

SmartComm™ Ethernet/IP Module for Sigma 3.1, 5.1 & 8.1 Tool Changers

The SmartComm™ Ethernet/IP Module for Sigma 3.1, Sigma 5.1 and Sigma 8.1 tool change systems features the fastest connection time on the market.

This is the first Ethernet/IP Module to offer diagnostics, taking Ethernet/IP information and indicators to a higher level.



Features and Benefits

- Ethernet Diagnostics and webpage are incorporated on the Robot Side Module (Please see Engineering Data on reverse side of this sheet for more details on it features.)
- An isolated subnetwork drastically reduces connection times.
- To even faster and better serve customers who change tools often, our Tool Side module automatically switches to low power sleep mode for a limited time using SmartCharge™ Technology.
- The patented SmartCharge™, feature reduces connection times by eliminating power-up delay on the Tool Side. With SmartCharge™ enabled, connection times drop to 60ms or less.
- Tool Present and Ready-to-Couple Signal input reduces cycle time and communicates tool changer status.
- An on-board Accelerometer provides real-time robot end-of-arm acceleration and orientation data.
- A Tool Stand Monitoring Safety Circuit is incorporated into the Module design. The actuation valve will not operate unless a tool adaptor is not present or the tool is resting in its support stand (Please Note: A Portion of the Safety Circuit is not included with the Module but is available for purchase).
- Modbus TCP capability included.
- Supports EIP class 1 connections and UCMM.

SPECIFICATIONS

| | |
|------------------------------------|------------------------------|
| Robot Module weight | 0.70kg (1.55lb) |
| Tool Module weight | 0.72kg (1.60lb) |
| Current/Electrical Contact | 5 amps |
| Resistance/Electrical Contact | 50 (mOhm) |
| Wire Gauge for Contact Receptacles | 22 - 26 AWG |
| Module Dimensions | (LWH)112mm x 110mm x 60.75mm |
| Connector Sizes | DeviceNet: Minifast |
| | Auxiliary Power: Minifast |
| | Ethernet: M12 D Coded |
| | Tool Stand: M12 |
| | Valve: M12 |
| Mounting to Tool Changer | Four M5 x 60mm length screws |
| IP Rating | IP65 |

Advanced Technology & Design

- Fastest available connection times
- Diagnostics available for the first time via a webpage
- Ability to schedule maintenance and run various reports
- Specific diagnostics available for the tool changer itself

Not exactly what your application requires? Applied Robotics can design a solution that meets your particular application needs.

Engineering Data

Home Page Example Shown

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Solutions in reach

SmartChange Module
DNET1 Home Page

| Current I/O Status | | | | | |
|--------------------|-----|------------------|-----|------------------------------|----|
| Aux. Power: | YES | Tool Present: | YES | Tool Stand (Sense Uncouple): | No |
| Rdy-to-Couple#1: | No | Rdy-to-Couple#2: | No | Rdy-to-Couple#3: | No |
| In#1 Coupled: | YES | In#2 Uncoupled: | No | In#3: | No |
| Out#1 Couple: | No | Out#2 Uncouple: | No | Out#3: | No |
| | | In#4: | No | In#4: | No |
| | | Out#4: | No | Out#4: | No |

| Connected Device Status | | | |
|-------------------------|---------|-------------------|------------------|
| Current Tool ID: | 1-2-003 | RTA 50529030 | Connected Tools: |
| Expected Tools: | 1 | Missing Tools: | 0 |
| | | Unexpected Tools: | 0 |

| Maintenance Status | | | |
|-----------------------------|------|-----------------------|--------------|
| Coupled Counter (lifetime): | 5889 | Factory Maintenance: | Not Required |
| Maintenance Counter: | 189 | Maintenance Interval: | 1500 Cycles |
| | | User Maintenance: | Not Required |

| Timing | |
|-----------------------------|-------|
| DeviceNet Connect: | 249mS |
| Coupled to Uncoupled: | 175mS |
| Uncoupled to Coupled: | 170mS |
| Couple to Coupled: | --- |
| Uncouple to Uncoupled: | |
| Max. Uncouple to Uncoupled: | |

CommSettings Configuration Show Histogram Show Acceleration

TALK TO US
Define the problem. The solution is in reach.

Applied Robotics is a leading global provider of specialized end-use tooling and connectivity solutions designed to meet unique application and market needs – bringing new levels of flexibility and efficiency to bear on the industrial material handling process.

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Ethernet Diagnostics

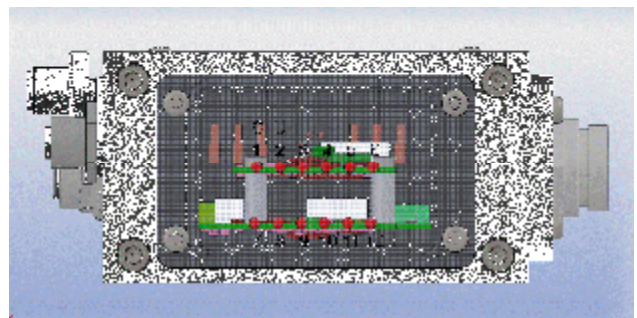
Connect the SmartComm™ module to your network to view Diagnostic Information on a webpage, using ODVA standard M-12 D-coded 4 wire connector.

- View IO Status.
- View lifetime Cycle counts.
- Set and read Maintenance counter which is also visible on the module's on-board LED array.
- View timing of functions to verify proper operation.
- View Histogram of timing trend to verify maintenance needs.
- View Max Cycle Time statistics to pinpoint problems.
- Generate XML format log history reports including such data as Time, Date, Module ID, Name, Cycle Counts, and Max Acceleration Values.
- View 3-Axis Accelerometer values, max values and calibrate.
- Set IP Address, Name, Description.
- View Connected Device Status (the Connected Tool and its downstream blocks/slaves)

Not exactly what your application requires? Applied Robotics can design a solution that meets your particular application needs.

Robot Side Ethernet/IP Module LED Indicators:

- 1=Coupled
- 2=Uncoupled
- 3=N/A
- 4=Factory Maintenance
- 5=User Maintenance
- 6=I/O Active
- 7=Ethernet Link
- 8=Ethernet Activity
- 9=Diagnostic
- 10=Slave Network Status
- 11=Master Network Status
- 12=Module Status



For Tool Side Information please see Users' Guide

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