

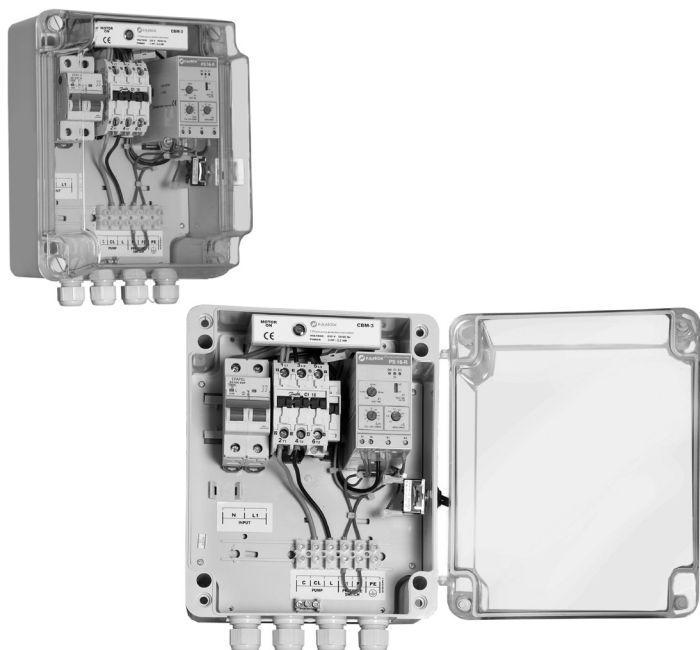
INSTRUCTIONS MANUAL

PROTECTION AND CONTROL PANELS

FOR SINGLE-PHASE SUBMERSIBLE PUMPS



CBM



Models	Code	Range I_B (A)	Motor 230 V 50/60 Hz	
			HP	KW
CBM-1/P	12311P-230	1 - 5	0.17 - 0.9	0.12 - 1.1
CBM-2/P	12312P-230	3 - 11	0.5 - 2	0.37 - 1.5
CBM-3/P	12314P-230	11 - 16	2 - 3	1.5 - 2.2
CBM-4/P	12313P-230	16 - 28	3 - 5	2.2 - 3.75

Main description

• Protections:

$I<$ Dry running by undercurrent control.

$I>$ Overload with thermal memory.

$U>$ Overvoltage: if the voltage increases more than 15% over the nominal voltage of the relay, it stops the motor. Once the voltage returns to its normal value, the relay restarts the motor automatically.

Short-circuit.

• Remote, or automatic reset every:

- PS11-R: 2 to 70 min.

- PS16-R: 2 to 240 min.

• Indicates cause of tripping.

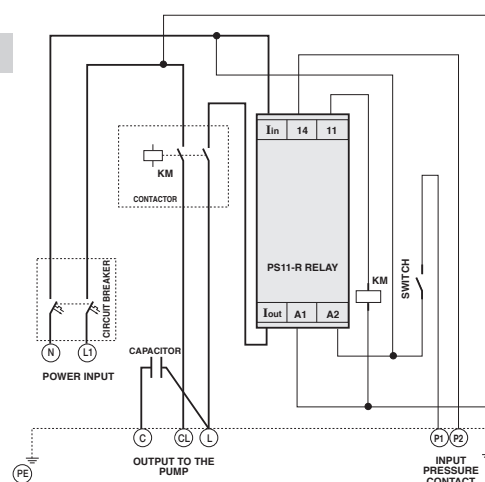
• Control point for pressure switch, buoy, programmer...

Connexion diagram

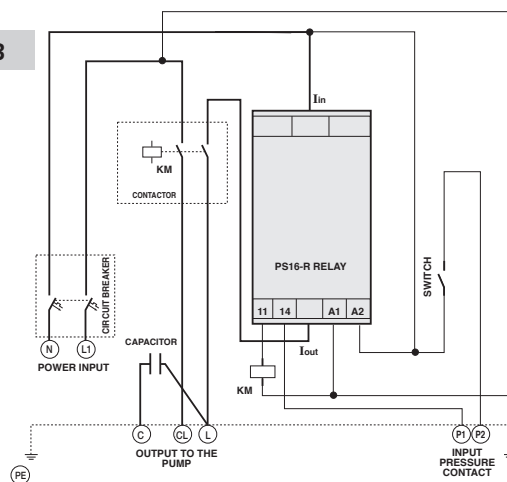
To prevent electrical shocks whilst installing or operating the relay, disconnect the power supply.

1. Check that the auxiliary voltage supply is correct.
2. To ensure a correct functioning of the equipment, install the capacitor with the μF recommended by the manufacturer of the motor-pump. Connect it to C and L.
3. Connect the wires of the motor to C, CL and L.
4. If terminals P1 and P2 are not going to be used for a pressure switch, a buoy, a timer, etc., they must be bridged with a cable.
5. Connect the power input to the terminals of the circuit breaker.

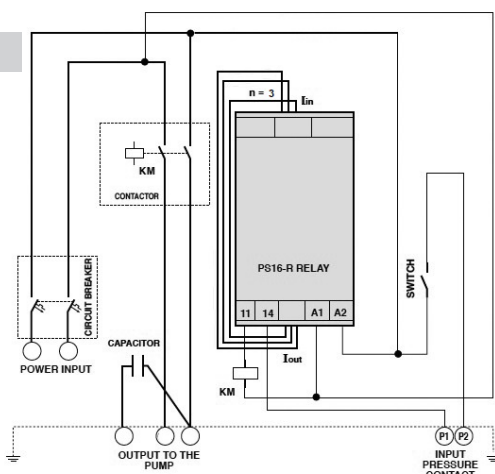
CBM-2



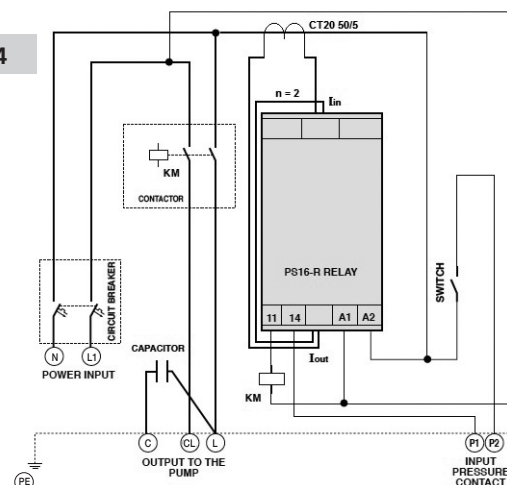
CBM-3



CBM-1



CBM-4



Settings

Depending on the characteristics of the motor and of the installation, some simple adjustments must be made to the PS relay.

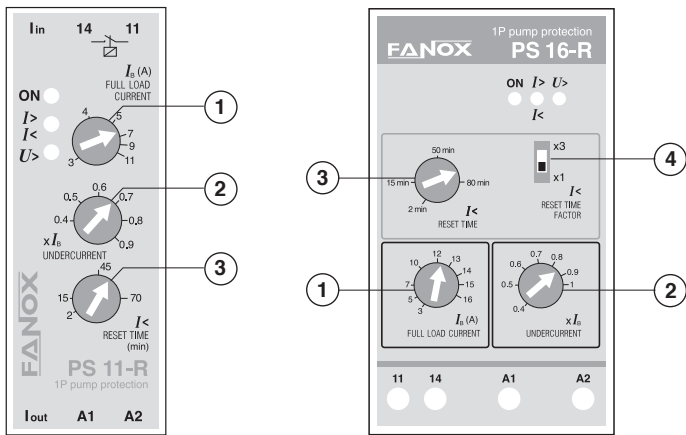
Check that the capacitor installed (μF) corresponds to the one specified by the manufacturer.

Signalling:

ON : relay in service

$I_{>}$: Tripping due to overload/underload

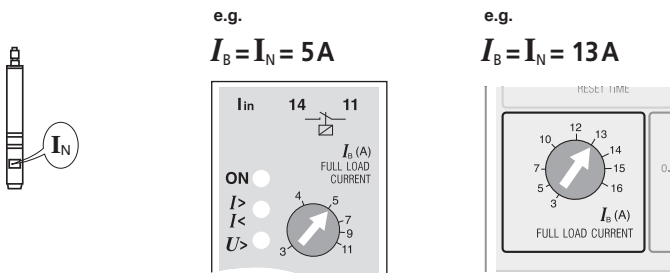
$U_{>}$: Tripping by overvoltage



① Current setting I_B "Full load current"

This adjustment is to be made according to the nominal current of the motor I_N indicated in its characteristics plate. The value to be set I_B is the same as I_N .

CBM-2 / CBM-3: Adjust the potentiometer ① with the value $I_B = I_N$

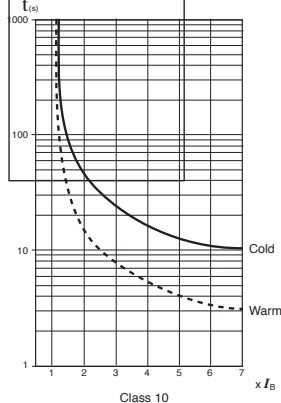


CBM-1 / CBM-4: adjust the potentiometer ① with the value.

$$I_B = \frac{I_{N \text{ motor}}}{I_{N \text{ CT}}} \times n$$

n : turns through relay (CBM-1 $n=3$ / CBM-4 $n=5 \times 2$)

The relay trips with overloads above $1.1 \times I_B$ depending on the curves class 10.



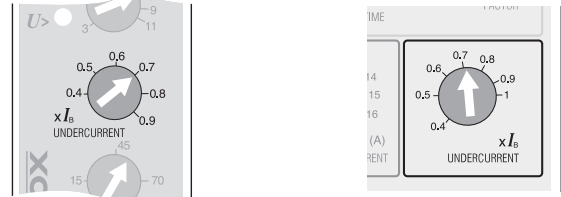
② Setting of the underload trip level "undercurrent" $\times I_B$

The setting of the underload trip level is made using a potentiometer ② in which a factor between 0.4 and 0.9 is to be chosen. By multiplying this factor by the adjusted I_B , we obtain a current value under which the relay will trip and disconnect the motor. The trip is delayed 4 seconds.

a) If the pump is adequately dimensioned, the recommended value for this factor is 0.7

Adjust the potentiometer ② at 0.7.

This is applicable for the majority of cases.



b) If the power of the motor is excessively dimensioned and during its functioning unwanted trips should occur, the underload adjusted factor should be reduced to 0.6.

Reset

a) After a trip caused by overvoltage, the relay resets automatically when the voltage returns to its normal value.

b) After a trip caused by overload, the relay waits for approximately 4 minutes before restarting the pump automatically.

c) After a trip caused by underload, the relay resets automatically after the time adjusted by the potentiometer ③.

- PS11-R: 2 to 70 min.

- PS16-R: 2 to 240 min. (by reset time factor ④).

In order to reset the relay manually, cancel the supply of the panel for approximately 10 seconds, disconnecting the circuit breaker and then, connect it again after this time has passed.

COMPONENTS

- Plastic case with transparent lid, 230 x 250 x 130 mm, IP 54
- Circuit breaker 1P+N.
- Fanox PS electronic relay.
- Contactor.
- Switch ON/OFF
- Signalling LED
- Connecting strip.
- 4 cable glands.
- CT20 50/5 (CBM-4 only)