

## Model 2775B Signal conditioner

### Features

- AC, DC and servo outputs
- PE, Isotron® and RCC inputs
- Switchable isolation
- Gain range 0 to 10 000
- Wide frequency response 120 kHz bandwidth (-3dB corner)
- Optional: filter or filter with single/double integration
- Wide full scale input range 0.01 to 100 000 EU
- Wide sensor sensitivity input range from 0.01 to 10 000 mV/EU, RC/EU



### Description

The 2775B accepts two optional input filter modules, models 35771 and 35818. Filter module 35771 is a plug-in 2-pole, butterworth filter that is jumper-configurable for high pass, low pass or band pass filtering – See data sheet 35771 for additional details. Filter integrator module 35818 provides capability for single or double integration of the input vibration signal – See data sheet 35818 for additional details.

Up to 6 model 2775B units can be installed in a 19" rack, Endevco model 4948A.\*

The unit is designed to operated from input power sources of 90-240 VAC/50 Hz to 400 Hz.

Optional software, model 35933, provides RS-232 interface for the Windows® based controlling software to configure up to 20 model 2775B units.

[An RCC is a low noise, two-wire, single-ended device designed for use with piezoelectric accelerometers. This device transforms a transducer's high impedance charge output to a low impedance voltage proportional to the transducer's output charge signal. The output of the RCC connects to the Isotron® input of a signal conditioner. See Model 2771B data sheet.]

\*Model 2775B is not compatible with the 4948 rack.

# Model 2775B Signal conditioner

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## Specifications

### Inputs

Piezo-Electric (PE)	High impedance, single-ended piezoelectric charge mode sensors with one side connected to signal ground.
Maximum charge input	< 100 000 pC
Source resistance	> 10 Meg ohms
Source capacitance	< 30 000 pF
Isotron/RCC type	Piezoelectric with internal electronics, single-ended with one side connected to signal ground, supplying constant current in a two-wire system.
Constant excitation current	4.3 mA default (or 8.5 mA), selected via internal switch (S2) at B position.
Current accuracy	± 0.5 mA
Compliance voltage	< 22 VDC
Maximum input voltage	< 22 VDC (AC + DC components)
Input impedance	100 Meg ohms and 33 000 pF
Calibration	High impedance, single-ended, AC coupled with one side connected to signal ground. This mode is front panel selected.
Input impedance	1 Meg ohms and 10 µF
Frequency response	0.5 Hz to 120 kHz -3dB
Common mode rejection	Minimum -60 dB from 10 Hz to 1 kHz

### Outputs

Type	Single-ended, one side connected to circuit ground. Signal proportional to input.
AC voltage output	10 Vpk
Minimum linear output	40 mA
Maximum current output	20 mV maximum
DC offset	Short circuit protected
Protection	
DC voltage output	Single ended with one side connected to ground. DC output selected via internal switch (S1 at A position which sets percent DC FS output).
Maximum linear output	10 VDC
Maximum current output	20 mA
DC offset	30 mV maximum with gain ≤ 1000
Protection	Short circuit protected
Servo voltage output	Single ended with one side connected to ground.
Output sensitivity	Front panel selectable 0.1 mV/EU, 1.0 mV/EU, 10 mV/EU, or, 100 mV/EU
Minimum linear output	10 Vpk
Maximum current output	30 mA
DC offset	20 mV maximum
Protection	Short circuit protected

### Transfer characteristics

AC & DC outputs	Programmable from 0 to 10 000
Gain range	0.0025, 0 ≤ gain < 10
Resolution	0.025, 10 ≤ gain < 100
	0.25, 100 ≤ gain ≤ 1000
	2.5 gain ≤ 10 000
Gain accuracy	± 0.5% for AC output and ± 1.0% for DC output at 1 kHz, filters disabled
Linearity	±0.1% of full scale, best fit straight line at 1 kHz
Broadband frequency response AC & DC	±5% at 0.5 Hz ±25% (HPF sets 0.5 Hz, -3dB @ 0.16 Hz) or ±5% at 2.0 Hz ±25% (for HPF set at 2 Hz, -3 dB @ 0.66 Hz) to ±5% at 50 kHz, referenced to 1 kHz
Piezoelectric noise	0.01 pC-rms plus 0.0015 pC-rms per 1000 pF of source capacitance referred to input (RTI), or 1 mV rms referred to output (RTO), whichever is greater.

# Model 2775B Signal conditioner (cont.)

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## Specifications

### Transfer characteristics—continued

Isotron noise	10 $\mu$ V-rms referred to input (RTI) or 1 mV-rms referred to output RTO, whichever is greater. (Input is shunted with 249 Ohms 4.7 mA excitation)
Servo output scaling	.1, 1, 10, 100, 1000 (front panel selected)
Plug-in filter characteristics	Filter model 35771 or model 35818 can be enabled or disabled from the front panel.
LP, HP or Band pass card	Model 35771, See PS 35771 for specifics
Integrator card	Model 35818, See PS 35818 for specifics
OutCal	2% accuracy at 170 Hz full scale output
ExtCal	2% accuracy at 1 kHz full scale output
Analog meter	2.5 inch analog meter displays the measured percent of full scale DC output.

### Environmental

Temperature	
Operating	32°F to +122°F (0°C to 50°C)
Storage	-40°F to + 185°F (-40°C to + 85°C)
Humidity	0 to 90% non-condensing

### Power

Voltage requirements	100 – 240 VAC, 50 to 400 Hz (universal input)
Power dissipation	0.135 mA @ 120 VAC, typical
Isolation	
Input to output signal grounds	Isolated - front panel selectable
Input to output case ground	Isolated
Output signal ground to case ground	No isolation as default (internal switch selectable S3)

### Physical

Dimensions	5.0" x 2.78" x 13" (12.7 cm x 7.1 cm x 33 cm)
Weight	4 lbs typical (1.8kg)
Case material	Aluminum
Rear connectors	
Sensor input	BNC
ExtCal	BNC
AC output	BNC
DC output	BNC
Servo output	BNC
Power input	AC: IEC 320 Inlet (male)
RS-232	RJ-11 jack
	Pin 1: Analog ground
	Pin 2: TX (connects to RX in computer)
	Pin 3: Not used
	Pin 4: RX (connects to TX in computer)
	Pin 5: Digital ground
	Pin 6: Digital ground

### Accessories

P/N	Description
EJ21	Microdot to BNC adapter
EW599	IEC 320 AC power cord
IM2775B	Instruction manual

### Optional accessories

P/N	Description
35771	Filter card
35818	Filter integrator card
EJ807	Serial DB9F to RJ-11 adapter
EW1027	7 ft. 6P4C cable with RJ-11 modular plugs straight pinning
EW1077	2 ft. 6P4C cable with RJ-11 modular plugs straight pinning
EJ822	RJ-11 splitter
35933	Application software

### Notes

Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.



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1007

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