

TEMPERATURE CONTROLLERS TYPE TREC

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.

DESIGN

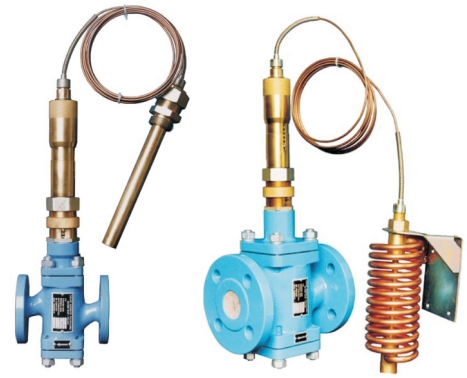
The temperature controller of direct continuous operation consists of:

- 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:

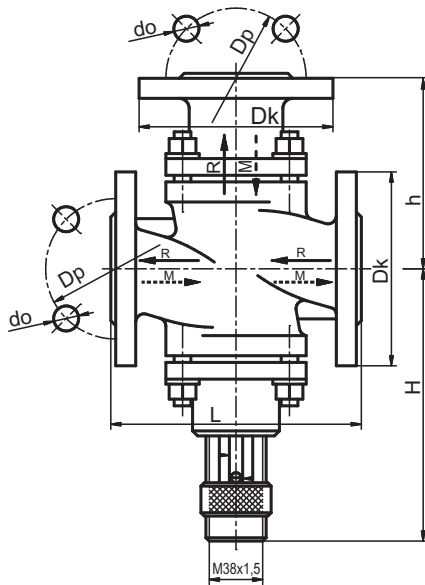
- three-way mixing MED-type,
- opening MEO-type,
- closing MEZ-type.



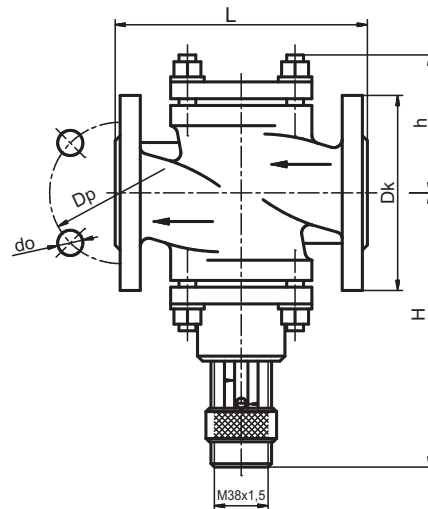
- direct continuous operation
- valves at diameters from DN15 to Dn50
- range of setting value from -20°C to +130°C
- nominal pressure 1,6 Mpa
- they perform requirements of directive PED 97/23/WE (art.3, par.3)

Dimensioned drawing

Three-way control valve type



Control valve - opening and closing



TECHNICAL DATA

THREE-WAY MIXING CONTROL VALVES

- 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 D_p = 0.2MPa

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

Leakage measured for water at D_p = 0.2MPa

* - 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.

| 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 _o | I _a | I _b | L _w | | | |
| | | | | s | | mm | | | | | | | | | | |
| HCT-01-01 | -20...+50 | 0,4 | 75 | | 50 | Brass | 236 | 22 | — | — | — | 205 | 1" | M38 x1,5 | 3m 6m 9m | |
| HCT-01-02 | | 0,6 | | 40 | | 361 | | | | | | | | | | |
| HCT-02-01 | | 0,4 | 20 | | 50 | Brass | 246 | 28 | — | — | — | | | | | |
| HCT-02-02 | | 0,6 | | | 40 | | 395 | | | | | | | | | |
| HCT-03-01 | 0...70 | 0,4 | | | 50 | Copper | 180 | 75 | 100 | 14 | — | 50 | — | | | |
| HCT-03-02 | 30...100 | 0,6 | 12 | 80 | 40 | | 245 | | | | | | | | | |
| HCT-04-01 | 60...130 | 0,4 | | | 50 | Copper | 180 | 75 | — | 5,5 | 80 | | | | | |
| HCT-04-02 | | 0,6 | | | 40 | | 245 | | | | | | | | | |
| HCT-05-01 | | 0,4 | | | 50 | 1H18N9T | 270 | 21,3 | — | — | — | 1" | | | | |
| HCT-05-02 | | 0,6 | 80 | | 40 | steel | 405 | | | | | | | | | |

REMARK: Standard version +30...100°C

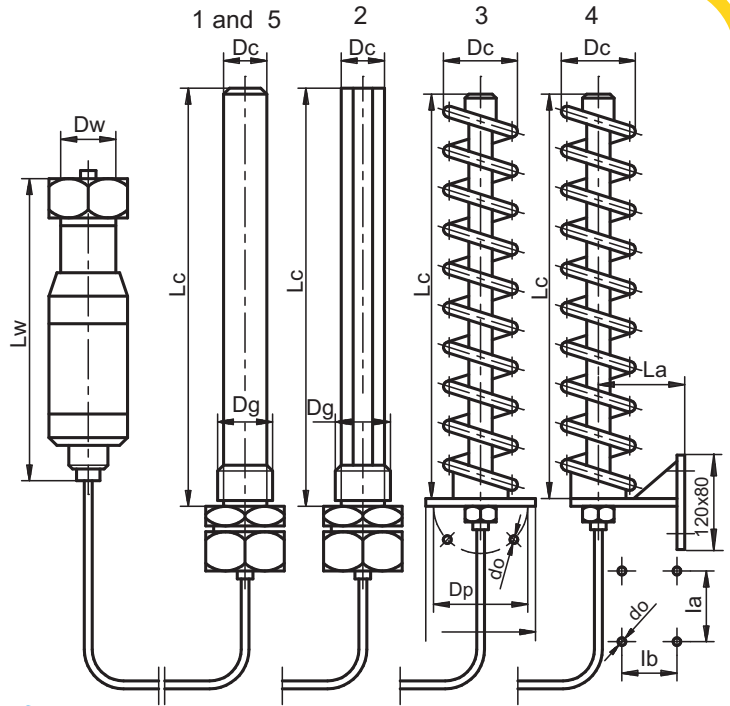
TEMPERATURE CONTROLLER SELECTION OF LIQUID TEMPERATURE SENSOR AND CONTROL VALVE

| 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

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 |
| Setting range in °C: | |
| - 30...100 | -1 |
| - 0...70 | -2 |
| - 20...50 | -3 |
| - 60...130 | -4 |



* longer capillary has to be agreed with manufacturer

ORDERING OF TEMPERATURE CONTROLLERS TYPE TREC WITH LIQUID TEMPERATURE SENSORS

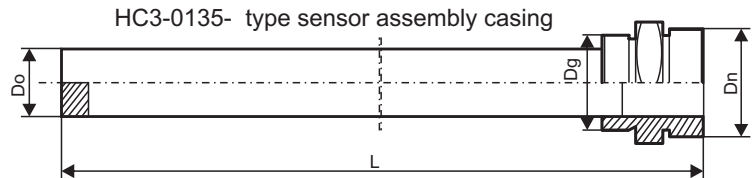
One should give full product name and symbol in his order, e.g.
 Temperature controller of direct continuous action type valve MEZ-01-02
 with liquid temperature sensor type HCT-01-01-1-1

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.

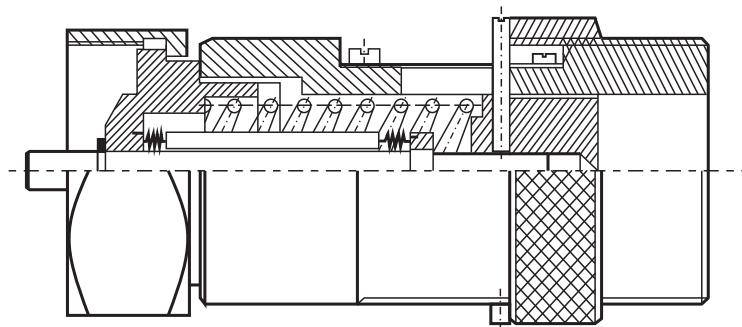
| Casing symbol | Overall Dimensions | | | |
|---------------|--------------------|------|----|---------|
| | L | Do | Dg | Dn |
| HC3-0135-1 | 281mm | 25mm | 1" | M38x1,5 |
| HC3-0135-2 | 406mm | | | |



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.

Manual setter HC3-0148 and HC3-0030



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