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PNGA
DNGA

DOUBLE LEVEL CONTROL

Field of application	· Control of two independent deposits · Control of two pumps with stop at an only level · Control of level and an alarm of maximum or minimum
Difference	It is composed by two independent level controls with a relay (contacts NA) associated to each one of them. They can work as individual or related among them (see the application examples in page 2).
Operation principle	**Control of maximum and minimum level:** Relay 1 activates when the level of the liquid reaches the electrode of maximum level (5: PNGA - Y2: DNGA) and it is deactivated when the liquid descends below the electrode of minimum level (6: PNGA - Y1: DNGA). Relay 2 activates when the level of the liquid reaches the electrode of maximum level (9: PNGA - Y4: DNGA) and it is deactivated when the liquid descends below the electrode of minimum level (8: PNGA - Y3: DNGA). **Control of maximum or minimum level:** The terminals of maximum and minimum electrodes have to be united (Relay 1: 5-6: PNGA; Y1-Y2: DNGA) (Relay 2: 8-9:PNGA; Y3-Y4: DNGA). The relay activates when the liquid level reaches the electrode and it is deactivated when the liquid descends below the it.
Leds indicating	Supply voltage: Green Relays activated: Red
Voltage in probes	24 VCA
Current in probes	4 mA (in short circuit).
Characteristic of the probes cable	Normally are used cables from 1..2.5 mm^2 of section with a good isolation and without screening. In some installations, when the supply and the probe lines are parallel in the same tube and with long distances, it is recommendable to use shielded cable. The resistance between cables and ground must at least be of 200KΩ. The screen is connected to ground.
Connection of the common electrode	If the tank is not conductive, an additional probe must be fitted for connecting the common electrode, terminal 7(PNGA) or Z1 (DNGA).
Length of probes cable	No specification detailed.
Accessories	Electrodes: NS, NR 43650, NRA 43650, NR, NRA, NT, NRP, NP, NRT2. Separators of electrodes: NR.SEP, NRA.SEP Nuts of attachment: NR.TUE/P, NR.TUE/T Protective of surge: PS-3

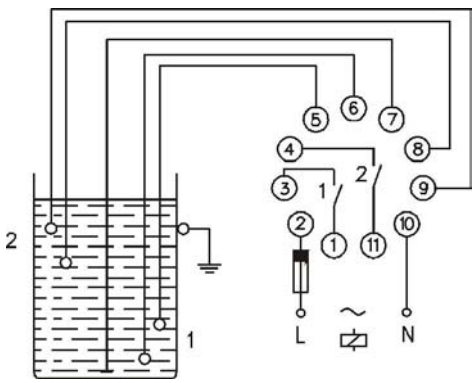
Reference

HOUSING		FUNCTION		OUT PUT		VOLTAGE		RANGE	
P	Plug-in	**NG**	Double level	**A**	2 NA	**024**	24 VAC	**100**	10..100 KΩ
D	Rail DIN					**048**	48 VAC		
						110	110..125 VAC		
						230	220..240 VAC		
						400	380..415 VAC		

In order to compose the reference, to select an option of each one of the columns. Example: **PNGA 230 100**

Connection diagram

PNGA



DNGA

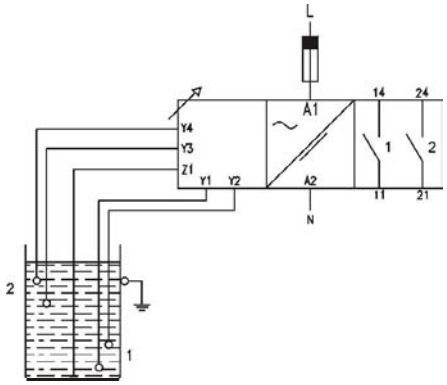
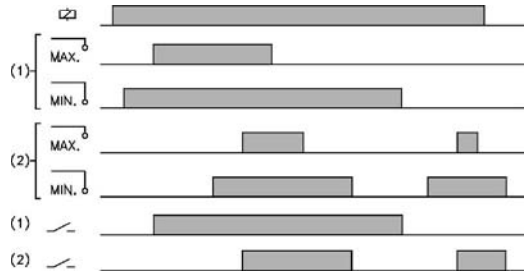
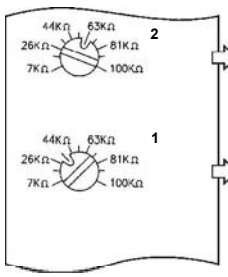


Diagram of operation



Adjustment buttons



RELAY 2

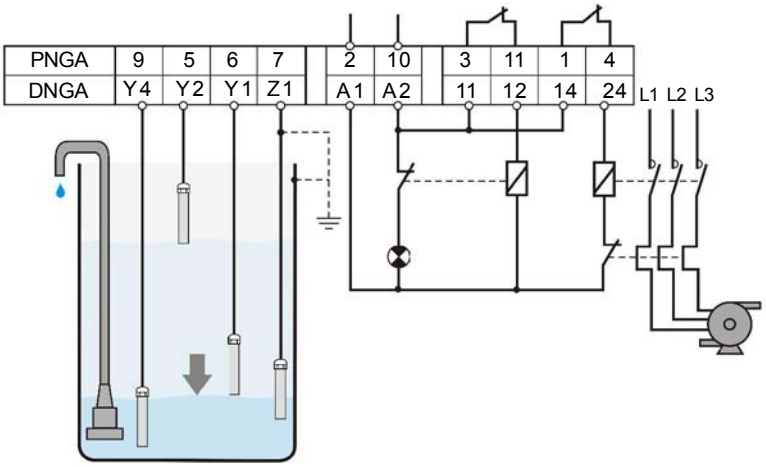
Sensitivity according to the water resistivity

RELAY 1

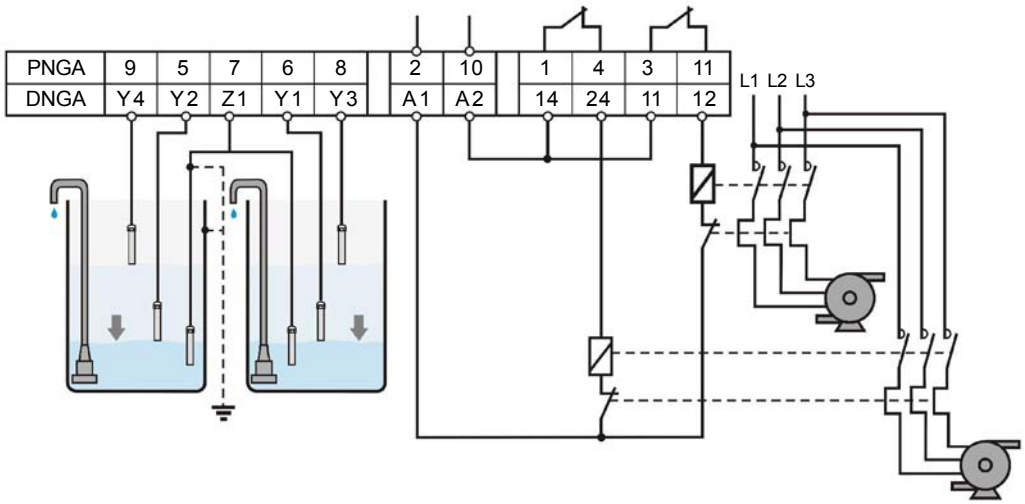
Sensitivity according to the water resistivity

Examples of conexionado

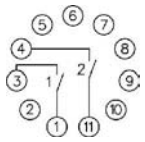
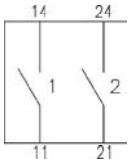
Filling control and alarm of maximum level



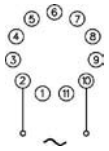
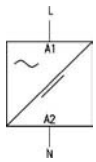
Filling control of two independent tanks



Output relays

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

Supply

	CA	
	PNGA	DNGA
		
Galvanic isolation	Yes	
Frequency	50 / 60 Hz	
Operating margins	±10..-15%	
Positive	-	
Protected polarity	-	
Consumption	3,2 VA	

Constructive and anviromental data

	PNGA	DNGA
Voltage phase-neutral	300 V	300 V
Overvoltage category	III	III
Rated impulse voltage	4 kV	4 kV
Pollution degree	2	3
Protection	IP 20 B	IP 20
Approximate weight	250 g	280 g
Storage temperature	-50..+85ºC	-50..+85ºC
Operating temperature	-20..+50ºC	-20..+50ºC
Humidity	30..85% HR	30..85% HR
Housing	Cycoloy - Light grey	Cycoloy - Light grey
Socket	Lexan - Light grey	-
Visor leds	Lexan - Transparent	Lexan - Transparent
Button, terminal block, clip	Technyl - Dark blue	Technyl - Dark blue
Pins of the socket	Nickel-plated brass	-
Pins of the terminal block	-	Brass
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

PNGA	DNGA