

# 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  $\Omega$  to 220 k $\Omega$ , selectable by switch in the front
- Adjustable sensitivity
- Possibility of parallel connection
- Level probe supply max. 6 V<sub>pp</sub>, 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  $\Omega$  to

220 k $\Omega$  (5 m Siemens to 4.5  $\mu$  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

<b>Level probe supply</b>	6 V <sub>pp</sub> (IEC 60364-4-41, PELV/SELV)
<b>Level probe current</b>	
Range 1: 200 $\Omega$ - 2.2 k $\Omega$	1.5 mA
Range 2: 2.0 k $\Omega$ - 22 k $\Omega$	150 $\mu$ A
Range 3: 20 k $\Omega$ - 220 k $\Omega$	15 $\mu$ A
<b>Clock in/clock out</b>	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
<b>Reaction time</b>	Approx. 1 s

## Output Specifications

<b>Output</b>	DPDT relay
<b>Rated insulation voltage</b>	250 VAC (rms) (cont./elect.)
<b>Contact ratings (Ag-CdO)</b>	(IEC 60947-5-1/IEC 60337)
Resistive loads	AC 1 8 A/250 VAC (2000 VA) DC 1 0.4 A/250 VDC (100 VA) or 4 A/25 VDC (100 VA)
Small inductive loads	AC 15 2.5 A/230 VAC DC 13 5 A/24 VDC
<b>Mechanical life</b>	$\geq 30 \times 10^6$ operations
<b>Electrical life</b>	AC 1 $\geq 2.5 \times 10^5$ operations (at max. load)
<b>Operating frequency</b>	$\leq 7200$ operations/h
<b>Insulation voltages</b>	
Rated insulation voltage	$\geq 2.0$ kVAC (rms) (cont./elect.)
Rated impulse withstand voltage	4 kV (1.2/50 $\mu$ s) (cont./elect.) (IEC 60664)



Supply Specifications

<b>Power supply</b>	Overvoltage cat. III (IEC 60664)
Rated operational voltage through term. 21 & 22 230	230 VAC $\pm$ 15%, 50/60 Hz, -5/+5 Hz
115	115 VAC $\pm$ 15%, 50/60 Hz, -5/+5 Hz
024	24 VAC $\pm$ 15%, 50/60 Hz, -5/+5 Hz
Voltage interruption	$\leq$ 40 ms
Rated insulation voltage	$\geq$ 2.0 kVAC (rms)
Rated impulse withstand volt.	4 kV (1.2/50 $\mu$ s) (line/neutral)
<b>Rated operational power</b>	2.5 VA

General Specifications

<b>Indication for</b>	
Power supply ON	LED, green
Output ON	LED, red
<b>Environment</b>	
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)
<b>Scale accuracy</b>	+/- 20%
<b>Hysteresis</b>	100% of set value
<b>Weight</b>	200 g

Mode of Operation

Max., min. control of charging/discharging.

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.

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

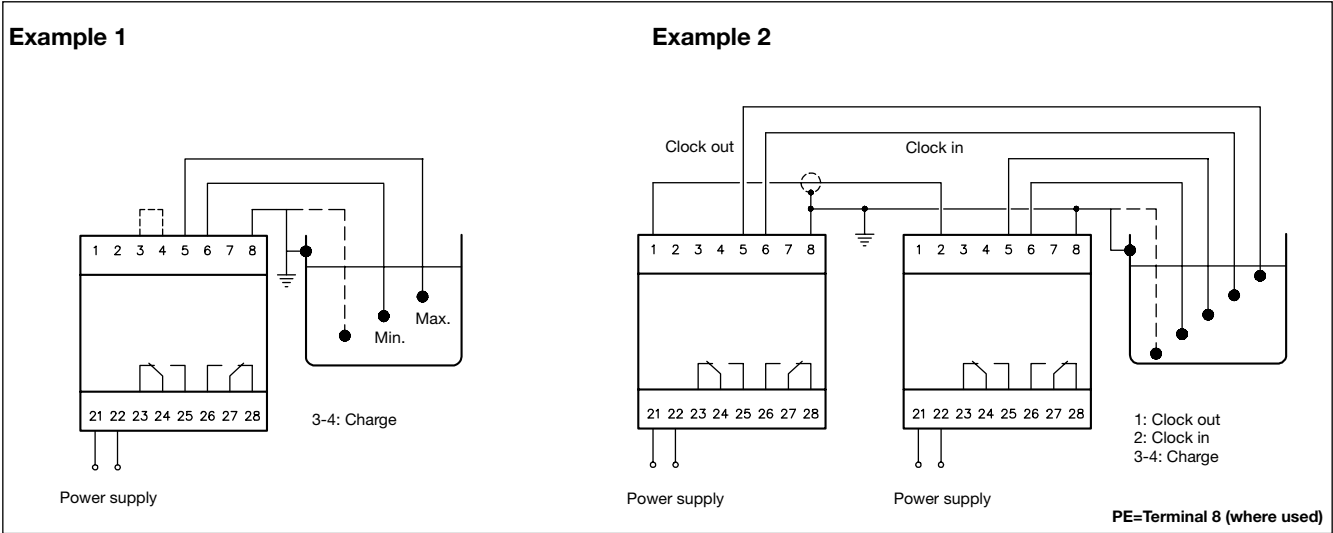
Example 2

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

that one system determines the clock for all systems cascaded.

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





**Accessories**

Conductive level probes:  
VN..., VNI..., VNY..., VNYI...,  
VT..., VTI..., VPP..., VPC...,  
VH...

**Settings**

Left knob: Sensitivity.  
Right knob: Range selection

**Operation Diagram**

