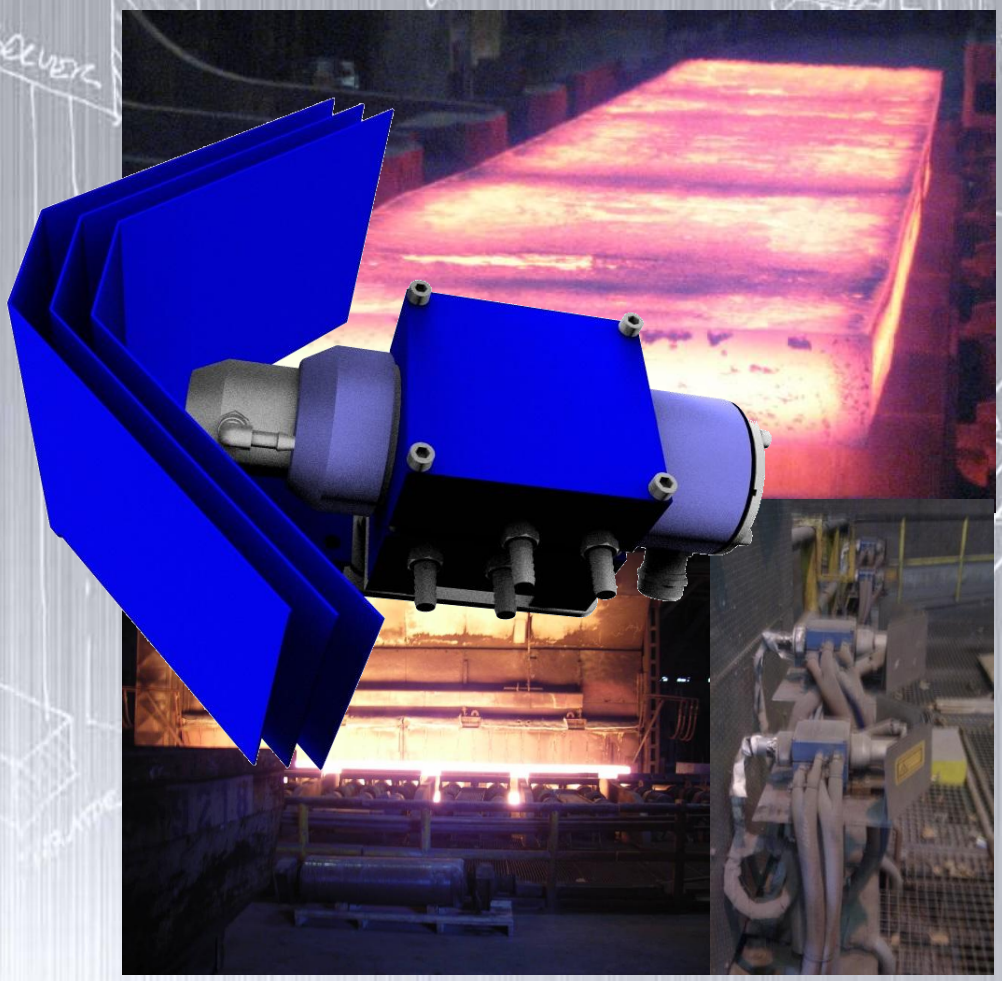
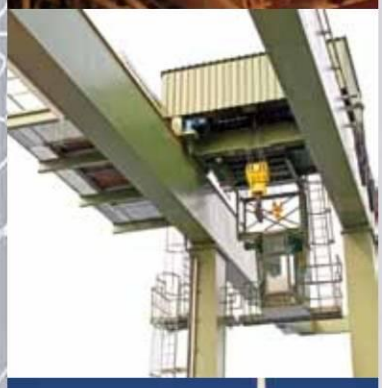
LOKE ENGINEERING
Kempf GmbH & Co. KG

FURNACE

LMC-FUR-50ST/HT

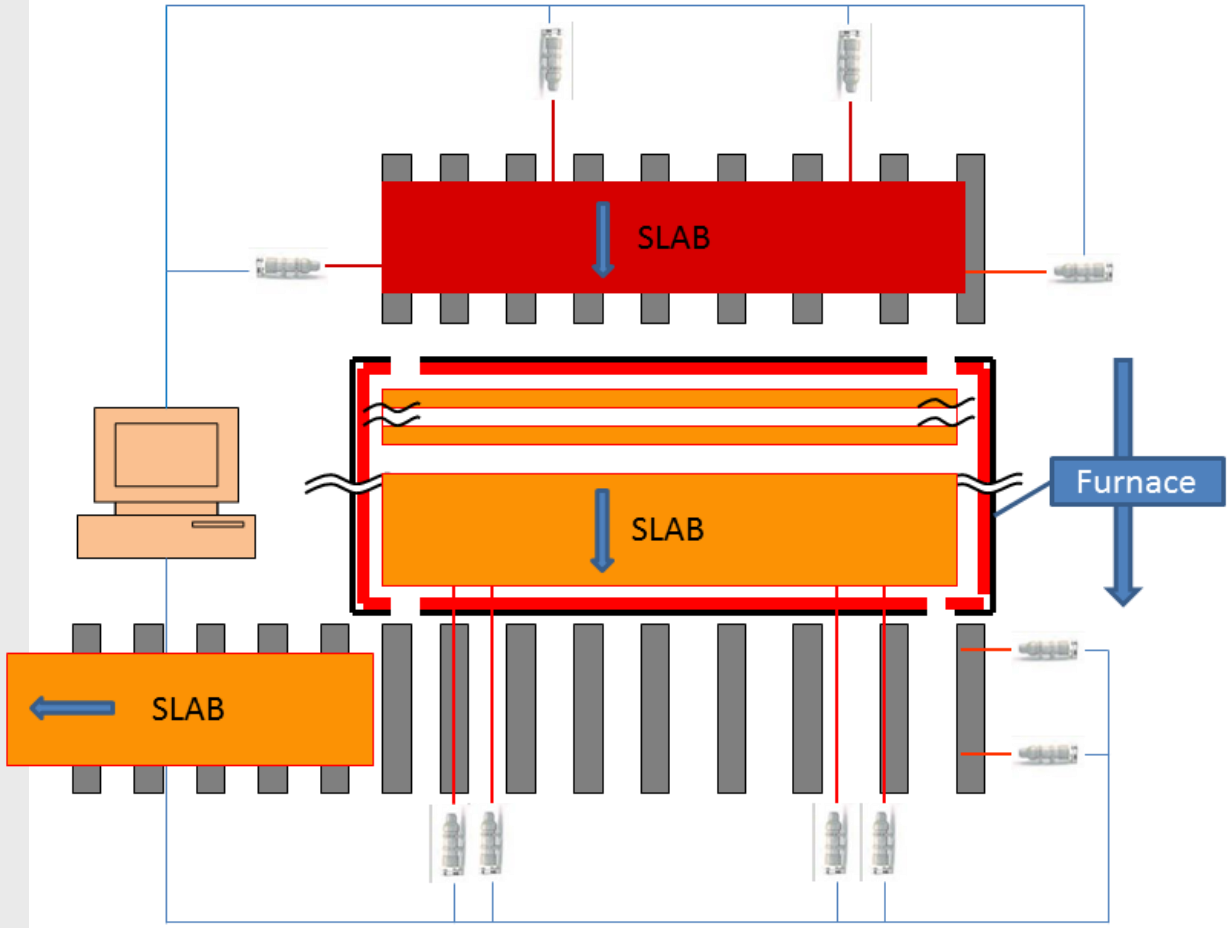
Best Hot Target Laser Distance Sensor Available



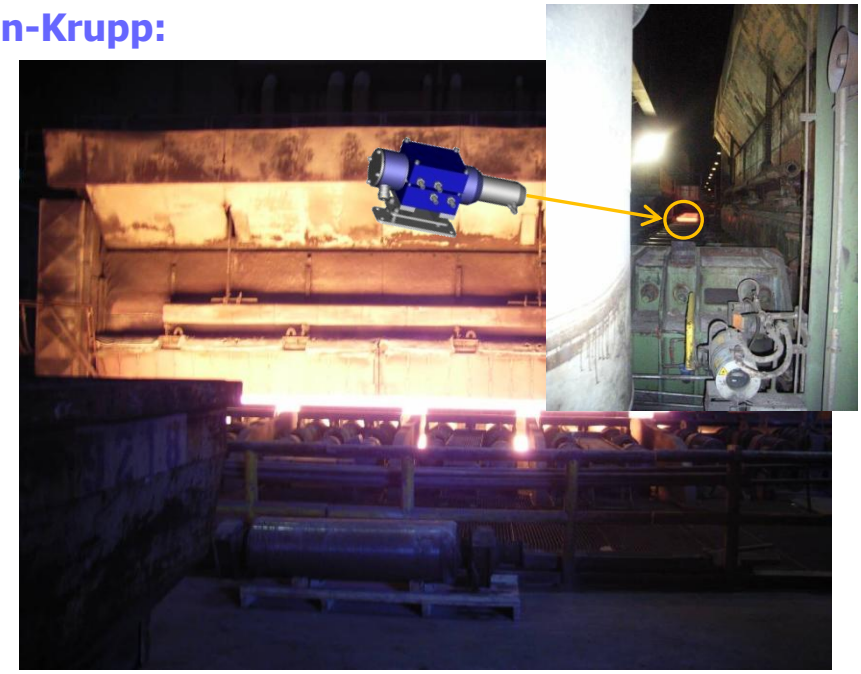


Experts for contactless measuring technologies

OUTSTANDING COMPACT LONGE RANGE DISTANCE SENSOR DESIGNED EXCLUSIVLY FOR HOT AREAS



Fork positioning at Thyssen-Krupp:



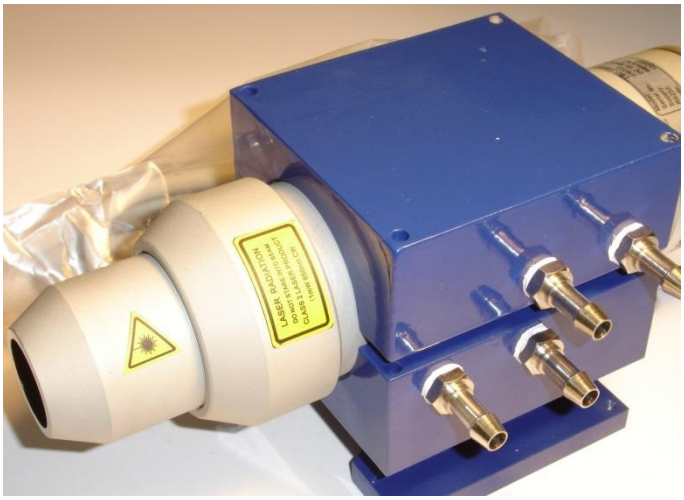
4x LMC-FUR-50HT ProfiBus Type Sensors measures directly inside furnace the slab position and alignment at 1350°C hot slabs at drop out side. Values are shown immediately after the furnace door opened. The discharge fork is positioned exactly according to the sensor datas.
Acc. to Thyssen-Krupp 100% of material position is detected

Also length is positioned with one more LMC-FUR-50HT.

Further more LMC-FUR-50 are used at inlet side for length positioning as well as charging positioning of the slabs.

LMC-FUR-50ST/HT
Laser Distance Measuring Device
up to 1450°C hot steel targets

Precise – Robust – Reflectorless



- **Made for target temperature up to 1450°C hot steel (HT)**
- **Measures distances within millimetre accuracy**
- **Detects movements**
- **Superb filtering functions**
- **100 Hz Output Rate**

The LMC-FUR-50ST/HT is an opto-electronic distance measuring module specially designed for ring rolling application.
The LMC-FUR-50ST works up to 900°C and the LMC-FUR-50HT until 1450°C target temperatures

The module operates on basis of non-contact comparative phase measurement with amplitude modulation. The Laser diode (cw operation) has a divergence of 0.6 mrad for measurement with pinpoint accuracy.

Depending on type, measuring output rate up to 100Hz possible. Filtering functions like measurement window, error and application specific value check.
The measuring range on steel surfaces can reach up to 30m (or more depending on target reflectivity).

The sensor alignment can be easily achieved with the help of the red pilot laser and the included 3-point, spring damped bracket which also improves the vibration protection of the gage.

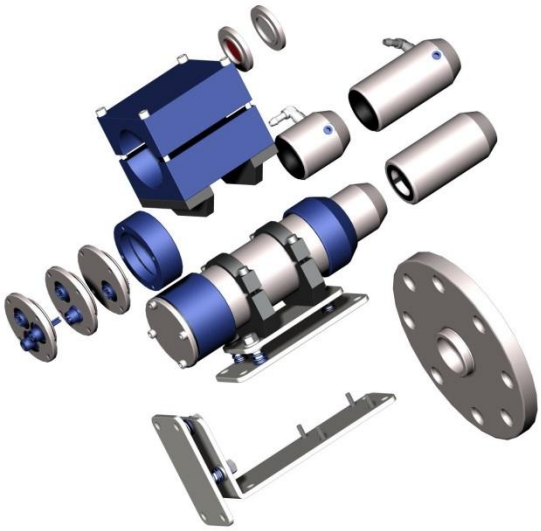
The standard includes also a water cooling jacket (depending on the conditions it can be used also as air cooling jacket) as well as an air-purged front tube.

Specifications:

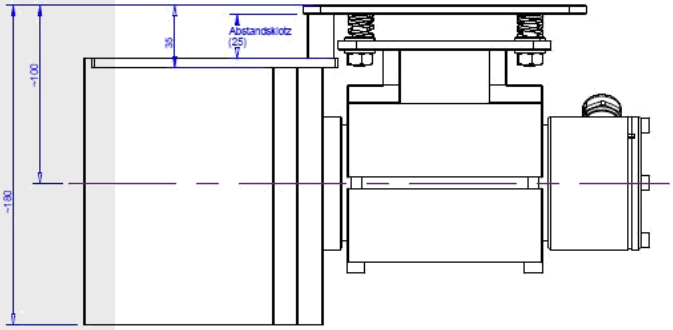
Measuring range:*1	0.2 to 30 m on natural targets
Measuring accuracy:*2	± 2 mm at temperatures up to 800°C ± 3 mm at temperatures up to 1450°C
Repeatability:	≤ ± 0,5 mm
Measuring resolution:	Depends on scale factor (1 mm / SF 1; 0,01mm / SF 100)
Measurement rate:	Depending on type max. 100 Hz
Laser divergence:	0.6 mrad
Laser classification:	ST ≤ 1 mW nach IEC 825-1, Laser Class 2 (650 nm) HT ≤ 5 mW nach IEC 825-1, Laser Class 3R (650 nm)
Interface:	Serial: RS232 or RS 422, Analogue Output 4…20 mA, Optional: EtherNet, WLan, ProfiBus, Bluetooth
Switching output:	1 digital
Temperature range:	-10 °C bis + 60 °C (-40° with heating, 120°C with water cooling)
Power supply:	10 - 30 VDC ; <2 W bei 24 VDC
Bracket:	Three-point bracket spring cushioned
Dimensions:	(260 x 100 x 150) mm (L x B x H)
Weight:	ca. 4,3 kg
Protection class:	IP 66
MTTF	50.000 h
*1	dependent on target reflectivity, stray light influences and atmospheric conditions
*2	statistical spread 95%. Depending also on environmental conditions

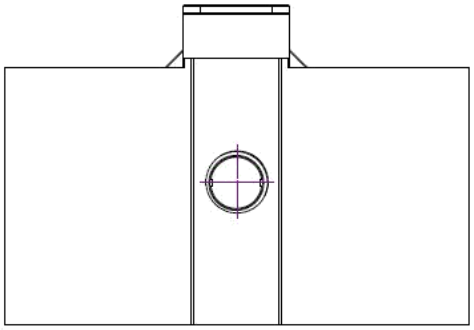
Options:

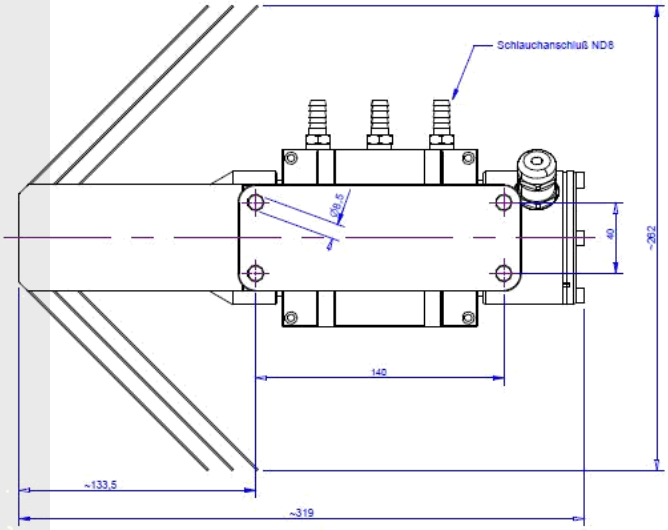
- Exchange Window
- Double long front tube for better dust and spray material protection
- Water cooling for temp. up to +120°C
- Heat shield
- Air Purge
- Heating for Temperatures down to -40 °C
- Plug versions
- ProfiBus, EtherNet, WLAN
- Custom made outputs, interfaces and housings

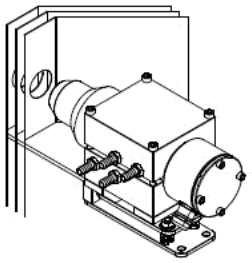


Dimenssions:









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