

SmartComm™: DeviceNet Ethernet Module for the SmartChange™ Tool Changer Line (patent pending)

The SmartComm™ DeviceNet Ethernet Module for the SmartChange™ tool change system features the fastest connection time on the market.

This is the first DeviceNet Module to offer diagnostics capability and a webpage; taking DeviceNet 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 its features.)
- Our proprietary subnetwork drastically reduces connection times.
- 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 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).
- Modules are interchangeable between all SmartChange™ Tool Changers.
- Ethernet/IP Protocol available.
- Modbus TCP capability included.

SPECIFICATIONS

Robot Module weight	0.78kg/1.75lbs.
Tool Module weight	0.76kg/1.70lbs
Current/Electrical Contact	5 amps
Resistance/Electrical Contact	50 (mOhm)
Wire Gauge for Contact Receptacles	22 - 26 AWG
Module Dimensions (LWH)	119mm x 133mm x 70mm
Connector Sizes	DeviceNet: Minifast
	Auxiliary Power: Minifast
	Ethernet: M12 D Coded
	Tool Stand:M12
	Valve:M12
Mounting to Tool Changer	Captured M5screw
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.

Home Page Example Shown

Applied Robotics Solutions in reach

SmartChange Module
DNET1 Home Page

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

Connected Device Status			
Current Tool ID:	-----	----- Not Connected -----	Connected Nodes:
Expected Nodes:	----	Missing Nodes:	0
			Unexpected Nodes:
			0

Maintenance Status			
Coupled Counter (lifetime):	10707	Factory Maintenance:	Not Required
Maintenance Counter:	10707	Maintenance Interval:	20000 Cycles
		User Maintenance:	Not Required

Timing	
DeviceNet Connect:	12mS
Coupled to Uncoupled:	171mS
Uncoupled to Coupled:	160mS
Couple to Coupled:	338mS
Uncouple to Uncoupled:	338mS
Max. Uncouple to Uncoupled:	613mS

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-of-arm 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

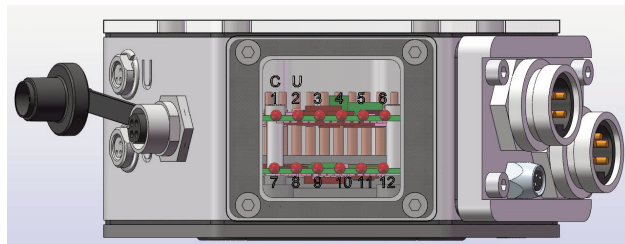
Connect the SmartComm™ module to your network to view SmartChange Diagnostic Information on a webpage, using OVA standard M-12 D-coded 4 wire connector.

- View IO Status
- View lifetime Cycle counts
- Set and read a maintenance counter whose status 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 predict maintenance needs
- View Max Cycle Time statistics to pinpoint potential 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)

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Robot Side DeviceNet Ethernet Module LED Indicators:

- 1=Coupled
- 2=Uncoupled
- 3=Ready To Couple
- 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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