

Level Sensors Amplifier, Conductive Type H 496

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- Level control for conductive liquids
- Max.- min. control of charging/discharging
- Selection of charging or discharging by inter-connection of the terminals
- 3 sensitivity ranges, from 200 Ω to 220 k Ω , selectable by switch in the front
- Adjustable sensitivity
- Possibility of parallel connection
- Level probe supply max. 6 V_{pp}, 1.5 mA, according to IEC 60364-4-41, PELV/SELV
- Output: 8 A DPDT relay
- LED-indication for relay and power supply ON
- AC power supply

Product Description

Level control relay for conductive liquids which can control two levels of charging or discharging. The relay features sensitivity ranges from 200 Ω to

220 k Ω (5 m Siemens to 4.5 μ Siemens). If more than two levels are required, more relays can be coupled in parallel.

Ordering Key

H 496 166 230

Housing _____
 Type/function _____
 Output _____
 Power supply _____

Type Selection

Output	Supply: 24 VAC	Supply: 115 VAC	Supply: 230 VAC
DPDT	H 496 166 024	H 496 166 115	H 496 166 230

Input Specifications

Level probe supply	6 V _{pp} (IEC 60364-4-41, PELV/SELV)
Level probe current	1.5 mA
Range 1: 200 Ω - 2.2 k Ω	150 μ A
Range 2: 2.0 k Ω - 22 k Ω	15 μ A
Range 3: 20 k Ω - 220 k Ω	
Clock in/clock out	Clock in: terminal 2 Clock out: terminal 1 Approx. 100 Hz \pm 15 Hz square wave Duty cycle typically 60-40 For parallel coupling of amplifiers Always use screened cable to avoid ambient noise Screen must be connected to terminal 8
Reaction time	Approx. 1 s

Output Specifications

Output	DPDT relay
Rated insulation voltage	250 VAC (rms) (cont./elect.)
Contact ratings (Ag-CdO)	(IEC 60947-5-1/IEC 60337)
Resistive loads	AC 1 DC 1 or 4 A/25 VDC (100 VA)
Small inductive loads	AC 15 DC 13 2.5 A/230 VAC 5 A/24 VDC
Mechanical life	$\geq 30 \times 10^6$ operations
Electrical life	AC 1 $\geq 2.5 \times 10^5$ operations (at max. load)
Operating frequency	≤ 7200 operations/h
Insulation voltages	
Rated insulation voltage	≥ 2.0 kVAC (rms) (cont./elect.)
Rated impulse withstand voltage	4 kV (1.2/50 μ s) (cont./elect.) (IEC 60664)



Supply Specifications

Power supply	Overvoltage cat. III (IEC 60664)
Rated operational voltage through term. 21 & 22 230	230 VAC ±15%, 50/60 Hz, -5/+5 Hz
115	115 VAC ±15%, 50/60 Hz, -5/+5 Hz
024	24 VAC ±15%, 50/60 Hz, -5/+5 Hz
Voltage interruption	≤ 40 ms
Rated insulation voltage	≥ 2.0 kVAC (rms)
Rated impulse withstand volt.	4 kV (1.2/50 µs) (line/neutral)
Rated operational power	2.5 VA

General Specifications

Indication for	
Power supply ON	LED, green
Output ON	LED, red
Environment	
Degree of protection	IP 20 B
Pollution degree	3 (IEC 60664)
Operating temperature	-20 to +50°C (-4 to +122°F)
Storage temperature	-50 to +85°C (-58 to +185°F)
Scale accuracy	+/- 20%
Hysteresis	100% of set value
Weight	200 g

Mode of Operation

Max., min. control of charging/discharging.

The relay releases (out)/operates (in) when the min. electrode is no longer in contact with the liquid.

Example 1

The diagram shows the level control connected as max. and min. control, i.e. detection of 2 levels. The relay operates (out)/releases (in) when the liquid reaches the max. electrode (terminal 5), provided that the min. electrode (terminal 6) is in contact with the liquid.

By use of a container of a conductive material terminal 8 can be connected to the container. If the container is made of a non-conductive material, an additional electrode is needed, indicated by the dotted line in the diagram. If only one level is required, terminals

5 and 6 must be interconnected, to select either max. or min. control.

that one system determines the clock for all systems cascaded.

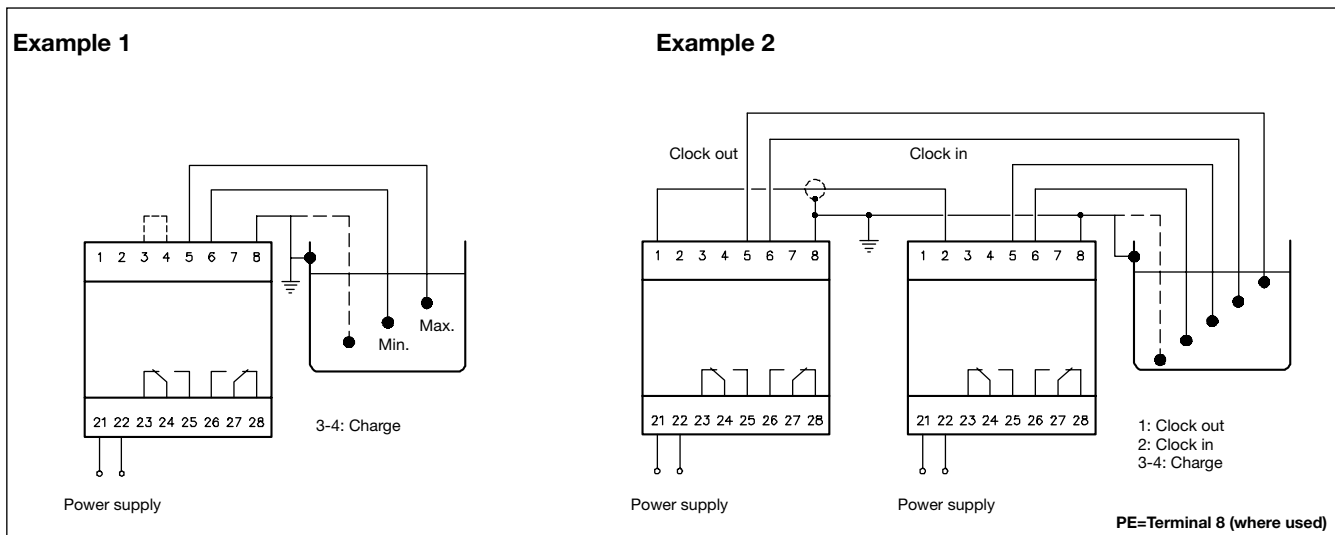
Example 2

If more than 2 levels are required, two or more amplifiers can be coupled in parallel, as in example 2.

Pin 8 (clock out) and pin 9 (clock in) are connected to synchronize the clock in all systems - otherwise interference may occur. This means

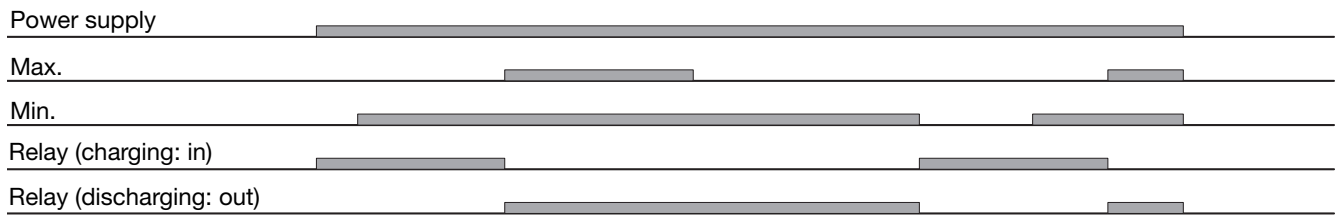
The clock in/clock out connection must be screened cable. In some cases screened cable must be used to achieve perfect operation e.g. in cable pits or trays where the sensor cable is placed in parallel with power cables. The screen must be connected to terminal 8.

Wiring Diagrams





Operation Diagram



Accessories

Conductive level probes:

VN..., VNI..., VNY..., VNYI...,
 VT..., VTI..., VPP..., VPC...,
 VH...

Settings

Left knob: Sensitivity.

Right knob: Range selection