AMELEC
SIGNAL CONDITIONING

Series ATW-510
Thermocouple and emf

The 510 series accepts inputs from all BSS 4937 and ISA JKRT and pallaplat thermocouples.

Normal adjustable span is 5 to 60mV.

All thermocouple input models have automatic Cold Junction compensation, site adjustable.

Factory calibration available.

Power ON-LED indicator—Rack mounting only.

CALIBRATION ACCURACY	±0.1% Span
INPUT SPAN	5 to 60mV DC
SOURCE RESISTANCE	1000Ω Maximum for specified performance
ZERO SUPPRESSION	−10 to +55mV
INPUT IMPEDANCE	>1MΩ
OPEN CIRCUIT RESPONSE	UP OR DOWN SCALE DRIVE SELECTION
OUTPUT SIGNAL	4 to 20mA DC
POWER SUPPLY	DC 12 to 50V Unregulated
ISOLATION	250V RMS Input/Output/Ground
AMBIENT TEMPERATURE	Working −20 to +85°C

MODEL ATW 511

Thermocouple input
19" rack mounting. 4U high
compatible with AMT Series

MODEL ATW 512

Thermocouple input
IP65 Free Standing Enclosure

MODEL ATW 513

Thermocouple input
19" rack mounting. 4U high
compatible with ABT Series

MODEL ATW 516

emf input version of ATW 511

MODEL ATW 517

emf input version of ATW 512

MODEL ATW 518

emf input version of ATW 513

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AMELEC INSTRUMENTS, Cochran Close, Crownhill, Milton Keynes
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Inputs Data

Source Details see individual specifications.

Open Circuit Response Standard is upscale drive, can be set to down scale drive by removal of internal link where specified as available.

Input Impedance >1MΩ at amplifier input circuit. Reduced when downscale drive fitted.

Power Supplies 12 to 50V DC unregulated.

Consumption 0.1W.

Controls–Zero and Span accessible by screwdriver from front by 15 turn potentiometers.

Output Data

Signals 4 to 20mA.

Output load is supply volts minus 12 divided by 20mA.

Power ON–LED Indicator. (Rack model only).

Conditions

Isolation–Galvanic isolator is used giving 250V RMS Input to Output and ground isolation.

Ambient Temperature–Working −20°C to 85°C.
Storage −40°C to 90°C.

Humidity 5 to 95% R.H.

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

Electrical Standards

Location ZONE 0, 1 or 2 as certified.

BASEEFA Cert. No. See individual specifications.

Insulation 1000V. 2000V for 20μ second.

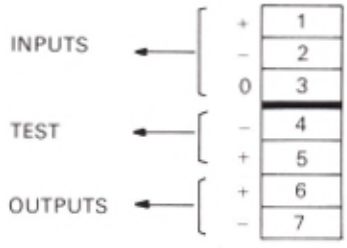
Termination and Mounting

Terminals For conductors up to 4.0mm².

Weight 0.5kg approximately.

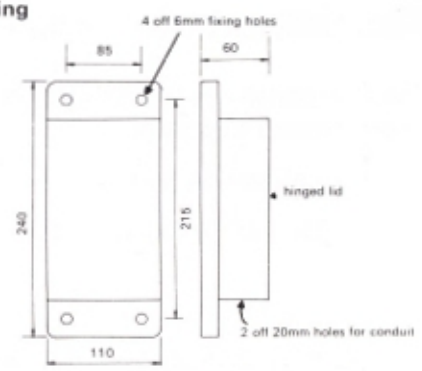
Position Any position.

Types of Mounting For Wall or Rack. Precision extruded aluminium rack.



Types of Mounting

1 Free Standing



All dimensions in mm

2 International 19" Rack

MODELS 511, 516 and 521 are for rack mounting in the A range of 4U high racks as shown on page 36.

MODELS 513, 518 and 523 are for rack mounting in the AB range of 3U high racks as shown on page 55.

Performance–Temperature Converters

Calibration Accuracy ±0.1% Span.

Output Ripple <0.3% RMS of FSD.

Stability Over 24 hours ±0.05% Span. Over 1 year ±0.1% Span.

Response Time <400 milliseconds for within 1% of final value for change of input from 10 to 90% FSD.

Temperature Effect on Zero <±0.02%/°C.

Temperature Effect on Span <±0.01% Span/°C or <±0.01°C/°C whichever is greater.

Temperature Effect on Suppression/Elevation <±0.02% of supp./elev. per °C.

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

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

Supply Volts Effect <0.2μA per V.

Load Resistance Effect <0.002%/100Ω

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

Input Overrange Protection

Fault Input Without Damage	100V

For Thermocouple units, Cold Junction Compensation Variations are:

CC, IC, CA	1.5μV/°C	Deviation from
PPR	0.7μV/°C	20°C

Maximum error for 0 to 70°C Variation CJ
=40μV for CC, IC, CA =18μV for PPR.

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