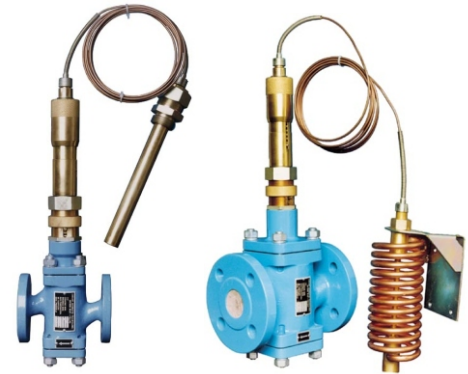


TEMPERATURE CONTROLLERS OF DIRECT CONTINUOUS OPERATION ARE USED IN AUTOMATIC TEMPERATURE CONTROL SYSTEMS IN HEATING INDUSTRY, AIR CONDITIONING, VENTILATING AND IN ALL BRANCHES OF INDUSTRY. LIQUID TEMPERATURE SENSORS HCT-type and valves MEZ-, MEO-, MED-type PERFORM REQUIREMENTS OF DIRECTIVE PED 97/23/WE PRESSURE SYSTEMS (ART. 3 PAR.3) AND THEY ARE MADE WITH ACKNOWLEDGED ENGINEERING PRACTICE.



- direct continuous operation
- valves at diameters from DN15 to Dn50
- range of setting value from -20°C to +130°C
- nominal pressure:
 - for valves 1,6 MPa
 - for liquid sensor 4,0 MPa (optional to 6,3 MPa)
- they perform requirements of directive PED 97/23/WE (art.3, par.3)

DESIGN

The temperature controller of direct continuous operation consists of:

- liquid temperature sensor (HCT),
- control valve (MED,MEZ,MEO)

Liquid sensor HCT-type and control valve are connected by separable screwed connection..

Depending on the control valve type, the controllers are divided into the following:

- three-way mixing MED-type,
- opening MEO-type,
- closing MEZ-type.

TECHNICAL DATA

THREE-WAY MIXING CONTROL VALVES - relate to drawing no. 1

- Nominal pressure - 1.6MPa
- Working temperature - up to 150°C for soft closing component; up to 250°C for hard closing component

Valve type	Max. permissible pressure before valve for water MPa	Max. Permissible p for water		K _v value ±10% m ³ /h	Max. leakage l/min	Travel of valve	Overall dimensions in mm						
		M	R				D _n	D _p	D _k	d _o	L	H	h
MED-01-01*...02**	1.3	0.6	0.2	3.6	0.30	3	15	65	95	14	130	120	118
MED-02-01...02	1.3	0.8	0.15	6.0	0.40	4	20	75	105	14	150	140	129
MED-03-01...02	1.3	0.8	0.12	10.0	0.50	5	25	85	115	17	160	145	129
MED-04-01...02	1.2	0.8	0.08	12.0	0.63	6	32	100	140	18	180	150	148
MED-05-01...02	1.2	0.6	0.05	16.5	0.80	6	40	110	150	18	200	155	148
MED-06-01...02	1.2	0.6	0.05	25.0	1.00	9	50	125	165	18	230	205	167

Leakage measured for water at $\Delta p = 0.2\text{MPa}$ * - hard closing component ** - soft closing component

THREE-WAY MIXING CONTROL VALVES - relate to drawing no. 2

- Nominal pressure - 1.6MPa
- Working temperature - up to 150°C for soft closing component; up to 250°C for hard closing component

Valve type	Max. permissible pressure before valve for water MPa	Max. Permissible p for water		K _v value ±10% m ³ /h	Max. leakage l/min	Travel of valve	Overall dimensions in mm						
		M	R				D _n	D _p	D _k	d _o	L	H	h
MED-01-01*...02**	1.3	0.6	0.2	3.6	0.30	3	15	65	95	14	130	120	163
MED-02-01...02	1.3	0.8	0.15	6.0	0.40	4	20	75	105	14	150	140	172
MED-03-01...02	1.3	0.8	0.12	10.0	0.50	5	25	85	115	17	160	145	184
MED-04-01...02	1.2	0.8	0.08	12.0	0.63	6	32	100	140	18	180	150	202
MED-05-01...02	1.2	0.6	0.05	16.5	0.80	6	40	110	150	18	200	155	194
MED-06-01...02	1.2	0.6	0.05	25.0	1.00	9	50	125	165	18	230	205	219

Leakage measured for water at $\Delta p = 0.2\text{MPa}$ * - hard closing component ** - soft closing component

CONTROL VALVES - OPENING AND CLOSING TYPES

- Nominal pressure - 1.6MPa
- Working temperature - up to 150°C for soft closing component; up to 250°C for hard closing component

Valve type	Max. permissible pressure before valve for water MPa	Max. Permissible Δp for		K _v value $\pm 10\%$ m ³ /h	Max. Leakage l/min	Travel of valve	Overall dimensions in mm						
		Water	Steam				D _n	D _p	D _k	d _e	L	H	h
MEO-01-01*...02** MEZ-01-01...02	1,3 1,5	1,2 1,2		3,6	0,06 0,06	3 3	15 15	65 65	95 95	14 14	130 130	120 120	118 118
MEO-02-01...02 MEZ-02-01...02	1,3 1,3	1,3 1,3	1,3	6,0	0,08 0,08	4 4	20 20	75 75	105 105	14 14	150 150	140 140	129 129
MEO-03-01...02 MEZ-03-01...02	1,3 1,5	0,8 0,8	1,3	10,0	0,10 0,10	5 5	25 25	85 85	115 115	17 17	160 160	145 145	129 129
MEO-04-01...02 MEZ-04-01...02	1,2 1,2	0,9 0,9	1,3	12,0	0,13 0,13	6 6	32 32	100 100	140 140	18 18	180 180	150 150	148 148
MEO-05-01...02 MEZ-05-01...02	1,2 1,2	0,6 0,6	1,3	16,5	0,16 0,16	6 6	40 40	110 110	150 150	18 18	200 200	155 155	148 148
MEO-06-01...02 MEZ-06-01...02	1,0 1,2	0,5 0,5	1,3	25,0 25,0	0,20 0,20	9 9	50 50	125 125	165 165	18 18	230 230	205 205	167 167

Leakage measured for water at $\Delta p = 0.2\text{MPa}$ * - hard closing component ** - soft closing component

LIQUID TEMPERATURE SENSORS

The liquid temperature sensors HCT-type are designed for controlling the control valves type MED-, MEO-, MEZ-. The HCT- sensors can co-operate with valves of 'MERTIK' company using the manual setter of HC3-0030 symbol. Nominal pressure 4,0 MPa (optional up to 6,3 MPa)

Sensor type	Set-point range °C	Proportionality range mm/°C	Time constant		Over-heating temp. °C	Over-heating temp.	Overall dimensions							D _g	D _w	L Capillary length
			Water	Air			L _c	D _e	D _p	d _e	I _a	I _b	L _w			
				s		mm										
HCT-01-01 HCT-01-02	-20...+50	0,4 0,6	75		50 40	Brass	236 361	22	—	—	—	—	205	1"	M38 x1,5	3m 6m 9m
HCT-02-01 HCT-02-02		0,4 0,6	20		50 40	Brass	246 395	28	—	—	—					
HCT-03-01 HCT-03-02		0...70 30...100	0,4 0,6	12	80	50 40	Copper	180 245	75	100	14	—				
HCT-04-01 HCT-04-02		60...130	0,4 0,6			50 40	Copper	180 245	75	—	5,5	80				
HCT-05-01 HCT-05-02		0,4 0,6	80		50 40	1H18N9T steel	270 405	21,3	—	—	—	—	1"			

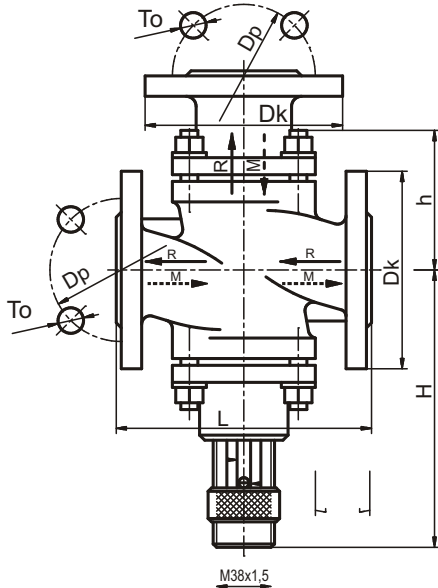
REMARK: Standard version +30...100°C

**TEMPERATURE CONTROLLER
SELECTION OF LIQUID TEMPERATURE SENSOR AND CONTROL VALVE**

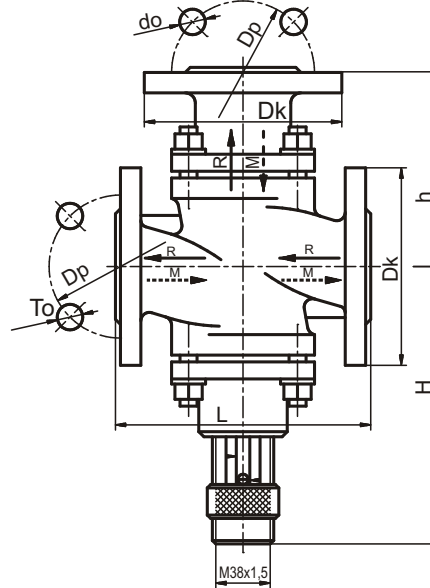
Liquid temperature sensor type	Proportionality range in °C, in connection with control valve					
	Control valve type					
	MED-01 MEO-01 MEZ-01	MED-02 MEO-02 MEZ-02	MED-03 MEO-03 MEZ-03	MED-04 MEO-04 MEZ-04	MED-05 MEO-05 MEZ-05	MED-06 MEO-06 MEZ-06
HCT-01-01 HCT-02-01 HCT-03-01 HCT-04-01 HCT-05-01	7,5	10	12,5	15	15	24
HCT-01-02 HCT-02-02 HCT-03-02 HCT-04-02 HCT-05-02	5	6,5	8	9,5	9,5	15

The proportionality range shown in the double frame (blue) are the standard values recommended for use

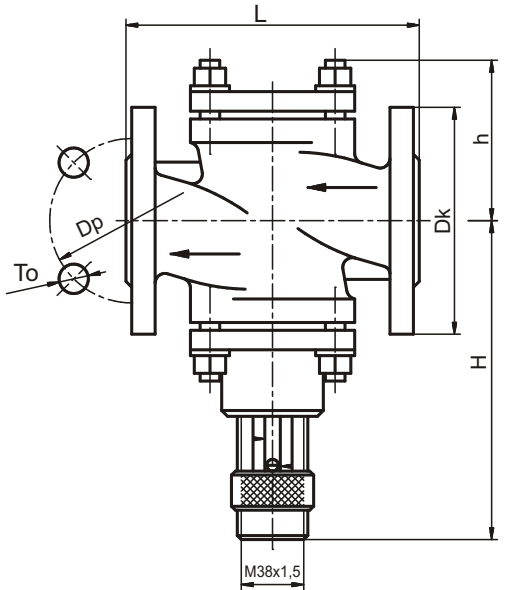
Three-way control valve type
- drawing no. 1



Three-way control valve type
- drawing no. 2



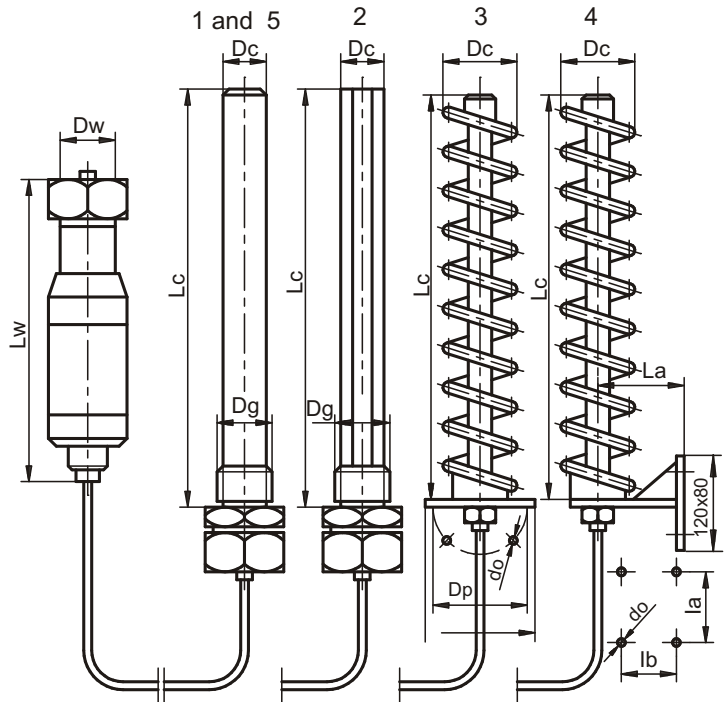
Control valve - opening and closing



METHOD OF VERSION DENOTING FOR LIQUID TEMPERATURE SENSORS

(*) Liquid temperature sensors HCT- ()-()-()-()

Sensor shape:	
- tube	-01
- multi-tube	-02
- spiral with flange	-03
- spiral with hanger	-04
- acid-proof steel tube	-05
Proportionality range Xp:	
- Xp = 0.4 mm/°C	-01
- Xp = 0.6 mm/°C	-02
Capillary tube length:	
- 3m	-1
- 6m	-2
- 9m	-3
- 12m	-4
Setting range in °C:	
- 30...100	-2
- 0...70	-3
- 20...50	-4
- 60...130	



* version with nominal pressure of liquid temperature sensor up to 6,3 MPa has to be agreed with manufacturer - Controlmatica ZAP-PNEFAL, +48 62 73 72 250

ORDERING OF TEMPERATURE CONTROLLERS TYPE TREC WITH LIQUID TEMPERATURE SENSORS

One should give full product name and symbol in his order, e.g.
Temperature controller of direct continuous action type valve MEZ-01-02
with liquid temperature sensor type HCT-01-01-1-1

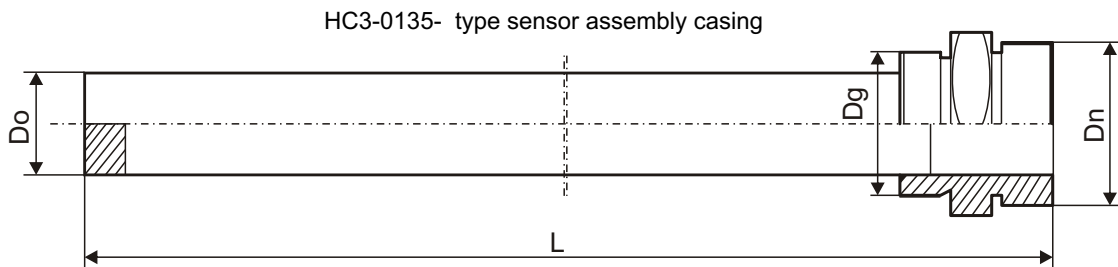
The right of introducing design changes in the product, without deteriorating of its operation parameters, is reserved.

ADDITIONAL EQUIPMENT

SENSOR ASSEMBLY CASING

The sensor assembly casing for temperature sensors HCT-01- can be placed in a casing, its symbol is - HC3-0135. This casing protects the sensor tube and allows to replace the sensor assembly, without the need to disconnect the installation.

Casing symbol	Overall Dimensions			
	L	Do	Ds	Dn
HC3-0135-1	281mm	25mm	1"	M38x1.5
HC3-0135-2	406 mm			



MANUAL SETTER

The Liquid temperature sensors HCT- can co-operate with control valves of 'MERTIK' Company make, using the manual setter of HC3-0030 symbol - for valves of 15 to 40 mm dia.; while HC3-0148 - for valves above 50 mm dia.

