

Time of flight LASER DISTANCE MEASUREMENT



Dilas FT

FT1500

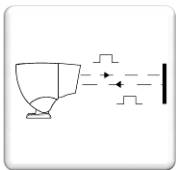


Long range - High temperature targets

High accuracy +/- 1mm

Easy setup on back panel

Design for steel industry conditions



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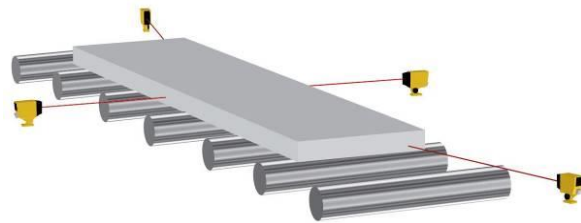


Features and benefits

The **Dilas FT1500** is a digital, high resolution, non-contact laser measurement sensor. The target may be hot or cold, stationary or moving. **Dilas FT1500** measures on all non-shiny surfaces.

- Measurement range: up to 50 m on natural surface, 500 m on reflective tape (see Accessories)
- Target temperature: up to 2370 °F
- Accuracy: up to ± 1 mm (1σ)
- Visible laser beam (class 2)
- Special modes optimized for Detection and Tracking
- Autonomous sensor: ready to use, no calibration required
- Integrated 5 digits display
- Easy sensor setup with pre-set distances selection or extended configuration
- Water cooling & air purging and optional heat shield (model FT1507- J•)

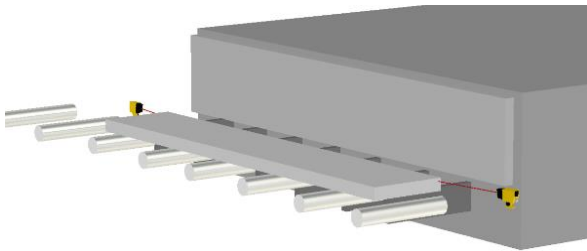
Typical applications



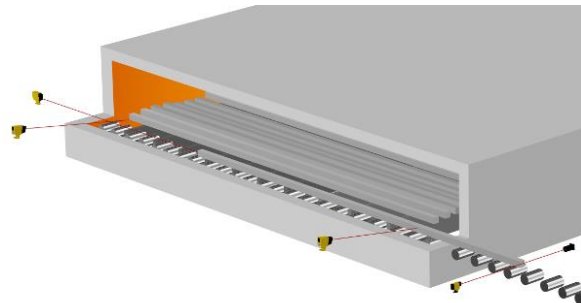
Slab dimension measurement



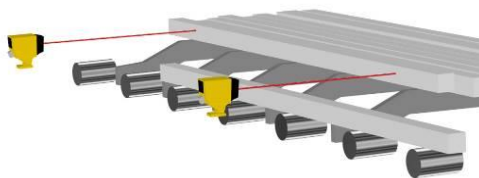
Billet length measurement



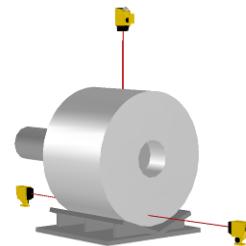
Furnace entry: slab position



Furnace entry: detection and position control



Position control



Position control – Width and diameter measurement



Presentation

The Dilas FT1500 is an autonomous sensor mounted in compact aluminium housing, IP66. The sensor can be ordered with mounting bracket or water cooling jacket. For electrical connection the sensor exists with terminal block or connector with prewired armored cable.

A digital display at the rear of the sensor indicates the distance. The measurement distance range can be easily selected with a rotary switch (3m / 5m / 7m / 10m / 20m / 30m) for most of the applications. Additional parameters such as Near & Far distances and measurement mode can be set for special applications.



Operating principle

The operation of the Dilas FT1500 is based on time of flight measurement. The sensor calculates the distance of the target surface using the time of flight of visible laser light pulses.

Performances

Sampling time	Target	Distance range	Accuracy (1σ) (2)
Auto mode (variable period, optimized for the measurement conditions)	black surface (6% remission)	0.15 to 20 m	+/- 1 mm
	natural surface, grey (13% remission)	0.15 to 50 m	+/- 1 mm
	white matt surface (80% remission)	0.15 to 100 m	+/- 1 mm
	reflective tape (1)	50.0 to 500 m	+/- 1 mm
50 - 100 - 200 - 500 ms	black surface (6% remission)	0.50 to 10 m	+/- 1 mm
	natural surface, grey (13% remission)	0.15 to 25 m	+/- 1 mm
	white matt surface (80% remission)	0.15 to 40 m	+/- 1 mm
10 - 20 ms	white matt surface (80% remission)	0.50 to 30 m	+/- 2.5 mm

Technical characteristics



Model	FT 1507
Maximum target temperature	2370 °F
Resolution	0.1 mm
Laser beam size	4 x 5 mm at 10 m / 6 x 7 mm at 50 m / 130 x 170 mm at 500 m
Laser (IEC 60825-1)	≤ 1 mW class 2, red, 635 nm
Measurement output (3)	4-20 mA (500 Ω max.)
3 Digital outputs:	PNP "High side" 0.1A: - PP (Product Presence): 24 V in product presence - CT (Control): 24 V when control activated (low margin) - AL (Alarm): 24 V when alarm activated (internal failure)
Display and setting	5 digits LED display + 2 status LED 2 rotary switches to: - choose between 6 preconfigured fields (3, 5, 7, 10, 20, 30 m) - select & adjust measuring range & mode
Operating voltage	10 to 30 VDC
Power consumption	< 10 W
Cable (model FT1507-•C)	Connector fitted with silicone cable with protective steel braid Standard length of 2 m (other length: 3, 5 or 8 m)
Weight	2.5 kg (FT1507-LB) - 3.0 kg (FT1507-JC)
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
Operating temperature	14 °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

(1) Reflective tape Oralite ® 5200 white 1x1 m

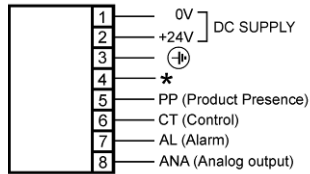
(2) Accuracy can be deteriorated by an intense ambient light, a reflecting or an absorbing surface, air turbulences.

(3) Total output error at 20 mA: + 0.15 % at a temperature of 25 °C.

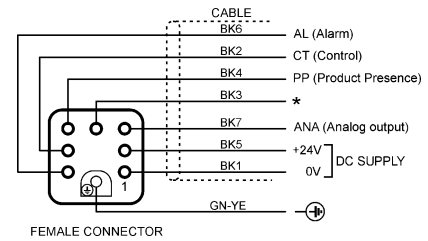


Connection

Terminal Block (FT1507-•B)



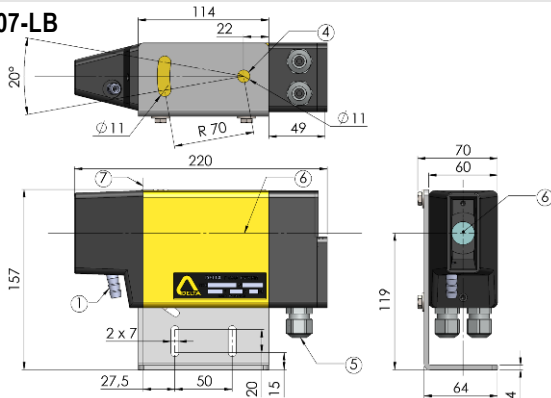
Connector (FT1507-•C)



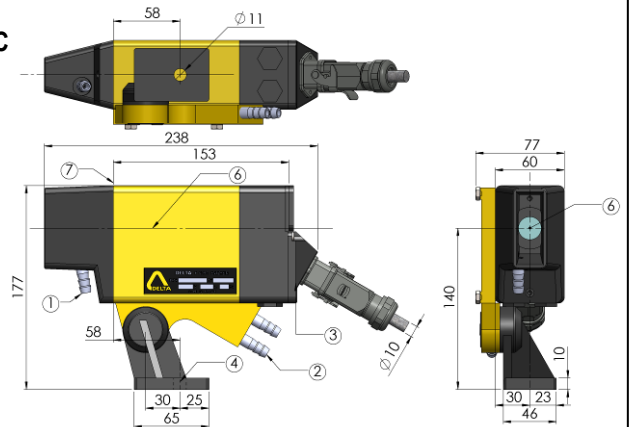
* Do not connect to any voltage

Dimensions

FT1507-LB



FT1507-JC



- ① Air supply Ø 10
- ② Water supplies Ø 10

- ③ Connector clearance 120 mm
- ④ Mounting with screw Ø 10

- ⑤ 2 cable glands (cable Ø from 7 to 10.5 mm)
- ⑥ Optical axis
- ⑦ Measurement Ref.

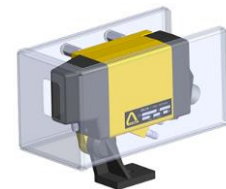
Reference for order

Case	Mounting	Connection
	L Bracket	B Terminal Block
	J Mounting stand & Cooling jacket	C Connector Cable length 2: 2 m (standard length) L= 3: 3 m 5: 5 m 8: 8 m

Example: FT1507-JC 24VDC L=2

Accessories

- Heat shield to protect from direct radiation, only for FT1507- J• models (ref. 7093146)
- Reflective tape Oralite © 5200 white 1x1 m (ref. 2636434)



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Subject to change without prior notice

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