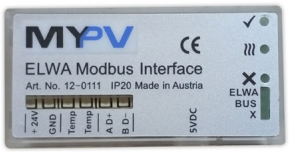
MYPV EN171018 Elwa Modbus Interface



MYPV EN171018 Elwa Modbus Interface Instruction Manual

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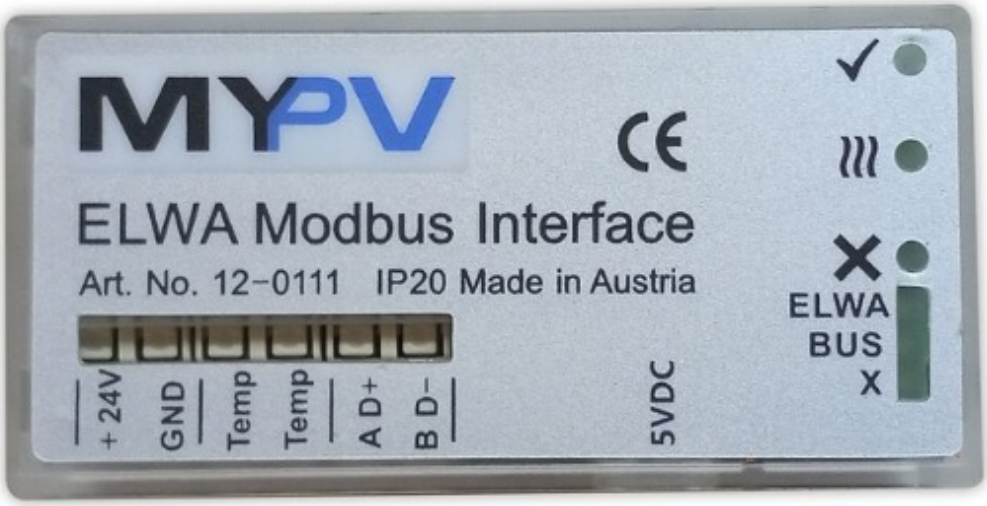


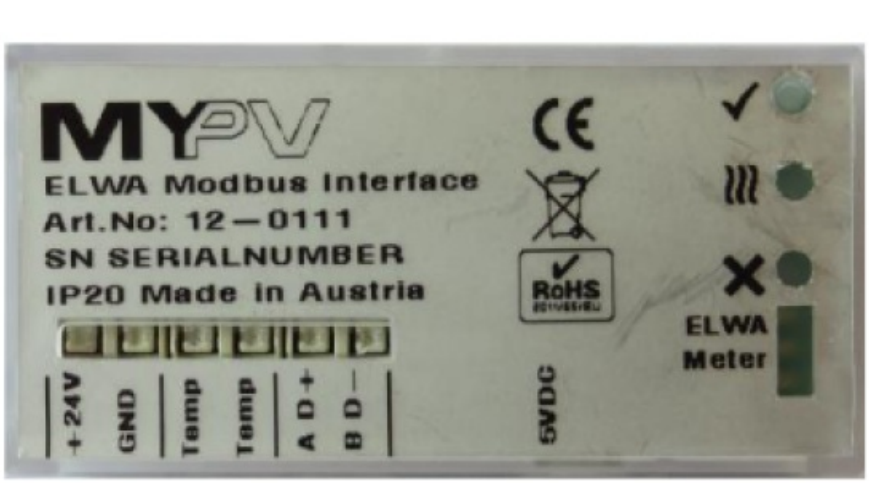
Assembly

Before placing into operation it is essential to read the assembly instructions provided with the device and the ELWA manual.

System requirements
The ELWA Modbus Interface can be used with all ELWA devices with firmware Version 1.30 or higher. Devices with serial numbers lower than 12010016081 0xxxx are equipped with earlier firmware versions.

- To update the ELWA firmware a USB Interface is required. The update is not possible by using the ELWA Mod bus Interface.
- If the ELWA Mod bus Interface is used in combination with the Smart-Home System LOXONE, the “Loxone RS485 Interface” and not the “Loxone Modbus Interface” has to be used, otherwise Bus conflicts may occur.
- The latest software packages are available at www.my-pv.com.

Operation displays



LED operation display

Green (on ELWA)

Yellow (on ELWA)

Red (on ELWA)

green

green

green

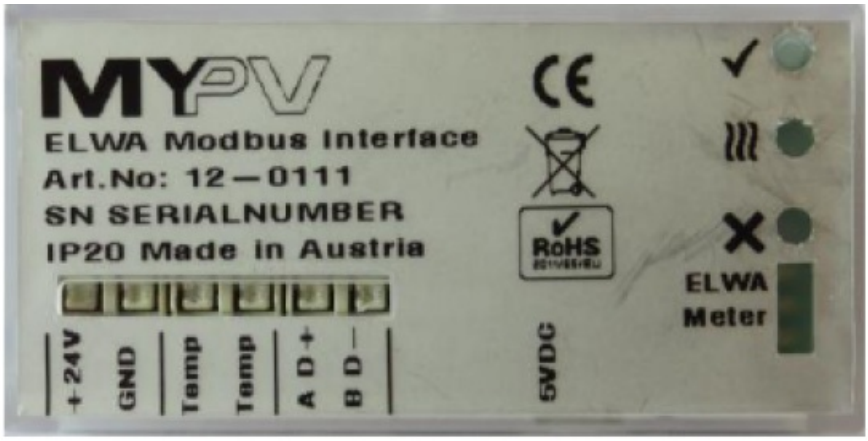
The 3 LEDs on the top are the operation displays on ELWA. Functions are described in the ELWA instruction manual.

The 3 green LEDs underneath show the operation condition of the ELWA Mod bus Interface:

- **No LED light:** no power supply
- **all 3 LED blinking**: no connection to the ELWA
- **upper LED light:** connection to the ELWA ok
- **middle LED light:** Modbus order received (timeout approx. 5 sec)

A proper communication between ELWA und ELWA Mod bus Interface is only possible with exact positioning (see assembly instructions).

Pins



- **Power supply** Either with the provided power supply unit via Micro USB interface (SVDC) or with 12-24V DC at the two pins+ 24V/GND
- **Temperature sensor** Connect the provided temperature sensor at the two ,,Temp" pins. Polarity does not matter.
- **Modbus** Connect the Mod bus at the pins AD+ and B D-.
  Consider polarity!

Functionality

- The ELWA Mod bus Interface is a link between the ELWA and a Mod bus based bus system. Because of the bus capability the allocation of bus addresses is required when there are multiple devices in operation (register 1030).
- The bus address is saved in the interface, not in the ELWA.
- Furthermore the interface can control the hot water securing of ELWA by the provided temperature sensor. For this purpose the following settings have to be made:
- The hot water securing (Boost) even is operative without an active Mod bus.
- Assuming that the additional temperature sensor in the boiler is positioned higher than the ELWA, it is recommended to set the boost-temperature on the interface (register 1009) a little higher (e.g. 70 °C). Thereby the El WA-internal control for hot water securing can be circumvented.
- The El WA-internal control of the boost-time needs also to be adjusted. The corresponding entry (register 1020) has to be set to 1441.

If the sensor (see figure) indicates a value >80 °C the pins may not be connected correctly or there might be a sensor break. A negative value can be an indication of a short circuit.

Terminating resistor in the bus system
Bus systems are high-resistive. For this reason, a terminating resistor (120 Ohm) must be set, ideally at the most remote location of the bus master. The resistance is included in the package.

Modbus register description

Modbus RTU Standard, Comm parameters 9600/8/1\1/1, All registers unsigned int (16 bit)

Register Address	mode	Content
1000	R	Operating Day Counter
1001	*RN-I*	Operation mode (see Table 1), write 1 skips 10 minutes startup delay
1002	R	DC Breaker status, 0: open, 1: dosed
1003	R	DC Relay status, 0:open, 1: closed
1004	*RN-I*	AC Relay status, 0: open, 1: closed, write to register starts/stops ELWA AC relay
1005	R	Temperature in 1/10°C
1006	R	Current Water Temp Day minimum in 1/10°C
1007	R	Current Water Temp Day maximum in 1/10°C
1008	R	DC Temp Setting in 1/10°C
1009	*RN-I*	AC Temp Setting In 1 / 10°C
1010	R	Internal Temperature of Electronics in •c
1011	R	DC Isolation value
1012	R	DC Voltage 0.1V
1013	R	DC Current mA
1014	R	DC PowerinW
1015	R	Current Day DC Energy in Wh
1016	R	Total DC Energy kwh
1017	R	Current Day AC Energy in Wh
1018	R	Internal clock (minutes from noon)
1019	R	Minutes since current day wakeup
1020	*RN-I*	AC boost mode, AC switch on time in minutes from noon

- 0 ELWA internal temperature controlled
- 1-1440 ELWA internal time controlled in minutes from noon
- 1440 ELWA internal control off, controlled via ELWA Modbus Interface

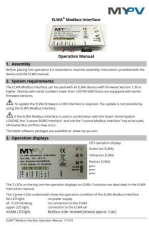
1021	R	ELWA Modbus Interface temperature sensor in 1/10°C
1022	RN/	• ELWA Modbus Interface boost temperature control setting in 1/10°C • 0 inactive (factory preset), 1-700 start boost at setting – 40 (4°C hysteresis), stop boost at setting set register 1020 to >1440 if 1022 is >O.
1023	RN/	Temp sensor offset calibration in 1/10°C, do not adjust unless sensor is changed
1030	w	address of device (01 factory preset)

Table 1: Operation mode

0	startup
1	switchdivert
2	switch_off
3	switch_on
4	setupmode
5	wait_for_de
6	charge_elko
7	rel_dc_on
8	check_upvswon_dcsupply
9	wait
10	check_position
11	mpp_scan
12	mpp_track
13	start_lower_unit
14	stop_lower_unit
15	wait_for_start_sequence
16	wait_for_stop_sequence
20	upv_lowerthan_upvswoff
21	temp_derating
129	error_overtemp_fuse
130	error_overtemp_measured
131	error_overtemp_chip
134	error_hardware_fault
135	error_iso_fault
136	error_temp_sensor

- Subject to change.
- my-PVGmbH
- Teichstrasse 43, 4523 Neuzeug
- www.my-pv.com

Documents / Resources

	**MYPV EN171018 Elwa Modbus Interface** [pdf] Instruction Manual EN171018, EN171018 Elwa Modbus Interface, Elwa Modbus Interface, Modbus Interface, Interface

References

- **User Manual**