4 limit value relays
EVEREST 214-S

USER MANUAL

4 limit value relays EVEREST 214-S	RE
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SUMMARY

- Installation, commissioning and maintenance may only be carried out by specialist personnel.
- Only connect the device to the voltage specified in the technical data or on the type label.
- The device must be disconnected from all sources of power during installation and maintenance work.
- The device may only be operated under the conditions specified in the operating instructions.

DESCRIPTION

The two-channel measuring amplifier EVEREST 214S is a processor-controlled display device for DIN rail installation. It has a built-in timer and can supply sensors with 24V DC voltage. It converts 2 analogue signals into limit values. Freely scalable inputs and relays allow a wide field of applications.

TECHNICAL FEATURES

Power supply	100 ... 240 V AC - 50/60 Hz
	10 ... 30 V DC and 12 ... 24 V AC
Consumption	1 ... 5 W
Measurement inputs	2 Channels 4 ... 20 mA (factory setting) scalable from 0 to 25 mA
Supply to sensors	24 V DC, Max. 100 mA and 5 V DC, Max. 100mA
Measurement accuracy	0.5 % ± 0.5 Digit
Measurement filter	Adjustable from 0.1 to 9.9 s
Reset hysteresis	Adjustable from 1 to 99 %
Limit contacts	250 V AC, 2A / 30 V DC, 1A

Note:
The contacts are not protected against overload. Provide an external protective device.

Output relays S1, S2, S3	3 potential free contacts, common shared
	Open / Close function settings
Output relay S4	Open / close settings or timer function from 1 s to 24 h
Display	2 ½ digit LED 5x7 dot matrix display
	4x LED = limit value relay status
	1x Blue LED = input 1
	1x Green LED = input 2
Display resolution	1 %
Settings	Combined rotary / pressure switch
Electrical connection	Screw terminals, cable cross section Max. 1.5 mm²

Note:
Protection against accidental contact according to DIN EN 61010-1 is only guaranteed when installed in a closed housing with at least protection class IP54.

Ambient temperature	-10 ... +45 °C
Housing:	For DIN rail 35 x 7.5 mm (DIN EN 50 022); Protection class IP40 according to EN 60 529

EC Conformity: The instrument meets the legal requirements of the current European Directives.

MAINTENANCE

Everest 214-S is maintenance-free if used for its intended purpose.

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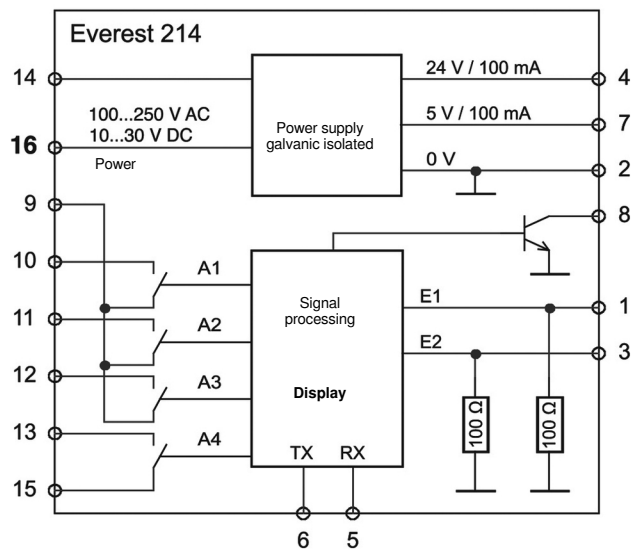
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OPERATING THE EVEREST 214S

After switching on the supply voltage, the device starts a test routine in which all LEDs and the digital display are activated (LEDs test).
After ≈1 second the software version is displayed for a short time.
Then the display jumps to menu level 0 (measured value display).

CONTROLS

See diagram of operating menu at the end of document
Rotary / **push switch: turning +/-**
    Menu level 0 = Selection of display of input 1 or input 2
    Menu level 1 = selection setting of the limit value for relays 1 to 4
    Menu level 2 to 6 = set values +/-

Rotary / **push switch: pressing**
    Selection of submenus 1 to 6
    If the control button is not pressed within 15 s, the system automatically switches back to the measured value display (menu 0).

LIMIT RELAY 1 to 4

Yellow LED lights up = relay pulled in = contact is closed

LIMIT VALUE

Setting from 2 to 100%
relative to the selected mA- or MIN- or MAX range
The threshold value cannot be set smaller than or equal to the currently set hysteresis.
Default setting: A1 = 80%, A2 = 60%, A3 = 40%, A4 = 20%

DELAY

Adjustable from 0.1 to 9.9 s
Exceeding, or falling below, the limit value --> after set delay the relay switches
Default setting: 0.1 s

HYSTERESIS

Setting from 1 to 99 %
The output relay only switches back when the measured value has fallen below the selected percentage.
The hysteresis cannot be set greater than or equal to the currently set threshold value.
Default setting: 1%

NC or NO SELECTION

NO (normally open): The contact is open as long as the measured value is lower than the set threshold value
NC (normally closed): The contact is closed as long as the measured value is lower than the set threshold value
Default setting: NO
Note: in the event of a power failure or device defect, all relay contacts are open

ASSIGNING OUTPUT RELAY TO INPUT E1 OR E2

The measured value of input E1 or E2 can be assigned to each individual output relay A1 to A4.
Factory setting: all relays are assigned to input 1 (E1)

OVER-RANGING DISPLAY

Measuring signal > mA max. value -> digital display = ↑
Measuring signal < mA min. value -> digital display = ↓

CLOCK-TIMER

Alternatively, relay 4 can also be used as a timer. The timer discount is switched on as soon as the ON and OFF times are set greater than 0.
--> This means that the settings for limit value relay 4 become ineffective.

ON-TIME
As long as the set ON-time is running, the contact of output relay 4 is closed
Setting range: 1 second to 24 hours

Available setting values:

0*, 1, 2, 5, 10, 30 secondes
→ **no additional dot lights up**

1, 2, 5, 10, 30 minutes
→ **1 additional dot light is blinking**

1, 2, 3, 6, 12, 24 hours
→ **2 additional dot lights are blinking**
Default setting: 0

| = 10 s | = 10 min | = 12 h |

OFF - time setting
As long as the set OFF time is running, the contact of output relay 4 is open
Settings as above
Default setting: 0

Note: After a power failure the device reboots, the program starts with the ON-Time
If one of the times is changed during operation, the new time takes effect immediately.

SCALING INPUT 1 AND 2
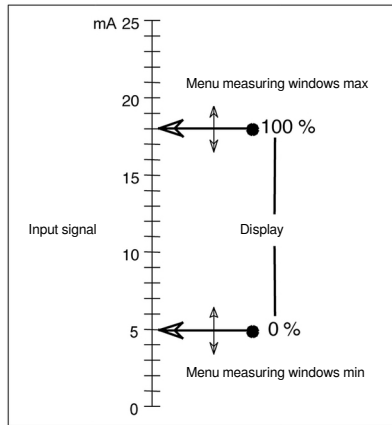
mA min. value:
Setting range: 0 to 24 mA
Default setting: = 4 mA

mA max. value:
Setting range: 1 to 25 mA
Default setting: = 20 mA
In the Scaling menu, the percentage display can be assigned to a range of the mA measuring signal.

Example E1:	**required setting:**
Measuring signal 5 mA = display of 0%	Menu: Scaling E1 / mA min. = 5
Measuring signal 18 mA = display of 100%	Menu: Scaling E1 / mA max. = 18

FILTER (DAMPER)

Filter for attenuating fluctuations on measured values and interferences
Integration time adjustable from: 0.1 to 9.9 s
Default setting: 0.1 s

HOLD FUNCTION

For each one of both inputs a hold function can be activated
This makes it possible to hold the last measured value while the timer is active (relay A4).
Available setting values:
oF: Hold function switched off (factory setting)
on: Hold function switched on

The hold function only works when the timer (A4) is activated (on-time)

RESET TO FACTORY DEFAULT SETTINGS

Switch on the power supply
Within 3 seconds (i.e. during the test routine), press the pushbutton for approximately 5 seconds.

Display counts up
1, 2, 3, 4, ... 99, ST ....

$\rightarrow$ all setting values are reset to the values of the factory setting
(Default values)

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Input 2

Input 2

Relay 4
or
Clock-timer

Relay 3

Relay 2

Relay 1

Select input 2
Measuring window min (mA)
Measuring window max (mA)
Filter time (s)
Hold function
Back to Level 1

Select input 1
Measuring window min (mA)
Measuring window min (mA)
Filter time (s)
Hold function
Back to Level 1

Select clock-timer
OFF-time
ON-Time
Back to Level 1

Select relay 4
Limit value (%)
Delay time (s)
Hysteresis (%)
Contact: Opening or Closing
Assign. E1 or E2
Back to Level 1

Select relay 3
Limit value (%)
Delay time (s)
Hysteresis (%)
Opening or Closing
Assign. E1 or E2
Back to Level 1

Measuring value E2 (%)
Select relay 2
Limit value(%)
Delay time (s)
Hysteresis (%)
Opening or Closing
Assign. E1 or E2
Back to Level 1

Measuring value E1 (%)
Select relay 1
Limit value (%)
Delay time (s)
Hysteresis (%)
Opening or Closing
Assign. E1 or E2
Back to Level 1

⊗ = LED OFF
✳ = LED on
✸ = LED flashes

Turn knob

Press knob

Closing contact
Opening contact

0 1 2 3 4 5 6
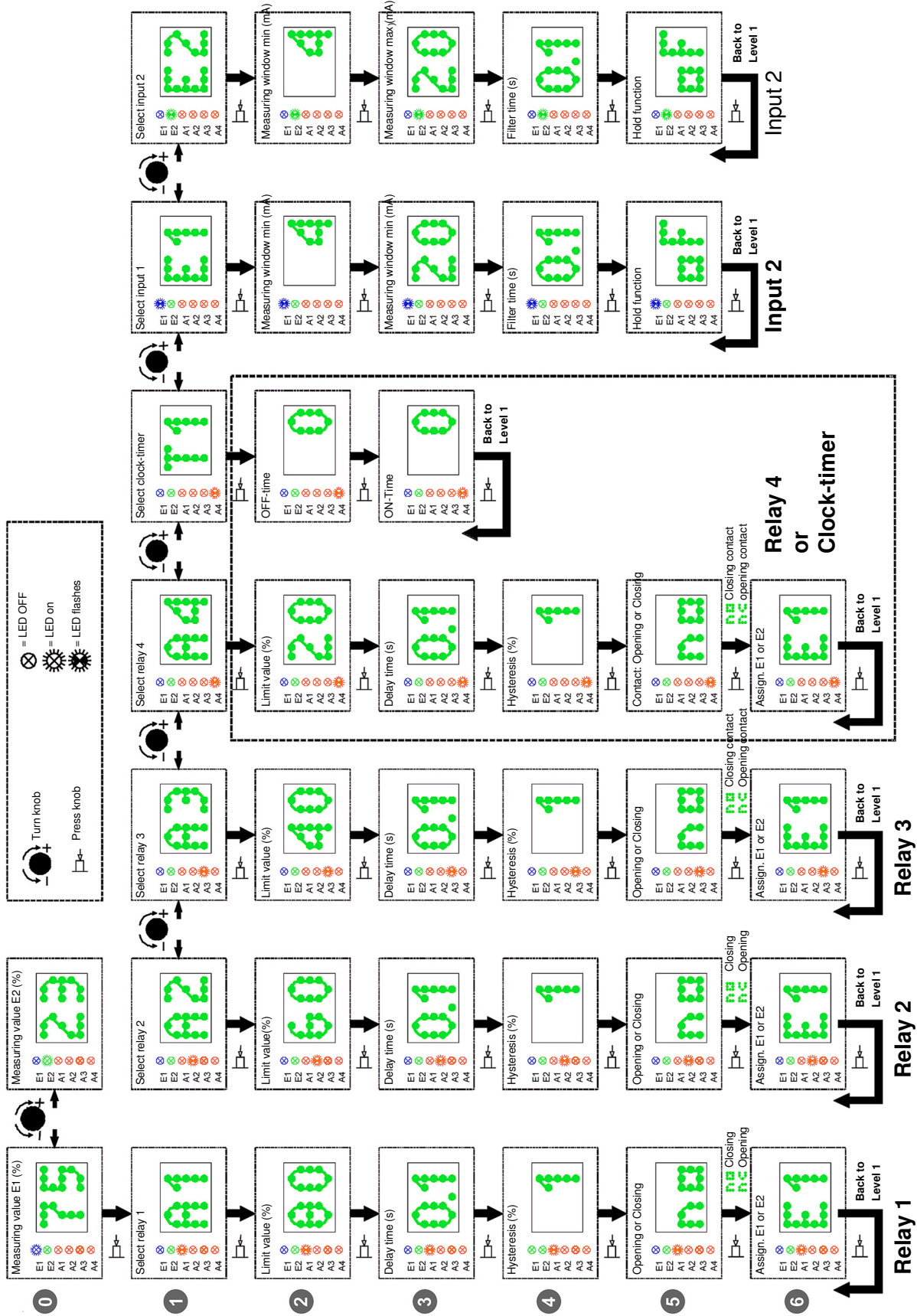
ELECTRICAL CONNECTIONS

Examples for connections of sensors: 2-wire or 3/4-wire sensors

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