Host RS-232 Connector

Table 1 provides information for connecting the Host computer to the On-Board *IS* Controller.

Table 1: Host RS-232 Connector Specifications

Parameter	Value
Baud Rate	9.6 kbs
Data Bits	7
Parity	Even
Number of stop Bits	1

NOTE: The Host computer RS-232 Cable must be fully shielded through to the outer shell. Use CTI-Cryogenics cable part number 8132157 or equivalent.

Startup

See the 8040647, *On-Board* IS *Cryopump Operation Instructions*, for details.

Status LEDs

Status LED III blinks when the On-Board *IS* Controller is operating and indicates normal On-Board Network communication. Status LED I and LED II remain off during normal operation.

Helium Mapping

A helium map is a collection of devices that the On-Board *IS* Controller manages, so that each cryopump uses a shared helium manifold and compressor efficiently. See the **On-Board IS Cryopump System Operation Guide**, part number 8040647, for more information about helium maps.

To check the device addresses in a helium map:

1. Make a physical inventory of the system, noting the address of each device.
2. Use the Remote keypad (part number 8187007K001, see *Figure 2*) to go to the *On-Board* IS *Controller* screen.
3. Choose *Monitor* and press *Enter*, choose *Show Devices* and then press *Enter*.
4. Ensure that all device addresses appear correctly.

If all device addresses match the physical inventory, continue to add or change a helium map. If the device addresses do not match, check the cable connections and repeat from *Step 2* through this step.

To change or add to a helium map:

1. Use the Remote keypad to go to the *On-Board IS Controller* screen.
2. Choose *System Setup* and press *Enter*, choose *Helium* and then press *Enter*, finally, choose *Helium Map X* (where *X* is the number of the helium map you want to see) then press *Enter*. The *Choose Map Pumps* screen appears.
3. Choose the addresses of cryopumps that match your inventory addresses, go to *Accept Change*, and then press *Enter*. The *Choose Compressors* screen appears.
4. Choose the addresses of compressors that match your inventory addresses, go to *Accept Change*, and then press *Enter*. The *Verify Helium Map X* screen appears.
5. Go to *Accept Change* and press *Enter* to set the helium map.

If you want to make changes to the helium map, press the back button as necessary, and make the changes.
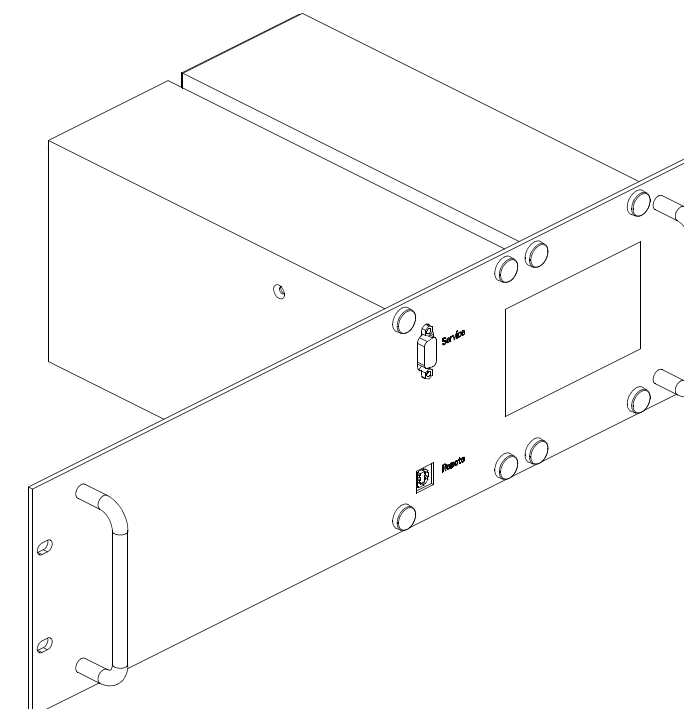
Product Information and Technical Support

Please visit the Brooks Automation website at www.brooks.com or email to *tscallcenter@brooks.com.*

On-Board® *IS* Controller (Rack Mount) Quick Installation Guide

Part Number 8040657, Revision A, 01/11/2013

ECO Number 63723

On-Board *IS* Controller Specifications

Input Voltage and Power: 100-120 VAC Or 200-230 VAC 50/60 Hz

Ambient Temperature: 50° F - 100° F (10° C - 38° C)

Communication Interface: Host RS-232, Aux RS-232, Service RS-232 - 9 Pin D Connector

Communication Interface Baud Rate: 9600

Host Computer Interface: RS-232

On-Board *IS* Software Interface: RS-232, bitbus, RS-485

On-Board *IS* Remote Interface: USB B Type with RS-232 Interface

Before You Start

1. Ensure the On-Board *IS* Cryopumps are installed according to the appropriate On-Board *IS* Cryopump Quick Installation Guide.
2. Ensure the On-Board *IS* 1000 Compressors are installed according to 8040645, *On-Board* IS *1000 Compressor Quick Installation Guid*e.
3. Read and follow all safety precautions in this guide and in the appropriate cryopump and compressor guides.

On-Board *IS* Controller Installation

Install one of the On-Board *IS* Controller configurations into the electronics rack with 4 screws as shown in *Figure 1*.
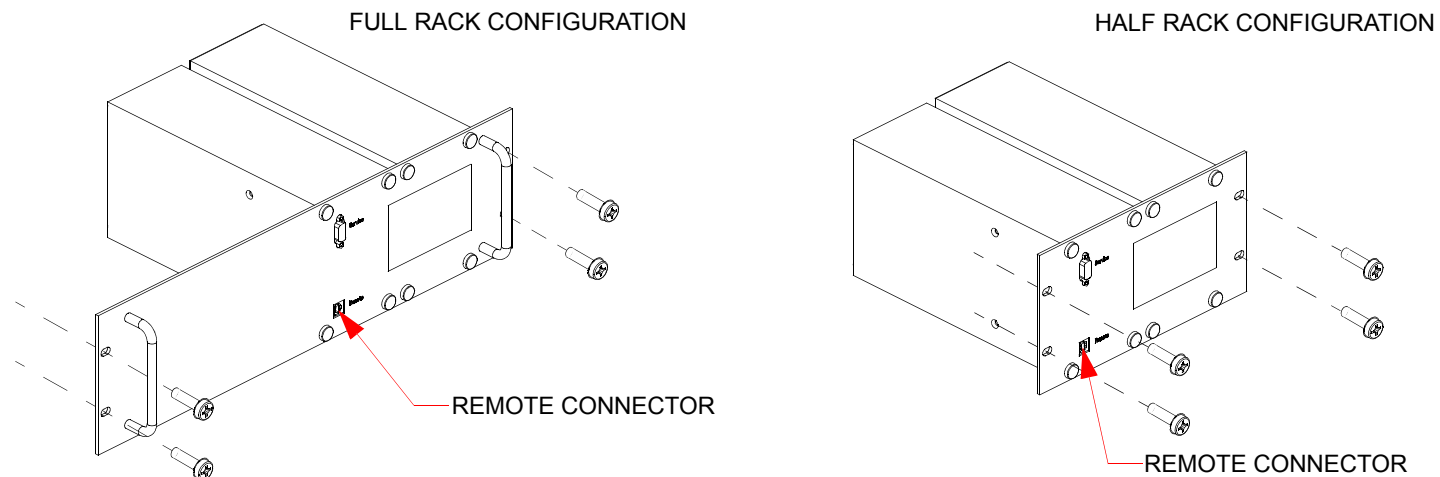
FULL RACK CONFIGURATION

HALF RACK CONFIGURATION

REMOTE CONNECTOR

REMOTE CONNECTOR

Figure 1: On-Board *IS* Controller Rack Mount Installation

On-Board *IS* Controller Cable Connections

⚠	**CAUTION**
	Equipment Damage
	To avoid damaging the equipment, ensure the Network Cables are not near EMI sources when routing them through the process tool.

1. Connect the Channel A Network Cables between the On-Board *IS* Controller and On-Board *IS* Cryopumps as shown in *Figure 2* and *Figure 3*.
2. Connect the Channel B Network Cables between the On-Board *IS* Controller and On-Board *IS* Cryopumps as shown in *Figure 2* and *Figure 3*.
3. Connect the Channel C Network Cables between the On-Board *IS* Controller and On-Board *IS* 1000 Compressors as shown in *Figure 2* and *Figure 3*.

NOTE: Make sure the last On-Board IS Cryopump and On-Board IS 1000 Compressor on each channel have a terminator installed in the open Network connector. Otherwise, data for that channel is not visible on the On-Board IS Remote.

4. Connect a Terminator to the open Network connector on the last On-Board *IS* device on each channel.
5. Connect the HOST computer RS-232 cable to the HOST connector on the On-Board *IS* Controller.
6. Connect the On-Board *IS* Remote cable to the REMOTE connector on the On-Board *IS* Controller front panel.
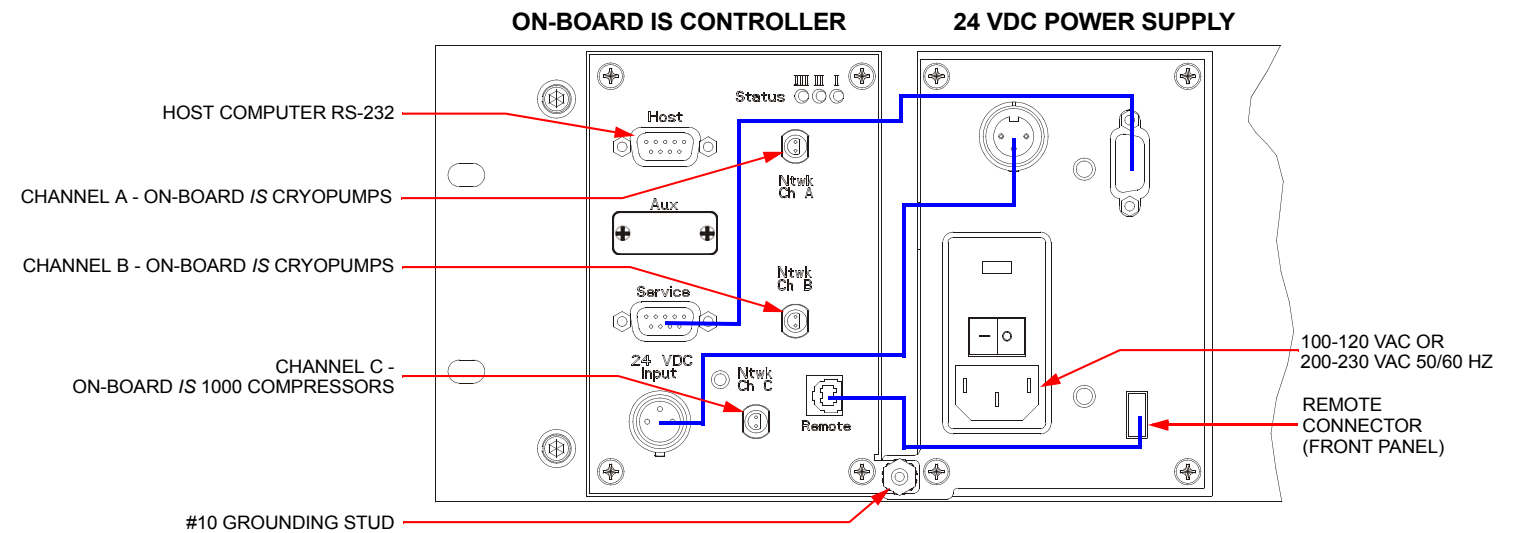7. Connect the power supply power cord to a 120 or 230 VAC 50/60 Hz power source.

ON-BOARD IS CONTROLLER   24 VDC POWER SUPPLY

HOST COMPUTER RS-232

CHANNEL A - ON-BOARD *IS* CRYOPUMPS

CHANNEL B - ON-BOARD *IS* CRYOPUMPS

CHANNEL C - ON-BOARD *IS* 1000 COMPRESSORS

100-120 VAC OR 200-230 VAC 50/60 HZ

REMOTE CONNECTOR (FRONT PANEL)

#10 GROUNDING STUD

Figure 2: On-Board *IS* Controller and 24 VDC Power Supply Cable Connections

ON-BOARD *IS* REMOTE

CHANNEL A ADDRESSES

01 02 03 04

HOST RS-232

TERMINATOR

ON-BOARD *IS* 8F CRYOPUMPS

10 11 12 13

CHANNEL B ADDRESSES

TERMINATOR

ON-BOARD *IS*-1000 COMPRESSORS
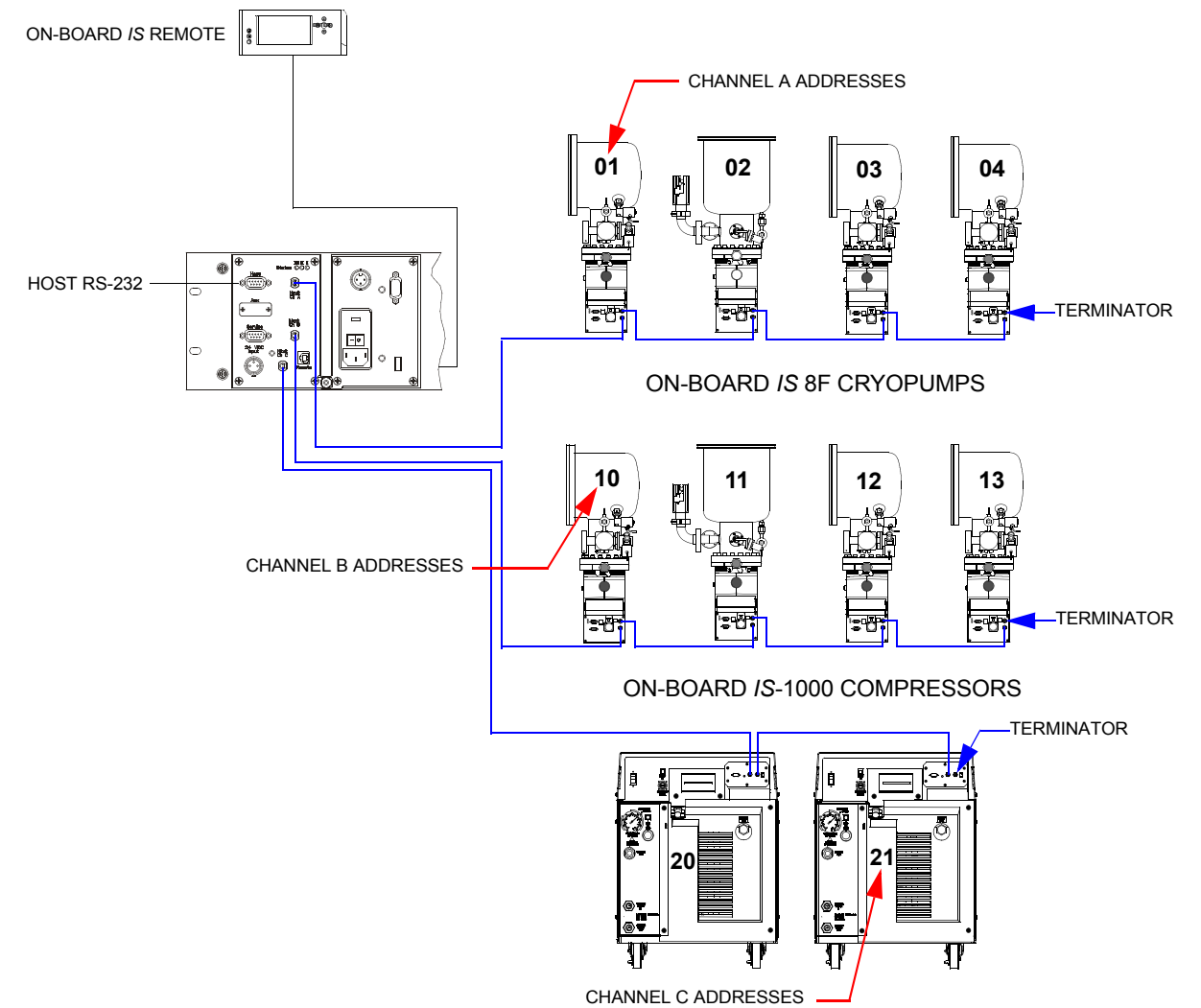
TERMINATOR

20 21

CHANNEL C ADDRESSES

Figure 3: On-Board *IS* Cryopump System and Intercomponent Network Connections