

Level Sensors Amplifier, Conductive Type S 197 (Charging/Discharging)

CARLO GAVAZZI



- Controller for conductive liquids
- Controls minimum/maximum and indicates over and under alarm
- Filling or emptying function selectable
- Fixed sensitivity
- 2 x 5 A 250 VAC relay outputs, SPST
- 4 LED indications: Pump running, power supply ON, alarm high (HiHi) and alarm low (LoLo)
- AC power supply: 24 VAC, 115 VAC and 230 VAC

Product Description

Level control relay for conductive liquids. Unit features output for controlling high and low levels as well as

separate output for alarm indication in case of tank running dry or an overflow condition.

Ordering Key

S 197 256 024

Housing _____
Type/function _____
Output configuration _____
Power supply _____

Type Selection

Plug	Supply: 24 VAC	Supply: 115 VAC	Supply: 230 VAC
11-pin circular	S 197 256 024	S 197 256 115	S 197 256 230

Note: There is approximately a 2 seconds delay on the output to compensate for wave action.

Input Specifications

Level probe supply	Max. 12 VAC
Level probe current	Max. 2.5 mA
Sensitivity	
ON (pin 5-6 and 7)	< 25 kΩ (approx.) 3.5 - 30 kΩ (approx.)
OFF (pin 5-6 and 7)	> 50 kΩ (approx.) 15-60 kΩ (approx.)

Supply Specifications

Power supply	Overvoltage cat. II (IEC 60664)
Rated operational voltage through pin 2 & 10	230 230 VAC ± 15% 115 115 VAC ± 15% 024 24 VAC ± 15%
Rated insulation voltage	≥ 2.0 kVAC (rms)
Rated impulse withstand voltage	4 kV (1.2/50 μs) (line/neutral)

Output Specifications

Output	SPST relay
Rated insulation voltage	250 VAC (rms) (cont./elec.)
Contact ratings (AgCd0)	μ (micro gap)
Resistive loads	AC 1 5 A/250 VAC (2500 VA) DC 1 1 A/250 VDC (250 W) or 5 A/25 VDC (250 W)
Small inductive loads	AC 15 2.5 A/230 VAC DC 13 5 A/24 VDC
Mechanical life	≥ 30 x 10 ⁶ operations
Electrical life	AC 1 ≥ 2.5 x 10 ⁵ operations (at max. load)
Operating frequency	≤ 7200 operations/h
Insulation voltages	
Rated insulation voltage	≥ 2.0 kVAC (rms) (cont./elec.)
Rated transient protection volt.	4 kV (1.2/50 μs) (cont./elec.) (IEC 60664)

General Specifications

Indication for	
Power supply ON	LED, green
Output ON	LED, yellow
Alarm HiHi	LED, red
Alarm LoLo	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)



Mode of Operation

The switch at the front is set in the desired mode IN (charging) or OUT (discharging).

is placed in parallel to the load cables (mains). The screen is connected to pin 7.

The relay releases (OUT)/operates (IN) when the Lo electrode is no longer in contact with the liquid. Pin 7 must be connected to the container. If the container consists of a non-conductive material, an additional electrode must be used. (To be connected to pin 7. In the diagram this electrode is shown by the dotted line.)

The alarm outputs utilise electrodes on pin 4 for HiHi alarm and pin 8 for LoLo alarm. Because alarm conditions of HiHi and LoLo can not be experienced at the same time the LED indication on the front of the housing offers visual confirmation as to which alarm condition is active or present.

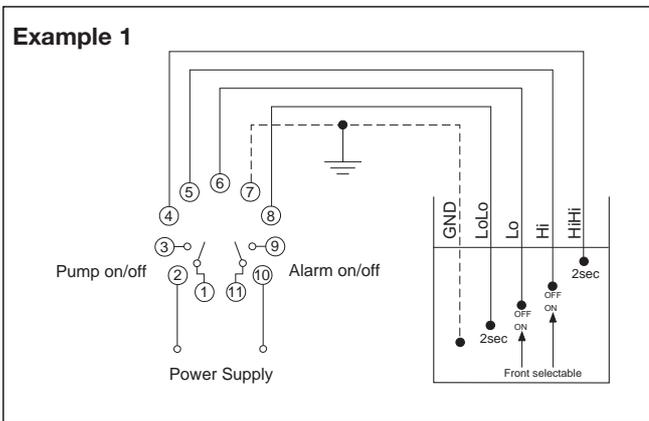
Connection cable

2 or 3 core PVC cable, normally unscreened. Cable length: max. 100 m. The resistance between the cores and the ground must be at least 220 kΩ. In certain cases it is recommended to use screened cable between sensor and amplifier, e.g. where the cable

Example 1

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

Wiring Diagram

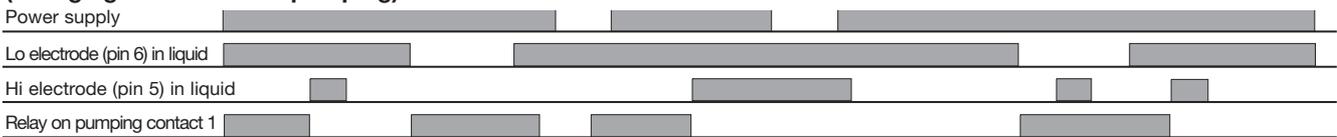


Accessories

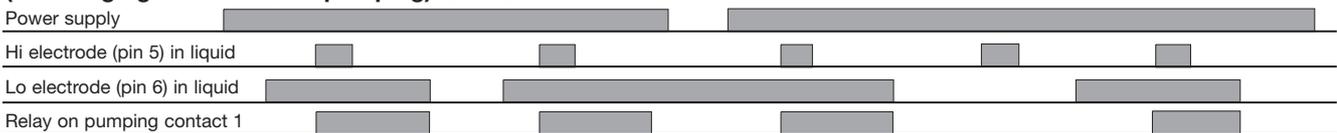
- Conductive level probes:
- VH
 - VPC, VPP
 - VN, VNY, VNI
 - VT, VTI
 - VS
 - S 411
- Base
- Hold down spring
- Base cover
- Front mounting bezel
- HF
 - BB 4
 - FRS 2

Operation Diagrams

(Charging contact no. 1. pumping) ON-OFF



(Discharging contact no. 1. pumping) OFF-ON



(Alarm contact no. 2. High or low)

