

**WAVEANALOG PRO Thermo**



**Analogue Signal Isolators**  
**WAVESERIES**  
**WAVEANALOGUE PRO RTD**

**MODEL**

Screw terminal connection  
WAS5 PRO Thermo  
Tension clamp connection  
WAZ5 PRO Thermo

**Order Number**

8560720000

8560730000

Please read these instructions before using the product and retain for future information.

## 1. General instructions

**Achtung!** The analogue signal isolators of the WAVE<sub>ANALOGUE PRO</sub> series may only be installed by qualified personnel. Be sure not to connect the unit to power supply before appropriate installation. Do not select ranges during operation, because live parts are exposed during this process. Only use a screwdriver which is properly insulated against the voltage applied to the input when fine adjusting the potentiometers on the front.

Be sure to observe the national regulations for installation and selection of cables.



Appropriate safety measures against electrostatic discharge (ESD) should be taken during assembly and adjustment work on the WAVE<sub>ANALOGUE PRO</sub>.

## 2. Application

Analogue signal isolators are used for galvanic isolation and conversion of thermoelement signals. Input and output signals are factory set according to type or can be calibrated/switched via DIP switches. It is **not** necessary to adjust the measurement range. A +/- 5% variation can be achieved in the respective range by connecting potentiometers for zero and span. The transmitted measurement signal is linear to be measured temperature.

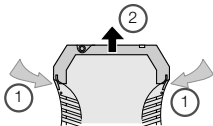
### 3. Configuration

#### 3.1 Equipment

A screwdriver with a width of 2.5 mm is required to adjust the unit and to connect the wires to the terminals.

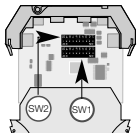
#### 3.2 Opening the unit

Disconnect the plugs. Disengage the top part of the housing by carefully pressing the latches on both sides (1). Pull out the top part of the housing and the electronics section until they lock (2).

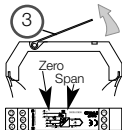


#### 3.3 Settings

Set input and output ranges, minimum input values and measuring span via the DIP switches SW1 and SW2 according to the following tables. When activating variable setting SW 1/8 of the span or offset, it is possible to make additional adjustments via front potentiometers span and offset, accessible below cover (3).



**Caution!** Only use a screwdriver which is properly insulated against the voltage applied to the input when fine adjusting the potentiometers on the front.



## Selecting the thermoelement

Type	SW1		
	1	2	3
K	1	1	1
J	0	1	1
T	1	0	1
E	0	0	1
N	1	1	0
R	0	1	0
S	1	0	0
B	0	0	0

## Selecting the minimum temperature

ϑ min	SW1			
	4	5	6	7
0° C	1	1	1	1
-10° C	1	1	1	0
-20° C	1	1	0	1
-30° C	1	1	0	0
-40° C	1	0	1	1
-50° C	1	0	1	0
-100° C	1	0	0	1
-150° C	1	0	0	0
-200° C	0	1	1	1
+50° C	0	1	1	0
+100° C	0	1	0	1

$\varnothing$ min	SW1			
	4	5	6	7
+150° C	0	1	0	0
+200° C	0	0	1	1
+250° C	0	0	1	0
+500° C	0	0	0	1
Special range	0	0	0	0

### Activating the manual fine adjustment

manual calibration	SW1
	8
off	0
on	1

1 = on

0 = off

## Selecting the temperature span

Span	SW2				
	1	2	3	4	5
100° C	1	1	1	1	1
150° C	1	1	1	1	0
200° C	1	1	1	0	1
250° C	1	1	1	0	0
300° C	1	1	0	1	1
350° C	1	1	0	1	0
400° C	1	1	0	0	1
450° C	1	1	0	0	0
500° C	1	0	1	1	1
550° C	1	0	1	1	0
600° C	1	0	1	0	1
650° C	1	0	1	0	0
700° C	1	0	0	1	1
750° C	1	0	0	1	0
800° C	1	0	0	0	1
850° C	1	0	0	0	0
900° C	0	1	1	1	1
950° C	0	1	1	1	0
1000° C	0	1	1	0	1
1050° C	0	1	1	0	0
1100° C	0	1	0	1	1
1150° C	0	1	0	1	0
1200° C	0	1	0	0	1
1250° C	0	1	0	0	0

Span	SW2				
	1	2	3	4	5
1300° C	0	0	1	1	1
1350° C	0	0	1	1	0
1400° C	0	0	1	0	1
1450° C	0	0	1	0	0
1500° C	0	0	0	1	1
1600° C	0	0	0	1	0
1700° C	0	0	0	0	1
1800° C	0	0	0	0	0

### Selecting the output

Output	SW2	
	6	7
0...10 V	1	0
0...20 mA	0	0
4...20 mA	0	1

### Activating the filter function

Filter	SW2
	8
off	0
on	1

1 = on

0 = off

Should a temperature measurement range be selected that is larger than the specified range of the thermoelement used, then the module sets itself to the maximum specified range:

Type K	-200° C ... +1372° C
Type J	-200° C ... +1200° C
Type T	-200° C ... +400° C
Type E	-200° C ... +1000° C
Type N	-200° C ... +1300° C
Type R	-50° C ... +1760° C
Type S	-50° C ... +1760° C
Type B	+50° C ... +1820° C

The voltage output and the combined current output (0...20 mA and 4...20 mA) are routed from two separate, calibrated connections. The output selected via the DIP switch, is the only output that is calibrated.

## 4. Mounting

Die The analogue signal isolators are mounted on standard TS 35 rails.

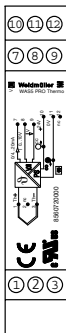
## 5. Electrical connection

### Terminal assignments

- 1 Thermo +
- 2 not assigned
- 3 Thermo -
  
- 7 Output + 0/4...20 mA
- 8 Output + 0...10 V
- 9 Output 0 V
- 10 Power supply + 24 Vdc (cross connected)
- 11 Power supply GND (cross connected)
- 12 not assigned

Wire cross-section max. 2.5 mm<sup>2</sup>

Multi-wire connection max. 1 mm<sup>2</sup>  
(two wires with same cross-section)



**Warning!** For applications with high isolation voltages, take measures to prevent accidental contact and make sure that there is sufficient distance or insulation between adjacent devices!

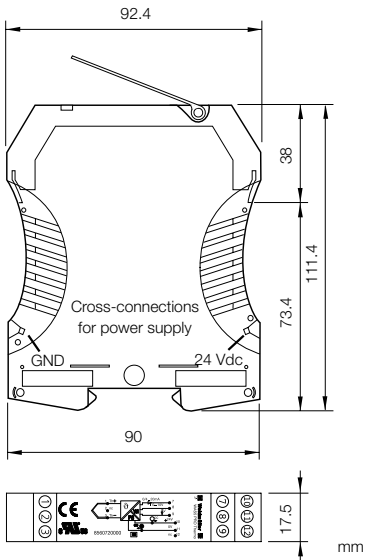
### 5.1 Power supply

approx. 1 W

18...30 Vdc

Voltage supply via cross-connections. Operating carrying capacity of cross-connection  $\leq 2$  A (see Cat. No. point 7)

## 6. Dimensions



## 7. Accessories (cross-connection)

<b>Designation</b>	<b>Cat. No.</b>
ZQV 2,5 N/2 yellow	169380
ZQV 2,5 N/2 red	171790
ZQV 2,5 N/2 blue	171799
ZQV 2,5 N/2 black	171808

## Connection markers

<b>Designation</b>	<b>Cat. No.</b>
WS 10/5 Multicard for plotter marking	163501
WS 10/5 Neutral	106086

## 8. Notes on CE marking

The WAS5/WAZ5 DC/DC analog signal isolators are marked CE in accordance with the EU directives 89/336/EEC "Electromagnetic Compatibility" and 73/23/EEC (low-voltage directive) detailing the Harmonized European Standards (EN).

The declarations of conformity are held, according to the above mentioned EU directive, article 10, for the authorizing body by:

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