FYLDE

MODULAR
INSTRUMENTATION

FE-768-PF
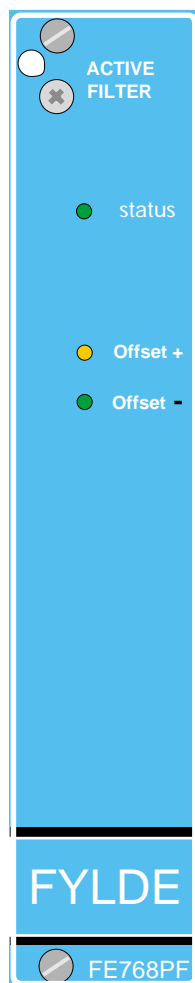# programmable filter

ACTIVE FILTER

● status

● Offset +

● Offset -

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FE768PF

The FE-768-PF provides eight selectable cut-off frequencies over a 10 Hz to 20 kHz range. The passband and phase response (Butterworth, Bessel, or Chebschev) may also be specified when ordering.   A High Pass or Low Pass 8 pole configuration is jumper selectable. A 4 pole bandpass response which is flat between the two cut off frequencies may also be jumper selected.

Each filter has a differential input stage and programmable overall gain from 1 to 50 in six steps, which allows the filter to be coupled directly to many signal sources without the need for additional conditioning.

Calibration facilities include both an end to end test which switches through an external single ended signal in place of the differential input, and the selection of a DC +10 Volt level at the output.

The module is compatible with other FYLDE programmable instrumentation modules and occupies only one slot in a 16 channel rack.

Computer control is normally via the 17th module in the rack which is typically an IEEE 488 interface module (FE-705-IB). If required modules may be directly connected to a host computer since they are commanded via an asynchronous serial bus.

The filter produces a ±10 V output, suitable for direct connection to a data acquisition board, and may be either mains or optionally 12V DC powered using the FE-605-DCC in place of each individual mains transformer.

FE-768-PF   PROGRAMMABLE FILTER

Description

A Programmable Filter in Euro Card format. The FE-768-PF features a programmable gain differential input stage, low or high pass filter choice (by internal link) and programmable gain output stage.   Sixteen modules will fit a standard 19" crate, leaving space for a RS232 controller card. (Type FE-705-SB).   The filter is 8 pole (-48dB/octave) and may be ordered as Butterworth or Bessel response. Cut off frequencies range from 10 Hz to 30 kHz in 8 steps. The module provides a ±10V output ready to interface with a suitable data acquisition system. System rear panel connectors are generally 3 pin Tuchel screw lock connectors where differential connection is required, or BNC connectors.   BNCs, or "D" type multi-way connectors, are recommended for output use.

Specification

INPUT	resistance	>100kΩ single ended,> 200kΩ differential
	offset voltage	<2 mV warmed up
	current	<1 nA
	protection	±30v protection
	filter	capacitors limit high frequency noise pick-up
	voltage drift	<10µV / °C
	coupling	low pass filter may be ordered with capacitive input coupling, 0.5 Hz (-3 dB)
	voltage noise	100µV pk. - pk. R.T.I. (note 1)
	gain	x1 or x10 programmable
	error	<±0.2%
	stability	better than 0.02% / °C
	CMR	>50 dB DC - 1 kHz (±10V)
FILTER	response	8 pole Butterworth or Bessel to order (-48dB/octave, -160 dB/decade).
	Low or High pass	may be configured on board using jumper links.
	Band Pass	May be configured as 4 pole band pass on board.
	accuracy	cut off frequency (-3 dB) typically ±1 % of selected value.
	range	8 selectable cut off frequencies (10 Hz , 30 Hz, 100 Hz, 300, 1 kHz, 3 kHz,10 kHz, 30 kHz)
OUTPUT	gain	x1, x2 or x5 programmable
	error	<±0.2%
	noise	< 1 mV pk. - pk. (note 1)
	offset	< ±10mV any setting.
	impedance	<0.1Ω (note 2)
	protection	continuous short circuit.
	calibration 1	+10V output cal. level on command
	2	External single ended cal. input selectable on command.
	offset indication	Using two LEDs. Thresholds set to ±7V
STATUS	indicator	LED indicator normally lit, will extinguish on reception of an illegal command
POWER SUPPLY		220V-240V 50/60 Hz or 110V-120V 50/60 Hz 12V D.C. by fitment of FE-605-DCC D.C. converter.
ENVIRONMENTAL	temperature range	0 to 50 °C
DIMENSIONS		panel 3u x 5HP, PCB 160 mm x 100mm. card and panel, DIN 41612 (C Body) edge connector.
PROGRAMMING		Gain, filter, Input cal and Output calibration by RS232C serial rack interface (17th module).

Notes   1.   Measurement bandwidth 50 kHz.
          2.   Module only, excluding backplane wiring and rear panel connectors.