

Digital **MAURER** Pyrometer

KTRD 1485

Measuring range 550 to 4000 °C

UNIVERSAL DEVICE with Fiber Optic Cable



Performance, precision and reliability - you can count on **MAURER** pyrometers. Benefit from maximum adaptability by choosing the right optics, accessories and the appropriate interface. Thus our pyrometer fits perfectly into existing systems. For tight spaces, this pyrometer is equipped with a fiber optic cable and an attached optic system



The most important **features** and **characteristics** at a glance:

- Spectral range: 0,85 – 1,1 μm
- Short response time from **less than 1 ms** with dynamic adjustment
- **Emissivity** from 100 – 10 %, adjustable directly at the pyrometer or via interface
- **Green target light (LED)** that is exactly identical to the actual measuring spot in position and size
- With **fiber optic cable and optic system** for exact focusing even in narrow spaces
- Use with **digital and analogue output**
- **1 limit output** (open collector)
- Operating voltage **24 V DC**
- **Free software** (IR-LOG) for parameter setting, data recording and storage

Measuring Ranges

1. 550 – 1800 °C
 2. 600 – 1600 °C
 3. 600 – 2000 °C
 4. 650 – 3000 °C
 5. 1000 – 4000 °C
- Special measuring ranges upon request -

Scope of Applications

Processing of steel, iron, non-ferrous metal and wires, ceramics, glass tub, glass arching, as well as hardening, rolling, soldering, forging, welding, transforming, induction heating, vacuum furnace, etc.

Technical Data

Device type	KTRD 1485-1
Target marking	Light beam aiming device with LED (green)
Response time	< 1 ms, with dynamic adjustment
Spectral range	0,85 – 1,1 µm
Measurement uncertainty	0,5 % ± 1 °C (ε = 1, Tu = 23°C, T95 = 1 s)
Temperature dependence	0,05 % / °C
Reproducibility	0,1 % ± 1 °C (ε = 1, Tu = 23°C, T95 = 1 s)
Emissivity	100 – 10 %, adjustable directly at the pyrometer or via interface
Resolution	< 0,1 % at the analogue output < 0,1 °C at the interface
Operating / Storage temperature	0 – 50 °C, fiber optic cable and optics 150 °C / -10 °C – 70 °C 32 – 140 °F, fiber optic cable + optics 302 °F / 14 – 158 °F
Permissible humidity	35 – 85 % RH (non-condensing)
Analogue output	0 – 20 mA / 4 – 20 mA (Load max. 500 Ω)
Subranges	freely adjustable within measuring range
1 limit output (open collector)	24 V 100 mA
Interface	RS 232 ± 50 V isolated or RS 485 ± 70 V isolated Optional: PROFIBUS, PROFINET, Ethernet, EtherCAT, USB 2.0
Maximum value memory	Maximum memory, peak value memory double, adjustable time and threshold value, erasing after time, external contact, by software, after every measuring object
Supply voltage	24 V DC ± 10 %
Power consumption	< 100 mA
Device connection	12-pol. plug connector
Dimensions (LxHxW) / Weight	54 x 54 x 147mm / 0,55 kg without fiber optic cable
IP Code	IP65

Fiber optic cables

Quartz fiber optic cable in metal hose, ambient temperature max. 150 °C, minimum bending radius = 200 x fiber thickness. Both sides with FSMA-plug for connecting the pyrometer and the optic system. Custom-tailored lengths and other fibers available upon request.

Fiber thickness	For measuring range No.
Ø 0,6 mm fiber	1
Ø 0,4 mm fiber	2, 3, 4
Ø 0,2 mm fiber	5

Configurations

- High-Speed version: KTRD 1485-HS
- Built-in digital display on the backside of the pyrometer

Main Equipment

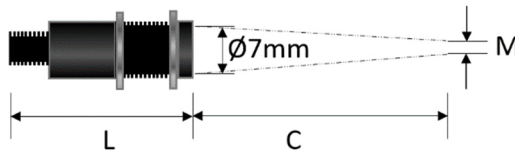
Electronic Equipment		Mechanical Equipment:	
Connection cables	Power Supply 100-270 VAC – 24 VDC	Objectives	Mirror 90° for beam deflection
Electronic process units	PC-Box (USB-connection set)	Mounting parts	Blowing devices

Optics for MAURER pyrometers with fiber optic cable

Optic systems

OVERVIEW

Fix-Focus
M12x1

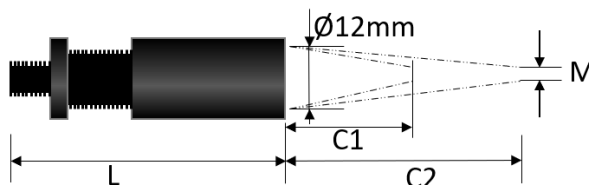


Legende

- L Length of optic
- C Measuring distance from optic front edge
- M Measuring spot size

Optics	C [mm]	L [mm]	Fiber Ø [µm]	M [mm]
VL 50-M 12	50	38	200	0,7
			400	1,4
			600	2,0
VL 100-M 12	100	40	200	1,0
			400	2,0
			600	3,0
VL 150-M 12	150	38	200	1,4
			400	2,7
			600	4,0
VL 200-M 12	200	38	200	2,0
			400	4,0
			600	6,0

Vario-Focus
Ø 18 mm

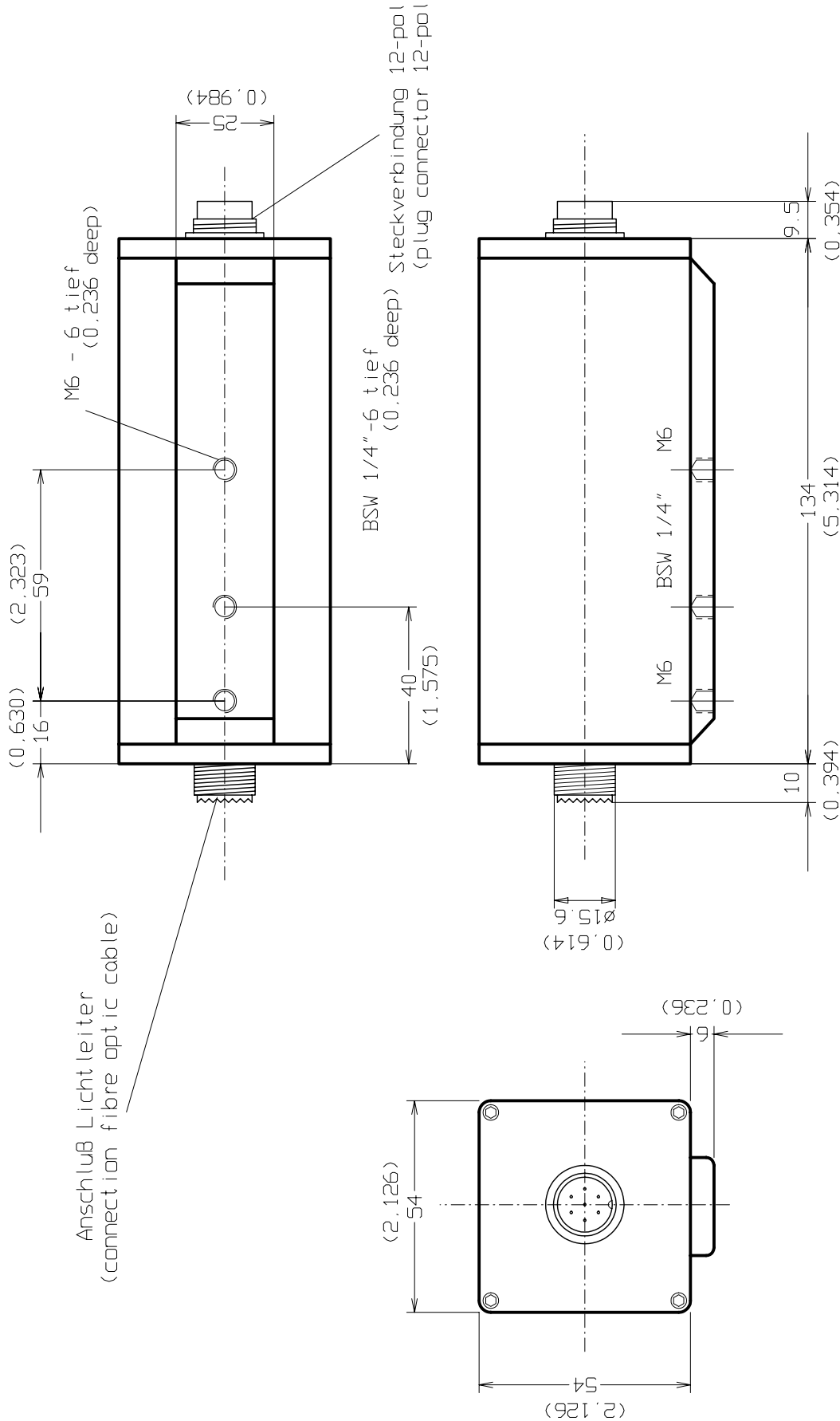


Legende

- L Length of optic
- C Measuring distance from optic front edge
- M Measuring spot size

Measuring spot size M (mm) = $\frac{\text{Measuring distance (mm)}}{\text{distance ratio}}$ z.B. $\frac{C=150 \text{ mm}}{D=75} = \text{Ø } 2,00 \text{ mm}$

Optics	C1 [mm]	C2 [mm]	L [mm]	Fiber Ø [µm]	D Distance ratio
VL-VA N	65	160	46 – 56	200	138
				400	69
				600	46
VL-VA T	100	5000	46 – 56	200	150
				400	75
				600	50



(xxx) - Maße in Zoll
 (dimensions inch)

				Maßstab 1:1		Fa. Dr. Maurer GmbH	
						STANDARDGEHÄUSE (standard case) KTRD 1400	
						Blatt	
						Bl.	
Zust.	Änderung	Datum	Name	091103			