Fan speed controller FP-FSR-8

to maintain the set condensing pressure level

PURPOSE

The fan speed controller FP-FSR-8 is designed to be installed on refrigeration units in order to maintain a given level of condensing pressure in the system by changing the speed of rotation of the condenser fans due to voltage regulation. The device is a slave and is controlled by the master. The device provides unified input signals 0...10V and 4...20 mA, digital inputs for remote activation and alarms, as well as an alarm relay.

DIGI
FAN

MANUFACTURER:

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PRODUCT DESCRIPTION:

- Ability to control multiple fans with a total power of up to 5.5 kVA;
- Has a pickup function;
- Has the function of reverse rotation control in the stopped state.
- Adjustment of the maximum and minimum fan performance;
- Two operating modes: "stop" with hysteresis or minimum speed.

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SPECIFICATIONS

Parameter	Value
Voltage	~400 V ±10%, 50/60 Hz with automatic synchronization
Output voltage range	25...99 % of supply voltage
Maximum connected power	5.5 kVA
Rated current	8 A
Minimum current	0.2 A
Maximum current*	12 A
Dissipation power	30 W
Analog inputs	0...10 V – 1 pcs, 4...20 mA – 1 pcs
Digital inputs	2 pcs., "dry contact"
Output relay	Max 1 A, 250 VAC; 3 A, 30 VDC
Protection class	IP55

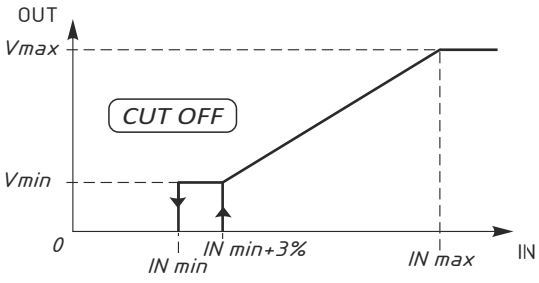
** Ambient temperature — ≤ +50 °C,*
maximum duration — ≤ 10 seconds every 5 minutes.

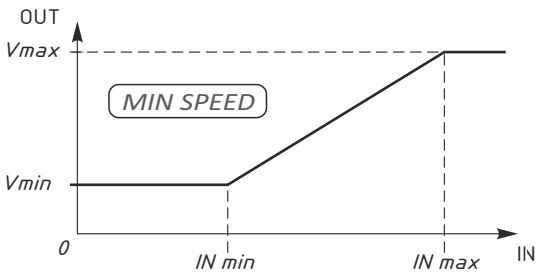
PRINCIPLE OF OPERATION

The FSR-8 regulator works on the principle of changing the output voltage (phase cutting) in accordance with the input signal. The controller has 2 input signal options: 4...20 mA, 0...10 V. The input signal source is set by the DIP-1 switch. The regulator has 2 modes of operation depending on the position of DIP-2.

DIP-2 = 0. CUT OFF mode. In this mode (see figure), the fan speed is proportional to the input signal over the entire range, from the minimum Vmin to the maximum Vmax speed. The regulation is switched off when the input signal level has reached the minimum value INmin. Regulation is enabled when the input signal level has risen to INmin+3%.

DIP-2 = on. ***MIN SPEED*** mode. In this mode (see figure), the fan speed is proportional to the input signal over the entire range, from the minimum Vmin to the maximum Vmax speed. When the input signal drops to the minimum value INmin and below, the regulation does not turn off, but continues to work at the speed Vmin.





Regardless of the operating mode, regulation is switched off (OUT=0) if:

- DI1 open- remote shutdown;
- DI2 open- an external fault has occurred (motor overheating);
- <--LOCK off- regulation blocked;
- a phase shift has occurred.

The regulator has a pickup function.

DIP-0 = off — pickup disabled. DIP-3 = 1 — pickup included. In this case, when the regulation starts, the output signal is OUT=100% for 5 seconds, and then the regulation proportional to the input signal is switched on. Pickup can be smooth (DIP-4=1). In this case, the output value smoothly increases from 0 to 100% in proportion to the pickup time.

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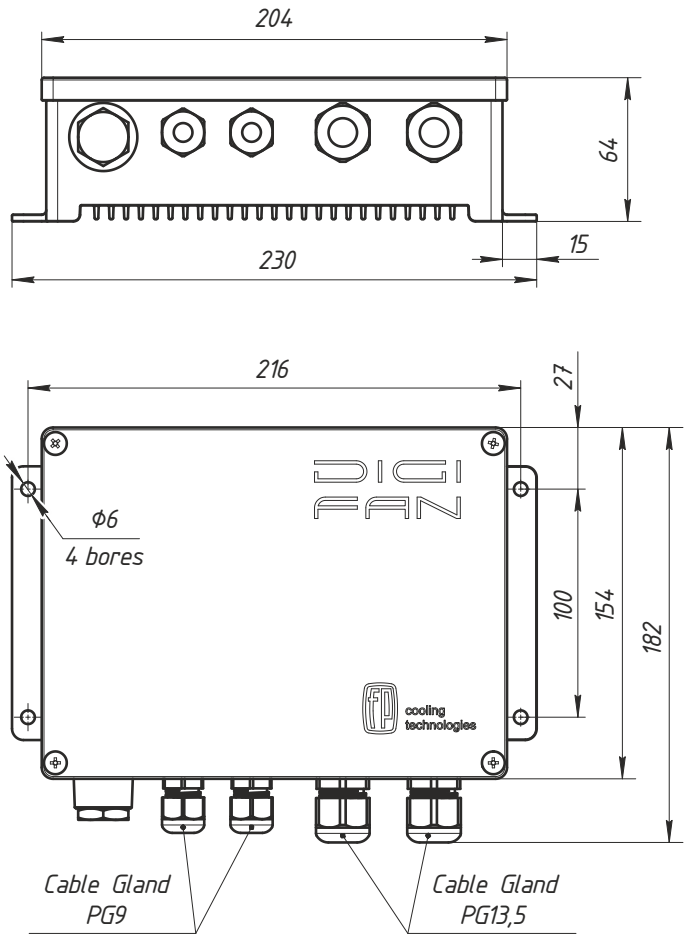
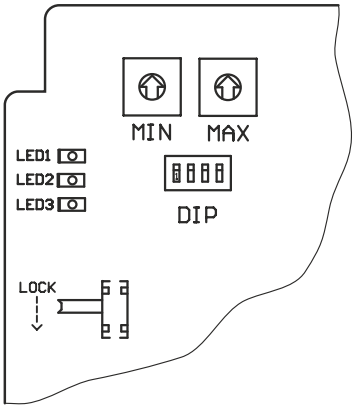
OVERALL AND MOUNTING DIMENSIONS

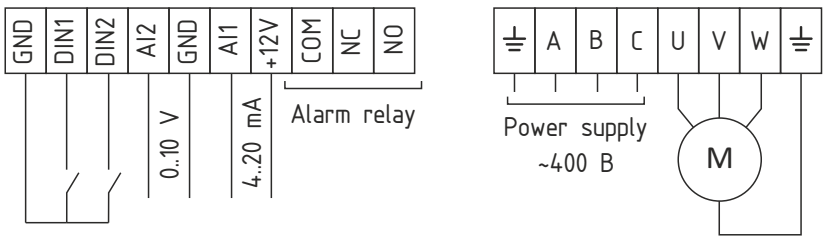


CONTROL



Vmin — trimmer for setting the minimum fan speed
Vmax — trimmer for setting the maximum fan speed
DIP — function switch block;
LED1 — green indicator;
LED2 — red indicator;
LED3 — yellow indicator;
LOCK — fan lock switch

ELECTRICAL SCHEME OF REGULATORS



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