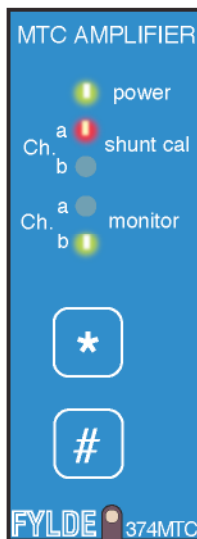


## FE-374-MTC Multi-Transducer Conditioning Amplifier



Front panel shown actual size

- 2 channel compact conditioner
- Operates with many transducers
- Panel operated shunt calibration
- Built-in 8 pole LP filter
- Monitor system included

The FE-374-MTC is a dual channel amplifier in the FYLDE 'blue panel' range for application with full and fractional Wheatstone bridge transducers and gauges, and many high level transducers.

The amplifier bridge supply is common to both channels and there are two identical high gain low noise instrumentation amplifiers which are galvanically isolated from the outputs to 500V DC or peak.

There is an auxiliary power supply for high level transducers and a bridge balance/voltage offsetting system is provided which enables the repeatable correction of gauge or transducer offsets; allows for level setting in servo accelerometer applications and can also be used to optimise the dynamic range for 4-20mA and bipolar or unipolar voltage inputs.

Configuration of the module is by jumper link.

The module front panel contains secondary controls which enable shunt calibration of bridge sources and also allows for the output of either channel to be inspected via the system monitor connector.

Power requirement is 24V DC nominal. An external low noise mains adaptor enables operation from 100-250VAC 50/60Hz if required.

Presented in FYLDE 2U panel and card format, there is a range of instrument cases and racks available.

**Description**

The FE-374-MTC is a dual channel amplifier in the FYLDE 'blue panel' range. It has a common bridge supply and two identical high gain low noise instrumentation amplifiers which are galvanically isolated from the outputs to 500V DC or peak. There is an auxiliary power supply available for high level transducers and a bridge balance/voltage offsetting system is provided, together with shunt calibration switches. 4-20mA or bipolar or unipolar voltage inputs may be catered for by the use of a digital offsetting network to enable full use of the amplifier's dynamic range. Module programming is by jumper link.

**Common Bridge/Transducer power supply :-**

Transducer Power	Bridge PSU Completion Calibration Aux. Supply Indication	5V or 10V $\pm 0.25\%$ (25ppm/ $^{\circ}$ C) 100mA max. total stabilised on each card, s/c protected. 1/4 and 1/2 bridge. 1/4 bridge requires an additional resistor to be soldered to turrets. Shunt cal. via front panel push buttons and led indication. $\pm 15V \pm 0.5V @ 60mA$ max. total. Suitable for transducers requiring dual power supply. Led indication of power.
------------------	--	--

**Two amplifiers as follows:-**

Balance system	Bridges Voltage Inputs Fine zero Stability	8 bit switched shunt balance via series resistor. 8 bit switched voltage injection. By multiturn trim pot. $\pm 15ppm/^{\circ}C$ typical. $\pm 30ppm/^{\circ}C$ max.
Preamplifier	Gain Selection Linearity Input Offset Voltage CMR Range 4-20mA Response	x1, x10, x100 & x1000 by jumper link $\pm 0.25\%$ $\pm 50ppm/^{\circ}C$ . Better than 0.01%. Impedance 2M $\Omega$ typ. $< 100\mu V$ (typ. 25 $\mu V$ ) $< 1\mu V/^{\circ}C$ Rejection $> 80dB$ dc - 1kHz, all settings. (typ. 100dB @ x10 and higher). $\pm 10V$ , Protected by diode and resistor networks to $\pm 30V$ . Position available for a (typically 100 $\Omega$ ) receiving resistor. DC - $> 1kHz$ all gain settings. 1V/ $\mu S$ slew rate typ.
Isolating section	Voltage Linearity	500Vpk galvanic isolation. Better than $\pm 0.02\%$ .
High Pass filter	Type	Single pole passive with settings of 0.01Hz, 0.1Hz, 1Hz (-3dB) and DC.
Post Isolation Gain	Settings Accuracy Offset Voltage	Jumper link x1, x2, x5, x10, x20, x50, x100. $\pm 0.25\%$ $< \pm 15mV @$ gain x1; $< \pm 100mV @$ gain x100.
Output Filter	Type Accuracy	Butterworth 8 pole low pass, preset by plug in resistor network. Range 0.5Hz to 1kHz*. *0.5Hz requires custom resistor network. Typ. $\pm 1\%$ , maximum $\pm 2\%$ excluding resistor network tolerance.
Output	Level Monitor	$\pm 10V$ into 10k $\Omega$ , 2000pF max. $@ \pm 5mA$ . Impedance 100 $\Omega$ . Via BNC on 17th module using front panel push buttons.
Overall	Noise RTI RTO Gain Accuracy Power	$< 2\mu V$ pk-pk dc- 1kHz $< 2mV$ pk-pk dc - 10kHz. $\pm 0.5\%$ (Includes preamplifier, isolator, output stage and filter). $\pm 12V$ 3.5W.
Card Frame Connector	Size Input Output	19" x 2u, accepts 16 amplifiers (32 channels). 2 x 50 way D connectors. 50 way Centronics connector.
Card size Temp Power		7.1" x 2.65" 2u high format (180mm x 67mm), $-20^{\circ}C$ to $60^{\circ}C$ operating. 24V @ 60W.