Pedal Effort Force Sensor

For Vehicle Brake Development, Driveability & Handling Test Applications

Highlights

- High overload protection (500% of FS)
- Compact, with a 1.19 in (30.2 mm) overall height
- Easy to install and remove
- Temperature-compensated from +30 to +130 °F (-1 to +54 °C)
- Standard capacities of 100, 200, & 300 lbf (0.44, 0.89, & 1.33 kN)

Applications

- Driveability
- Vehicle Handling
- Transmission Shift Quality
- Legislative & Safety Testing
- Vehicle Brake Development

Model 1515-106-02A

PCB Load & Torque Division Series 1515-106 Pedal Effort Force Sensors are designed to measure load applied to the brake, accelerator, and clutch pedals during acceleration, deceleration, and transmission shift events. The units are compact and light weight, making them easy to install and remove. These sensors also have a high overload protection (500% of FS) which prevents damage to the sensor in the event of a vehicle panic stop. All models include an anti-slip spherical loading surface to minimize the effects of off-axis loading. Temperature-compensated to +130 °F (+ 54 °C), and with standard capacities of 100, 200, and 300 lbf (0.44, 0.89, and 1.33 kN), these sensors are durable and accommodating for your automotive testing requirements.

As with all PCB® instrumentation, these sensors are complemented with toll-free applications assistance, 24-hour technical service, and are backed by a no-risk policy that guarantees total customer satisfaction or your money refunded.

Series 1515-106	
Technical	
Measurement Range [1] [5]	100, 200, 300 lb 0.44, 0.89, 1.33 kN
Sensitivity [4]	2 mV/V FS
Non-Linearity [4]	≤ 0.10 % FS
Hysteresis [4]	≤ 0.10 % FS
Non-Repeatability [4]	≤ 0.05 % FS
Environmental	
Overload Limit [5]	500, 1000, 1500 lb 2.20, 4.40, 6.67 kN
Temperature Range (Operating)	-65 to +200 °F -54 to +93 °C
Temperature Range (Compensated)	+30 to +130 °F -1 to +54 °C
Temperature Effect on Output (Maximum) [3]	±0.002 % Reading/ °F ±0.0036 % Reading/ °C
Temperature Effect on Zero Balance (Maximum) [4]	±0.002 % FS/ °F ±0.0036 % FS/ °C
Electrical	
Bridge Resistance [1]	350 ohm
Excitation Voltage [2]	10 VDC
Insulation Resistance	> 5 x 10^9 ohm
Zero Balance	≤ 5 % RO
Physical	
Size (Diameter x Height)	2.63 x 1.19 in 66.80 x 30.23 mm
Weight	1.10 lb 0.49 kg
Sensing Element	Strain Gage
Housing Material	Plated Steel
Electrical Connector	Pigtail Ends
Electrical Connection Position	Side
Notes	
All specifications are at room temperature unless otherwise specified. [1] Nominal. [2] Calibrated at 10 VDC, usable 5 to 20 VDC or VAC RMS [3] Over compensated operating temperature range. [4] FS - Full Scale [5] Model comes in three standard capacities	

Recommended Signal Conditioners for Series 1515-106 Brake Pedal Effort Sensors

PCB Load & Torque Division offers a range of DC powered signal conditioners which supply a regulated excitation to the sensor and provide user selectable outputs of ± 5 volts, ± 10 volts, or 4 to 20 mA.

8161 Series:

DIN rail, 35 mm, strain gage signal conditioner, operates from 12 or 28 VDC, provides 5 or 10 VDC bridge excitation, and delivers ± 5 or ± 10 volts and 4 to 20 mA. Adjustable zero and span with built-in shunt calibration.

8162 Series:

Strain gage signal conditioner in IP66 (NEMA 4X) enclosure operates from 12 to 28 VDC and provides 5 or 10 VDC sensor excitation, and delivers ± 5 or ± 10 volts and 4 to 20 mA output via screw terminal connections. Adjustable zero and span with built-in shunt calibration.

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ISO 9001 CERTIFIED ■ A2LA ACCREDITED to ISO 17025

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PCB Load & Torque Division, is a manufacturer of high quality, precision load cells, torque transducers, and telemetry systems, located in Farmington Hills, Michigan, USA. In addition to the quality products produced, the division offers many services including: A2LA Accredited Calibration for torque, force, and related instrumentation; an A2LA Accredited Threaded Fastener Testing Laboratory; and complete and reliable custom stain gaging. PCB Load & Torque products and services fulfill the test and measurement needs of numerous industries including: Aerospace & Defense, Automotive, Medical Rehabilitation, Material Testing, Textile, Process Control, Robotics & Automation, and more. PCB's RS Technologies product line includes test systems and threaded fastener torque/angle/tension systems ideal for use in the Automotive, Aerospace & Defense, Power Generation industries, and for product assembly by manufacturers or processors of threaded fasteners or other companies that use threaded fasteners to assemble their products. The expert team of Design, Engineering, Sales, and Customer Service individuals draw upon vast in-house manufacturing resources to continually provide new, more beneficial sensing solutions. From ready-to-ship stock products, to custom-made specials, PCB proudly stands behind all products with services customers value most, including 24-hour technical support, a global distribution network, and the industry's only commitment to Total Customer Satisfaction. For more information please visit **www.pcb.com.**

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