

Time of flight LASER DISTANCE MEASUREMENT



Dilas FT

FT4200

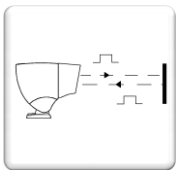


Measurement up to 500 m

Measurement on target up to 2462 °F

Fast sampling time

Design for steel industry conditions



Lt 1425



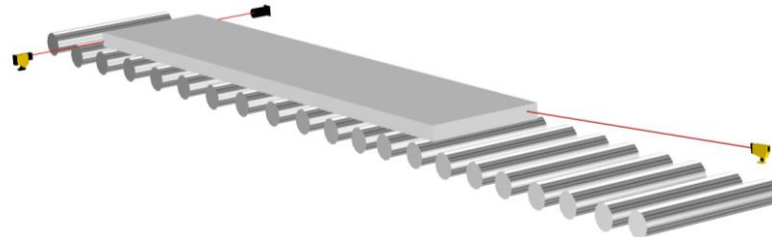
Features and benefits

The **Dilas FT4200** is a digital, high performance, non-contact laser measurement sensor. The target may be hot or cold, stationary or moving. **Dilas FT4200** measures on all non-shiny surfaces.

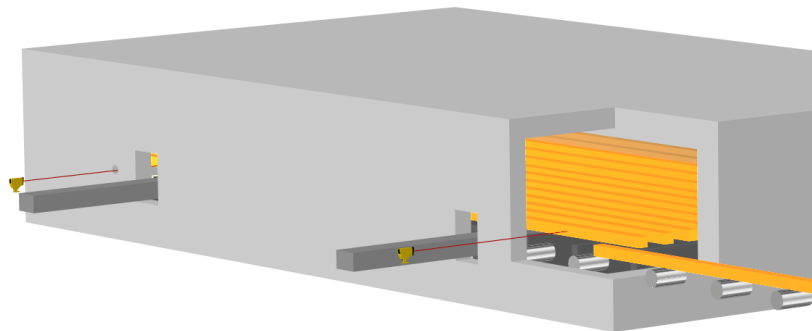
- Measurement range up to 500 m directly on the target
- Measurement on hot products up to 2462 °F
- High power infrared laser
- Fast sampling time
- Accuracy: ± 20 mm
- Laser pointer (class 2)
- Communication possible through Profibus-DP
- Sensor configuration with PC software
- Autonomous sensor: ready to use, no calibration required
- Water cooling and air purging for the steel industry

The **Dilas FT4200** can be easily configured for optimal measurement depending on the application. A configuration software running under Windows operating system is used to quickly and easily view the readings and the status of the sensor, and a graphical user interface makes it simple to setup the sensor. Connection is made via USB.

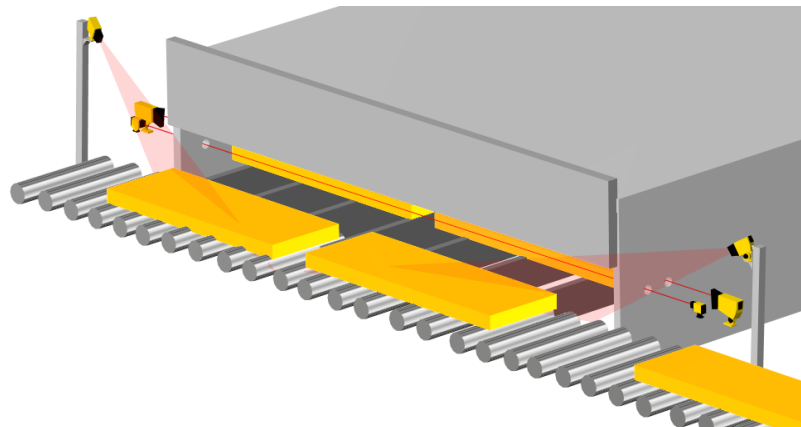
Typical applications



Position – Length measurement of a slab or bloom



Position control – discharging of reheat furnace



Detection of slabs (2 rows) and position control – discharging of reheat furnace



Presentation

The **Dilas FT4200** is an autonomous sensor mounted in cast aluminium housing. A hood for protecting the window glass is fitted with an air-jet facility to blow a vertical air curtain in front of this glass. The case is mounted on a cooling plate including a stainless steel pipe and fixed to a mounting stand, adjustable in two axes. The electrical connection is made via a connector. The sensor is delivered already equipped with the corresponding plug with silicone-armoured cable (2 m standard length).

Operating principle

The operation of the **Dilas FT4200** is based on time of flight measurement. The sensor calculates the distance of the target surface using the time of flight of infrared laser pulses.

Technical characteristics

Measuring Range (1)	0.5 – 500 m
Accuracy	±20 mm typical
Maximum target temperature	2462 °F
Sampling time	User configurable min 0.25 ms For typical application in Average mode with 100 samples: 25 ms

(1) Distances are referred to the front plan of the sensor (see dimensions)

Outputs

Model	FT4207	FT4227
Measurement output (1)	4 - 20 mA (250 Ω max.)	
Communication protocol	Serial link (RS485 - Isolated)	Profibus-DP
Digital output: Product presence (2)	Relay: Single pole changeover, Switching capacity: 230 V a.c. – 2.5 A a.c.	
Digital output: Sensor OK (3)	Relay: Normally Open contact, Switching capacity: 230 V a.c. – 2.5 A a.c. Sensor OK: contact closed. Alarm or Power Off: contact open	
Configuration port	Serial link (RS232) M12 connector Sensor supplied with 1 m cable with 9-pin sub D connector for connection to PC	
Cable	Connector fitted with silicone cable with protective steel braid, Ø13. Standard length of 2 m (other length: 3, 5 or 8 m)	Connector fitted with silicone cable with protective steel braid, Ø19 (including IN and OUT Profibus cables). Standard length of 2 m (other length: 3, 5 or 8 m)

(1) Linearity 0.1% - Temperature drift: 50 ppm/°C. The measurement range for the analogue output can be set through the configuration port using PC configuration software. Set to 0 - 10 m by default.

(2) The product presence distance corresponds to the presence of a product within the measuring range (0 - 10 m default).

(3) Power supply, internal temperature over 131 °F, Error code

Other Data

Measurement laser	Class 1M (IEC 60825-1) / 905 nm Beam divergence: 3 mrad (30 cm @ 100 m)	
Laser pointer	Class 2 (IEC 60825-1) / 630 - 670 nm	
Operating voltage	110 V (-15%) to 240 V (+10%) - 50/60 Hz	24 VDC (10 - 28 VDC)
Power consumption	30 VA	20 W
Weight	9 kg	
Protection rating	IP 66 (cast aluminium case)	
Air Purging	Protection of the optic with clean air: 50 to 200 g/cm ² , 4 to 16 l/min	
Working temperature	0 °F to 140 °F without cooling. Up to 250 °F with water cooling: industrial quality water at about 77 °F, pressure 1-2 bar and flow 1-5 l/min	



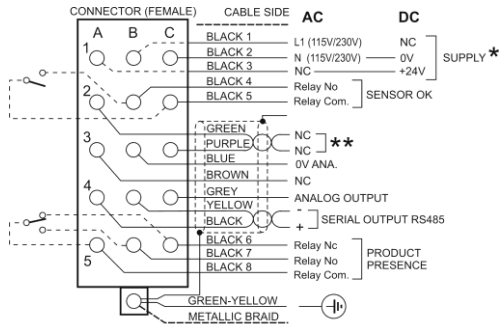
Laser Class 1M
Laser Class 2





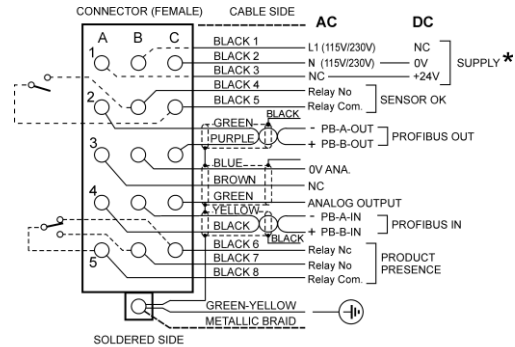
Connection

RS485



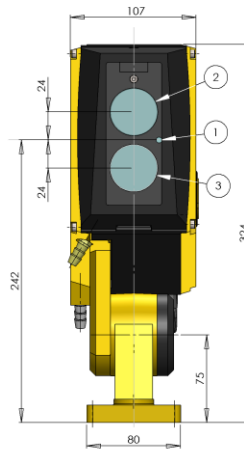
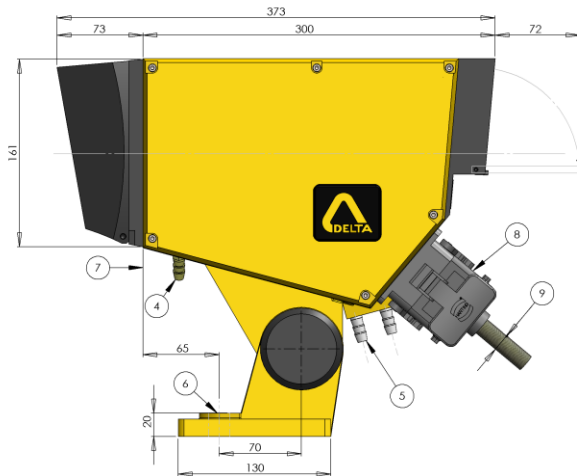
* NOTE : CABLE IS SUPPLIED WITH CONNECTIONS FOR THE VOLTAGE REQUESTED.
 ** DO NOT CONNECT TO ANY VOLTAGE.

Profibus DP



* NOTE : CABLE IS SUPPLIED WITH CONNECTIONS FOR THE VOLTAGE REQUESTED.

Dimensions



- ① Laser Pointer
- ② Receiver lens Ø 40
- ③ Infrared Laser lens Ø 40; Diverging angle: 3 mrad
- ④ Air Supply Ø 10
- ⑤ Water Supplies Ø 10
- ⑥ Mounting hole Ø 18
- ⑦ Measurement Reference
- ⑧ Connector Clearance 100 mm
- ⑨ Ø13: FT420•
Ø19: FT422•

Infrared Laser Beam minimum aperture:

at 1.5 m from the sensor: Ø 120 mm
 at 5 m from the sensor: Ø 150 mm

Reference for order

DILAS FT42•7

Protocol
 0 : RS485
 2 : Profibus-DP

Supply voltage
 24 VDC
 115/230 VAC

Example: FT4207 115/230 VAC

Accessories

- USB to RS232 interface, reference 7935577

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Subject to change without prior notice

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