

## AHT625 RTD Differential Trip Amplifier

- Suitable for BS1904, 2 wire RTD's
- Supply voltage 21 to 30Vdc
- Amelec standard 10 year guarantee
- Suitable for SIL Level 1, 2, & 3 (IEC 61508-2)

### TECHNICAL SPECIFICATION

#### FUNCTION

High Trip: Relay de-energise on rising temperature.  
Low Trip: Relay de-energise on falling temperature.

#### INPUT

From 2 x 2 wire resistance temperature sensors.

Typical input: Differential range 0 - 30 Deg °C over a working range of 0 – 200 Deg °C / PT100 2 wire RTD

#### OUTPUT

The Trip output is a pair of changeover contacts SPCO per set point, rated at 250VAC, 2A, 100VA (resistive).

#### CONTROLS

Zero / Span: 15 turn potentiometers, only fitted when used with common display.

Set point: 15 turn potentiometer to set Trip point within set input range.

#### INDICATOR

Amber Led: power ON indicator  
Red Led: Relay status indicator

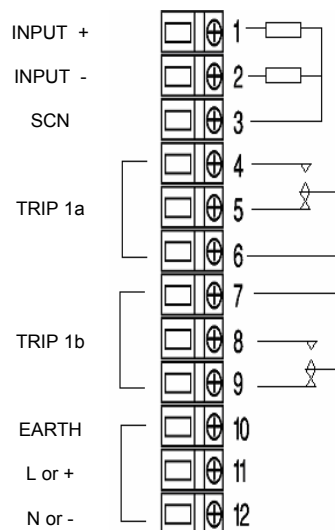
#### PERFORMANCE

Trip repeatability: <  $\pm 0.1\%$   
Response time: Typically < 400ms  
Trip settability: <  $\pm 0.1\%$

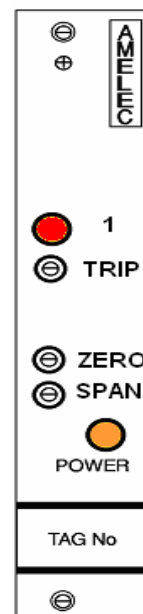
#### PROTECTION

Isolation 1000V RMS\*. Input/Contacts/Supply/Earth  
\*500VDC if RFI option (K) is specified.  
Internal Fuse.  
Fail safe on loss of power  
Input over range typically at 300%.

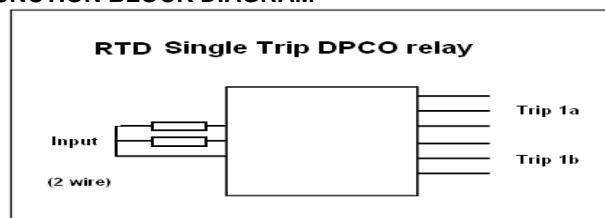
#### TERMINATION



#### FRONT VIEW



#### FUNCTION BLOCK DIAGRAM



#### ENVIRONMENTAL CONDITION

Storage temperature: - 40 to +70 °C  
Operating Ambient: -15 to +55 °C  
Relative Humidity: 5 to 95% RH

#### MOUNTING / DIMENSION

Card 3U high 4E wide  
Mounting 19" rack / 84E wide (See rack GA for details)  
Card weight < 200g

#### ADD ON / OPTIONS

DI: Common LCD display for local monitoring  
J: Input injection jack socket  
P: Test point (Trip set point monitoring)  
K: RFI protection to IEC801-3  
Non standard Power supply ranges available

# AH SERIES GENERAL SPECIFICATION

## INPUT DATA

### Input source

For details see individual specification.

### Open circuit response

For details see individual specification.

### Input Impedance (Voltage input)

>1Mohm at amplifier input. This will be shunted by burnout drive or input conditioning components.

## SUPPLY DATA

### Power supplies

AC models 115 / 230 Vac  $\pm$  20%

DC models 24 Vdc  $\pm$  2.5V

2 wire 12 – 60 Vdc

### Consumption

Single Transmitter <3VA

Trip Amplifier <3VA

Transmitter/Trip <5VA

2 Wire Transmitter 250mW

## OUTPUT DATA

### Output signals

Standard units

Any constant current from 0-100uA to 0-20mA (at up to 20V loop) or any constant voltage from 0-1V to 0-10V (at up to 20mA loading).

2-wire units

4-20mA or 10-50mA as modulation of supply voltage.

### Response time

<400mSec. Unless otherwise stated. Typical response time for Trip with 4-20mA input; <150uS for 1% change and <100mS for 100% step change.

### Relay specification

DP/DT or SP/DT for each trip, unless otherwise stated. Contacts are rated at 250 VAC, 2A/3A, 100 VA (Resistive).

### Relay function

Selected by PC Link. Default is normally energised, relay to de-energise on trip (fail safe operation).

### Relay status

Indicated by a red LED for each trip, mounted on the front panel. Lit when relay is energised.

### Controls

ZERO  $\pm$  25%

SPAN  $\pm$  50%

TRIP (When fitted) 0-100%

DEADBAND (When fitted) 1-20%

## CONDITIONS

### Ambient temperature

Working -20°C to +60°C

Storage -40°C to +70°C

### Humidity

From 5% to 95% RH.

**Vibration:** 1g at 15Hz to 150Hz.

## ELECTRICAL STANDARDS

### Insulation Input-output-contacts-earth-channel

1000V RMS continuous. 2000V for 2OuSec. Derate to 500Vdc for option 'K' enclosures.

### Fusing

Power supply fused.

## WIRING AND MOUNTING

### Terminals

For conductors up to 2.5mm<sup>2</sup>

### Weight

<1kg per module.

### Position

Any position is acceptable.

### Mounting

Standard units have a 3U by 4E front panel and up to 21 of these may be mounted in a 19" rack. Some units are double width and a 19" rack will accept up to 10 of these. Both types may be freely intermixed.

### Additional protection

Enclosures are available to NEMA 12 oiltight, NEMA 4 watertight and IP54 for N-protection.

## PERFORMANCE

### Input/output linearity

< $\pm$ 0.1% error, unless otherwise stated.

### Series mode rejection

< $\pm$ 01% error for 50Hz input at 5% of span amplitude.

### Common mode rejection

< $\pm$ 01% error for 250V RMS.

### Temperature effect on zero

<0.02% per °C.

### Temperature effect on span

<0.01% of span per °C or <0.1°C per °C, whichever is the greater.

### Temperature effect on suppression/elevation

<0.02% of suppression/elevation per °C.

### Supply voltage effect

<0.01% per % input change.

### Trip Adjustment

Infinitely variable by multi-turn potentiometers, which are accessible through the front panel.

### Deadband

Standard 1%. Also available adjustable from 1 to 20% by multiturn potentiometer (To special order only).

### RFI rejection

Standard units have some RFI rejection due to their design and construction. However, for extra protection to BS6667, specify option 'K'.

### Permissible Input overload

mV Input	20V	Resistance Input	6V
AC voltage Input	200%	DC voltage Input	200V
AC current Input	500%	DC current Input	500%