

# THINKING THE WAY FORWARD: FUTURE-LOOKING WAREHOUSING

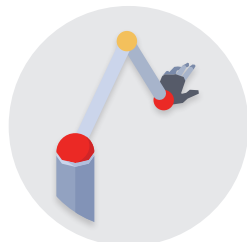
## Our Experience. Your Advantage.

Warehouse logistics and processes can be complex, so you need a partner who can help you navigate the best solutions for your business. Honeywell forms strategic partnerships with our customers, meaning that you can count on us from our first conversation to final deployment. Our solutions are broad — from force sensors to ensure robotic grippers can safely grasp products to safety cable-pull switches that provide emergency stop signaling along the conveyor line. Featured in this warehouse example are four key pieces of equipment along with the Honeywell solutions that allow them to run reliably and deliver accurate readings.



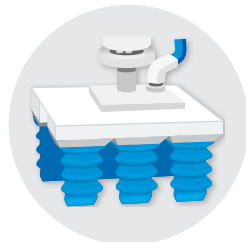
### ARTICULATED ROBOTIC ARMS

- **Force Sensors** – ensure safe grasping or gripping
- **Board-Mount Pressure Sensors** – measure pressure of air or fluid in control lines
- **Heavy-Duty Pressure Sensors** – provide functionality to robotic equipment
- **Magnetic Position Sensor ICs** – help maintain a high level of accuracy and precision
- **MICRO SWITCH Limit Switches** – sense presence of welding rods and provide end-stop detection
- **MICRO SWITCH Basic Switches** – for use in control assemblies and provide end-of-travel and grid-style guidance
- **Humidity/Temperature Sensors** – catch moisture from moving items and provide alerts for extreme environmental conditions
- **Position Sensors** – optimize accuracy and efficiency through highly accurate motion control
- **MICRO SWITCH Safety Switches** – used for perimeter guarding to provide emergency stop protection



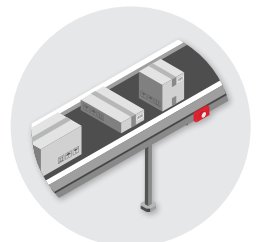
### ROBOTIC GRIPPERS

- **Force Sensors** – ensure safe grasping or gripping
- **Board-Mount Pressure Sensors** – utilized in robotic gripping technology
- **Heavy-Duty Pressure Sensors** – provide functionality to robotic equipment
- **Magnetic Position Sensor ICs** – allow the robot to automatically adjust its grip and angle to handle irregular objects
- **MICRO SWITCH Basic Switches** – integrated into grippers of the arm wrist to sense grip pressure
- **Temperature Sensors** – provide feedback to the chamber controller to ensure proper temperature levels
- **Humidity/Temperature Sensors** – catch moisture from moving items and provide alerts for extreme environmental conditions
- **Position Sensors** – optimize accuracy and efficiency through highly accurate motion control



### INDUCTION SORTER

- **Force Sensors** – ensure safe grasping or gripping
- **Board-Mount Pressure Sensors** – monitor pneumatic pressures to ensure specified operating level
- **Heavy-Duty Pressure Sensors** – provide functionality to robotic equipment
- **Magnetic Position Sensor ICs** – allow the robot to automatically adjust its grip and angle to handle irregular objects
- **MICRO SWITCH Basic Switches** – count packages as they pass on conveyors
- **Position Sensors** – optimize accuracy and efficiency through highly accurate motion control
- **MICRO SWITCH Safety Switches** – used for perimeter guarding to provide emergency stop protection



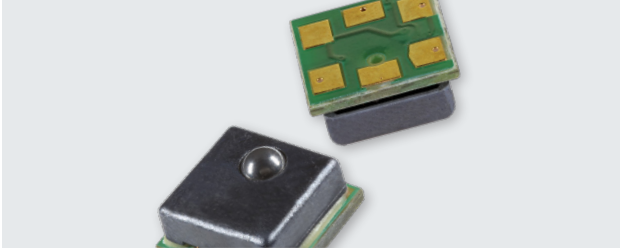
### CONVEYOR SYSTEM

- **MICRO SWITCH Safety Switches** – provide required emergency stop signaling for personal safety protection
- **MICRO SWITCH Limit Switches** – indicate position for system controls and can also count items passing by
- **MICRO SWITCH Hazardous Location Limit Switches** – send an electrical signal to indicate position of equipment and material. Often used for “door plugged”
- **Heavy-Duty Pressure Sensors** – control direction of packages coming down the conveyor
- **Magnetic Position Sensor ICs** – used for motor/fan control, position sensing, linear and angular displacement and speed sensing of moving parts

# MAINTAINING OUR FOCUS ON THE FUTURE WITH INNOVATIVE SOLUTIONS FOR FORWARD-THINKING APPLICATIONS

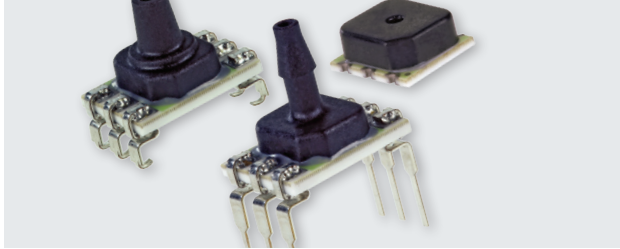
**THE INCREASING COMPLEXITY OF WAREHOUSING, ROBOTICS AND EQUIPMENT TRANSLATES TO AN INCREASING NUMBER OF HIGHLY ACCURATE AND RESPONSIVE PRODUCTS REQUIRED.**

We measure ourselves against the industry's needs quickly and constantly – enhancing our broad product portfolio to address future opportunities. Honeywell limit switches have an 85-year history and continue to revolutionize industrial applications. And, our newly engineered MicroForce force sensors are an industry leader in long-term stability, reliability and relative humidity. With such a broad product offering, you can count on Honeywell solutions for the latest technology, affordability, ease of installation, accurate performance and reliability.



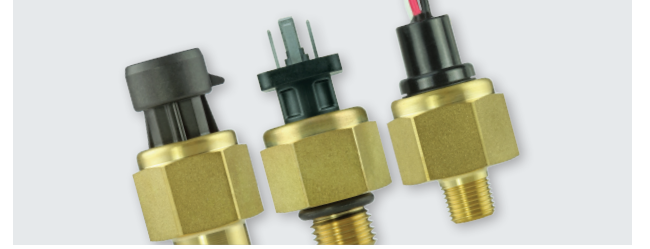
## FORCE SENSORS, MICROFORCE FMA SERIES

- Small form factor: 5 mm x 5 mm [0.20 in x 0.20 in]
- Accuracy:  $\pm 2$  %FSS typical
- Multiple force ranges allow the customer to choose the force range to maximize sensitivity and improve system resolution/performance
- Robust design provides enhanced durability in applications where overforce may exist



## BOARD MOUNT PRESSURE SENSORS, BASIC ABP & MPR SERIES

- High accuracy, great value pressure measurement solution
- ABP: Pressure range:  $\pm 60$  mbar to 10 bar,  $\pm 6$  kPa to 1 MPa,  $\pm 1$  psi to 150 psi
- ABP: Accuracy:  $\pm 1.5$  %FSS (temp compensated: 0°C to 50°C [32°F to 122°F])
- MPR: Compact with digital output. High accuracy and measures as low as  $\pm 1.5$  %FSS TEB



## HEAVY-DUTY PRESSURE TRANSDUCERS, MIP & PX3 SERIES

- Designed for enhanced performance and reliability
- Absolute, gage and sealed-gage measurement
- Wide array of pressure ranges, port styles, termination types and outputs
- Pressure ranges from 3 psi to 8,000 psi; corrosion resistant



## MICRO SWITCH SAFETY SWITCHES, 2CCP, CPS & CLSX SERIES

- Positive-opening operation of normally closed contacts
- Designed for global acceptance; various sizes, actuators, housings and configurations
- Cable-pull, non-contact, key-operated and limit switch options



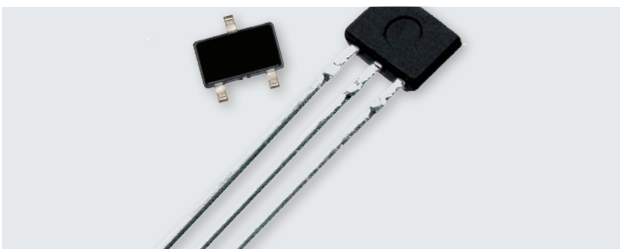
## MICRO SWITCH BASIC SWITCHES, V7 & BZ SERIES

- BZ: Low operating force and differential travel; current rating ranges from 15 A to 25 A
- V7: Designed for long-term reliability, up to 10 million cycles; wide range of electrical ratings from logic level (less than 0.1 A) up to 25 A power duty rated



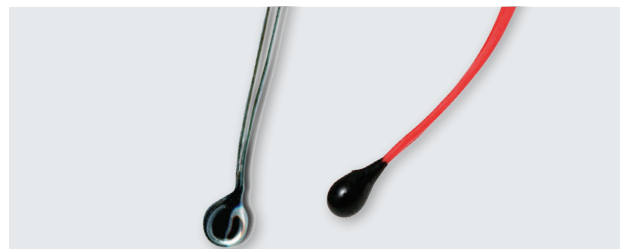
## MICRO SWITCH LIMIT SWITCHES, HDLS, NGC & 914CE SERIES

- HDLS: NEMA 1, 3, 4, 4X, 6, 6P, 12, 13 and IP65/66/67 environmental sealing for demanding applications
- NGC: Can be configured more than 380,000 ways, carries global approvals and are sealed to IP67
- 914CE: Rugged, miniature construction; NEMA 1, 2, 3, 3R, 4, 6, 6P, 12 (boot seal), 13; pre-leaded



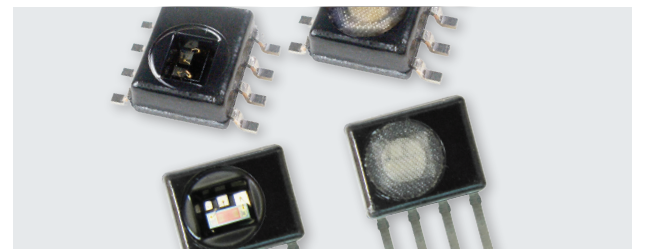
## HALL-EFFECT/MAGNETORESISTIVE SENSOR ICs, SS360/460 & SM SERIES

- Small, versatile digital Hall-effect devices operated by magnetic field
- Various formats: bipolar, latching, quadrature, linear, AMR 4-pin
- Enhanced accuracy; durable design
- SM: operate from as low as 1.65 V, promoting energy efficiency



## TEMPERATURE SENSORS, 192 & 194 SERIES

- Can be used as both a temperature monitor and control
- Available in a wide range of resistance values
- Variety of packages and styles from leaded devices to surface-mount versions



## DIGITAL HUMIDITY/TEMPERATURE SENSORS, HONEYWELL HUMIDICON™ HIH6000, HIH6100, HIH7000, HIH8000

- Digital output-type relative humidity sensor; energy efficient; ultra-small package
- An industry leader in long-term stability, reliability and relative humidity accuracy
- Lowest total cost solution; true, temperature-compensated digital I<sup>2</sup>C or SPI output

## FOR MORE INFORMATION

Honeywell Advanced Sensing Technologies services its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing or the nearest Authorized Distributor, visit [our website](http://our website) or call:

USA/Canada	+302 613 4491
Latin America	+1 305 805 8188
Europe	+44 1344 238258
Japan	+81 (0) 3-6730-7152
Singapore	+65 6355 2828
Greater China	+86 4006396841

## Honeywell Advanced Sensing Technologies

830 East Arapaho Road  
Richardson, TX 75081  
[sps.honeywell.com/ast](http://sps.honeywell.com/ast)



## POSITION SENSORS, SMART SPS SERIES

- Enable highly accurate motion control and improve operation efficiency and safety
- Linear, arc and rotary configurations
- Non-contacting technology provides enhanced life
- IP67, IP69K for harsh applications; CE approvals



## MICRO SWITCH HAZARDOUS AREA LIMIT SWITCHES, BX, LSX & GSX SERIES

- Choice of aluminum or stainless steel housings for use in non-corrosive and corrosive environments
- Designed for use in the toughest climates (-40°C to 70°C [-40°F to 158°F])
- Designed to ensure that even welded contacts will open and machine will stop in emergency situations