SENSING THE WORLD'S NEEDS

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SMART SENSORS

From the Comus Group of Companies

What is a Smart Sensor?

A Smart sensor utilizes multiple sensing technologies and processing techniques in a package uniquely tailored for various environments, giving our customers a turnkey package solution that will transmit more information than using independent sensors. Our range of Smart sensors is designed to weather environmental conditions such as vibration and mechanical stress. They consist of time proven and tested sensing technology to give you a robust sensor with reaction time as little as 2ms.

Smart Sensor Features

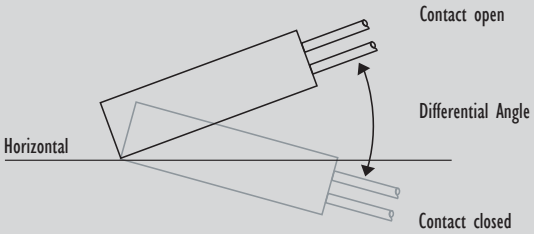
- Custom Designs: Options that can be changed include:
  - Angle
  - G-Force
  - Package size
  - Number of outputs
  - Load capacity
  - Voltage capacity
- Rapid Prototyping (fast turn around for custom designs)
- Available in up to 4 outputs (on certain models)
- Field programmable (on certain models)
- Interface capable with computer using USB/UART cable
- Resistant to ambient environmental conditions
  - Vibration
  - Temperature

OPERATION

Angle Detection Sensors:

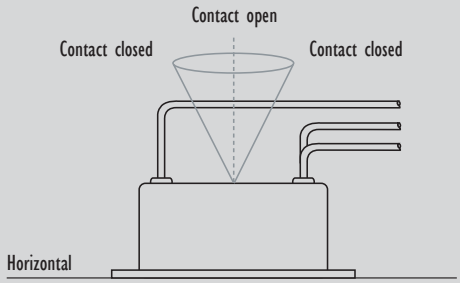
Horizontal Plane:

When tilted from the horizontal position, the sensor movement required to cause contact change is called the differential angle. It is very important when selecting a horizontal angle sensor to allow for the differential angle. Specific angle designs are available.



Vertical Plane:

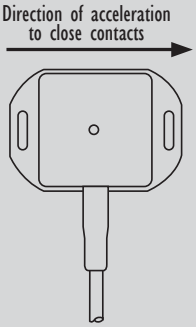
These operate when the sensor is actuated from the vertical position. Available angles range for as low as 5 degrees and as high as 90 degrees and sensor packages are available in a normally closed or normally open starting state..



OPERATION (continued)

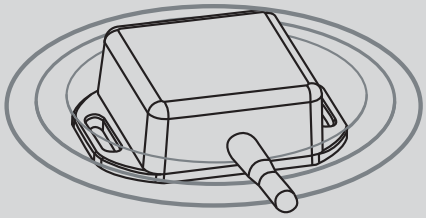
Acceleration Sensors:

These Sensor packages can detect acceleration in one plane, or with our multi -access output option, several planes simultaneously.



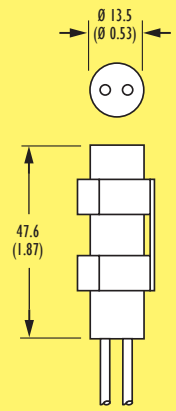
Movement and Vibration Sensor packages:

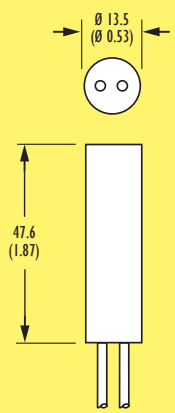
Our Movement and vibration sensor packages are non position sensitive and available in single output and up to four programmable channels.

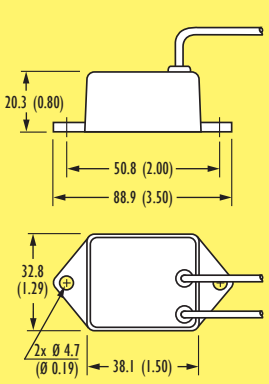


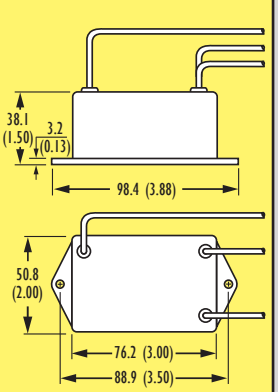
All dimensions are nominal, in millimeters unless otherwise stated. If further information is required, individual datasheets are available on our websites, and on CD.
As part of the group's policy of continued product improvement, specifications may change without notice. Our sales office will be pleased to help you with the latest information on our products.

AC Voltage Power Sensors



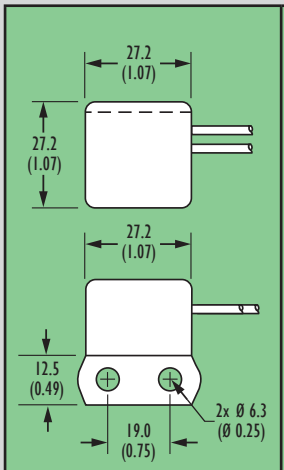


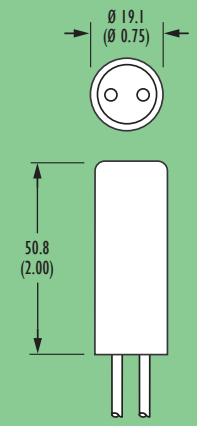


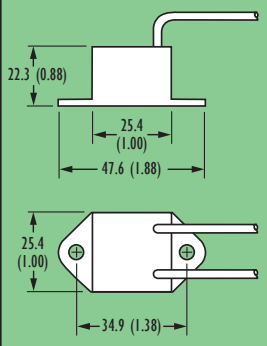


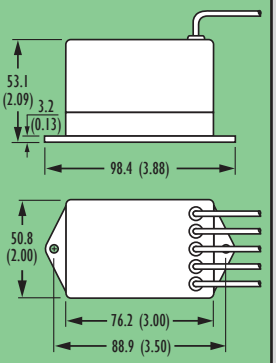
Options / Features	• Encapsulated Tilt Switch	• Multi Access Sensing	• Best suited for inductive loads, resistant to external vibration.	• Ideal for inductive high current loads.
Contact Form	Normally Open	Normally Closed		Normally Open / Closed
Type	PD5005-7TC	PD5045	PD6014	PD6011
Operating Voltage Max. VAC	280	240	110 / 220	120 / 220
Current Max. A	2.5	2.5	3	15
Power Max. W/VA	700	600	330 / 660	1500 / 3000
Differential Angle Deg	15	-	-	-
Break Angle Deg	-	45	22 ±3	15 ±5
Operating Position	Horizontal	Vertical	Vertical	Vertical
Sensitivity	Single Plane	Omnidirectional	Omnidirectional	Omnidirectional
Load Type	Inductive and Resistive	Inductive and Resistive	Inductive and Resistive	Inductive and Resistive
Operating Temperature °C	-25 +70	-25 +70	-40 +70	-25 +70
Wire	2 x 18 AWG Neoprene insulated	2 x 18 AWG Neoprene insulated	2 x 18 AWG Neoprene insulated	3 x 16 AWG PVC insulated
Case Material	ABS	ABS	ABS	ABS
Potting Compound	Black Epoxy	Black Epoxy	Black Epoxy	Black Epoxy
Applications	• medical devices such as hospital beds • engineering equipment such as automated testers • solar panel positioning • safety sensing for heaters where equipment has to be kept in relative level state			

DC Voltage Power Sensors



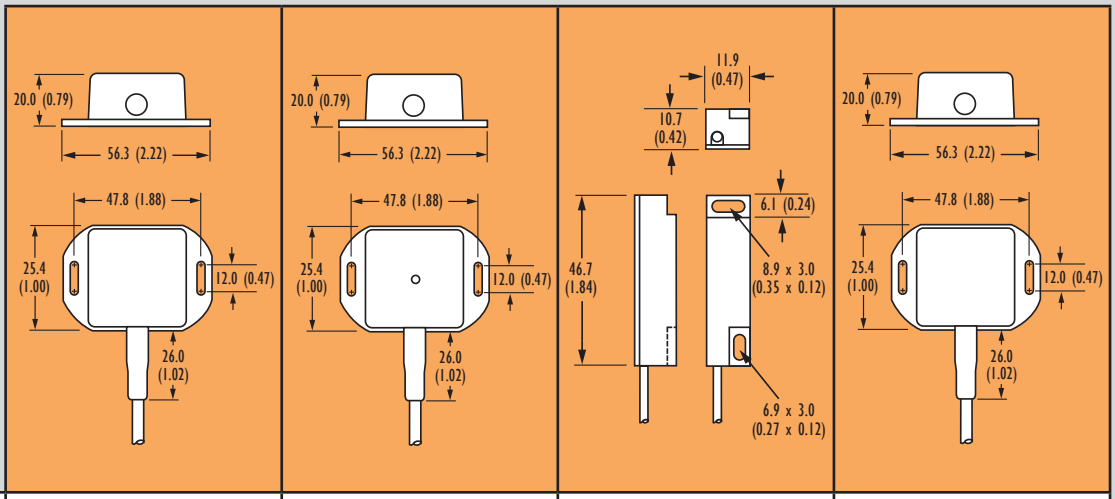






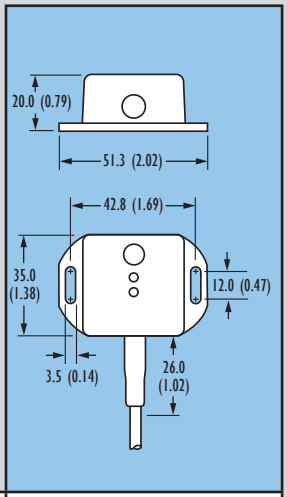
Options / Features		• Wide Angle Power Tilt Switch	• Best suited for DC loads in excess of 5 amps and external applications.	• Ideal for Thermocouple control applications.	• Ideal for High Power loads in excess of 10 amps.
Contact Form		Normally Open		Normally Closed	Normally Open / Closed
	Type	PD5009	PD6010	PD6025	PD6000
Operating Voltage	VDC	10 MIN - 18 MAX	6 MIN - 40 MAX	self powered DC	9 MIN - 14.5 MAX
Current	Max. A	5.0	10	5.0	20
Power	Max. W/VA	90	60	30	290
Differential Angle	Deg	30 ±5	20	-	-
Break Angle	Deg	-	-	15 ±10	45 ±5
Operating Position		Vertical	Horizontal	Vertical	Vertical
Sensitivity		Single Plane	Single Plane	Omnidirectional	Omnidirectional
Load Type		Inductive and Resistive	Inductive and Resistive	Thermocouple	Inductive and Resistive
Operating Temperature	°C	-40 +125	-40 +176	-60 +80	-40 +55
Wire		2 x 18 AWG GXL insulated	2 x 16 AWG PVC insulated	2 x 18 AWG Neoprene insulated	5 x 16 AWG Thermoplastic insulated
Case Material		ABS	ABS	ABS	ABS
Potting Compound		Black Epoxy	Black Epoxy	Black Epoxy	Black Epoxy
Applications		• vehicle leveling and/or alarm control sensing • Ideal for industrial application safety controls, such as cranes and fork trucks. • safety sensing for motor loads and other high power DC load applications			

Precision Acceleration Sensors



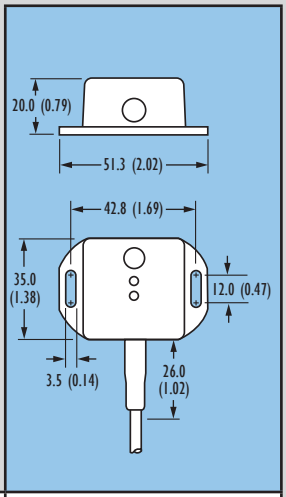
Options / Features		• XYZ-Axis 0-4V Analog Output G-Force	• Programmable Acceleration Module		• XZ-Axis 0-4V Analog Voltage Output
	Type	PDG1000	PDG1001	PDG1003	PDG1005
Switching Current	Max. mA	-	100	1500	-
Supply Current	Max. mA	20	10	7	5
Voltage Power Supply	VDC	7 - 30	6 - 30	10 - 30	7 - 30
G-Force	g	-2 +2g / -6 +6g / -1 +1g	-6 +6g / -2 +2g	-1.5 >sp> +1.5g	0 to ±2 / 0 to ±6
Response Time		-	-	10 ms	30 ms
Acceleration Resolution	mg	-	15 mg / 5 mg	5 mg	5 mg / 15 mg
Operating Temperature	°C	-20 +70	-20 +70	-20 +70	-20 +70
Case Material		ABS	ABS	ABS	ABS
Applications		• vibration detection • platform leveling or balance sensor • security sensing for alarm warning systems			

Precision Motion Sensor



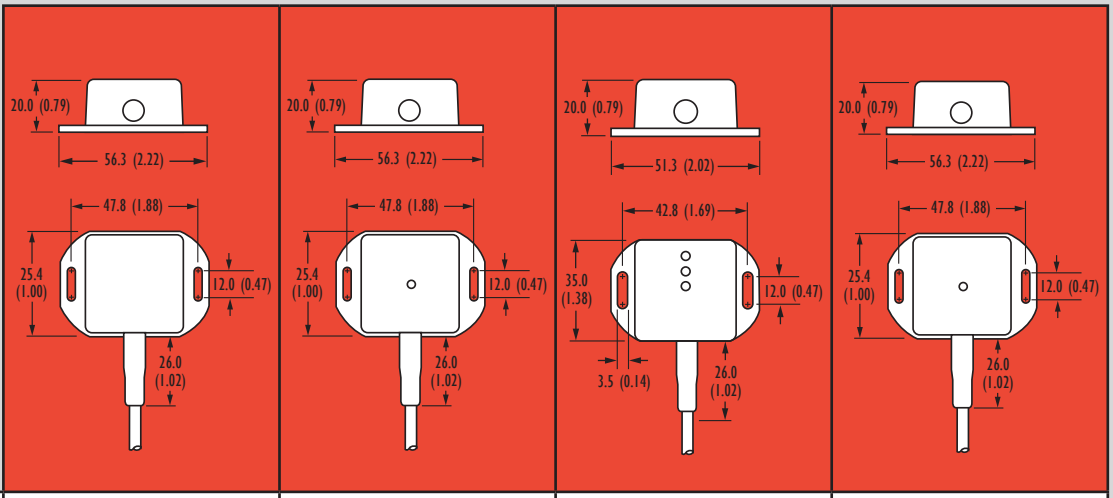
Options / Features	• Teachable Motion Module
Type	PDM1000
Switching Voltage Max. VDC	45
Switching Current Max. mA	100
Supply Current Max. mA	15
Voltage Power Supply VDC	6 - 30
Motion Level mg	5 - 2000
Motion Level Resolution mg	±5 (-0.1)
Response Time ms	30
Operating Temperature °C	-20 +70
Case Material	ABS
Applications	• vibration detection • security sensing for alarm warning systems • dynamic distances

Precision Shock Sensor



Options / Features	• Teachable Shock Module
Type	PDS1000
Switching Voltage Max. VDC	45
Switching Current Max. mA	100
Supply Current Max. mA	15
Voltage Power Supply VDC	6 - 30
Shock Level mg	5 - 6000
Shock Level Resolution mg	±15
Response Time ms	30
Operating Temperature °C	-20 +70
Case Material	ABS
Applications	• vibration detection • measure seismic activity

Precision Angle Sensors



Options / Features	• Single Output Tilt Module	• Programmable Tilt Module	• Teachable Tilt Module	• XY-Axis 0-4V Analog Output Tilt Module
Type	PDT1000	PDT1001	PDT1002	PDT1005
Switching Voltage Max. VDC	45	-	30	-
Switching Current Max. mA	100	100	100	-
Supply Current Max. mA	10	10	10	20
Voltage Power Supply VDC	6 - 30	6 - 30	6 - 30	7 - 30
Shock Survivability	10000g for 0.1ms	10000g for 0.1ms	10000g for 0.1ms	10000g for 0.1ms
Tilt Angle deg	25 Omnidirectional	Programmable for XYZ Planes	Teachable in EEPROM	-90 +90
Tilt Resolution deg	<0.5	<0.6	<0.5	<0.5
Operating Temperature °C	-20 +70	-20 +70	-20 +70	-20 +70
Case Material	ABS	ABS	ABS	ABS
Applications	• Air suspension level sensor. • medical devices such as hospital beds • vehicle leveling and/or alarm control sensing • solar panel positioning • safety sensing for heaters where equipment has to be kept in relative level state			

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We also have a large network of worldwide agents. These can be seen on any of our websites, or on our company profile brochure.