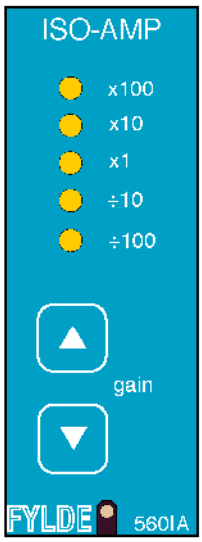
FYLDE MODULAR INSTRUMENTATION

FE-560-IA Isolation Amplifier



Front panel shown actual size

Power Line Monitoring

Ground Loop Elimination

Current Shunt Measurements

Oscilloscope front end

The FE-560-IA is an Isolation Amplifier in the FYLDE “blue panel” modular range of signal conditioning and is a general purpose isolation amplifier for front end use when hazardous voltages must be measured.

Contiunuous voltage isolation is up to 1500 V RMS or 2.2 kV DC*.

Bandwidth extends to more than 200 kHz and high speed pulses down to 3μS can be measured.

The amplifier is fully protected using advanced depletion mode FET devices and has a gain range of ÷100 up to x100.

The amplifier features limit detection with attention grabbing indication when the signal amplitude is out of range.

The module may be housed in the “PE” range of enclosures starting with the FE-PE2 for 2 channels up to the FE-PE17 for a maximum of 16 amplifiers.

Power source is either 115 or 230V 50/60Hz and a DC power option is available.

* May be limited by input connector choice.

Introduction

The FE-560-IA Isolation Amplifier is a module for a Fylde enclosure. It provides 1500 V RMS working isolation voltage or 2100 V peak for continuous DC Voltage Isolation. It has a bandwidth set by a plug-in resistor network. Unless otherwise stated, the specification is for a 2.2 kΩ resistor network which sets 150 kHz -3 dB bandwidth.

Isolation	Working Voltage	Max 1500 V RMS or 2100V peak DC
	Withstand Voltage (100% tested)	5000V pk for 5s
	Capacitance	15 pF
	Resistance	> 15GΩ (1GΩ = 10^9Ω)
	Isolation Mode Rejection	> 150 dB (DC to 60 Hz) Inputs Shorted Together.
	Leakage Current	< 2 μA RMS at 230 V RMS 50 Hz
Gain	Settings	÷100, ÷10, x1, x10, x100
	Linearity	±0.02% Full Scale
	Accuracy	±0.1% of gain setting
	Temperature Coefficient	< 0.01% / °C
	Stability	< 0.1% Change over 12 months.

Frequency Response

Resistor Pack RP1	8 pole LP filter -3dB Bandwidth	Amplifier Bandwidth + 8 pole LP filter
1 M	366 Hz	366 Hz
100 k	3.66kHz	3.66kHz
47 k	7.75 kHz	7.75 kHz
22 k	16.6 kHz	16.6 kHz
10 k	36.5 kHz	36.5 kHz
4700	77.5 kHz	77 kHz
2200 *	**166 kHz**	**163 kHz**
1 k	360 kHz	280 kHz

*** normal delivery standard**

Transient Response	10 V pulse	(x 1 Gain, 1kΩ resistor pack): Rise time 3 μs
Input	Impedance	>1MΩ
	Maximum	1000 V peak DC
	Protection	1000 V at Gains x1, x10, x100
		Attenuated settings (÷100, ÷10) withstand 2000V cont.
		Offset Temperature Coefficient < 1.5 μV/°C max RTI
Output	Range	±10 V minimum
	Current	±10 mA
	Offset Temperature Coefficient	< 15 μV/°C max
	Noise	7 mV RMS
	Demodulation Noise RMS	-50dB of F.S output
Limit Detection	Minimum pulse width	6 μs
Remote Control		See Specification for FE-507-IF module.
Environment	Operating Temperature	0 – 50 °C
Power Supply	Options:	230 V AC, 110 V AC, 9-36 V DC, 12V DC
Physical	Dimensions / weight	panel 2.75” x 1”, overall depth 8.2” / 200gm
Enclosures	Options:	2 modules fit FE-PE2. 4 modules fit FE-PE4
		8 modules fit FE-PE8. Up to 16 in FE-PE17(RK)
		RK= Rack Mount
EMC	EN 61326-1:2013 and EN 61326-2-1:2013	
Safety	EN 61010-1:2010	