

Temperature

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Temperature Controller - General

- Compact
- Rugged
- Reliable
- Easy operation
- Metal housing
- High protection class
- Modular construction
- Many variants
- Rotatable
- Analogue output
- Password
- °C, °F

The TemperatureController combines the functions of a temperature switch, a temperature sensor and a display instrument:

- Temperature display (thermometer)
- Switching outputs
- Analogue signal

Simple operation, comprehensive functionality and modular construction are the most important features of the TemperatureController.

The TemperatureController offers excellent technical parameters and optimal temperature management combined with many mounting possibilities.

Consequently it is ideal where temperature must be safely monitored and easily viewed.

Easy to operate

During temperature monitoring the usual matching of the limiting values (eg. cooling and alarm) is effected via the keys or a programming module.

High functionality

Every switching output can be individually set:

- Normally closed/normally open contacts
- Temperature on/off switch
- Delay times
- Hysteresis/window function

Intelligent settings can be achieved with these convenient switch functions; these would simply not be possible with a mechanical switch. Consequently several switches can be replaced by one Controller.



The analogue output is individually settable

- 0/4...20 mA switchable
- Settable starting temperature
- Settable fi nal temperature

Reliable/safe

An existing functional error is signalled and can be processed in accordance with DESINA. Unauthorised changes to parameters can be avoided thanks to the password.

Rugged

The housing is made from metal and is protected against humidity and shock, and is resistant to vibrations. The electronics are protected against reverse polarity, overvoltage and short circuits.

Everything within view

The large luminescent display is readable even from a considerable distance. Temperatures can be shown either as °C or °F.

Temperatures can always be observed in an optimum way because of the modular construction and rotatable housing.

Optimal built-in possibilities

Different probe lengths are available for various tank sizes. These can be connected either directly or via a cable to the TemperatureController. There is also a temperature probe up to 630 bar available for high pressure applications.

Universal

There are many types available for a wide range of applications.



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Temperature Controller - Examples

Application example: tank temperature monitoring

a) The equipment should shut down if the tank temperature falls below 10 °C or exceeds 60 °C. In this regard, protection against wire breakage should be given consideration for safety reasons. b) Cooling If the tank temperature climbs above 50 °C, a cooler brings it down again to 40 °C.



HTSD

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Temperature Controller - Instument features

HTSD

- Optical interface **Flexible installation** - Switch status display - Compact - 290° rotatable **Everything in view** - Angled display - Digital display **Tube clamp** - Large SCSD-S27 - Illuminated - Display - °C/°F Cable SCK-410-03-45-45 - Actual temperature - Minimum temperature - Maximum temperature **High pressure** - Switch points temperature sensor - 630 bar Easy to operate - SCTT-20-010-07 - 3 large keys - Display of units **Temperature probe** - Stainless steel **Connect as required** - 2 switching outputs - Wide media compatibility - Analogue output - Various lengths - 0...20 or 4...20 mA - SCTT-10-xxx-07 - Freely programmable - Scaleable Height adjustable - Plugs clamping fi tting - SCA-TT-10-1/2 - M12 - DIN EN 175301-803 form A **Connection adaptor** Rugged - SCA-TT-10-SD - Metal housing - Watertight - High interference resistance **Immersion tube** - Vibration resistant additional with - Shockproof - higher pressures - agressive media - SCA-TT-10-xxx Can be set using immersion tube ControllerWIN software

Temperature

Temperature Controller - Technical data

| Input quantities | | | |
|-----------------------------------|--|--|--|
| display range | -50+150 °C | | |
| Probe input | PT1000 | | |
| Probe connection | M12x1; 4-pole | | |
| Output quantities | | | |
| switch point accuracy at 25 °C | ± 0,35 % FS | | |
| display accuracy at 25 °C | ± 0,35 % FS ± 1 Digit | | |
| Electrical connection | | | |
| power supply | 1530 VDC nominal 24 VDC; protection class 3 | | |
| electrical connection | M12x1; 4-pole; 5-pole; connector plug DIN EN 175301-803 form A (formerly DIN43650) | | |
| short circuit protection | yes | | |
| overload protection | yes | | |
| current consumption | < 100 mA | | |
| Housing | | | |
| | directionally adjustable up to 290° | | |
| material | zinc diecasting Z 410; painted | | |
| foil material | polyester | | |
| display | 4-fi gure 7-segment LED; red; digit height 9 mm | | |
| connection thread | M24x1,5 | | |
| protection class | IP67 EN 60529 IP 65 with appliance inlet DIN EN 175301-803 form (formerly DIN43650) | | |

| Temperature probe | | |
|---------------------------|---------------------------------------|--|
| measuring element | PT1000/DIN EN 60751, class B | |
| measurement range | -40+125 °C | |
| response time | т0,5 = 6 s/т0,9 = 25 s | |
| accuracy | ± 0,3 K + 0,005* t | |
| material | stainless steel 1.4571 | |
| nominal pressure (max) | 10 bar | |
| temperature of media | -40+125 °C | |
| environmental temperature | -25+80 °C (for the range of plugs) | |
| storage temperature | -25+85 °C | |

20 g; 10...500 Hz vibration resistance IEC60068-2-6 50 g; 11 ms shock resistance IEC60068-2-29 **EM** compatibility interference emissions EN 61000-6-3 interference resistance EN 61000-6-2 Outputs 2 x PNP switching outputs normally open/normally closed; contact functions window/hysteresis switch current max. 0,7 A/switch

Environmental conditions

storage temperature range

environmental

temperature range

response speed accuracy

| High pressure probe | | |
|------------------------------------|---------------------------------------|--|
| measurement element | PT1000/DIN EN 60751, class B | |
| measurement range | -40+125 °C | |
| usage range | fluid media, air | |
| response time | т0,5 = 3 s/т0,9 = 15 s | |
| accuracy | ± 0,3 K + 0,005*t | |
| material | stainless steel 1.4404 | |
| screw-in stud thread | M10x1 | |
| sealing | O-Ring 7,65x1,78 mm; FKM | |
| measurement tube diameter | 7 mm | |
| built-in length | 18,5 mm | |
| nominal pressure P _n | 630 bar | |
| overload pressure P _{max} | 800 bar | |
| burst pressure P _{burst} | 1200 bar | |
| media temperature | -40+125 °C | |
| environmental temperature | -25+80 °C (for the range of plugs) | |
| storage temperature | -25+85 °C | |

300 ms

±1%FS



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-20...+85 °C

-40...+100 °C



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Temperature Controller-Connection designation HTSD

HTSD-150-00-06

1 switching output; DIN EN 175301-803 form A (formerly DIN43650)





HTSD-150-10-07 1 switching output; 1 analogue output; M12x1; 4-pole

HTSD-150-00-07 2 switching outputs;

M12x1; 4-pole



HTSD-150-10-05 2 switching outputs; 1 analogue output; M12x1; 5-pole





gn = green wh = white

gr = grey

bn = brown

own

bk = black bl = blue

Greatest Smallest settable **Display resolution** Smallest reverse Measurement range switch value difference between increment switch value RSP SP SP and RSP (SP-RSP) - 50 bis 150 °C 0,1 °C -50 °C 150 °C 0,8



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Temperature Controller - Dimensions

Temperature probe

M12 plug-in connector

46.3

12.1

DIN EN 175301-803 form A (formerly DIN43650))

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Temperature Controller - Dimensions

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Accessory:

Connection adaptor



Material: Stainless steel 1.4404 Stud adaptor: G1/2A BSPP DIN3852-E

Seal configuration: ED (Eolastic seal)

Stud adaptor hole: G1/2A BSPP DIN3852-E

Spare seals: O-ring 9,5x1,5 (FKM) ED1/2VITX (FKM)

Accessory: Probe cable 3 m





SW19

GE10LR1/2EDOMD71: (with 10 mm bore) 1.4571 stainless steel

EO2 functional nut: FM10L71

<u>Stud adaptor:</u> G1/2A BSPP DIN3852-E

Seal configuration: ED (Eolastic seal) Spare seal: ED1/2VITX (FKM) Accessory:



Accessory: Immersion tube



L1 = total length (mm) L2 = built-in length (mm)

| | L1 | L2 |
|---------------|-----|-----|
| SCA-TT-10-100 | 107 | 82 |
| SCA-TT-10-150 | 157 | 139 |
| SCA-TT-10-250 | 257 | 239 |



Temperature

