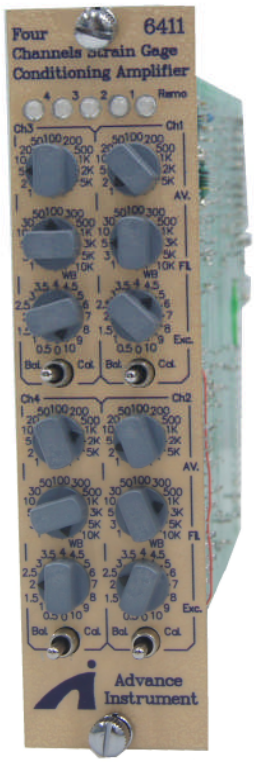
6411 Four Channels Strain Gage Conditioning Amplifier



Features:

- Differential signal amplifier with high bandwidth **up to 10k Hz**
- **Gain Accuracy ±0.1%,**
- **Gain Step : 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, 2000 to 5000 by rotary switch**
- **Gain Linearity 0.01%**
- **Fully calibrated gain from 1 to 5,000**
- **4 Channels per Module**
- **Accepts foil type strain gage, piezoresistive, potentiometers, etc.**
- **Selectable bridge step excitation (16bits): 0.5 to 10V**
- Plug-in amplifier
- **Automatic bridge balance, with EEROM to preserve balance without power**
- **Built-in with all bridge completion including 120 or 1000 and 350 Ω dummies.**
- **Built-in with shunt calibration circuits**
- Built-in with four-pole Bessel low-pass filter with cutoff frequencies of 1 Hz, 3 Hz, 50 Hz, 100Hz, **300 Hz, 500Hz, 1k, 3k, 5k, 10kHz and wide-band**
- Others filter type and cut-off frequency is **possible**
- **Front-panel monitoring: Automatic balance status**

Applications:

- **Dynamic Material Test**
- **Strain/Stress Analysis**
- **Dynamic Material Elasticity Testing**
- **Load Cell Signal Conditioning**
- **Foil Strain Gage Signal Conditioning**
- **Piezo Resistive Sensor Signal Conditioning**
- **Semiconductor Strain Gage Signal Conditioning**

Description:

6411 Signal Conditioning System is designed with and incorporates all the features necessary for dynamic precise conditioning of strain gage and transducer inputs in the most severe operating environments.

6411 Signal Conditioning and amplifier s low-level signals to high-level outputs for multiple channels can be simultaneously and dynamically recorded and displayed on external devices.

6411 Four Channels Strain Gage Conditioning Amplifier

Specification:

●Input
- Strain gages: Quarter, half or full bridge **(50 to 1000 Ω)**
- Built-in 120 Ω and 350 Ω dummy gages; **1000 Ω dummy capability**
- Transducers: Foil or piezoresistive strain gage **types DCDT displacement transducers; Potentiometers**

●Excitation
- Fixed settings: 0, 0.5, 1, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, **7, 8, 9, 10 VDC ±3 mV**
- Current: 100 mA, max
  - Regulation (0-100 mA ± 10% line change) **±0.05 mV ±0.004 %, max measured at remote sense points.**
  (Local sense: -5 mV, typical, 100 mA, measured at plug.)
- Remote sense error: 0.0005% per Ω of lead **resistance (350 Ω load)**
- Noise and ripple: 0.005% Vp-p, max **(dc to 10 kHz)**
- Stability: ± 0.002%/° C
- Level: Normally symmetrical about ground; Either side may be grounded with no effect on **performance.**

●Bridge Balance
- Method: Automatic
- Ranges (Auto ranging): ± 13000 μ εε Resolution 2.5 μ (0.0012 mV/V)
- Balance time: 8 seconds
- Manual vernier balance range: 0.1 V/Step, **Max ±5 V**

●Calibration
- Two internal shunt calibration resistors, **±0.1% tolerance**
  - 174.8k, 1000 μ ε (0.50 mV/V) 350 Ω bridge; 59.94k,1000 μ ε (0.50 mV/V) 120 Ω bridge.
  - Others range is possible
- Internal selector switches for unipolar shunt **calibration circuits**

- Amplifier
  - Input Impedance : 100M Ω
  - Input Common Voltage : ± 30Vpp
  - Gain Step : 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, **2000 to 5000 by rotary switch setting, Accuracy ±0.1% Max**
  - Gain Linearity : < 0.01% Max
  - Common mode rejection: @ Gain = 1,000
    - DC to 10 kHz, >100 dB
  - Frequency response versus all gain (1~1,000), **10kHz @ -3 dB**
  - Rise Time <0.1μsec
  - Stability (gain over X 100)
    - ± 5 μV/° C, max, RTI (referred to input)
  - Noise (gain over X 100, all outputs)
    - 0.01 to 10 Hz: 25Vp-p RTI

●Filter
- Characteristics
  - Low-pass active four-pole Butterworth standard
  - Frequencies (-3 ± 1dB): 1 Hz, 3 Hz, 50 Hz, **100Hz, 300 Hz, 500Hz, 1k, 3k, 5k, 10kHz and wide-band**

●Input & Output
- 4 Channels per Module
- 8 pin terminal input connector for each sensor input
- Output : Low impedance terminal analog output
- Each Enclosure have IDC 50 pin box **header, Centronic Connector and terminal board for output signal**

●Remote Control
- All Amplifier function can be remote control via **RS-485 with AmpCon60 Windows software, max up to 1024 channels.**

●Operational Environment
- Operation temperature: -10° C ~ 60° C
- Storage: -20° C ~ 70° C
- Humidity: Below 95% RH, non-condensing

●Power Requirement
- Input: 12 VDC ± 10% 15 A

●Dimensions & Weight
- Panel: 1.3" X 5.2" (33.4 X 133.3 mm)
- Amplifier depth behind panel: 10.6" (270 mm)
- Weight: 1.32 Lb (0.6 Kg)

●Optional Accessories
- 6001C. Single-Module enclosure with power supply.
- 6002C. 2- Modules enclosure with power supply.
- 6006C. 6- Modules enclosure with power supply.
- 6012C. 12- Modules enclosure with power supply.