HARSCO RAIL

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SERVICE BULLETIN

MAINTENANCE OF WAY EQUIPMENT

DATE: 3-2013 **BULLETIN NO:** 13-003

TITLE: Jupiter Module And Cable Inspection Recommendations

RATING:

- ☐ **DIRECTIVE** (Action Is Required)
- ☐ **ALERT** (Potential Problem)
- ☒ **INFORMATION** (Action Is Optional)
- ☐ **PRODUCT IMPROVEMENT** (Enhance Product)

PRODUCT SERIES / MODEL: All Harsco Rail Equipment With Jupiter I or Jupiter II Control Systems

SERIAL NO: All Harsco Rail Equipment With Jupiter I or Jupiter II Control Systems

SUMMARY: Harsco Rail Jupiter I and Jupiter II modules and power tees are designed for use in the elements and typically do not require any maintenance. This is true as long as all cable connection points are securely sealed against entry of water, dust, grease, etc. To ensure the modules remain sealed against the elements, it is recommended that periodic inspection of the module cable connections take place. While inspecting the module cable connections, be sure to "blow down" or wipe off excess accumulation of debris (dust, grease, etc.) which impedes efficient heat dissipation.

OPERATIONAL IMPACT: Routine inspection and maintenance of the Jupiter Control System cable connections will help ensure that the cable connections are clean and properly tightened which will help prevent entry of water, dust, grease, etc. Routine inspection and maintenance of the Jupiter cables and modules will help prevent equipment down time.

ACTION: Follow the inspection and maintenance procedures outlined in this service bulletin to ensure the Jupiter Control System cable connections are clean and tightened securely. While inspecting the module cable connections, be sure to "blow down" or wipe off excess accumulation of debris (dust, grease, etc.) which impedes efficient heat dissipation.

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Safety Information

■ **FOLLOW APPLICABLE RAILROAD LOCKOUT - TAGOUT PROCEDURES TO DISABLE ENERGY SOURCES WHEN PERFORMING MAINTENANCE, MAKING ADJUSTMENTS OR REPAIRS TO THE EQUIPMENT. FAILURE TO HEED THIS WARNING COULD RESULT IN SEVERE BODILY INJURY.**

Jupiter I Cable Identification and Maintenance - See Figure 1

(1) - Network Cables

Jupiter I network cables are identified by their purple colored jacket and large, M23 connector.

90 days: Check tightness of connection; snug it using a Jupiter Wrench, Harsco Rail # H6285X01.

360 days: Remove connector from module and inspect contacts for oxidation. Clean if required and apply a small amount of dielectric grease to both the module connector and the cable connector. Follow the routing of the cable and check for abrasion or crushing. Replace if necessary.

(2) - Field Power Cables

Jupiter I field power cables are identified by their gray colored jacket and large, M23 connector.

90 days: Check tightness of connection; snug it using a Jupiter Wrench, Harsco Rail # H6285X01.

360 days: Remove connector from module and inspect contacts for oxidation. Clean if required and apply a small amount of dielectric grease to both the module connector and the cable connector. Follow the routing of the cable and check for abrasion or crushing. Replace if necessary.

(3) - Device Cables (Input / Output)

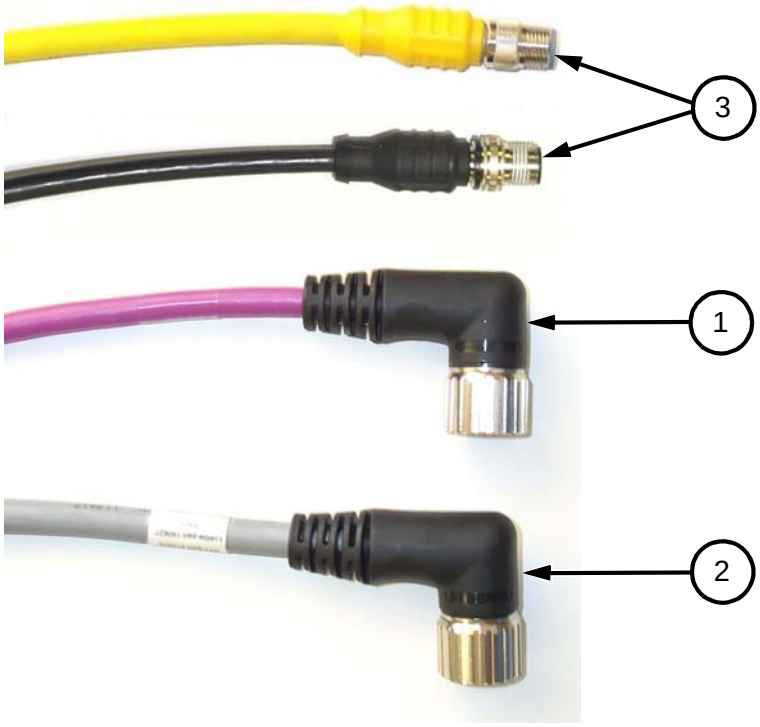
Device cables can be black, yellow or gray in color and have a small, M12 connector that mounts to the module.

90 days: Check tightness of connection by using an M12 torque wrench set at 0.9 N-m, Harsco Rail # 3427735.

360 days: Check the cable termination at the device end. Inspect for tightness of connection or missing connection hardware. Remove connector from module and inspect contacts for oxidation. Clean if required and apply a small amount of dielectric grease to both the module connector and the cable connector. Follow the routing of the cable and check for abrasion or crushing. Replace if necessary.

Jupiter I Cable Identification and Maintenance

FIGURE 1
JUPITER I CABLES



Unused Module Connectors - See Figure 2

Any connection at the module which does not have a cable attached should have a protective cap or plug installed. Use Harsco Rail # 2011829 caps (1) and # 5027895 plugs (2).

90 days: Check tightness of caps and plugs; snug them by hand.

FIGURE 2
JUPITER MODULE CAPS AND PLUGS

Jupiter II Cable Identification and Maintenance - See Figure 3

(1) - Network Cables

Jupiter II network cables are identified by their purple colored jacket and small M12 connector.

90 days: Check tightness of connection; by using an M12 torque wrench set at 0.9 N-m, Harsco Rail # 3427735.

360 days: Remove connector from module and inspect contacts for oxidation. Clean if required and apply a small amount of dielectric grease to both the module connector and the cable connector. Follow the routing of the cable and check for abrasion or crushing. Replace if necessary.

(2) - Field Power Cables

Jupiter II field power cables are identified by their black colored jacket and small M12 connector.

90 days: Check tightness of connection; by using an M12 torque wrench set at 0.9 N-m, Harsco Rail # 3427735.

360 days: Remove connector from module and inspect contacts for oxidation. Clean if required and apply a small amount of dielectric grease to both the module connector and the cable connector. Follow the routing of the cable and check for abrasion or crushing. Replace if necessary.

(3) - Device Cables (Input / Output)

Device cables can be black, yellow or gray in color and have a small, M12 connector that mounts to the module.

90 days: Check tightness of connection by using an M12 torque wrench set at 0.9 N-m, Harsco Rail # 3427735.

360 days: Check the cable termination at the device end. Inspect for tightness of connection or missing connection hardware. Remove connector from module and inspect contacts for oxidation. Clean if required and apply a small amount of dielectric grease to both the module connector and the cable connector. Follow the routing of the cable and check for abrasion or crushing. Replace if necessary.

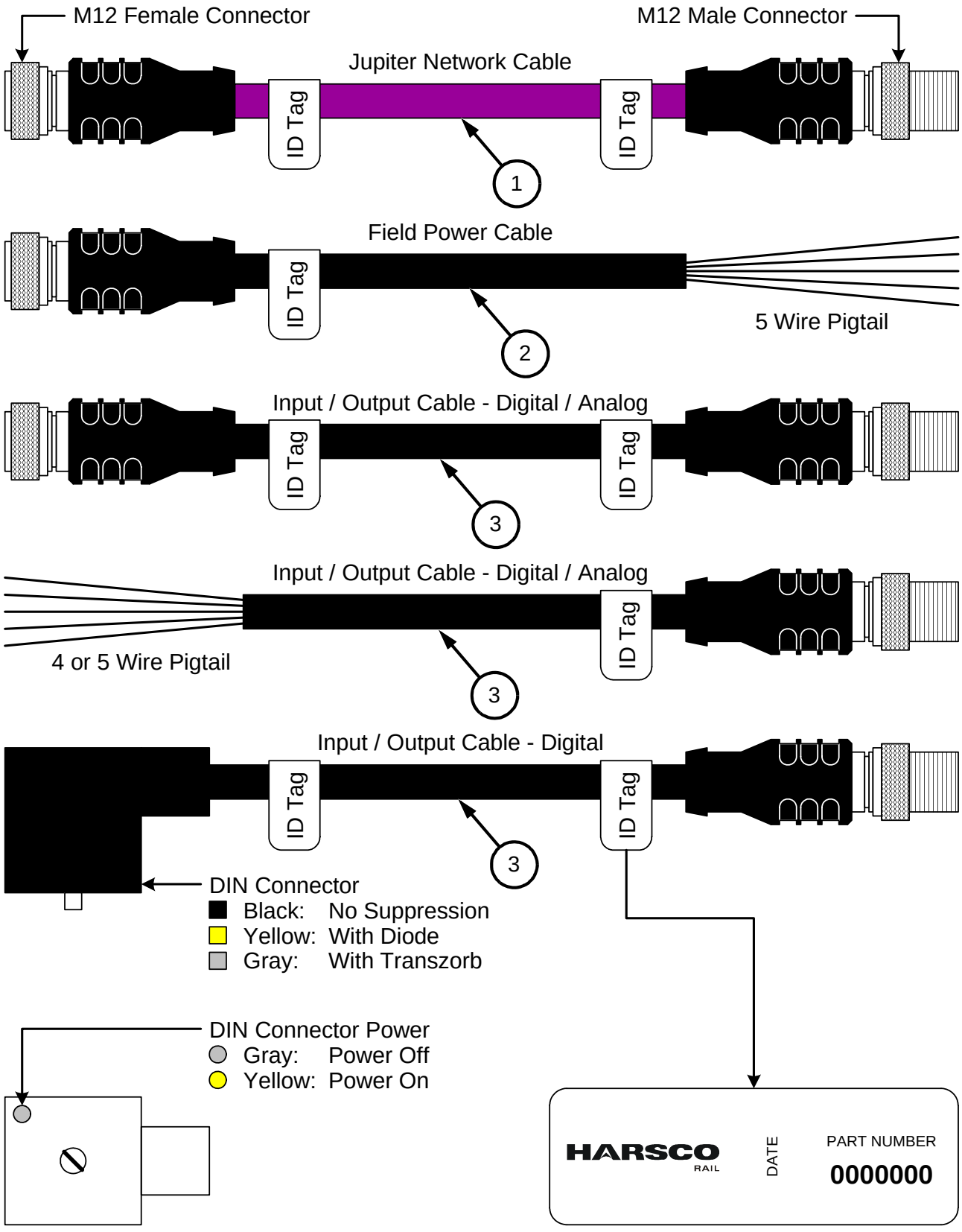
Unused Module Connectors

Any connection at the module which does not have a cable attached should have a protective cap or plug installed. See Figure 2. Use Harsco Rail # 2011829 caps (1) and # 5027895 plugs (2).

90 days: Check tightness of caps and plugs; snug them by hand.

Jupiter II Cable Identification and Maintenance

FIGURE 3
JUPITER II CABLES



Jupiter Cable Wrenches

(1) - Jupiter I Cable Wrench - See Figure 4

This wrench is used on the Jupiter I Network and Field Power Cables with M23 connectors. The wrench is Harsco Rail # H6285X01. The wrench can be used to loosen and tighten the cable connections. When tightening the connection with the wrench, tighten only until the connection is just snug.

FIGURE 4
JUPITER I CABLE WRENCH

(2) - Jupiter II and Device Cables (Input / Output) Wrench - See Figure 5

This wrench is used on the Jupiter II Network, Field Power Cables and Jupiter I and Jupiter II Device Cables (Input / Output) with M12 connectors. The wrench is Harsco Rail # 3427735. When the wrench is received, instructions and a tool are provided to set the torque feature to 0.9 N-m. Make sure the wrench is set to 0.9 N-m before use. Tighten the cable connections to 0.9 N-m. To loosen the cable connections, pull jaw end (3) off of shaft (4). Turn it over and re-install it on the shaft.

FIGURE 5
JUPITER II AND DEVICE CABLE WRENCH

Jupiter I Network Modules and Related Components

The following illustrations are of typical Jupiter I Network Modules and are provided for reference purposes.

FIGURE 6
DIGITAL INPUT MODULE

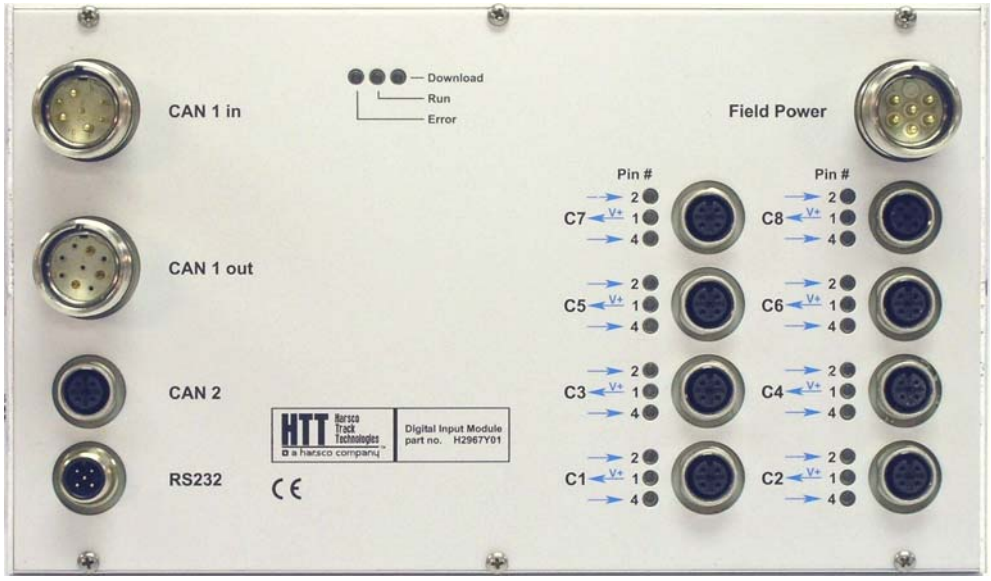
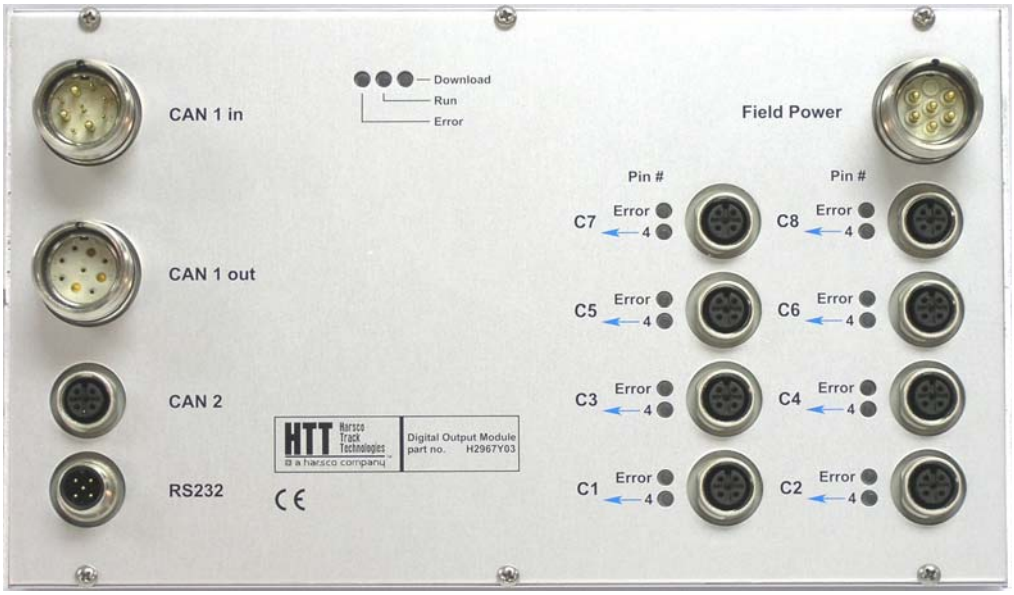


FIGURE 7
DIGITAL OUTPUT MODULE



Jupiter I Network Modules and Related Components

FIGURE 8
ANALOG INPUT MODULE

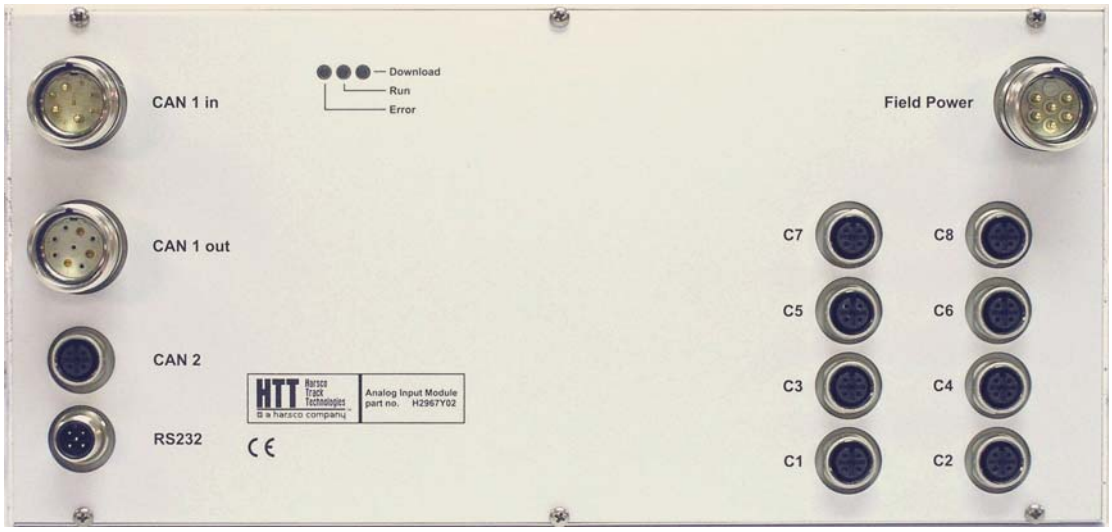
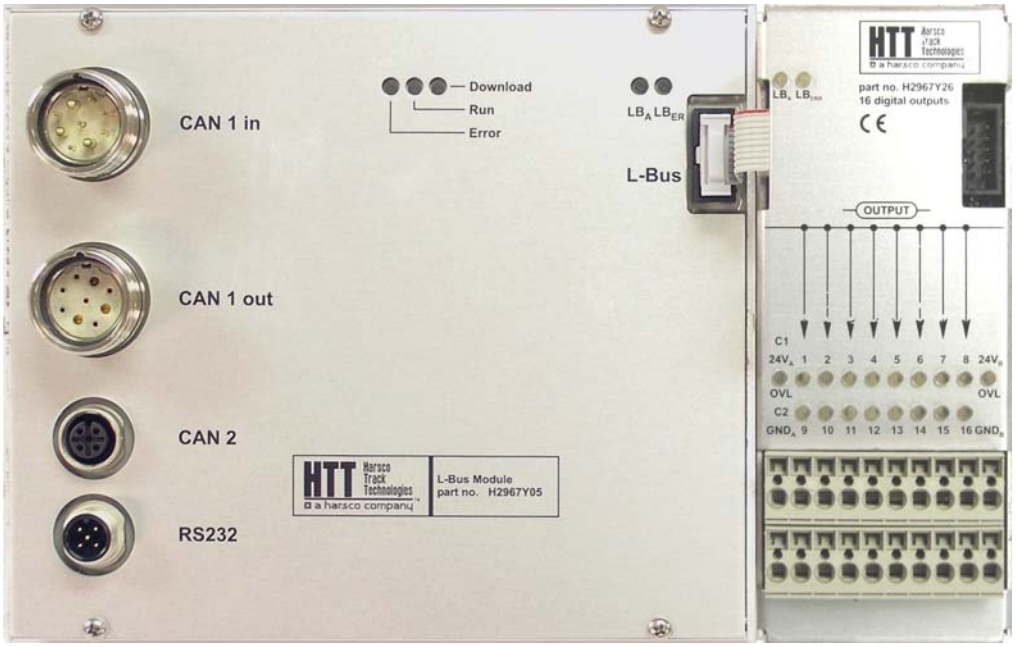


FIGURE 9
L-BUS MODULE



Jupiter I Network Modules and Related Components

FIGURE 10
POWER DISTRIBUTION MODULE

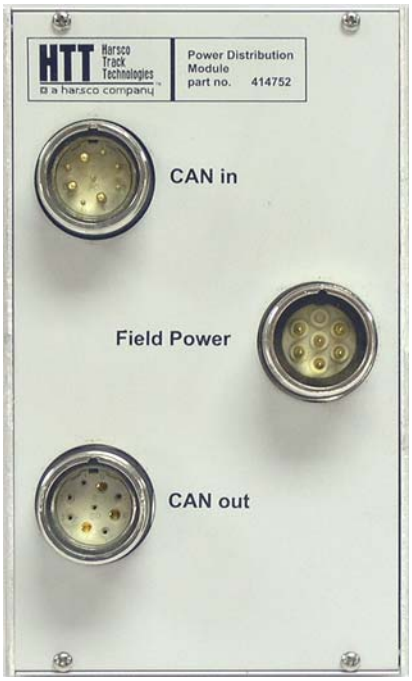
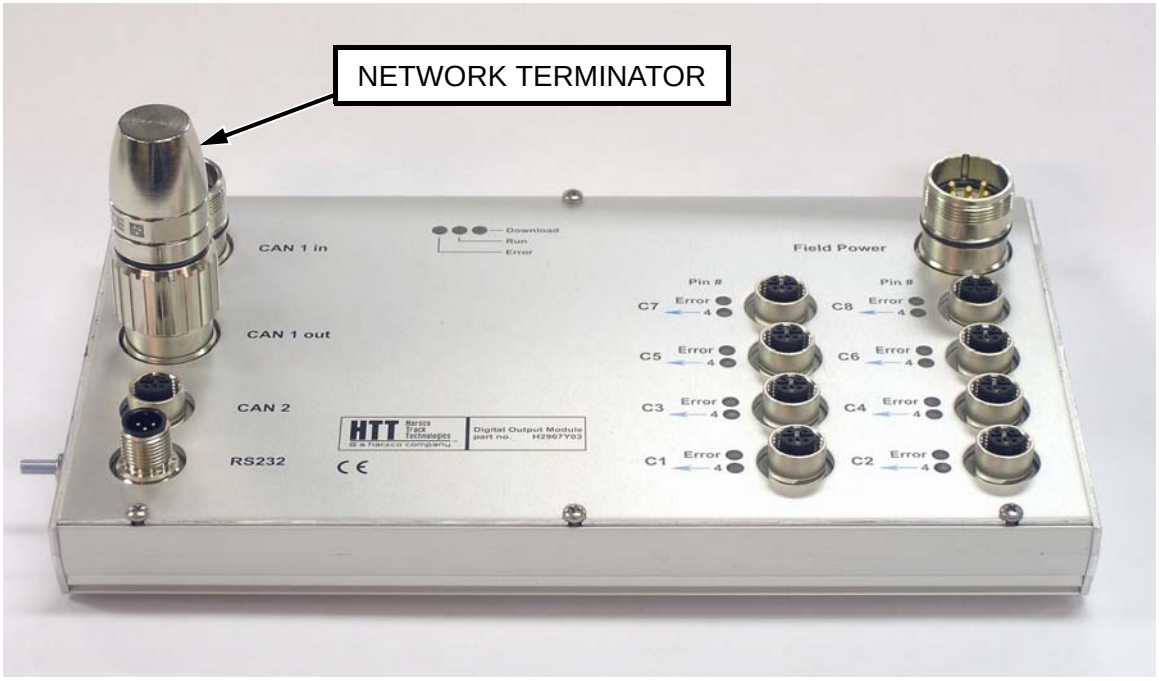


FIGURE 11
DIGITAL OUTPUT MODULE WITH NETWORK TERMINATOR



Jupiter II Network Modules and Related Components

The following illustrations are of typical Jupiter II Network Modules and are provided for reference purposes.

FIGURE 12
ANALOG INPUT MODULE

FIGURE 13
DIGITAL INPUT / OUTPUT MODULE

Jupiter II Network Modules and Related Components

FIGURE 14
ANALOG OUTPUT MODULE

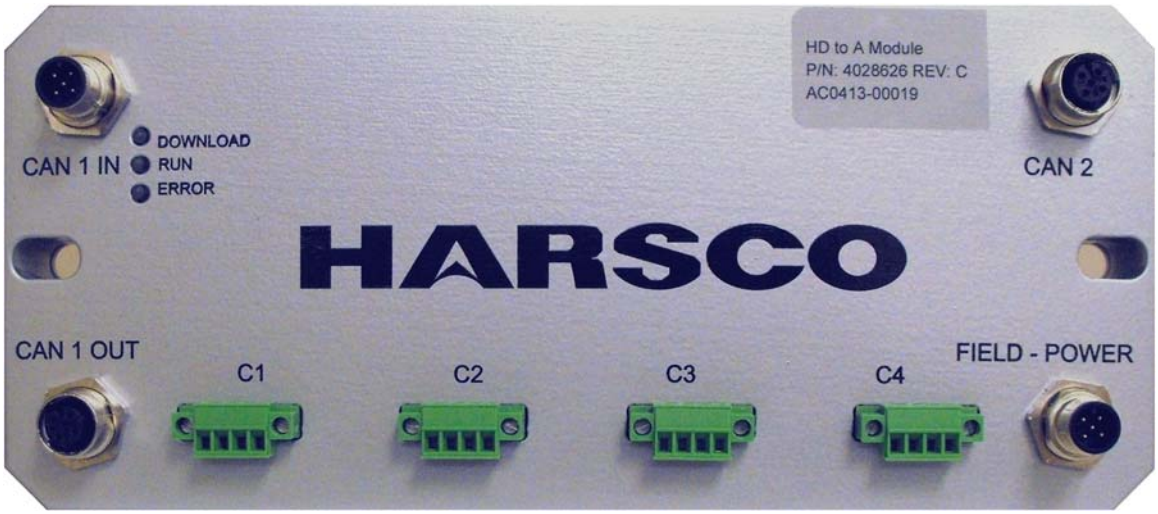
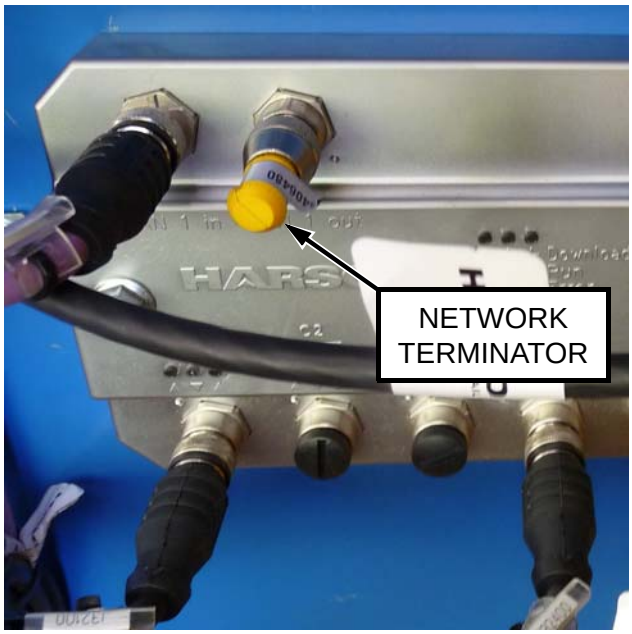


FIGURE 15
HIGH DENSITY DIGITAL INPUT / OUTPUT MODULE

Jupiter II Network Modules and Related Components

FIGURE 16
POWER DISTRIBUTION MODULE

FIGURE 17
DIGITAL INPUT / OUTPUT MODULE WITH NETWORK TERMINATOR



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