MODEL PCM

AC Current Transducer

0-300 Amps AC
to produce 4-20 mA DC

PCM 5 - 200   *PCM 5 - 300*

REGULATORY AGENCY APPROVALS

317008, **CANADIAN**ᶜ 317008

Operating Range

Input 0-5 thru 300 Amps ac.
Output: 4-20 mA dc.

Frequency

50-400 Hz.

Ambient Temperature Range

Effect on accuracy ± 0.04 %/°C
Operating: -30°C to +60°C
Storage: -55°C to +85°C

Insulation level

600 Volts, 10 kV BIL full wave

Continuous Thermal Current Rating Factor

1.33 at 30°C ambient.*

* 6.00 times rated current for 30 seconds.

Accuracy

± 0.05 % F.S. maximum.

1 % maximum to peak ripple on dc output. peak ripple on output.

- Output load (RL): 0-600 ohms.
- Maximum output: 30 mA dc.
- Supply Voltage Range: 24V dc + 10 %.
- Response Time: <200ms (10 %-90 %)
- Repeatability: <0.1 %
- PCM 5- 200 terminal are brass screws No. 10-32 with one flatwasher, lockwasher and regular nut.
- PCM 300 terminal are brass studs No. 8-32 with one flatwasher, lockwasher and nut.

Approximate weight 1.5 lbs

The PCM transducer accurately converts a sinusoidal ac input to a proportional dc current. The high performance integrated circuit amplifiers achieve a contestant current output, insensitive to a variable impedance load. This allows the PCM to be easily applied to remote instrumentation, motor control, and energy management installations. The input circuit is average responding. The output require 24V dc to be applied between the (+) terminal and ground. The output load may be inserted in either the (-) line for a negative ground system. Power supply polarity is critical for correct operation, but an accidental reverse polarity connection will not damage the output. Several transducers can be operated from a single power supply with the only limitation being the maximum current available from the supply itself.

(Example: a one Amp supply will support 50 transducers operating at 20mA dc output.) The maximum output is limited to 30mA dc to prevent damage to external components.

CAUTION:

Some consideration should be given to the ripple content of the external power supply. Any ripple introduced by the power supply will appear at the load resistor.
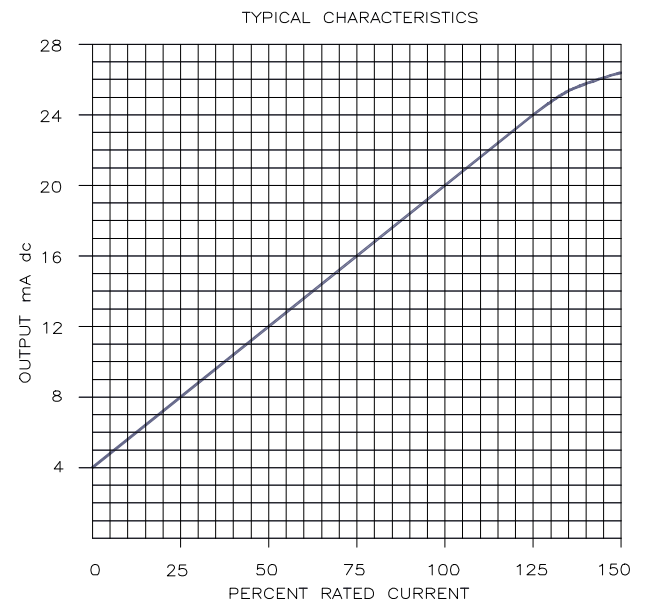
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Model PCM

MODEL NUMBER	INPUT CURRENT RANGE
PCM 5	0 - 5
PCM 10	0 - 10
PCM 20	0 - 20
PCM 30	0 - 30
PCM 50	0 - 50
PCM 75	0-75
PCM 100	0 - 100
PCM 150	0 - 150
PCM 200	0 - 200
PCM 300	0 - 300

For load currents which are greater than 600A the PCL-5 may be used in conjunction with separate higher ratio C.T.'s having a rated 5A secondary.
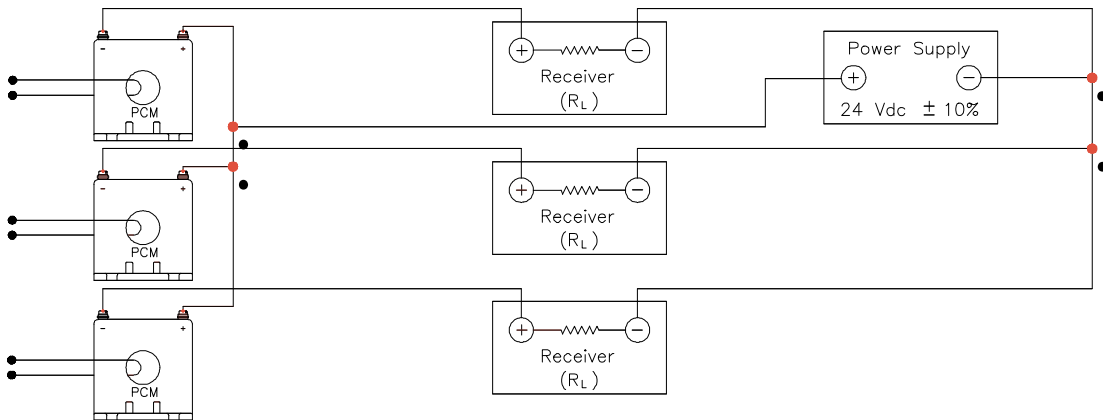
TYPICAL CHARACTERISTICS

Applications Notes

Application #1 Monitoring Loads 300 Amps or Less
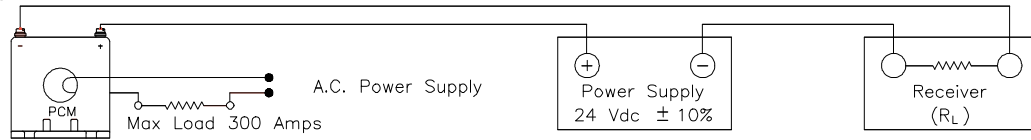
Application #2 Monitoring Loads from a Current Transformer Secondary
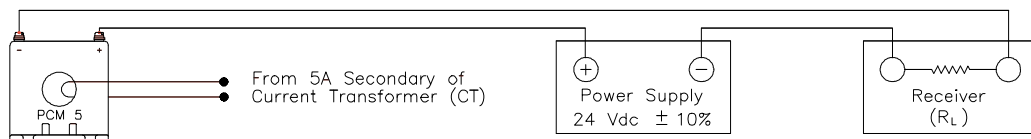
Example

When used with a 2000:5 CT $I_{in} = 2000 \times \left(\dfrac{I_o - 4}{16}\right)$

If $I_o = 10\text{mA}$ then $I_{in} = 2000 \times \left(\dfrac{10 - 4}{16}\right) = 750$ amps

Application #3 Energizing multiple transducers from a single power supply

Application

Calculating $I_{in} = $ = ac Amps measured

I_o = mA dc out of PCL

Rated Input CT Primary Rating (when monitoring a CT)

Rated Input PCL Primary Rating (when monitoring direct)

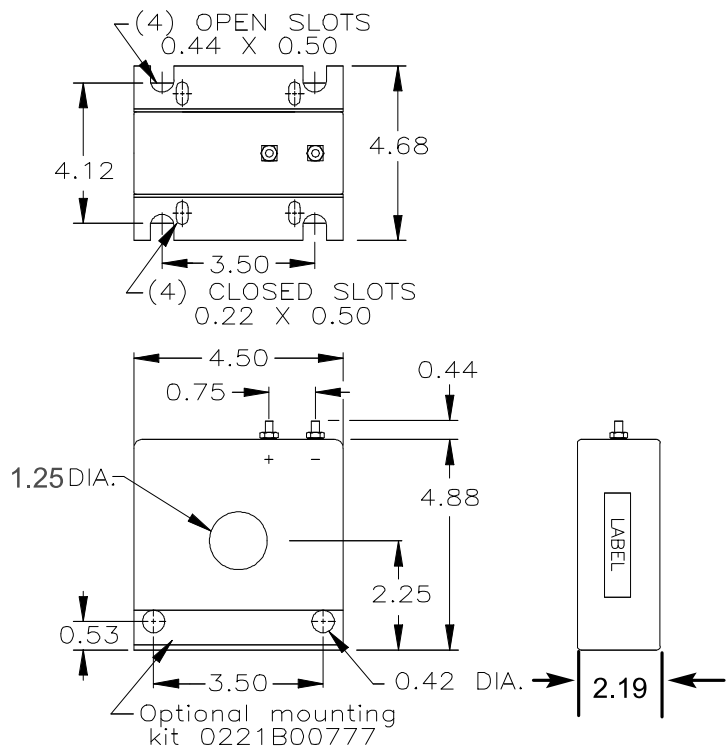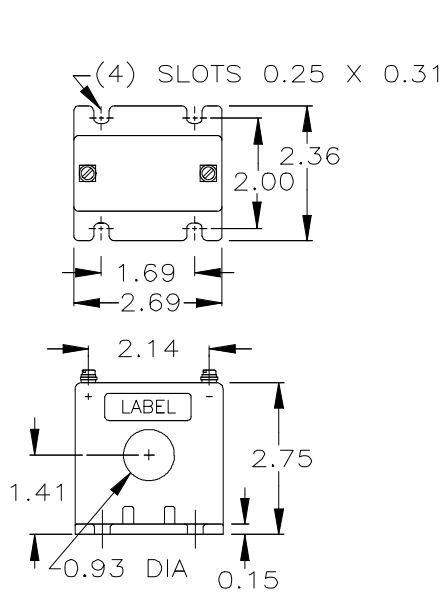Where: $I_{in} = $ Rated input $X\left(\dfrac{I_o - 4}{16}\right)$

NOTE: Output current of each PCM is limited to 30mA max. From this the required by using capacity of the D.C. supply can be calculated by multiplying the total number of PCM's times 0.03A to find the maximum requirement output capacity of the supply. It is possible to achieve an output close to full scale increase output resolution by using multiple turns through the window of the PCM. The following equation would apply:

$$I_{in} = \frac{\text{Rated input Amps}}{\text{No. of Turns}} \times \left(\frac{I_o - 4}{16}\right)$$

EXAMPLE: A PCM 5 Is used with two turns and is monitoring a 2A load.

If $I_o = 16.8 \text{ mA}$ then $I_{in} = \dfrac{5}{2} \quad X \quad \left(\dfrac{16.8 - 4}{16}\right) = 2$ Amps

Dimensions

(4) SLOTS 0.25 X 0.31

2.36
2.00
1.69
2.69

2.14
LABEL
+
2.75
1.41
0.93 DIA
0.15
+

(4) OPEN SLOTS
0.44 X 0.50

4.12
4.68
3.50

(4) CLOSED SLOTS
0.22 X 0.50

4.50
0.75
0.44
1.25 DIA.
4.88
+ −
2.25
0.53
3.50
0.42 DIA.
Optional mounting
kit 0221B00777

LABEL
2.19

**Do not apply around or remove
from Hazardous LIVE conductors.**

Cleaning:

Remove dust with a damp cloth. Do not spray with any chemicals.

Caution:

Proper safety precautions must be followed during installation by a trained electrician. Never install or remove while bus is energized. Protective equipment must be used if hazardous parts in the installation where measurement is tobe carried out could be accessible.

For more information, visit
gevernova.com/grid-solutions

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