

## CHANNEL RESISTANCE ALARM (v3) RA106

### DESCRIPTION

The RESISTANCE ALARM RA106 is a dual electronic alarm relay suitable for detection of resistive changes within the range of 1k  $\Omega$  up to 1.5M  $\Omega$ . The sensitivity adjustment (SENS) enables the accurate and repeatable setting of the trip point by a 15-turn precision trimmer accessible from front.

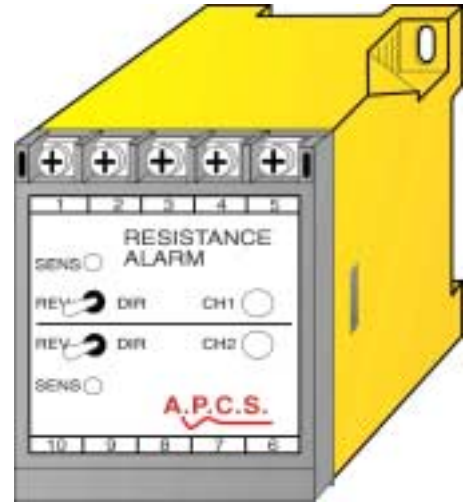
The relay status is displayed by L.E.D. on front. Reverse (REV) or direct (DIR) action is selectable via a mode switch located on front:

DIR: relay energised with resistance lower than trip point.

REV: relay energised with resistance higher than trip point.

Relay contacts are wired normally open, but can be changed internally for normally closed operation. The mode select switch can be used to test the circuitry connected to the Resistance Alarm. The 1% dead band and a 0.5 sec filter eliminate "chattering" when resistance value fluctuates rapidly around trip point. By inserting a solder link on power board channel 1 can be latched to channel 2 and vice versa (latch option). This is particularly useful for "dead band control". The voltage potential applied to the resistance device is 7.5Vdc (standard unit) fully isolated from mains power and current limited to 0.7mA providing an entirely safe operation and very low power dissipation on any device employed.

Various ac power supply choices are available all featuring power isolation and power transient protection. If a dc supply is required then use the LLD206.



### TYPICAL APPLICATIONS

- Level control or alarming on tanks containing conductive (water based) liquid by using electrodes for detection.
- Water detection in pipes or moisture level in ground.
- "Chute block" alarms for conductive materials (coal).
- All resistive detectors such as thermistors, photo-resistors etc.

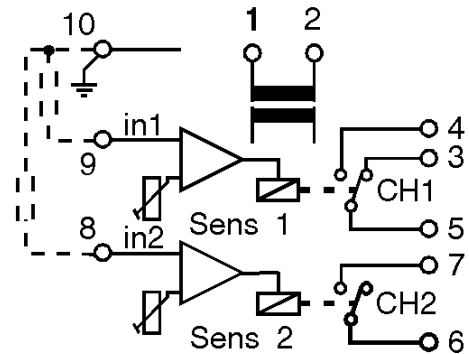
### General Specifications

Size: 52 W x 70 H x 110 D (mm).  
 Mounting: DIN-Rail, gear plate.  
 Termination: Screw terminals on front.  
 Protection class: IP40 (IP65 Enclosure opt.)  
 Weight: 0.350 kg.  
 Housing material: Polycarbonate.  
 Trip repeatability: 0.5% of setting.  
 Temperature effect: 0.01% per °C.  
 Operating temperature: 0...-60°C.  
 Storage temperature: -10...+70°C.  
 Trip relay: CH1: Change-over  
 CH2: Normally-open or normally closed rated at 5A/240Vac resistive.

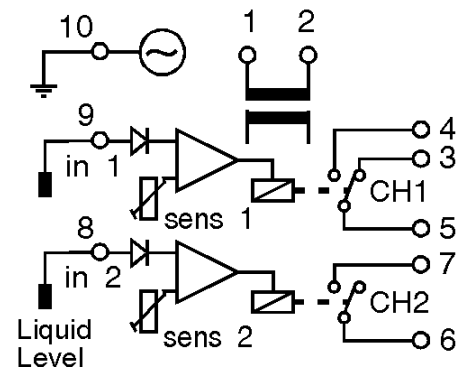
Power requirement: 4W.  
 Electromagnetic compatibility: Complies with AS/NZS 4251.1 (EN 50081.1)

For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

Block Diagram



Liquid Level



## TYPE NO. DESIGNATION

**RA106 - X X X X X X X**

### Power Supply:

- 1 = 240V, 50/60Hz ±10%                      For dc supply use LLD206
- 2 = 120V, 50/60Hz ±10%.
- 3 = 24V, 50/60Hz ±10%.

\*) 9 = Other (Specify).

### Input:

- 1 = 1-500k Ω sensitivity                      (7.5Vdc to detector).
- 2 = 10k Ω - 1M Ω sensitivity                (24Vdc to detector).
- 3 = 10k Ω - 1.5M Ω sensitivity              (24Vdc to detector).
- \*) 4 = Liquid level (AC supply only)        (24Vac to probes).
- \*) 9 = Other (Specify).

### Output:

- Contacts 5A at 24Vdc or 240Vac resistive.
- 1 = N/O (open when relay de-energised) CH2, CH1 C/O.
  - 2 = N/C (closed when relay de-energised) CH2, CH1 C/O.
  - \*) 9 = Other (Specify).

### Operation Mode:

- 1 = Switch (standard).
- 2 = Jumper internally.

### Type of Mode (for jumper selection):

- 0 = Operation Mode 1: Switch (see above).
- 1 = Both channels direct acting.
- 2 = Both channels reverse acting.
- 3 = CH1 direct, CH2 reverse.
- 4 = CH1 reverse, CH2 direct.

### Latch Option:

- 0 = No latch.
- 1 = Channel 1 latches to channel 2.
- 2 = Channel 2 latches to channel 1.
- 3 = Both channels latched to each other.

### Options:

- 0 = None.

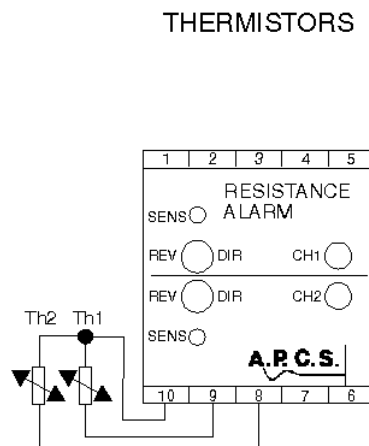
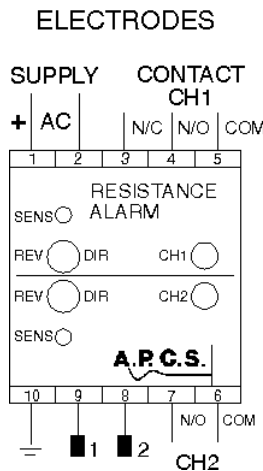
\*) 9 = Other (Specify).

## Connection Diagram

For liquid level probes use:

- PR105 - 1
- PR105 - 2

For DC supply and liquid level detection use LLD206.



\*) Price Extra.

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