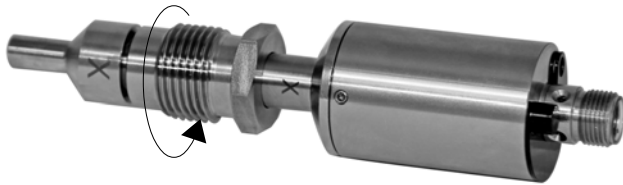


Product Information

Temperature Transmitter / Switch HTK30



- Compact robust temperature switch/transmitter for foodstuffs use
- No Moving parts in the medium
- Only one medium-contact material
- Simple to use
- Very low pressure loss
- Cable outlet infinitely rotatable
- Very small installation width, therefore very narrow pipework is possible

Characteristics

The HTK30 temperature sensor monitors fluid media. Its compact form combines the built-in sensor and the evaluation electronics. The integrated transducer has an analog output (4..20 mA or 0..10 V) and one switching output, which can be configured as a limit switch for monitoring minima or maxima, or as a frequency output.

The switching output is designed as a push-pull driver, and can therefore be used both as a PNP or an NPN output. The state of the switching output is signalled with a yellow LED in the switching outlet; the LED has all-round visibility.

The sensor is configured in the factory, or alternatively this can be done with the aid of the optionally available ECI-1 device configurator (USB interface for PC). A selectable parameter can be modified on the device, with the aid of the magnet clip provided. In this case, the current measured value is saved as the parameter value. Examples of these parameters are the switching value or the fullscale value.

The stainless steel electronics housing is rotatable, so it is possible to orient the cable outlet after installation.

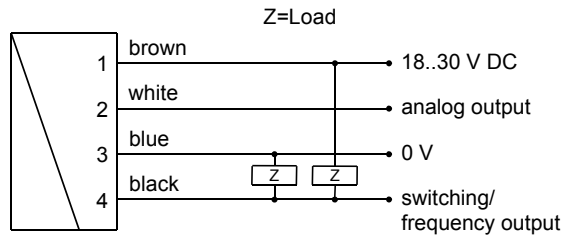
Technical data

Metering range	0..100 °C (0..130 °C available on request)
Accuracy	±1 % FS
Reproducibility	±0.1 % FS
Process pressure	PN 50
CIP- / SIP-Temperature	130 °C, 45 minutes max.
Ambient temperature	-20..+70 °C
Storage temperature	-20..+80 °C
Teaching / settings	by means of magnet
Weight	approx. 200 kg (standard version)
Supply voltage	10..30 V DC
Current Consumption	max. 100 mA

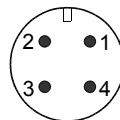
Switching output	transistor output "push-pull" (resistant to short circuits and polarity reversal) $I_{out} = 100 \text{ mA max.}$	
Switching hysteresis	2 °C (others available on request)	
Display (only with switching output)	yellow LED (On = OK / Off = Alarm)	
Analog output	4..20 mA / Load 500 Ohm max. or 0..10 V / Load min. 1 kOhm	
Connection	for round plug connector M12x1, 4-pole	
Materials medium-contact	Sensor	1.4435, FDA-compliant
Materials, non-medium-contact	Housing	1.4305
	Plug	PA6.6
	Clip	PA6.6
Ingress protection	IP 67	
Conformity	CE, EHEDG	



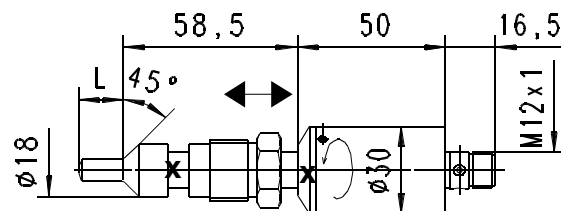
Wiring



Connection example: PNP NPN



Dimensions



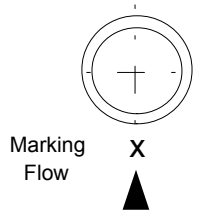
For compatible T-pieces and weld-on sockets in the GHMadapt series, see "Accessories".

Product Information

Handling and Operation

Installation

The sensor is inserted into the boring with sealing cone, oriented, and fastened in place with a pressure screw.
 When a flow is present, this should impinge on the side of the sensor marked with an X, in order to achieve a short response time.



The torque on the pressure screw should be between 5..10 Nm.

Avoid bubbles or deposits on the sensor! It is therefore best to install at the side.
 For T-pieces or welded-on nozzles, see Accessories.

Programming

The electronics contain a magnetic contact, with the aid of which different parameters can be programmed. Programming takes place when a magnet clip is applied for a period between 0.5 and 2 seconds to the marking located on the label. If the contact time is longer or shorter than this, no programming takes place (protection against external magnetic fields).



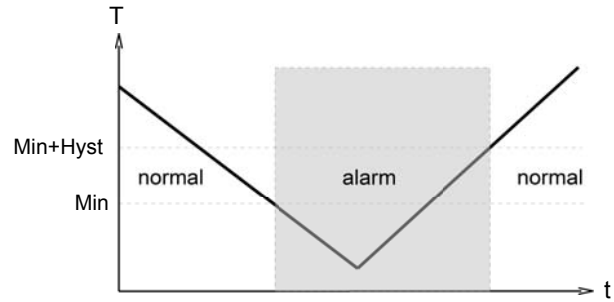
After the programming ("teaching"), the clip can either be left on the device, or removed to protect data.
 The device has a yellow LED which flashes during the programming pulse. During operation, the LED serves as a status display for the switching output.
 In order to avoid the need to transit to an undesired operating status during "teaching", the device can be provided ex-works with a "teach-offset". The "teach-offset" value is added to the currently measured value before saving (or is subtracted if a negative value is entered).

Example: The switching value is to be set to 70 % of the metering range, because at this flow rate a critical process status is to be notified. However, only 50% can be achieved without danger. In this case, the device would be ordered with a "teach-offset" of +20 %. At 50 % in the process, a switching value of 70 % would then be stored during "teaching".

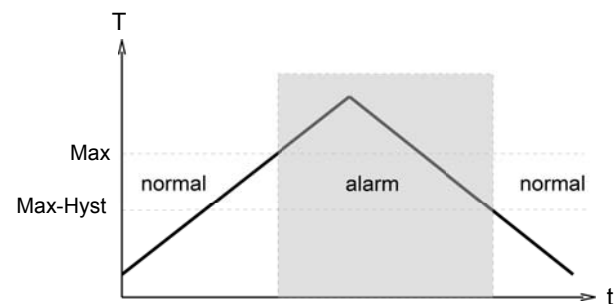
Normally, programming is used to set the limit switch. However, if desired, other parameters such as the end value of the analog or frequency output may also be set.

The limit switch can be used to monitor minima or maxima.

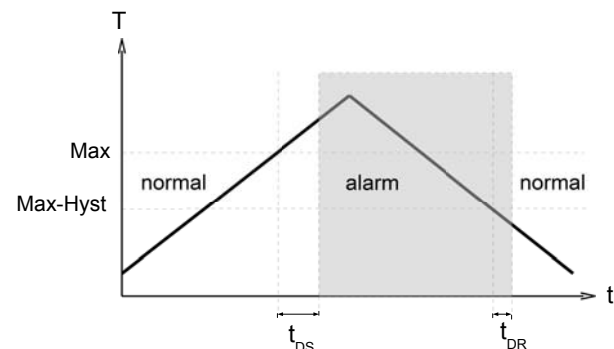
With a minimum-switch, falling below the limit value causes a switchover to the alarm state. Return to the normal state occurs when the limit value plus the set hysteresis is again exceeded.



With a maximum-switch, exceeding the limit value causes a switchover to the alarm state. Return to the normal state occurs when the measured value once more falls below the limit value minus the set hysteresis.



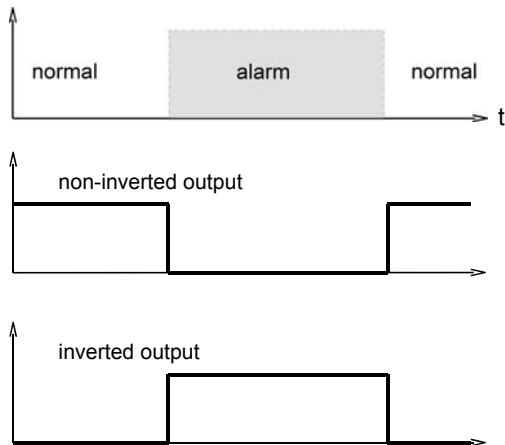
A switchover delay time (t_{DS}) can be applied to the switchover to the alarm state. Equally, one switch-back delay time (t_{DR}) of several can be applied to switching back to the normal state.



In the normal state the integrated LED is on, in the alarm state it is off, and this corresponds to its status when there is no supply voltage.

In the non-inverted (standard) model, while in the normal state the switching output is at the level of the supply voltage; in the alarm state it is at 0 V, so that a wire break would also display as an alarm state at the signal receiver. Optionally, an inverted switching output can also be provided, i.e. in the normal state the output is at 0 V, and in the alarm state it is at the level of the supply voltage.

Product Information



A Power-On delay function (ordered as a separate option) makes it possible to maintain the switching output in the normal state for a defined period after application of the supply voltage.

Ordering code

HTK30 -

○=Option

1. Sensor tip length	015	L = 15 mm
2. Materials	K1	stainless steel 1.4571
3. Analog output	I	current output 4..20 mA
	U	voltage output 0..10 V
	K	no analog output
4. Switching output	T	transistor output "push-pull"
	M	<input type="radio"/> NPN (open collector)
	K	no switching output
5. Functioning of the switching output	L	minimum-switch
	H	maximum-switch
	R	frequency output
	K	no switching output
6. Switching signal	O	standard output
	I	<input type="radio"/> inverted output

Options

Special measuring range for temperature:

maximum 130 °C (standard = 100 °C)

minimum -20 °C (standard = 0 °C)

<input type="text"/>	<input type="text"/>	<input type="text"/>	°C
<input type="text"/>	<input type="text"/>	<input type="text"/>	°C

Special range for analog output:

<= metering range (standard = metering range)

<input type="text"/>	<input type="text"/>	<input type="text"/>	°C
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Special range for frequency output:

<= metering range (standard = metering range)

<input type="text"/>	<input type="text"/>	<input type="text"/>	°C
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End frequency (max. 2000 Hz)

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Hz
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Switch-on delay (from Alarm to OK)

<input type="text"/>	<input type="text"/>	s
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Switch-off-delay (from OK to Alarm)

<input type="text"/>	<input type="text"/>	s
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Power-On delay (0..99 s)

(Time after power on, during which the outputs are not actuated)

<input type="text"/>	<input type="text"/>	s
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Switching output fixed

<input type="text"/>	<input type="text"/>	<input type="text"/>	°C
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Special hysteresis

<input type="text"/>	<input type="text"/>	°C
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If the field is not completed, the standard setting is selected automatically.

Accessories

- ECI-1 device configurator (USB programming adapter)
- Process adapter
- Cable/round plug connector (KH...) see additional information "Accessories"