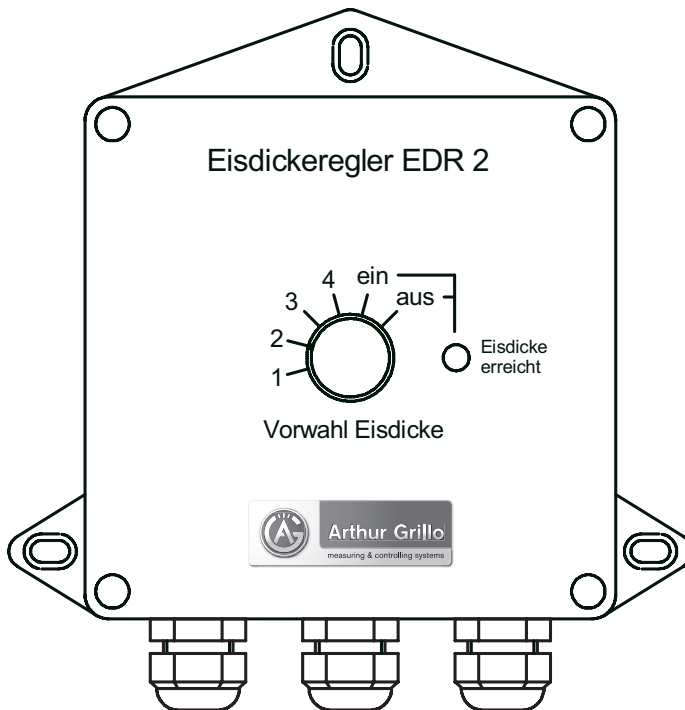




Controlled automatic ice production

EDR2 - ICETHICKNESS CONTROLLER

Installation and operation manual



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I. General safety instructions

I.1 Signal words for safety instructions

The safety instructions in this operation manual are designed to prevent hazards. They can be found in the operation manual before an operation / task / activity is described, which can entail a possible hazard.

CAUTION

Identification of a hazard with a low risk, which can lead to material damage or minor or moderate bodily injuries.

NOTICE

Signal word for important information regarding the product, which needs to be specifically pointed out.

Hazard word



Type of hazard

Hazard source
Hazard prevention

I.2 Used pictograms and symbols

In this manual the following symbols are used:



General hazard symbol (danger, warning, caution)



General information

I.3 General notes

NOTICE



This manual contains information for installation and operation of the pressure controller and is exclusively for the operator and expert staff. The guidelines in this manual will help to avoid danger and downtime.

2. Product description

The EDR2 ice thickness controller is manufactured by Arthur Grillo GmbH according to customer requirements. The standard delivery includes an EDR2 controller module with an associated sensor.

2.1 Type plate



2.2 Intended use

The EDR2 ice thickness controller is used for the controlled automatic production of ice. For this purpose, one or more heat exchangers are arranged in an ice storage system, which are flowed through by a refrigerant or cooling brine. On the surface of these plates, an ice layer is formed whose thickness can be measured and regulated via the EDR2.

The range of application of the EDR2 includes, for example, ice making for cooling purposes or the control of brine-water heat pumps with ice storage.

2.3 Functional description

A heat exchanger, floated through with coolant is put in an water filled basin to produce ice. An ice thickness sensor with four contacts is mounted on these heat exchangers. When operating the connected chiller ice layers grow slowly on the heat exchange surface. This procedure can be controlled via the EDR2. For this purpose the EDR2 is equipped with a six level switch. Controller stages 1 to 4 set the device in to control mode, in which a desired ice thickness is constantly kept. When this ice thickness is reached, the cooling system shuts down and an LED signal lights up. If the ice layer thaws again, the cooling process is restarted automatically.

In stages 5 and 6, the refrigeration plant is switched to continuous operation or switched off completely.

3. Installation


The EDR2 controller module is designed for wall mounting. The controller is mounted on a wall near the liquid container and connected to the ice thickness sensor on the heat exchanger via a 5-core cable.

To connect the cables, please follow the instructions in chapter 3.5.

CAUTION


Material damage

Read the manual carefully before installation and operation
Only experienced staff may connect the device and bring it into operation.



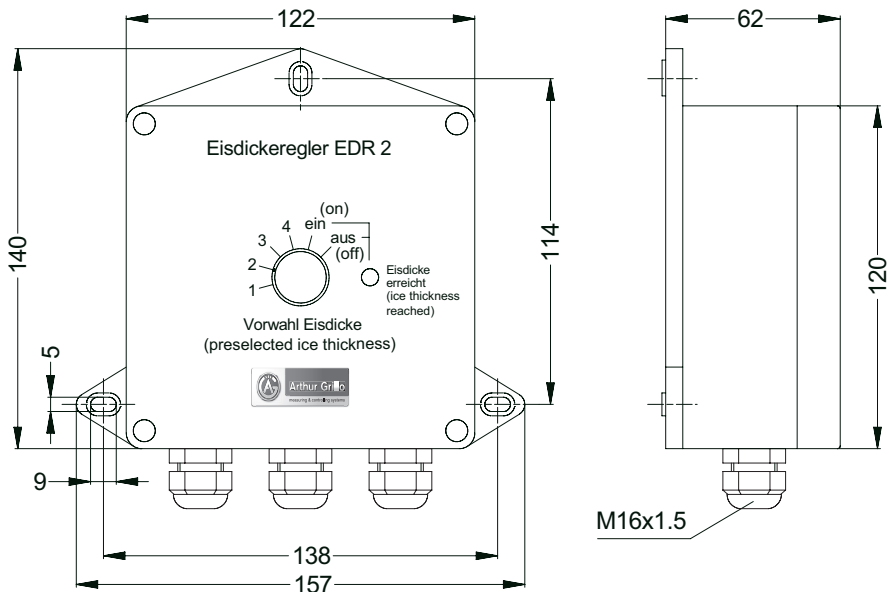
NOTICE

- The assembly of the EDR2 controller must be vertical.
- The sensor unit is mounted on the cooling plate according to customer requirements.
- A mounting bracket can be provided.

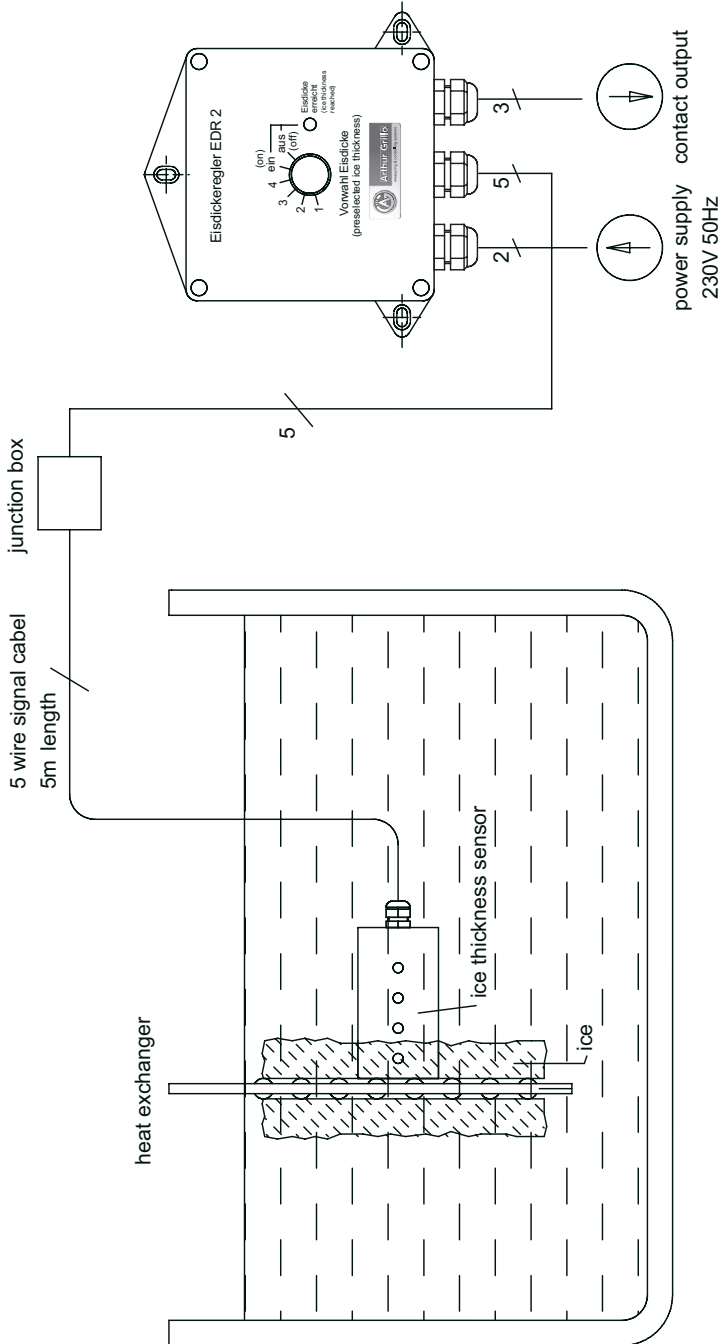


3.1 Dimensions

All dimensions in mm.



3.2 Device setup



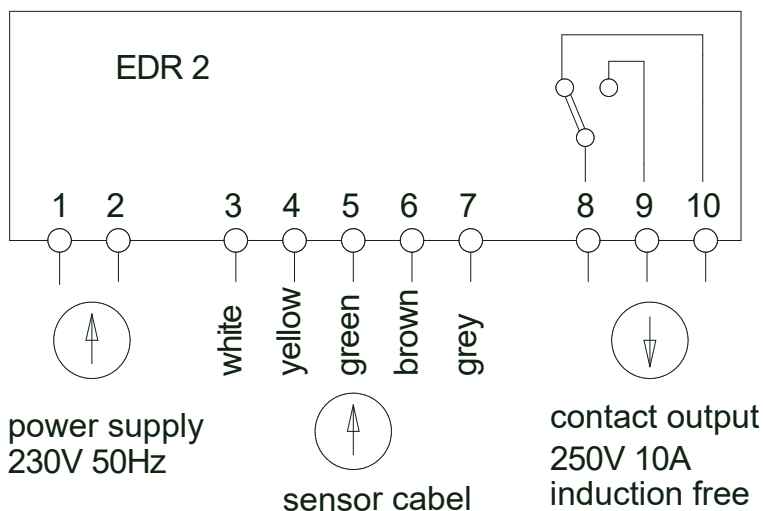
3.3 Wall mounting

1. Hold the EDR2 controller to the wall and mark the mounting holes.
2. Drill mounting holes for adequately dimensioned screws or dowels.
3. Press in the dowels.
4. Insert fixing screws through the screw channels of the housing so that the screws protrude from the rear of the housing.
5. Place the housing with the screws precisely on the fixing holes with the dowel.
6. Tighten screws.

3.4 Montage the EDR2 - Ice thickness controller

The sensor unit is mounted to the heat exchanger according to customer requirements. Corresponding mounting brackets can be provided.

3.5 Electrical connection



1. Pull off the knob of EDR2 controller module (collet mounting, SW 7 mm)
2. Release front cover screws and remove cover
3. Connect the sensor cable to terminals 3 ... 7 according to the color coding
4. If the cable length of 5 m is not sufficient, a junction box must be set. The color assignments in the additional cable must be taken into account.
5. Connect power supply 230V 50 Hz to terminals 1 and 2
6. Control of the chiller via changeover 8, 9, 10
7. After closing the front cover, fix the knob in the correct position.

4. Maintenance

The EDR2 contains no wearing or consumable parts. Servicing is not required. On request, Arthur Grillo GmbH offers an annual calibration with factory certificate. For information, please contact:



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5. Warranty

Warranty and liability claims for personal and property damage are excluded if they are caused by one or more of the following reasons:

- Improper use of the device.
- Improper installation, commissioning, operation and maintenance of the device.
- Unauthorized modifications to the device beyond the intended use.
- Disasters due to external influences and force majeure.

6. Troubleshooting

If not working properly please contact us immediately!

7. Disposal

Dispose of parts so as not to endanger human health or the environment. Follow the laws in the country of use for disposing of electronic components and devices during disposal.

8. Specifications

Sensor

Housing: Plastic POM, black, dimensions 56 x 30 x 40 mm (l x w xh) with 4 stainless steel contacts at a distance of 1 ... 4 cm; Enclosed sealed housing suitable for operation under water.

Connection cable: 5-wires, 5 m length, colour coded

Cable diameter: approx. 5 mm

Controller

Housing: Plastic ABS, light grey, protection class IP54, dimensions 122 x 120 x 55 mm (l x w xh) with wall bracket
3 cable entries M16 x 1.5

Power supply: 230 V 50 Hz

Input: 5-wire cable

Output: potential free relay contact,
switching capacity 250V 10 A,
induction free load,
Display of relay activation (ice thickness reached) via LED

Settings: 6-level rotary switch
Ice thickness preselection in 4 steps
Relay activation permanently on
Relay activation permanently off

8.1 CE-labelling

As an electric device the EDR2 falls within the scope of the directive 2004/108/EG (EMV-directive). In the scope of the EMV-directive the following norms were applied:

DIN EN 61000-6-2:2006-03 correction 1:2011-06	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
DIN EN 61000-6-3:2011-09	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light industrial environments