

# Loop powered, integral cable sensors

## PCC423 series



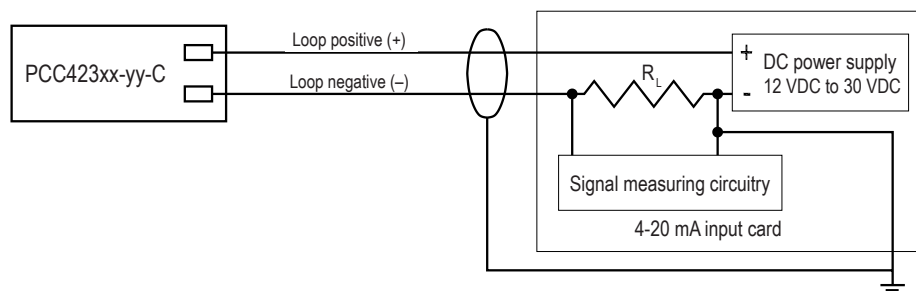
**Table 1: PCC423xx-yy-C model selection guide**

| xx (4-20 mA output type)                          | yy (4-20 mA full scale)                                                                                             | C (cable type)                                      |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| AR = acceleration, RMS<br>AP = acceleration, peak | 05 = 5 g (49 m/sec <sup>2</sup> )<br>10 = 10 g (98 m/sec <sup>2</sup> )<br>20 = 20 g (196 m/sec <sup>2</sup> )      | J9T2A = shielded, twisted pair cable, high temp     |
| VR = velocity, RMS<br>VP = velocity, peak         | 05 = 0.5 ips (12.8 mm/sec)<br>10 = 1.0 ips (25.4 mm/sec)<br>20 = 2.0 ips (50.8 mm/sec)<br>50 = 5.0 ips (127 mm/sec) | J10 = shielded, twisted pair cable, general purpose |

### Key features

- Choice of true RMS or calculated peak output (in acceleration or velocity units)
- Other connector options available (PCC421 models)
- Enables continuous trending of machine vibration
- Manufactured in an approved ISO 9001 facility

### PCC423xx-yy-C wiring



### Certifications



Note: Due to continuous process improvement, specifications are subject to change without notice.  
This document is cleared for public release.

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### SPECIFICATIONS

|                                             |                                    |
|---------------------------------------------|------------------------------------|
| Output, 4-20 mA                             | see Table 1 on page 1              |
| Full scale, 4-20 mA, ±5%                    | selectable (see Table 1)           |
| Frequency response, 4-20 mA                 | see Table 2, below                 |
| Repeatability                               | ±2%                                |
| Transverse sensitivity, max                 | 5%                                 |
| Power requirements (2-wire loop power):     |                                    |
| Voltage at sensor terminals                 | 12 - 30 VDC                        |
| Loop resistance <sup>1</sup> at 24 VDC, max | 700 Ω                              |
| Turn on time, 4-20 mA loop                  | <30 seconds                        |
| Grounding                                   | case isolated, internally shielded |
| Temperature range                           | -40° to +105°C                     |
| Vibration limit                             | 250 g peak                         |
| Shock limit                                 | 2,500 g peak                       |
| Sealing                                     | hermetic                           |
| Sensing element design                      | PZT ceramic / shear                |
| Weight                                      | 145 grams (excluding cable)        |
| Case material                               | stainless steel                    |
| Mounting <sup>4</sup>                       | 1/4-28 captive screw               |
| Cabling                                     | J9T2A or J10 (see Table 1)         |

Accessories supplied: Mounting screw; calibration data (level 2)

| Connections       |             |
|-------------------|-------------|
| Function          | Cable color |
| loop positive (+) | white       |
| loop negative (-) | black       |
| ground            | shield      |

**Notes:** <sup>1</sup> Maximum loop resistance ( $R_L$ ) can be calculated by:

$$R_L = \frac{V_{DC \text{ power}} - 10 \text{ V}}{20 \text{ mA}}$$

| DC supply voltage | $R_L$ (max resistance) <sup>2</sup> | $R_L$ (minimum wattage capability) <sup>3</sup> |
|-------------------|-------------------------------------|-------------------------------------------------|
| 12 VDC            | 100 Ω                               | 1/8 watt                                        |
| 20 VDC            | 500 Ω                               | 1/4 watt                                        |
| 24 VDC            | 700 Ω                               | 1/2 watt                                        |
| 26 VDC            | 800 Ω                               | 1/2 watt                                        |
| 30 VDC            | 1,000 Ω                             | 1/2 watt                                        |

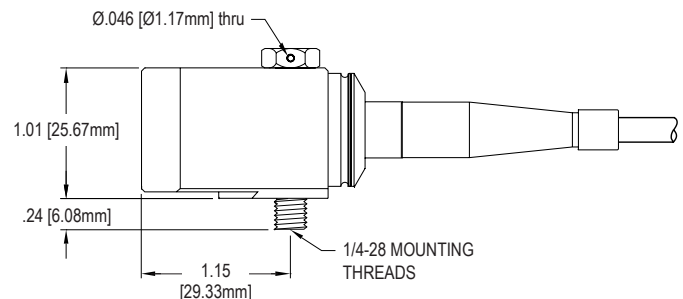
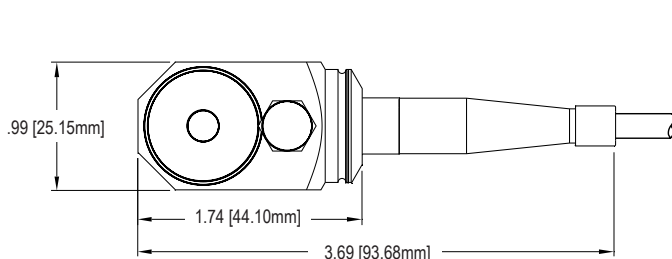
<sup>2</sup> Lower resistance is allowed, greater than 10 Ω recommended.

<sup>3</sup> Minimum  $R_L$  wattage determined by:  $(0.0004 \times R_L)$ .

<sup>4</sup> M6 mounting screw available by request.

**Table 2: PCC423 frequency response**

|              |        |                |
|--------------|--------|----------------|
| Acceleration | ± 10%  | 10 Hz - 1 kHz  |
|              | ± 3 dB | 1 Hz - 2 kHz   |
| Velocity     | ± 10%  | 10 Hz - 1 kHz  |
|              | ± 3 dB | 3.5 Hz - 2 kHz |



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