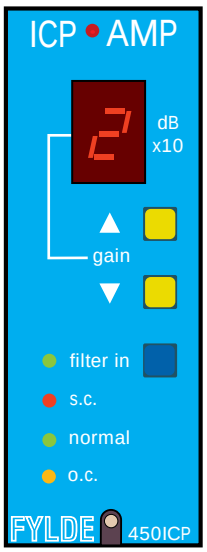
FYLDE MODULAR INSTRUMENTATION

# FE-450-ICP
# ICP AMPLIFIER




* GAIN RANGE -10db to +60dB
* HIGH INPUT IMPEDANCE
* LOW NOISE FET INPUT
* 3 LED BIAS CHECK
* BUILT IN LOW PASS ACTIVE FILTER
* REMOTE AND LOCAL EARTHING OPTIONS
* MICROCOPROCESSOR CONTROLLED
* 7 SEGMENT LED DISPLAY OF GAIN
* PUSH BUTTON CONTROL OF GAIN & FILTER SETTINGS
* ADDITIONAL FACILITIES AVAILABLE WHEN USED WITH THE FE-452-MM 16 CHANNEL MONITOR MODULE

The FE-450-ICP is a combined amplifier and power supply module which is particularly suited to the requirements of ICP head amplifiers.

A specially designed constant current supply is established to energise the head amplifier via the co-axial cable, and special features of the input connection enhance the common mode rejection when the remote transducer has an electrical connection to earth.

LED indicators are provided which give front panel display of normal, open or short circuit cable condition. An on board microcontroller allows simple push button control of gain and filter settings. Eight 10dB gain steps are available, covering -10dB to +60dB. A 7 segment LED is used to display gain and an LED indicates when the low pass active filter is switched in. The cut off frequency of the filter is programmable over a wide range by replacing an internal plug in SIL resistor network

The module is AC coupled with a low frequency cut off of 0.16Hz and bandwidth extends to greater than 50kHz.

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

The FE-450-ICP is designed to be used with the FE-452-MM 1" wide Monitor Module. This provides monitoring facilities for up to 16 channels. A facility to set all module gains simultaneously, together with a lock function which prevents accidental changes in gain / filter settings is also provided.

FYLDE also manufactures ICP head amplifiers for charge type sources. The FE-074-HA is scaled in V/pC to match piezo-electric accelerometers. The FE-074-HA is powered, received and amplified by the FE-450-ICP.

## SPECIFICATION

| | | |
|---|---|---|
| CONSTANT CURRENT | Setting | Preset at 4mA dc (Alternative setting 2-6mA). |
| | Working Range | 5 - 20volts dc. |
| | Impedance | 1Megohm approximately. |
| | Noise | <0.1µA RMS (dc - 20kHz). |
| | Indication | LED monitors current flow. |
| GAIN | Range | -10dB to +60dB, in 10dB steps |
| | Control | Two push buttons with auto repeat. |
| | Display | 7 segment LED, indicates gain in dBs (x10). |
| | Accuracy | ±0.1dB on all settings. |
| | Stability | 0.02% over 12 months. ±0.01%/°C max. |
| COMMON MODE | Rejection | >80dB (50 - 400Hz). |
| | Impedance | 1MΩ (remote setting). |
| INPUT | Impedance | 200kΩ differential |
| | Coupling | 1µF and 100kΩ (1MΩ option). |
| | Protection | Against open circuit static damage or short circuit. |
| | Range | 10V pk-pk max. |
| | Connector | Rear panel BNC or multiway (Trident). |
| | Remote/Local switch | Allows operation with remotely earthed transducers in "Remote" position. |
| NOISE | Referred to input | (gain 40B) 6.5µV RMS dc - 40kHz. |
| | Referred to input | (gain 0dB) 5µV RMS dc - 40kHz. |
| | Referred to output | (gain 0dB) 1mV RMS dc - 40kHz. |
| BANDWIDTH | Filter OUT | <1.6Hz to >40kHz (0.16Hz option).<br><0.25dB down @10kHz. |
| | Filter IN | Low Pass Filter set by by plug in SIL resistor network |
| | Filter setting range | Typ. 100Hz to 10kHz. Standard 500Hz (-3dB).<br>3 Pole Butterworth characteristic. |
| | Control | Push button with LED indication of Filter In. |
| OUTPUT | Voltage | 20V pk-pk (10k load). |
| | Current | ±10mA. |
| | Protection | Short circuit limited. |
| | Capacity Load | 5000pF max. |
| | DC Offset | <10mV. |
| MONITOR | Indication | Front panel LED indicates when the module has been selected by the FE-452-MM Monitor Module. |
| | Connection | A relay is energised when the module is selected, this routes the module output to the front panel BNC on the Monitor Module. |
| | Remote Gain Line | Allows the Monitor Module to set the gain of the module. |
| | Remote Lock Line | Allows the Monitor Module to lock out gain and filter push buttons to stop accidental changes being made. |
| | Isolation | Opto-couplers are used on all control lines to maintain isolation between individual channels and the Monitor Module. |
| POWER | Requirement | Mains 200 - 250V 50/60Hz. Alternative 110V option, or 12V dc via dc-dc converter option. |
| PRESENTATION | | 1" wide module 2U high rack system compatible with all standard FYLDE housings. |