

Sensors and Switches for Potential Medical Applications



Airflow Sensors



Honeywell Zephyr™
HAF Series



AWM40000 Series



AWM90000 Series

Flexible Heaters



3100 Series

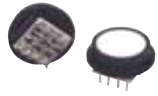


3200 Series



3400 Series

Force Sensors



1865 Series



FS01/FS03 Series



FSG Series



FSS Series



FSS-SMT Series

Hour Meters



28000 Series

Humidity Sensors



Honeywell Humidicon™
HIH6130/6131 Series



HCH-1000 Series



HIH-4000 Series



HIH-4020/4021 Series



HIH-4030/4031 Series



HIH-5030/5031 Series



HIH-4602 Series

Infrared Sensors



HOA088X Series



HOA0881 Series



HOA1180 Series



HOA187X Series



HOA1870 Series



HOA0698X Series

Magnetic Position Sensor ICs



SL353 Series



SS400 Series



SS549AT Series

MICRO SWITCH™ Snap-Action Switches



SM Series



SX Series



ZD Series



ZM Series



ZV Series



ZW Series



ZX Series

Pressure Sensors - Board Mount



Honeywell TruStability®
HSC Series, SSC Series



20PC Series



26PC Flow Through
Series



CPC/CPCL Series



DUXL Series



SCX Series



SDX Series

Heavy Duty Pressure Sensors/Transducers



13 mm Series



19 mm Series



MLH Series



SPT Series

Pressure Switches



5000 Series

SMART Position Sensors



Linear & Arc SPS Series

Temperature Probes



500 Series

Thermistors



192 Series



194 Series

Work Smarter with Honeywell Sensors and Switches

Anesthesia Delivery Machines

- Airflow sensors measure air, oxygen, and nitrous oxide flow
- Board mount and stainless steel media isolated pressure sensors meter and measure the anesthesia gas so that pressure doesn't exceed the desired level
- Magnetic position sensor ICs enable smooth motor control that reduces noise and vibration
- Thermistors enable accurate air temperature control

Dental Equipment

- Board mount pressure sensors keep water flow constant in dental instruments, allowing smooth operation
- Infrared sensors obtain images in dental imaging systems
- Magnetic position sensor ICs enable accurate motion control and positioning of the dental imaging system
- Magnetic position sensor ICs promote energy efficiency and help reduce PC board space in small, hand-held battery-operated dental equipment

Hospital Diagnostics

- Airflow sensors in gas chromatography equipment regulate the flow rate to eliminate outgassing
- Board mount pressure sensors in blood analyzer pump systems regulate pressure to draw/transport samples
- Board mount pressure sensors in gas chromatography equipment sense and controls pressure of the gas stream to maintain a constant and precise flow
- Infrared sensors in hematology analyzers are used with an encoder wheel on the pump shaft to count shaft rotation
- Thermistors in blood analyzers monitor chamber, diffusion lamp, and motor temperature to prevent overheating

Hospital Hardware

- Board mount pressure sensors control inflation of the bed's air columns to prevent patients from developing bedsores
- Board mount pressure sensors measure pressure in blood pressure monitors
- Flexible heaters in medical incubators prevent fogging
- Humidity sensors in incubators and microenvironments provide optimal temperature and relative humidity levels to support critical processes and experiments
- Magnetic position sensor ICs enable remote locking/unlocking of medication dispensing cabinet drawers
- MICRO SWITCH™ snap-action switches determine min/max position of electrically adjustable hospital beds
- SMART position sensors (arc configuration) in hospital beds monitor backrest elevation which helps ensure the proper angle is maintained
- Thermistors monitor the incubator system's temperature

Hospital Rooms

- Board mount pressure sensors carefully monitor airflow rates to provide continuous positive or negative air pressure to prevent contamination

Infusion, Insulin, Syringe Pumps

- Board mount pressure sensors monitor and control the flow of fluid (infusion, insulin, and syringe pumps)
- Flexible heaters conform to the pump's surface so that specific temperature levels may be maintained (infusion pumps)
- Force sensors detect blockage in the pump's tube that delivers medication (infusion, insulin, syringe pumps)
- Infrared sensors are used with an encoder wheel on the pump shaft to count shaft rotation (infusion, insulin, syringe pumps)
- Magnetic position sensor ICs enable smooth motor control that reduces noise and vibration (infusion, insulin pumps)
- Magnetic position sensor ICs enable smooth motor control that reduces noise and vibration; promote energy efficiency, and help reduce PC board space and manufacturing costs (infusion pumps, insulin pumps, and other wearable medical devices)
- SMART position sensors monitor syringe plunge position to deliver the correct amount and rate of medication to the patient

Kidney Dialysis Machines

- Board mount pressure sensors obtain dialysate and venous pressure measurements without interrupting flow
- Flexible heaters warm the blood or dialysate to body temperature prior to re-entry into the body
- Force sensors detect the presence/absence/weight of a dialysate cartridge and monitor flexible tubing pressure
- Infrared sensors are used with an encoder wheel on the pump shaft to count shaft rotation

- Magnetic position sensor ICs enable smooth motor control that reduces noise and vibration
- Stainless steel media isolated pressure sensors monitor pressure in the cartridge's flexible tubing
- Thermistors provide enhanced temperature control of the permeation rate across the dialysis membrane

Oxygen Concentrators

- Airflow sensors detect ultra-low airflow levels that sense when the patient exhales for efficient oxygen delivery
- Board mount pressure sensors detect when the patient begins to inhale for efficient oxygen delivery
- Hour meters track machine usage
- Pressure switches alert the user when the pressure exceeds a specified limit
- Stainless steel media isolated pressure sensors sense surge tank pressure for accurate compressor pressure levels

Patient Monitoring Systems

- Airflow sensors in respiratory monitoring equipment monitor respiratory function
- Board mount pressure sensors in blood glucose monitoring equipment control the pumps used to extract and return blood so that the pressure doesn't rupture the veins
- Board mount pressure sensors in blood pressure monitoring equipment accurately measure blood pressure
- Board mount pressure sensors in nebulizers carefully monitor airflow rates so that the specified amount of medicine, amid a humid environment, is delivered to the patient
- Board mount pressure sensors in spirometers measure airflow in and out of the patient
- Thermistors in temperature monitoring equipment monitor the patient's temperature

Pneumatic Circuit Control Applications

- Board mount pressure sensors monitor and control pneumatic flow and system pressure for precise and efficient performance in respiratory breathing circuits (nebulizers, spirometers, patient monitoring), flow/pressure control (therapeutic hospital beds), gas collection/delivery (hospital gas supply, oxygen concentrators) and sampling/gas flow (blood analysis, gas chromatography, analytical instrument sampling systems)

Robotically Assisted Surgery Equipment

- SMART position sensors (arc configuration) control the robotic arms that hold the articulated instrument tips, allowing the precise control that enables revolutionary minimally invasive surgical procedures

Sleep Apnea Machines

- Airflow sensors monitor breathing and send an output to reduce airflow when the patient exhales
- Bimetallic commercial thermostats on-board (stand-alone) devices on flexible heaters provide temperature control without the need to add associated software or electronics
- Board mount pressure sensors monitor the pressure of air delivered to the patient
- Flexible heaters vaporize water to provide a comfortable breathing environment
- Humidity sensors monitor the amount of humidified air to provide adequate air moisture
- Magnetic position sensor ICs enable smooth motor control that reduces noise and vibration
- Thermistors and pre-packaged temperature probes provide warm, moist air

Spirometers

- Airflow sensors measure the airflow from the patient upon exhalation
- Board mount pressure sensors measure airflow in and out of the patient

Surgical Instruments

- Board mount pressure sensors in surgical fluid management systems sense joint site pressure during arthroscopic surgery
- Force sensors regulate a fluid management system's pump head pressure

Ventilators

- Airflow sensors measure air and oxygen flow so the correct amount is delivered to the patient
- Board mount pressure sensors detect when the breath changes from inhalation to exhalation in order to measure the airflow to and from the patient
- Flexible heaters heat water to a vapor and introduce it to the air stream
- Humidity sensors deliver warm and moist air to the patient
- Magnetic position sensor ICs enable smooth motor control that reduces noise and vibration
- Stainless steel media isolated pressure sensors provide a sensing solution in corrosive media
- Thermistors monitor and control air temperature

While Honeywell provides application assistance personally, through its literature and the Honeywell Web site, it is up to the customer to determine the suitability of the product in the application.

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000720-4-EN IL50 GLO
January 2012

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