

Model 200 Frequency to Analog Convertor

- The unique range selection design permits full scale frequency range selections from 0 to 12.5 Hz to 0 to 12 kHz
- Convenient simple calibration via DIP switches
- 4-20 mAdc output is compatible with standard process instrumentation
- Repeater pulse output, frequency out equal to frequency in
- Solid state modular plug-in design
- Integral power supply
- Base mounted on a 35 mm track or mounting plate
- Standard NEMA 1 enclosure or optional NEMA 4 wall mounted weatherproof enclosure
- Optional 3-1/2 digit display may be set for percent or direct engineering units

DESCRIPTION

The Brodie Model 200 Frequency-to-Analog Converter accepts a frequency input signal (TTL compatible) and converts this input frequency to a linear analog current output of 4-20 mAdc capable of driving standard process instrumentation. The standard model has an integral 12 Vdc, 120 mA power supply to power accessory equipment. The basic converter is completely solid state in design utilizing plug-in circuit boards and is packaged in a NEMA 1 enclosure. The instrument is available with an optional NEMA 4 weatherproof enclosure. In addition, the converter is available with a locally mounted 3-1/2 digit liquid crystal display enclosed with the converter in the NEMA 4 enclosure.

PRINCIPLE OF OPERATION

The Brodie Model 200 Converter utilizes a straight forward conversion technique whereby every input pulse triggers a measuring length and amplitude. The pulse triggers a measuring length and amplitude. The measuring pulse series then passes to a filter network where the arithmetic mean value is produced and converted into a dc current directly proportional to the input frequency.



Model 200 - Standard NEMA 1 Enclosure



Model 200 - Optional NEMA 4 Enclosure



Model 200 - Optional Digital Indicator and NEMA 4 Enclosure

SPECIFICATIONS

⚠ WARNING

Do not operate this instrument in excess of the specifications listed below. Failure to heed this warning can result in serious personal injury and/or damage to the equipment.

Input

Pulse signals, TL level, "Low" +1.3 V; "High" +2.7 V
Maximum amplitude +100 V or -100 V

Input Indicator

Red LED illuminates with each input pulse

Input Frequency Range

10 full scale ranges, selectable by DIP switches

12.5 - 25 Hz	100 - 200 Hz	1600 - 3200 Hz
25 - 50 Hz	200 - 400 Hz	3200 - 6400 Hz
50 - 100 Hz	400 - 800 Hz	6400 - 12000 Hz
	800 - 1600 Hz	

Adjustments

DIP switches, with zero and span potentiometers

Output 1

Analog 4 - 20 mA for the desired frequency range

Load

Maximum 10 V (500 ohm); Maximum no load voltage 15V

Time Constant

With a 100 ohm load = 1.1 seconds (2 sec. from 0 - 90% full scale)
With a 500 ohm load = 3.6 seconds (8.5 sec. from 0 - 90% full scale)

Linearity

Better than 0.1% of full scale

Accuracy

0.2% of measured value

Temperature Drift

0.2% per 10°C of measured value

Output 2

Repeater pulse; Square wave repeating the input signal

Auxiliary Voltage Output

12 Vdc, 120 mA

Operating Temperature

0°C to 50°C (32°F to 120°F)

Storage Temperature

-10°C to +80°C (-14°F to 175°F)

Supply Voltage

220 Vac or 110 Vac $\pm 15\%$, 50 to 60 Hz or 117 Vac +10% -15%, 50 to 60 Hz approximately 7 VA, internally protected with fuse type M 0.1 amp

Housing

Makrolon plastic for mounting on standard 35 mm rail or via 2 holes

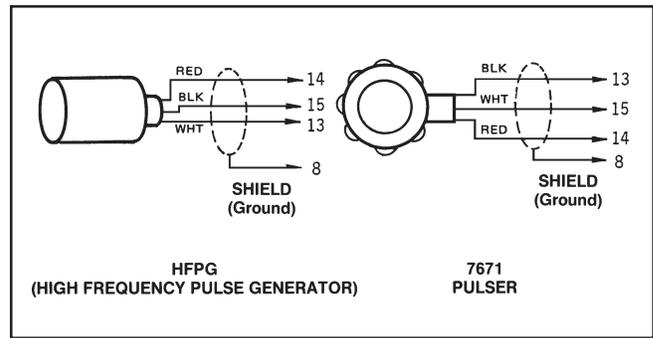


Figure 1 Typical Wiring Connections - External Devices

Connection Terminals

Maximum = No. 12 AWG

Weights

Approximately 1.8 lbs. (0.8 kg), approximately 3.6 lbs. (1.6 kg) with NEMA 4 enclosure

OPTIONAL DIGITAL INDICATOR

Accuracy

$\pm 0.1\%$ of full scale; ± 1 count

Maximum number of Display Counts

1,999

Stability

± 1 count (max.)

Sampling Speed

Approximate 2.5 times/sec.

Variable Full Scales Counts

100 to 1,999

Variable Offset Counts

± 200

Voltage Drop

2.9 V (at 20 mA) typical; 2.5 V (at 4 mA) Typical

Display

LCD 3-1/2 digit; Character height: 12.7 mm, (0.500 inch)

External Control

A decimal point selection to any position

Working Temperature

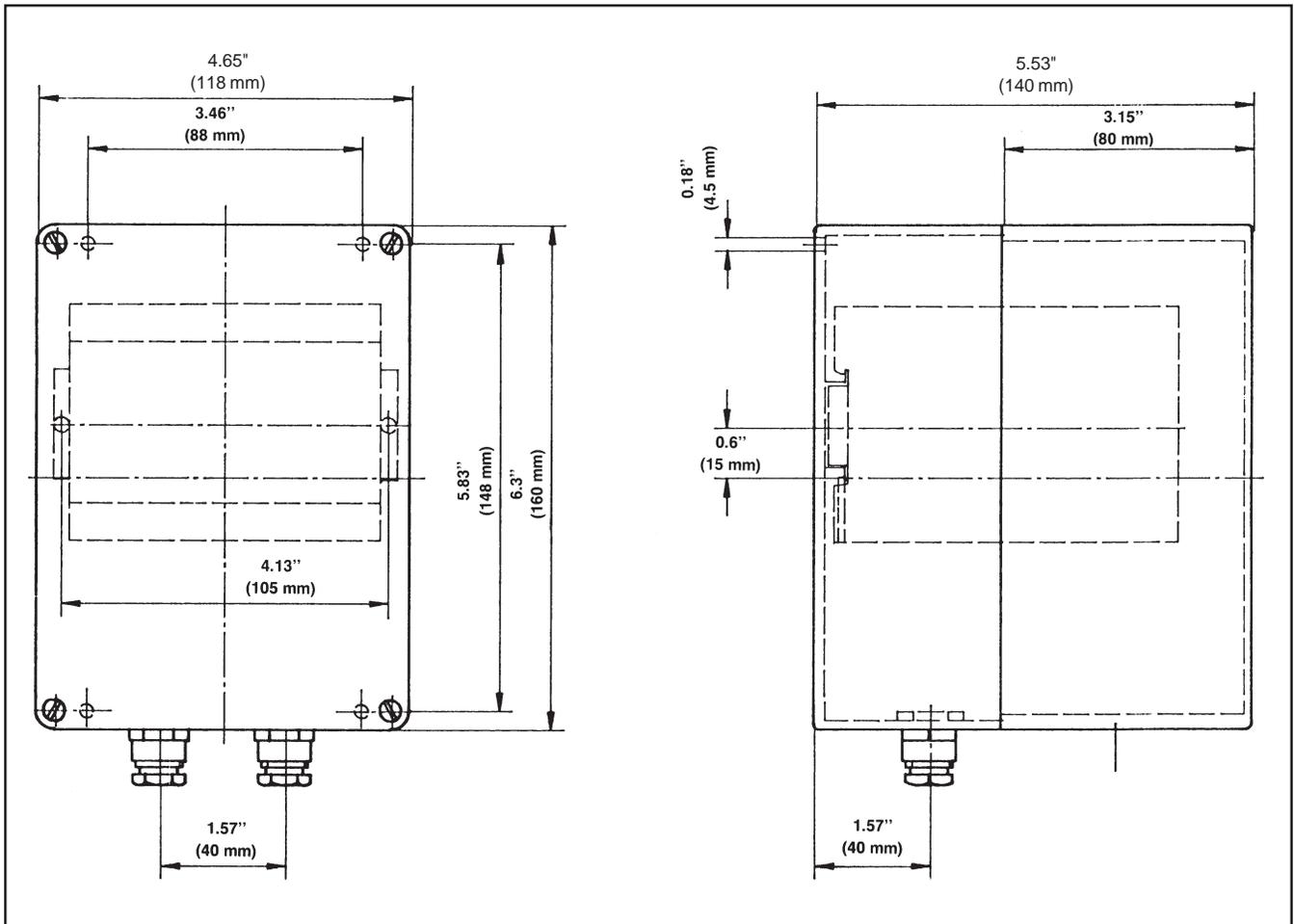
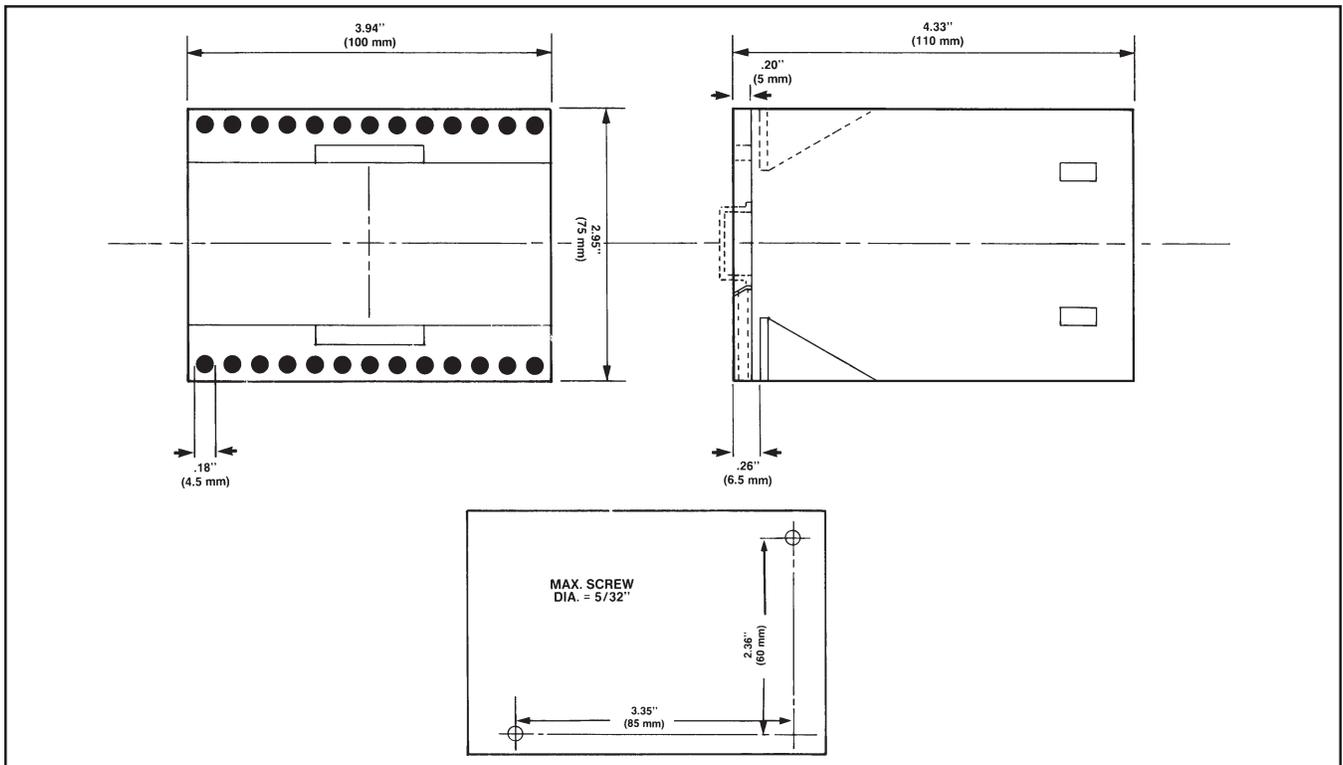
0°C to 50°C (32°F to 120°F)

Power Supply

Operated by input current

ORDERING INFORMATION

<u>Part Number</u>	<u>Description</u>
159495	NEMA 1
159495-001	NEMA 4
159495-002	NEMA 4 with Display



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