



MĚŘÍCÍ A REGULAČNÍ TECHNIKA

THERMIS, spol s.r.o.
Mateř 14, Brno, Czech Republik
www.thermis.cz



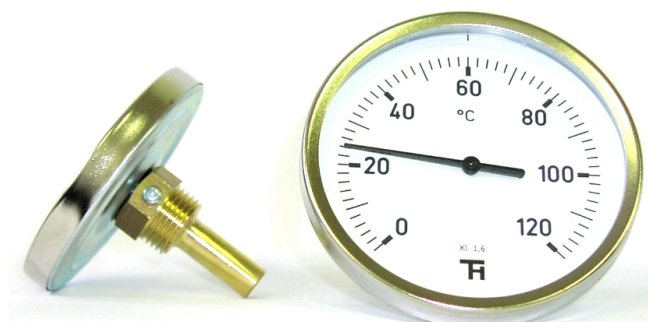
**KATALOG VÝROBKŮ
MĚŘÍCÍ A REGULAČNÍ TECHNIKY
PRO VÝROBU A SERVIS
KOTLŮ A BOJLERŮ**



BIMETALLIC THERMOMETER ETR

diameter 63, 80, 100, 160 mm

back connection, including thermowell G1/2

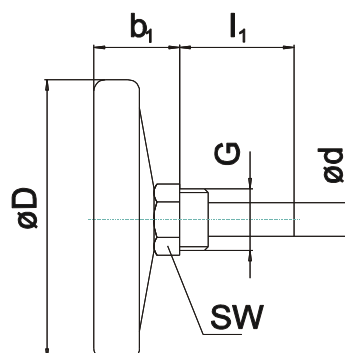


Specification:

These thermometers can be used universally for measuring local temperatures in heating engineering and in light industry. They can be used for measuring temperature in any position. The thermometer head can be placed in a simple environment in range of temperatures between -30 °C to +110 °C. The tolerance for all ranges is $\pm 2\%$ of the entire range. The measured temperature can not exceed the maximum range of scale. The thermometers are manufactured with different stem lengths mentioned in the table on the following page. Thermometers automatically include brass plunge pocket PN 6 with screw G1/2.

Description:

- head: galvanised sheet
- stem: brass
- acryl glass inspection hole
- equipped with plunge pocket PN 6 with screw G1/2



Head	D	b1	SW	G	Ø stem	Ø well	l1
63	63	22	22	G1/2	9	11	50, 65, 105,150
80	80	22	22	G1/2	9	11	
100	100	24	22	G1/2	9	11	
160	160	26	22	G1/2	9	11	

Thermometer	Ø head	Dial grading	Range	Stem length... L [mm]			
Type	D [mm]	in °C	°C	d = 9 mm			
				50	65	105	150
ETR 63	63	1	-20 to 60	X	X	X	X
		1	0 to 100	X	X	X	X
		2	0 to 120	X	X	X	X
		2	0 to 160	X	X	X	X
ETR 80	80	1	-20 to 60	X	X	X	X
		1	0 to 100	X	X	X	X
		2	0 to 120	X	X	X	X
		2	0 to 160	X	X	X	X
ETR 100	100	1	-20 to 60	X	X	X	X
		1	0 to 100	X	X	X	X
		2	0 to 120	X	X	X	X
		2	0 to 160	X	X	X	X
ETR 160	160	1	-20 to 60		X	X	X
		1	0 to 100		X	X	X
		2	0 to 120		X	X	X
		2	0 to 160		X	X	X

Possible temperature range: -50+50, -30+30, -20+40, -15+45, -10+70, -10+60, 0-40, 0-50, 0-60, 0-80, 0-200, 0-250 °C

BIMETALLIC THERMOMETER TR and TU

diameter 60, 100 a 120 mm,
bottom, back connection
stainless steel design



Specification:

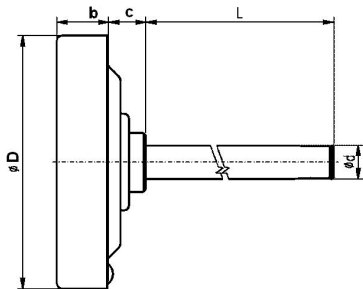
These thermometers with a bimetallic measuring system can be used universally for measuring local temperatures in almost all branches of industry. They can be used for measuring for less demanding application in any position. The thermometers are manufactured with different stem lenths mentioned in the table below. In some cases, particularly when the pressure on the stem exceeds 0,3 MPa, the stem should be placed into a well.

Description:

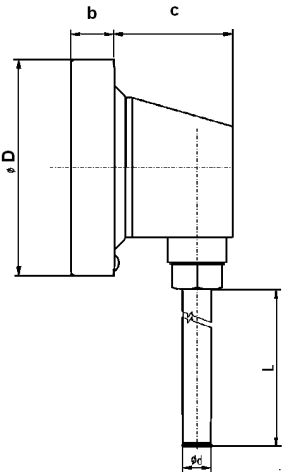
- head made of stainless steel class 17
- stem made of stainless steel class 17
- glass inspection hole
- tolerance $\pm 2\%$
- head environment temperature range $-30+110^{\circ}\text{C}$
- maximum pressure on the stem 0,3MPa
- the well is always by approx. 5mm longer than the stem

Installation:

- a) loose installation
- b) with specific
 - sliding threaded socket
 - sliding conical socket
 - thermometric well
 - thermometers with scale of 0-350 and 450°C must not be used without the well



Type	D	b	c	L	Ø stem
TR60	60	12	10	45, 60,	9mm lenght 400mm (400 included)
TU60	60	12	34	100, 160,	
TR100	100	12	15	250, 400,	
TU100	100	12	32	630,	12mm lenght 630mm
TR120	120	12	15	1000,	
TU120	120	12	32	1500	





Thermometer	Ø head	Dial grading	Scale range	Stem length ... L [mm]								
Type	D [mm]	in °C	°C	Ø d = 8 mm (stainless steel (AKVS))						Ø d = 12 mm (steel class 11)		
				45	60	100	160	250	400	630	1000	1500
TR 60	60	1	-30 to +50		X	X	X	X				
		1	0 to 120	X	X	X	X	X				
		2	0 to 200	X	X	X	X	X				
		5	0 to 350			X	X	X				
		10	0 to 450			X	X	X				
TR 100	100	1	-30 to +50		X	X	X	X	X	X	X	X
		1	0 to 120	X	X	X	X	X	X	X	X	X
		2	0 to 160		X	X	X	X	X	X	X	X
		2	0 to 200	X	X	X	X	X	X	X	X	X
		5	0 to 350			X	X	X	X	X	X	X
		10	0 to 450			X	X	X	X	X	X	X
TR 120	120	1	- 30 to +50		X	X	X	X	X	X	X	X
		1	0 to 120		X	X	X	X	X	X	X	X
		2	0 to 200		X	X	X	X	X	X	X	X
		5	0 to 350			X	X	X	X	X	X	X
		10	0 to 450			X	X	X	X	X	X	X
TU 60	60	1	-30 to +50			X	X	X	X			
		1	0 to 120			X	X	X	X			
		2	0 to 200			X	X	X	X			
		5	0 to 350			X	X	X	X			
		10	0 to 450			X	X	X	X			
TU100	100	1	- 30 to 50			X	X	X	X	X	X	X
		1	0 to 120			X	X	X	X	X	X	X
		2	0 to 160			X	X	X	X	X	X	X
		2	0 to 200			X	X	X	X	X	X	X
		5	0 to 350			X	X	X	X	X	X	X
		10	0 to 450			X	X	X	X	X	X	X
TU 120	120	1	-30 to +50			X	X	X	X	X	X	X
		1	0 to 120			X	X	X	X	X	X	X
		2	0 to 200			X	X	X	X	X	X	X
		5	0 to 350			X	X	X	X	X	X	X
		10	0 až 450			X	X	X	X	X	X	X

ROUND CAPILLARY THERMOMETER

**type 2037 Ø37mm, type 2040 Ø40mm, type 2052 Ø52mm
capillary 500-3000mm**



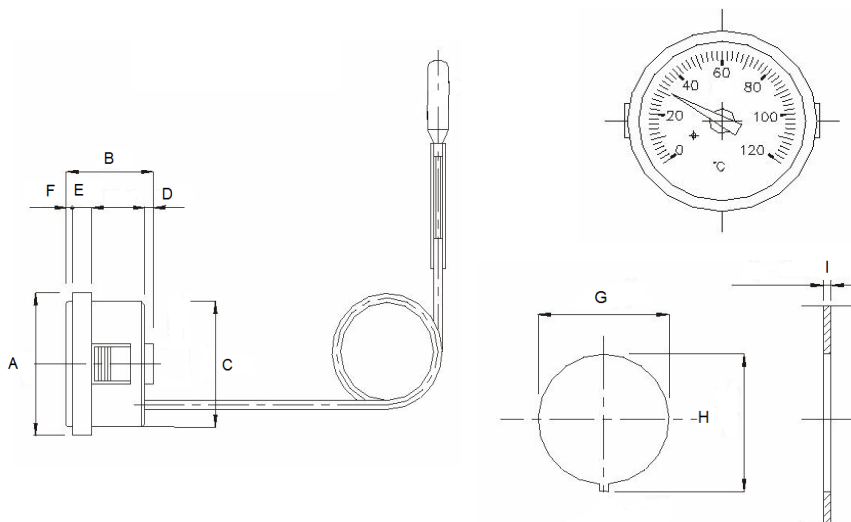
Specification:

Capillary thermometers are designed for all applications, where the place of measuring is not identical with the place of reading. They may be used in all kinds of operations due to the wide range of types and versions. Frequently used for boilers, heating and cooling systems.

Type	2037	2040	2052
Dimension	37mm	40mm	52mm
Temperature range	-40+40°C, 0-120°C, 50-350°C		
Capillary length, material	500, 1000, 1500, 2000, 3000 mm, Copper with PVC protection (-40+40°C, 0-120°C), stainless steel (50-350°C)		
Case	Plastic, white, black or grey colour		
Inspection hole	Transparent acryl		
Scale	Plastic, white, black or grey colour; printing and needle white, grey or black		
Sensor	Copper 8,5x30mm (-40+40°C) ; copper 6,5x30mm (0-120°C); stainless steel 3x80mm (50-350°C)		
Max case temperature	70°C		
Min capillary radius	5mm		

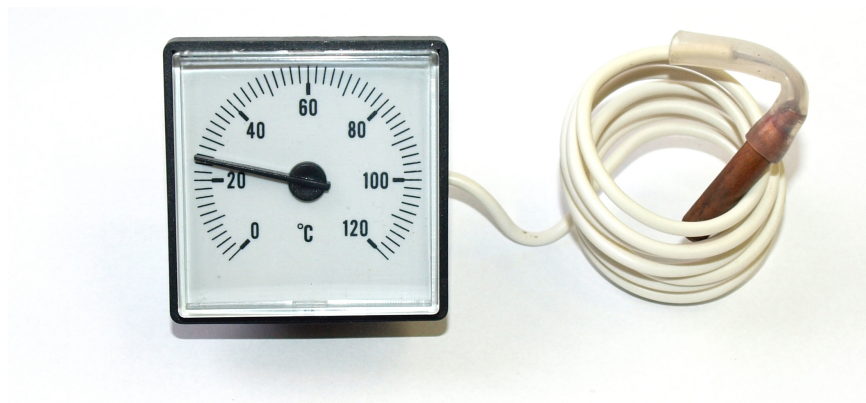
Dimensions:

Type	2037	2040	2052
A	42	43	57,5
B	27	28,5	38
C	37	40	52
D	2,5	2,5	2,5
E	6	3	7,5
F	2	0	0
G	37,5	40,5	53,5
H	39	41,5	52,5
I	0,8	0,8	0,8



SQUARE CAPILLARY THERMOMETER

type 2137 37x37mm, type 2145 45x45mm
capillary 500-3000mm



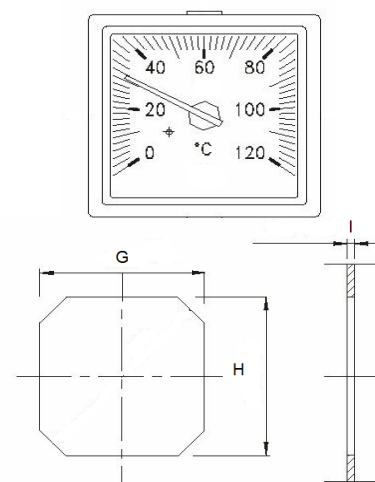
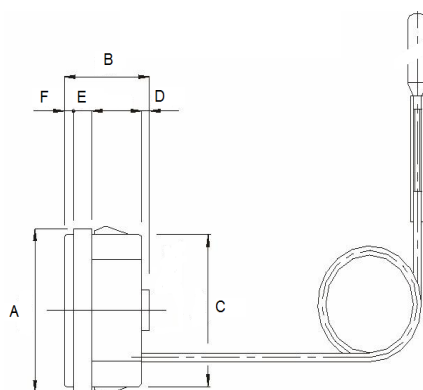
Specification:

Capillary thermometers are designed for all applications, where the place of measuring is not identical with the place of reading. They may be used in all kinds of operations due to the wide range of types and versions. Frequently used for boilers, heating and cooling systems.

Type	2137	2145
Dimension	37x37mm fitting 42x42mm including collar	45x45mm fitting 48x48 mm including collar
Temperature range	-40+40°C, 0-120°C, 50-350°C	
Capillary length, material	500, 1000, 1500, 2000, 3000 mm, Copper with PVC protection (-40+40°C, 0-120°C), stainless steel(50-350°C)	
Case	Plastic, white, black or grey colour	
Inspection hole	Transparent acryl	
Scale	Plastic, white, black or grey colour; printing and needle white, grey or black	
Sensor	Copper 8,5x30mm (-40+40°C) ; copper 6,5x30mm (0-120°C); stainless steel 3x80mm (50-350°C)	
Max case temperature	70°C	
Min capillary radius	5mm	

Dimensions:

Type	2137	2145
A	42	48
B	27	28
C	37	45
D	2,5	2,5
E	6	6
F	2	3
G	37	45,5
H	37	45,5
I	0,8	0,8



ROUND CAPILLARY PRESSURE GAUGE

type 1037 Ø37mm, type 1040 Ø40mm, type 1052 Ø52mm
capillary 1000mm



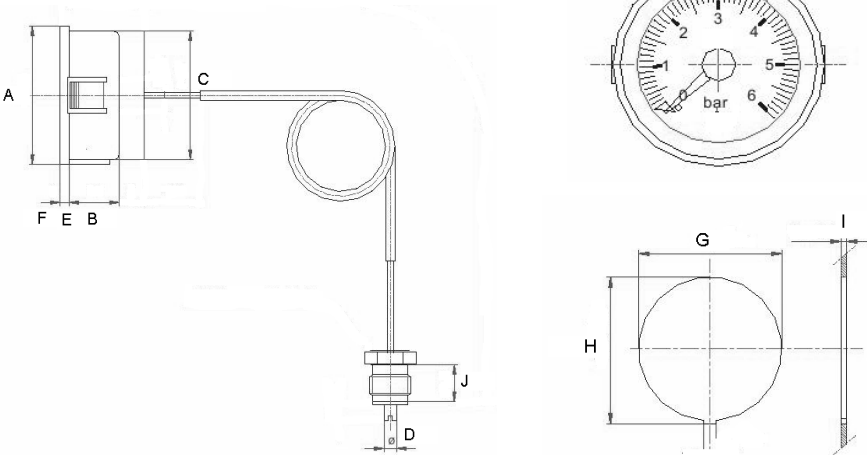
Specification:

Capillary pressure gauges are designed for all applications, where place of measuring is not identical with place of reading. They may be used in all kinds of operations due to the wide range of types and versions. Frequently used for boilers, heating and cooling systems.

Type	1037	1040	1052
Diameter	37mm	40mm	52mm
Pressure range	0-4 bar; 0-6 bar		
Capillary length, material	500, 1000, 1500, 2000, 3000 mm, copper with PVC protection		
Case	Plastic, white, grey or black design		
Inspection hole	Transparent acrylglass		
Dial	Plastic, white, grey or black design , writing white, grey or black		
Connecting thread	G1/4, M14x1,mounting wrench 14		
Max case temperature	70°C		
Min capillary radius	5mm		

Dimensions:

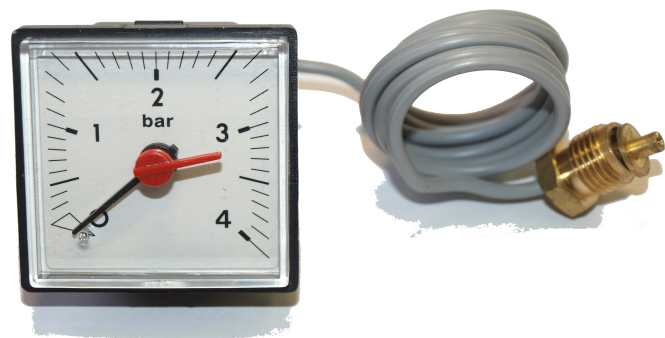
Type	1037	1040	1052
A	42	43	57,5
B	11,5	16	13
C	37	40	52
D	4	4	4
E	6	3	7,5
F	2	0	0
G	37,5	40,5	53,5
H	39	41,5	52,5
I	0,8	0,8	0,8
J	11,5	11,5	11,5



SQUARE CAPILLARY PRESSURE GAUGE

type 1137 37x37mm, type 1145 45x45mm

capillary 1000mm



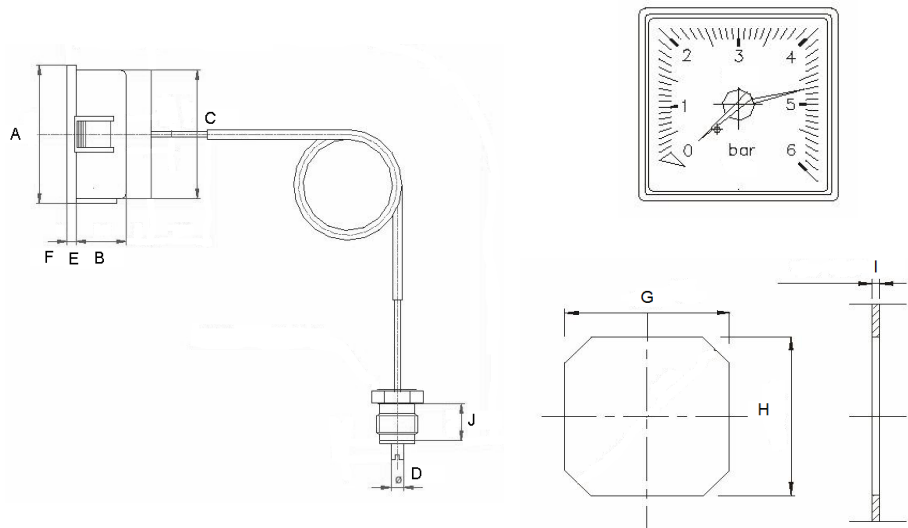
Specification:

Capillary pressure gauges are designed for all applications, where place of measuring is not identical with place of reading. They may be used in all kinds of operations due to the wide range of types and versions. Frequently used for boilers, heating and other systems, where pressure measuring is essential.

Type	1137	1145
Diameter	37x37mm mounting 42x42mm collar included	45x45mm mounting 48x48mm collar included
Pressure range	0-4 bar; 0-6 bar	
Capillary length, material	500, 1000, 1500, 2000, 3000 mm, copper with PVC protection	
Case	Plastic, white, grey or black design	
Inspection hole	Transparent acrylglass	
Dial	Plastic, white, grey or black design , writing white, grey or black	
Connecting thread	G1/4, M14x1,mounting wrench 14	
Max case temperature	70°C	
Min capillary radius	5mm	

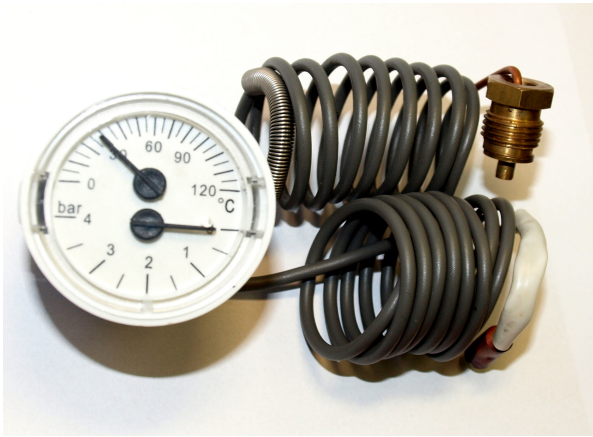
Dimensions:

Type	1137	1145
A	42	48
B	19	19
C	37	45
D	4	4
E	6	6
F	0	0
G	37	45,5
H	37	45,5
I	0,8	0,8
J	11,5	11,5



ROUND CAPILLARY THERMOMANOMETER

type 3040 Ø40mm, type 3052 Ø52mm
capillary 500-2000mm



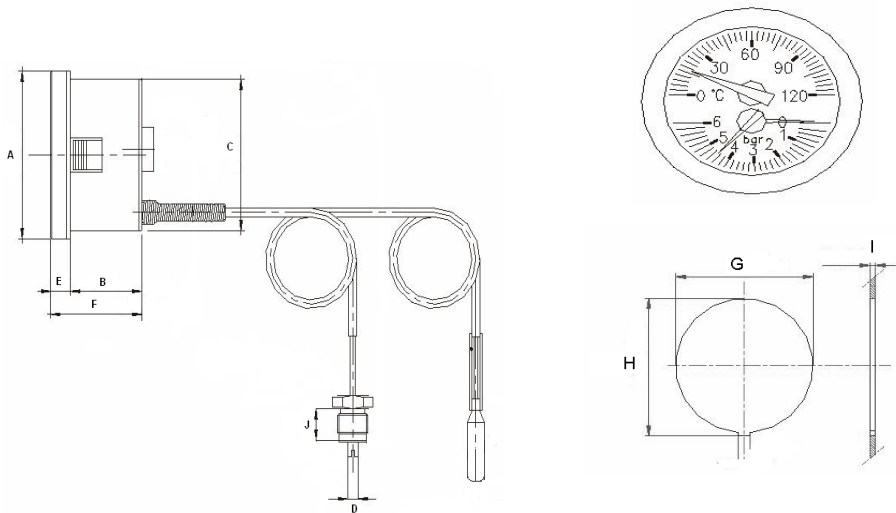
Specification:

Capillary thermomanometers are designed for all applications, where place of measuring is not identical with place of reading. They may be used in all kinds of operations due to the wide range of types and versions. Frequently used for boilers, heating and other applications, where pressure measuring is essential.

Type	3040	3052
Diameter	40mm	52mm
Temp/ Pressure range	0-120°C 0-4 bar; 0-120°C 0-6 bar	
Capillary length, material	500, 1000, 1500, 2000 copper with PVC protection	
Case	Plastic, white, grey or black design	
Inspection hole	Transparent acrylglass	
Dial	Plastic, white, grey or black design , writing white, grey or black	
Connecting thread	G1/4, M14x1,mounting wrench 14	
Sensor size	6,5x25mm	
Max case temperature	70°C	
Min capillary radius	5mm	

Dimensions:

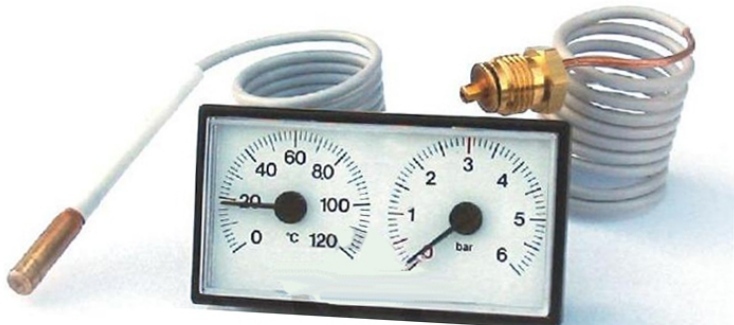
Type	1040	1052
A	43	57,5
B	30	28,5
C	40	52
D	4	4
E	3,5	7,5
F	33,5	36
G	40,5	53,5
H	41,5	52,5
I	0,8	0,8
J	11,5	11,5



SQUARE CAPILLARY TERMOMANOMETERS

type 3145

capillary 500-2000mm



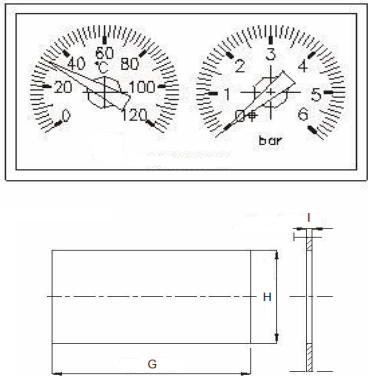
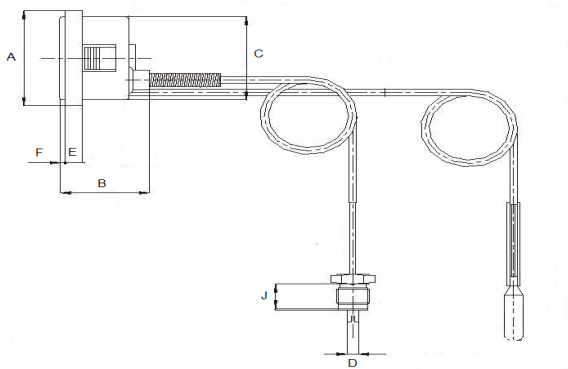
Specification:

Capillary thermomanometers are designed for all applications, where place of measuring is not identical with place of reading. They may be used in all kinds of operations due to the wide range of types and versions. Frequently used for boilers, heating and other applications, where pressure measuring is essential.

Type	3145
Diameter	78x45mm
Temp/ Pressure range	0-120°C 0-4 bar; 0-120°C 0-6 bar
Capillary length, material	500, 1000, 1500, 2000 copper with PVC protection
Case	Plastic, white, grey or black design
Inspection hole	Transparent acrylglass
Dial	Plastic, white, grey or black design , writing white, grey or black
Connecting thread	G1/4, M14x1,mounting wrench 14
Sensor size	6,5x30mm
Max case temperature	70°C
Min capillary radius	5mm

Dimensions:

Type	3145
A	42
B	33
C	37
D	4
E	6
F	2
G	73
H	37
I	0,8
J	11,5





THERMOMANOMETERS

diameter 63, 80 mm

bottom, back connection



Specification:

Thermomanometers are used to measure temperature and pressure at the same time. Devices are fitted with an automatic shut-off valve, which allows the change of the device without draining the system.

Description:

- metal case
- glass inspection hole
- copper alloy measure system
- accuracy 1,6 %
- temperature range 0-120, 150°C
- measure range 0-4, 6, 10, 16 bar

Application:

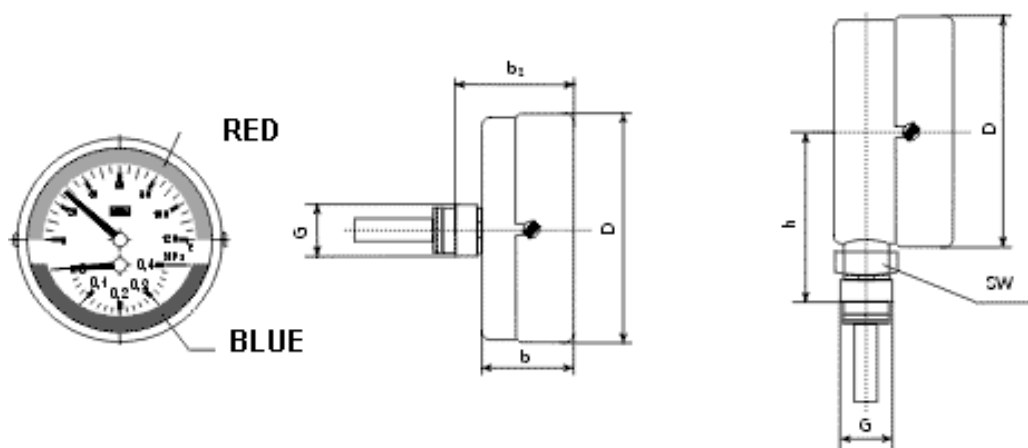
- heating
- filters
- regulating stations
- light industry
- pumps

Special version:

- rear/ Front flange
- special version of connecting thread
- special dial design
- maximum indicator
- variable stem length



Type	1495	1497
Diameter	80 mm	80 mm
Design		
Accuracy	1,60%	
Measure range	0-120°C, 0-150°C 0-1,2,5,4,6,10,16 bar	
High accuracy measurement	Constant pressure - 3/4 the range Fluctuating pressure – 2/3 the range	
Case	Black sheet	
Ring	Black metal, stainless steel	
Window	Plastic	
Dial	AL tin plate with black writing according to DIN EN 837	
Needle	Al plate according to DIN 16 099	
Movement	CuZn - alloy	
Tube	Cu - alloy	
Connection	CuZn - alloy	
Temperature Medium Surroundings	Tmax-20°C, Tmax 60°C Tmin-20°C, Tmax 60°C	
Dependence on temperature	0,3%/10K for deviation from the normal temperature 20°C	
Weight approx.	0,3 kg	0,3 kg



NG	dimensions in mm							weight
	b	b1	b2	D	h	G	SW	
63	32	-	40	63	-	G 1/4	14	0,25
80	32	41	40	80	57	G 1/2	22	0,31

BIMETALLIC THERMOSTATS
automatic, manual reset
switch –on, switch-off contact



Specification:

Bimetallic thermostats are used for electric circuit connection or disconnection after reaching a defined temperature. This temperature is set during the production and can not be changed. These thermostats are designed either with automatic or manual reset. They are very small. Connecting contacts are either produced in straight or angular design and contact surface of the thermostat is either smooth or with thread M5x1mm.

Parameters	
Maximum working voltage	250 VAC
Maximum working current	10 / 16A
Contact resistance	≤ 50 mΩ / ≤ 10 mΩ (gold-plated contacts)
Electric connection	fastons 2.8 / 4.8 / 6.3 mm
Connection design	straight /angular
Contact surface	smooth/ with thread M5x1mm
Reset	automatic / manual
Sensor dimensions	□ 16 x 12mm
Amount of cycles	10.000
IP protection	IP 54

CAPILLARY THERMOSTAT

series TKR100

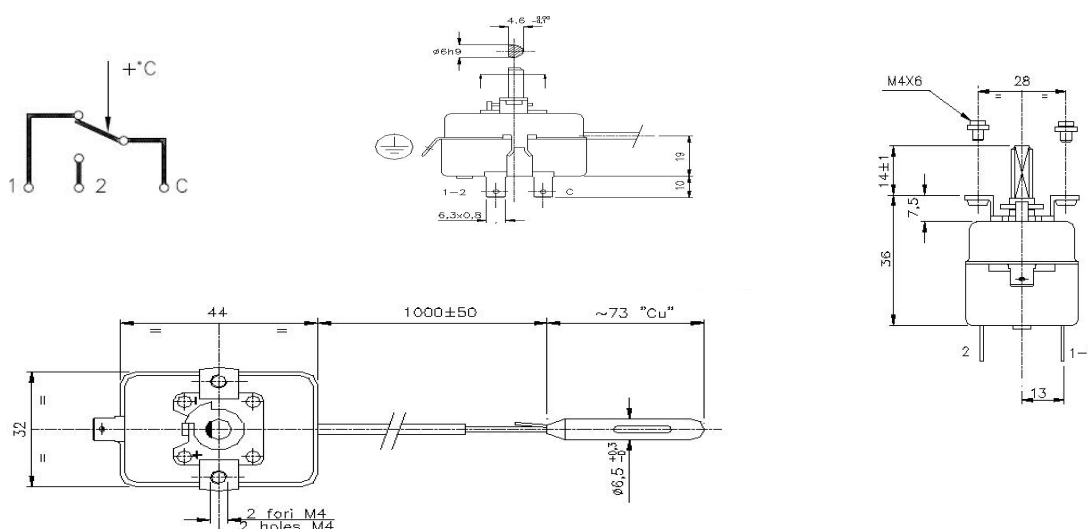
shaft setting



Specification:

Capillary thermostats are designed for thermoregulation of appliances heated by alternate current (boilers etc.). They can not be used as a switch. Thermostats are manufactured with switch contacts, so that you can choose from desired fuction: connecting/ disconnecting. Required temperature can be set by a shaft (optional step by regulatory button).

Type	TKR100						
Temperature range	-30+35°C	0-40°C	7-77°C	0-90°C	20-127°C	0-210°C	0-300°C
Setting accuracy	±5°C	±5°C	±5°C	±5°C	±3-8°C	±6-10°C	±8-15°C
Difference	2±1°C	2±1°C	3±1°C	3±1°C	3±1°C	6±2°C	8±2°C
Maximum sensor temp.	65°C	65°C	120°C	120°C	135°C	250C	350°C
Capillary length	500, 1000, 1500, 2000, 3000 mm						
Angular setting	270°C						
Case	Galvanised plate/ plastic						
Sensor	Copper						Stainless steel
Capillary	Copper with PVC protection						Stainless steel
Contact load	16(4)A 250V, 6(1)400V						



CAPILLARY THERMOSTAT

series TKR200

screw setting

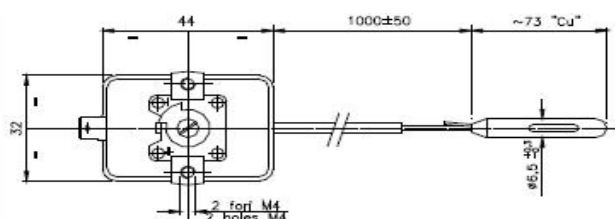
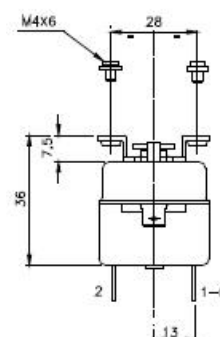
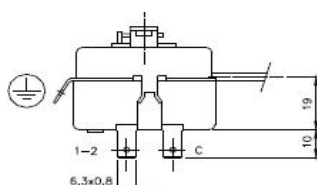
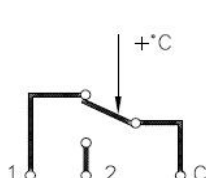
temperature scale



Specification:

Capillary thermostats are designed for thermoregulation of appliances heated by alternate current (boilers etc.). They can not be used as a switch. Thermostats are manufactured with switch contacts, so that you can choose from desired fuction: connecting/ disconnecting. Required temperature can be set using a screwdriver by turning the screw with temperature scale on the thermostat.

Type	TKR200
Temperature range	0-90°C, other range on request
Setting accuracy	Min. temp $\pm 5^{\circ}\text{C}$, max. temp $\pm 3^{\circ}\text{C}$
Difference	$3 \pm 1^{\circ}\text{C}$
Maximum sensor temp.	120°C
Capillary length	500, 1000, 1500, 2000, 3000 mm
Angular setting	270°C
Case	Galvanised plate/ plastic
Sensor	Copper
Capillary	Copper with PVC protection
Contact load	16(4)A 250V, 6(1)A 400V



CAPILLARY THERMOSTAT

series TKR300

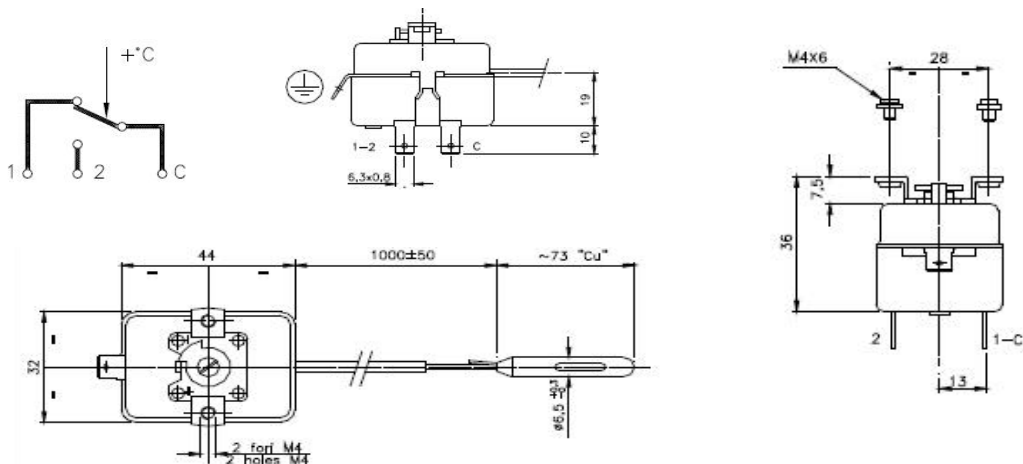
fixed pre-set temperature



Specification:

Capillary thermostats are designed for thermoregulation of appliances heated by alternate current (boilers etc.). They can not be used as a switch. Thermostats are manufactured with switch contacts, so that you can choose from desired fuction: connecting/ disconnecting. Required temperature can not be regulated, it is previously set by the manufacturer.

Type	TKR300
Temperature range	0-90°C, other range on request
Setting accuracy	$\pm 3^{\circ}\text{C}$
Difference	$2 \pm 1^{\circ}\text{C}$
Maximum sensor temp.	120°C
Capillary length	500, 1000, 1500, 2000, 3000 mm
Angular setting	270°C
Case	Galvanised plate/ plastic
Sensor	Copper
Capillary	Copper with PVC protection
Contact load	16(4)A 250V, 6(1)A 400V



CAPILLARY THERMAL FUSE

series WPR100

automatic reset

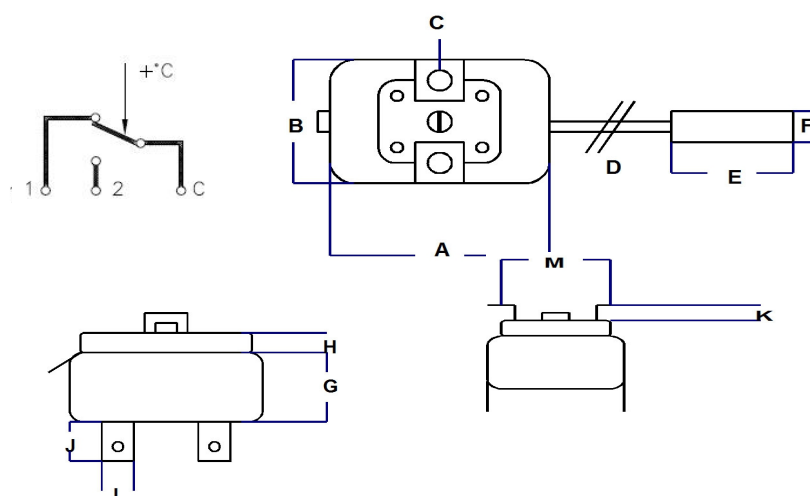


Specification:

Capillary thermal fuses are designed for temperature protection in case of thermostat operating failure in devices heated by alternate current (boilers etc.). They do not serve as a switch. Thermal fuses are manufactured in switch contacts design, where you can choose from desired fuction: connecting/disconnecting and with fixed or settable temperature. Thermal fuses WPR100 are automatic, it connects with temperature drop by difference value.

Type	WPR100	
Temperature range	100°C	90-110°C
Setting accuracy	±0-6°C	
Difference	20±5°C	
Max sensor temperature	135°C	
Capillary length	1500 mm	
Angular setting	fixed	120° temperature setting on the scale
Case	Galvanised plate / plastic	
Sensor	copper	
Capillary	Copper with PVC protection	
Contact load	16(4)A 250V, 6(1)400V	

Dimension	mm
A	44
B	32
C	M4
D	1500
E	75
F	6,5
G	17
H	11
I	6,3
J	10
K	7,5
M	28



CAPILLARY THERMAL FUSE

series WPR200

manual reset

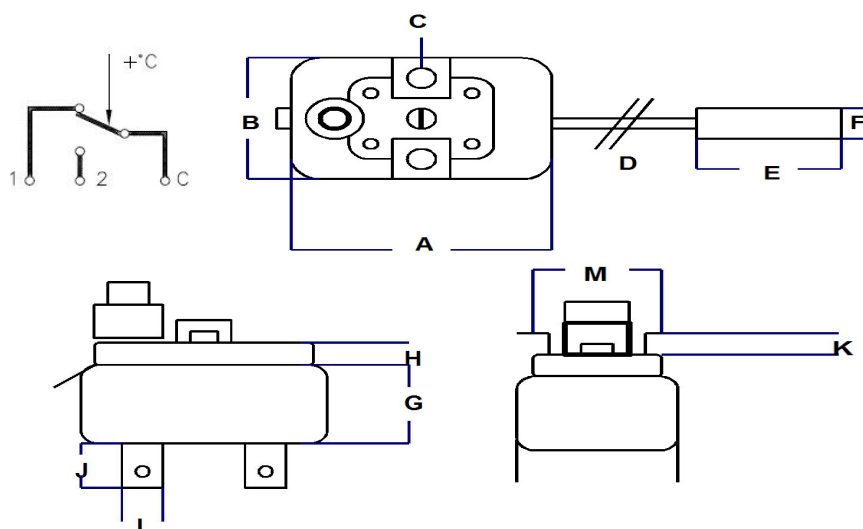


Specification:

Capillary thermal fuses are designed for temperature protection in case of thermostat operating failure in devices heated by alternate current (boilers etc.). They do not serve as a switch. Thermal fuses are manufactured in switch contacts design, where you can choose from desired fuction: connecting/ disconnecting and with fixed or settable temperature. Thermal WPR200 are equipped with manual reset, further connection can be done mechanically only by pressing the button on the fuse body.

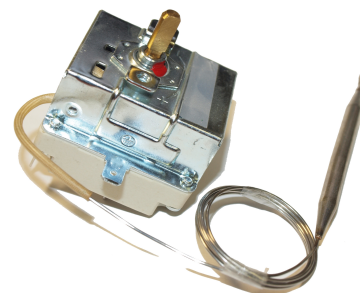
Type	WPR200			
Temperature range	100°C	110°C	70-90°C	90-110°C
Setting accuracy	±3°C			
Difference	20±5°C			
Max sensor temperature	135°C			
Capillary length	1500 mm			
Angular setting	fixed		120° temperature setting on the scale	
Case	Galvanised plate / plastic			
Sensor	Copper			
Capillary	Copper with PVC protection			
Contact load	16(4)A 250V, 6(1)400V			

Dimension	mm
A	44
B	32
C	M4
D	1500
E	75
F	6,5
G	17
H	11
I	6,3
J	10
K	7,5
M	28



THREE-PHASE CAPILLARY THERMOSTAT MMG

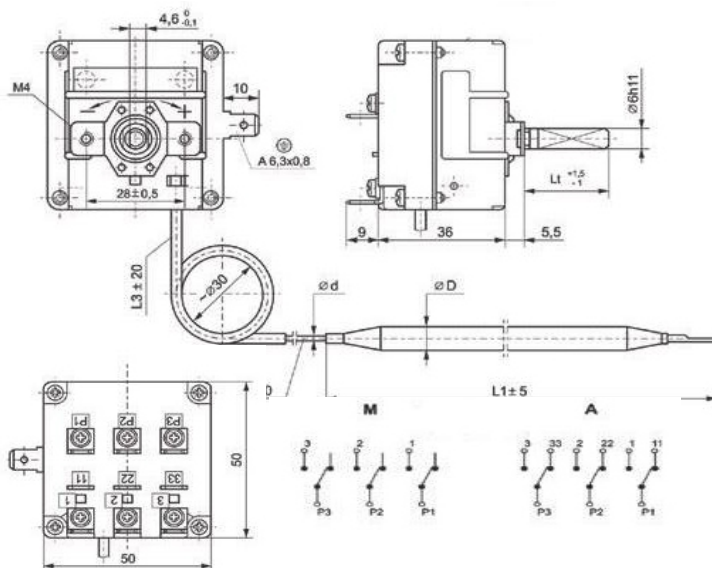
load 16A/400V
shaft setting



Specification:

After reaching the pre-set temperature, the thermostat automatically disconnects the electric circuit, in case of temperature drop it connects again and thus continuously keeps the medium temperature by on/off switching. These thermostats are used particularly for washing machines, industrial kitchen cookers, ovens etc. It is suitable for temperature control of liquid, gas and solid substances.

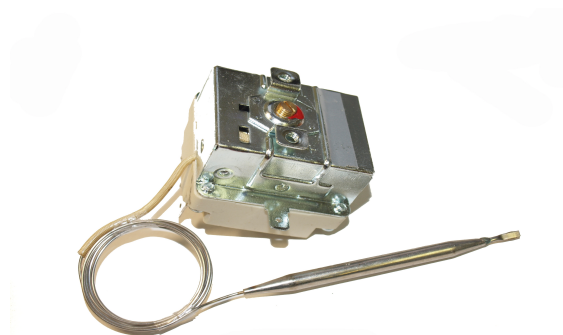
Technical parameters	
Switching range:	16 A, 400 V
Life-time:	100.000 switch ons
Touch protection:	I. (earthed)
IP protection:	IP00
Connection:	A 6,3 terminal clip
Max. surrounding temperature:	150°C
Max.temperature of sensor surrounding:	Upper switching value + 15%
Relative air humidity:	30-80%
Storing temperature:	5-50°C
Installation:	inner
Use position:	optional
Weight:	80 g



Type:	Regulatory range: (°C)	Switching temperature difference (°C)	Sensor diameter (mm)	Sensor length (mm)	Capillary length (mm)
5270-0-101-1	50-280	10	4	168	420
5270-0-101-4	50-300	10	4	168	1500
5270-0-101-9	50-280	10	6	168	920
5270-0-104-4	50-190	10	6	95	600
5270-0-104-8	50-190	10	6	95	920
5270-0-105-0	50-220	10	6	95	920
5270-0-113-4	20-110	4	6	165	920
5270-0-114-2	20-80	4	8	88	920
	25-85				
	30-90				
5270-0-118-4	50-230	12	3	276	920
5270-0-131-1	50-300	10	4	168	920

THREE-PHASE CAPILLARY FUSE

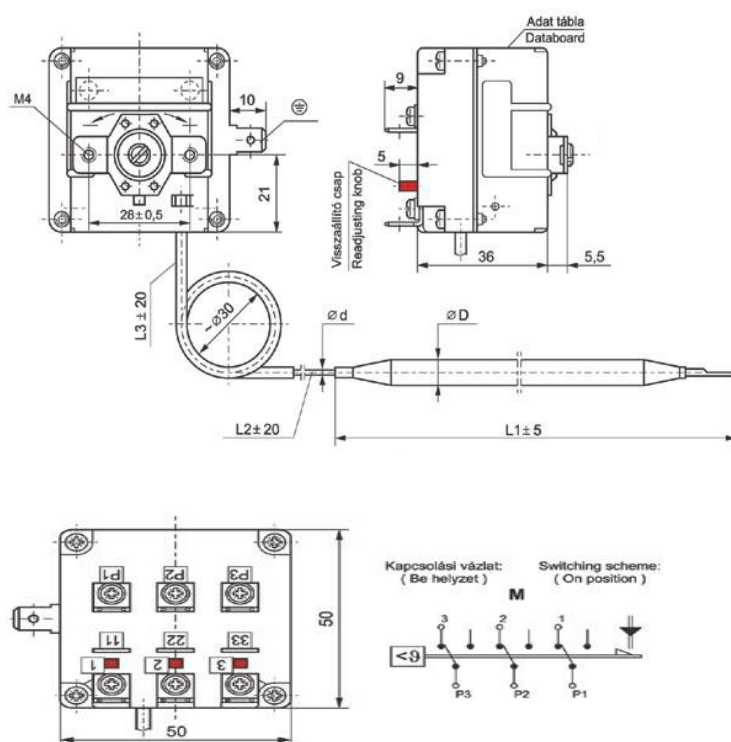
load 16A/400V
manual reset



Specification:

If the temperature of the sensor surroundings reaches the pre-set value by a manufacturer, the circuit disconnects. That's how the fuse protects the appliance from over-heating. Next connection can only be done mechanically. The fuse is designed primary for hot water boilers and other heating appliances as a protective device. It is a suitable thermoregulatory of all liquid, gas and solid substances.

Technical parameters	
Switching range:	16 A, 400 V
Life-time:	1.000 switch-ons
Touch protection:	I. (earthed)
IP protection:	IP00
Connection:	A 6,3 terminal clip
Max. surrounding temp.:	150°C
Max. temperature of sensor surrounding:	Upper switching value + 15%
Relative air humidity:	30-80%
Storing temperature:	5-50°C
Installation:	inner
Use position:	optional
Weight:	80 g



Type:	Regulatory range: (°C)	Sensor diameter (mm)	Sensor length (mm)	Capillary length (mm)	Protective collar length (mm)
5278-0-100-1	315 ± 6	4	168	420	40
5278-0-102-1	220 ± 6	4	168	420	40
5278-0-103-1	250 ± 6	6	95	920	40
5278-0-103-2	315 ± 6	6	95	920	40
5278-0-117-6	135 (+0 -10)	6	117	920	320

COMBINATED THERMOSTAT WITH FUSE

load 20/30A/400V

three-phase, manual reset

type RAC



Specification:

After reaching a pre-set temperature the thermostat automatically disconnects the electrical circuit. In case of a temperature drop it connects again and simultaneously keeps the medium temperature by on/off switch. If the temperature of sensor surroundings reaches the pre-set value by a manufacturer, the circuit disconnects. Thats how the fuse protects the appliance from over-heating. These thermostats are used primary for washing machines, industrial ovens, etc. Suitable for termoregulatory of all liquid, gas and solid substances.

Technical parameters	
Regulatory range	20/30 A, 400 V
Thermostat life-time:	100.000 connections
Fuse life-time:	500 connections
Contact protection:	I. (earthed)
IP protection:	IP00
Capillary and sensor material:	copper/ stainless steel
Max. environment temperature:	330 °C
Max. sensor surrounding temperature:	Upper disconnecting value + 25%
Ending:	Thread M 4x8
Storing temperature:	-25 +60°C
Membrane material:	Stainless steel
Use orientation:	optional

Setting range (°C)		Calibration tolerance (K)		Connecting difference (K)		Max. Temperature (°C)	
TR/TW	STB	TR/TW	STB	TR/TW	STB	TR/TW	STB
30...85	100	+3.2	0 – 6	-10	-10	115	130
0....100	110	+3.5	0 – 6	-12	-10	125	140
0....300	330	+10	0 – 16	-30	-30	340	370

ENCASED THERMOSTATS

**contact, stem, room, capillary
free/covered regulation**



Specification:

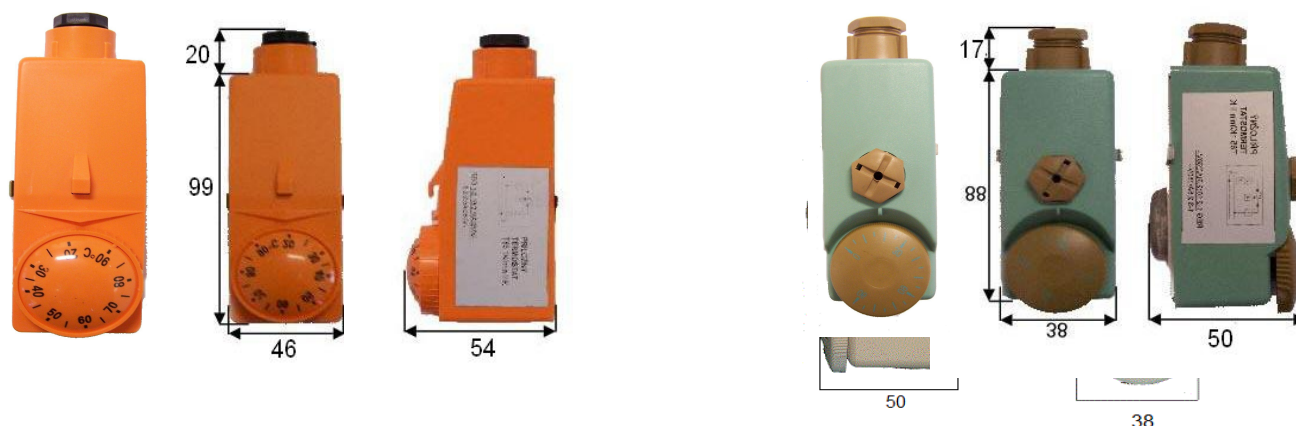
Encased thermostats are mainly used in applications, where visual aspect is important as well as easy control, optionally when it is important to prevent from direct contact with the contacts. Commonly used to switch-on boiler circulating pump. Thanks to higher protection IP54 they are suitable even for external use. Main advantages are easy control and mounting, reliability.

Contact encased thermostats

Both series are equipped with ON/OFF contact of the electric circuit. THP series enables the user to set the switch-on difference. This series is also supplied with covered regulation to prevent from deliberate and non-professional manipulation.

Thermostat type WTHP is due to its wider regulatory range suitable also for applications, where it is essential to control temperatures about zero. That is why WTHP has higher protection – IP 40.

	THP-90	WTHP 90
Temperature range :	20-90°C	0-90°C
Temperature difference :	8±3 K	8±3 K
IP protection :	IP20	IP40
Insulation class :	I	I
Rate of temp. change :	< 1K/min	< 1K/min
Tmax surrounding :	85°C	85°C
Storing temperature:	15-60°C	15-60°C
Output :	contact switch-off or over	contact switch-off or over
Contact load :	1-2 = 16 (2,5)A/250V~	1-2 = 16 (4)A/250V~
	1-3 = 2,5A/250V~	1-3 = 6(1)A/400V~
Installation :	common environment	common environment
Output pipe :	M20x1,5	M20x1,5
Mounting :	on pipe	on pipe
Design:	Freely accesible or covered regulation	

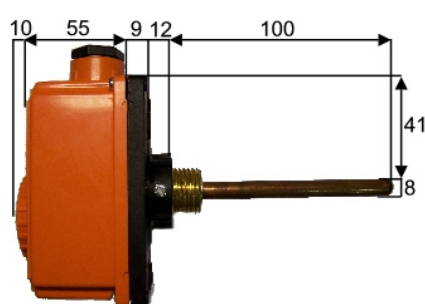


Stem encased thermostats

Specification:

Stem thermostat is designed for electric device operation in dependence on temperature of measured medium. It is mounted into heating system by copper protection well with G1/2 thread. Use suitable material for connection sealing, such as teflon tape. Maximum permitted pressure on the well is 10bar (1 MPa). Wide spectrum of temperature ranges. Standard stem length is 100 mm (optionally 200, 300 mm).

Technical parameters	THS-90	THS-210
Temperature range	0-90°C	40(70)-210°C
Temperature difference	5°K	5°K
Stem length	100 – 300 mm	
IP protection	IP 40	IP 40
Insulation class	I	I
Rate of temp. change	< 1°K/min	< 1°K/min
Storing temperature	15 – 55 °C	15 – 55 °C
Contacts	On/off	
Contact load	C-1 = 16 (4) A/250V~, 7A/400V~	
Tmax case surroundings	80°C	80°C
Tmax sensor	125°C	245°C
Mounting	well D8mm with thread G1/2	
Design	Freely accessible regulation	

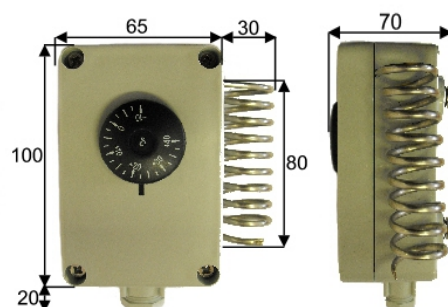
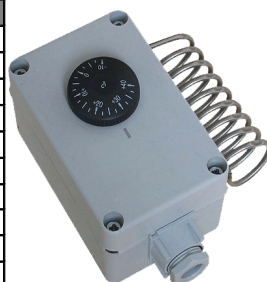


Room thermostats

Specification:

Room thermostat is designed to operate electric devices depending on the rooms temperature. Wall mounting. Due to its high IP protection 54 they are also suitable for exterior use. Main advantages are easy operation and installation, reliability.

Technical parameters	type THPR
Temperature range	-10...+40°C
Accuracy	±3°C
Temperature difference	5°K
IP protection	IP 54
Insulation class	I
Rate of temperature change	< 1°K/min
Contact load	16 (4) A 250 V~ 6 (1) A 250 V~
Case surrounding Tmax	80°C
Mounting	wall

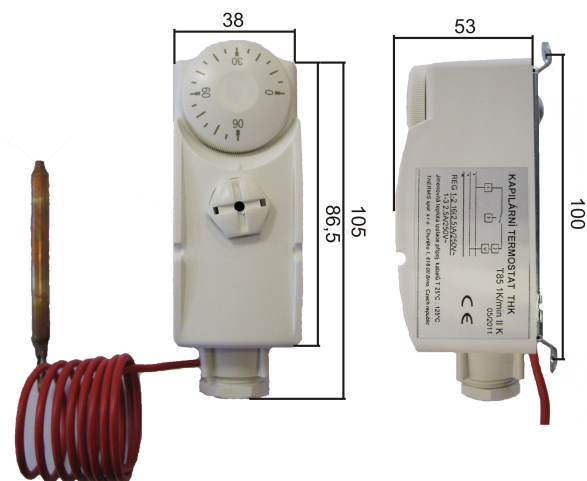


Capillary encased thermostats

Specification:

Capillary thermostat is designed for electric devices depending on temperature of measured medium. Used in applications, where the place of measurement is out of reach. Main advantages are easy handling, mounting and reliability.

Technical parameters type THK	
Temperature range:	0...+90°C
Accuracy:	±3°C
Temperature difference	5°C
IP protection:	IP 40
Capillary length:	1.000mm
Contact load:	16 (4) A 250 V~
	6 (1) A 250 V~
Tmax case surrounding:	80°C
Mounting:	On wall



STEM THERMOSTAT WITH REVERSIBLE USE

type DTHS-70,90

IP protection 44



Specification:

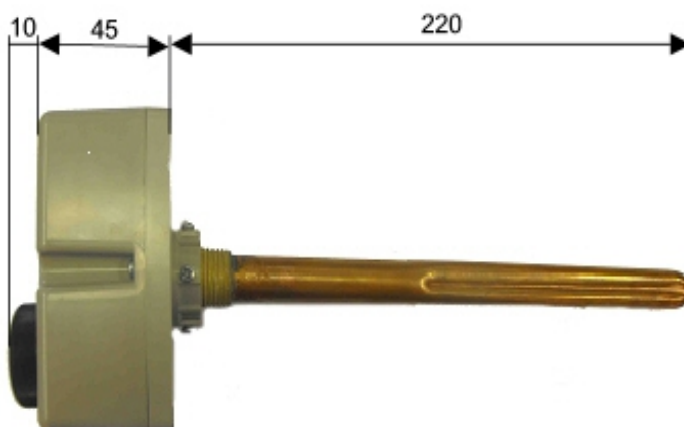
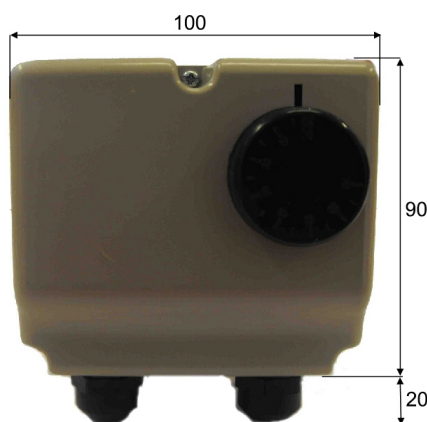
This thermostat is designed for temperature regulation in liquid or other environment, where a thermostat fuse automatically switches the circuit off in case of thermostat failure. The fuse is part of this device and works as a protection element. After cover removal it is possible to control manually.

Application: heating, hydraulic systems, industry

Description:

PVC cover
copper well G1/2"
adjustable, reversible fuse
regulatory knob
IP 54

Type	DTHS - 70	DTHS - 90
Regulatory range of the thermostat	0 - 70°C	30 - 90°C
Regulatory range of the fuse	0 - 90°C	90 - 110°C
Setting accuracy	+ / - 5°C	+ / - 5°C
Stem length	200 mm	200 mm
Contact load	16 A / 250 V	16 A / 250 V
Weight	0,52 kg	0,52 kg
Reversible fuse manual reset	yes / no	yes / no



PROTECTION WELLS

Material brass, copper

1 and 3 sensor design



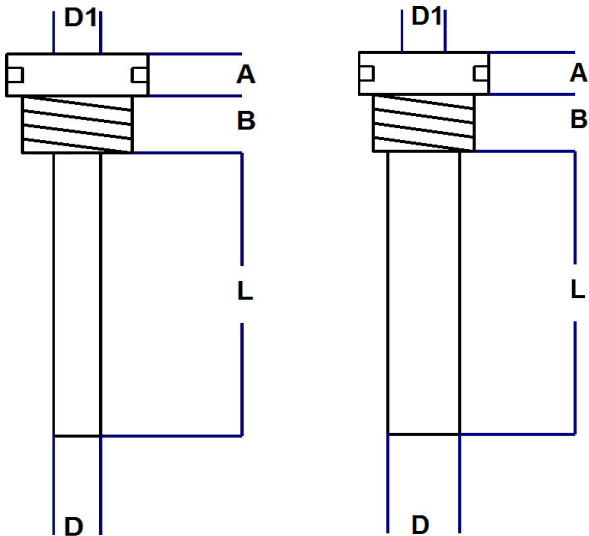
Specification:

Designed for protection of all thermometers, NTC and other sensors mainly in semi-heavy conditions. The body is made of copper, thread is brass. Wells are stepped with thread G1/2. They are divided into one- and three-sensor type according to amount of inserted sensors. Equipped with fuse spring for capillary sensor, thermostat etc. attachement.

Type	For 1 sensor	For 3 sensors (pressed)	Fuse spring
Length	45, 100, 200 mm	100, 200 mm	-
Well/socket material	copper / brass		steel
Thread	G1/2"		for thread G1/2"
Inner diameter	7 / 15 mm	15 mm	-
Outer diameter	8 mm	16 mm	-

Dimensions:

Type	1-way	1-way	3-way
L	100, 200	45	100, 200
A	8	8	8
B	12	12	12
D	15	7	15
D1	8	8	16



PRESSURE SWITCH

ON/OFF type 110

Ranges from 0.3-6 bar

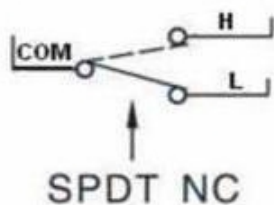


Specification:

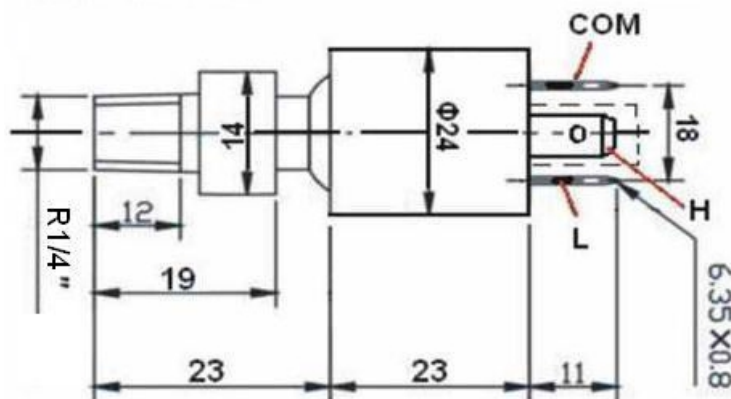
Pressure switches are designed for wide range of application in most branches of industry. Max. voltage 250 V and 16 A. The body of the switch is plastic and bottom connection thread G1/4" is made of brass. Applicable in common operations. Medium temperature up to 120°C.

Type	Low pressure	Standard pressure
Ranges	0,3-0,7 bar accuracy +/- 0,1 bar 0,8-1,5 bar accuracy +/- 0,15 bar	0,5-0,7 bar accuracy +/- 0,1 0,8-1,5 bar accuracy +/- 0,15 1,6-6 bar accuracy +/- 0,2
Maximum pressure	Max pressure switch setting + 2 bars	
IP protection	IP 00	
El. contact load	16 (4) A 250VDC / 6(1) 400 VDC	
Mechan. life-time	100 000 cycles	
Connection	G 1/4"	
Material	Thread brass, body plastic	
El. connection	3x FAST ON 6,35 x 0,8	
Medium	Air, water and other medium on request	

Contact connexion



Dimensions



HEATING ELEMENTS WITH REGULATION

liquid heating
power 1,5 - 12kW

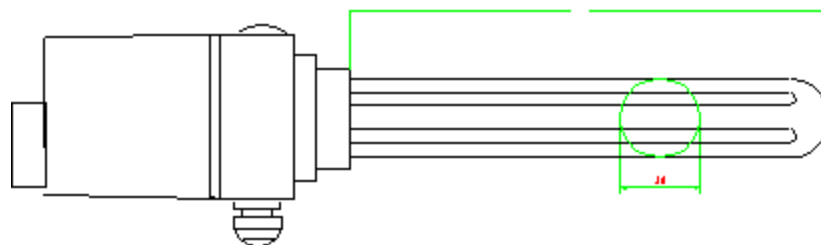
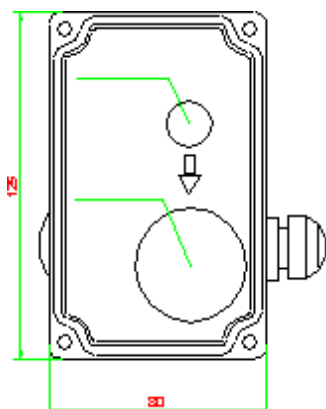


Specification:

Heating element consists of two parts: the hot part is composed of three rods made of mentioned materials, U-shaped attachment to the head with thread M48x2 or G1¹/₂". Terminal board is made from Al case with IP 54. Other components are : the three-phase capillary thermostat with a range of 30-85°C, thermal fuse to prevent over-heating of the heating element, glow tube to indicate the current condition (on / off) and regulatory knob with indicated scale. Electric supply is possible from both sides through the OBO-VTEC bushing.

Heating element is designed for direct heating of any liquid (material of the body must be adapted). The body must be constantly immersed up to the head in the liquid during all operation. Suitable for operations, where immediate liquid thermoregulation is essential.

W	V	L	Material	Scale / Thermal fuse
1500	230/400	290	Brass, stainless steel 17 248, Incoloy 800	0-40°C / 55°C 7-77°C / 99°C 20-127°C / 150°C 30 – 85°C / 110°C 50-150°C/ 180°C
2000	230/400	290		
2400	230/400	290		
3000	230/400	290		
4000	230/400	310		
4500	230/400	335		
6000	230/400	435		
7500	230/400	610		
9000	230/400	670		
12000	230/400	810		



HEATING ELEMENTS FOR LIQUID HEATING

power 800W – 30kW
water and similar liquids heating



Specification:

Heating elements designed for water and similar liquids heating without the threat of medium carbonisation on the body surface. Typical fields of application:

Household electrical appliances – boilers, washing machines, dish washers, electro boilers, oil radiators, hot water radiators, kettles, coffee machines, deep fryers

Food industry and gastronomy – water heaters, other cooking vessels, steam chambers, deep fryers and other frying equipment.

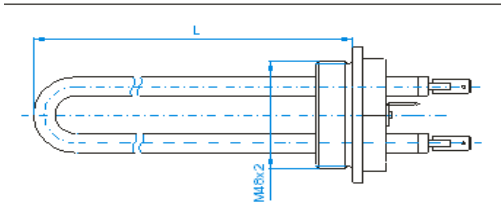
Transport – coolant heating and transmission oil heating in motor vehicles during winter period

Type: 5101 / 5102 ; 14010970; 40.xxx

Heating element consists of one heating rod, attached to the brass head(M48x2 / G6/4). Heating branch has got connecting terminals with M4 screws, that serve for cable inlet connection. Suitable for direct water and similar liquid heating (boilers), must be immersed to the head during all operations.



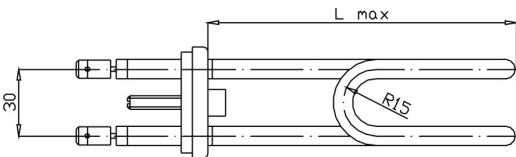
Type			V	W	L	screw
5101/011	1401097010	40.800	230	800	285	M48x2 G6/4
5101/013	1401097020	40.1000	230	1000	370	
5101/018	1401097040	40.2000	230	2000	353	
5102/011	1401097030	40.1600	230	1600	293	
5102/012	1401097050	40.2400	230	2400	363	



Type: 5107; 14006950; 16.xxx

Heating element consists of heating rod attached to the flange. Outlets are equipped with flat pins. Suitable for direct water heating in el. water heaters, must be immersed to the flange during all operations.

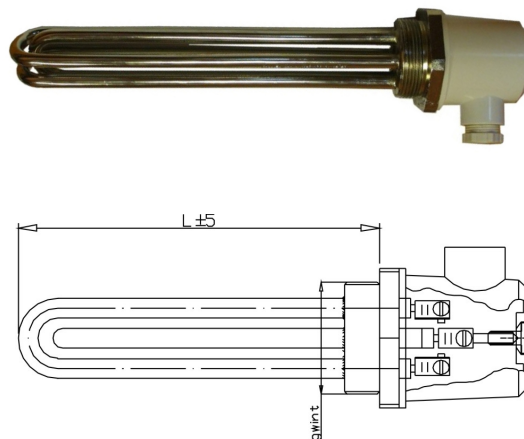
Type			V	W	L	L2	Ø
5107/7	1400695070	16.121	230	850	138	30	8,5
5107/1	1400695010	12.102	230	1000	198	30	8,5
5107/8	1400695020	16.131	230	1350	193	30	8,5
5107/3	1400695030	16.141	230	1600	283	30	8,5
5107/9	1400695040	16.151	230	1750	253	30	8,5
5107/6	1400695060	16.161	230	2000	358	30	8,5
5107/5	1400695050	16.171	230	2400	358	30	8,5



Type: 5144; 14011900; 40.xxx

Heating element consists of three U-shaped heating rods, which are attached to the brass head with a cover (IP 54). Designed for direct water and similar liquids heating in water heaters, electroboilers etc., must be immersed to the head during all operations.

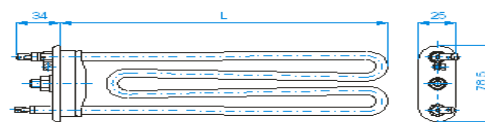
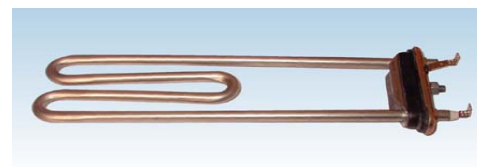
Type			V	W	L	screw
5144/1	1401190091		230/3x230	1500	148	M48 x 2 G6/4
5144/2	1401190081		230/3x230	2000	178	
5144/3	1401190010	40.911	230/3x230	2400	203	
5144/4	1401190020	40.921	230/3x230	3000	240	
5144/5	1401190030	40.931	230/3x230	4000	303	
5144/6	1401190040	40.941	230/3x230	4500	333	
5144/7	1401190050	40.951	230/3x230	6000	428	
5144/8	1401190060	40.961	400/3x400	7500	520	



Type: 14089; 02.xxx

Heating element designed for direct water heating in washing machines. Installation is performed using flat oval hole 18x70, sealing is performed using one nut M8. Heating rods is made of stainless steel. Must be immersed during all operations.

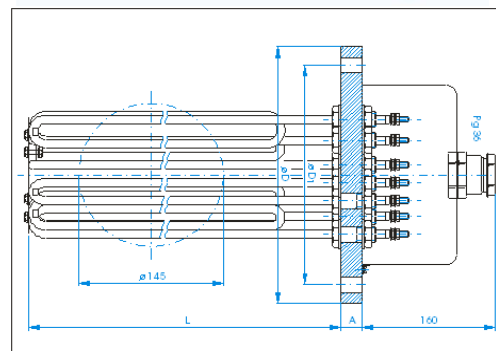
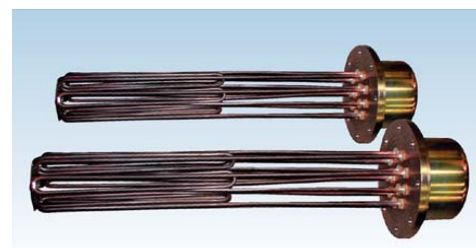
Type		V	W	L
1408990060	02.1750	230	1750	190
1408990040	02.2000	230	2000	225
1408990100	02.2500	230	2500	180
1408990150	02.2800	230	2800	300
1408990050	02.3000	380	3000	370
1408990080	02.4000	380	4000	370



Type: 14071

Heating element designed for direct water and similar liquids heating. Working pressure max 1,0 MPa. Heating rods are made of copper-nickel or stainless steel, nickel-steel flange. IP protection 42.

Type	W	R+/-5	D	D ₁	Jt MPa
14407193010	15000	550	260	225	0,6
14407193020	18000	575			
14407193050	24000	735			
14407193060	30000	870			
14407193110	15000	505			
14407193160	30000	870	280	240	1,0
14407193210	15000	550			
14407193220	18000	575			
14407193250	24000	735			
14407193260	30000	870			
14407193310	15000	505			
14407193360	30000	870			

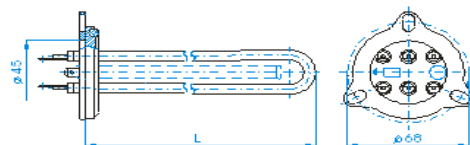


Type: 14520

Heating element designed for dishwashers manufactured by ALBA Hořovice. Stainless steel rods, brass flange.



Type	V	W	Well
1452090000	220	3 x 2000	No well
1452090010	220	3 x 1333	No well
1452090030	220	3 x 2000	With well
1452090050	220	3 x 1333	With well



Type: 14273

Heating element for galvanic baths heating. It can work in upright position only and the level must reach max. 5cm under the holder and minimum up to the draft mark. IP protection 54, casing material optional: steel, stainless steel, titanium.

