

EVAJET®

superheat controlling technology

up to 20%
energy savings

Cloud
dispatching

PURPOSE

The refrigeration cycle control system is designed to control the compressor, evaporator fan, defrost, and electronic control valve (ERV pulse type). The system supports evaporator overheating, chamber temperature, evaporator temperature (freezing), low pressure alarm, and has a programmable digital input.



MANUFACTURER:

Russian factory of refrigeration components Frigopoint
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Belgorod;

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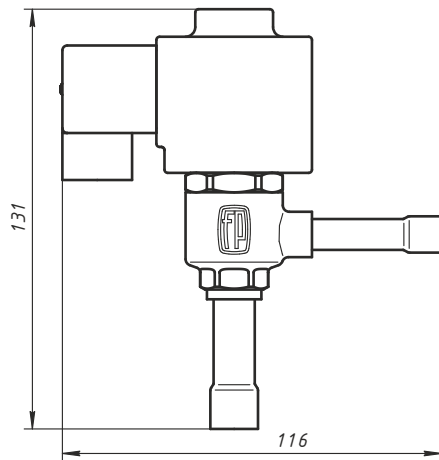
PRODUCT DESCRIPTION:

- The system replaces the TRV + solenoid + controller+low pressure relay.
- Up to 20% energy savings (due to the ability to set the condensation temperature for low-temperature cold 20 °C, and for medium-temperature cold 30 °C).
- Work with any HFC, HCFC, CFC refrigerants including R410.
- Operation in the 10 range...100% of maximum performance.
- Capacity up to 16 kW (calculated on frigopoint.com/ru/vessel/online).
- Simple cloud-based dispatching.



совершенствуя лучшее

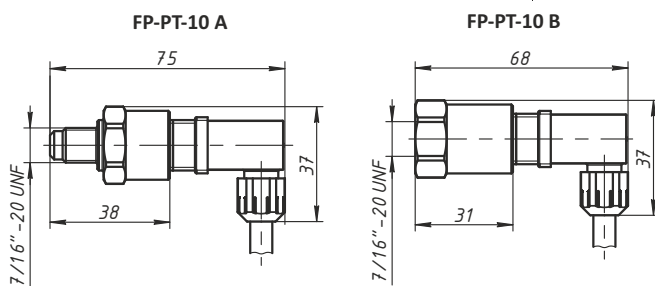
ELECTRONIC EXPANSION VALVE



Parameter	Value
Voltage	220 V, $\pm 10\%$
Ingress protection rating	IP 67
Operating principle	PWM
Recommend period	6 seconds
Capacity (R22)	0,36...16,3 Kw
Capacity range	10...100 %
Working temperature	-50...+50 °C
Plunger sealing leakage	<0.02 % from kv-value
MOPD	18 bar
Maximum operating pressure	45 bar

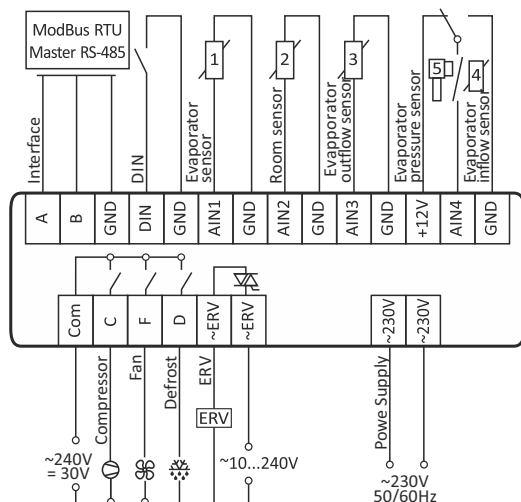
Valve type	Nominal capacity, kW				kv-value, m³/h	Connection ODS, In x Out, inch
	R22	R134a	R404A/R507	R407C		
FP-1	0.36	0.32	0.29	0.39	0.003	3/8 x 1/2
FP-2	1.0	0.9	0.8	1.1	0.010	3/8 x 1/2
FP-3	1.6	1.4	1.3	1.7	0.017	3/8 x 1/2
FP-4	2.6	2.1	2.0	2.5	0.025	3/8 x 1/2
FP-5	4.1	3.4	3.1	4.0	0.046	3/8 x 1/2
FP-6	6.4	5.3	4.9	6.4	0.064	3/8 x 1/2
FP-7	10.2	8.5	7.8	10.1	0.114	3/8 x 1/2
FP-8	16.3	13.5	12.5	17.0	0.162	3/8 x 1/2

PRESSURE SENSOR



Parameter	Value
Measurement range FP-PT-10A(B)	0...10 bar
Output signal	4...20 mA
Power supply	8...25 V DC voltage
Environment compatibility	All refrigerants
Electrical connection	DIN43650 type C mini
Precision	$\leq 1\%$ of measuring range
Ingress protection rating	IP65
Maximum pressure FP-PT-10A(B)	25 bar
Operating temperature range	-40...90 °C
Thermal compensation range	-30...70 °C
Cable diameter	3,0...6,0 mm

REFRIGERATION CYCLE CONTROLLER



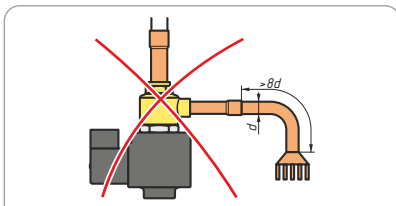
Parameter	Value
Power capacity	~ 230 V $\pm 10\%$; 50/60 Hz
Power requirements	3VA
Dimension	Overall dimension 77x35.5x79(65.5) mm Panel 77x35.5 mm
Interface	RS485 Modbus RTU
Environment	-5...+55 °C, relative humidity 10...90%
Ingress protection	IP65 front panel, IP20 case
Analogue inputs	FP-TSN(PX3-42H) range -45...+110 °C — 4 pcs; 4...20 mA — 1 pcs
Discrete input (DIN)	Dry contact, configurable
Relay outputs	Ind. load (AC15) 250V/3A, (DC13) 30V/3A Resistive load (AC1) 250V/8A, (DC1) 30V/8A
Output ERV	Triac (AC15) 10...230V/1A
Connectors	Screw clamps do 1,5 mm² in increments 3,5 mm

Installation instructions

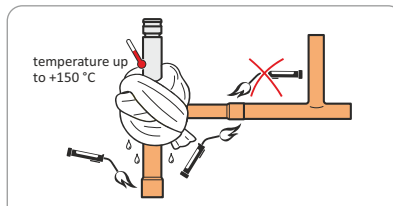
0. Equipment

- ERV kit (FP-MC-23EM, including 3 temperature sensors; FP-ERV, including orifice, FP-PT-10A/B);
 - Shielded cable 2x0.75 — L, cable 3x0.75 — L;
 - Shielded cable 2x0.5 — 4xL;
 - Cable for compressor, fan, defrost;
 - Box 100x100x40, terminal block
- L — distance from the air cooler;
l — distance to a discrete device.

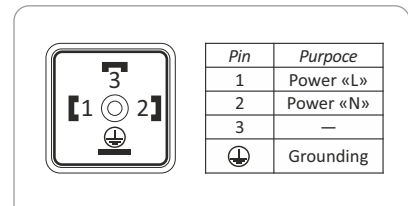
1. Installation of ERV



- It can be installed in any position except with the coil facing down.
- The distance to the distributor is at least 8 d.

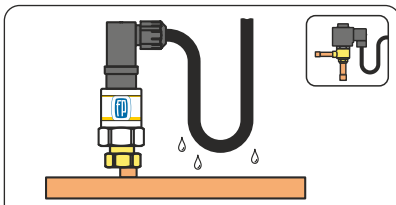


- Remove the caps, tag, ring, and coil before installation.
- During the soldering process, provide additional cooling of the expansion valve so that its temperature does not exceed 150 °C.
- To reduce water impacts, it is recommended to arrange a gas pocket with a dead end.

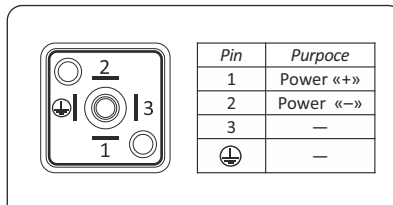


- Connect according to the diagram.
- Use cable 3x0.75.
- Ground potential.

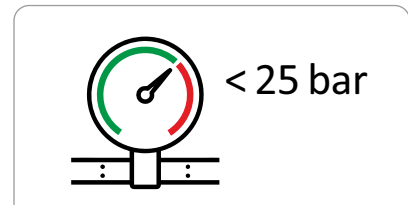
2. Installation of pressure sensor



- It is recommended to mount vertically upwards.
- Make a loop on the cable for dripping drops.

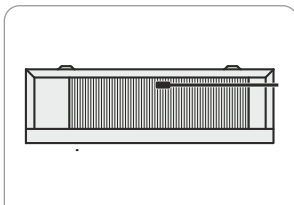


- Use shielded cable 2x0.5.

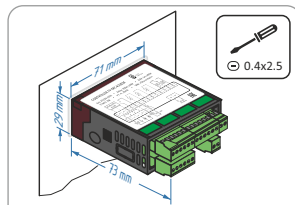


- During pressure testing, the pressure must not exceed 25 bar.

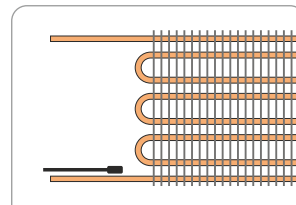
3. Installation of temperature sensors



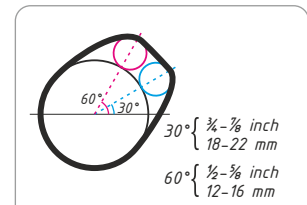
- Place the evaporator temperature sensor (AIN1) at the top point between the slats.



- Mounting dimensions: 71x29 mm.
- Use a screwdriver ⊕ 0.4x2.5.

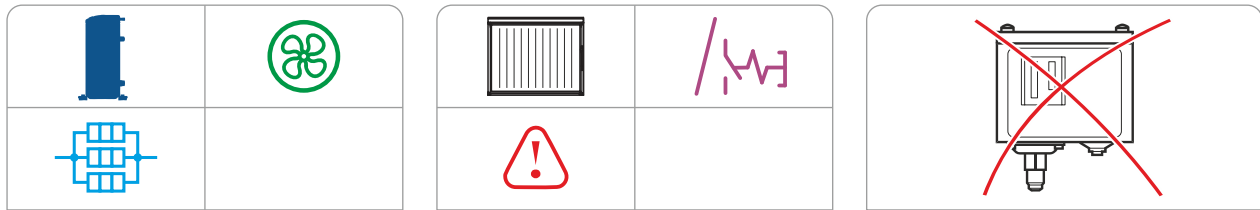


- The evaporator outlet temperature sensor (AIN3) is positioned on the horizontal outlet pipe.



- Installation at 30 or 60° depending on the diameter of the pipeline.
- Isolate from the external environment.
- Use the 2x0.5 shielded cable to connect.

4. External connections for compressor, fan, defrost, and digital input

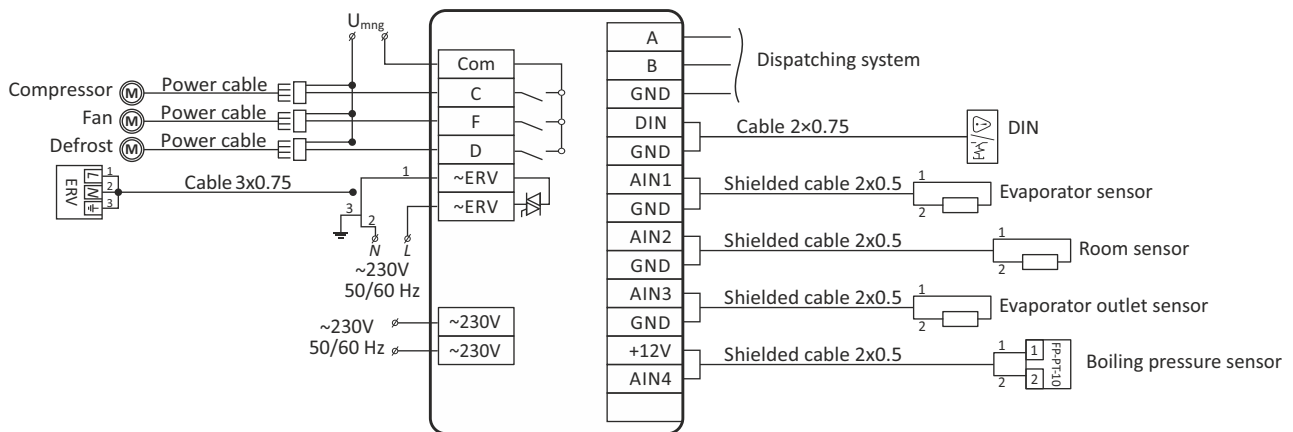


- Connect the compressor, fan, and defrost via intermediate relays.
- Use power cable depending on the phase.

- Connect the door / emergency switch / button to the digital input.
- Use cable 2x0.75.

- A low pressure switch is not required.

5. Cable connection diagram



6. Mandatory settings

