

FE-1810 Dual DC Amplifier

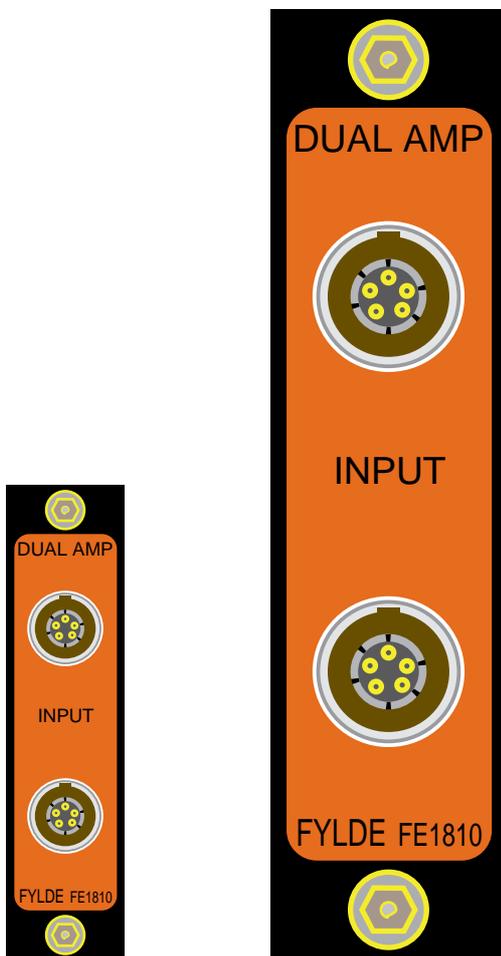
This module has been designed to amplify small analogue signals developed in transducers which may be energised by the stable bridge supply of the FE1800MCU. For larger signals, input attenuator resistor positions are provided with A.C. coupling components as an alternative.

Input offset drift is better than $1 \mu\text{V} / ^\circ\text{C}$, combined with very high input impedance (100 MW) and excellent common mode rejection ratio (>80 dB). The preset gain accuracy is $\pm 0.5\%$ and non-linearity is better than 0.02%. Gain stability depends upon the stability of the installed gain resistor, but 30 ppm / $^\circ\text{C}$ is standard.

Bridge power supplies of +5 V and -5 V are routed to the front panel of the module, each channel having these supplies at its front panel connector.

On each amplifier channel a single resistor can programme the gain between unity and x5000, and the filter cut-off frequency may also be set anywhere in the amplifier bandwidth (up to 70kHz at gain of 100) by user selection of the appropriate resistor. Bandwidth is from D.C. to 5 kHz with the factory preset single pole filter.

Output is $\pm 5 \text{ V}$ with < 10 mV pk-pk noise, and is stable with a load capacitance of up to 0.01 μF , and on board potentiometers enable an output shift of $\pm 2.5 \text{ V}$ to be introduced if required.



actual size

2X actual size

AMPLIFIER	Input	Impedance Bias Current Offset Current Offset Voltage	>100 M Ω 15 nA Max. <10 nA. < $\pm 150 \mu\text{V}$. $\pm 1 \mu\text{V}/^\circ\text{C}$ -30°C to +85°C.
	Common Mode	Rejection	D.C. >90 dB @ gain = 10-1000 >80 dB @ unity Gain. A.C. >70 dB @ 400 Hz. >60 dB @ 2.5kHz.(Gain =10-1000) >50 dB @ 2.5kHz.(Gain <10)
		Impedance Range	>100 M Ω ± 7 Volts.
	Gain	Range Programming Accuracy Non-linearity Stability	x1 to x5000. By single resistor. Gain=200,000/Rg. $\pm 0.5\%$. <0.02%. $\pm 30 \text{ ppm}/^\circ\text{C}$ ($\pm Rg$).
	Bandwidth		DC to >5 kHz (3 dB).
		Filter	Single Pole, programmable by single resistor.
	Output	Volts Impedance Offset	$\pm 5\text{v}$ into 20k Ω load. <1 Ω (w.r.t. 0v). max. $\pm 25 \text{ mV}$ at centre tap dead band (VR1).
Shift		Continuously variable +2.5v to -2.5v (VR1).	
Noise Capacity Load Stability		<10 mV pk. to pk. up to 5 kHz. Up to 0.01 μF .	
ENVIRONMENT	Temperature Altitude Vibration Acceleration Shock	Range	-30°C to +85°C. 3.8 to 108 kPa. MIL-STD-810B. Fig. 514-2 100m/s ² in any axis. 1000m/s ² peak 1/2 Sinewave 6 ms.
CONNECTORS	Front Panel		5 way socket LEMO type EHG 0B305.