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F. High Power Modules

MT14A-M and MT14-T—High Power Module

1. Product Overview

The high power modules are required to provide a means for the customer to communicate through the tool changer

Amphenol MS style connectors are provided for interfacing on the Master and Tool modules. When the tool changer is coupled, the Master and Tool signal modules communicate with each other using a spring loaded pin block. A flexible boot surrounds the pin block to seal the connection from moisture and liquid while coupled.

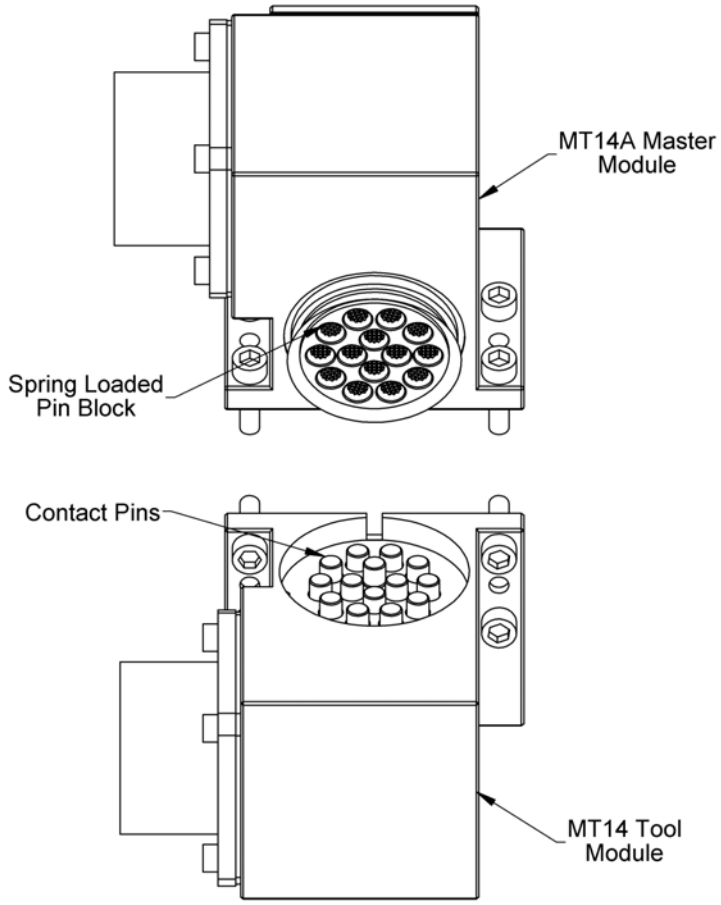


Figure 1.1—High Power Modules (MT14A-M, MT14-T shown)

2. Installation

The control/signal modules are typically installed by ATI prior to shipment. The steps below outline the field installation or removal as required.



WARNING: Do not perform maintenance or repair on Tool Changer or modules unless the tool is safely supported or docked in the tool stand and all energized circuits (e.g. electrical, air, water, etc.) have been turned off. Injury or equipment damage can occur with tool not docked and energized circuits on. Dock the tool safely in the tool stand and turn off all energized circuits before performing maintenance or repair on Tool Changer or modules.

2.1 Installing

1. It may be necessary to clean the mounting surface on the tool changer prior to installing the module in order to remove any debris that may be present.
2. Apply Loctite-222® (or similar) thread locker to the socket head cap screws and tighten using a hex key.

2.2 Removal

1. All customer connections up to the module need to be disconnected.
2. Remove the socket head cap screws and pull the module off the tool changer.

3. Operation

The primary current modules are designed to carry large currents to various industrial devices, providing a separable joint in the power wiring. To maximize the service life of these components the following points should be observed:

1. Do not couple or uncouple the modules unless electrical power has been disconnected and discharged both upstream and downstream from the modules. Arcing and contact damage will occur if this is not observed.
2. Properly route and secure all cables, particularly on the Master. Failure to observe this point may result in premature failure of the industrial electrical connectors. Poor cable routing can also result in wires and cable being pinched in the joint between the tool changer halves.
3. Always protect the un-used Tool modules when not coupled to a Master module. Dust, debris, and weld spatter can contaminate the contact tips resulting in arcing and a significant decrease in contact life.

4. Maintenance

Contact pins on the control module should be inspected and cleaned periodically to ensure electrical continuity is maintained. Care should be taken not to bend or pull out the contacts when cleaning. Do not use an abrasive media to clean the contact pins as erosion may occur to the contact surface.

5. Troubleshooting

Symptom	Possible Cause / Correction
Loss of Communication	Check/Replace cabling up- and down-stream of the tool changer modules. Inspect signal module contact pins for debris/wear.

6. Recommended Spare Parts

Assembly	Part Number	Description
MT14A High Power Module Master	9120-MT14A-M	Master High Power Module Assembly
	4010-0000041-01	V-Ring
MT14 High Power Module Tool	9120-MT14-T	Tool High Power Module Assembly
MTR14 High Power Module Master	9120-MTR14-M	Master High Power Module with Amphenol connector relocated to mount with connector flange parallel to mounting flat
MTR14 High Power Module Tool	9120-MTR14-T	Tool High Power Module with Amphenol connector relocated to mount with connector flange parallel to mounting flat
MT14A-VL High Power Module Master	9120-MT14A-M-VL	Haster High Power Module Assembly with Viton Seals
	4010-0000051-00	V-Ring
MT14-VL High Power Module Master	9120-MT14-M-VL	Tool High Power Module Assembly with Viton Seals

7. Specifications

High Power Module	**MT14A-M / MT14-T**	High Power Module w/ -- signal pass-through for customer use.
Weight (coupled)	1.5 lbs. (0.68 kg)	MT14A-M and MT14-T
Pass-Through Signals	14 @ 13 amp 500 VAC / 700VDC	Master-side Customer interface connector, MS3102E22-14P. Tool-side Customer Interface connector, MS3102E22-14S. Rhodium-plated contacts w/ first mate ground pin.

8. Drawings

Drawings are available on the ATI website or by contacting an ATI representative.