

*OVERALL DEMAND FOR APPLICATIONS AND DATA TRANSMISSION THROUGH SATELLITES IS GROWING, AND THERE IS A METEORIC RISE IN COMMERCIAL SATELLITES PROVIDING SUCH APPLICATIONS AND SPACE-BASED INTERNET SERVICES DIRECTLY TO CONSUMERS*

OMNETICS
CONNECTOR CORPORATION

# Space Connectors: Omnetics Equipment Operating in Mars Curiosity for a Decade

**We have connector solutions for your next adventure to outer space and beyond. If you need a custom connector solution, please contact us. We build and engineer our connectors with pride in the USA.**

## Space

Omnetics Connector Corporation has a rich history of supporting orbital and deep space projects. Our connectors have been used on the Co-Star, Space Shuttle, Mars Rover and Iridium satellite, to name a few. Omnetics can aid in the design of connectors and harnesses suitable for your application. We offer multiple levels of space screening to the requirements of your specific application.

# Certified in Accordance to IPC/WHMA-A-620 Space Addendums

## Space Level Screening

| Screening Level | Special Screening Only | Processing for Outgassing |
|---|---|---|
| Level 1 – Mission Critical | SPT1 | All standard materials exhibit less than 1.0% TML without additional processing. Contact service for special requirements. |
| Level 2 – High Reliability | SPT2 | |
| Level 3 – Standard Reliability | Standard | |

**Ordering Steps:**

Step 1 - Choose a suitable Micro or Nano connector

Step 2 - Choose a level of Space Screening
Level 1 - Mission Critical (Highest Reliability)
Level 2 - High Reliability
Level 3 - Standard Reliability

Step 3 - Select any added outgassing processing needed.

Step 4 - Specify chosen ORDERING CODES from the table. These codes should be used as separate line items on all quote Requests and Purchase Orders as required.

Ordering Codes: (Quoted as seperate line items)

| | Micro (.050" Center) | | Nano (.025" Center) | |
|---|---|---|---|---|
| | *Sample Size (Allowable Failures)* | | | |
| **Inspection/Test** | **Level 1 Com'l/SCD** | **Level 2 Com'l/SCD** | **Level 1 Com'l/SCD** | **Level 2 Com'l/SCD** |
| **Visual** | 100% | 100% | 100% | 100% |
| **Mechanical** | 2 (0) | 2 (0) | 2 (0) | 2 (0) |
| **Voltage Rating (DMV)** | 100% | 2 (0) | 100% | 2 (0) |
| **Insulation Resistance** | 2 (0) | 2 (0) | 100% | 100% |
| **Temperature Cycling** | 2 (0) | 2 (0) | 2 (0) | - |
| **Low Level Contact Resistance** | 2 (0) | 2 (0) | 2 (0) | 2 (0) |
| **Mating/Unmating Force** | 2 (0) | - | 2 (0) | - |
| **Solderability/Resistance to heat (SMT & Thru-Hole only)** | 2 (0) | - | 2 (0) | - |
| *Note: NASA screening requirements from Table 2C & 2J of EEE-INST-0023* | | | | |

## Nano - Rectangular Design @ .025" Pitch

- Materials: For up to +200°C operation*
- Insulator: 2 Row-LCP / 30% glass, 1 Row-PPS / 40% glass, Low Outgassing meets NASA SP-R-0022
- Pin count: @ .025" pitch – up to 60 positions
- Single row or Dual Row
- Board Mounting: SMT or Thru-Hole
- Current Rating: Up to 1 amp
- Shock & Vibration: Exceeds MIL-DTL-32139
- High Shock Mounting & Mating Hardware

## Micro - Rectangular Design @ .050" Pitch

- Materials: For up to +200°C operation*
- Insulator: PPS / 40% glass, Low Outgassing meets NASA SP-R-0022
- Pin count: @ .050" pitch – up to 97 positions
- Single row or Dual Row
- Board Mounting: SMT or Thru-Hole
- Current Rating: Up to 3 amp
- Shock & Vibration: Exceeds MIL-DTL-32139
- High Shock Mounting & Mating Hardware
- Micro - Rectangular Design @ .050" Pitch

## Metal Circular Connector Series

- Outgassing meets NASA SP-R-0022
- Threaded Coupling Mate - Unmate
- EMI Cable Shield to Shell Design
- Pin Count Micro - Up to 27 positions
- Pin Count Nano - Up to 28 positions
- O-ring Sealed
- High-Flex Cable for rotating systems

New Connector Design & Materials are focused on low weight, high density and rugged superiority to meet the extreme reliability demands during launch through deep space operations. Special "rugged-mount" designs can be made to system configurations. Materials have been selected for thermal-expansion match to sustain continued performance from launch pad through geo-thermal orbit conditions.
With increased densification of cable diameter and reduced connector size, nano-interconnect systems offer significantly reduced weight and lower payload costs. Our design team will also help with unique cable requirements to solve EMI, Cross-talk and High Speed problems. Backshells, Strain-reliefs, Braided shields and Special cables are all available to improve handling and extend life in your system. Call our Sales Rep or Omnetics direct and we will work with you to optimize your design.

* High Temperature Epoxy available upon request