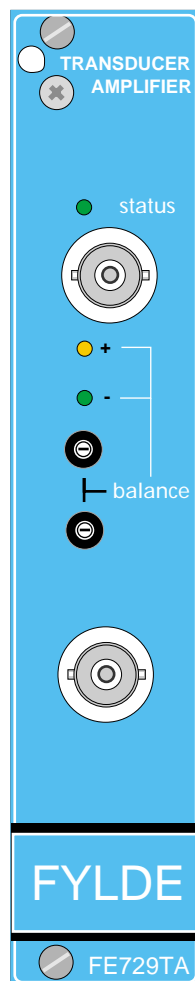


## FE-729-TA programmable dual transducer amplifier



The FE-729-TA is a member of the FYLDE range of programmable instrumentation and provides two channels of programmable amplification together with a programmable bridge supply. Up to 32 channels may be controlled within a single 19 inch rack which makes this module particularly suitable for applications requiring high channel densities.

Each channel of programmable gain amplification is high bandwidth, low noise and has a digital offset correction circuit which leads to negligible offset errors over the full range of gains.

Each channel has a 3 pole anti-aliasing filter which has a cut off frequency programmed by a plug-in network.

The common bridge supply is programmable from 0 to 10 V, and completion for bridge configurations is by on board jumper selection.

The format of the module is compatible with other Fylde programmable instrumentation, and front panel outputs are provided in addition to the rear connector input/output connections. The module allows the single channel FE-759-TA to be replaced by the dual channel FE-729-TA when additional measurement channels are required.

**Description**

The FE-729-TA is intended for multi-channel computer based strain measurement applications where up to 32 channels are required in a standard 19 inch rack. Each channel combines a 3 pole anti-aliasing filter with good instrumentation amplifier performance and integral programmable bridge supply. Shunt balance and programmable auto-zero are provided. AI signals are connected via the 4 way connector on the rear of the module, and outputs are also available on BNC type connectors mounted on the front panel.

**Specification**

<b>Bridge</b>	Excitation	Type	Programmable Constant Voltage.	
		Programmable Features	Selection of supply voltage of 0, 4, 5, or 10V. Both channels assume the selected bridge voltage.	
		Accuracy	$\pm 0.5\%$	
	Current		60 mA Max. at 10 V	
			80 mA Max. at 2.5 V	
	Noise		80 mA Max. at 5 V.	
		Protection	10 Hz - 10kHz : 1 mV pk-pk Short Circuit	
	Completion	Jumper Selection	Full, half, quarter bridge configurations.	
		Bridge Values	120 $\Omega$ and 350 $\Omega$ .	
	Shunt Balance	Type	Manual shunt balance is available by front panel potentiometer.	
Shunt Calibration	Programmable Features	Selection of either channel for shunt calibration by single on board calibration resistance.		
	Jumper Selection	Positive or Negative bridge arm.		
	Shunt Accuracy	$\pm 0.1\%$		
<b>Amplifier</b>	Bandwidth		DC to 50kHz (-3dB)	
	Common Mode	Rejection Ratio	> 100 dB	
		Range	$\pm 10$ V	
	Gain	Programmable Features	6 independently programmable gain steps for each channel.	
		Gain Steps	10, 30, 100, 300, 1000, 3000	
		Error (any step)	<0.5 %	
	Noise	Stability	$\pm 100$ ppm over 12 months.	
		Wide Band (50kHz)		<10 $\mu$ V pk-pk referred to input.
			10Hz to 2.5kHz	
	Auto-Zero	Type	Voltage Injection.	
Correction Range		Corrects input differences of up to $\pm 1$ V at Gain of 10 or $\pm 10$ mV at gain of 1000.		
Accuracy		After correction, amplifier output will be within 2 mV of zero.		
Storage.		All Auto-Zero Corrections are stored in non volatile EEPROM for all gain ranges.		
Output	Range	$\pm 10$ V (at 5 mA)		
	Impedance (at BNC)	100 $\Omega$		
	Protection	Continuous Short Circuit		

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	Crosstalk Rejection	Better than 65 dB Capacitance Load	up to 1000 pF
	Input	Resistance Bias Current Voltage Stability	4 M $\Omega$ $\pm$ 80 nA max. better than 1 $\mu$ V / $^{\circ}$ C
<b>Filter</b>	Type Response Jumper Selection		3 pole low pass. Butterworth (Standard), Bessel to special order). Cut off frequency using supplied resistor networks.
	Programmable Features		Filter In/Out
<b>Indicators</b>	Module Status		Green status indicator indicates module healthy.
	Limit Indicators		Amber and Green LEDs indicate the positive or negative offset from zero at the output.
	Auto Zero Out Command		When the green status LED flashes slowly, the Channel A balance potentiometer can be used to coarse balance the module. When it flashes rapidly the Channel B balance potentiometer may be used.
<b>Programming</b>	System Level		Via Fylde interface module for the IEEE 488 bus or RS232.
	Module Level		Each module is addressed on a serial opto-isolated bus using asynchronous serial data at 2400 baud , 1 stop, 1 start, no parity allowing direct communication with amplifiers if required.
<b>Power Requirement</b>	Mains powered modules		230 V or 115 V.
	D.C. powered modules.		12 V D.C. for modules fitted with FYLDE DC/DC converter.
<b>Dimensions</b>	Panel PCB Connector		3U x 5HP 160 mm x 100 mm (Eurocard) DIN 41612 (C body) edge connector 2 off BNC connectors on front panel.
<b>Environment</b>	Temperature		0 to 50 $^{\circ}$ C

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