

# Single Trip Alarm v2 PA201

## DESCRIPTION

The PA201 is a signal conditioning and alarm, the base functions of the PA201 are:

1. Adjustable trip-point with voltage-free 8A contact output.
2. Optional retransmit analogue output up to 50mA representing input signal range.

Power supply can be 12 or 24Vdc or low level (non-isolated) AC voltage. Double surge protection is standard as with all Series 200 modules to prevent failure due to spikes induced by DC switched inductive loads. The PA201 is designed to accept DC voltage and DC current inputs accommodating a wide range of process signals. The voltage input version covers a range of 0.1 up to 100Vdc and references to the DC supply common and the output common. The current input version covers a range of 1mA up to 1000mA and uses a DC-shunt resistor on the input circuit to generate a voltage signal of typically 1V. (e.g. 47Ω for 20mA). This voltage is then transferred to a high impedance differential input stage. In this way the PA201 can be connected in series mode as is usually required in current loops without causing unwanted ground connections. The trip-point and switching hysteresis are adjustable from the front of the module. A 2mm test socket is used for trip adjustment within a 0 - 5V trip set range calibrated to correspond to the input signal range. (1 - 5V for 4 - 20mA input). Trip status is indicated by a red L.E.D. on the front. Direct or reverse action is selectable internally by coding plugs.

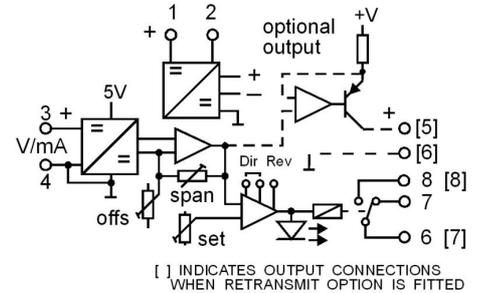


## General Specifications

Size:	23.5W x 71.5H x 109D (mm).
Mounting:	Clip for 35mm DIN-Rail.
Housing material:	ABS.
Connection:	Screw terminals.
Protection class:	IP40 (IP65 Enclosure opt.)
Weight:	0.100 kg.
Load change effect:	0.1% up to RL max.
Accuracy:	0.2% of range.
Internal span adjust:	±50%.
Input range:	100mV up to 100Vdc and 1mA up to 1000mA <sub>dc</sub> .
Linearity:	<0.5% of range.
Temperature drift:	0.02% /°C within operating range.
Ambient operating range:	-20...+70°C.
Relay contact:	Change-over. 8A/250Vac resistive. 3.5A/250Vac inductive.
Switching hysteresis (DB):	0.5 - 5%.
Power supply swing:	-20...+30%.
Input to retransmit isolation:	None.
Current shunt common mode voltage range:	-3 to +12V.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

On voltage inputs the input common connects to output common.  
Input current has 70dB DC CMRR.

## Block Diagram



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

### TYPE NO. DESIGNATION

#### Power Supply: (non-isolated)

- |                          |                                      |
|--------------------------|--------------------------------------|
| 1 = 12Vdc (30mA - 50mA). | *) 5 = Other <48Vdc/ac (Specify).    |
| 2 = 24Vdc (30mA - 50mA). | 6 = Signal Power 10 - 20Vdc.         |
| # 3 = 12Vac              | 7 = Signal Power 20 - 30Vdc.         |
| # 4 = 24Vac              | *) 8 = Signal Power Other (Specify). |

#### Input:

- |                       |                               |
|-----------------------|-------------------------------|
| 0 = Signal Power      | 5 = 0 - 10V (500kΩ).          |
| 1 = 0 - 0.1V (100kΩ). | 6 = 0 - 1mA (1kΩ).            |
| 2 = 0 - 1V (100kΩ).   | 7 = 0 - 10mA (100Ω).          |
| 3 = 0 - 2V (100kΩ).   | 8 = 0 - 20mA, 4 - 20mA (47Ω). |
| 4 = 0 - 5V (200kΩ).   | *) 9 = Other (Specify).       |

#### Retransmit Output:

(For 24Vdc supply only - 12Vdc models have reduced output drive).

- |                            |                              |
|----------------------------|------------------------------|
| 0 = None                   | *) 5 = 0 - 10V (500kΩ min).  |
| *) 1 = 0 - 1mA (10kΩ max). | *) 6 = 1 - 5V (100kΩ min).   |
| *) 2 = 0 - 5mA (2kΩ max).  | *) 7 = 4 - 20mA (500Ω max).  |
| *) 3 = 0 - 1V (100kΩ min). | *) 8 = 10 - 50mA (200Ω max). |
| *) 4 = 0 - 5V (100kΩ min). | *) 9 = Other (Specify).      |

#### Options:

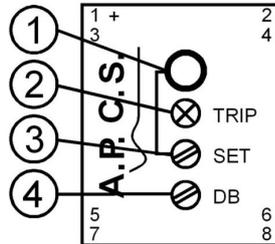
- 0 = None
- 2 = Open collector transistor output.
- \*) 4 = Thermistor input.
- \*) 5 = NAMUR input.
- \*) 9 = Other (Specify).

#) = Not suitable for units with retransmit outputs.

\*) = Price Extra.

### Front Control Explanation

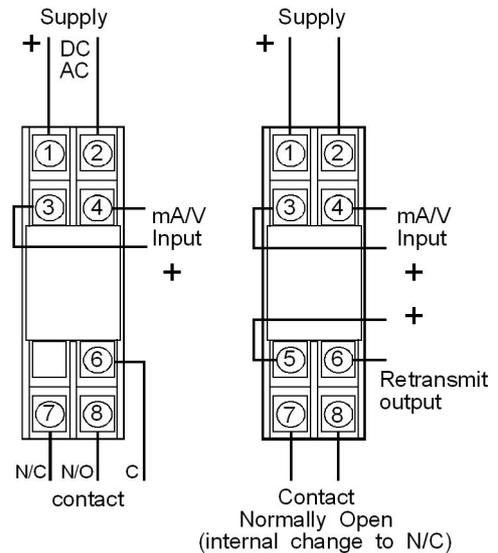
1. Test socket - Reference to terminal 2 for trip adjustment.
2. Status indicator ON - relay energized.
3. Trip set - adjust 15 turns.
4. Dead band (Hysteresis) - adjust 15 turns.



#### Trip set example:

- Input Range: 0 - 20mA.  
 Trip set range: 0 - 5Vdc (test socket to terminal 2).  
 Required trip point: 12mA.  
 Set trip to:  $\frac{12}{20} \times 5V = 3V$

### Connection Diagrams



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