Technische Alternative RT GmbH

UMV5-DL

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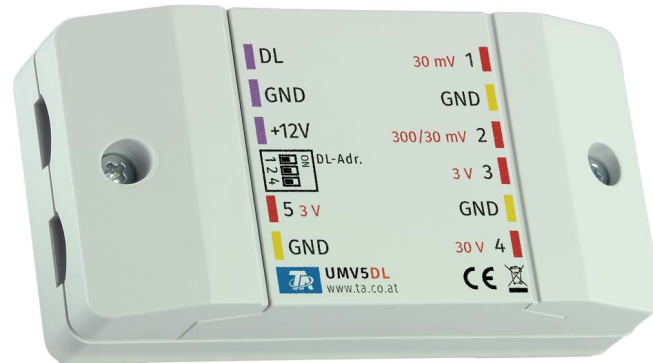
CE

Vers. 1.01.2

Universal measuring amplifier

The UMV5-DL universal measuring amplifier measures voltage on **5** inputs with different measuring ranges and translates them for the **DL bus**.

Inputs **1** and **2** can be used to measure a **type K thermocouple**.

Input **2** also switches cyclically (1 s) between two different voltage ranges.

Input **5** can be used to measure a pH Redox probe. If a resistor is removed (see diagram on page page 2), input **3** can be used for a second pH Redox probe.

Electrical connection

The DL bus is **not** protected against reverse polarity. **DL** and **GND** must be connected correctly. The 12 V supply (e.g. from the CAN bus of the controller) must be connected.

Example: Connection to a UVR16x2 controller
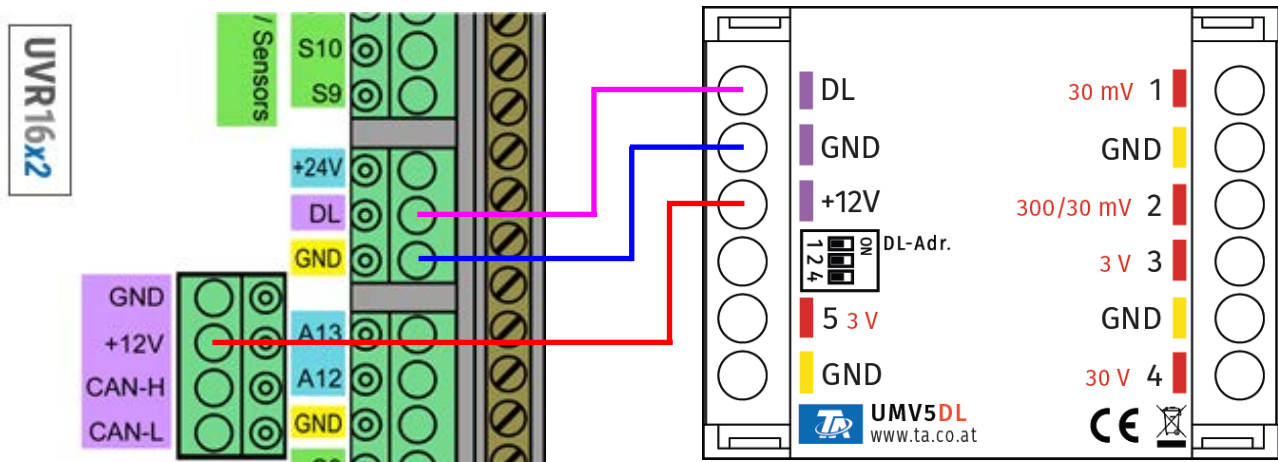
Inputs

The UMV5-DL has 5 inputs:

|	
1	Voltage input **-3 – 30 mV,** thermocouple
2	Voltage input **-3 – 30 mV** or **-30 – 300 mV** (index 2 and 3), thermocouple
3	Voltage input **-2 – 2.5 V** (pH Redox probe possible, see diagram on page 2)
4	Voltage input **0 – 30 V**
5	Voltage input **-2 – 2.5 V** pH Redox probe

Input **2** switches at 1-second intervals between the two voltage ranges.

Index

The UMV5-DL transmits values to the data link via several indices.

Index	Inp.	Description	Measuring range	Value output
1	**1**	Voltage	**-3 – 30 mV**	Dimensionless max. 30,000
2	**2**	Voltage	**-3 – 30 mV**	Dimensionless max. 30,000
3			**-30 – 300 mV**	Dimensionless max. 30,000
4	**3**	Voltage	**-2 – 2.5 V**	Dimensionless max. 25,000
5	**4**	Voltage	**0 – 30 V**	Dimensionless max. 30,000
6	**5**	Voltage	**-2 – 2.5 V**	Dimensionless max. 25,000
7	-	PCB temperature (internal PT1000 sensor)		°C
8	**1**	Thermocouple temperature	**-25 °C – 750 °C**	°C
9	**2**	Thermocouple temperature	**-25 °C – 3200 °C**	°C
10	**3**	pH Redox probe*	**pH 0-14**	Dimensionless max. 1,400
11	**5**	pH Redox probe	**pH 0-14**	Dimensionless max. 1,400
12	**5**	Voltage	Average pH for a 10 sec. period	
13	**3**	Voltage	Average voltage for a 10 sec. period	
14	-	Serial number of the module		
15	-	Software version (without decimal points)		

*To use a second pH Redox probe at input **3**, the following resistor must be removed from the PCB:
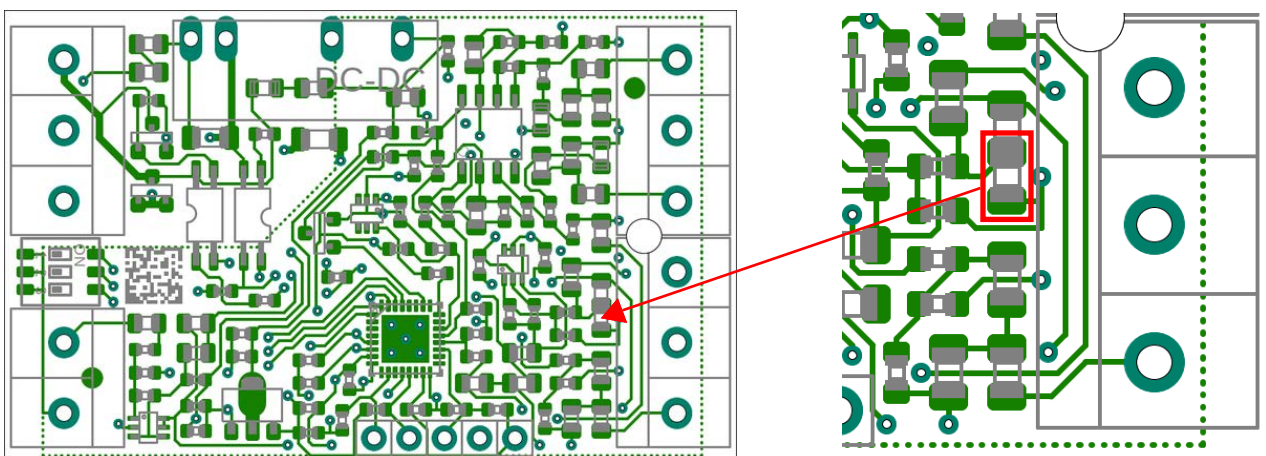
For this, insert a screwdriver (blade 3-4 mm) between the terminal box and the resistor and rotate it slightly in both directions. This breaks the solder joints and the resistor comes away.
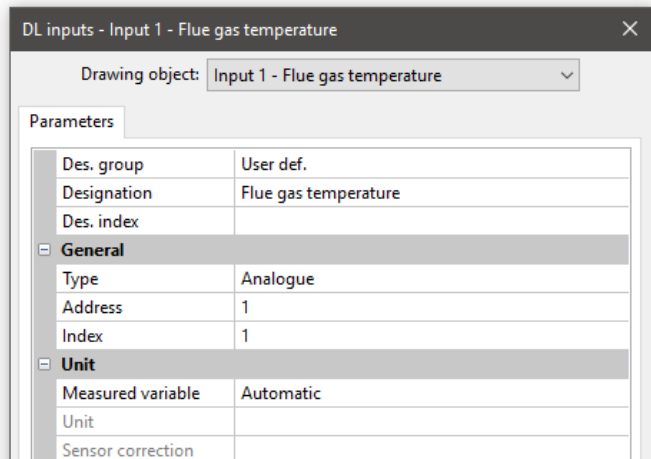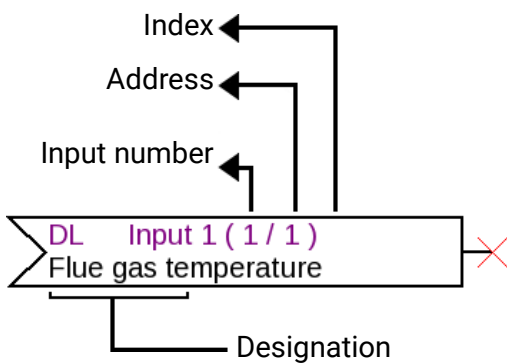
BNC adaptor

The *measuring amplifier (UMV) to BNC adaptor*, which is available separately as an accessory, is a screened BNC adaptor cable for connecting a pH Redox probe. The screen for this cable must be connected to the earth (GND) of the measuring amplifier.

Programming in TAPPS2

In the following example, the default DL bus address 1 is used.

The most important settings can be found under **General**. Here, specify the DL bus address set on the UMV5-DL (default 1), as well as the index of the required input.

If the **Measured variable** is set to **Automatic**, no further settings are required under **Unit**.

The table in the **Index** section (page page 2) provides information about which index belongs to which input/measurement.

DL address

The UMV5-DL has a default address of 1. This address can be changed using the DIP switches in the device. The final address is made up of the default 1 and the sum of the DIP switches that are set to "ON".
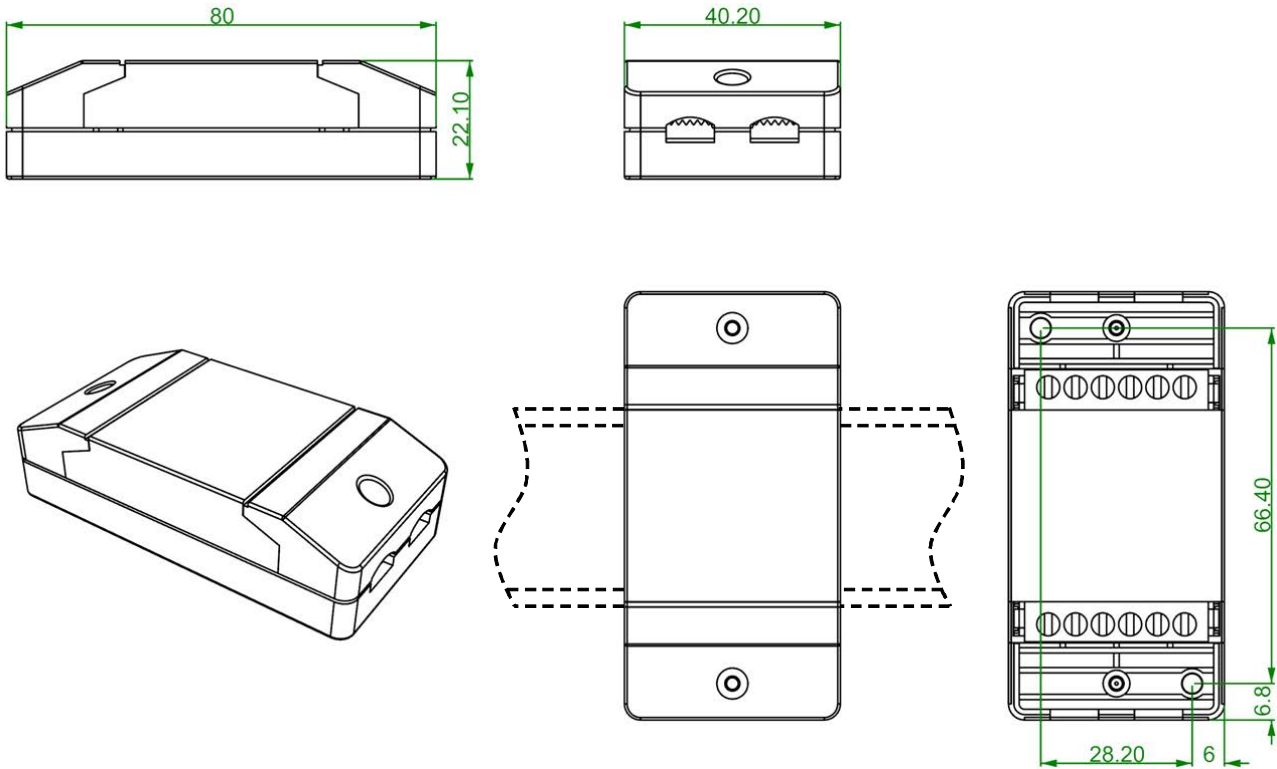
Example:

Required address	6
Default setting	1
DIP switches 1 and 4	+ 5
Sum = address	= 6

Position of DIP switches acc. to example.

DIP switches **1** and **4** must be set to **ON**.

Dimensions in mm

Top-hat rail installation
(support rail TS35 to
standard EN 50022)

Technical data	
DL bus load (12 V supply required)	10 %
pH sensor	pH Redox probe
IP rating	IP 20
Clamping area	Max. 1.5 mm^2
Maximum measuring tolerance	± 3 %
Max. ambient temperature	45 °C
Compatibility	x2 devices only

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