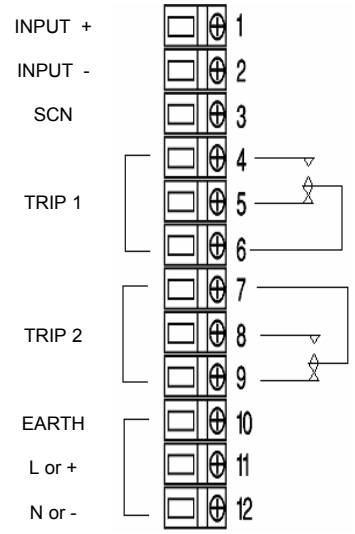
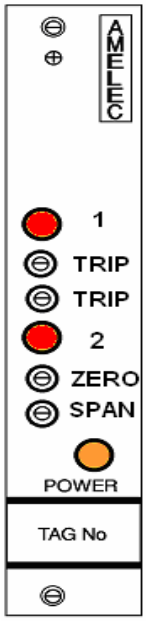
AHT612 Thermocouple Trip Amplifier

- Suitable for any BS4937 Thermocouple input
- Supply voltage 21 to 30Vdc
- Amelec standard 10 year guarantee
- Suitable for SIL Level 1, 2, & 3 (IEC 61508-2)

TERMINATION



FRONT VIEW



TECHNICAL SPECIFICATION

FUNCTION

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

INPUT

Can be configured to accept mV signal from thermocouple Type S, R, B, J, K, T, E, N and other special types also available on request.

Automatic Cold Junction compensation fitted as standard.

Typical input: 0 – 500 Deg ℃ / TC type “K”

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 indicators

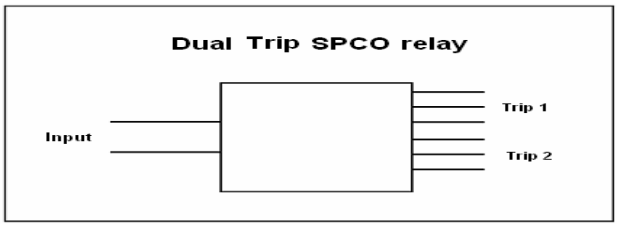
PERFORMANCE

Trip repeatability: < ±0.1%
Response time: Typically < 400mS
Trip settability: < ±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%.

FUNCTION BLOCK DIAGRAM



ENVIROMENTAL 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

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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 ± 20%
DC models	24 Vdc ± 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	± 25%
SPAN	± 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 2.5mm²

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

<±0.1% error, unless otherwise stated.

Series mode rejection

<±01% error for 50Hz input at 5% of span amplitude.

Common mode rejection

<±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%