



OUTER SPACE SOLUTIONS WITH DOWN-TO-EARTH APPLICATIONS

Honeywell

**International Space
Station**

Mars Rover

Satellites

Space Rockets

Telescopes

Space Suits

Spacecraft



INTERNATIONAL SPACE STATION



21FW PROXIMITY SENSOR

Space Use: Detects that hatches have been closed, gear deployed, arms and panels retracted or extended.

Land Applications:

- Landing gear and hydraulics
- Rotary actuators and valves
- Cargo storage
- Doors on planes and ground vehicles



HM SERIES SEALED SWITCH

Space Use: Specified to the docking ring of the International Space Station to ensure capsule is mated to the airlock. Also, can be used to sense engine fuel valve position and select sensing applications inside spacecraft cabin.

Land Applications:

- Building controls and equipment
- Doors and lifts
- Communication equipment
- Foot switches
- Medical instrumentation
- Float & power switches
- Operator controls



MODEL 31 LOAD CELL

Space Use: Force feedback for low-impact docking station clamp.

Land Applications:

- Cable tension
- Electromechanical parts testing
- Factory process monitoring
- Test laboratory



3MS1 QPL PRECISION THERMOSTAT

Space Use: Used on Space X Dragon Crew Capsule that transports astronauts to the Space Station

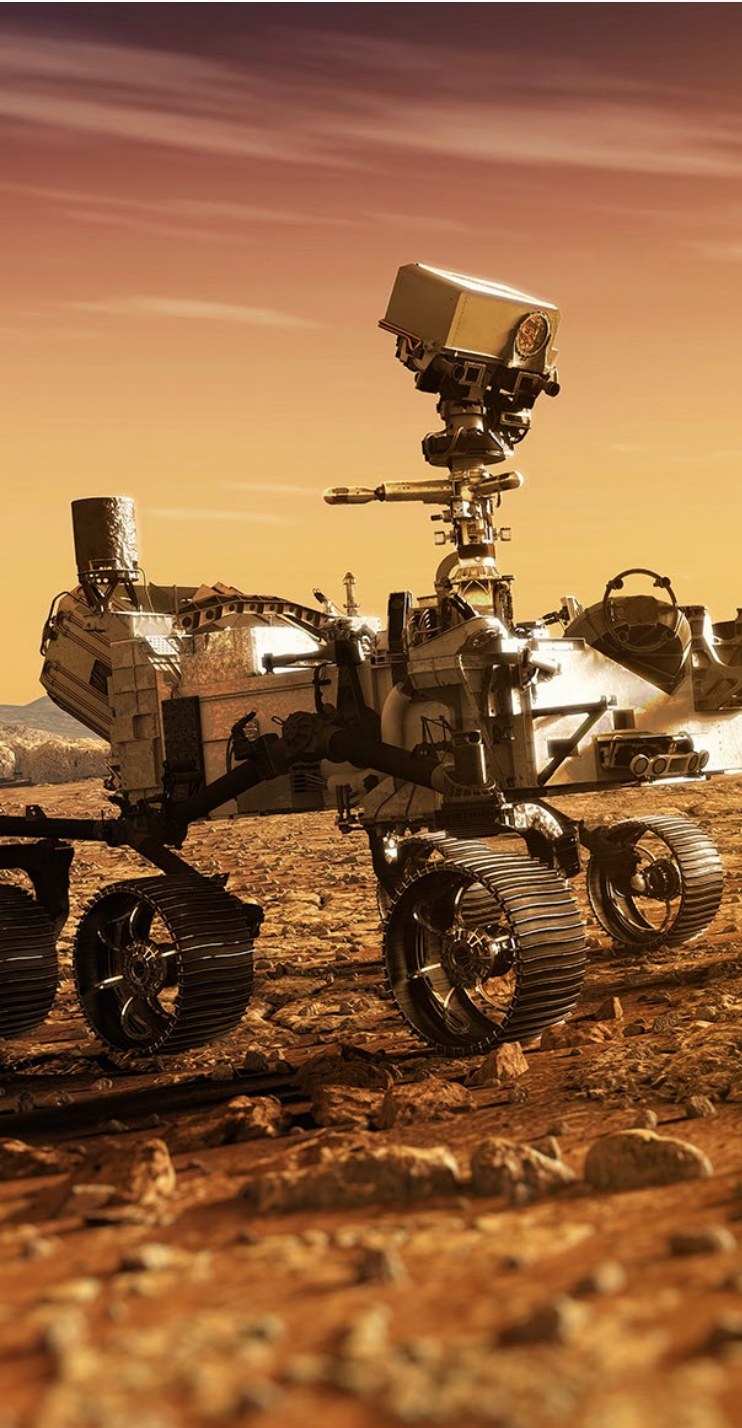
Land Applications:

- Military vehicles and aircraft



DID YOU KNOW?

All capsules, regardless of nationality or origin, specify the MICRO SWITCH HM Series to the vehicle's docking ring.



MARS ROVER



SS41 MAGNETIC SENSOR IC

Space Use: Designed in BLDC motors for commutation. There are several on the Rover.

Land Applications:

- Speed, RPM, tachometer
- Brushless dc motor commutation
- Robotics control
- Medical motor assemblies & dispensing control



MODEL D LOAD CELL

Space Use: Force feedback for the Corer sample drill.

Land Applications:

- Bolt force measurement
- Clamping forces
- Factory process monitoring

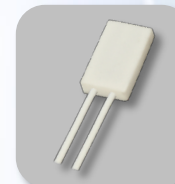


3200 SERIES THERMOSTAT

Space Use: Performs a variety of functions, including heater control and battery management, as well as found within the radio modules.

Land Applications:

- Information technology, telecom & communications
- Medical equipment
- Transportation and aircraft
- Radar



HRTS THIN-FILM PLATINUM RTD

Space Use: Monitors external and internal temperatures throughout the Mars Rover.

Land Applications:

- Motor overload and semiconductor protection
- External temperature indication
- HVAC/R equipment
- Electronic assembly thermal management and temperature compensation



DID YOU KNOW?

There are close to 500 HRTS RTDs used all over the Mars Rover (Curiosity) as they are rated down to -75°C.



ORBITING SATELLITES



HRTS THIN-FILM PLATINUM RTD

Space Use: Monitors external and internal temperatures on the Europa Clipper satellite.

Land Applications:

- Motor overload & semiconductor protection
- External temperature indication
- HVAC/R equipment
- Electronic assembly thermal management



TEMPERATURE PROBES: 500 SERIES

Space Use: Performs a variety of functions, including solar array temperature sensing, crew climate control, battery pack & case temperature monitoring.

Land Applications:

- HVAC & refrigeration
- Air compressors & hydraulic systems
- Power generation
- Heavy-duty or sport vehicle engine oil & fuel
- Weather stations



MODEL 41 LOAD CELL

Space Use: Force calibration for dexterous robotic arms and robotic tools.

Land Applications:

- Tube mills and extruding processes
- Factory process monitoring
- Oilfield handling equipment



RESOLVER

Space Use: Accurately positions the solar panels and antenna for maximum performance.

Land Applications:

- Oncology equipment
- CNC/precision tooling
- Vehicle infrared systems
- Electro-optical systems



DID YOU KNOW?

The MICRO SWITCH HM Series sealed switch is on a satellite that orbits half-way between the earth and the moon?

SPACE ROCKETS



21FW PROXIMITY SENSOR

Space Use: Detects that hatches have been closed, gear deployed, arms and panels retracted or extended.

Land Applications:

- Landing gear
- Hydraulics
- Rotary actuators and valves
- Cargo storage
- Doors on planes and ground vehicles



RESOLVER & ARC POTENTIOMETER

Space Use: Accurately positions the fins on space vehicles.

Land Applications:

- Oncology equipment
- CNC/precision tooling
- Vehicle infrared systems
- Electro-optical systems
- Bucket and lift positioning



3200 SERIES THERMOSTAT

Space Use: Performs a variety of functions, including heater control and battery management, as well as found within the radio modules.

Land Applications:

- Information technology, telecom & communications
- Medical equipment
- Transportation and aircraft
- Radar



TELESCOPES



TEMPERATURE PROBES: 500 SERIES

Space Use: Performs a variety of functions, including solar array temperature sensing and battery pack & case temperature monitoring.

Land Applications:

- HVAC & refrigeration
- Air compressors & hydraulic systems
- Power generation
- Heavy-duty or sport vehicle engine oil & fuel
- Aviation engine bleed air or environmental systems
- Weather stations



3200 SERIES THERMOSTAT

Space Use: Performs a variety of functions, including heater control and battery management, as well as found within the radio modules.

Land Applications:

- Information technology, telecom & communications
- Medical equipment
- Transportation and aircraft
- Radar



RESOLVER

Space Use: Accurately positions the solar panels and antenna for maximum performance.

Land Applications:

- Oncology equipment
- CNC/precision tooling
- Vehicle infrared systems
- Electro-optical systems



SPACE SUITS

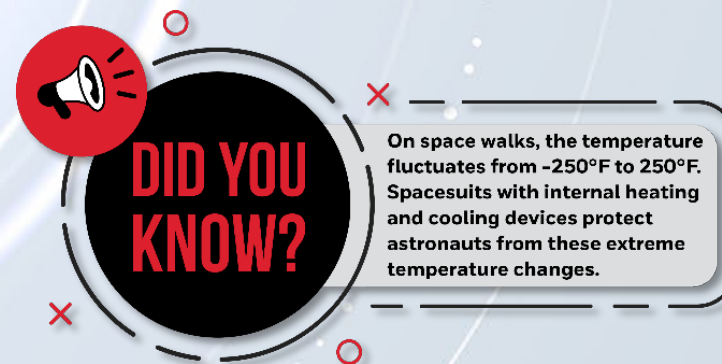


MICRO SWITCH AT SERIES TOGGLE SWITCH

Space Use: Designed into the glove of an astronaut's space suit so he/she can activate the heater built into the suit

Land Applications:

- Cockpit pilot controls
- Military and commercial aviation
- Grain elevators
- Refrigeration
- Generators
- Applications where a Class 1, Div 1 switch is a requirement



**DID YOU
KNOW?**

On space walks, the temperature fluctuates from -250°F to 250°F. Spacesuits with internal heating and cooling devices protect astronauts from these extreme temperature changes.





SPACECRAFT



RESOLVER

Space Use: Accurately positions the solar panels and antenna for maximum performance. Exactly aligns the rudder on space vehicles.

Land Applications:

- Oncology equipment
- CNC/precision tooling
- Vehicle infrared systems
- Electro-optical systems



ARC POTENTIOMETER

Space Use: Exactly positions the fins on space vehicles.

Land Applications:

- Robotically assisted surgery equipment position
- Ground-based solar panel and satellite dish elevation and azimuth
- Aerial work lift platform, front end loader and digger/excavator boom position
- Bucket and lift positioning



MICRO SWITCH TOGGLE & ROCKER SWITCHES

Space Use: Performs a variety of functions within the cockpit.

Land Applications:

- Cockpit pilot controls
- Military and commercial aviation & transportation
- Grain elevators and agriculture applications
- Medical and industrial equipment
- Oil and gas



DID YOU KNOW?

Honeywell switches and sensors have been a part of every NASA manned spacecraft mission for over 60 years.