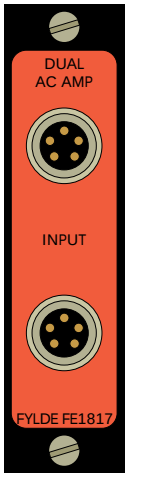
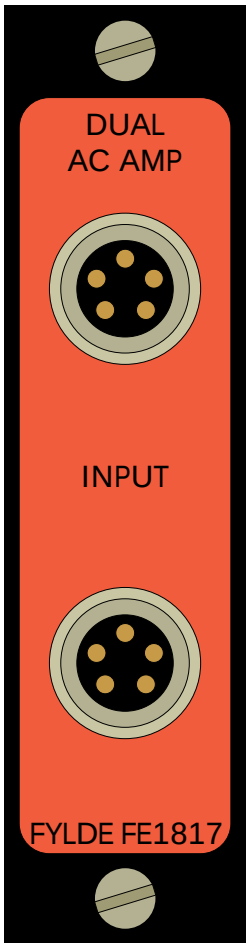
FYLDE MODULAR INSTRUMENTATION

FE-1817
Dual AC Amplifier



actual size



2X actual size

This dual channel A.C. coupled transducer amplifier incorporates two independent low noise constant current sources for transducer excitation. It is particulary intended for dynamic measurements where static information is not required. Each channels constant current source may be programmed by a pair of current setting resistors which are made available on solder turrets.

Each channel contains a high quality instrumentation amplifier providing the user with the facility to choose an optimum gain by altering the gain resistor mounted on the solder turrets. Gains may be preset by the user from 0.5 to 1000 with a bandwidth of 1.6 Hz to 40 kHz. In other respects the amplifier performance is equivalent to the FE1810.

A three pole low pass active filter at each channel's output is also provided with user configurable components to allow the optimum signal to noise ratio to be obtained.

The standard transducer excitation provided by the FE1800MCU or FE1803MCU is also available and the choice between constant current and voltage source excitation may be made with an on board link.
The output stage is capable of ±10v with 5mA capability and will drive capacity load (10nF) without instability.

In common with other modules in the 1800 series a front panel mounted 5 pin lemo connector is used for amplifier inputs and bridge outputs.

Up to eight FE1817 modules may be fitted in one of the FE1800 series crates. this provides a very compact signal conditioning package for both aircraft and vehicle use.

FYLDE Electronic Laboratories Ltd., 49/51 Fylde Road Preston PR1 2XQ, England Phone 01772 257560 Fax 01772 821530

AMPLIFIER	Input	Impedance	1MΩ
		Coupling	1µF and 1MΩ
		Noise	10 nV√ Hz @ 1-10 kHz 10µV r.t.i to 40 kHz
		Range	A 15v pk-pk signal will cause no spurious effects on the output, other than clipping.
		Protection	Series resistors and catching diodes protect against series and common mode overloads.
		Common Mode	Rejection >70 dB @ 50-400 Hz. (Gain <10) >90 dB @ 50-400 Hz. (Gain100 to 1000) Range± 7 Volts.
	Gain	Range	x1 to x1000.
		Formula	Gain = 1 + (50kΩ/Rg)
		Accuracy	±0.5%.
		Non-linearity	<0.02%.
		Stability	±30 ppm/°C (±Rg)
	Attenuator	Range	divide by 2
		Accuracy	±0.2%
	Bandwidth		1.69Hz to >40 kHz (-3 dB).
	Low Pass Filter	Type	3 Pole Butterworth (-18 dB/octave)
		Programmable	By fitting of 3 resistors.
		Cut off (Fc.LP)	1kHz - 10 kHz (-3 dB)
		-5% point	0.69 Fc.
	Output	Volts	±5v rated, (4.75V for gains <1) @5 mA.
		Impedance	<1 ohm (w.r.t. 0v).
		Offset	±5mV max.
		Noise	<1 mV RMS up to 40 kHz.
		Capacity Load	Up to 0.01µF, with no loss of stability.
CONSTANT CURRENT	Setting	Preset	By fitment of two resistors.
		Range	2 - 6 mA (See Note 1)
		Tolerance	-0% +10%
		Selection	Selectable 'in' or 'out' by solder link.
	Compliance	Voltage	18V typical.
		Impedance	1MΩ typical.
		Noise	<0.1µA RMS (DC - 20 kHz)
BRIDGE SUPPLY	Voltage		±5V available on LEMO i/p connector. (Specification as per FE1800MCU)
ENVIRONMENT	Temperature	Range	-30°C to +85°C.
	Altitude		3.8 to 108 kPa.
	Vibration		MIL-STD-810B. Fig. 514-2
	Acceleration		100m/s^2 in any axis.
	Shock		1000m/s^2 peak 1/2 Sine wave 6 ms.
CONNECTORS	Inputs	(Amplifier)	5 way socket LEMO type EHG 0B305.
	Output	(Power Supply)	37 way socket AMPHENOL / BENDIX type SJT00RT-14-35S-014.
	Power	(Power Supply)	5 way plug LEMO type EGJ 0B305.

Note 1: The total constant current (all channels) available is 64 mA due to the limitations of the internal supply rails of the standard FE1800MCU crate.