

22mm Solenoid pilot options

The P2F P13*4* (NC) 3/2 solenoid pilot operators are designed for piloting pneumatic control valves with compressed air or other inert gases.

The P2F P operator is available for Normal operating pressures up to10 bar having an outlet orifice 1.3mm and exhaust orifice 1.5 mm. An alternative operator is also available having an outlet orifice of 0.8mm and exhaust orifice of 1.0mm for Xtreme maximum operating pressure of 16 bar and wide band voltage tollerances required for mobile applications.

For hard environnement , a metal operator (anodised aluminium) with brass manual override is available with a 1.2 mm outlet orifice and 1.3mm exhaust orifice. Different temperature range is covering inside , outside application.

Corrosion resistant design

The pilot operator body is manufactured in thermoplastic PA 6 material and the core tube brass/stainless steel. The plunger/core is made from stainless steel and the valve seats from FKM.

Solenoid Pilot Exhaust

These operators all exhaust out of the top of the core tube which is tapped M5. The standard solenoid nut fitted to the core tube is the Diffuser nut which allows the exhaust to escape to atmosphere. This nut also minimises ingress of dirt into the valve through this port. The alternative plastic knurled nut can be specified (refer to part number system) if the exhaust air needs to be captured and piped away using the M5 tapped port.

Coils

Coils are wound with enameled copper wire, having temperature index 180^{0}C with class F insulation (155^{0}C) and are encapsulated in Thermoplastic resin. When fitted with suitable connector and correct gasket they give protection to IP65.

Mobile Applications

Viking Xtreme valves are tested to +5g shock and vibration. Solenoid operated valves are designed to operate with wide voltage tolerance bands within the ambient temperature ranges stated in the technical section.

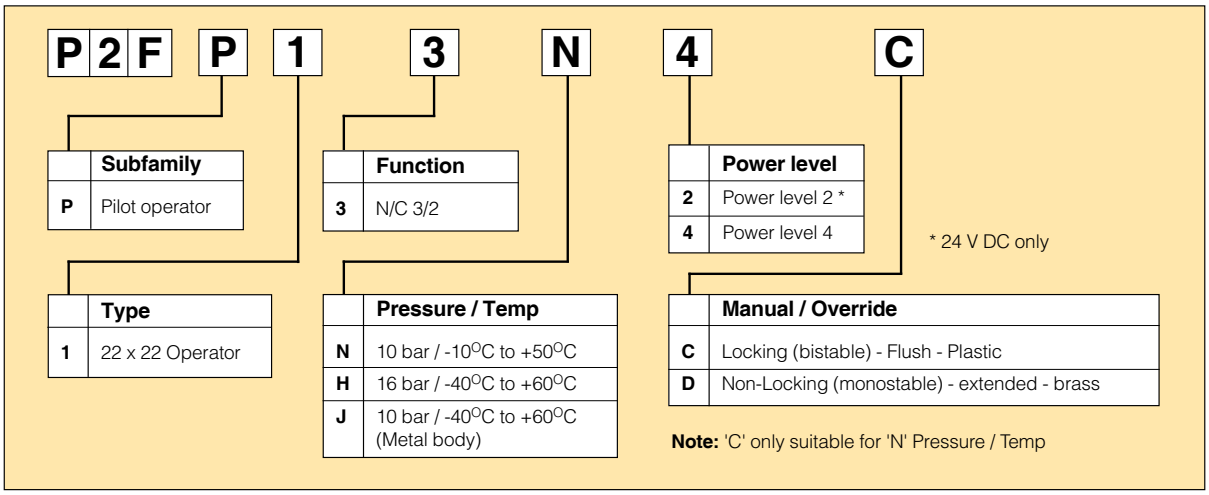
Manual Override options

The pilot operators can be supplied with or without manual override. The standard manual override is the monostable (spring return) extended brass override. Alternatively the bistable (locking) override can be specified as an alternative for the Normal duty 10bar option.

Spares

Solenoid operators are available as spares complete with mounting screws and seals. Coils and connectors should be ordered separately.

Order key, solenoid operators (22mm)



Technical data

	NC Normal	NC Xtreme	NC 22mm Xtreme (Mobile)	NC 30mm Xtreme (Mobile)	NC 30 mm Metal (Mobile)
Working pressure	0 to10 bar	0 to 16 bar	0 to10 bar	0 to 16 bar	0 to 10 bar
Ambient temperature	-10 °C to +50 °C	-40 °C to +60 °C	-40 °C to +60 °C	-40 °C to +60 °C	-40 °C to +60 °C
Orifice	1.3/1.5mm	0.8/1.0mm	0.8/1.0mm	0.8/1.0mm	1,2 mm / 1,3mm
Flow Qn @ 6 bar input 1 bar press drop. 1-2 l/m	55	20	20	20	60
Flow Qn @ 6 bar input 1 bar press drop. 2-3 l/m	70	30	30	30	70
Power (DC)	4.8W (2W Low power)	4.8W	6.0W	6.8W	6.8W
Power (AC)	8.5VA	8.5VA			
Voltage tolerance (Standard)	+/- 10%	+/- 10%			
Voltage tolerance (Mobile)			-10 to +30%	+/- 30%	+/- 30%
Duty cycle	100%	100%	100%	100%	100%
Insulation class	F	F	F	F	F
Electric connection	Ind Form B	Ind Form B	Ind Form B	Form A	Form A
Protection	IP65	IP65	IP65	IP65	IP65
Shock & Vibration	-	0 to +5g	0 to +5g	0 to +5g	0 to 5g
Approval	UL coil version available on request				
Working media	All neutral media such as compressed air and inert gases.				

Mobile applications

Solenoid operated Viking Xtreme duty valves for Mobile applications are fitted with the P2FP13H4D solenoid pilot operator. It has a 22mm footprint with 0.8/1.0mm orifice and will accept 22mm or 30mm coil options. The choice of coil option will depend on the voltage tolerance, operating ambient temperature range and maximum operating pressure. Use the technical data in the table above before selecting the coil type required, or contact our technical department.

Transients

Interrupting the current through the solenoid coil produces momentary voltage peaks which, under unfavourable conditions, can amount to several hundred times the rated operating voltage. Normally, these transients do not cause problems, but to achieve the maximum life of relays in the circuit (and particularly of transistors, thyristors and integrated circuits) it is desirable to provide protection by means of voltage-dependent resistors (varistors). All connectors/cable plugs with LED's listed on page 54 include this type of circuit protection.

Materials

Pilot Valve

Body:	Polyamide
Body:	Anodised aluminium for J type
Armature tube:	Brass (Normal) Stainless Steel 16 bar mobile
Plunger & core:	Corrosion resistant Cr-Ni steel
Seals:	FKM (Viton™)
Screws:	Stainless steel

Coil

Encapsualtion material:	Thermoplastic

22mm solenoid operator part numbers and spares

Solenoids coil standard 22mm

Voltage	Voltage tolerance	Temperature	Order code Form B	Power	Weight (Kg)	Use with Operator type
12V 50Hz	+-10%	-10°C / 50°C	**P2FCB440**	8,5VA	0.053	P2FP13N4
24V 50/60Hz	+-10%	-10°C / 50°C	**P2FCB442**	8,5VA	0.053	P2FP13N4
48V 50/60Hz	+-10%	-10°C / 50°C	**P2FCB449**	8,5VA	0.053	P2FP13N4
120V/50Hz, 120V/60Hz	+-10%	-10°C / 50°C	**P2FCB453**	8,5VA	0.053	P2FP13N4
230V/50Hz, 230V/60Hz	+-10%	-10°C / 50°C	**P2FCB457**	8,5VA	0.053	P2FP13N4
12V DC	+-10%	-10°C / 50°C	**P2FCB445**	4,8W	0.053	P2FP13N4
24V DC	+-10%	-10°C / 50°C	**P2FCB449**	4,8W	0.053	P2FP13N4
48V DC	+-10%	-10°C / 50°C	**P2FCB451**	4,8W	0.053	P2FP13N4

For pressure 0 to 10 bar

Solenoids coil low power 22mm

Voltage	Order code Form B	Power	Weight (Kg)	Use with Operator type
24V DC Low power	**P2FCB249**	2W	0.093	P2FP13N2

For pressure 0 to 10 bar

Solenoids coil 22mm Xtreme

Voltage	Voltage tolerance	Temperature	Order code Form B	Power	Weight (Kg)	Use with Operator type
12V 50Hz	+-10%	-40°C / 60°C	**P2FCB440**	8,5VA	0.053	P2FP13NH4D
24V 50/60Hz	+-10%	-40°C / 60°C	**P2FCB442**	8,5VA	0.053	P2FP13NH4D
48V 50/60Hz	+-10%	-40°C / 60°C	**P2FCB449**	8,5VA	0.053	P2FP13NH4D
120V/50Hz, 120V/60Hz	+-10%	-40°C / 60°C	**P2FCB453**	8,5VA	0.053	P2FP13NH4D
230V/50Hz, 230V/60Hz	+-10%	-40°C / 60°C	**P2FCB457**	8,5VA	0.053	P2FP13NH4D
12V DC	+-10%	-40°C / 60°C	**P2FCB445**	4,8W	0.053	P2FP13NH4D
24V DC	+-10%	-40°C / 60°C	**P2FCB449**	4,8W	0.053	P2FP13NH4D
48V DC	+-10%	-40°C / 60°C	**P2FCB451**	4,8W	0.053	P2FP13NH4D

For pressure 0 to 16 bar for A+B & 12 bar for C+D

Solenoids coil mobile voltage 22mm

Voltage	Voltage tolerance	Temperature	Order code Form B	Power	Weight (Kg)	Use with Operator type
12V DC	-10% / +30%	-40°C / + 60°C	**P2FCB447**	6W	0.053	P2FP13H4D
24V DC	-10% / +30%	-40°C / + 60°C	**P2FCB448**	6W	0.053	P2FP13H4D

For pressure 0 to 16 bar for A+B & 12 bar for C+D

Solenoids coil Mobile voltage 30mm

Voltage	Voltage tolerance	Temperature	Order code Form A	Power	Weight (Kg)	Use with Operator type
12V DC	+/- 30%	-40°C / +60°C	**P2FCA447**	6,8W	0.09	P2FP13H4D
24V DC	+/- 30%	-40°C / +60°C	**P2FCA448**	6,8W	0.09	P2FP13H4D
48V DC	+/- 30%	-40°C / +60°C	**P2FCA474**	6,8W	0.09	P2FP13H4D
72V DC	+/- 30%	-40°C / +60°C	**P2FCA470**	6,8W	0.09	P2FP13H4D
96V DC	+/- 30%	-40°C / +60°C	**P2FCA471**	6,8W	0.09	P2FP13H4D
110V DC	+/- 30%	-40°C / +60°C	**P2FCA472**	6,8W	0.09	P2FP13H4D

For pressure 0 to 16 bar for A+B & 12 bar for C+D

Solenoids coil Mobile voltage 30mm

Voltage	Voltage tolerance	Temperature	Order code Form A	Power	Weight (Kg)	Use with Operator type
12V DC	+/- 30%	-40°C / +60°C	**P2FCA447**	6,8W	0.09	P2FP13J4
24V DC	+/- 30%	-40°C / +60°C	**P2FCA448**	6,8W	0.09	P2FP13J4
48V DC	+/- 30%	-40°C / +60°C	**P2FCA474**	6,8W	0.09	P2FP13J4
72V DC	+/- 30%	-40°C / +60°C	**P2FCA470**	6,8W	0.09	P2FP13J4
96V DC	+/- 30%	-40°C / +60°C	**P2FCA471**	6,8W	0.09	P2FP13J4
110V DC	+/- 30%	-40°C / +60°C	**P2FCA472**	6,8W	0.09	P2FP13J4

For pressure 0 to 10 bar

Spare Solenoid Nuts

Valves requiring captured exhaust should be fitted with plastic knurled nut

Order code
P2FNP

Valves with vented exhaust are fitted with diffuser plastic nut

Order Code
P2FND

Spare Solenoid Operators

Solenoid pilot operator 22mm NC, Normal duty (Max Operating pressure 10bar, Temp –10⁰C to +50⁰C)

Order code (with locking bi-stable m/o)	weight Kg	Order code (with Non-locking monostable m/o)	weight Kg
P2FP13N4C	0.05kg	**P2FP13N4D**	0.05kg

Low power pilot operator NC, Normal duty (Max Operating pressure 10bar, Temp –10⁰C to +50⁰C)

Order code (with locking bi-stable m/o)	weight Kg	Order code (with Non-locking monostable m/o)	weight Kg
P2FP13N2C	0.05kg	**P2FP13N2D**	0.05kg

Solenoid pilot operator 22mm NC, Xtreme duty (Max Operating pressure 16bar, Temp –40⁰C to +60⁰C)

Order code (with Non-locking (monostable m/o)	weight Kg
P2FP13H4D	0.05kg

Solenoid pilot operator 22mm NC Mobile metal (Max Operating pressure 10bar, Temp –40⁰C to +60⁰C)

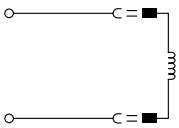
Order code (with brass non locking m/o)	weight Kg	Order code (with brass locking m/o)	weight Kg	Order code No manual override	weight Kg
P2FP13J4B	0.04kg	**P2FP13J4C**	0.04kg	**P2FP13J4A**	0.04kg

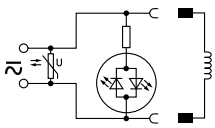
Note.
Solenoid pilot operators are fitted to the Viking valve range. Order the above part numbers for spares. The operators are supplied with mounting screws and interface 'O' rings.
Coils and connectors must be ordered separately.

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Solenoid Connectors / Cable Plugs EN175301-803

	Description	Order code 15mm Form C/ISO15217	Order code 22mm Industrial Form B	Order code 30mm Form A/ISO4400
With large headed screw suitable for mounting in inaccessible or recess position 	Standard IP65	**P8C-C**		
	24V DC LED and protection IP65	**P8C-C26C**		
	110V AC LED and protection IP65	**P8C-C21E**		
With standard screw 	Standard IP65 without flying lead	**P8C-D**	**3EV10V10**	**3EV290V10**
	With LED and protection 24V AC/DC	**P8C-D26C**	**3EV10V20-24**	**3EV290V20-24**
	With LED and protection 110V AC/DC	**P8C-D21E**	**3EV10V20-110**	**3EV290V20-110**
	With LED and protection 230V AC		**3EV10V20-230**	
With cable 	Standard with 2m cable IP65	**P8L-C2**		
	Standard with 5m cable IP65	**P8L-C5**		
	24V AC/DC, 2m cable LED and protection IP65	**P8L-C226C**		
	24V AC/DC, 5m cable LED and protection IP65	**P8L-C526C**	**3EV10V20-24L5**	**3EV290V20-24L5**
	24V AC/DC, 10m cable LED and protection IP65	**P8L-CA26C**		
	110V AC/DC, 2m cable LED and protection IP65	**P8L-C221E**		
	110V AC/DC, 5m cable LED and protection IP65	**P8L-C521E**	**3EV10V20-110L5**	
	230V AC, 5m cable LED and protection IP65		**3EV10V20-230L5**	





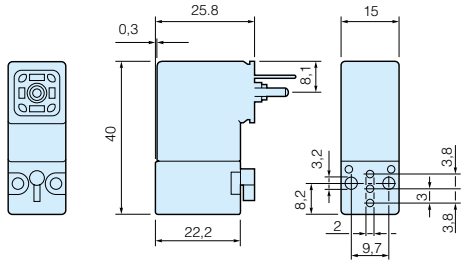
P8C-C
P8C-D
P8L-C2
P8L-C5
3EV10V10
3EV290V10

P8C-D26C	**P8L-C226C**
P8C-D21E	**P8L-C526C**
P8C-C26C	**P8L-CA26C**
P8C-C21E	**P8L-C221E**
	P8L-C521E
3EV10V20-24	**3EV10V20-24L5**
3EV10V20-110	**3EV10V20-110L5**
3EV10V20-230	**3EV10V20-230L5**

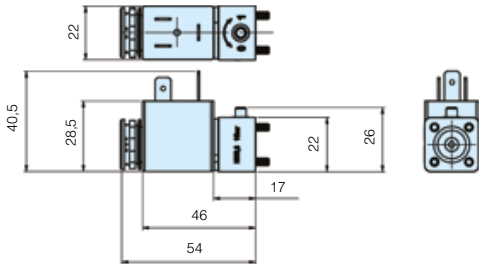
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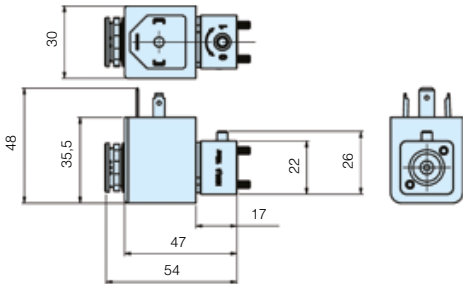
Cable Plug Dimensions (mm)

Solenoid operators P2E-•V...



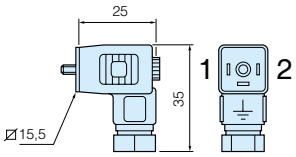
Solenoid operators P2FP...





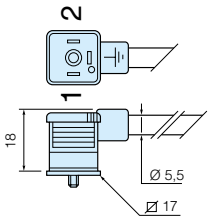
Cable plugs

P8C-C
P8C-C26C
P8C-C21E
P8C-D
P8C-D26C
P8C-D21E



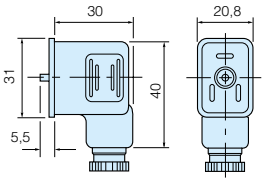
Cable plugs with cables

P8L-C2
P8LC5
P8L-C226C
P8L-C526C
P8L-CA26C
P8L-C221E
P8L-C521E



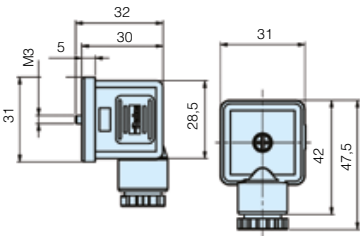
Cable plugs Form B

3EV10V10
3EV10V20-24
3EV10V20-110
3EV10V20-230
3EV10V20-24L5
3EV10V20-110L5
3EV10V20-230L5



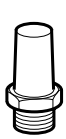
Cable plugs Form A

3EV290V10
3EV290V20-24
3EV290V20-24L5



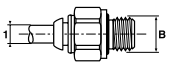
Accessories

Sintered bronze series



Port	Order code	Pack Qty
M5	9721900005	1
G1/8	9090050700	1
G1/4	P6M-BAA2	1
G3/8	9090050900	1
G1/2	9090051000	1

Male straight connectors - Parallel thread



Tube Ø1	Thread B	Order code	Box Qty
4	1/8	F4PMB4-1/8	20
6	1/8	F4PMB6-1/8	30
6	1/4	F4PMB6-1/4	30
8	1/8	F4PB8-1/8	40
8	1/4	F4PB8-1/4	30
8	3/8	F4PB8-3/8	20
10	1/4	F4PB10-1/4	20
10	3/8	F4PB10-3/8	20
10	1/2	F4PB10-1/2	10
12	1/4	F4PB12-1/4	10
12	3/8	F4PB12-3/8	10
12	1/2	F4PB12-1/2	10
14	3/8	F4PB14-3/8	10
14	1/2	F4PB14-1/2	10