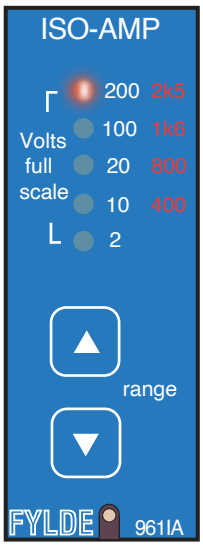
FYLDE

FYLDE MODULAR INSTRUMENTATION

FE-961-IA Isolation Amplifier



Front panel shown actual size

The FE-961-IA is a high voltage isolation amplifier for front end use when hazardous inputs must be measured.

The amplifier comprises a low noise, low drift input stage with differential characteristics, a high performance isolation stage and a filter with buffered voltage output.

Continuous voltage isolation is up to 1500 V RMS or 2.1 kV DC*.

There are 9 input ranges with a maximum of 2500V pk (1800V RMS sinewave).

The amplifier is exceptionally easy to use and is fully protected on all ranges to 3kV DC or RMS continuous, and up to 5kV pk (1s).

Maximum Bandwidth is 200kHz.

Front panel controls can be disabled and this module also provides an option for remote control.

Applications include power line monitoring including high side current shunts, ground loop elimination and as a protected front end for data acquisition systems recorders and oscilloscopes.

Two sizes of enclosure are available :-
FE-PE8 for up to 8 amplifiers.
FE-PE17 for up to 16 amplifiers.

Power source is 9-36V DC. Optional mains power supply 100-240VAC external to the enclosure

* May be limited by input connector choice.

Power Line Monitoring

Ground Loop Elimination

Current Shunt Measurements

Data Acquisition or Oscilloscope front end

Introduction

The FE-961-IA Isolation Amplifier is a module for a Fylde enclosure. It provides 1500 V RMS working isolation voltage or 2.1 kV 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 160 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	> 110 dB (DC to 60 Hz) Inputs Shorted Together.
	Leakage Current	< 2 μA RMS at 230 V RMS 50 Hz
Gain	Selectable Settings	÷250 (2500 V FS), ÷160, ÷80, ÷40, ÷20, ÷10, x1, x5 (2V FS)
	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
4700	77.5 kHz	77kHz
2200 *	**166 kHz**	**163 kHz**
1 k	360 kHz	260 kHz

*** normal delivery standard**

Transient Response	10 V pulse	(x 1 Gain, 1kΩ resistor pack): Rise time 3 μs
Input	Impedance	> 2.5MΩ
	Maximum	2.5kV peak (sine) or 2kV DC continuous
	Withstand	3kV pk continuous or 2.5kV DC 2 minutes
	Protection rating	CAT III 600V, CAT IV 300V
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:	9-36 V DC Optional external Mains power supply adaptor 100-240VAC
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	