

FE-1818 Dual Thermocouple Amplifier

This dual thermocouple amplifier module is designed to accept K type thermocouples.

Gain is preset to provide full scale at the output (-0.5V to +10V) corresponding to a standard input range from -50 °C to +1000 °C although other ranges are possible.

The amplifiers are differential in order to reduce or eliminate the interference often generated by a remote ground; in many instances these amplifiers may be used in place of galvanically isolated thermocouple amplifiers.

Cold junction compensation is included and linearisation of the thermocouple characteristic is optional.

The module has standard frequency response from D.C. to 5 Hz, but this may be configured by user selectable components for higher bandwidth if required.

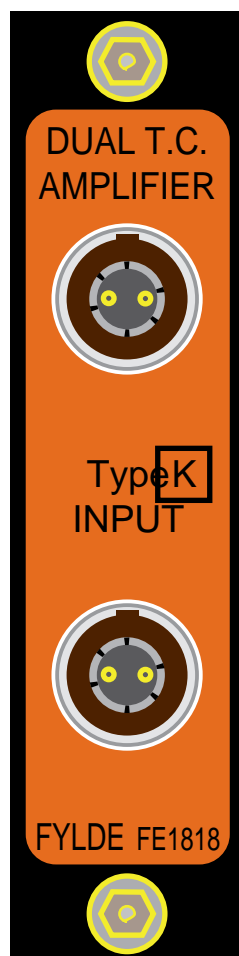
The front panel is fitted with high quality Lemo connectors and the mating halves are fitted with thermocouple metal pins for most accurate compensation.

The module is capable of operation at -25°C to +85°C with aerospace vibration environment.

This module will fit either the 1800 mainframe (aircraft 28VDC PSU), or the 1803 mainframe (automotive 11V to 30VDC PSU).



actual size



2X actual size

Thermocouple		Type	k
		Cold Junction Ranges (fixed)	Preset for 0°C to develop 0 Volts at output. Standard: -50°C to +1000°C (-0.5 V to +10 V) Options : -50° to 1300°C , -50° to 500°C, -50 to 200°C.
		(user set)	May be supplied with turret fixtures to allow custom range setting (non-linearised).
		Connector	Type k crimp pins used in the front panel socket.
Amplifier	Supply	Voltage	±12 V nominal
		Current	± 10 mA maximum.
	Input	Impedance	20 k
		Protection	Protected against series and common mode overloads.
		Bias Current	<10 nA
		Offset Current	typically 0.5 nA
	Offset Current TempCo	±10 pA/°C	
Output	Range	±10 V maximum.	
	Shift control	Allows ±2.5V output shift.	
	Linearity	Better than 0.01%	
	Frequency Response	DC to 5 Hz at 3 dB higher frequency customer configurable.	
	Impedance	100	
	Current	5 mA.	
	Protection	Indefinite short circuit.	
Linearisation		Type	May be supplied linearised if required by analogue gain correction, approximating to the thermocouple characteristic with up to 6 curve correction points.
	Accuracy	Temperature	±0.2 % of range.
		Cold junction Setting	±1°C
		Cold Junction TempCo	1°C for a 30°C change of ambient temperature.
		Linearisation	± 0.2 % of range.
Environment	Temperature	Range	-25°C to +85°C (Operating).
	Pressure	Range	3.8 to 108 k Pa
	Vibration	Test	MIL-STD-810B Fig 514.2
	Acceleration	Maximum	100 m/s ² in any axis
	Shock	Maximum	1000 m/s ² peak (1/2 sine 6 ms)
Mechanical	Connectors	Front Panel Input.	2 pin socket LEMO. (Type k pins).
		Rear PCB	20 pin HARWIN "Datamate"