

Table 1. Specifications

Parameter	Value
Model	CPR1-4
Max. operating pressure PS	4.5 MPa
Max. test pressure PT	5.0 MPa
Coil voltage	~230 V +/- 10%; 50 Hz with automatic synchronization
Output voltage range	25...99% of supply voltage
Rated current	4 (3) A (see fig.7)
Minimum current	0.2 A
Setting range	[5...35] bar (factory setting 20 bar)
Ambient operating temperature air	-25...55 °C (see fig.7)
Working environment temperature	-25...70 °C
Storage temperature	-30...70 °C
Protection class	IP67
Weight (without bracket)	0.22 kg
Cable	1 m, PVC; 4×0.75 (ø 5.9 mm)
Controlled Environments	HCFCs, HFCs and other group 2 refrigerants



Operation instruction

FP-CPR1-4. FAN SPEED CONTROLLER (1-PHASE)

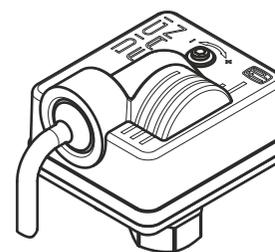


Fig. 1. General view

The fan speed controller FP-CPR1-4 is designed for installation on refrigeration units in order to maintain a given level of condensation pressure in the system by changing the rotation speed of the condenser fans by regulating the voltage. The device is self-contained and has a pressure measurement port; the output voltage changes according to a proportional algorithm relative to the setpoint (screw on the front panel).

SAFETY INSTRUCTION

- ⚠ Before installing the FP-CPR1-4 regulator, please read these instructions carefully. Failure to follow the instructions may result in device failure, personal injury, and may also cause condenser fan failure.
- ⚠ Installation, maintenance and operation must be carried out by qualified personnel with the necessary knowledge, skills and electrical safety approval group.
- ⚠ Observe the ambient temperature requirements and do not obstruct air circulation in the regulator area.
- ⚠ Follow the electrical connection diagram for the device.
- ⚠ Provide automatic power line protection for eligible ultrafast semiconductors.
- ⚠ The device is a non-repairable product; in case of failure, dismantle and dispose of the device in accordance with the dismantling and disposal paragraph of this manual.

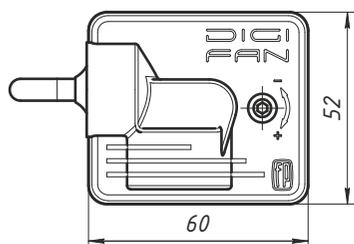
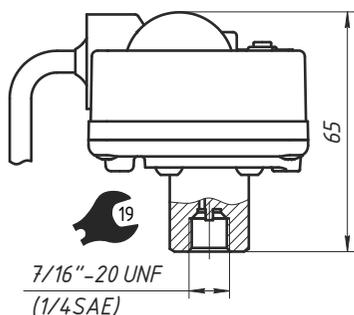


Fig.6. Overall and connection dimensions

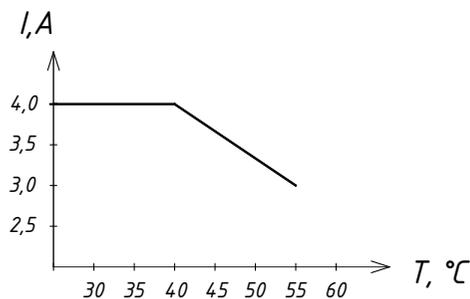


Fig.7. Dependency max. current from ambient temperature

INSTALLATION AND OPERATION INSTRUCTIONS

- Install the regulator on the liquid line. Installation on the discharge line "compressor-condenser" is not permitted. Installation should be carried out strictly in a vertical position (with the adjusting screw upwards); installation in other spatial positions is not allowed. There are 2 installation options: A. Directly on the pipe to the Schrader valve (Fig. 2a); B. On the panel using a mounting bracket (Fig. 2b) and subsequent installation of the connecting tube to the regulator fitting. Overall and connection dimensions are shown in Fig. 6.
- It is necessary to provide free zones around the regulator body for unhindered heat dissipation. The regulator must be isolated from external heat sources and located out of reach of direct sunlight, as well as corrosive gases and liquids.
- Make sure that the regulator will not be subject to strong vibration loads during operation.
- Make electrical connections according to Fig. 3. To supply power and connect the motor, use a cable with a cross-section of at least 0.75 mm² that complies with local electrical safety regulations. All cables must withstand operating temperatures up to +80 °C.
- Installation of any additional devices is not allowed, incl. switching on the power supply line from the regulator to the fan.
- To protect the regulator power line, provide ultra-fast fuses (FUSE) with a rating of no more than 4A for the relevant semiconductors with an actual load of $I^2 \times t < 610A^2s$.

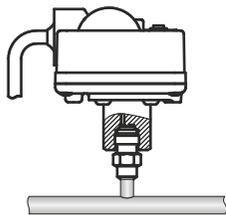


Fig. 2a.
Pipe mounting

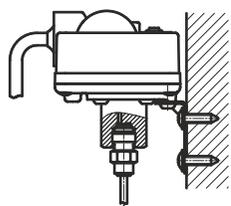


Fig. 2b.
Bracket mounting

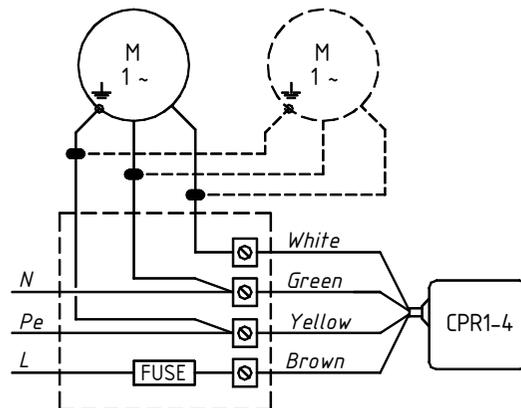


Fig. 3. Electrical connections

- To set the regulation setpoint, you will need a 2.5 mm Allen key. Install it in the hex hole of the adjusting screw (Fig. 4) and rotate clockwise to increase the set point, counterclockwise to decrease the set point. 1 revolution corresponds to a change in the setpoint by 1 bar. The factory default setting is 20 bar. To set the set point, use a pressure gauge installed in the same line as the regulator.

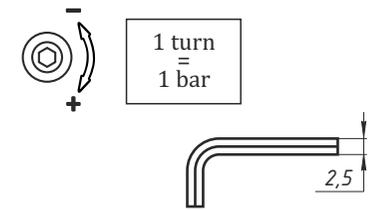


Fig. 4. Setpoint setting

OPERATING PRINCIPLE

The CPR1-4 regulator operates on the principle of changing the output voltage (phase cutting) in accordance with the measured pressure and a given setpoint. Figure 5 shows the working diagram. There is an adjusting screw on the front panel, one turn of which corresponds to a change in the set point by 1 bar (increase - clockwise, decrease - counterclockwise).

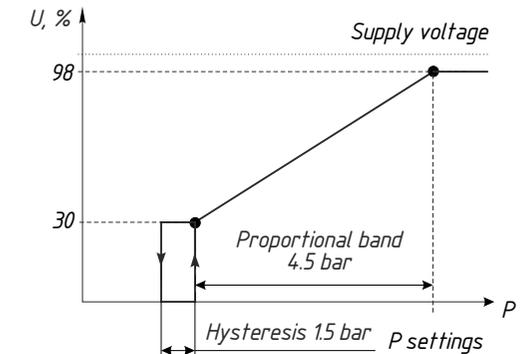


Fig. 5. Dependence of output voltage on pressure

TRANSPORTATION AND STORAGE

- Products must be stored in the manufacturer's packaging according to storage conditions U2 in accordance with GOST 15150.
- Transportation of the product must be carried out in accordance with conditions 5 (OZh4) according to GOST 15150-69.
- The month and year of production are indicated on the case.

DISASSEMBLY AND DISPOSAL

- Before dismantling, make sure that all connected wires are de-energized. Disconnect the wires, disconnect the regulator from the installation site.
- Dispose of the regulator housing separately from the printed circuit board, in accordance with national regulatory requirements (for the countries of the Customs Union GOST 1639-2009 "Scrap and waste of non-ferrous metals and alloys").