

Universal Interface for AC ELWA® Products



Assembly and Operation Manual

1. Intended Use

For the operation of AC ELWA, AC ELWA-I, AC ELWA-E and AC ELWA-F

2. Scope of delivery

- Universal Interface
- 5V power supply unit
- 120 Ohm resistor
- Assembly and Operation Manual

3. Safety instructions

When installing and connecting the relevant standards must be observed. In case of damage caused by inobservance these operating instructions, the warranty expires.

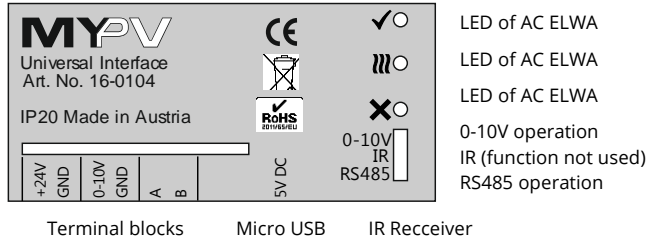
See the manuals of the respective AC ELWA product.

4. Intended Use

The Universal Interface enables the control of the AC ELWA products via different interfaces:

- 0-10V (unidirectional analogue control via wires)
- RS485 (bidirectional Communication via wires)

5. Operation displays



- ▶ all 3 LEDs flashing: no connection to AC ELWA
- ▶ 0-10V LED on: Connection between AC ELWA and Universal Interface, 0-10V operation (standard-operation mode)
- ▶ IR LED on: (function not in used)
- ▶ RS485 LED on: Communication via RS485 Bus (see command list below)

6. Assembly of the Universal Interface on an AC ELWA

1. Remove dust and dirt from the surface of the AC ELWA.
2. Remove the protective film from the adhesive tape on the back of the Universal Interface.
3. Assemble Universal Interface above the LEDs of AC ELWA (see picture).
4. Press on Universal Interface
5. Check position again



Proper communication between Universal Interface and AC ELWA is only possible with exact positioning!

The Universal interface can be easily removed by pulling on the protruding adhesive strip.

7. Pins

Power supply via provided 5V power supply unit or 24V DC (left terminal block)

0-10 V: middle terminal block (remove 120 Ohm resistor, only serves to avoid apparent control voltages)

RS485 (A, B) right terminal block, Note the termination of the RS485 bus with the included 120 ohm resistor

8. Placing into operation

1. Set desired target temperature on the rotation knob of AC ELWA.

2. Plug in mains plug of AC ELWA.
3. Plug in 5V power supply of Universal Interface
4. The connection between AC ELWA and Universal Interface happens automatically.
5. LED of AC ELWA:
 - ▶ green LED flashing (Standby, no excess power) or
 - ▶ yellow LED on (excess power is used).
 - ▶ red LED on: no communication between AC ELWA and Universal Interface. Check position of the Universal Interface.
6. Operation displays of Universal Interface:
Depending on the connected communication, one of the three LEDs is on.
The 0-10V LED also lights up when no control voltage is applied to 0-10V.

9. RS485 Control commands

Communication parameters: 9600/8/N/1

Protocol structure

Byte	Description
1	Address of the AC ELWA (normally 0x01 until 0x06, factory pre-set 0x01)
2	Command code (see below)
3	Quantity of bytes n
4 ... n+3	Data (see below)
n+4	CRC16 (Modbus), little endian (low byte)
n+5	CRC16 (Modbus), little endian (high byte)

Answer-protocol

Byte	Description
1	adress of the AC ELWA (normally 0x01 until 0x06, factory pre-set 0x01)
2	Command code + 0x80
3	Quantity of bytes n
4 ... n+3	Data
n+4	CRC16 (Modbus), little endian (low byte)
n+5	CRC16 (Modbus), little endian (high byte)

Command overview (elementary functions):

Command code	Quantity of bytes	Function	Answer (hex)
0x0D	2	Set Power	0x01 0x8D 0x02 0xnn 0xnn crcl crch
0x00	0	Reply Request (for testing the connection)	0x01 0x80 0x00 crcl crch
0x02	0	Read Temp Water (in 0.1°C)	0x01 0x82 0x02 0xnn 0xnn crcl crch
0x03	0	Read Temp Setting	0x01 0x83 0x02 0x00 0xnn crcl crch

For a basic implementation, you only need the command 0x0D.

10. Universal Interface Fault indication

- no LED on ▶ check power supply
- all 3 LEDs flashing ▶ check if AC ELWA is active
- ▶ check position of Universal Interface on AC ELWA

No Function of RS485

- ▶ A und B eventually upside down connected
- ▶ 120 Ohm resistor not assembled

No Function of 0-10V

- ▶ Control voltage eventually reversed
- ▶ No control voltage

11. Technical specifications

Universal Interface

Supply voltage	5VDC (Micro USB supply unit delivered) or 24VDC
Internal consumption	<0,2W
Protection	IP20
Operation temperature range	5 °C bis 40 °C
Operating status display	3 LED's
Interface	RS485, 0-10V
Dimensions (BxHxT)	100 x 30 x 10mm
Weight	30g, incl. supply unit 150g

12. Disposal of waste



Keep the packaging material or dispose it properly. Dispose the product at the end of its service life in accordance with the applicable regulatory requirement.

Subject to change.

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