

# PNWB

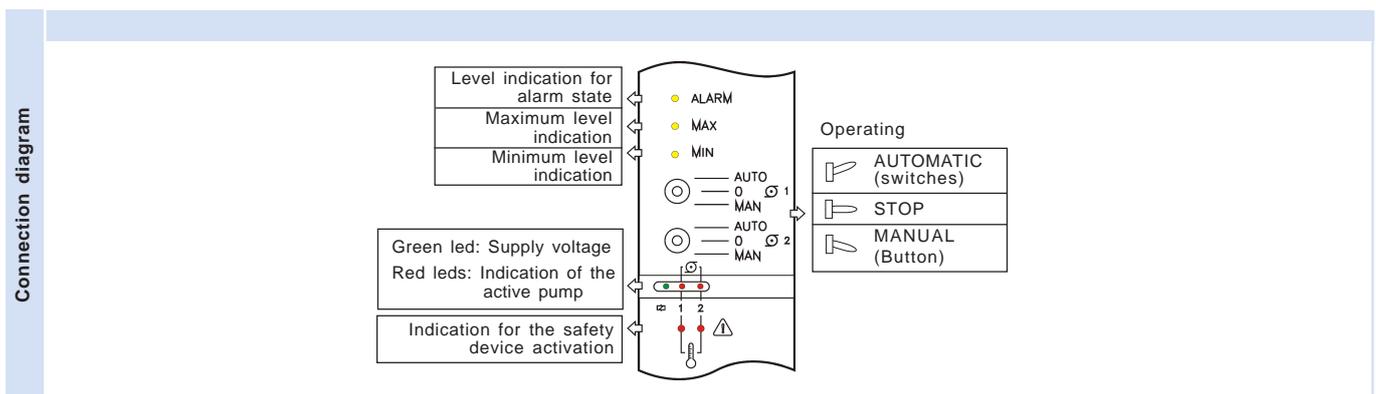
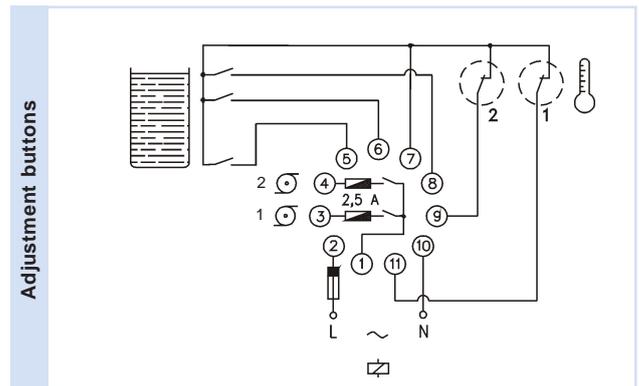
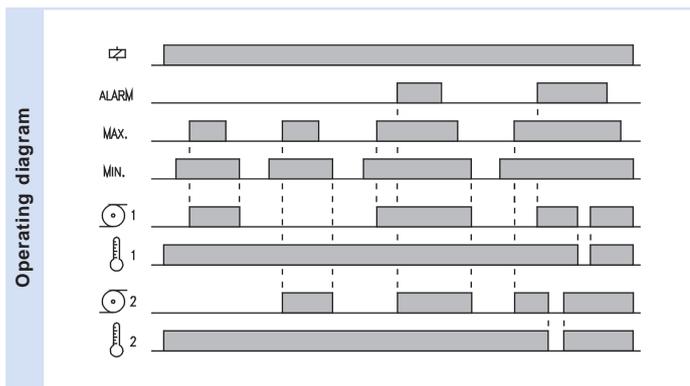


## LEVEL CONTROL OF TWO PUMPS

Function	Alternative control of two pumps. Selection modes: Stop - automatic - manual.
Operating principle	<p><b>Switches in 0 position:</b> No operation is possible.</p> <p><b>Switches in MAN position (push-button):</b> The relay related to each switch remains operated whenever the switch is pushed, with independence of the state of the level.</p> <p><b>Switches in AUTO position:</b> When the liquid reaches the maximum level, relay 1 operates and releases when the liquid goes under the minimum level. If while relay 1 is operated the liquid reaches the alarm level, relay 2 operates and both relays release when the liquid goes under the minimum level. Relays 1 and 2 operate alternatively each time that the liquid reaches the maximum level.</p> <p>If one of the switches goes to the 0 position, the alternate cycle is cancelled, and only operates the relay related to the switch in the AUTO position.</p> <p><b>Switches in MAN or AUTO position:</b> If the external thermal protector (safety device) detects a failure, whichever operation of the related relay is switched off and no-one operation is possible, the alternate cycle is cancelled and only operates the relay related to the thermal protector which did not detect the failure.</p> <p>See more operating possibilities in the next page</p>
Sensors	Any level sensor with potential free contacts.
Contacts	Two relays SPST NO (8 A).
Indications leds	Power on (green) - Relays on (red) - Levels (yellow) - Safety devices (red)

	HOUSING	FUNCTION	OUTPUT	SUPPLY
Reference	P Plug-in	NW Double level	B 2 SPST NO	024 24 VAC
				048 48 VAC
				110 110..125 VAC
				230 220..240 VAC
				400 380..415 VAC

To compose the reference, select one option of each column. Example: **PNVB 048**



## Operating exceptions

There are some exceptions to the normal operating mode.

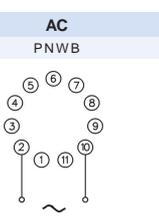
Basically, they consist in the following ones:

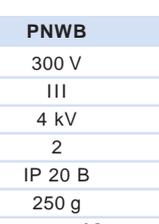
- Pumps work in manual mode although level is under minimum.
- If any electrode fails during operation, the pumps work until the level goes below the deeper electrode which doesn't fail.

The complete set of exceptions are stated in the following true table. The "X" means that the pump works or not depending on the alternative cycle.

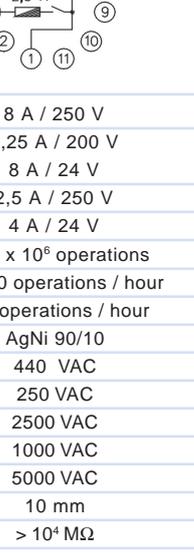
The signs "0»1" or "1»0" mean a change of state during a certain operation.

Pos	MIN	MAX	ALARM	TERMIC PROTEC.		AUTO		MANUAL	
				1	2	RELAY 1	RELAY 2	RELAY 1	RELAY 2
1	0	0	0	1	1	0	0	1	1
2	1	0	0	1	1	0	0	1	1
3	0	1	0	1	1	X	X	1	1
4	1	1	0	1	1	X	X	1	1
5	0	0	1	1	1	1	1	1	1
6	1	0	1	1	1	1	1	1	1
7	0	1	1	1	1	1	1	1	1
8	1	1	1	1	1	X	X	1	1
9	0	0	0	0	0	0	0	0	0
10	1	0	0	0	0	0	0	0	0
11	0	1	0	0	0	0	0	0	0
12	1	1	0	0	0	0	0	0	0
13	0	0	1	0	0	0	0	0	0
14	1	0	1	0	0	0	0	0	0
15	0	1	1	0	0	0	0	0	0
16	1	1	1	0	0	0	0	0	0
17	1	1	0	1»0	1	1»0	0»1	-	-
18	1	1	0	1	1»0	0»1	1»0	-	-

Supply	AC	
	PNWB	
		
	Galvanic isolation	Yes
	Frequency	50 / 60 Hz
	Operating margins	±10..-15%
Positive	-	
Protected polarity	-	

Output relays	PNWB	
		
	Resistive load	AC 8 A / 250 V
		DC 0,25 A / 200 V
	Inductive load	AC 8 A / 24 V
		DC 2,5 A / 250 V
		4 A / 24 V
	Mechanical life	> 30 x 10 <sup>6</sup> operations
	Max. switching rate, mech.	72.000 operations / hour
	Electrical life at full load	360 operations / hour
	Contact material	AgNi 90/10
	Maximum voltage	440 VAC
	Operating voltage	250 VAC
Volt. between changeovers	2500 VAC	
Voltage between contacts	1000 VAC	
Voltage coil/contact	5000 VAC	
Distance coil/contact	10 mm	
Isolation resistance	> 10 <sup>4</sup> MΩ	

Constructive and environmental data	PNWB	
	Voltage phase-neutral	300 V
	Overvoltage category	III
	Rated impulse voltage	4 kV
	Pollution degree	2
	Protection	IP 20 B
	Approximate weight	250 g
	Storage temperature	-50..+85°C
	Operating temperature	-20..+50°C
	Humidity	30..85% HR
	Housing	Cyclcoly - Light grey
	Socket	Lexan - Light grey
	Visor leds	Lexan - Transparent
	Button, terminal block, clip	Technyl - Dark blue
	Pins of the socket	Nickel-plated brass
	Pins of the terminal block	-
	Approvals	Designed and manufactured under EEC standards. Electromagnetic compatibility , directives 89/366/EEC and 92/31/EEC. Electric safety, directive 73/23/EEC. Plastics: UL 91 V0

Dimensions	PNWB
	

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