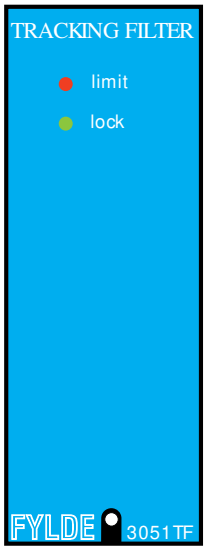
FYLDE MODULAR INSTRUMENTATION

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.

FYLDE Electronic Laboratories Ltd., 49/51 Fylde Road Preston PR1 2XQ, England Phone 01772 257560 Fax 01772 821530

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