

trip amplifiers

Series ATA 190 Motor Winding Temperature

The 190 series has been specifically designed for three phase motor winding temperature trip application. Models accept inputs from 3 off RTD or thermocouples which are in the motor windings. Each of the three inputs is compared with the trip set point and when any one is above the trip level a relay is operated.

If one winding overheats there are two outputs. Output one is the main control relay with SPDT contacts and this relay operates for any one of the three windings overheating. Output two is a simple contact and can be used to display which particular winding is overheating. Each output has an LED status indicator.

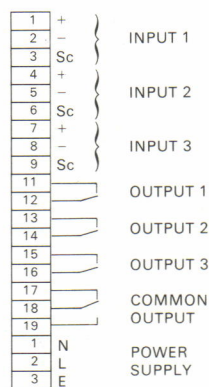
INPUT SPAN	0 to 100°C, can be customised
OPEN CIRCUIT RESPONSE	Upscale drive
DEADBAND	1%
POWER SUPPLY	AC 110V, 240V, ±20% 50/60Hz DC 24V ±2.5V
TRIP ADJUSTMENT	15 turn blind potentiometers
ISOLATION	Inputs are isolated from supply/output and buffered from each other
AMBIENT TEMPERATURE	-20 to +60°C working

MODEL ATA 191

Inputs thermocouple

MODEL ATA 195

Inputs BS 1904 three wire resistance thermometers



TERMINAL DIAGRAM

trip amplifiers

OPTIONAL EXTRAS

Description	Suffix Code
Variable Deadband (1 to 20%)	V
Sealed Relay	S
Latched Relay—Reset by button on unit face	L
Timed Relay—mounted in separate box	T
Remote Trip Set Point	B
Ten Turn Trip Set Point	C
Input Injection Jack	J
Calibration Test Point	P
Power Supply Output	M
R.F.I. Proof Enclosure	K
Indicating—Digital	DIG
Analogue	DA

*Some combinations of options are not mechanically possible to arrange.
If in doubt please contact the Sales Office.*

ORDERING INFORMATION

To order trip amplifiers please give the following details:

1. Model of Trip
2. Power Supply—Voltage and Frequency
3. Mounting Wall, Panel, Back of Panel or 19" Rack
4. Input Range and Source
5. Setting of open circuit drive—normally set to drive up scale
6. Setting of Relay Function—normally set to de-energise on trip
7. Any extras in code
8. Any special enclosures required
9. LED to indicate relay status or alarm state

Order code example:

ATA 113S DC Power Supply 24V
 Wall Mounting
 0 to 400°C CA Thermocouple BS 4937
 Open circuit drive up scale
 Relay de-energised on trip
 LED shows Relay status

AMELEC INSTRUMENTS LTD
SOUTHDOWN ROAD
HARPENDEN
HERTS AL5 1PW

Telephone: Harpenden (05827) 64421 Telex: 825242

trips specification

Inputs Data

Source—Details see individual specification.

Open Circuit Response—See individual specification.

Trip Point Adjustment Infinitely variable by single turn 260° potentiometer on instrument face. Calibrated 0 to 100% and lockable. Calibration accuracy $\pm 1\%$. Ten turn potentiometer available as optional extra, with accuracy of 0.1%.

Trip Point Repeatability $< \pm 0.2\%$ Span.

Deadband Minimum 1.0% Span. Available adjustable in range 1.0% to 20% of Span by potentiometer on instrument face.

Input Impedance $> 1M\Omega$ at amplifier input. When unit is fitted for downscale drive on open circuit input the input impedance is reduced.

Power Supplies AC Models 110V $\pm 20\%$ 50 or 60Hz, 220V $\pm 20\%$ 50 or 60Hz, 240V $\pm 20\%$ 50 or 60Hz. DC Model 24V $\pm 2.5V$. Consumption Single trip 3 Watt. Double trip 4 Watts.

Controls Zero $\pm 25\%$ and Span $\pm 25\%$ accessible by screwdriver from the front by 15 turn potentiometer.

Output Data

Response Time < 200 milliseconds.

Relay Specification DPDT for each trip point. Contacts rated at 250V 5AMP 100VA AC. Resistive load.

Relay Function Selected by internal link. Normally set to de-energise relay on operation of trip.

Relay Status Indicated by 150,000 hour rated LED for each trip. Coloured red.

Power ON—Indicator.

Conditions

Isolation Input to Output and Power Supply to 1000V RMS.

Ambient Temperature Working—20 to 60°C.
Storage—40 to 70°C.

Humidity 5 to 95% R.H.

Vibration 1g at 15Hz to 150Hz no effect.

Electrical Standards

Insulation 1000V RMS. 2000V for 20 μ second.

Fusing Power Supply fused. Spare fuse on PC Board.

Termination and Mounting

Terminals For Conductor up to 2.5mm².

Weight 1.5kg approximately.

Position Any position acceptable.

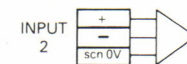
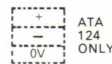
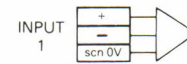
Types of Mounting For Wall, Rack, Back of Panel and Panel. Precision extruded aluminium case and rack. Details on page 35. Up to 7 units in 19" Rack.

Enclosures Available to NEMA 12 oiltight, NEMA 4 water-tight, IP54 for N-Protection.

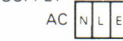
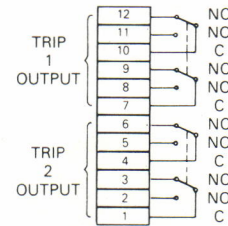
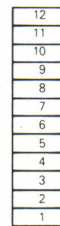
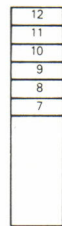
Models
ATA 111 ATA 141
ATA 115 ATA 150
ATA 121 ATA 151
ATA 124 ATA 171
ATA 131 ATA 180
ATA 135

Models
ATA 112
ATA 116
ATA 122
ATA 132
ATA 142
ATA 172

Models
ATA 113
ATA 117
ATA 123
ATA 125
ATA 133
ATA 134
ATA 139
ATA 143



MECHANICAL BARRIER



Note :-

On models ATA 171 and 172 excitation is on second input terminal block.

Models ATA 118, 119, 128, 138 and 148

The terminal layout is similar to the Right Hand terminal column above with the change for each trip channel there are two sets of SPDT outputs. Hence for Trip Channel 1 the two outputs are on terminals 12, 11, 10 and 9, 8, 7 respectively. Similarly for trip channel 2 the outputs are 6, 5, 4 and 3, 2, 1 terminals. See Amelec drawing No. ATA 2101 for details.

Performance

Series Mode Rejection $< 0.1\%$ error 50Hz input at 5% span amplitude.

Common Mode Rejection $< 0.1\%$ error for 250V RMS.

Temperature effect on Trip Point $< 0.02\%/^{\circ}C$ or $7\mu V/^{\circ}C$ whichever is greater.

Supply Voltage on Trip Point $< 0.01\%/%$.

R. F. Rejection All normal industrial interference and R.F. up to 460MHz has no effect outside performance given above when option K is used.

Normal Input	Fault Input Without Damage
All mV	20V
1 to 10V	200V
over 10V	1000V

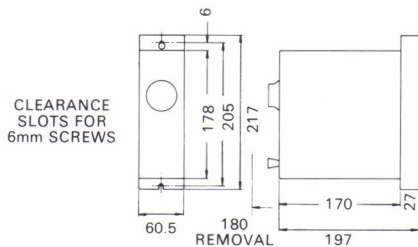
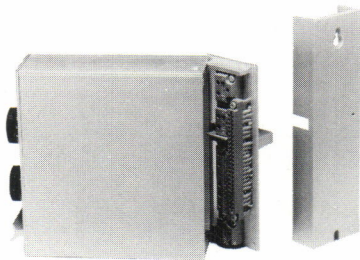
mounting data

Mounting shown below applies to all ATA, AMT, ACC & APS Series Units.

Illustrated are the most standard methods of mounting. All dimensions are in millimetres. The dimension of 180mm marked **REMOVAL** is clearance required at front of instrument to allow removal of the plug-in PC Board.

SURFACE MOUNTING

This mounting can also be used for Back of Panel.

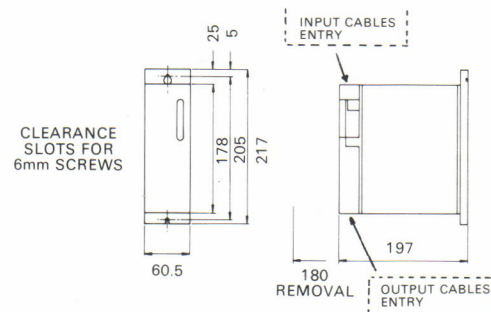
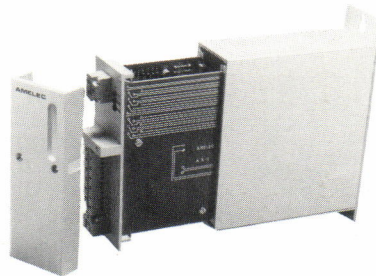


SINGLE END ACCESS

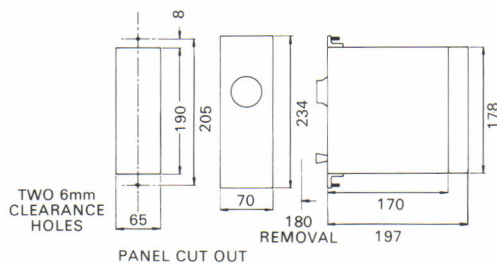
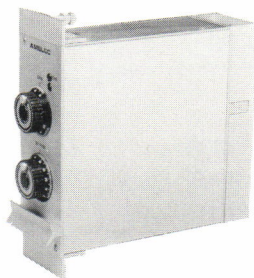
With this mounting arrangement the terminal blocks are at the front of the unit.

All adjustments are available at the front, trip settings are by 15 turn blind potentiometers. LED indicators are also fitted on the front of the unit.

Single end access can be supplied in Wall mounting or 19" Rack mounting configurations.



FRONT OF PANEL MOUNTING



continued overleaf