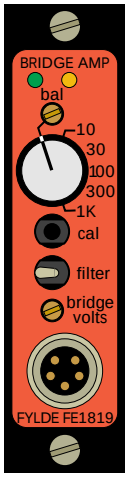
FYLDE MODULAR INSTRUMENTATION

FE-1819
Bridge Amplifier



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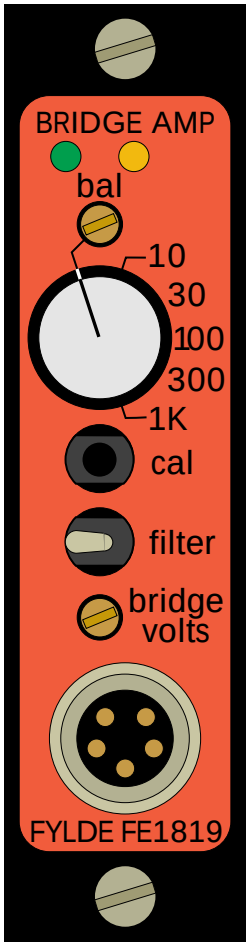

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This extremely compact single channel DC Bridge / Transducer Amplifier meets the conditioning needs of DC bridge type transducers and complete or fractional strain gauge bridges.

Bridge supply is fully variable from 0 to 10v, The supply is capable of providing 5v into 120W (42mA). Internal completion is provided for both 1/2 and 1/4 bridges.

A balance control together with twin LEDs allows easy balancing of bridges without any additional equipment.

A Cal switch together with internal Cal resistor allow DC shunt calibrations to be made.

Amplification is provided by a high quality instrumentation amplifier with an input impedance of >100MW. A five position gain switch allows gains from 10 to 1000 to be selected in 1,3,10 steps. The bandwidth is dc-50kHz for all gain settings.

A filter switch enables the 3 pole low pass filter to be switched in or out. An internal plug in SIL resistor network allows easy programming of the filter cut off frequency.

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 FE1819 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.

SPECIFICATION

AMPLIFIER	Input	Impedance	>100MΩ
		Noise	10 nV√ Hz @ 1 kHz 10µV pk-pk r.t.i to 100 kHz
		Protection	Series resistors and internal protection against series and common mode overloads.
		Common Mode	Rejection >90 dB @ dc-500 Hz (Gains 10 & 30) >100 dB @ dc-500 Hz (Gains 100 to 1000)
		Range	±10 Volts.
	Gain	Setting	Front panel rotary switch
		Ranges	x10, x30, x100, x300 and x1000.
		Accuracy	±0.5%.
		Non-linearity	<0.02%.
		Stability	±50 ppm/°C
	Bandwidth	Filter Out	dc to >50 kHz (-3 dB).
	Low Pass Filter	In/Out control	Front panel toggle switch
		Type	3 Pole Butterworth (-18 dB/octave)
		Programmable	By plug in resistor network.
		Cut off (Fc.LP)	100Hz - 20 kHz (-3 dB)
		-5% point	0.69 Fc.
	Output	Volts	±10v
		Current	±5mA
		Impedance	50Ω
		Offset	±5mV max.
		Noise	<1 mV RMS up to 40 kHz.
		Capacity Load	Up to 0.01µF, with no loss of stability.
BRIDGE SUPPLY	Setting	Control	Front panel multi-turn potentiometer.
		Range	0 - 10V
		Current capability	42mA rated (5V into 120Ω)
		Current Limit	50mA
	Balance	Control	Front panel multi-turn potentiometer.
		Method	Shunt balance via resistor Rbal
		Indication	2 leds facilitate balance
	Completion	Internal	For full 1/2 and 1/4 bridges
	Calibration	Control	Front panel push button
		Method	Shunt calibration via resistor Rcal
ENVIRONMENT	Temperature	Range	-25°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 2 Sine wave 6 ms.
CONNECTORS	Inputs	(Amplifier)	5 way socket LEMO type EHG 0B305.
	Output	(Power Supply)	19 way socket AMPHENOL / BENDIX type (RS 466-680)
	Power	(Power Supply)	5 way plug LEMO type EGJ 0B305.