



Signal Conditioner

**ENDEVCO
 MODEL
 2775A**

Model 2775A

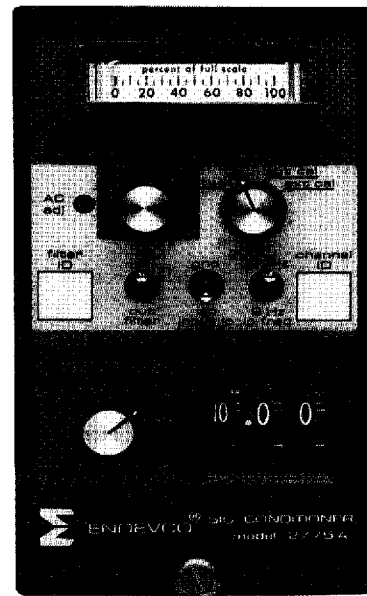
- Multi-use, Wide Dynamic Range, Low Noise Signal Conditioner
- PE, ISOTRON® and Remote Charge Convertor Inputs
- AC, Servo and DC Outputs
- Isolated Input
- Optional Filter or Integrator

DESCRIPTION

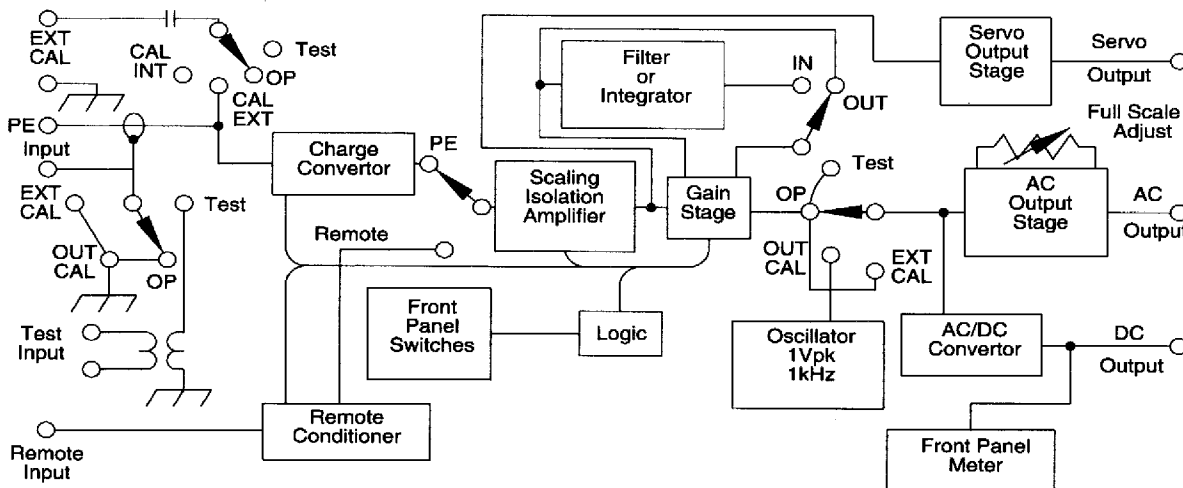
The ENDEVCO® Model 2775A general purpose signal conditioner is easy to use and provides the flexibility for a wide range of testing applications. The front panel displays the settings and status of the unit. The unit provides system features of external calibration, output calibration and end-to-end testing.

The Model 2775A provides conditioning for two types of input signals: The standard PE input is compatible with a wide range of accelerometers covering the range of 0.1 to 1099 pC/g. The constant current (0.5 to 20 mA) excitation allows the 2775A to accept signals from ISOTRON (integral electronic) transducers and remote charge convertor preamplifiers.

The Model 2775A provides three standard outputs: The AC output is front panel adjustable from 1 - 10V pk Full Scale with 85 mA current to drive large capacitive loads. The servo output provides 10 or 100 mV/g pk selectable by an internal jumper. The DC output provides a 10VDC full scale output to drive X-Y plotters, strip chart recorders, etc. A front panel meter is provided to display percent of full scale, and is driven by the DC output. All outputs are buffered and short circuit protected. The Model 35771 plug-in filter card provides two pole Butterworth filtering in low pass or band pass configuration. The ENDEVCO Model 35818 integrator plug-in card provides velocity and displacement outputs.



Not actual size



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SPECIFICATIONS

INPUTS

PIEZOELECTRIC (PE) INPUT	Single-ended with one side connected to input common
Input Charge	3000 to 110 000 pC maximum depending on gain for instantaneous recovery
Source Resistance	10 MΩ minimum
Source Capacitance	30 000 pF maximum

ISOTRON INPUT	Single-ended with one side connected to input common. Compatible with constant current systems using 2 wire remote charge converters, or integral electronic transducers
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Constant Current Excitation Supply	Adjustable from 0.5 to 20 mA DC with control located on main circuit board, factory set at 4 mA
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Compliance Voltage	21 V maximum (AC + DC components)
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GROUNDING INPUT MODE	The input common is connected to output common
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ISOLATED INPUT MODE	This input allows the insertion of a signal in series (transformer coupled) with the resistance in shunt with 600 pF maximum capacitance
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Common Mode Voltage	6 V pk maximum to meet all specifications 500 V pk absolute maximum without damage
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Maximum Common Mode Sensitivity	400 Hz to 1000 Hz, 0.025 pC/V RTI or 0.25% of F.S. per volt RTO, whichever is greater. 5 Hz to 399 Hz, 0.02 pC/V RTI or 0.1% of F.S. per volt RTO, whichever is greater.
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Long Term Specification (6 months w/o adjustment)	5 Hz to 1000 Hz, 1pC/V RTI or 1.0% of Full Scale RTO, whichever is greater.
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TEST INPUT	This input allows the insertion of a signal in series (transformer coupled) with the cable and the PE transducer. The signal level may be any voltage which will give a convenient reading at the output. The test frequency must be between 100 and 10 000 Hz
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EXTERNAL CALIBRATION INPUT	An external calibration signal may be applied to the charge converter input through an internal capacitor of 1000 pF ±0.5%
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Input Voltage Level	To obtain F.S. output, the voltage input in mV should be $V_{in}[mV] = FS \times S$ where FS is the full scale setting and S is the sensitivity setting
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OUTPUTS: All outputs are short-circuit protected, single-ended with one side connected to output common

AC OUTPUT

Full Scale Voltage	1 V pk to 10 V pk adjustable. Linear to 12 V pk. Factory set at 10 V pk.
Output Current	85 mA pk maximum
Output DC Offset	20 mV maximum, < 5 mV typical

DC OUTPUT	This output is proportional to the peak average of the AC output signal
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Full Scale Output Voltage	10 VDC
Output Current	3 mA DC maximum
Output Offset Voltage	30 mV DC maximum < 5 mV DC typical

SERVO OUTPUT

Output Sensitivity	Internally selectable 10 mV/g, 100 mV/g
Linear Output	12 V pk maximum from 1 Hz to 20 KHz
Output Current	3 mA pk maximum over specified frequency range
DC Offset	17 mV maximum, < 5 mV typical

TRANSFER CHARACTERISTICS

GAIN RANGE	.03 to 1000
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GAIN ACCURACY	±1.5% of F.S. maximum, with filter disabled
Input to AC, DC or Servo Output	±3% of F.S. maximum, with filter disabled

NOISE	PE input open circuit, a 250 Ω resistor is connected to the remote input and the current adjustment set to 4mA
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PE Input/AC Output Noise	0.015 pC maximum rms plus 0.0015 pC rms per 1000 pF of source capacitance RTI or 1 mV rms RTO, whichever is greater
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PE Input/ AC Output Low Frequency Noise	Less than 15 mV pk-pk RTO with 100 mV/pC gain, from 0.01 Hz to 100 Hz
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Remote Input/AC Output Noise	<table border="1"> <tr> <td>Full Scale</td> <td>1</td> <td>3</td> <td>10</td> <td>30</td> <td>100</td> <td>300</td> <td>1k</td> <td>3k</td> <td>10k</td> <td>30k</td> </tr> <tr> <td>Noise mV rms</td> <td>5.0</td> <td>2.0</td> <td>5.0</td> <td>2.0</td> <td>5.0</td> <td>0.7</td> <td>0.7</td> <td>0.5</td> <td>0.5</td> <td>0.5</td> </tr> </table>	Full Scale	1	3	10	30	100	300	1k	3k	10k	30k	Noise mV rms	5.0	2.0	5.0	2.0	5.0	0.7	0.7	0.5	0.5	0.5
Full Scale	1	3	10	30	100	300	1k	3k	10k	30k													
Noise mV rms	5.0	2.0	5.0	2.0	5.0	0.7	0.7	0.5	0.5	0.5													

Meter Deflection (Independent of input type)	1% maximum
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Servo Output (Independent of input type)	10 mV/g servo output sensitivity setting
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Sensitivity Multiplier	0.1	1	10	100
Noise mV rms	20	2	0.3	0.2

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TRANSFER CHARACTERISTICS--continued FULL SCALE RANGES

Sensitivity Multiplier	Full Scale Ranges, g pk					
	100	300	1k	3k	10k	30k
0.1	100	300	1k	3k	10k	30k
1	10	30	100	300	1k	3k
10	1	3	10	30	100	300
100	1	3	10	30		

FREQUENCY RESPONSE

The gain is flat within its bandwidth. At the lower and upper cutoff frequency the gain is 5% lower than the gain at 1 kHz.

Piezoelectric Mode

Lower Cutoff Frequency, AC and DC Outputs

Low frequency switch set at < 0.5 Hz 0.5 Hz \pm 0.1 Hz,
 -3 dB at 0.2 Hz maximum
 Low frequency switch set at 2 Hz 2.1 Hz \pm 0.5 Hz,
 -3 dB at 0.5 Hz maximum

Upper Cutoff Frequency, AC and DC Outputs

The upper cutoff frequency depends on the full scale setting as follows:

Full Scale	1	3	10	30	100	300	1k	3k	10k	30k
-5% f [kHz] minimum	25	30	25	30	40	30	50	50	50	50

Remote Mode

Lower Cutoff Frequency, AC and DC Outputs

Independent of low frequency switch position

-5% at 0.5 Hz maximum
 -3 dB at 0.2 Hz maximum

Upper Cutoff Frequency, AC and DC Outputs

The upper cutoff frequency depends on the full scale setting as follows:

Full Scale	1	3	10	30	100	300	1k	3k	10k	30k
-5% f [kHz] minimum	24	24	24	24	30	35	70	70	70	70

AMPLITUDE LINEARITY

Input to All Outputs

1% of reading from best fit straight line approximation

Input to Meter

\pm 3% of full scale from best fit straight line from 0 to full scale

OUTPUT CALIBRATION MODE

This mode is selected from the front panel switch. A calibration voltage is provided at the AC and DC outputs. The amplitude represents 100% of full scale, regardless of range or sensitivity control settings.

Voltage Accuracy

\pm 1% of full scale

Frequency

1000 Hz \pm 5%

ENVIRONMENTAL

TEMPERATURE RANGE

Operating 36°F to 125°F (2°C to 52°C)
 Storage -65°F to 185°F (-54°C to 85°C)

HUMIDITY

95% R.H. maximum

POWER

INPUT VOLTAGE

Selectable through a switch located on the main board
 90 - 110 V rms
 105 - 125 V rms
 210 - 250 V rms

FREQUENCY RANGE

40 to 400 Hz

CURRENT

100 mA rms maximum at 115 V rms, 60 Hz

PHYSICAL

DIMENSIONS

4.88" h x 2.71" w x 15.81" d (12.4cm x 6.9cm x 40.2cm)

WEIGHT

4.5 lbs (2.1 kg)

CONNECTORS

PE input 10 - 32 Microdot®
 Remote input and outputs BNC, UG 1094/U or equivalent

ACCESSORIES

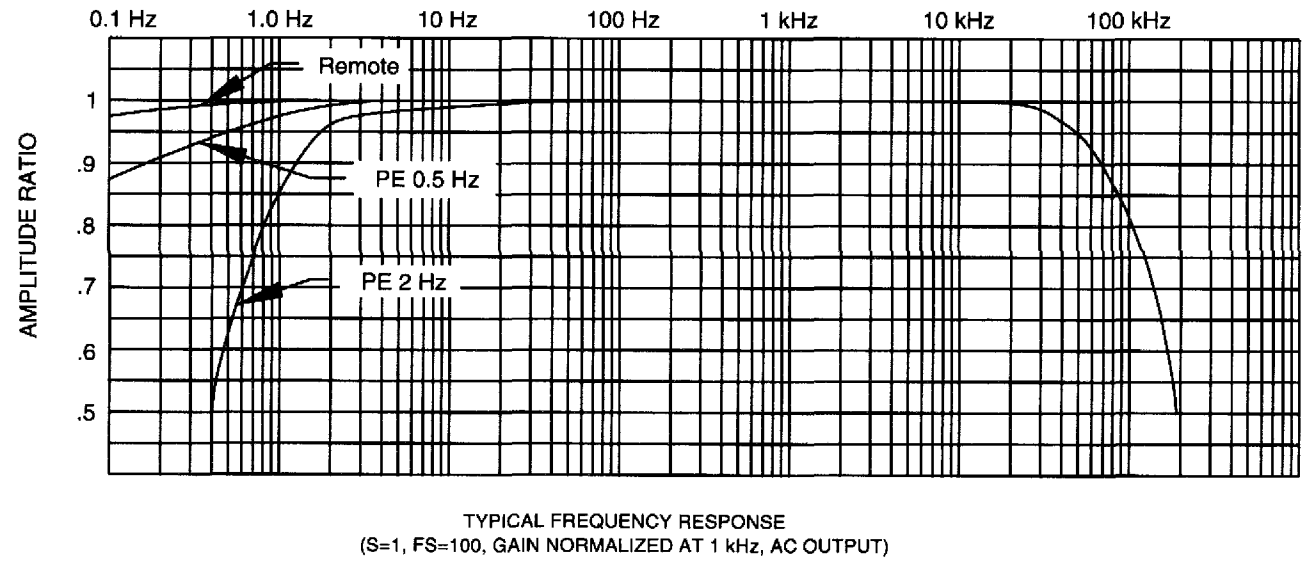
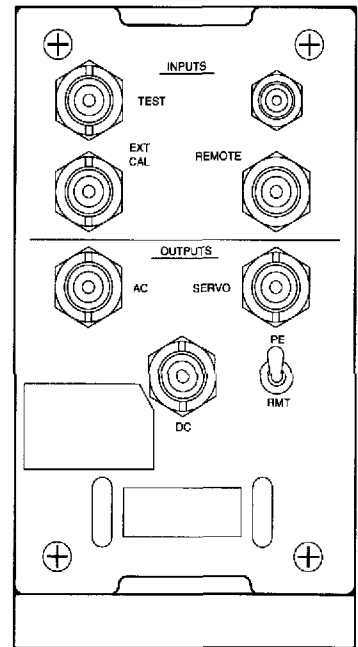
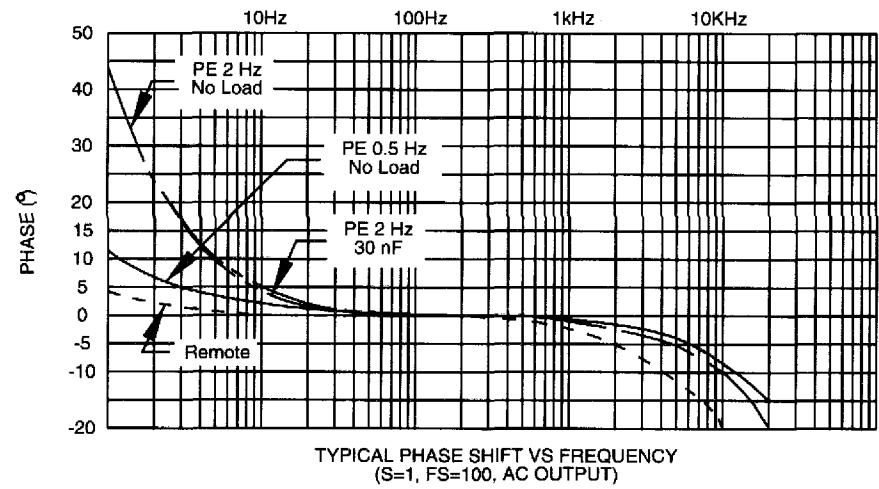
17180 Power Cord (17180V for 230 V operation)
 EJ21 BNC to Microdot™ Connector Adapter
 IM2775A Instruction Manual

OPTIONAL ACCESSORIES

35771 Filter Card
 35818 Integrator Card
 4948 Rack Adapter (1 per 6 each Model 2775A/2775AM4)
 16678 Blank Panel

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Continued product improvement necessitates that Endevco reserve the right to modify these specifications without notice. Endevco maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. These measures, together with conservative specifications have made the name Endevco synonymous with reliability.