



CATALOGUE CO₂

SUBCRITICAL
REFRIGERATION SYSTEMS | 45 bar



Pressure vessels



Linear components



Vibroeliminators



Oil level control



Electronic
components



Filters

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COMPANY HISTORY

The history of the plant began in 2000, with a small factory for the production of refrigeration receivers. Today the product range consists of 159 models component of the cooling systems. The factory area is 2200 square meters, the factory has more than 70 people. The quality of products recognized by FP customers around the world and confirmed by the world leader in certification - TUV Rheinland.

RANGE OF PRODUCTS

Currently under FP are serially produced on serial basis the following components of the cooling system:

- Electronic oil level regulator "FeedWay";
- Electronic level sensor;
- Liquid receivers, suction accumulator;
- Oil separators, oil receivers, oil filters;
- Sight glasses, moisture indicators;
- Safety valves;
- Vibroeliminators;
- Differential check valves;
- Rotalock valves;
- Filter-driers with replaceable core;
- Refrigeration controllers;
- Pressure sensors;
- Electronic expansion valves.

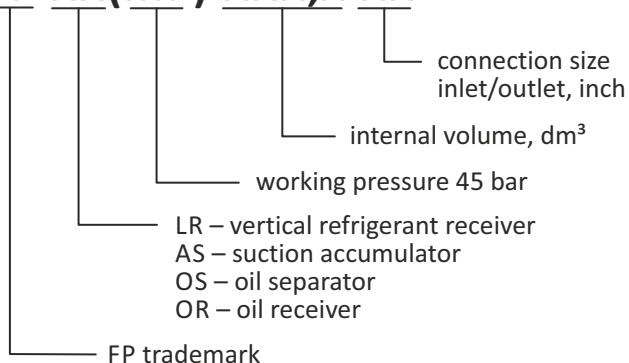
All information and news you can find on our website: <http://frigopoint.com/en>

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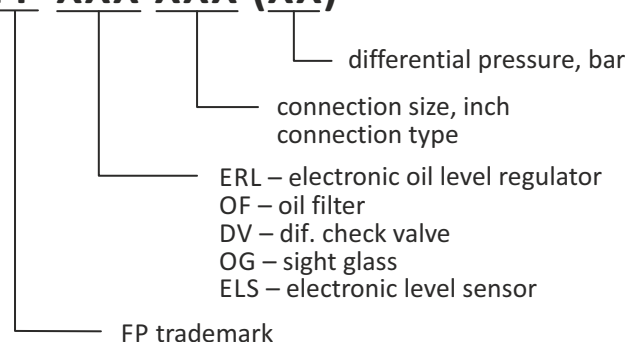
PRESSURE VESSELS

FP-XX(MP)-XXX,X-XX



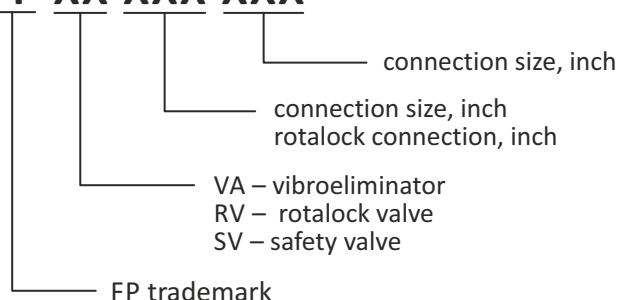
OIL CONTROL SYSTEM

FP-XXX-XXX-(XX)

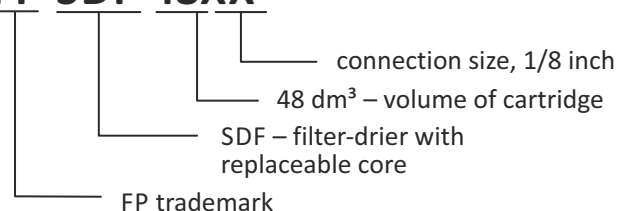


LINEAR COMPONENTS

FP-XX-XXX-XXX

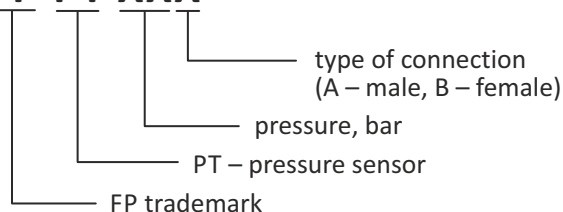


FP-SDF-48XX

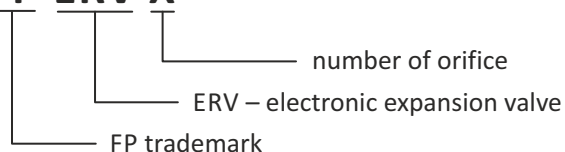


EVAPORATOR MANAGEMENT SYSTEM

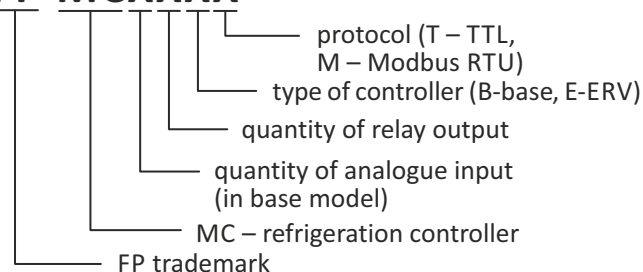
FP-PT-XXX



FP-ERV-X




FP-MCXXXX




REFRIGERANT RECEIVERS

Receiver is a container for liquid refrigerant storing. Receivers are designed to collect liquid after the condenser for smooth refrigerant supply to the evaporator and creating refrigerant reserve in a system. According to construction and technical characteristics all FP cooling technologies receivers can be apply to work with all refrigerant kinds, under admissible working pressure.

Vertical refrigerant receivers							
Type	Model	Ø D, mm	In/Out UN, inch	SG, 1¼", pcs	SVP, 1¼"	Volume, dm ³	PS, bar
	FP-LR(MP)-20,0	240	1 1/4	1	+	20.0	45
	FP-LR(MP)-25,0	240	1 1/4	1	+	25.0	
	FP-LR(MP)-30,0	240	1 1/4	2	+	30.0	
	FP-LR(MP)-40,0	240	1 1/4	2	+	40.0	
	FP-LR(MP)-50,0	240	1 1/4	3	+	50.0	
	FP-LR(MP)-70,0	240	1 1/4	3	+	70.0	



SUCTION ACCUMULATORS

Suction line accumulator's main purpose – deliver refrigerant to a compressor only as a gas. All units with flooded evaporators need this item, as well as system with overheated evaporators to prevent liquid refrigerant accumulation in suction line. Apart from liquid separation suction accumulators provides oil return to compressor.

Suction accumulators					
Type	Model	Ø D, mm	In/Out ODS, inch	Volume, dm ³	PS, bar
	FP-AS(MP)-2,0-012	102	1/2	2.0	28
	FP-AS(MP)-2,0-058	102	5/8	2.0	
	FP-AS(MP)-2,0-034	102	3/4	2.0	
	FP-AS(MP)-3,5-034	102	3/4	3.5	
	FP-AS(MP)-3,5-078	102	7/8	3.5	
	FP-AS(MP)-3,5-118	102	1 1/8	3.5	
	FP-AS(MP)-5,0-118	133	1 1/8	5.0	
	FP-AS(MP)-5,0-138	133	1 3/8	5.0	
	FP-AS(MP)-7,0-138	159	1 3/8	7.0	

OIL SEPARATORS

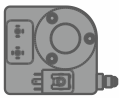
Oil separators are used to separate oil dissolved in refrigerant in order to return it to compressor's crankcase. Effectiveness of FP oil separators is more than 90% which increases system's productivity by preventing excessive oil circulation.

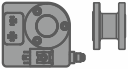
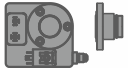
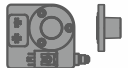
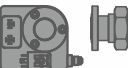
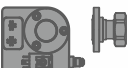
Oil separators						
Type	Model	Ø D, mm	In/Out ODS, inch	ORP, inch	Volume, dm³	PS, bar
	FP-OS(MP)-2,0-012	102	1/2	3/8" SAE	2.0	45
	FP-OS(MP)-2,0-058	102	5/8	3/8" SAE	2.0	
	FP-OS(MP)-3,5-078	102	7/8	3/8" SAE	3.5	
	FP-OS(MP)-3,5-118	102	1 1/8	3/8" SAE	3.5	
	FP-OS(MP)-5,0-118	133	1 1/8	3/8" SAE	5.0	
	FP-OS(MP)-5,0-138	133	1 3/8	3/8" SAE	5.0	
	FP-OS(MP)-7,0-138	159	1 3/8	3/8" SAE	7.0	
	FP-OS(MP)-7,0-158	159	1 5/8	3/8" SAE	7.0	
	FP-OS(MP)-12-218	190	2 1/8	3/8" SAE	12.0	45

FEEDWAY. ELECTRONIC OIL LEVEL REGULATOR

Electronic oil level regulator Feedway designed for installation into oil distribution circuit of compressor stations to control and maintain level of oil in compressor's crankcase and to give alarm signal and disconnect compressor in case of accident or low level of oil in crankcase.


Operation of electronic oil level control is based on electro-mechanics and uses hall-effect sensor as a sensitive element which allows to eliminate false alarms and to effectively control the level of oil in crankcase of compressor.

Feedway. Electronic oil level regulators				
Type	Model	Parameter	Value	PS, bar
	FP-ERL3	Test pressure	5.4 MPa	45
		Power supply	230 V, 50/60Hz, 0.04A	
		Range of filling	40%...60% from sight glass height	
		Protection class	IP54	
		Time fill delay	10 sec	
		Alarm relay delay	120 sec	
		Alarm relay	max. 3A, 230V, 50/60Hz	
		Length of cables of power supply / alarm relay	3 m	
		Oil connection	Thread 7/16"-20UNF (1/4"SAE)	
		Valve coil electrical connection	DIN43650B	
		Power supply / alarm relay connection	DIN43650C	

Electronic oil level regulator with adapters		
Type	Model	Connection
	FP-ERL3 + UA	Flange adapter 3 holes Ø 6,7 mm, D 47.6 mm 4 holes Ø 6,7 mm, D 50.0 mm
	FP-ERL3 + BB	Screw adapter 1 1/8"-14NPTF, flange and 2 O-rings included
	FP-ERL3 + AA	Screw adapter 3/4"-14NPTF, flange and 1 O-ring included
	FP-ERL3 + CD	Rotalock adapter 1 3/4"-12UNF
	FP-ERL3 + CE	Rotalock adapter 1 1/4"-12UNF

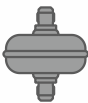
OIL RECEIVERS

The range of oil receivers consists of models from 5.0 to 12.0 liters and is designed for storage of temporary unclaimed at the moment oil. Identical for all models connection size is a big advantage in designing a refrigeration system and in oil receiver installation. In order to control the level of oil there are two ports for sight glasses and one port 3/8" SAE with thread 5/8 UNF for connection of differential valve.

Oil receivers							
Type	Model	Ø D, mm	In/Out UN inch	SG, 1¼", pcs	DVP, ¾", SAE	Volume, dm³	PS, bar
	FP-OR(MP)-5,0	102	1	2	+	5.0	45
	FP-OR(MP)-8,0	133	1	2	+	8.0	
	FP-OR(MP)-12,0	159	1	2	+	12.0	


OIL FILTERS

Oil filters FP-OF are designed to protect components of oil circuit from dirt and other contaminants. They can be used with any types of refrigerants and oils. The use of two niobium magnets allows to filter flow of oil in both directions and to stop magnetized parts of much smaller size than it is done by filter net.

Oil filters						
Type	Model	Connection A SAE, inch	L, mm	L ₁ , mm	D, mm	PS, bar
	FP-OF-014	7/16"-20 UNF (1/4 SAE)	86	36	75	45
	FP-OF-038	5/8"-18 UNF (3/8 SAE)	92	36	75	
	FP-OF-012	3/4"-16 UNF (1/2 SAE)	98	36	75	


DIFFERENTIAL CHECK VALVE

Differential check valve FP-DV designed for maintaining of the difference in pressure in oil receiver for low pressure systems. The valve is installed on oil returning line between oil receiver and suction line. Differential valve FP-DV can be used with any type of refrigerants (except from ammonia) and refrigeration oils.

Differential check valves				
Type	Model	Connection SAE, inch	Pressure difference, bar	PS, bar
	FP-DV-038-15	3/8 SAE	1,5	45
	FP-DV-038-30	3/8 SAE	3,0	


SIGHT GLASSES

Sight glasses FP-OG are designed to visual control of oil return lines. Sight glass has threading connection SAE.

Sight glasses				
Type	Model	Connection A SAE, inch	Overall dimensions L, mm	PS, bar
	FP-OG-038	3/8	70	45

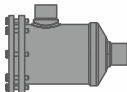
VIBROELIMINATORS

Vibroeliminators are designed for use in stationary or mobile refrigeration systems. The main function of vibroeliminator is to eliminate vibrations from the compressor working on pumping or suction pipe of the refrigeration system.

Vibroeliminators					
Type	Model	Overall dimensions		Connection	PS, bar
		L, mm	Ø D, mm	Ød ODS, inch	
	FP-VA-038	230	15	3/8	45
	FP-VA-012	230	18	1/2	
	FP-VA-058	255	20	5/8	
	FP-VA-034	255	27	3/4	
	FP-VA-078	290	32	7/8	
	FP-VA-118	330	38	1 1/8	
	FP-VA-138	375	50	1 3/8	

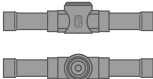
FILTER-DRIERS WITH REPLACEABLE CORE

Filter with replaceable core FP-SDF is designed to protect refrigeration and air-conditioning systems from solid particles, moisture and acids. Filter is usually installed on the liquid line before the expansion valve or suction pipe of the compressor. The FP-SDF filter standard disposable cartridge 48 cubic inches can be installed.

Filter-driers with replaceable core				
Type	Model	Connection Ød ODS, inch	Overall dimensions L, mm	PS, bar
	FP-SDF-485	5/8	232	45
	FP-SDF-487	7/8	232	
	FP-SDF-489	1 1/8	232	
	FP-SDF-4811	1 3/8	232	
	FP-SDF-4813	1 5/8	232	

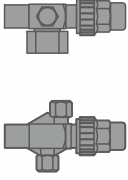
MOISTURE INDICATORS

Moisture indicator FP-SG is designed for visual inspection of the state of the refrigerant in the liquid lines of refrigeration facilities. The main function of the moisture indicator is the indication of the moisture content in the refrigerant, which allows you to control a drying capacity of the filter drier.

Moisture indicators				
Type	Model	Connection Ød ODS, inch	Overall dimensions L, mm	PS, bar
	FP-SG-014	1/4	101	45
	FP-SG-038	3/8	119	
	FP-SG-012	1/2	146	
	FP-SG-058	5/8	146	
	FP-SG-078	7/8	173	


ROTALOCK VALVES

Rotalock valves are made for blocking pressure vessels, which allows to make service maintenance on-time and make it easier to change receiver if needed.

Rotalock valves						
Type	Model	Connection		L, mm	□, mm	PS, bar
		ØD UN, inch	Ød ODS, inch			
	FP-RV-1-038	1	3/8	106	SW 20	45
	FP-RV-1-012	1	1/2	106	SW 20	
	FP-RV-1-058	1	5/8	106	SW 20	
	FP-RV-114-058	1 1/4	5/8	109	SW 22	
	FP-RV-114-034	1 1/4	3/4	142	SW 30	
	FP-RV-114-078	1 1/4	7/8	142	SW 30	
	FP-RV-114-118	1 1/4	1 1/8	145	SW 30	
	FP-RV-134-078	1 3/4	7/8	142	SW 30	
	FP-RV-134-118	1 3/4	1 1/8	185	SW 36	
	FP-RV-134-138	1 3/4	1 3/8	187	SW 36	


SAFETY VALVES

Safety valve should be installed on all vessels that have a safety valve port. It is designed to protect the vessels working under pressure against excessive pressure by dumping excess fluid.

Safety valves				
Type	Model	Connection		PS, bar
		NPT, inch	SAE, inch	
	FP-SV-38	3/8	3/8	on request 45...55



REFRIGERATION CYCLE CONTROLLERS

The refrigeration controller FP-MC-23 is designed to control superheat, room temperature, defrost cycle and fan. The controller has 3 temperature and 1 pressure sensor, 3 power relays (compressor, fan, defrost) and 1 triac (ERV).

Refrigeration cycle controllers			
Type	Model	Parameters	Value
	FP-MC-23	Power capacity	~230B ±10%; 50/60 Hz
		Dimension	Outline 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
		DIN	Dry contact, configured
		Relay output C, F, D	Inductive load (AC15) 250 V/3A, (DC13) 30 V/3A Resistive load (AC1) 250 V/8A, (DC1) 30 V/8A
		ERV	Triac (AC15) 10...230 V/1A
		Connection	Connection till 1.5 mm ²

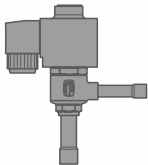
PRESSURE SENSORS

Pressure sensors FP-PT are designed to install to the pressure side and the suction line of the refrigerant circuit, to measure gauge pressure. The main function of the sensors is to transform the working pressure range in a unified 4-20 mA current signal. Pressure sensors are elements of automation, control and regulation of the refrigeration cycle. Pressure sensors are compatible with all types of refrigerants have a high vibration resistance and impact resistance. The sensor body is made of stainless steel and corrosion resistant action.

Pressure sensors						
Type	Model	Pressure range, bar	Connection, UNF, inch	Output, mA	Voltage, VDC	PS, bar
	FP-PT-25A	0...25	7/16-20 (A)	4...20	8...25	50
	FP-PT-45A	10...45	7/16-20 (A)	4...20	8...25	
	FP-PT-25B	0...25	7/16-20 (B)	4...20	8...25	50
	FP-PT-45B	10...45	7/16-20 (B)	4...20	8...25	


ELECTRONIC EXPANSION VALVES

Electronic expansion valves FP-ERV are electrically operated expansion valves designed for refrigeration and air conditioning system. Electronic expansion valve are controlled by refrigeration controller FP-MC-23EM.

Electronic expansion valves				
Type	Model	Parameters	Value	PS, bar
	FP-ERV	Voltage	220 V, ±10%	45
		Ingress protection rating	IP 67	
		Operating principle	PWM	
		Recommend period	6 seconds	
		Capacity range	10...100 %	
		Working temperature	– 50...50 °C	
		Plunger sealing leakage	<0.02 % from kv-value	
		MOPD	25 bar	

ELECTRONIC REFRIGERANT / OIL LEVEL SENSOR

Electronic refrigerant / oil level sensor FP- ELS is designed for use as electronic meter of high and low levels (interface) of working media in vessels and apparatus under pressure. Level sensor install to the visual monitoring devices (sight glasses).

Electronic refrigerant/oil level sensor				
Type	Model	Parameter	Value	PS, bar
	FP-ELS	Test pressure	5.4 MPa	45
		Power supply	230 V, 50/60Hz, 0.04A	
		Protection class	IP54	
		Alarm relay delay	120 sec	
		Alarm relay	max. 3A, 230V, 50/60Hz	
		Length of cables of power supply / alarm relay	3 m	
		Oil connection	Thread 7/16"-20UNF (1/4"SAE)	
		Power supply / alarm relay connection	DIN43650C	
		Connection to receiver	Rotalock adapter 1 1/4"-12UNF	

improve the best



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