

# Monitoring Relays Pump alternating Type DLA73

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- Pump alternating relay for 2 pumps
- Output: 3 x 5 A SPST relay
- For mounting on DIN-rail in accordance with DIN/EN 50 022
- 35.5 mm DIN-rail housing
- LED indication for relay and power supply ON
- Galvanically separated power supply
- Built-in delay for the second pump in case of simultaneous activation is required
- Built-in function for automatic rotation of the pumps
- Alarm relay output managed by one independent input contact

## Product Description

DLA73 is relay made to alternate 2 pumps in a multiple pump system. In case of need (i.e.: overflow) the second pump can be activated together with the first one. The unit activates the third output relay (i.e.: for alarm signal) by closing one independent input contact. In case more than one pump is required to start at the

same time, the pumps start 10 s after the previous to avoid big inrush current.

The LED indicates the state of the alarm and the output relay.

35.5 mm wide housing suitable both for back and front panel mounting.

## Ordering Key

**DLA 73 T B23 2P**

Housing \_\_\_\_\_  
Function \_\_\_\_\_  
Type \_\_\_\_\_  
Item number \_\_\_\_\_  
Output \_\_\_\_\_  
Power supply \_\_\_\_\_  
Number of pumps \_\_\_\_\_

## Type Selection

Mounting	Output	Function	Supply: 24/48 VAC	Supply: 115/230 VAC
DIN-rail	3 x SPST	For two pumps	DLA 73 T B48 2P	DLA 73 T B23 2P

## Input Specifications

Contact input	Terminals
Normal mode	
ON/OFF 1 pump	C, S1
ON/OFF 2 pumps	C, S2
ON/OFF 3 <sup>rd</sup> SPST output (15-38)	C, S3
Full mode	
ON 1 pump	C, S1
ON 2 pumps	C, S2
ON/OFF 3 <sup>rd</sup> SPST output (15-38)	C, S3
OFF all pumps	C, S4
Disabled	> 10 kΩ
Enabled	< 1 kΩ
Voltage	< 25 V
Current	< 2 mA

## Output Specifications

Output	3 x SPST NO relay
Rated insulation voltage	250 VAC
Contact ratings (AgSnO <sub>2</sub> )	μ
Resistive loads AC 1	5 A @ 250 VAC
DC 12	5 A @ 24 VDC
Small inductive loads AC 15	1.5 A @ 250 VAC
DC 13	1.5 A @ 24 VDC
Mechanical life	≥ 30 x 10 <sup>6</sup> operations
Electrical life	≥ 10 <sup>5</sup> operations (at 5 A, 250 V, cos φ = 1)
Operating frequency	≤ 7200 operations/h
Dielectric strength	
Dielectric voltage	2 kVAC (rms)
Rated impulse withstand volt.	4 kV (1.2/50 μs)

## Supply Specifications

<b>Power supply</b> Rated operational voltage through terminals: A1, A2 or A3, A2		Overvoltage cat. III (IEC 60664, IEC 60038)
	B48:	24/48 VAC $\pm$ 15% 45 to 65 Hz, insulated
	B23:	115/230 VAC $\pm$ 15% 45 to 65 Hz, insulated
<b>Dielectric voltage</b> Supply to input Supply to output Input to output		4 kV (1.2/50 $\mu$ s)
		4 kV (1.2/50 $\mu$ s)
		4 kV (1.2/50 $\mu$ s)
<b>Rated operational power</b> AC		3 VA

## General Specifications

<b>Reaction time</b> Closing input Opening input Minimum delay to activate the rescue pump	< 100 ms
	< 100 ms
	10 s
<b>First pump activated after power up</b>	Random
<b>Continuous working time to activate the rotation pumps</b>	6 h $\pm$ 10%
<b>Indication for</b> Power supply ON One pump ON Two pumps ON	LED, green, steady
	as above, flashing 1 Hz
	as above, flashing 2 Hz Note: if more than one pump is active, the indication refers to the pump started last.
<b>Environment</b> Degree of protection Pollution degree Operating temperature Storage temperature	(EN 60529)
	IP 20
	3
	-20 to 60°C, R.H. < 95%
<b>Housing</b> Dimensions Material	-30 to 80°C, R.H. < 95%
	35.5 x 81 x 67.2 mm PA 66
<b>Weight</b>	Approx. 135 g
<b>Screw terminals</b> Tightening torque	Max. 0.5 Nm acc. to IEC 60947
<b>Approvals</b>	UL, CSA
<b>CE Marking</b>	Yes
<b>EMC</b> Immunity Emission	Electromagnetic Compatibility
	According to EN 61000-6-2
	According to EN 61000-6-3

## Mode of Operation

DLA73 is made for pumping systems where 2 pumps are in parallel. It lets the pumps work alternatively, allowing more pumps to work together in case of need.

### Example 1

(Emptying a basin, normal mode)

As soon as the liquid reaches switch S1 one pump starts. As soon as S1 switches back the pump stops. When switch S1 is activated again the other pump starts allowing uniform wear and tear of all the pumps. If switch S2 is activated both pumps start (2 pumps running at the same time). When S2 switches

back the pump running since most time stops.

As soon as switch S3 (used as high level control in this example) is activated, the 3th output relay (15-38) reacts immediately to send an alarm signal (i.e.: by a siren).

As soon as S3 switches back, the alarm stops.

### Example 2

(Emptying a basin, full mode)

As soon as the liquid reaches switch S1 one pump starts. When it drops below switch S4 it stops. If switch S1 is triggered again the other pump starts. If switch S2 is activated both pumps

start (rescue function).

As soon as switch S3 (used as high level control in this example) is activated, the 3th output relay (15-38) reacts immediately to send an alarm signal (i.e.: by a siren).

As soon as S3 switches back, the alarm stops.

The only switch to stop all the pumps active at a certain time is S4.

### Note 1

As soon as DLA73 is supplied and then S1 or S2 is switched, the device activates at random one of the two pumps.

### Note 2

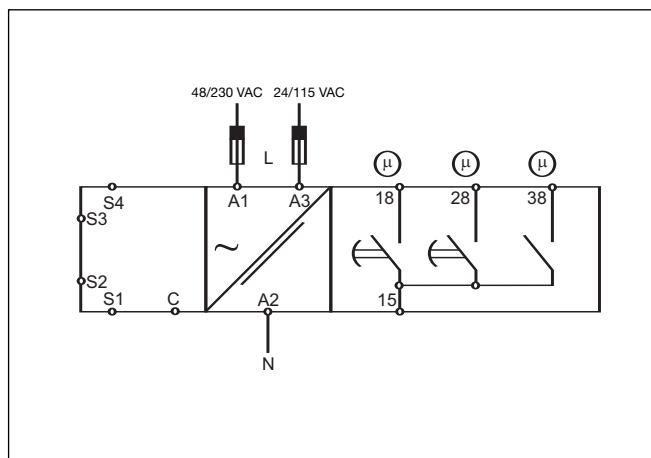
If the system is continuously working with only one pump, after working for 6 hours, DLA73 stops the pump and the second one automatically starts.

This rotation is repeated every 6 hours of single and continuative work of a pump.

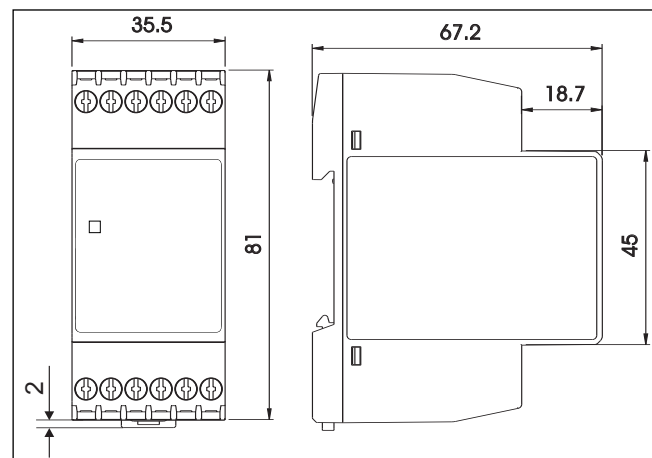
### Note 3

In case the task is to fill a basin, all the switches are reversed in the basin itself.

## Wiring Diagrams

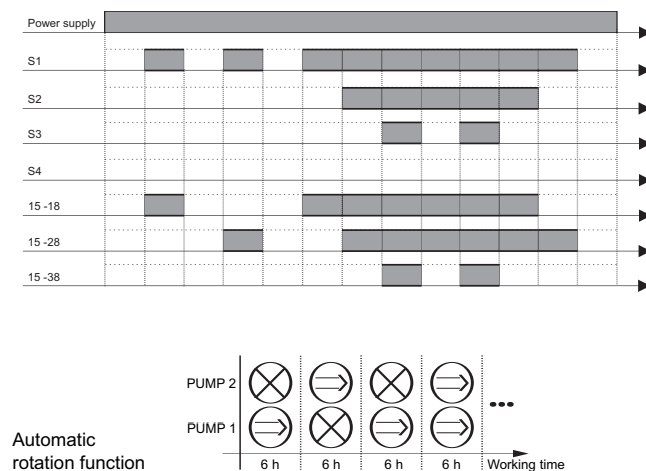
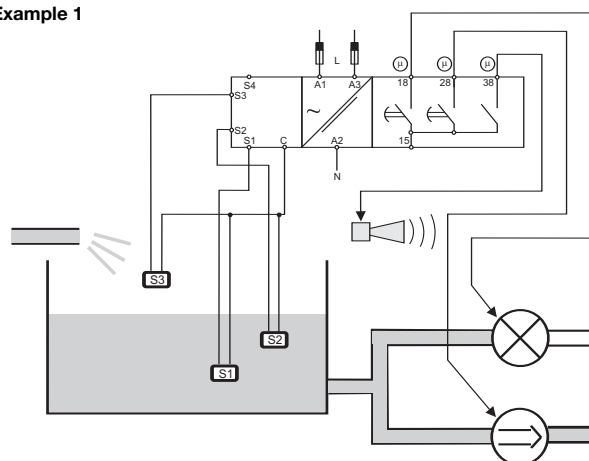


## Dimensions



## Operation Diagrams

Example 1



Example 2

