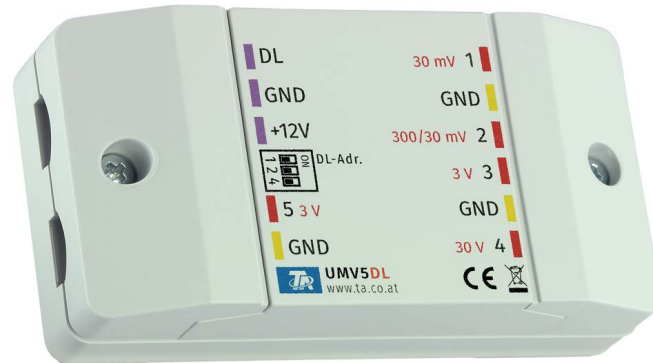




## Universal measuring amplifier



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**.

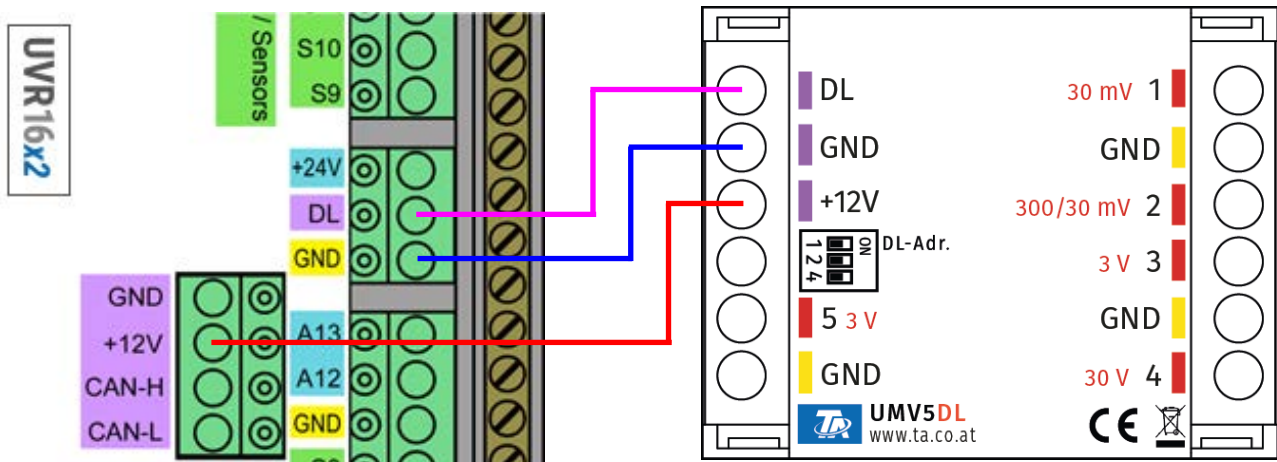
Input **2** also switches cyclically (1 s) between two different voltage ranges.

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

<b>1</b>	Voltage input <b>-3 – 30 mV</b> , thermocouple
<b>2</b>	Voltage input <b>-3 – 30 mV</b> or <b>-30 – 300 mV</b> (index 2 and 3), thermocouple
<b>3</b>	Voltage input <b>-2 – 2.5 V</b> (pH probe or Redox probe possible, see graphic on page 2)
<b>4</b>	Voltage input <b>0 – 30 V</b>
<b>5</b>	Voltage input <b>-2 – 2.5 V</b> pH probe or Redox probe

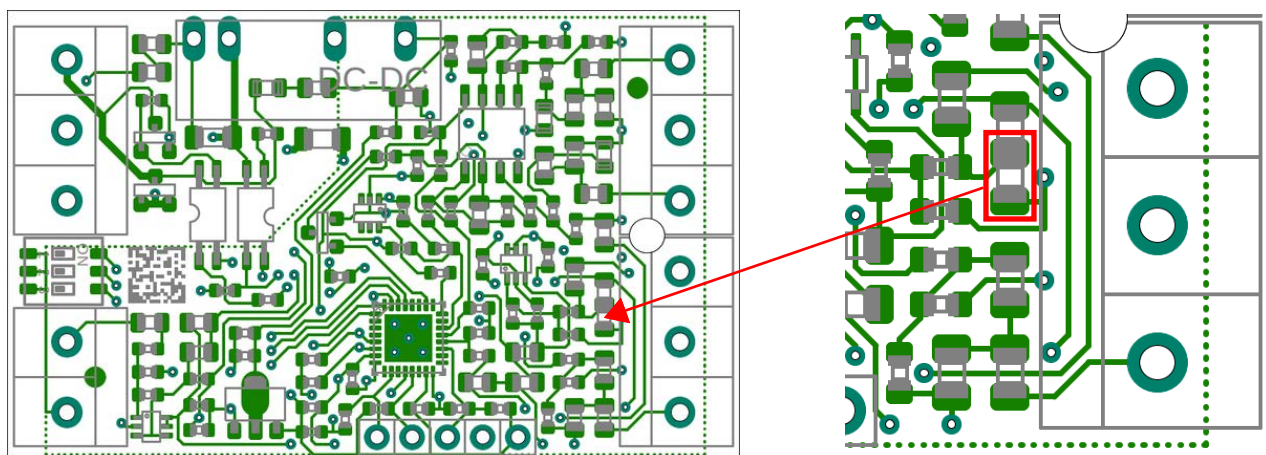
Input **2** switches at 1-second intervals between the two voltage ranges.

# 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 (Redox probe)	-2 – 2.5 V	Dimensionless max. 25,000
5	4	Voltage	0 – 30 V	Dimensionless max. 30,000
6	5	Voltage (Redox probe)	-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 probe* (59 mV per pH stage)	pH 0-14	Dimensionless max. 1,400
11	5	pH probe (59 mV per pH stage)	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 probe or 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.

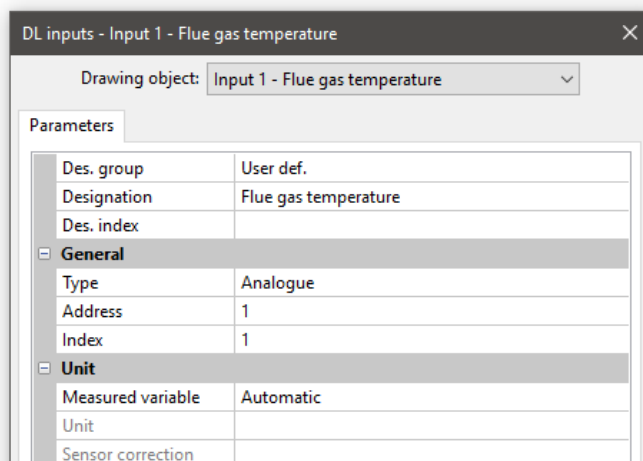
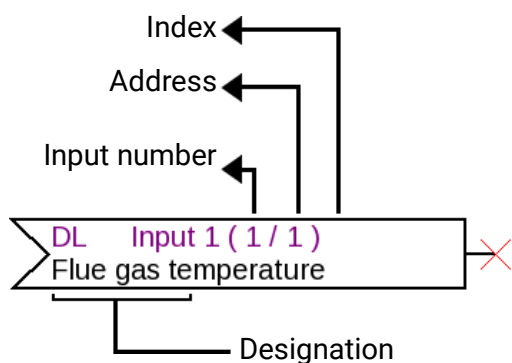
## BNC adaptor

The measuring amplifier (UMV) to BNC adaptor, which is available separately as an accessory, is a screened BNC adaptor cable for connecting a pH probe or 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:**

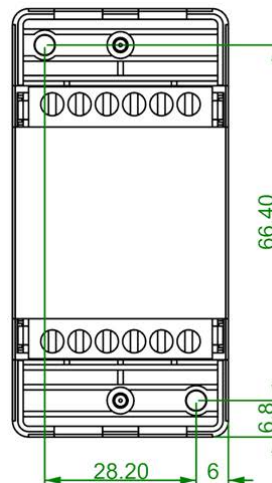
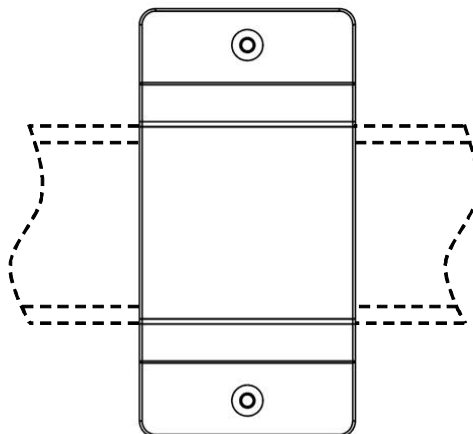
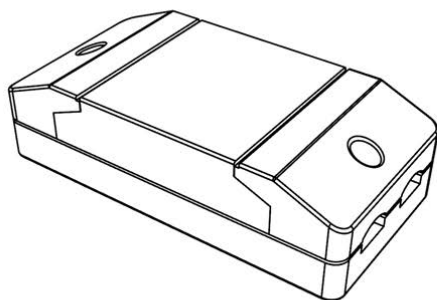
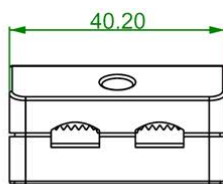
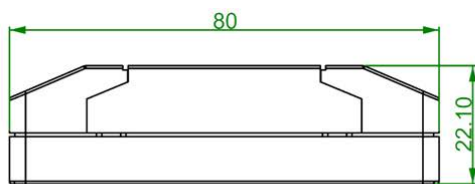
Required address	6
Default setting	1
DIP switches 1 and 4	+ 5
Sum = address	= 6



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 probe or Redox
IP rating	IP 20
Clamping area	Max. 1.5 mm <sup>2</sup>
Maximum measuring tolerance	± 3 %
Max. ambient temperature	45 °C
Compatibility	x2 devices only

Subject to technical modifications as well as typographical and printing errors. This manual is only valid for devices with the corresponding firmware version. Our products are subject to constant technical advancement and further development. We therefore reserve the right to make changes without prior notice.

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