

# Non-Contact Temperature Measurement

**DIGITAL – INFRARED – PYROMETER**

**Temperature range 50 to 1000°C (122 - 1832°F)**

**Temperature control during production process  
compact units – Infrared – measuring transducer and electronic process  
unit in one case with light beam aiming device  
or optical viewfinder, focusable optic,  
serial interface, limit output**

**Series KTRD 2300**



MAURER – Infrared – pyrometer can also assist you to monitor your heating processes, ensuring a uniform standard of quality for your products.

leaflet KTRD 2300



<http://www.maurer-ir.de>

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# Infrared-Digital-Pyrometer Series KTRD 2300

More than 60 years experience in the area of non-contact temperature measurement and permanently development of the pyrometers makes it possible to offer you a complete program of field tested units.. Mainly for **fast warming processes** the **contactless temperature measurement** is suitable.

The **series KTRD 2300** are **digital part radiation pyrometer** with vario-objective in compact structure likewise suitable for industry, research and laboratory.

With the integrated light beam aiming device (green LED or Laser) resp. viewfinder an adjusting of the pyrometer to the measuring object is very easy.

The temperature linear analog output signal 0/4 up to 20 mA is available for measuring- and controlling purposes.

The simultaneous using of the serial interface with the software IR-LOG enables the data detection, graphical representation and the parameter settings of the pyrometer.

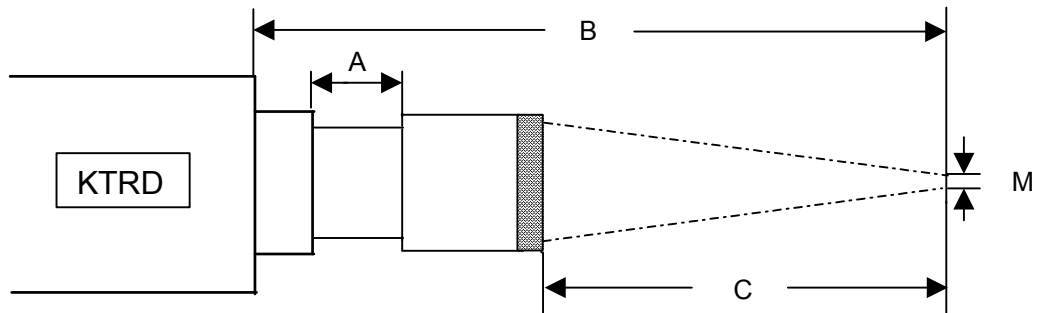
## Examples for applications:

steel, iron, non-ferrous metal, wires, ceramics, rolling, induction heating, soldering, welding, transforming, vacuum furnace etc.

Technical datas:	KTRD 2300-1			KTRD 2300-2
Unit types	KTRD 2300-1			KTRD 2300-2
Target marking	light beam aiming device green LED or laser			viewfinder
Temp. measuring ranges:	MR 1: 50 - 400°C 122 - 752°F	MR 2: 70 - 550°C 158 - 1022°F	MR 3: 100 - 700°C 212 - 1292°F	MR 4: 150 - 1000°C 302 - 1832°F
Response time (t90)	5 ms	5 ms	<0,5 ms	
Spectral range	2,3 µm			
Measuring uncertainty	0,5% of meas.value in °C ± 1°C (ε = 1, Tamb. = 23°C, T <sub>95</sub> = 1s)			
Reproducibility	0,1% of meas.value in °C ± 1°C (ε = 1, Tamb. = 23°C, T <sub>95</sub> = 1s)			
Emission factor ε	100 - 10 % adjustable at the unit or through interface			
Analog output	0 - 20 mA or 4 - 20 mA , load max. 500R			
Part measuring ranges:	free adjustable within the measuring range			
Resolution	< 0,1% analog output, < 0,1°C at interface			
1 limit output (open coll.)	24 V DC / max. 100 mA			
Max.reading memory	max.memory, double memory,adjustable time and threshold value, erasing after time, external contact, by software, after new meas.part			
Interface	RS 232 isolated ± 50 V or RS 485 isolated 2500VRMS options: PROFIBUS, PROFINET, Ethernet, EtherCAT, USB 2.0			
Software IR-LOG	data recording, graph.representation, setting of pyrometer parameters			
adjustable parameter with Software IR-LOG	emissionfactor,switching output,analog output, part meas.range, °C/°F, max.memory, average value, light beam aiming device switchable			
Objectives	for accommodation to the measuring application an extensive selection of objectives are available			
Working temperature	pyrometer 0 - 50°C (32-122°F), optic system up to 150°C(302°F)			
Stock temperature	- 10°C - + 70°C (14-158°F)			
Temperature sensitivity	0,05 % / °C			
Humidity tolerance	35 - 85 % RF (non condensing)			
Operating voltage	24 V DC ± 10 % or 18 V AC ± 10 % < 160 mA			
Unit connection	12-pole plug-connector			
Dimensions: H / W / D	54 x 54 x 147 mm (2,13 x 2,13 x 5,79 inch) ALU-case			
Weight	0,6 kg (1,32 lbs)			
Protection grade	IP 65			
Option	built in digital display			

mechanical assembly	electrical assembly		
Execution in cooling case	AED 1012	electr.process unit	digital display (built in-execution)
Blowing device	AED 1012-C	PID controller	connection cable 12-pole
Mirror 90°	AED 1012-PC	Program controller	line scanner SC 1000 / SC 1012
Mounting parts	power supply 100-270VAC - 24 VDC	PC-Box (USB – connection set)	

# Optic table for KTRD 2300



Optic type	: IR 2050-N0-D (CaF2)		
Lens	: f 50 25,4 Ø		
meas. aperture	: 1,0 mm Ø		
radiation aperture	: 8,5 mm Ø		
Meas. distance from casing of meas. Head	Meas. distance from optic front edge	Optic extension	Target size
B / mm	C / mm	A / mm	M / mm = Ø
153,0	110,0	13,0	1,7
166,7	130,0	6,7	2,0
180,0	150,0	0	2,5

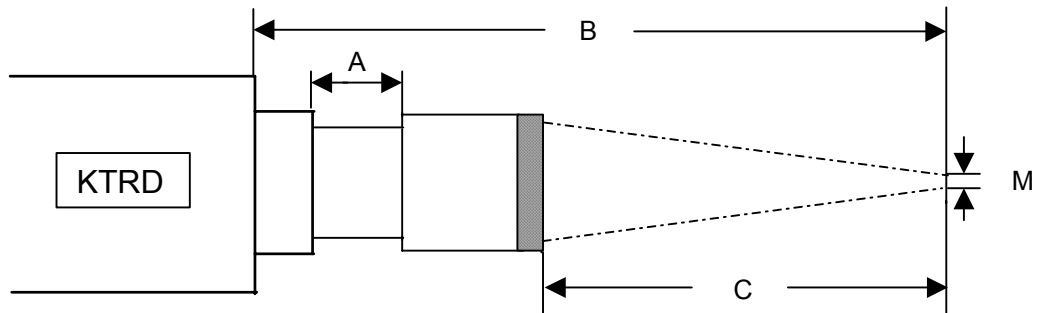
Target = 95 % of beam density of the surface

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Reg.-Nr.: QT 0201014

# Optic table for KTRD 2300



Optic type	: IR 2050-N1-D (CaF <sub>2</sub> )		
Lens	: f 50 25,4 Ø		
meas. aperture	: 1,0 mm Ø		
radiation aperture	: 8,5 mm Ø		
Meas. distance from casing of meas. Head	Meas. distance from optic front edge	Optic extension	Target size
B / mm	C / mm	A / mm	M / mm = Ø
180,0	146,0	13,0	2,7
190,0	158,5	10,5	2,9
200,0	170,5	8,5	3,0
220,0	193,0	6,0	3,4
240,0	215,0	4,0	3,9
260,0	236,0	3,0	4,2
280,0	257,2	1,8	4,7
300,0	278,2	0,8	5,0

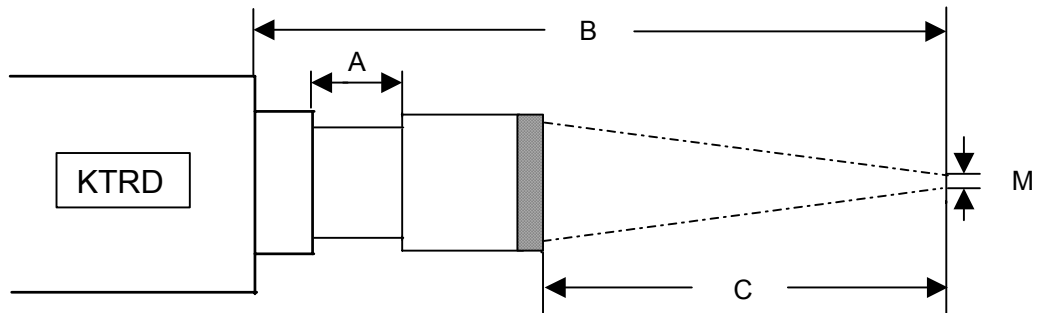
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Reg.-Nr.: Q1 0201014

# Optic table for KTRD 2300



Optic type	: IR 2050-N2-D (CaF2)		
Lens	: f 50 25,4 Ø		
meas. aperture	: 1,0 mm Ø		
radiation aperture	: 8,5 mm Ø		
Meas. distance from casing of meas. Head	Meas. distance from optic front edge	Optic extension	Target size
B / mm	C / mm	A / mm	M / mm = Ø
200,0	166,0	13,0	3,0
220,0	188,5	10,5	3,4
250,0	221,3	7,7	4,0
300,0	273,6	5,4	5,0
350,0	325,5	3,5	6,0
400,0	376,4	2,6	7,0
450,0	427,6	1,4	8,1
500,0	478,1	0,9	9,1
550,0	528,5	0,5	10,1
600,0	579,0	0	11,2

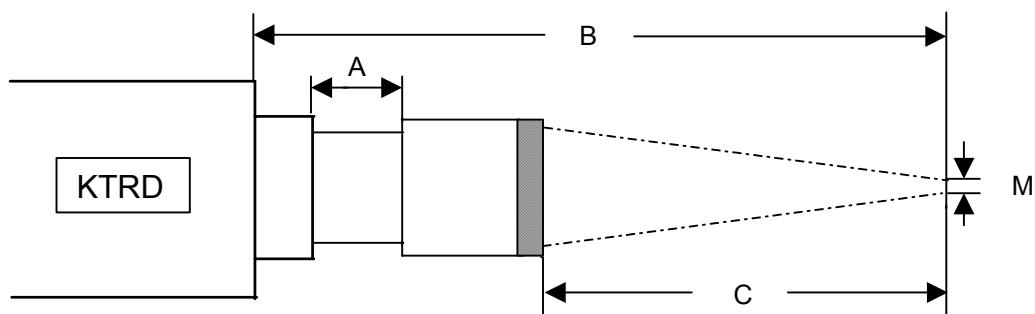
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# Optic table for KTRD 2300



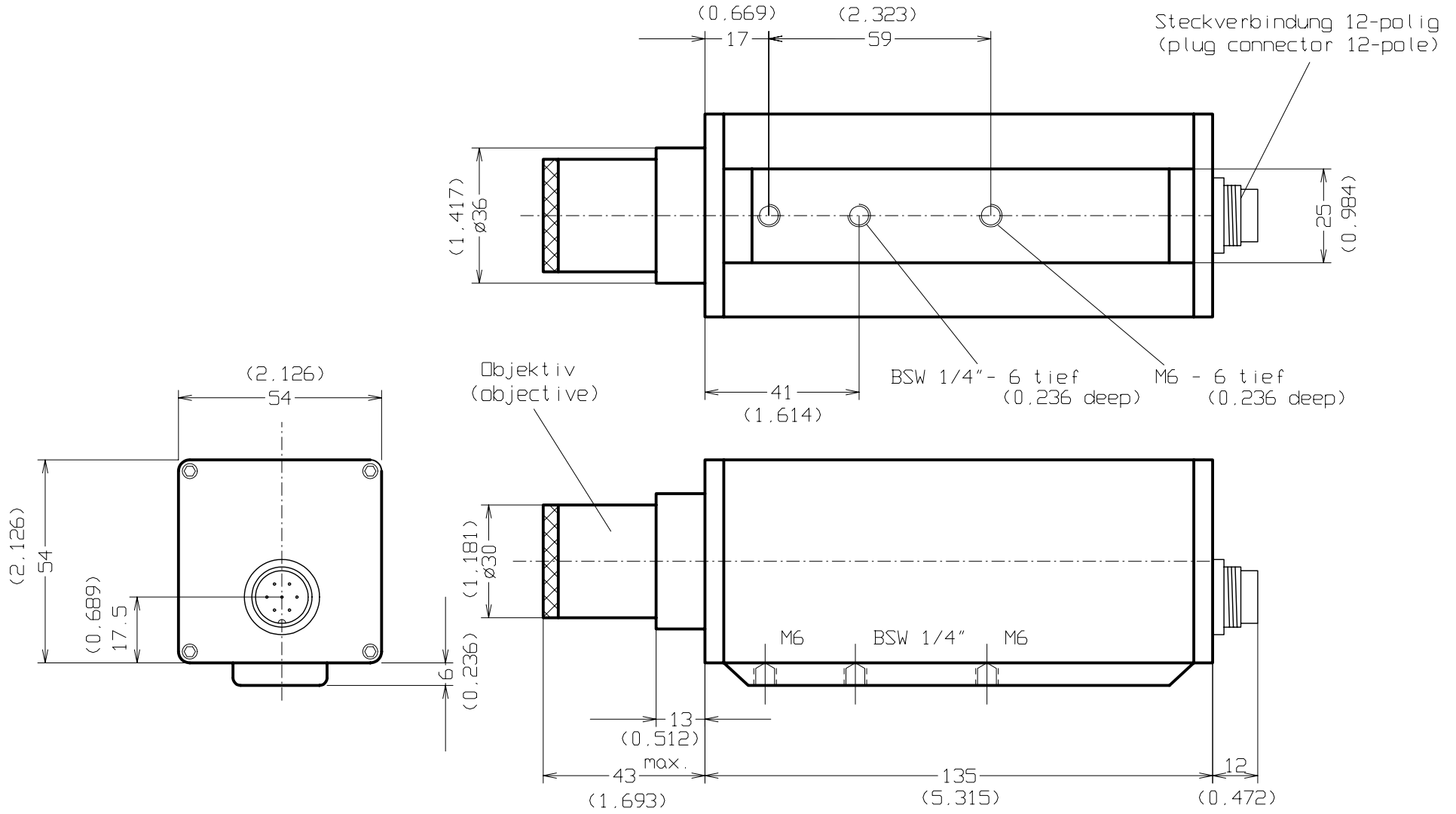
Optic type	: IR 2050-T (CaF2)		
Lens	: f 50 25,4 Ø		
meas. aperture	: 1,0 mm Ø		
radiation aperture	: 8,5 mm Ø		
Meas. distance from casing of meas. Head	Meas. distance from optic front edge	Optic extension	Target size
B / mm	C / mm	A / mm	M / mm = Ø
220,0	186,0	13,0	3,7
300,0	270,0	9	5,2
400,0	372,5	6,5	7,3
500,0	474,0	5,0	9,7
800,0	775,9	3,1	15,5
1000	977,0	2,0	20
2000	1978,0	1,0	42
3000	2978,4	0,6	63
5000	4978,8	0,2	107

Target = 95 % of beam density of the surface

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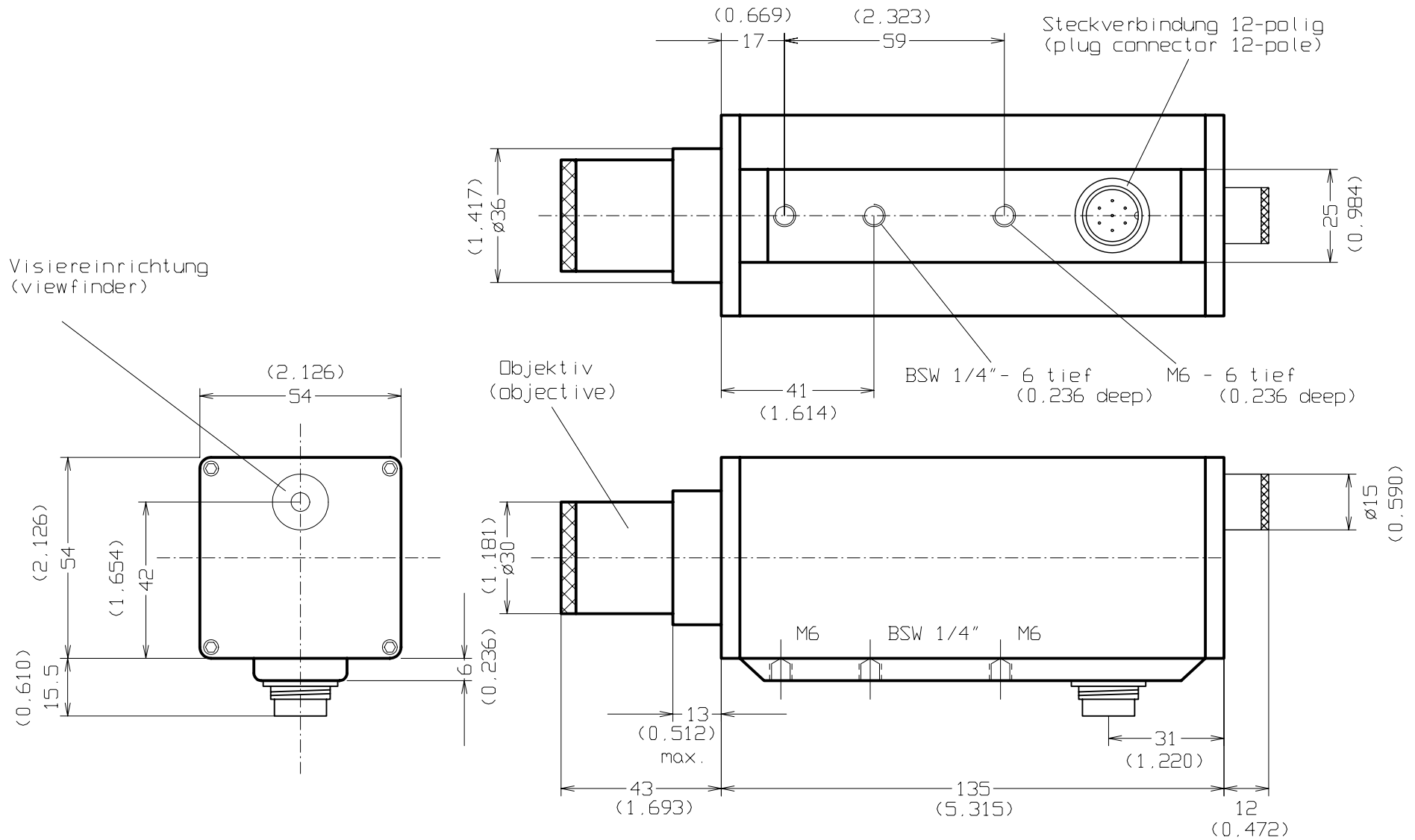


Reg.-Nr.: Q1 0201014



(xxx) - Maße in Zoll  
(dimensions in inch)

				Maßstab 1:1	
				Fa. Dr. Maurer GmbH	
				STANDARDGEHÄUSE (standard case) KTRD 1000-1	
				100205	
				Blatt	
				Bl.	
Zust	Änderung	Datum	Name		



(xxx) - Maße in Zoll  
(dimensions in inch)

				Maßstab 1:1	
				Fa. Dr. Maurer GmbH	
				STANDARDGEHÄUSE (standard case)	
				KTRD 1000-2 Stecker 90° (connector 90°)	
				Visiereinrichtung (viewfinder)	
				Blatt	
				Bl.	
				100207	
Zust	Änderung	Datum	Name		