

Brief operating manual for compact hydraulic power packs type FPX 12 and FP 12

acc. to pamphlet D 7310



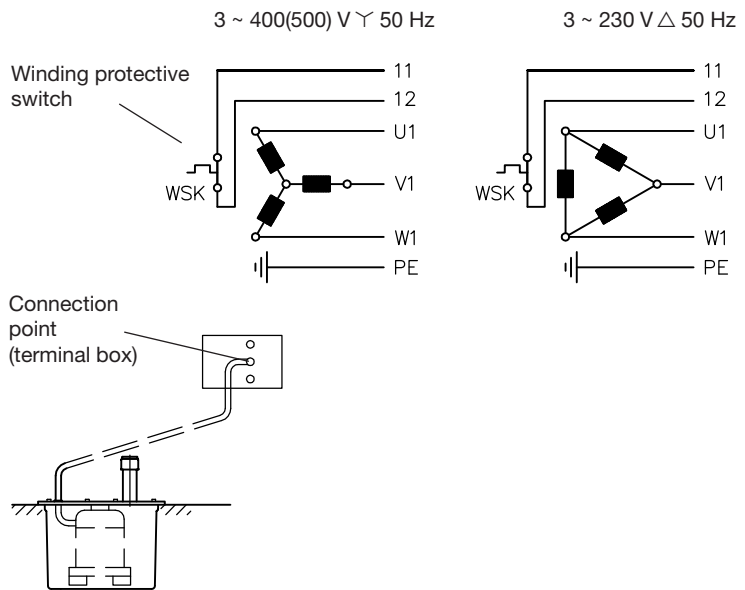
1. Electrical data

Performance	P_N	0.37 kW		
Nominal speed	n_N	2810 rpm (50 Hz)		
Voltage ¹⁾ , Frequency	U_N/f	400 V ∇ 50 Hz (460 V ∇ 60 Hz) ²⁾	230 V Δ 50 Hz (265 V Δ 60 Hz) ²⁾	500 V ∇ 50 Hz
Current	I_N	1.0 A	1.73 A	0.8 A
Start current ratio	I_A/I_N	5.7		
Power factor	cos. φ	0.80		
Insulation class		B (winding)		
Reference protection class		IEC 70 (Co) 13		
		Power pack incl. tank		IP 54
		Power pack excl. tank (cover plate version)		IP 00

Winding protective switch WSK integrated in the winding head bimetallic (snap) switch
 $U_W = 250$ V
 50...60 Hz
 $I_N = 1.6$ A (cos $\varphi = 0.6$)
 NC-contact $\vartheta = 100^\circ\text{C} \pm 6\%$

∇ - or Δ - Fixed connection at the winding head

Connection: Industrial standard cable, leads (3~gnd) min. 1.5 mm²



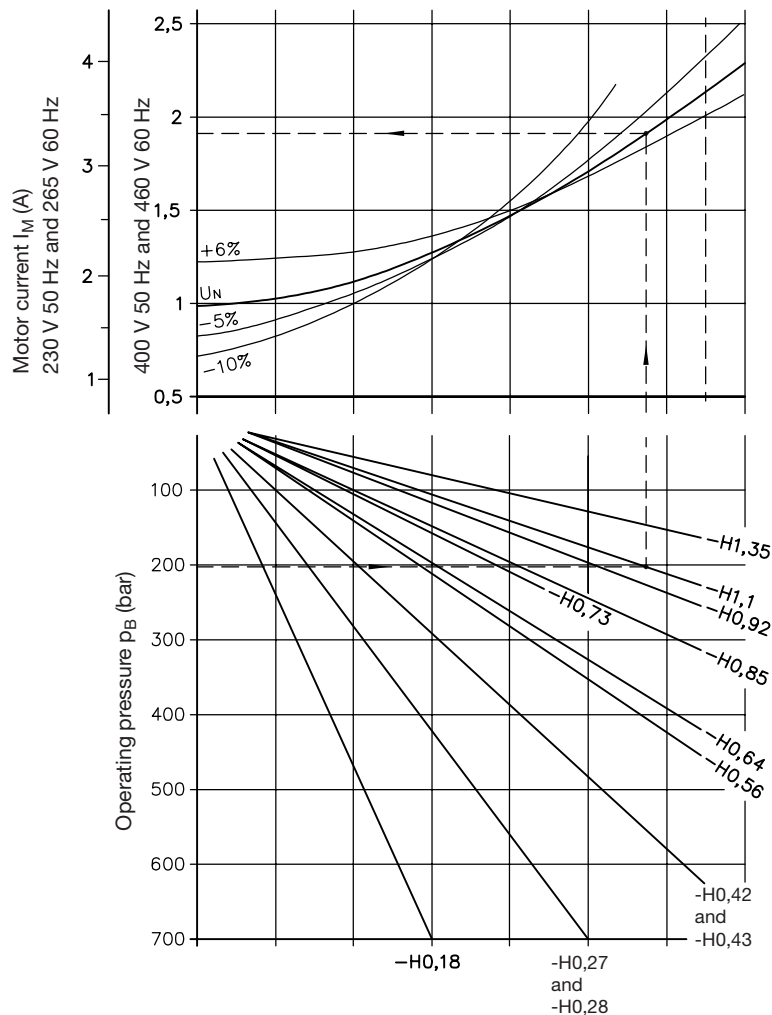
- 1) Permissible voltage ranges Mains 50 Hz: $\pm 10\%$ U_N (conforming IEC 38)
 Mains 60 Hz: $\pm 5\%$ U_N

The motors can be used also below of these range limits, but only with the drawback of reduced performance (reduction of the max. pressure).

Example: Pump FPX12-H0,64/B1.3, $p_{\max} = 410$ bar $p_{\max} \approx \frac{400V}{1,1 \cdot 460V} \cdot 410$ bar
 (Mains voltage: 400 V 60 Hz
 Nom. motor voltage: 460 V 60 Hz) $p_{\max} \approx 320$ bar

- 2) The hydraulic power unit may be connected to mains with a frequency of 60 Hz, but the resulting motor speed of approx. 3400 rpm is rather high. This can not only lead to increased running noise, but also uneven flow with small piston diameters.

2. Load dependent motor current (guideline)



3. Notes for general lay-out and initial operation

3.1 Filling up with fluid

Hydraulic oil conforming DIN 51514 part 1 to 2;
 ISO VG 10 to 68 conform. DIN 51519 or synthetic ester (HEES) conform. VDMA 24568 and 24569.
 Only proprietary fluids should be used, pamphlet D 5488/1 lists approved fluids.
 Viscosity for opt. service: approx. 10 ... 200 mm²/s
 During start min. approx. 4 mm²/s; max. approx. 500 mm²/s
 Hydraulic oil ISO VG 22, 32 and 46 cover the widest temperature range within the operation viscosity range.

Attention: The hydraulic power packs type FP are not suited for use with fire inhibiting fluids type HFA(B), HFC, HFD.. conforming VDMA 24317 and biologically degradable pressure fluids based on polyglycole (HEPG).
 Electrically hazardous: Any fluid types containing water must not be used (danger of short circuit).
 Any fluids based on seed oil are not suited as the permanent contact with the hot motor winding (fluid immersed motor) would cause rapid aging of them.

3.2 Initial operation and bleeding

The two/three pump cylinders will be bled automatically if the pump runs or is switched on and off several times with the directional valves being switched into a switching position where idle circulation is provided (if possible with your circuitry - see circuit diagram).
 Another way is to install a pipe fitting with a short piece of pipe and prolonged by a translucent tube. The other end of the tube should be put into the filler neck, held firmly and sealed with a non-fluffing cloth. Now switch on the pump and let it run until no more bubbles are visible.

Next after the pump cylinders are bled any air dragged into the system should be removed by opening the bleeder screws at the consumers (if provided) until no more bubble are detected or by operating all functions of the circuitry without load until all cylinders, motors, etc. move steadily and without any hesitation.

3.3 Servicing

The compact power packs type FP and the valves being directly mounted onto the hydraulic power pack are almost maintenance free. Only the fluid level should be checked regularly depending on operation conditions. The fluid should be exchanged every year as a general rule, but more frequently if tests show aging or contamination.

3.4 Spare parts

Repairs (replacing service items) are possible by competent craftsmen. The motor can't be repaired or replaced by the customer. Therefore if the motor is defect, the complete pump should be returned to our facilities for an overhaul. A spare parts list is available on request.