

Installation Instructions

ATTENTION: Wrong connection can cause damage to the controller and transformer. We cannot be held responsible for any damage caused by wrong connection and improper handling of the controller!

- Before working at the controller switch off current.
- Installation and service may only be done by authorised personnel.
- Installation has to be effected in accordance with the enclosed elementary wiring diagram.
- Please connect the controller to fixed electric wiring only.
- Please follow EN 60730, part 1.
- Please also follow instructions of your local energy supplier.
- If the controller does not work please check whether connection has been effected properly and voltage is supplied.

1. Short description

The charge controller E272 is an appliance for a weather-compensating charge control of storage heating systems (e.g. for electric floor heating systems). It is a backward-acting control. The necessary settings are done by potentiometers which are available at the front of the controller.

You can set the “temperature at start of charging“ on proportion of the outdoor temperature and charging cycle (8h/2h/1h). The cycle starts when the power circuit is switched on. The appliance provides 1 sensor input (low voltage, semi-conductor, KTY), a timer input (setback input) and a relay output.

2. Function

2.1. Storage control (backward-acting control)

In proportion of the set parameter (input [1]) as well as outdoor temperature the appliance determines the turn-on period (ED) for the storage heating within a possible charging cycle.

The charging cycle is selected by means of a potentiometer [2] and can last either 1 hour, 2 hours or 8 hours. The „arrow“ at the adjustment shaft has to point to the respective black marking (see example: 2 hours). Adjustments outside of the marked areas may lead to malfunctions.

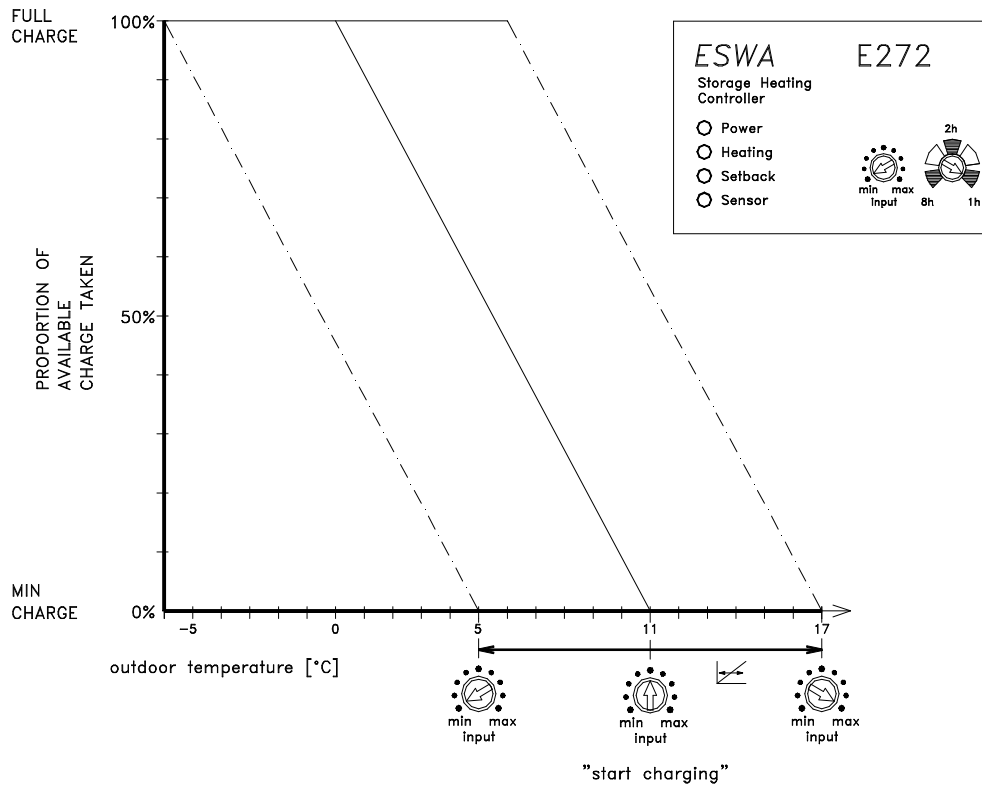


This should be adapted to the corresponding low tariff times of your local electricity supplier, enabling you to optimise efficiency of an energy offer.

The backward-acting control determines the turn-on time on proportion of the turn-on period (ED). The turn-on delay results of the turn-on period (ED) and the cycle time set (8h/2h/1h).

When charging is stopped at the end of the low tariff period, the energy required from then to the next charging must have been stored. The following graphics will show you how the different settings are connected with the outdoor temperature.

Diagram showing effect of adjustment knob "start charging" on proportion of charge taken at different outdoor temperatures:



Examples: Outdoor temperature 3 °C knob in the middle position – storage will be approximately 73 % of full capacity
 Outdoor temperature 3 °C knob in the left position – storage will be approximately 18 % of full capacity

2.2. Setback input

If this input is activated by means of a floating contact (manual knob, timer ...) there will be a reduced charging. Start of charging will be deferred by 5 K in proportion to the external temperature.

Example: Adjusting potentiometer input in middle position

Setback input:	not active (open)	active (short-circuited)
Start of storage	11 °C	6 °C

2.3. Monitoring of sensor

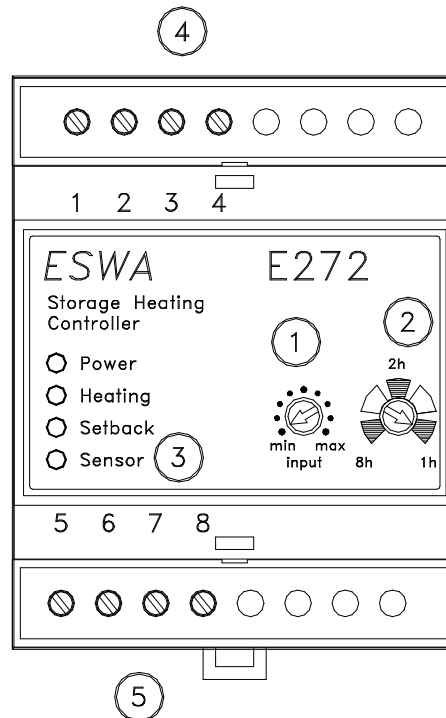
The external sensor is monitored in regard to sensor fracture and short-circuit. In case of any defect at the external sensor, the controller takes a temperature of 5°C (frost protection) and effects the charge cycle in accordance with the adjustments set. If the external sensor shows a fault the LED „sensor“ glows

Conditions for a sensor defect:	Sensor fracture	Sensor short-circuit
Temperature at the sensor	> 50°C	< -30°

3. Operation

Operation is done by means of potentiometers at the front of the controller. There are no further switches situated inside the housing.

3.1. Operating elements



1 Knob „set temperature“ (shift of start temperature „charging“)

2 Adjustmest of cycle time for a charge-cycle (8h/2h/1h)

3	State display with LED:	LED	Function	
		Power	glowing	-> mains voltage
		Heating	glowing	-> heating relay is turned-on
			flashing	-> countdown is running
			off	-> heating relay is turned-off
		Setback	glowing	-> setback input is activated
		Sensor	glowing	-> fault at the sensor

4 Terminals for sensor and setback input

1,2 Setback input **! Warning: never connect any voltage !**

3,4 Sensor input

5 Terminals for mains and load

5 Mains N

7 Mains L1

6 Load N

8 Load L1 switched

3.2. Fuse

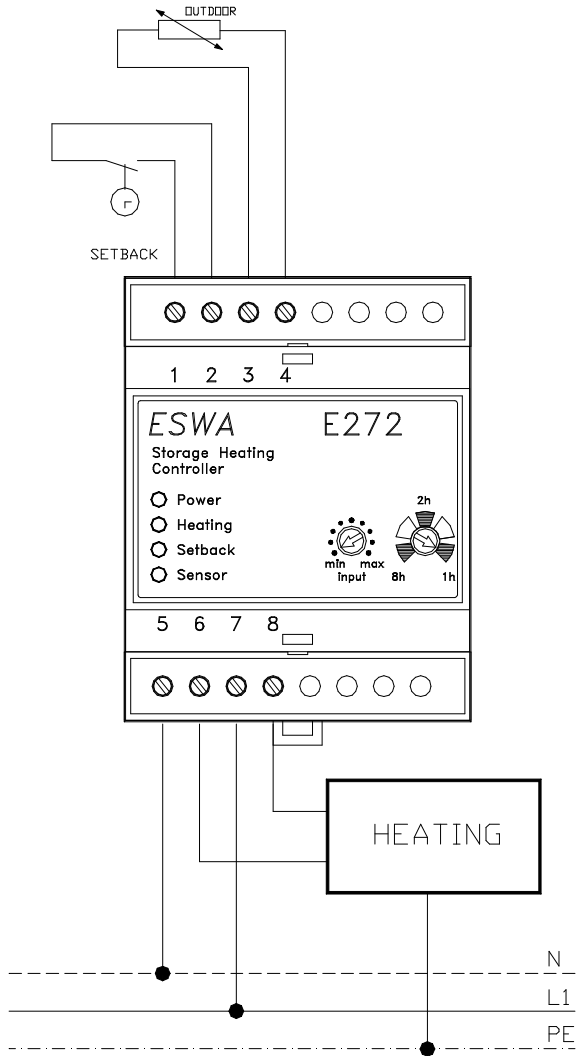
The necessary fuses have to be provided within the control panel (max. 16 A). There is no fuse situated inside the housing.

4. Technical data

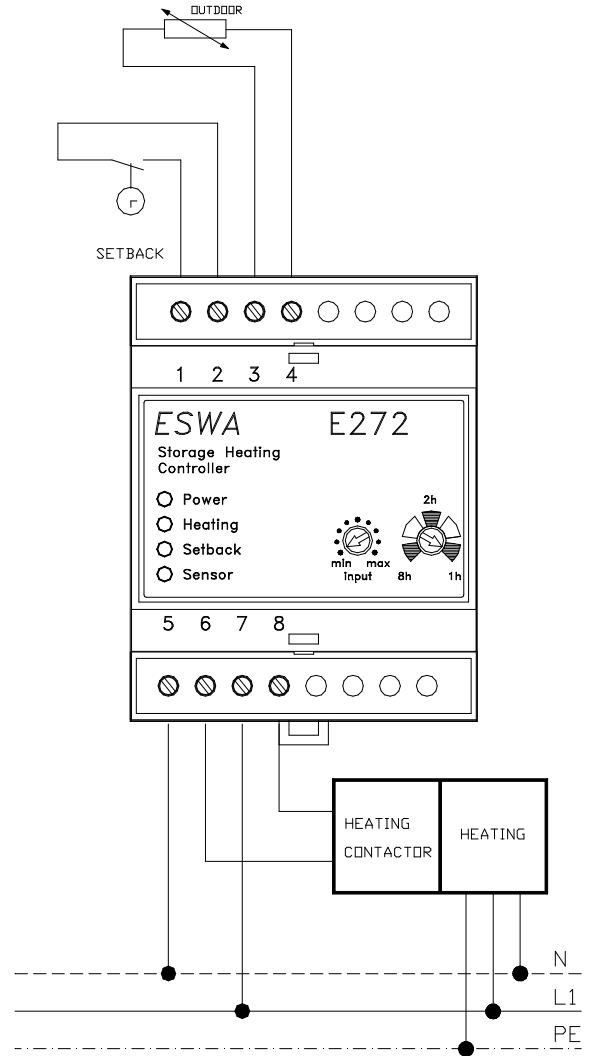
Type	E272, storage heating controller
Settings	spindle with screwdriver slot
Visual indication	4 LEDs, for Details see page 3
Operating voltage	240 V AC, +/- 10%, 50 Hz
Fuse	has to be provided within the distribution board
Power consumption (electronics)	approx. 2.5 VA
Contact	relay contact (normally open contact)
Maximum permissible current relay	16(4) A, 250 V AC
Electrical lifetime	minimum 1.2×10^5 switching operations
Mechanical lifetime	minimum 30×10^6 switching operations
Electrical connections	screw terminal blocks
Enclosure Material	synthetic material
Mounting	on DIN-rail
Protective kind	IP 20
Protective class	II, in accordance with VDE 0700, <u>when built-in</u>
Weight	approx. 250 g
Permissible ambient temperature	0 to +45 °C
Storage temperature	-10 to +60°C

5. Elementary wiring diagrams

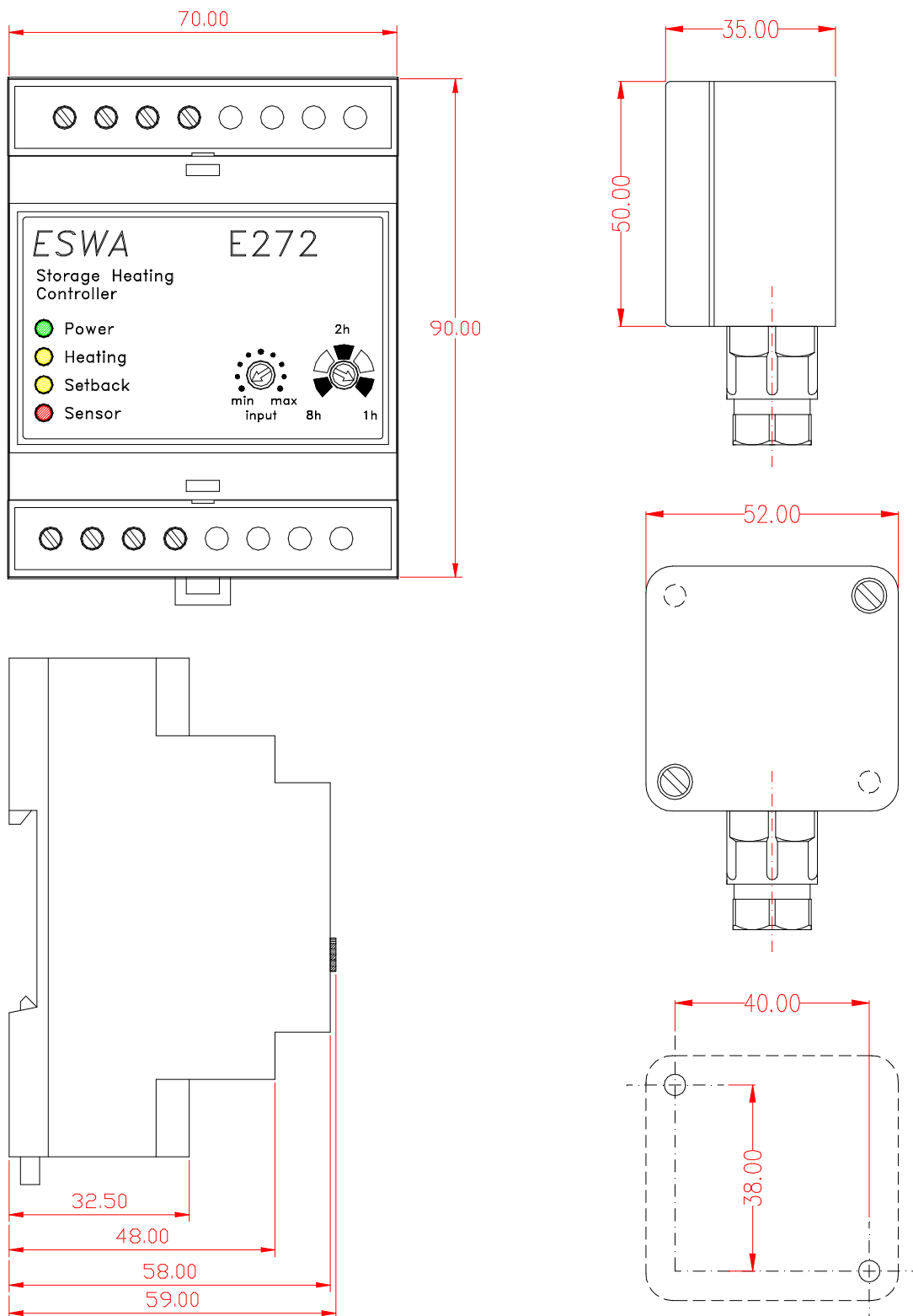
Example 1: heating directly connected



Example 2: heating connected via a heating contactor



6. Dimensions (mm)



Specifications and details may be subject to change as a result of continuous product evaluation.

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