FE-078-FV Frequency to Voltage

DIN Rail

- 10Hz TO 30kHZ Measurement range
- Full range or final 10% equals Vout
- Opto coupled input.
- 8 Hysteresis settings.
- x2 Digital outputs

This instantaneous F-V converter accepts frequency inputs from electromagnetic or light activated sources, or from a low impedance output of other signal conditioning systems for virtually all pulse or frequency waveforms from 10mV to 30V RMS.

The frequency of the incoming signal is converted to an output voltage in the range 0-10V, requiring just one pulse of the new frequency to update the output voltage.

The full-scale frequency is set using two front panel decimal rotary switches, and an on-board jumper selects the output span so that 0.0 V can represent 0 Hz or 90% of the full-scale frequency.

The full-scale frequency can be set between 10 Hz and 30 kHz. The lowest frequency which can be converted is 0.25 Hz.

A low noise output combined with linearity and accuracy exceeding 0.1% provides excellent analogue performance, and selecting the on board 3 pole filter provides a frequency averaging function when required.

Front panel indicators show “signal present” and “status”. A front panel control can be used to adjust signal sensitivity.

12V DC transducer power and 3.3V TTL buffered frequency outputs are available at the module output connector.

Power requirement is 10-36V DC.

The module is mechanically and electrically compatible standard DIN Rail specifications.

Description

The FE-078-FV module consists of a Frequency to Voltage converter using a high speed technique which overcomes the long filter delay normally associated with averaging F-V methods.

The module will accept inputs from frequency pickups and preconditioned signals in the range <100mV to >30VRMS. For most frequencies an updated output is available after only one period of the incoming frequency plus 60 µs.

Specification

INPUT	Arrangement	Differential input or high speed opto-coupled for digital signals.
	Impedance	40k Ω(differential).
	Voltage handling	> 30VRMS.
TRIGGERING	Indication	'signal ' indicates signal present. 'status ' indicates signal within range
	Threshold	Front panel adjustable threshold.
F-V	Output	0.00V to +10.00 V (Full-scale)
	Range selection	2 digit decimal number x 10Hz or x 1kHz sets full scale frequency
	Max Full Scale	30 kHz
	Min Full Scale	10 Hz
	Min Frequency	0.25 Hz
	Linearity	±0.1% of full-scale
	Full Scale Accuracy	±0.05% (up to 10 kHz range) ±0.1% (up to 50 kHz range)
	Response	Output follows instantaneous change of frequency in :- 1 period of new frequency. + 60µs to 25kHz, (100µs 30kHz).
	Span selection	Span of 0V = 90% of full scale ,10V = 100% of full scale. Set by on board jumper.
FILTER	Low Pass	Ripple reduction filter 3 pole active Low Pass filter follows F-V. Set by plug in filter network. On board jumper selects filtered or unfiltered output.
OUTPUT	Impedance	100 Ω at the output BNC connector.
	Offset	<± 5mV. < 10 mV pk-pk (10 kHz range, unfiltered output
	Noise	selected)
FREQUENCY OUTPUTS		TT L (3.3V amplitude) outputs which follow the input frequency are available at the module connector.
TRANSDUCER SUPPLY		A 12V supply at 30mA is available at the module connector.
POWER SUPPLY	Module	10-36V DC..
	Indication	'status ' or 'signal ' indicator always illuminated when module is powered.
ENVIRONMENTAL	Temperature range	0 to 40 °C.
DIMENSIONS	Presentation	DIN Rail Unit 100mm x 75mm x 22.5mm
	Connections	Inputs - DC power jack, 5 pin Lemo (P N and screen, +/- trNansducer supply) Outputs - BNC (0-10V analouge), 5 pin Lemo (Digital ouptputs)