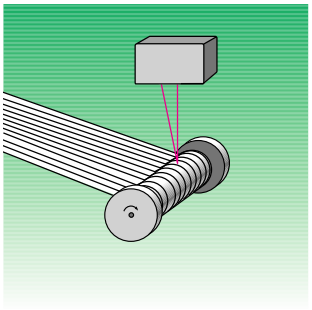
The measurement ranges vary from 2mm up to 1000mm. And with blind ranges from 10mm up to 245mm you can mount the sensor at a save distance from the moving target.

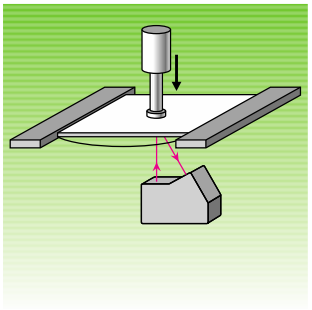
Due to the non contact measurement you can avoid, force on the target and wear of both target and sensor surfaces. Due to the fact that the laser spot does not have mass, it follows the target at the same speed.

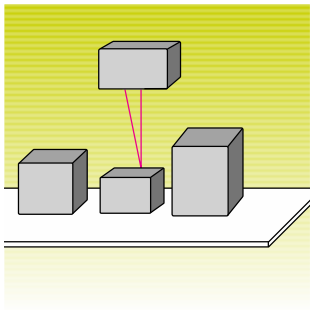
Features

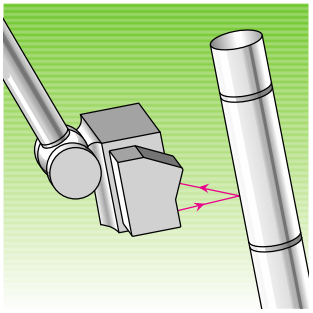
- Safe distance to target
- Non-contact
- Non-wear
- Non-force
- Fast, non-mass laser spot





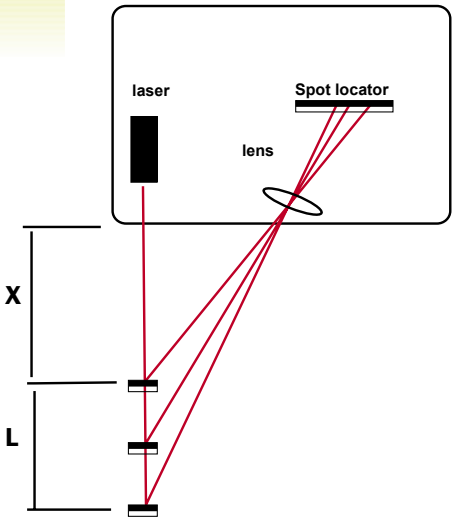






FDRF605

FDRF603



FDRF600

FDRF603

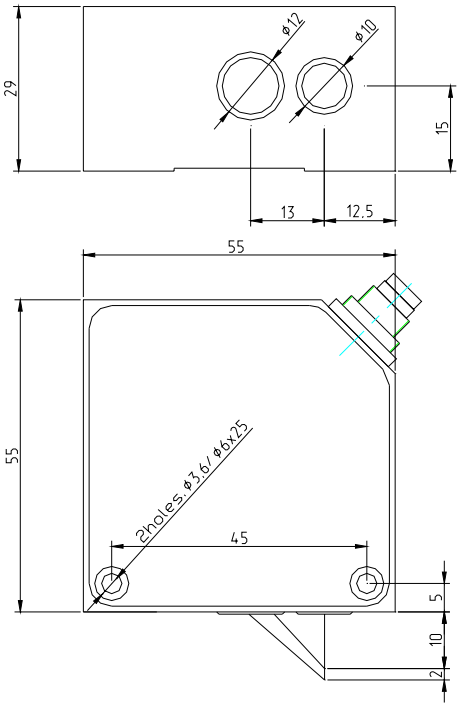
fast and ranges: 2mm up to 1000mm

Specifications

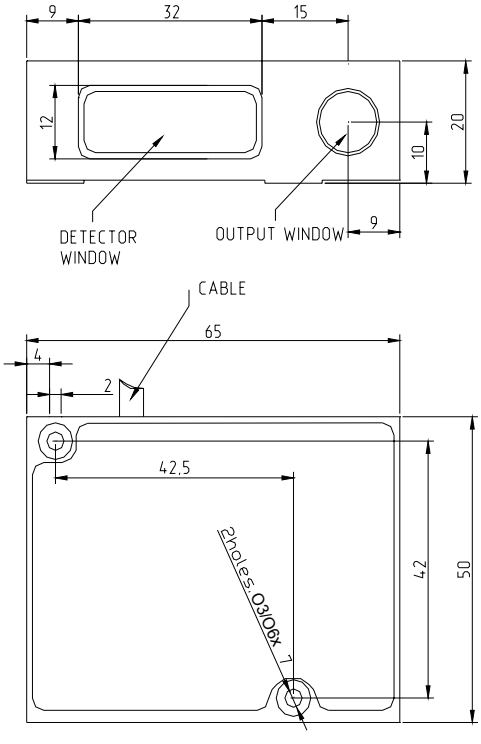
		X/2	X/5	X/10	X/15	X/25	X/30	X/50	X/100	X/250	X/500	X/750	X/1000
Blind distance, X, mm		10	15	15, 25 55	15, 30 60	25, 45 80	35, 55 95	45, 65 105	60, 90 140	80	125	145	245
Working range, mm		2	5	10	15	25	30	50	100	250	500	750	1000
Linearity, %		±0,1of the range										±0,2…0,3	
Resolution, %		0.01 of the range										0,03	
Maximum sampling rate, kHz		2 or 5 or 8											
Laser type		1…3 mW, wavelength 660 nm									5mW, 660 nm		
Output signal	digital	RS232 (460,8 kbit/s max) or RS485 (460,8 kbit/s max) or RS232 and CAN V2.0B (1 Mbit/s) or CANopen											
	analog	4…20 mA (≤500 Ω load) or 0…10 V											
Synchronization input		2,4-5 V (CMOS, TTL)											
Power Supply, V		5 (4,5…9) or 12 (9…18) or 24 (18…36)											
Alarm output		NPN: 100 mA max; 40 V max											
Power consumption, W		1,5…2											
Enclosure rating		IP67											
Operating temperature, °C		-10…+60, (-30…+60 for the sensor with built-in heater), (-30…+120 for the sensors with cooling housing)											
Weight (without cable), g		100											

Note: All specifications apply for a diffusely reflecting white paper

Dimensions



FDRF603 - 10/2



FDRF603 - others

FDRF600

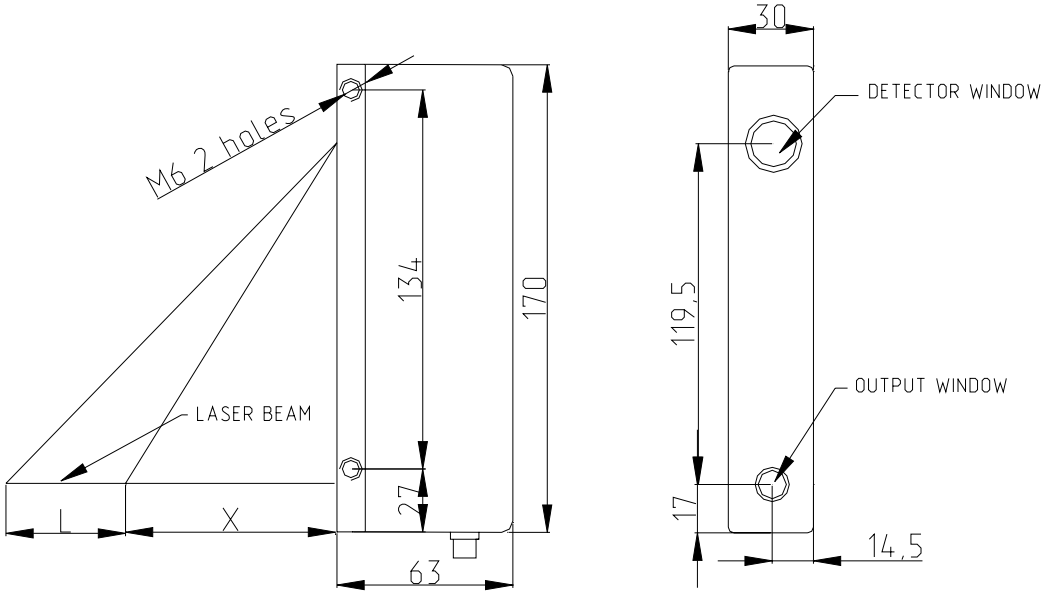
fast and long ranges: 250mm up to 2000mm

Specifications

		230/250	300/500	230/600	350/1000	1300/1000	380/2000
Blind distance, X, mm		230	300	230	350	1300	380
Measuring range, S, mm		250	500	600	1000	1000	2000
Measurement error		±0.1%…0.15% of the range		±0,2…0,3%			
Resolution		0.03% of the range		0.05%			
Maximum sampling rate, Hz		2000				8000	2000
Laser type		5mW, wavelength 660 nm					10mW
Output signal	digital	RS232 (460,8 kbit/s) or RS485 (460,8 kbit/s) or RS232 and CAN (1 Mbit/s) or CANopen					
	analog	4…20 mA or 0…10 V					
Trigger input		2,4-5 V (CMOS, TTL)					
Alarm output		NPN: 100 mA max; 40 V max					
Power Supply, V		5 (4,5…9) or 12 (9…18) or 24 (18…36)					
Power consumption, W		1,5…2					
Enclosure rating		IP67					
Operating temperature, °C		-10…+60 (-30…+60 for the sensor with built-in heater)					
Weight, g		500					

Note: All specifications apply for a diffusely reflecting white paper

Dimensions



FDRF605

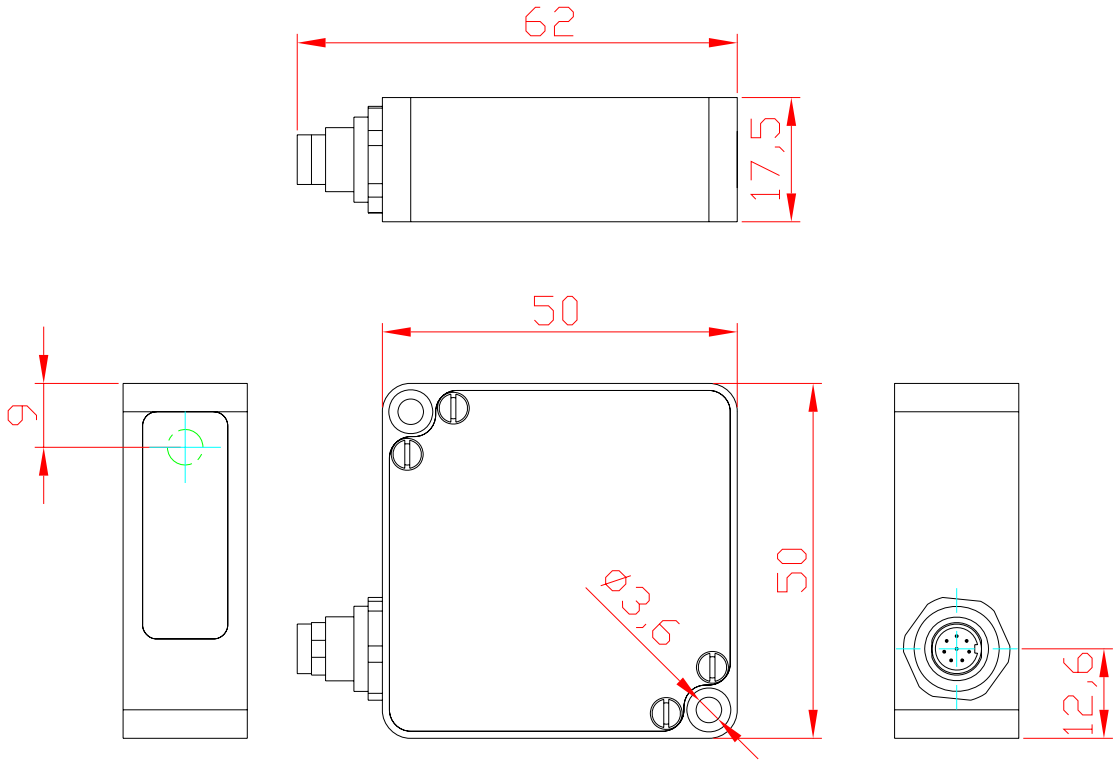
inexpensive and ranges: 50mm up to 500

Specifications

		25/50	45/100	65/250	100/500
Blind distance, mm		25	45	65	100
Working range, mm		50	100	250	500
Linearity, %		±0.2 of the range			
Resolution, %		0.03 of the range			
Maximum sampling rate, kHz		2			
Laser type		<1 mW, 660nm			
Output signal	digital	RS232 (kbit/s max) or RS485 (kbit/s max)			
	analog	4…20 мА (≤500 Ω load) or 0…10 В			
Synchronization input		2,4 – 5 В (CMOS, TTL)			
Power Supply, V		24 (9…38)			
Alarm output		NPN: 100 mA max; 40 V max			
Power consumption, W		<1			
Enclosure rating		IP67			
Operating temperature, °C		-10…+60			
Weight (without cable), g		70			

Note: All specifications apply for a diffusely reflecting white paper

Dimensions



Ordering info

FDRF603 / FRF600

Symbol	Description
F	maximum sampling rate , kHz (2 or 5 or 8)
X	base distance (beginning of the range) in mm
L	operating range in mm
SERIAL	type of the serial interface (RS232 or RS485 or RS232&CAN)
OUT	attribute showing the presence of Current Loop (I) or U output
IN	trigger input (input of synchronization)
AL	This signal is of triple purpose. It can be used as: 1) logical output; "0" – object is beyond the (selected) range "1" – object is within the (selected) range 2) line of mutual synchronization for two and more sensors 3) line of hardware zero setting
VV	supply voltage
CC	Connection: CG (Cable gland) or CC (socket + cable with connector, Binder 702, IP67)
M	Cable length in m
H	Sensor with built-in heater
P	Sensor with protect air cooling housing (See annex # 1)

For example:
FDRF600-230/250-232-I-12-CC-5 – blind distance – 230 mm, range – 250 mm, serial port - RS232, current output available, supply voltage 12V (9…18V), connector, 5 m cable length.

FDRF605

Symbol	Description
X	base distance (beginning of the range) in mm
L	operating range in mm
SERIAL	type of the serial interface (RS232 or RS485 or RS232&CAN)
OUT	attribute showing the presence of Current Loop (I) or U output **Note:** only for the sensors with RS232 or RS485
IN	trigger input (input of synchronization)
AL	This signal is of dual purpose. It can be used as: 1) logical output; ("0" – object is beyond the range (beyond the selected window in the range), "1" – object is within the range (within the selected window in the range)) 2) line of mutual synchronization for two and more sensors
CC	Cable gland – CG or socket + cable - CC (Binder 702, IP67,)
M	Cable length in m

For example:
FDRF605-65/250-232-I-CC-3 –base distance – 65 mm, range – 250 mm, serial port - RS232, 4…20 mA output available, socket + cable, 3 m

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