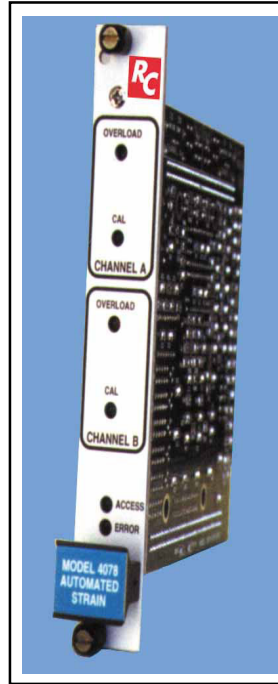


### Description

The Dynamics 4078 next generation dual channel programmable Automated Strain Conditioner uses the latest surface mount technology to produce a simple to use system for voltage excited bridge circuits. The system comes complete with excitation, shunt calibration, bridge completion, auto-balance and span, plus a 4 position/4 pole low pass filter to remove unwanted signals and noise. In addition, four LED indicators instantly notify you of the amplifier's operating condition regarding overload condition, calibration operation, programming activity, and programming errors.

The sensor interface circuits are programmable, with the exception of manually selecting 350 or 120 Ohm bridge completion resistors. Excitation provides 5V or 2.5V to handle both 350 and 120 Ohm strain gages with 10V as an option. Local or Remote sense on the excitation is provided to work with short or long distance connecting wires to the strain gage to insure precision and repeatable measurement. Both 120 and 350 Ohm bridge completion resistors are also built into the 4078 module. This avoids additional configuration requirements, such as soldering, when switching between the two most popular strain gages. Alternatively, higher bridge completion resistors can be installed upon request.

4078 modules are equipped with an Auto-Balance circuit to balance the bridge by removing any unwanted offsets caused by residual strain. A unique Auto-Span feature is provided to let you automatically control the span to produce calibrated output without manual trimpots. The span can be adjusted to 0.001%. Three distinct shunt calibration values, plus one user configurable resistor, set the span.



4078 Dual Channel Strain Card

### Features

- Dual Channel Strain Conditioner
- Bridge Completion for 120 & 350 Ohm Gage
- 4 Step Shunt Calibration
- Local/Remote Sense
- Auto Balance
- Auto Span
- 4 Position Low Pass Filter
- LED Indicators  
Overload  
Cal  
Access  
Error

### Specifications

Strain Amplifier	
Fixed Gain	50, 100, 200, 250, 500, 800, 1000, 2000, 4000
Variable Gain	50-4000
Frequency Response	DC-40 kHz
Common Mode Rejection	80 dB @ 100 Hz
Gain Accuracy	Auto: 0.25% of full scale Fixed: ±2%
Linearity	±0.01%
Input Noise	2 μV rms
Output Noise	1 mV rms

Output	
Voltage Range	±10V @ 25 mA
Output Impedance	50Ω
Short Circuit Protection	Yes
Overload Indicator Settings	5V, 10V

Low Pass Filter	
Type	4 Pole Butterworth
Settings	10 Hz, 500 Hz, 5 kHz, 40 kHz
Accuracy	±20%

Calibration	
Source	100K, 200K, 400K, User
Accuracy	±0.1%

Excitation	
Type	2.5V, 5V (10V optional) @ 60 mA
Accuracy	±0.5%
Remote Sense	Yes
Short Protection	Yes

Bridge	
Gages	120Ω, 350Ω
Completion	Full, 1/2, 1/4
Shunt Resistance	100K, 200K, and 400K, user installed
Accuracy	±0.1%
Stability	±0.1%
Balance Range	120Ω ±30 mV 350Ω ±75 mV

Environmental	
Power Requirements	Maximum: +15V, 90 mA -15V, 40 mA +5V, 300 mA
Operating Temperature	0°C to 50°C