

CAPACITIVE DRIVER

CPL490

Elite Series

- Highest resolution
- Widest bandwidth (50 kHz)
- Five-element range indicator
- Zero adjust
- Front-panel BNC analog output
- Differential output to National Instruments 68-pin connector
- Uses 2nd Generation Probes

Specifications

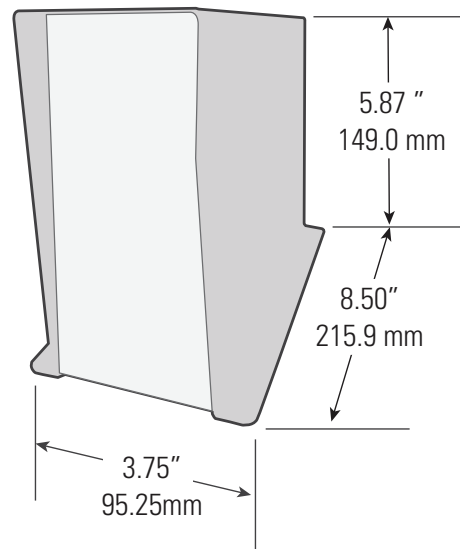
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|---------------------------|---|
| Resolution ¹ : | 0.0004% @ 1 kHz |
| | 0.0007% @ 15 kHz |
| | 0.002% @ 50 kHz |
| Selectable Bandwidth: | 1, 10, 15, 50 kHz |
| Linearity ² : | <0.2% F.S. typical |
| Max Drift: | 0.02-0.04% F.S./°C |
| Operating Temp: | 15-40°C |
| Front-Panel BNC: | ±10V, 0Ω 10mA max |
| Rear-Panel National Inst: | ±10V, 0Ω Differential |
| Multiple Channels: | Up to 3 per enclosure (Contact Lion Precision for more than 3) |

1. Dependent on probe, range, and bandwidth. See next page for details.

2. Dependent on probe and range. See next page for details.

Listed [specifications](#) assume a two meter probe cable: Flat measurement area diameter at least 1.3 times larger than the Sensing Area with no customizations.

The CPL490 uses 2nd Generation probes.



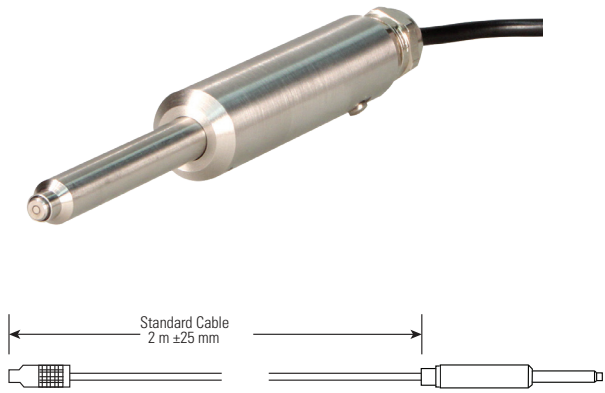
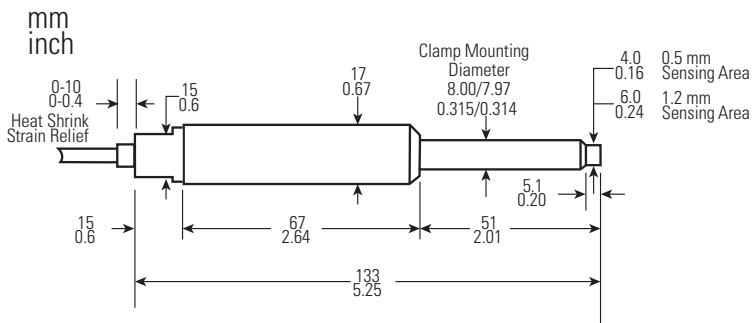
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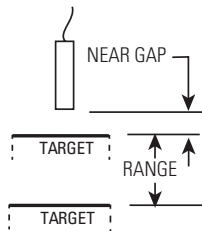
Second Generation Probes

- The CPL490 uses 2nd Generation Capacitive Probes which include electronics in the probe housing.
- The probes are mounted by the 8mm diameter probe body extending from the larger housing.
- Two models are available differing only in the sensing area diameter and associated measurement ranges.

2G-C8-0.5: 0.5 mm sensing area
 2G-C8-1.2: 1.2 mm sensing area



Sensing Area



CPL490 Probe Measuremen Ranges and Resolutions

| Sensing Area Diameter mm (Probe Model) | Range Type | Range μm / mils | Near Gap μm / mils | 1 kHz nm / μin | 10 kHz nm / μin | 15 kHz nm / μin | 50 kHz nm / μin | Probe Max. Drift % FS/°C |
|--|------------|----------------------------|-------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|--------------------------|
| 0.5 (2G-C8-0.5) | Fine | 10 / 0.4 | 20 / 0.8 | 0.05 / 0.002 | 0.07 / 0.003 | 0.09 / 0.004 | 0.26 / 0.010 | 0.04 |
| | Standard | 50 / 2.0 | 25 / 1.0 | 0.17 / 0.007 | 0.27 / 0.011 | 0.35 / 0.014 | 1.0 / 0.040 | 0.02 |
| | Extended | 100 / 4.0 | 50 / 2.0 | 0.38 / 0.015 | 0.80 / 0.31 | 1.0 / 0.039 | 3.3 / 0.14 | 0.03 |
| 1.2 (2g-C8-1.2) | Fine | 50 / 2.0 | 25 / 1.0 | 0.15 / 0.006 | 0.20 / 0.008 | 0.22 / 0.009 | 0.63 / 0.25 | 0.02 |
| | Standard | 100 / 4.0 | 50 / 2.0 | 0.33 / 0.013 | 0.40 / 0.016 | 0.52 / 0.021 | 1.7 / 0.065 | 0.02 |
| | Ultrafine | 200 / 8.0 | 100 / 4.0 | 0.68 / 0.027 | 1.0 / 0.040 | 1.3 / 0.050 | 3.8 / 0.15 | 0.02 |

Range is determined by the sensing area diameter. The larger the diameter, the larger the range. Flat target surface must be 1.3 times larger than the sensing area diameter.