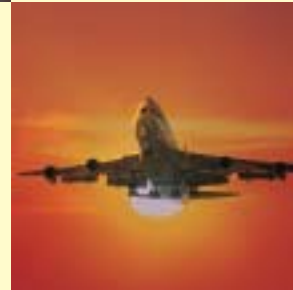


Sensing and Control

## ■ Pressure

## ■ Airflow

## ■ Force



# Pressure, Airflow and Force Sensing at Honeywell

## Honeywell Sensing and Control:

In the 1980's, Honeywell developed a full line of piezoresistive pressure sensors featuring excellent repeatability, high accuracy, and reliability under varying environmental conditions. In addition, they feature highly consistent operating characteristics from one sensor to the next and interchangeability without recalibration.

In 1998, Honeywell acquired Data Instruments and added stainless steel and high purity pressure sensors, as well as the Advanced Silicon Group, or ASG family of pressure sensors. Data Instruments is best known for their sensors' precision and performance in applications that require high accuracy.

In 2002, Honeywell acquired Invensys Sensor Systems, including Sensym ICT, which brought a full line of high pressure, industrial products from the ICT side of the business, and a full line of low pressure plastic products from the SenSym side. SenSym is

best known for their Low Pressure Plastic products and their willingness to produce custom sensors and packages. ICT is known for their highly accurate Pressure sensors that are used in Industrial applications. ICT is also known for their willingness to work with customers to create custom pressure sensor solutions to meet challenging customer needs.

In 2003, Honeywell purchased Sensotec. Founded in 1973, Sensotec designs and manufactures one of the broadest and most comprehensive product lines of pressure, load cells and electronic sensor instrumentation. Sensotec products are best known for their quality of engineering and customization.

Honeywell Sensing and Control offers the broadest line of pressure, force, and airflow capabilities in the world. For more information on these, or any of our products, visit our website and interactive catalog at [www.honeywell.com/sensing](http://www.honeywell.com/sensing).

# Honeywell

## 1998 Data Instruments:

- 1977 **Data Instruments** was formed as a result of a leveraged buyout of the Tyco Instruments Division of Tyco Laboratories.
- 1994 **NeXt Sensors** was founded
- 1995 **NeXt Sensors** merged with **Data Instruments** and formed the Advanced Silicon Group (ASG)
- 1998 **Honeywell** acquires **Data Instruments**.

## 2002 SenSym ICT:

- 1972 **ICT** was spun off from Fairchild.
- 1974 The **Foxboro** Company purchased **ICT**.
- 1989 Hawker Siddley (later acquired by BTRS) purchased **SenSym** from National Semiconductor
- 1990 Siebe acquired the **Foxboro** company
- 1999 BTR merged with Siebe to form Invensys. **Sensym** merged with **Foxboro ICT** to form **Sensym ICT**.
- 2002 **Honeywell** acquired **SenSym ICT** as a part of Invensys Sensor Systems.

# You can *trust* Honeywell Sensing and Control for:

## *The right products for your applications*

By offering you the broadest switching and sensing portfolio in the world—and by offering you expert advice through our global sales and distribution channels to make the right choices, we can help to ensure you get the right product for your application.

## *Delivered on time*

Through extensive work with Six Sigma\* Plus and lean manufacturing programs, Honeywell is able to boast on-time to promise delivery statistics over 95%. Many of our locations operate at 100%. With an average lead time of only five days and distributor stocking programs in place throughout the world, we can meet even the most stringent of deadlines.

## *That work right the first time*

At Honeywell Sensing and Control, we provide you with quality right out of the box, and quality down the line. Our Six Sigma\* culture ensures that our sensors, switches and control products will work the first time and every time.

## *And every time*

With over 60 years in the switching and sensing business, we have built a reputation you can rely on. Our robust product designs and extensive testing facilities ensure that the products you order from Honeywell are the quality you have come to depend on.

## *Anywhere in the world*

Honeywell has a global sales force with application assistance available wherever you are located. See the back page of this brochure for more information on who to contact in your part of the world.

In addition to the sensing and control industry's largest direct salesforce, we have several ways of getting the answers you need:

1. Visit the website and interactive catalog at [www.honeywell.com/sensing](http://www.honeywell.com/sensing)
2. Contact our Customer Response Center directly at:

**Domestic:** 800.537.6945

**International:** 815.235.6847

**Fax:** 815.235.6545

Our technical customer service staff is waiting to help you from 7:30am to 4:30pm, Central Standard Time.

3. Email us at [info.sc@honeywell.com](mailto:info.sc@honeywell.com)



## SMT Pressure Products (1.0 psi to 100 psi)



Series	26PC	24PC	SCC	SX
<b>Description</b>	Calibrated	Bare Sensor	Bare Sensor	Bare Sensor
	Silicon Die Elastomeric Technology	Silicon Die Elastomeric Technology	Silicon Die on Ceramic Current Excitation	Silicon Die on Ceramic Voltage Excitation
<b>Pressure Range</b>	1.0 psi to 100 psi	1.0 psi to 100 psi	1.0 psi to 300 psi	1.0 psi to 300 psi
<b>Device Type</b>	Differential, Gage	Absolute*, Differential, Gage	Absolute*, Gage	Absolute*, Gage
<b>Output Signal</b>	mV	mV	mV	mV
<b>Accuracy</b>	Linearity, Hysteresis & Repeatability 0.5% typ.	Linearity, Hysteresis & Repeatability 0.5% typ.	Linearity, Hysteresis & Repeatability 0.2% typ.	Linearity, Hysteresis & Repeatability 0.2% typ.
<b>Temperature Range</b>	Compensated 0 °C to 50 °C [32 °F to 122 °F]	No Temperature Compensation	No Temperature Compensation	No Temperature Compensation

\*Absolute only available on 15.0 psi and above.

## Ultra Low Pressure Products (<10 inches of water)



Series	ASDXL	DC	SDXL	SCXL	DCXL	DUXL
<b>Description</b>	Amplified	Amplified SureSense™	Calibrated	Calibrated	Calibrated SureSense™	Bare Sensor SureSense™
	Silicon Die with ASIC Output	Dual Silicon Die with ASIC Output	Silicon Die with Thick-film Resistors	Silicon Die with Thick-film Resistors	Silicon Die with Thick-film Resistors	Silicon Die only
<b>Pressure Range</b>	0 in H <sub>2</sub> O to 5.0 in H <sub>2</sub> O and 10 in H <sub>2</sub> O	0 in H <sub>2</sub> O to 1.0, 2.0, 5.0, 10.0, 20.0, and 30.0 in H <sub>2</sub> O	0 in H <sub>2</sub> O to 5.0 in H <sub>2</sub> O and 10.0 in H <sub>2</sub> O	0 in H <sub>2</sub> O to 4.0 in H <sub>2</sub> O and 10.0 in H <sub>2</sub> O	0 in H <sub>2</sub> O to 10.0 in H <sub>2</sub> O	0 in H <sub>2</sub> O to 4.0 in H <sub>2</sub> O and 10.0 in H <sub>2</sub> O
<b>Device Type</b>	Differential, Gage	Differential, Gage	Differential, Gage	Differential, Gage	Differential, Gage	Differential, Gage
<b>Output Signal</b>	.5 Vdc to 4.5 Vdc	.5 Vdc to 4.5 Vdc	mV	mV	mV	mV
<b>Accuracy</b>	Total Accuracy 2.0%	Total Accuracy 2.0%	Linearity & Hysteresis 0.2% typ.	Linearity & Hysteresis 0.2% typ.	Linearity & Hysteresis 0.2% typ.	Linearity & Hysteresis 0.5% typ.
<b>Temperature Range</b>	Compensated 0 °C to 85 °C [32 °F to 185 °F]	Compensated -25 °C to 85 °C [-13 °F to 185 °F]	Compensated 0 °C to 50 °C [32 °F to 122 °F]	Compensated 0 °C to 50 °C [32 °F to 122 °F]	Compensated 0 °C to 50 °C [32 °F to 122 °F]	Compensated -25 °C to 85 °C [-13 °F to 185 °F]

# Airflow Sensors



Series	AWM1000	AWM2000	AWM3000	AWM40000	AWM5000	AWM700	AWM90000
<b>Signal Conditioning</b>	Un-amplified (mV)	Un-amplified (mV)	Amplified	Amplified & Un-Amplified	Amplified	Amplified	Un-amplified (mV)
<b>Technology</b>	Silicon Die	Silicon Die	Silicon Die	Silicon Die	Silicon Die	Silicon Die	Silicon Die
<b>Flow/Pressure Range</b>	+1000 sccm to -600 sccm, +/- 4" H2O, +/-200 sccm	+/-1000 sccm, +/-4" H2O, +/-200sccm, +/-30 sccm	+/-1000 sccm, +/-2" H2O, +1000 sccm, +/-30 sccm	+6 SLPM, +/-1000 sccm, +1000 sccm, +/-25 sccm	0 to 5 SLPM, 0 to 10 SLPM, 0 to 15 SLPM, 0 to 20 SLPM	+200 SLPM	+/-200 sccm, +/-2" H2O
<b>Port Style</b>	Straight	Straight	Straight	Manifold	1/4in - 18 NPT	22mm Tapered	Straight
<b>Media Capability</b>	Dry Gas Only	Dry Gas Only	Dry Gas Only	Dry Gas Only	Dry Gas Only	Dry Gas Only	Dry Gas Only

# Ultra Low Pressure Products (<10 inches of water)



CPXL	CPCL	XPCL	XCXL	SLP	170PC	160PC
Bare Sensor	Calibrated	Motorola Drop-In Calibrated	Calibrated	Bare Sensor	Calibrated	Amplified
Silicon Die only	Silicon Die with Thick-film Resistors	Silicon Die with Thick-film Resistors	Silicon Die with Thick-film Resistors	Silicon Die only	Silicon Die with Thick-film Resistors	Silicon Die with Op-Amp Output
0 in H <sub>2</sub> O to 4.0 in H <sub>2</sub> O and 10.0 in H <sub>2</sub> O	0 in H <sub>2</sub> O to 4 in H <sub>2</sub> O and 10.0 in H <sub>2</sub> O	0 in H <sub>2</sub> O to 4.0 in H <sub>2</sub> O and 10.0 in H <sub>2</sub> O	0 in H <sub>2</sub> O to 4.0 in H <sub>2</sub> O and 10.0 in H <sub>2</sub> O	0 in H <sub>2</sub> O to 4.0 in H <sub>2</sub> O and 10.0 in H <sub>2</sub> O	0 in H <sub>2</sub> O to 28.0 in H <sub>2</sub> O	0 in H <sub>2</sub> O to 28.0 in H <sub>2</sub> O
Differential, Gage	Differential, Gage	Differential, Gage	Differential, Gage	Differential, Gage	Differential, Gage	Differential, Gage
mV	mV	mV	mV	mV	mV	1.0 Vdc to 6.0 Vdc
Linearity & Hysteresis 0.5% typ.	Linearity & Hysteresis 0.5% typ.	Linearity & Hysteresis 0.5% typ.	Linearity & Hysteresis 0.5% typ.	Linearity & Hysteresis 0.3% typ.	Linearity & Hysteresis 1.0% typ.	Accuracy 2.0% typ.
No Temperature Compensation	Compensated 0 °C to 70 °C [32 °F to 158 °F]	Compensated 0 °C to 70 °C [32 °F to 158 °F]	Compensated 0 °C to 50 °C [32 °F to 122 °F]	No Temperature Compensation	Compensated 0 °C to 50 °C [32 °F to 122 °F]	Compensated -18 °C to 63 °C [0 °F to 145 °F]



## Low Pressure Products (0.5 psi to 250 psi)



Series	ASDX	140PC	XCA	22PC	24PC	26PC	136PC	CPC	CPX	XCX	SCX
<b>Description</b>	Amplified	Amplified	Amplified	Bare Sensor	Bare Sensor	Calibrated	Calibrated	Calibrated	Bare Sensor	Calibrated	Calibrated
	Silicon Die with ASIC Output	Silicon Die with Op-Amp Output	Silicon Die with Op-Amp Output	Silicon Die Elastomeric Technology	Silicon Die Elastomeric Technology	Silicon Die Elastomeric Technology	Silicon Die/ Thick-film Technology	Silicon Die with Thick-film Resistors	Silicon Die only	Silicon Die with Thick-film Resistors	Silicon Die with Thick-film Resistors
<b>Pressure Range</b>	1.0 psi to 150 psi	1.0 psi to 100 psi	1.0 psi to 300 psi	1.0 psi to 100 psi,	0.5 psi to 250 psi	1.0 psi to 250 psi	1.0 psi to 250 psi	1.0 psi to 300 psi	1.0 psi to 300 psi	1.0 psi to 300 psi	1.0 psi to 150 psi
<b>Device Type</b>	Absolute*, Differential, Gage	Absolute*, Differential, Gage	Absolute*, Differential, Gage	Differential, Gage	Absolute*, Differential, Gage	Differential, Gage	Absolute*, Differential, Gage	Absolute*, Differential, Gage	Absolute*, Differential, Gage	Absolute*, Differential, Gage	Absolute*, Differential, Gage
<b>Output Signal</b>	.5 Vdc to 4.5 Vdc	1.0 Vdc to 5.0 Vdc	1.0 Vdc to 5.0 Vdc	mV	mV	mV	mV	mV	mV	mV	mV
<b>Accuracy</b>	Total Accuracy 2.0% max.	2.0% typ.	Linearity & Hysteresis 0.2% typ.	Linearity & Hysteresis 0.5% typ.	Linearity & Hysteresis 0.5% typ.	Linearity & Hysteresis 0.5% typ.	Linearity & Hysteresis 0.5% typ.	Linearity & Hysteresis 0.5% typ.	Linearity & Hysteresis 0.5% typ.	Linearity & Hysteresis 0.5% typ.	Linearity & Hysteresis 0.3% typ.
<b>Temperature Range</b>	Compensated 0 °C to 85 °C [32 °F to 185 °F]	Compensated -18 °C to 63 °C [0 °F to 145 °F]	Compensated 0 °C to 50 °C [32 °F to 122 °F]	No Temperature Compensation	No Temperature Compensation	Compensated 0 °C to 50 °C [32 °F to 122 °F]	Compensated 0 °C to 50 °C [32 °F to 122 °F]	Compensated 0 °C to 70 °C [32 °F to 158 °F]	Compensated 0 °C to 70 °C [32 °F to 158 °F]	Compensated 0 °C to 50 °C [32 °F to 122 °F]	Compensated 0 °C to 70 °C [32 °F to 158 °F]

\*Absolute only available on 15.0 psi and above.

\*Absolute only available on 15.0 psi and above.

## Stainless Steel Pressure Products (3 to 40K psi)



Series	AB	BL	SA	EA	MM	XP	EC	SR	BX	ML/MLH	ST
<b>Description</b>	Flush Design	Flush Design	Port Design	Port Design	Port Design	Port Design	Port Design	Flush Design	Flush Design	Port Design	Port Design
<b>Construction</b>	Wetted Parts 15-5 PH/316 SS (Optional - Hastelloy, Titanium, Inconel)	Wetted Parts 15-5 PH/316 SS (Optional - Hastelloy, Titanium, Inconel)	Wetted Parts 304/306 SS Stainless Steel Housing	Wetted Parts 304/306 SS Plastic Housing	Wetted Parts 304/306 SS Stainless Steel Housing	Wetted Parts 304/306 SS Stainless Steel Housing	Wetted Parts 304/306 SS Stainless Steel Housing	Wetted Parts 304/306 SS Stainless Steel Housing	Wetted Parts 304/306 SS Stainless Steel Housing	Wetted Parts 304/306 SS Plastic Housing	Wetted Parts SS & Silicon Plastic Housing
<b>Pressure Range</b>	6.0 psig to 20K psig 6 psia to 50 psia	5.0 psig to 20K psig 15 psia to 50 psia	15.0 psig to 50.0 psig 15.0 psia to 200 psia 500 psia to 5K psia	6.0 psig to 5K psig	15.0 psig to 7K psig	15.0 to 50 psig 100 psia to 5K psia	15.0 to 50 psig 100 psia to 5K psia	15.0 psig to 2K psig	15.0 psig - 300 psig	15.0 psig to 5K psig	5.0 psig to 250 psig
<b>Output Signal</b>	100 mV	4 mA to 20 mA	1 Vdc to 6 Vdc	1 Vdc to 6 Vdc 1 kHz to 6 kHz	50 mV	4 mA to 20 mA	0.5 Vdc to 4.5 Vdc 1.0 Vdc to 6.0 Vdc 4 mA to 20 mA	25 mV/mA at Excitation of 4 mA, 5.0 Vdc	50 mV at Excitation of 4 mA, 5 Vdc	0.5 Vdc to 4.5 Vdc 1.0 Vdc to 6 Vdc 4 mA to 20 mA	0.5 Vdc to 4.5 Vdc 4 mA to 20 mA
<b>Accuracy</b>	0.25%	1.0%	1.0%	1.0%	0.50%	1.0%	0.25%	1.0%	1.0%	0.25% Total Error Band - 2%	1.0% Total Error Band - 2%
<b>Temperature Range</b>	Compensated -1 °C to 54 °C [30 °F to 130 °F]	Compensated -1 °C to 54 °C [30 °F to 130 °F]	Compensated -1 °C to 85 °C [30 °F to 185 °F]	Compensated -1 °C to 85 °C [30 °F to 185 °F]	Compensated -1 °C to 82 °C [30 °F to 180 °F]	Compensated -1 °C to 54 °C [30 °F to 130 °F]	Compensated -40 °C to 105 °C [-40 °F to 221 °F]	Compensated -1 °C to 71 °C [30 °F to 160 °F]	Compensated 10 °C to 54 °C [50 °F to 130 °F]	Compensated -40 °C to 105 °C [-40 °F to 221 °F]	Compensated -40 °C to 100 °C [-40 °F to 212 °F]
<b>Termination/Connector</b>	Cable	Bendix Connector	Cable/Hirschmann	Valox Connector	Hirschmann Connector Spade Pins	Cable/Hirschmann	Cable/Hirschmann DIN/Packard	Pins	Pins	Multiple Connectors	Packard Connector

## Low Pressure Products (0.5 psi to 250 psi)



Series	SX	SCC	XPX	XPC	XSC	SDX	1800	40PC	180PC	24PC Flow through	26PC Flow Through
<b>Description</b>	Bare Sensor	Bare Sensor	Bare Sensor	Calibrated	Calibrated	Calibrated	Calibrated	Amplified	Amplified	Bare Sensor	Calibrated
	Silicon Die only Constant Voltage Supply	Silicon Die only Constant Current Supply	Silicon Die only	Silicon Die with Thick-film Resistors	Silicon Die with Thick-film Resistors	Silicon Die with Thick-film Resistors	Silicon Die with Thick-film Resistors	Monolithic Silicon Die	Silicon Die with Op-Amp Output	Silicon Die only	Silicon Die with Thick-film Resistors
<b>Pressure Range</b>	1.0 psi to 150 psi	1.0 psi to 150 psi	1.0 psi to 30 psi	1.0 psi to 150 psi	1.0 psi to 150 psi	1.0 psi to 100 psi	3.0 psi to 150 psi	+/- 1.0 psi to 500 psi	1.0 psi to 30 psi	± 1.0 psi, ± 30 psi	± 1.0 psi to ± 100 psi
<b>Device Type</b>	Absolute*, Differential, Gage	Absolute*, Differential, Gage	Absolute*, Differential, Gage	Absolute*, Differential, Gage	Absolute*, Differential, Gage	Absolute*, Differential, Gage	Absolute*, Differential, Gage	Gage	Differential, Gage	Gage	Gage
<b>Output Signal</b>	mV (Voltage Excitation)	mV (Current Excitation)	mV	mV	mV	mV	mV	0.5 Vdc to 4.5 Vdc	1.0 Vdc to 6.0 Vdc	mV	mV
<b>Accuracy</b>	Linearity & Hysteresis 0.2% typ.	Linearity & Hysteresis 0.2% typ.	Linearity & Hysteresis 1.0% typ.	Linearity & Hysteresis 1.0% typ.	Linearity & Hysteresis 1.0% typ.	Linearity & Hysteresis 0.25% max.	Linearity & Hysteresis .15% max.	Linearity & Hysteresis 0.25% typ.	2.0%	Linearity & Hysteresis 0.75% typ.	Linearity & Hysteresis 0.35% typ.
<b>Temperature Range</b>	No Temperature Compensation	No Temperature Compensation	No Temperature Compensation	Compensated 0 °C to 70 °C [32 °F to 158 °F]	Compensated 0 °C to 70 °C [32 °F to 158 °F]	Compensated 0 °C to 50 °C [32 °F to 122 °F]	Compensated -1 °C to 54 °C [30 °F to 129 °F]	Compensated -45 °C to 125 °C [-49 °F to 257 °F]	Compensated -18 °C to 63 °C [0 °F to 145 °F]	No Temperature Compensation	Compensated 0 °C to 50 °C [32 °F to 122 °F]

\*Absolute only available on 15.0 psi and above.

## Low Pressure Products (0.5 psi to 250 psi)



\*Absolute only available on 15.0 psi and above.

## Stainless Steel Pressure Products (3 to 40K psi)



Series	13U	13C	19U	19C
<b>Description</b>	Non-calibrated Bare Sensor Media Isolated	Calibrated Media Isolated	Non-calibrated Bare Sensor Media Isolated	Calibrated Media Isolated
<b>Construction</b>	Wetted Parts 316 L SS	Wetted Parts 316 L SS	Wetted Parts 316 L SS	Wetted Parts 316 L SS
<b>Pressure Range</b>	500 psi to 5K psi	0 psia to 500 psia and 5K psia	3.0 psi to 500 psi	3.0 psi to 500 psi
<b>Device Type</b>	Absolute*	Absolute*, Sealed Gage	Absolute*, Gage, Vacuum Gage	Absolute*, Gage, Vacuum Gage
<b>Output Signal</b>	100 mV	100 mV	100 mV	100 mV
<b>Accuracy</b>	Linearity & Hysteresis 0.2% typ.	Linearity & Hysteresis 0.2% typ.	Linearity & Hysteresis +/-0.2% max.	Linearity & Hysteresis +/-0.2% max.
<b>Temperature Range</b>	No Temperature Compensation	Compensated -25 °C to 85 °C [-13 °F to 185 °F]	No Temperature Compensation	Compensated -25 °C to 85 °C [-13 °F to 185 °F]
<b>Termination/Connector</b>	Pins	Ribbon Cable	Ribbon Cable	Ribbon Cable

\*Absolute only available on 15.0 psi and above.

## Stainless Steel Pressure Products (3 to 40K psi)



Series	SPT	BE
<b>Pressure Connection</b>	1/8-27 NPT, 1/4-18 NPT 7/16-20 UNF, 1/4-19 BSP	Multiple Port Designs
<b>Construction</b>	Wetted Parts 316 L SS Stainless Steel Housing	Wetted Parts 17-4PH Stainless Plastic Housing
<b>Pressure Range</b>	3.0 psi to 5K psi	125 psi to 42K psi
<b>Device Type</b>	Absolute*, Gage, Sealed Gage, Vacuum Gage	Gage
<b>Output Signal</b>	4-20 mA, 100 mV, 1 Vdc to 5 Vdc	0.5 Vdc to 4.5 Vdc ratiometric
<b>Accuracy</b>	0.25% max.	1.50% Total Error Band
<b>Temperature Range</b>	Compensated -10 °C to 85 °C [14 °F to 185 °F]	Compensated -20 °C to 85 °C [-4 °F to 185 °F] Operating -40 °C to 125 °C [-40 °F to 257 °F]
<b>Termination/Connector</b>	Cable/8 Bayonet	Multiple Electrical Terminations

\*Absolute only available on 15.0 psi and above.



Series	SDPGB
<b>Description</b>	Calibrated Pressure Gauge
<b>Construction</b>	Wetted Parts 316 series SS
<b>Pressure Range</b>	3 to 5,000 psi
<b>Output Signal</b>	100 mV output
<b>Accuracy</b>	0.25%
<b>Temperature Range</b>	Compensated 0 °C to 82 °C [32 °F to 180 °F]
<b>Termination/Connector</b>	Battery Operated

## High-Purity Pressure Transducers



## Automotive



Series	F1	S1	TLD	PT4	PT1	PTT
<b>Description</b>	Flow through VCR port	Single VCR port	Single and Flow Through VCR port	Automotive Grade Sensor	Automotive Grade Sensor	Diesel-Heating Applications
	SEMI specs	SEMI specs	SEMI specs Integral digital display	LIN Bus Output	ASIC Output	ASIC Output
<b>Pressure Range</b>	25.0 psi to 3K psi	25.0 psi to 3K psi	25.0 psi to 3K psi	0 Bars to 38.0 Bars	2.0 Bars to 4.0 Bars	4.0 Bars to 8.0 Bars
<b>Device Type</b>	Absolute*, Compound & Gage	Absolute*, Compound & Gage	Absolute*, Compound & Gage	Absolute*	Absolute*	Absolute*
<b>Output Signal</b>	4 mA to 20 mA 0 Vdc to 5.0 Vdc	4 mA to 20 mA 0 Vdc to 5.0 Vdc	4 mA to 20 mA 0 Vdc to 5.0 Vdc	12.0 Vdc Bus	0.25 Vdc to 4.5 Vdc	+/- 2 mAmp
<b>Accuracy</b>	Linearity & Hysteresis 0.5% FSO	Linearity & Hysteresis 0.5% FSO	Linearity & Hysteresis 0.5% FSO	<1% FS/LP Range	<1% FS	+/- 100 mBars
<b>Temperature Range</b>	Compensated 0 °C to 70 °C [32 °F to 158 °F] Operating -40 °C to 85 °C [-40 °F to 185 °F]	Compensated 0 °C to 70 °C [32 °F to 158 °F] Operating -40 °C to 85 °C [-40 °F to 185 °F]	Compensated 0 °C to 70 °C [32 °F to 158 °F] Operating -40 °C to 85 °C [-40 °F to 185 °F]	-20 °C to 130 °C [-4 °F to 366 °F]	-40 °C to 135 °C [-40 °F to 275 °F]	-40 °C to 130 °C [-40 °F to 266 °F]
<b>Termination/ Connector</b>	Cable & Bendix	Cable & Bendix	Cable	Connector	Connector	Connector

\*Absolute only available on 15.0 psi and above.

## Force Sensors



Series	FSG15N1A	FSS15NST	1865	FS
<b>Signal Conditioning</b>	Un-Amplified	Un-Amplified	Calibrated	Amplified
<b>Technology</b>	Silicon Die (Piezoresistive)	Silicon Die (Piezoresistive)	Silicon Die (Piezoresistive)	Silicon Die (Piezoresistive)
<b>Force Range</b>	0 g to 1500 g	0 g to 1500 g	0 psi to 5 psi, 0 to 10, 0 to 15, 0 to 25, 0 to 30 psi	0 lbs to 1.5 lbs, 0 lbs to 3 lbs
<b>Output</b>	360 mV	180 mV	Voltage excitation = 40 mV Typ., Current excitation = 100 mV Typ.	3 Vdc
<b>Operating Temperature Range</b>	-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-28 °C to 54 °C [-18 °F to 129 °F]	0 °C to 70 °C [32 °F to 158 °F]
<b>Temperature Range</b>	No Temperature Compensation	No Temperature Compensation	Compensated -1 °C to 54 °C [30 °F to 129 °F]	Compensated 5 °C to 50 °C [41 °F to 122 °F]



# Switching and Sensing Technology at Honeywell

From basic switching to on-chip, signal conditioned sensors, Honeywell Sensing and Control offers a wide variety of system critical switching and sensing solutions for all of your application needs. For more information, visit our website and interactive catalog at [www.honeywell.com/sensing](http://www.honeywell.com/sensing).

## Humidity Sensors

Humidity sensors from Honeywell are configured with integrated circuitry to provide on-chip signal conditioning. These sensors contain a capacitive sensing die set in thermoset polymers that interacts with platinum electrodes. Absorption based humidity sensors provide both temperature and %RH (Relative Humidity) outputs. On-chip signal processing ensures linear voltage output versus %RH. Sensor laser trimming offers + 5%RH accuracy, and achieves 2%RH accuracy with calibration. Packages are chemically resistant and operate in ranges of -40 °C to 85 °C (-40 °F to 185 °F) to accommodate harsh environments.



## Temperature Sensors and Thermal Products

Temperature sensors provide a change in a physical parameter such as resistance or output voltage that corresponds to a temperature change. These sensors are suitable for applications that require small package size, accuracy, and linear outputs. Honeywell also offers a full line of heaters, thermistors, and thermostats.



## Infrared Sensors

Optoelectronic sensors from Honeywell integrate optical principles and semi-conductor electronics. These sensors are reliable, cost effective sensors for applications which require object presence sensing, motion sensing, position encoding, limit sensing, movement detection and counting.



## Basic Switches

Honeywell's basic switch product families include standard size basics, miniature, subminiature, hermetically sealed, and high temperature switches. The precision snap-action mechanisms are offered with a wide variety of actuators and operating characteristics. MICRO SWITCH basic switches are ideal for applications requiring compactness, light weight, accurate repeatability and long life. Honeywell basic switches, provide a very cost effective solution for applications that require presence/absence detection where physical contact with object is permissible.



## Magnetic Position Sensors

The Honeywell Magnetic Position Sensor family includes digital and analog Hall-effect position sensors, magnetoresistive digital sensors, Hall-effect vane sensors, gear tooth sensors, Hall-effect basic switch, and magnets. Magnetic Position Sensors are reliable, high speed, long life, sensors and are directly compatible with other electronic circuits.



These sensors respond to the presence or the interruption of a magnetic field by producing either a digital or an analog output proportional to the magnetic field strength. Digital and analog "sensor-only" devices are operated by the magnetic field from a permanent magnet or electro-magnet. Position sensors from Honeywell are used in applications that require accurate, reliable outputs.

## Position Transducers

The Honeywell Sensing and Control transducer products use potentiometric technology originally developed for military applications and more recently applied to industrial markets. The proprietary MystR® conductive plastic has extensive temperature and power capabilities along with infinite resolution in very small stroke units (5 mm [0.2 in]) without any intermediate signal conditioning. In a world where miniaturization drives sensor development, potentiometers have shrunk to the point where their weight is measured in grams and their stroke in millimeters. This amazing technology can still be utilized for measurements in tens of feet with repeatability in thousandths of an inch.



## Current Sensing

Current sensors monitor AC or DC current. Honeywell offers a broad line of adjustable linear, null balance, digital, and linear current sensors. Digital current sensors can sound an alarm, start a motor, open a valve or shut down a pump. The linear signal duplicates the waveform of the current being sensed, and can be used as a feedback element to control a motor or regulate the amount of work being done by a machine.



## Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. **The foregoing is Buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

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INTERNET: [www.honeywell.com/sensing](http://www.honeywell.com/sensing)

Contact our Customer Response Center directly at:

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