

FE-3051-TF TRACKING FILTER



- * AC and DC outputs
- * Constant Q Bandpass Filter
- * 20Hz to 1kHz range
- * Compatible Tacho/divider, Charge Amplifier and ICP modules available.
- * High performance - small size

The FE-3051-TF is a frequency controlled tracking bandpass filter with a tracking range of from 20Hz to 1kHz, intended for application in vibration measurement of turbines.

The frequency control input accepts a TTL compatible control frequency which is numerically equal to the centre frequency. This may be supplied from a programmable tachometer conditioner and divider module such as the FE-579-FD. Such a combination, applied with toothed wheel pickups, enables the Tracking Filter to be centred at harmonics of the rotational speed. Alternatively, a 'Filter Tune' module, the FE-290-CM, is available to allow manual tuning of the filter.

The Filter gives an AC output at unity gain, and also a rectified and filtered DC output at 1VDC for 1V AC for a maximum input level of 20V pk-pk.

Power supply may be mains 240V (standard) 110V 60Hz or 12V dc when fitted with FE-605-DCC, DC-DC converter.

Up to 16 modules (plus power switch module) fit standard 2U-U17 crate. 8 in an MC8 1/2 rack and 2 in an MC2.

FYLDE also manufactures Charge and ICP type receivers and head amplifiers for charge type sources. See FE-128-CA for piezo-electric accelerometers. See FE-430-ICP for ICP type sources.

Description

A tracking filter for vibration measuring systems, the FE-3051-TF is a 4 pole Butterworth filter requiring a control frequency of 20Hz to 1 kHz to set a centre frequency of 20Hz to 1kHz. The filter is constant Q of approximately 28 (optionally 14 or 7) and has a signal rectifier and filter on board providing both AC and DC outputs.

The FE-3051-TF is designed to work with the FE-579-FD Frequency Divider which will accept and condition signals from tachogenerators and provide a tachogenerator frequency dividing function at up to 99 : 1.

Alternatively, the FE-290-CM 'Filter Tune' module will enable manual control of the centre frequency.

Specification

INPUT	resistance voltage	minimum 75k 20V pk - pk maximum
GAIN	tuned	unity ± 0.1 dB typ. ± 0.2 dB max.
FREQUENCY	response	20Hz to 1kHz
FILTER	response Q	Butterworth constant Q bandpass 28 (Optionally 14 or 7)
SIGNAL RECTIFIER	type	full wave averaging
SMOOTHING FILTER	type frequency	2 pole LP active 1.6Hz -3dB (see text)
A.C. OUTPUT	voltage offset impedance residual level protection	10V pk maximum ± 5 mV < 1 3mV RMS typ. s/c indefinite
D.C. OUTPUT	scaling voltage offset residual level impedance protection	1V D.C for 1V RMS 7V DC maximum ± 2 mV ± 2 mV typ. < 1 s/c indefinite
INDICATORS	"overload" "lock"	red led (on at 10V pk.) green led (on for system in phase lock)
POWER SUPPLY	Mains 110/240V 12V dc when fitted with FE-605-DCC dc-dc converter.	50/60Hz
ENVIRONMENTAL	temperature range	0 to 50 °C
DIMENSIONS	Panel PCB	1" x 2.7" 7.1" x 2.65"