

Digital MAURER Two-Colour Pyrometer

QKTRD 1475

Measuring ranges 300 to 1700 °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: 1,4 – 1,75 μm and 1,6 – 1,75 μm
- Short response time from **less than 1 ms** with dynamic adjustment
- Emissivity slope from 0,8 – 1,2, 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. 300 – 1000 °C
2. 350 – 1300 °C
3. 400 – 1400 °C
4. 500 – 1700 °C

Special measuring ranges upon request
Subranges freely adjustable within measuring range

Scope of Applications

Processing of steel, iron, non-ferrous metal and wires, as well as rolling, soldering, annealing, hardening, forging, transforming, induction heating, etc.

Technical Data

Spectral range	1,4 – 1,7 µm and 1,6 – 1,75 µm
Target marking	Green target light (LED)
Response time	< 1 ms, with dynamic adjustment
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 slope	0,8 – 1,2, 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)
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 0,4 mm fiber	1-4

Configurations

- Built-in digital display on the backside of the pyrometer

Main Equipment

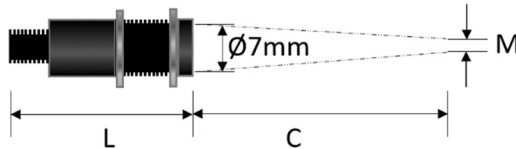
Electronic Equipment		Mechanical Equipment:	
Connection cables	Power Supply 100-270 VAC – 24 VDC	Objectives	Mirror 90° for beam deflection
Electronic process units	PC-Box (USB-connection set)	Mounting parts	Blowing devices

Optics for MAURER pyrometers with fiber optic cable

Optic systems

OVERVIEW

Fix-Focus
M12x1

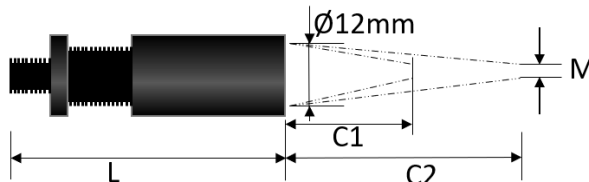


Legende

- 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

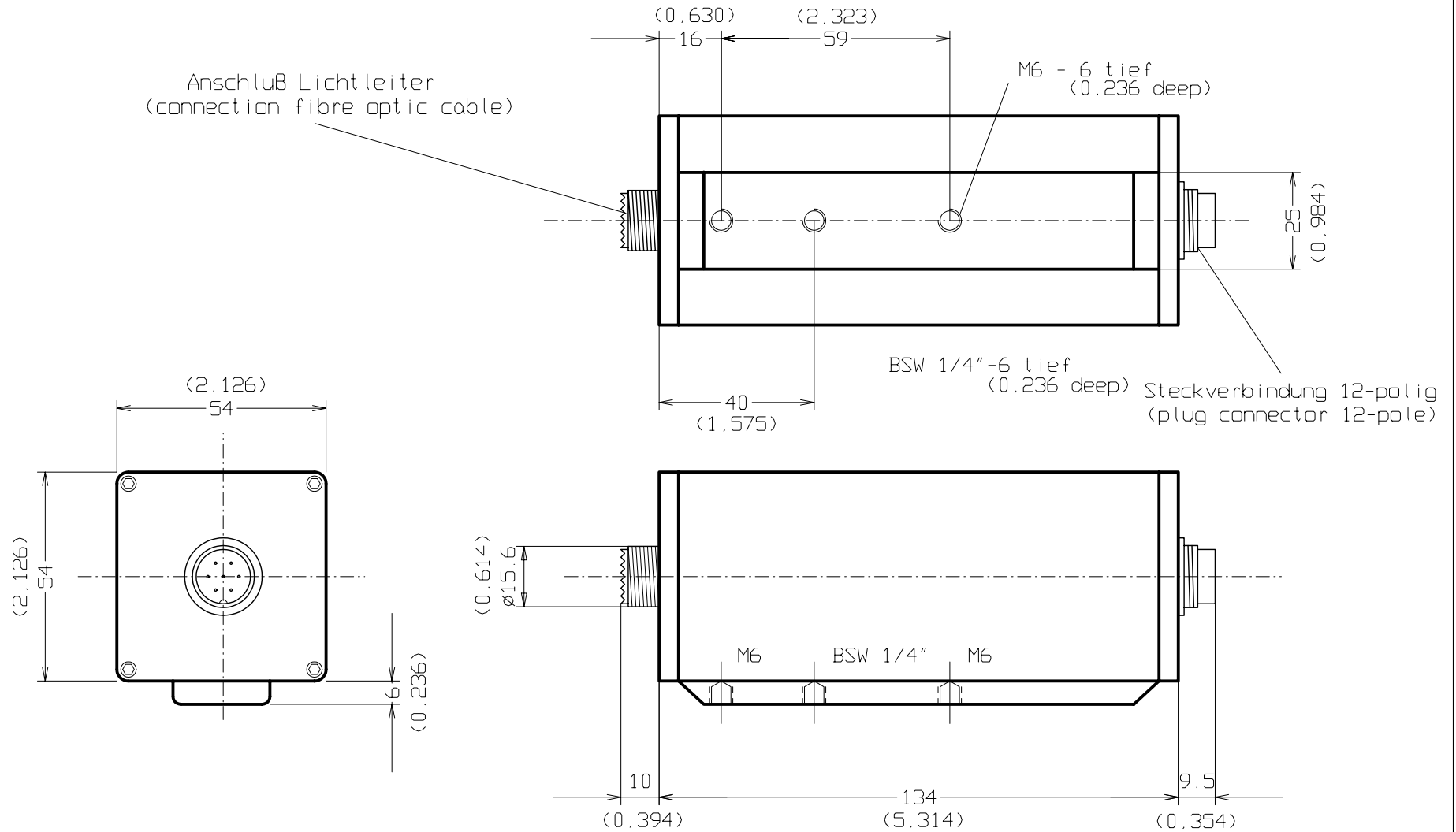


Legende

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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	