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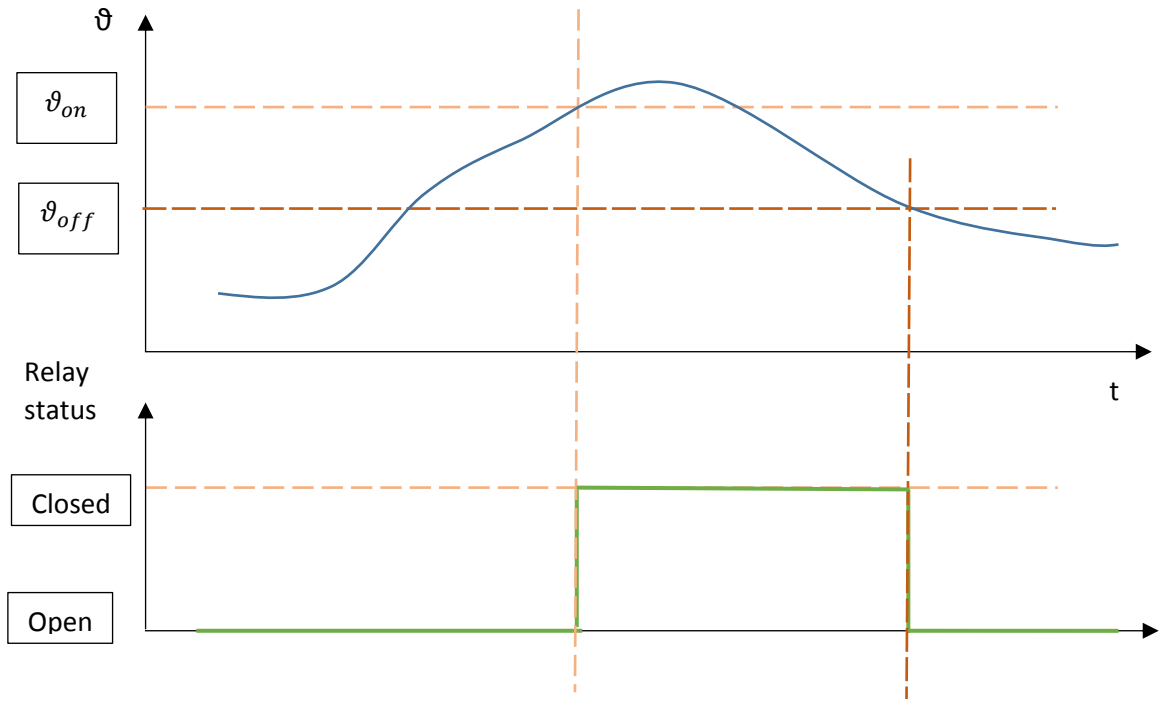
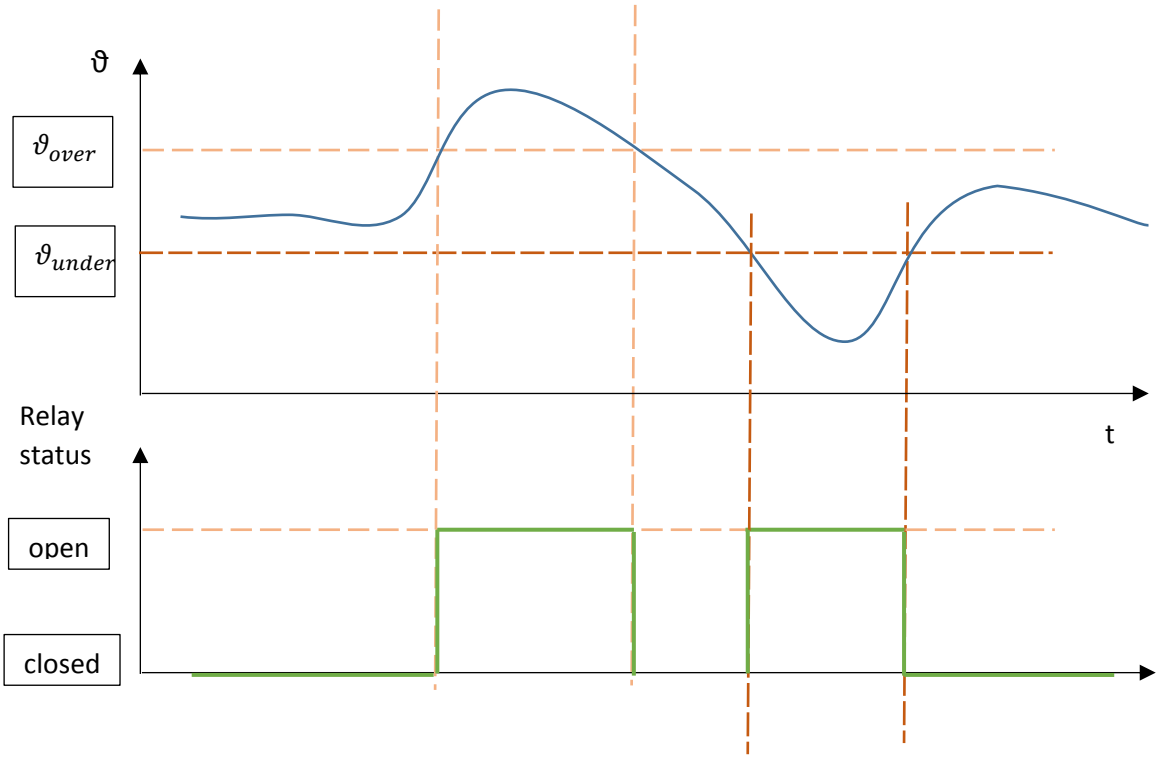
Firmware 2.118 Relay Configuration

General

Fotemp devices of the series „Trafo“ and „Compact“ can be equipped with relay functionality. Single channel devices are equipped with one relay, four-channel devices are equipped with four relays. They can be enabled or disabled depending on the measured temperature. Each relay is configured for one channel. In firmware versions up to 2.116 the user can configure one activation temperature and one deactivation temperature. Here the relay functionality reacts on “over-temperature” or alternatively on “under-temperature” states.



Starting with firmware version 2.117 it is possible to define an “over-temperature” and an “under-temperature” state.



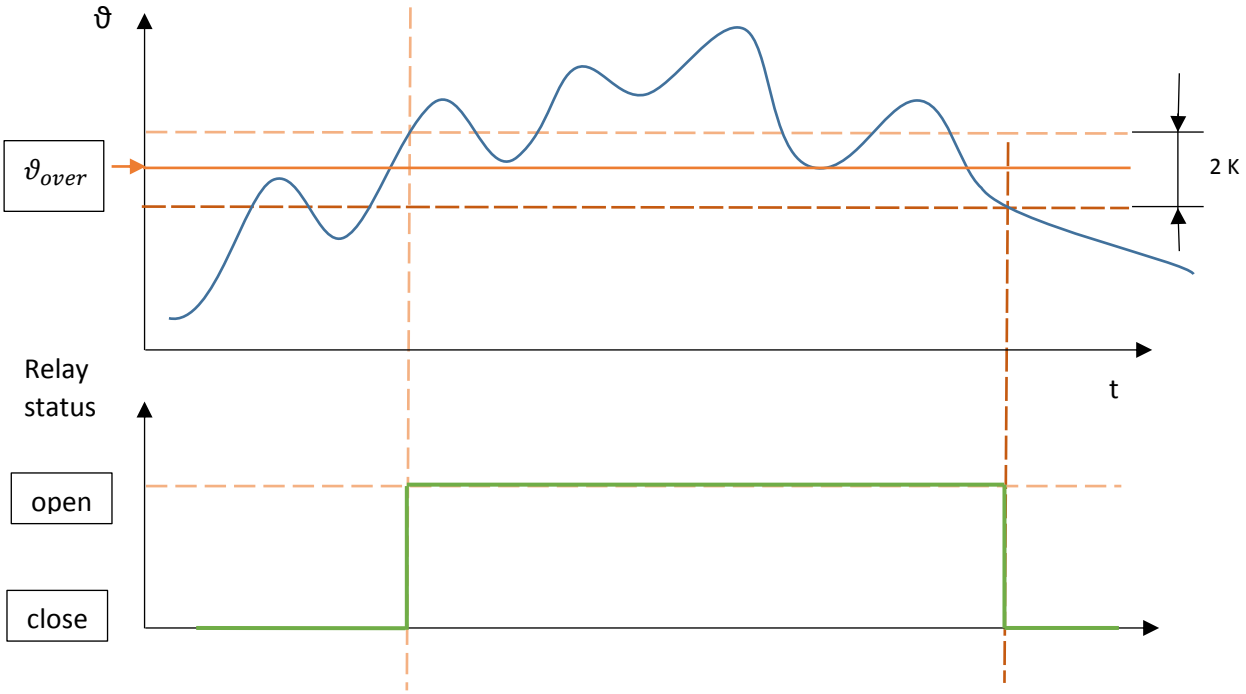
For the on- and off-state a switching hysteresis oft wo Kelvin (2K) is set.

The relay closes when the „over-temperatur“-limit is crossed upwards by one Kelvin (1K).

The relay opens when the „over-temperatur“-limit is crossed downwards by one Kelvin (1K).

The relay closes when the „under-temperatur“-limit is crossed downwards by one Kelvin (1K).

The relay opens when the „under-temperatur“-limit is crossed upwards by one Kelvin (1K).



Configuration via ASCII protocol

The relay configuration can be accessed via the serial interface using command sequences described in the FoTemp ASCII protocol. The characters are byte oriented and coded from 0..127. All characters are human readable as there are numbers, letters and punctuation signs.

For executing these commands a terminal software as, next to unlisted, Window™ Hyperterminal, TerraTerm or Realterm can be used.

All used characters are listed in the following table:

Character	Code(DEC)	Code(HEX)	Description
<CR>	13	D	Carriage Return for diagram end
<LF>	10	A	Line Feed for diagram end
A .. F	65 .. 70	41 .. 46	Capital letters for hexadecimal numbers
0 .. 9	48 .. 57	30 .. 39	Numbers for decimal and hexadecimal numbers
	32	20	Space as divider between command and parameter list and divider between each parameter
-	45	2D	Sign for negative numbers
:	58	3A	Start sign for writing commands
?	63	3F	Start sign for reading commands
*****	42	2A	Start sign for reply telegrams
#	35	23	Start sign for data reply telegrams

Syntax Description

Two writing commands are implemented for configuring the relays. This configuration must be done for each channel separately.

Syntax	Description
:82 <channel> <lower limit> <upper limit> <CR>	Set new channel limits for one channel
:84 <channel> <flags><CR>	Set parameter of on channel

For successful execution the device replies with *00<CR><LF> else the telegram *FF<CR><LF> signals an error.

Parameter	Format	unit	Description	
Channel	decimal	1	Channel number	
Under-temperature	hexadecimal	1/°C	Lower temperature limit	
Over-temperature	hexadecimal	1/°C	Upper temperature limit	
Flags	hexadecimal		Bit	Meaning
			0	Activate upper limit monitoring
			1	Activate lower limit monitoring
			2	Invert output signal

Examples for writing commands

:82 3 FFCE 00B4<CR> This command sets an upper temperature limit of 180°C and an lower temperature limit of -50°C.

:84 5 3 This command enables lower and upper limit monitoring for channel 5.

:84 5 5 This command enables the upper limit monitoring and inverts the output signal.

Syntax of reading commands

For checking the adjusted device parameters separate reading commands are implemented.

Reading of temperature limits of one measurement channel	
Reading command	?82 <channel> <CR>
Reply	#82 <channell> <lower limit> <upper limit><CR> <LF>

Reading of relay configuration of one measurement channel	
Reading command	?84 <channel> <CR>
Reply	#84 <channel><CR> <LF>

Example for reading commands

?82 3<CR>	#82 3 FFCE 00B4<CR> <LF>*00 <CR> <LF>

Here the channel #3 is set to an upper temperature limit of 180°C and a lower temperature limit of -50°C.

?84 5	#84 5 0003

The configuration flags of channel 5 are read. Bit 0 and bit 1 are set. This means the relay switches at lower and upper temperature limits.