

# Non-Contact Temperature Measurement

**DIGITAL – INFRARED – 2 – COLOR – PYROMETER**

**Temperature range 600 to 3300°C (1112 - 5972°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  
2- and 1- color temperature**

**Series QKTRD 1085**



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

leaflet QKTRD 1085

**Dr. Georg Maurer GmbH**  
-Optoelektronik-

**GRUBATEC**



MESS- UND REGELTECHNIK

Grubatec AG  
Wölferstrasse 5  
4414 Füllinsdorf  
Telefon: +41 (0)55 617 00 80  
Telefax: +41 (0)55 617 00 81  
[www.grubatec.ch](http://www.grubatec.ch)  
[sales@grubatec.ch](mailto:sales@grubatec.ch)

# Infrared-Digital-Pyrometer Series QKTRD 1085

Mainly for **fast warming processes** the **contactless temperature measurement** is suitable.

The **series QKTRD 1085** are **digital-2-color-pyrometer** with vario-objective in compact structure likewise suitable for industry, research and laboratory.

2-color-pyrometer afford on the basis of it's measuring principle contrary to part radiation pyrometer a few substantial advantages. They show also still under critical conditions the true temperature, i.e. by absorption of smoke within the measuring path, mist of viewing glasses at ovens, by small parts which don't illuminate the measuring field.

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.

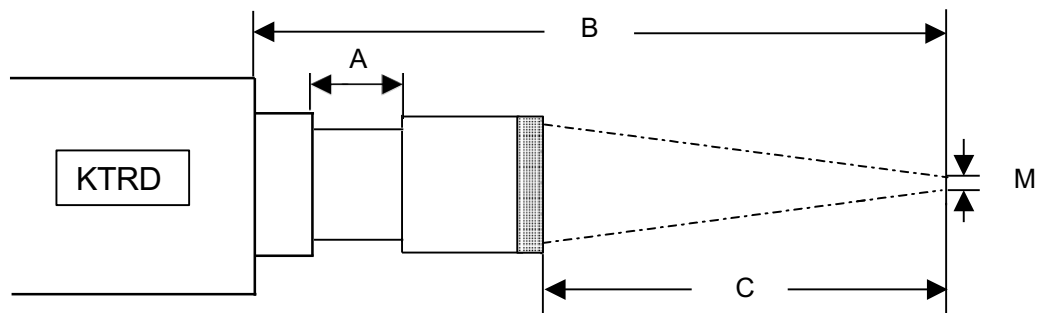
## Examples for applications:

steel, iron, non-ferrous metal, coating, wires, molding, hardening, induction heating, soldering, metal melt, forging, welding, transforming, vacuum furnace, rolling

Technical datas:	
Unit types	QKTRD 1085-1
Target marking	light beam aiming device green LED or laser
Temp. measuring ranges:	viewfinder
Response time (t90)	MR1: 600-1600°C 1112-2912°F
Spectral range	MR2: 750-2500°C 1382-4532°F
Measuring uncertainty	MR3: 900-3000°C 1652-5432°F
Reproducibility	MR4: 1000-3300°C 1832-5972°F
Emission ratio	<1 ms with dynamical adaption
Emission factor $\epsilon$	0,85 - 1,1 $\mu\text{m}$ and 0,95 - 1,1 $\mu\text{m}$
Analog output	0,5% of meas.value in °C $\pm$ 1°C ( $\epsilon = 1$ , T <sub>amb.</sub> = 23°C, T <sub>95</sub> = 1s)
Part measuring ranges:	0,1% of meas.value in °C $\pm$ 1°C ( $\epsilon = 1$ , T <sub>amb.</sub> = 23°C, T <sub>95</sub> = 1s)
Resolution	0,8 – 1,2 adjustable at the unit or through interface
1 limit output (open coll.) “min. intensity”	100 - 10 % through interface
Max.reading memory	0 - 20 mA or 4 - 20 mA , load max. 500R
Interface	free adjustable within the measuring range
Software IR-LOG	< 0,1% analog output, < 0,1°C at interface
adjustable parameter with Software IR-LOG	24 V DC / max. 100 mA
Objectives	max.memory, erasing after time, external contact, by software, double memory
Working temperature	RS 232 isolated $\pm$ 50 V or RS 485 isolated 2500VRMS
Stock temperature	options: PROFIBUS, PROFINET, Ethernet, EtherCAT, USB 2.0
Temperature sensitivity	data recording, graph.representation, setting of pyrometer parameters
Humidity tolerance	emissionfactor,switching output,analog output, part meas.range, °C/°F, max.memory, average value, light beam aiming device switchable
Operating voltage	for accommodation to the measuring application an extensive selection of objectives are available
Unit connection	pyrometer 0 - 50°C (32-122°F), optic system up to 150°C(302°F)
Dimensions: H / W / D	- 10°C - + 70°C (14-158°F)
Weight	0,05 % / °C
Protection grade	35 - 85 % RF (non condensing)
Option	24 V DC $\pm$ 10 % or 18 V AC $\pm$ 10 % < 160 mA

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

# Optic tables for KTRD 1065+1075+1085 and QKTRD 1075+1085



Optic-type : L 1050-N1			
Lens : f 50 22,4 ∅			
Meas. aperture : 0,5 mm ∅			
Meas. distance from casing of meas. head B / mm	Meas. distance from optic front edge C / mm	Optic extension A / mm	Target size M / mm=d
180	124	13	1,5
190	137	10	1,6
200	149,5	7,5	1,7
210	162	5,0	1,8
220	173,5	3,5	1,9
230	185	2,0	2,0
240	196	1,0	2,1
250	207	0	2,2

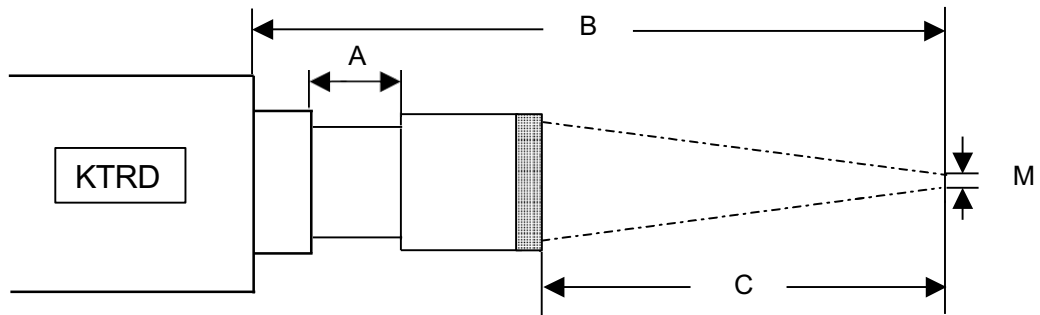
Optic-type : L 1060-N1			
Achromat : f 60 22,4 ∅			
Meas. aperture : 0,5 mm ∅			
Meas. distance from casing of meas. head B / mm	Meas. distance from optic front edge C / mm	Optic extension A / mm	Target size M / mm=d
285	229	13	1,5
300	245,4	11,6	1,6
350	299,9	7,1	1,9
400	352,3	4,7	2,3
450	404,1	2,9	2,7
500	455,5	1,5	3,2
550	507	0	3,8

Optic-type : L 1050-N2			
Lens : f 50 22,4 ∅			
Meas. aperture : 0,5 mm ∅			
Meas. distance from casing of meas. head B / mm	Meas. distance from optic front edge C / mm	Optic extension A / mm	Target size M / mm=d
210	154,0	13,0	1,3
220	166,1	10,9	1,4
240	188,6	8,4	1,6
260	210,9	6,1	1,8
280	232,6	4,4	2,1
300	253,9	3,1	2,3
320	274,9	2,1	2,5
340	295,5	1,5	2,7
360	316,0	1,0	2,9
380	336,5	0,5	3,1
400	357,0	0,0	3,3

Optic-type : L 1060-N2			
Achromat : f 60 22,4 ∅			
Meas. aperture : 0,5 mm ∅			
Meas. distance from casing of meas. head B / mm	Meas. distance from optic front edge C / mm	Optic extension A / mm	Target size M / mm=d
350	294	13	2,0
400	346,7	10,3	2,4
450	398,9	8,1	2,8
500	450,1	6,9	3,2
550	501,1	5,9	3,7
600	522	5,0	4,2
650	603	4,0	4,7
700	653,9	3,1	5,2
750	704,4	2,6	5,6
800	754,9	2,1	6,1
1000	956,2	0,8	9,2

Target=98 % of beam density of the surface

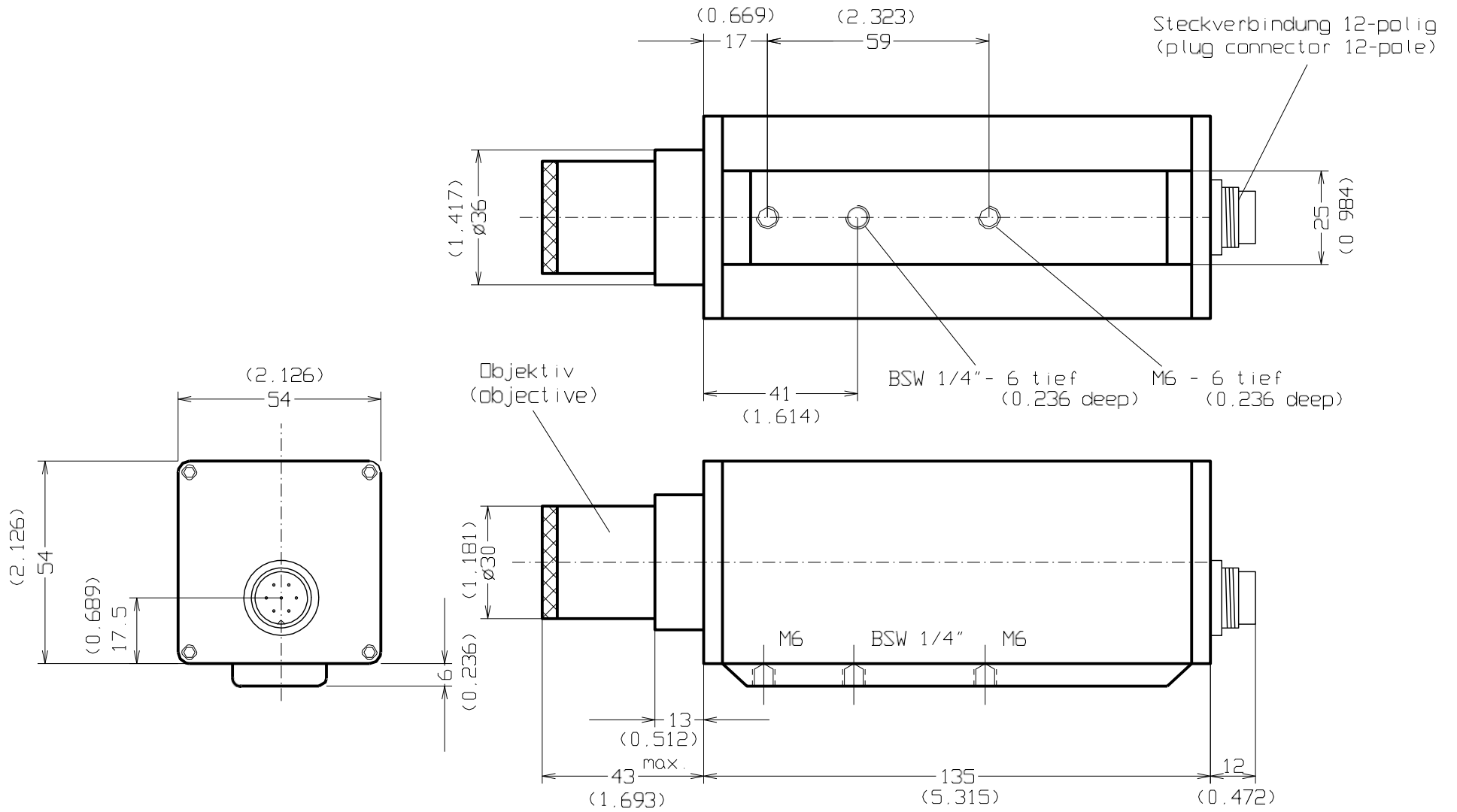
# Optic tables for KTRD 1065+1075+1085 and QKTRD 1075+1085



Optic-type	: L 1060-T		
Achromat	: f 60 22,4 $\varnothing$		
Meas. aperture	: 0,5 mm $\varnothing$		
Meas. distance from casing of meas. head B / mm	Meas. distance from optic front edge C / mm	Optic extension A / mm	Target size M / mm=d
335	279	13	2,6
400	345,8	11,2	2,5
500	448,5	8,5	3,2
600	550	7,0	4,0
700	651,4	5,6	4,8
800	753	4,0	5,9
900	853,9	3,1	7,2
1000	954,8	2,2	8,3
2000	1956	1,0	14,6
3000	2955,4	0,6	23,9
4000	3956,8	0,2	31,0

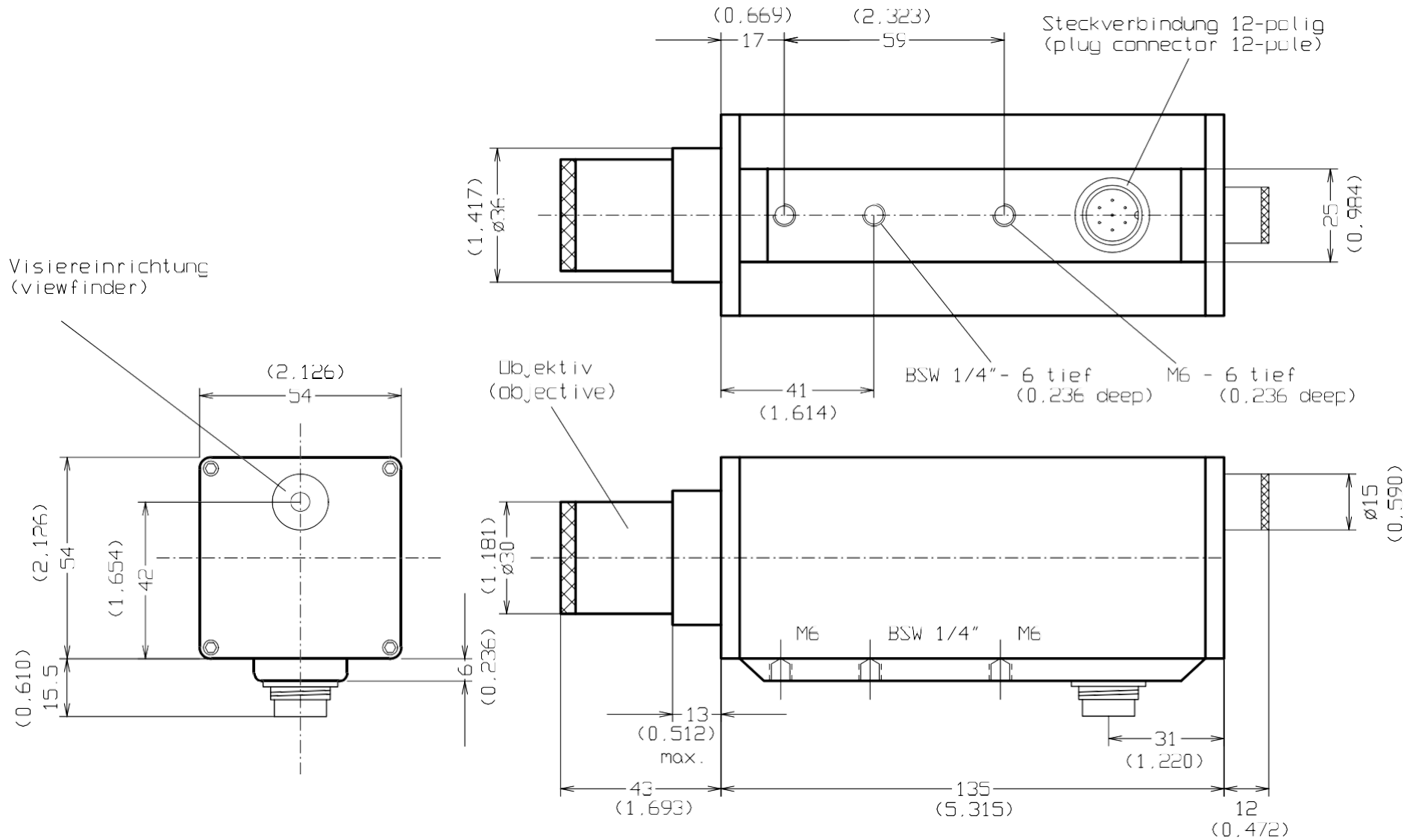
Optic-type	: A 1080		
Achromat	: f 80 31,5 $\varnothing$		
Meas. aperture	: 0,5 mm $\varnothing$		
Meas. distance from casing of meas. head B / mm	Meas. distance from optic front edge C / mm	Optic extension A / mm	Target size M / mm=d
620	557,5	13	3,5
700	639,9	10,6	4,0
800	741,4	9,1	4,5
900	842,5	8,0	5,0
1000	943,4	7,1	6,0
1100	1044,3	6,2	6,5
1200	1144,9	5,6	7,0
1300	1245,4	5,1	7,5
1400	1345,8	4,7	8,0
1500	1446,2	4,3	8,5
1600	1546,5	4,0	9,2
1700	1646,9	3,6	10,0
1800	1747,2	3,3	10,8
1900	1847,4	3,1	11,5
2000	1947,5	3,0	12,1
3000	2948,5	2,0	18,0
4000	3949,2	1,3	24,0

Target=98 % of beam density of the surface



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

				Maßstab 1:1	
				Fa. Dr. Maurer GmbH	
				STANDARDGEHÄUSE (standard case)	
				KTRD 100 0-1	
				100205	
				Blatt	
				Bl	
Zust	Anderung	Datum	Name		



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

				Maßstab 1:1	
				STANDARDGEHÄUSE (standard case)	
				KTRD 1000-2 Stecker 90° (connector 90°)	
				Visiereinrichtung (viewfinder)	
				100207	
				Blatt	
				Bl	
Zust	Anderung	Datum	Name		