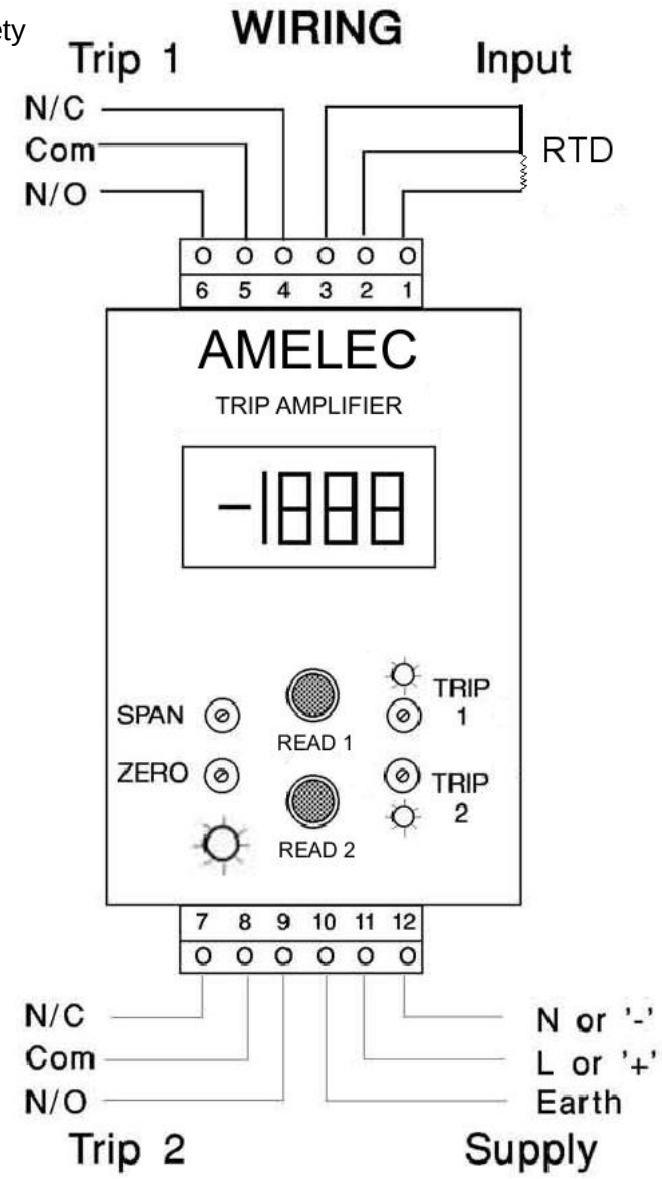
ADT122DI (BI)(V)(X)(K) RTD Trip Amplifier with Display

- Suitable for SIL 1, SIL 2 or SIL 3 rated (EN 61508-2) safety instrumented system (SIS) loop applications
- Non-Smart/Non-uProcessor instrument (Type A)
- Supply voltage options: 115Vac ±20%
  240Vac ±20%
  24Vdc ±10%
  48Vdc ±10%
- 'K' option: RFI Protection to EN 61000-4-3:2006/A2:2010
- AMELEC Standard 10 year warranty



Technical Specifications

Input
Any 2 or 3 wire PT100 resistance temperature sensor. Third wire compensation to overcome lead resistance variation. (PT130 / PT500 / PT1000 & 4 wire input options available)

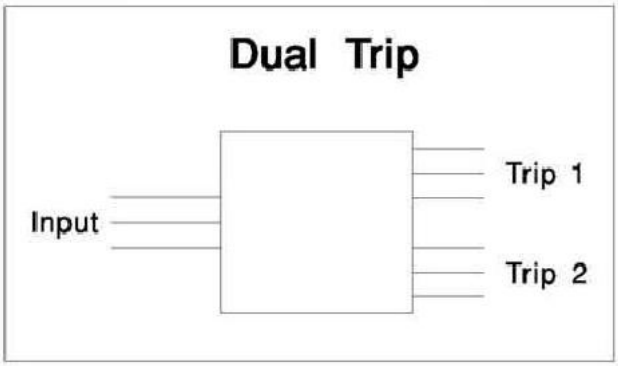
Trip Relays
Each output is a set of S.P.C.O contacts, rated 250VAC, 3A,100VA (resistive).
Fail Safe Relays: De-energises on Trip & Loss of Power.
Red LED indication of each Relay status: On Energised/ healthy, Extinguished in Trip/De-energised state as std.
(Red/Green BI-colour indicator LED optional)

Display of the Input on a 3½ digit LCD, Calibration range: -1999 to +1999, scaled 0-100.0 (%) or in Engineering units to suit the application.
(Up to 4½ digit Red LED Display option also available)
Front fascia Read buttons or Toggle switch show the Trip Set points within the calibrated scale.

Isolation
1000V RMS* Input/Contacts/Contacts(s)/Supply/Earth
*(500vdc if RFI option 'K' is specified)

Performance
Deadband: 1% standard (variable 1-20% optional 'V')
Trip settability: ±0.1%
Trip repeatability: ±0.1%
Response time: <400mS
Input O/C response: Upscale drive as standard
(O/C Downscale drive option available on request)
'K' option RF Immunity: 20MHz-3GHz ≤10V/m
(80MHz-1GHz/5.6GHz ≤30V/m, 889MHz/1.75GHz ≤40V/m)

Mounting/Dimensions
Din Rail (TS35) standard, Surface by seismic Keyhole plate or Front of Panel mounting options also available on request.
Fixed screw terminals as standard, Plug-in terminals optional
Enclosure: 50w x 75h x 145d mm
(RFI 'K' option enclosure = 182d mm)



Environmental Conditions
Storage Temperature: -40 to 70°C
Operating Ambient: -15 to 55°C
Relative Humidity: 5 – 95% RH
EMC: 2014/30/EU, EN 61326-1:2013
('K' option to highest Generic Industrial levels)

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AMELEC Instruments, Cochran Close, Crownhill, Milton Keynes, MK8 0AJ

AMELEC SIGNAL CONDITIONING

PROOF TEST / CALIBRATION CHECK PROCEDURE

ADT122XDI (Hi-Hi RTD input Temperature Trip, O/C Up, 110V DC Supply)

Even small voltages can cause potentially fatal shocks; this product is only to be tested by a competent person.

The ADT122XDI is a 110V DC supplied Temperature RTD input trip amplifier with two relay outputs and a front fascia display showing the input signal as either 0-100% or in Engineering units, please refer to the general data sheet for termination details. The instrument will have been factory calibrated and shouldn't require any further zero/span calibration adjustments, just the Trip set points to meet with your application requirements. Please follow the calibration check procedure below;

Equipment required

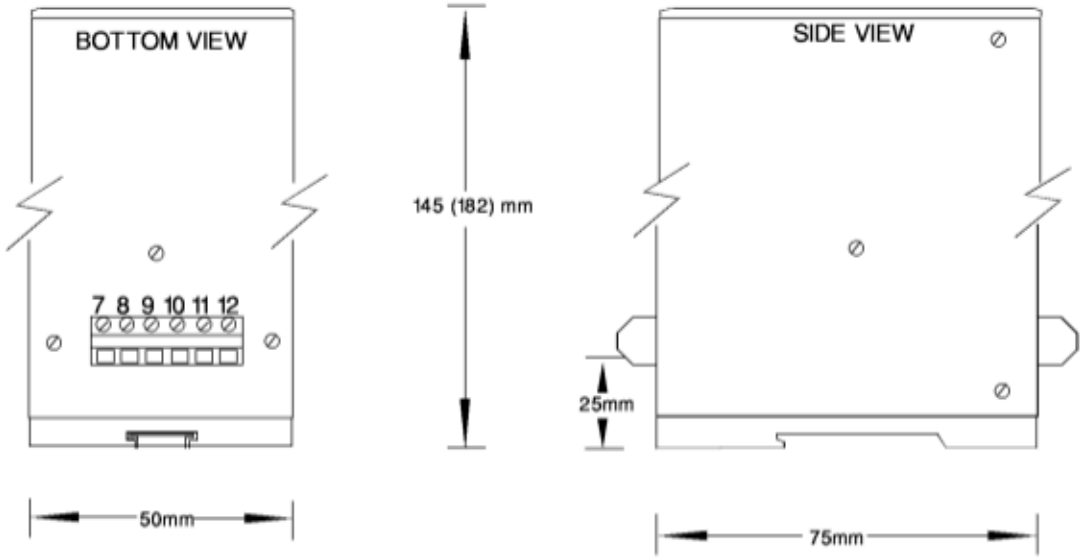
- 110 Volt DC power supply unit (PSU)
- A Resistance Decade box or similar RTD Simulator.
- A Digital Multi-Meter (DMM) to check the supply voltage and relay output contacts making/breaking
- A small instrument screwdriver to adjust the 15-turn blindset potentiometers through unit front fascia

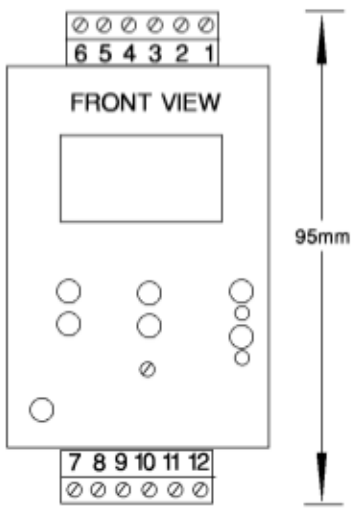
Calibration check procedure

1. Connect the 110Vdc power supply to the supply terminals as shown on the general data sheet**,** check the front fascia power ON LED illuminates and leave on for 20 minutes to allow the unit to acclimatise.
2. Connect the RTD simulator to the input terminals as shown on the general data sheet.
3. Set DMM for continuity test and apply input 0% of the input temperature range from the RTD simulator, check that Display reads correctly using Zero potentiometer to adjust if needed
4. Turn Trip 1 blindset potentiometer fully anti-clockwise checking that Trip1 Red LED relay status indicator Extinguishes before reaching bottom end stop and the Trip1 relay contact changes over (opens across terminals 5-6 & makes across terminals 4-5).
5. Now turn Trip 2 blindset potentiometer fully anti-clockwise checking that Trip2 Red LED relay status indicator Extinguishes before reaching bottom end stop and the Trip2 relay contact change over (opens across terminals 8-9 & makes across terminals 7-8.
6. Apply input 100% of the input temperature range from the RTD simulator and check that Display reads correctly, using Span potentiometer to adjust if needed.
7. Turn Trip 1 blindset potentiometer fully clockwise checking that Trip1 Red LED relay status indicator illuminates before reaching top end stop and the Trip1 relay contact change over (opens across terminals 4-5 & makes across terminals 5-6).
8. Now turn Trip 2 blindset potentiometer fully clockwise checking that Trip2 Red LED relay status indicator illuminates before reaching top end stop and the Trip2 relay contact change over (opens across terminals 7-8 & makes across terminals 8-9.
9. Apply actual input Temperature level required for each Trip point and adjust the corresponding blindset potentiometer until the relay status LED indicator just Extinguishes/ relay De-energises.
10. Press the corresponding Read button (or move the front fascia Toggle Switch to select) for each Trip Set Point and check that the correct reading is being shown for each on the front fascia display.
11. Vary the 110Vdc power supply to the unit by +/-10% (+/-11V) to check that both the Display & the Trip Set Points remain stable.
12. Open circuit the input to check that the Display goes upscale/ over range, and the unit Trips, i.e Output Relays De-energise, with the Red LED relay Status indicators Extinguished.
13. End. Re-install unit to the plant safety loop wiring.
14. Should any of the above steps not be achievable, replace the suspect unit with a spare calibrated unit asap and contact AMELEC technical support team for further assistance.

For more information and/or to discuss your application, please contact our technical staff at the factory in Milton Keynes;
Postal address: Cochran Close, Crownhill, Milton Keynes, Bucks. MK8 OAJ
Tel: 01908 567003 **Fax:** 01908 566735 **Email:** sales@amelec-uk.com

Issue 2: 03.19





NOTES:

1) The main part of the enclosure is a one-piece aluminium extrusion. The front panel is machined from solid aluminium block. The rear is machined from Din rail extrusion.

2) Dimensions in brackets refer to the increase in length for a type 'K' enclosure.

DIMENSIONS in mm TOLERANCES ± Nominal 0.4 mm Decimal 0.15 mm Unless shown otherwise	Drawn: SLK Checked: Approved: Date: 11/7/00	REVISION Redrawn 7/2000	TITLE: Din Rail enclosure Views of enclosure showing major dimensions. Used on Assembly AD series products	SCALE N.T.S.	AMELEC INSTRUMENTS Cochran Close, Presley Way Crownhill, Milton Keynes, MK8 0AJ DRAWING NO. AD Din Enclosure Sht 1 of 1

AMELEC SIGNAL CONDITIONING

Notes: Good Practice when installing any Din Rail mounted instrumentation

To increase the life expectancy of your din rail mounted instruments, it is recommended that the following guidelines are adhered to:

Mounting Instruments along a Din Rail

Any signal conditioning/process control modules will contain electronic components & circuits which in certain conditions have to lose their excess energy as HEAT. Suppliers of such instruments cannot predict the site conditions or situations, so to make sure that hot spots do not occur it is recommended that electronic instruments are not bunched together horizontally in groups of more than FIVE units.

A space of 5-10mm every five units max will minimise any temperature rise within that group of instruments.

If mounted vertically it is recommend that no more than two instruments are stacked together, and then with a minimum 5mm spacer between adjacent units/pairs.

Cabling/Relay Transient Suppression

The electronics in process control units are generally mounted in a small enclosure, which by the very size means that the wiring entering and leaving each enclosure is physically close together. To avoid interference from one port to another the following rules of thumb are recommended:

a) Power cables and wires that carry transients are routed separately to the signal wiring, ideally crossing at 90° to each other.

b) Low level signal cables are kept as screened or twisted pairs where possible. On screened cables only earth the screen at one end.

c) Relay contacts that switch inductive loads or other arcing devices should be suppressed, ideally at or across the inductance or other source.

On DC circuits a free wheeling diode should be used, it's PIV at least 4 times the working voltage.

On AC circuits use an RC network, the values of the R and C chosen to match the L and R value of the coil itself.

These rules are very general, so if you encounter any specific problems please contact our sales support team for further assistance.

Amelec product

The Amelec Din Rail mounted instruments are available in a number of product packages:-

The Plastic enclosures; which can be DIN rail or individually Surface mounted. They can be surface mounted by the corner fixing holes or clipped to the TS35 rail (light or heavy duty).

The Metal enclosure; is supplied as standard for DIN rail mounting (TS35 heavy duty rail). An optional Keyhole plate is available to surface mount the instrument for extra rigidity.

The Panel mounted enclosure is supplied in a metal enclosure. The panel cut out needs to be approximately 1mm more than the extrusion dimensions (50mm horizontally and 75mm vertically). Two brackets from inside your panel secure the units.

CE Declaration of Conformity

The Manufacturer / Supplier of the products covered by this Declaration: -

Amelec Instruments
Unit 5, Cochran Close,
Crownhill, Milton Keynes,
MK8 0AJ
Tel: 01908 567003
Fax: 01908 566735

The Products Covered by this Declaration

Model No: ADT122XDI

Conforms to applicable section of the following Directives / Standards:

EMC Directive 2014/30/EU Standard BS EN 61326-1: 2013 (Controlled EM)

LVD Directive 2014/35/EU Standard BS EN 61010-1: 2010

Attention!

The attention of the user is drawn to special measures and limitations to use, which must be observed when these products are placed into service to maintain compliance with the above directives. It is also assumed that a competent person will handle the product and that the standard industry practises will be applied. Signal cabling shall be routed separately to power carrying cabling (includes any relay output wiring). All signal cabling shall be screened. The screen shall only be terminated to the power earth terminal.

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Signature:  **Position:** Q A Manager **Date:** 20.04.16

Name: Mr B Sisodiya