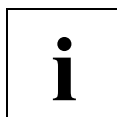
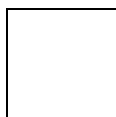
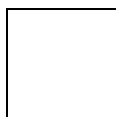
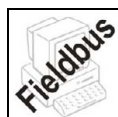


## Laser Measuring Device LLB-60-D (H) PB

Eglishalde 6  
 D-78647 Trossingen  
 Tel. +49 - (0) 74 25 / 228 - 0  
 Fax +49 - (0) 74 25 / 228 - 33  
<http://www.tr-electronic.de>  
 Germany



- PROFIBUS-DP interface
- Analog interface: 0...20 mA or 4...20 mA
- Detection of positions
- Non contact distance measurement
- Distance measurements on
  - natural surfaces : 0.05 up to approx. 65 m
  - reflective target plate : 0.05 up to approx. 500 m
- LLB60-00100, LLB60-00101: without heating
- LLB60-00110, LLB60-00111: with heating
- Programmable via PROFIBUS-DP

## Characteristics

Supply voltage.....	13...30 VDC
with heating.....	24...30 VDC
Current consumption without load .....	< 0.5 A
with heating.....	< 2.5 A
<b>Measuring range</b>	
on natural surfaces .....	typically 0.05...65 m
on reflective target plate .....	typically 0.05...500 m
Measuring resolution.....	0.1 mm
<b>Measuring accuracy</b>	
LLB60-00100, LLB60-00110.....	typically $\pm 1.5$ mm at $2\sigma$
LLB60-00101, LLB60-00111.....	typically $\pm 3.0$ mm at $2\sigma$
<b>Time for a measurement</b>	
Single measurement.....	typically 0.15...4 s
Tracking Mode.....	typically 0.15...4 s
Light source.....	Laser diode, red light
Wavelength $\lambda$ .....	620...690 nm
Laser protection class.....	2 accor. IEC 60 825-1: 2001 / FDA 21CFR 1040.10 und 1040.11
Beam divergence.....	0.16 x 0.6 mrad
Pulse duration.....	$0.45 \times 10^{-9}$ s
Radiant power.....	< 0.95 mW
Life time .....	> 50.000 h at 20 °C
PROFIBUS-DP according to IEC 61158, IEC 61784 <sup>1)</sup> .....	9.6 kbit/s...12 Mbit/s
Analog interface <sup>1)</sup> .....	0...20 mA, 4...20 mA, $\leq 500 \Omega$
Digital switching outputs.....	Open Drain, 30 VDC, 200 mA
2 Digital outputs for level control <sup>1)</sup> .....	programmable
1 Digital output.....	Device error
Digital input <sup>1)</sup> .....	external triggering
Switching level.....	1-level > +13V...< +30 V, 0-level < 2 V
Mass.....	950 g, 975 g with heating

<sup>1)</sup> programmable parameter

## Environmental conditions

### EMC

- Discharge of static electricity, DIN EN 61000-4-2: 2001
- Immunity to disturbance, DIN EN 61000-6-2: 2001
- Emission, DIN EN 61000-6-4: 2001

Working temperature ..... -10 °C...+50 °C, max. +45 °C in Tracking Mode

Working temperature with heating ..... -40 °C...+50 °C, max. +45 °C in Tracking Mode

Storage temperature ..... -40 °C...+70 °C, dry

Protection class, DIN EN 60529: 1991 <sup>2)</sup> ..... IP 65

<sup>2)</sup> valid with screwed on mating connector and / or screwed together cable gland

## Dimension drawing

