

# RS-232/422 16-Port (DB25) Interface Reference Card

for Hostess<sup>®</sup> 550 16, Hostess 550/MC 16, Hostess 186 16,  
Hostess i 16, and Hostess i/MC 16

## Scope

This reference card discusses the interface box you purchased with your Control<sup>™</sup> controller. Use this card if you want to configure ports for RS-422 or synchronous operation. Only the Hostess *i* and Hostess *i/MC* models support synchronous mode.

**Note:** The default setting for the interface box is RS-232 asynchronous mode.

## Prerequisites

This *Reference Card* assumes that you are familiar with installing equipment for your computer.

The following are required to install this interface box:

- An applicable Control controller
- A Phillips screwdriver to remove the backplate, when configuring current loop mode.
- A probe to move the jumpers during configuration

This reference card assumes you have already configured and installed the controller, and that the device driver is already installed.

## Specifications

The following table lists specifications for the interface:

Function	Specification
I/O ports	16 ports
Interface	RS-232 and RS-422
Default mode	RS-232 async
FCC Certification	Complies with FCC Class A for section 15 subpart J, conducted and radiated types of interface.
UL recognition	Yes
Dimensions	4.875" x 5.75" x 1.75"

Refer to the *Hardware Installation Guide* or *Hardware Reference Card* for specific information for the controller.

Software specific information and a comprehensive support section can be found in the *Installation Guide* or *Reference Card* for the device driver you ordered.

If you did not order a Control device driver, you may receive a *Programming Guide* that contains programming information for your controller.

## Configuring the Interface Box

Tables 1 and 2 provide you with the information that you may need to configure the interface box. If you plan on using RS-232 for asynchronous operation, you can connect your peripherals without configuring the interface box.

You must remove the back cover of the interface box to configure the interface box if you wish to use:

















- RS-422 mode
- Synchronous operation for the Hostess *i* or Hostess *i/MC*. Make sure you have previously configured the controller for synchronous mode, or do so before using Ports 1 and 2 for synchronous operation.

**Note:** If you open the interface box to configure it, be aware that the jumpers are not specifically coded to the adjacent port.

If you need to test signals, the ports are labeled on the inside of the interface box.


There are two styles of jumpers used to configure the interface box, 2-pin and 3-pin jumpers. There are only six 3-pin jumpers.

Table 1. Setting Asynchronous Modes

Port	Jumper	RS-232 (Default)	RS-422	RS-232 (Default)	RS-422
		Female		Male	
		Off*	On**	Off*	On**
1	JP5	Off*	On**	Off*	On**
	JP6	Off*	On**	Off*	On**
2	JP7	Off*	On**	Off*	On**
	JP8	Off*	On**	Off*	On**
3	JP1				
	JP2				
	JP9	Off*	On**	Off*	On**
	JP10	Off*	On**	Off*	On**
4	JP3				
	JP4				
	JP15	Off*	On**	Off*	On**
	JP16	Off*	On**	Off*	On**

\* Off means that the jumper is installed on one pin or completely removed.

\*\* On means that the jumper is installed on both pins.

 Means that the jumper is installed over pins 2 and 3.

**Table 1. Setting Asynchronous Modes (Continued)**

Port	Jumper	RS-232	RS-422	RS-232	RS-422
		(Default)		(Default)	
		Female		Male	
5	JP11	Off*	On**	Off*	On**
	JP12	Off*	On**	Off*	On**
	JP37	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
	JP38	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
6	JP17	Off*	On**	Off*	On**
	JP18	Off*	On**	Off*	On**
7	JP13	Off*	On**	Off*	On**
	JP14	Off*	On**	Off*	On**
8	JP19	Off*	On**	Off*	On**
	JP20	Off*	On**	Off*	On**
9	JP21	Off*	On**	Off*	On**
	JP22	Off*	On**	Off*	On**
10	JP29	Off*	On**	Off*	On**
	JP30	Off*	On**	Off*	On**
11	JP23	Off*	On**	Off*	On**
	JP24	Off*	On**	Off*	On**
12	JP31	Off*	On**	Off*	On**
	JP32	Off*	On**	Off*	On**
13	JP25	Off*	On**	Off*	On**
	JP26	Off*	On**	Off*	On**
14	JP33	Off*	On**	Off*	On**
	JP34	Off*	On**	Off*	On**
15	JP27	Off*	On**	Off*	On**
	JP28	Off*	On**	Off*	On**
16	JP35	Off*	On**	Off*	On**
	JP36	Off*	On**	Off*	On**

\* Off means that the jumper is installed on one pin or completely removed.

\*\* On means that the jumper is installed on both pins.

1  3 Means that the jumper is installed over pins 2 and 3.

**Note:** The jumper pins are numbered 1, 2, and 3 from left to right with the cable towards your body.

**Table 2. Setting Synchronous Modes**

Port	Jumper	RS-232 †	RS-422 ††	RS-232 †	RS-422 ††
		(Default)		(Default)	
		Female		Male	
1	JP1	<input type="checkbox"/> 3	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 3
	JP2	<input type="checkbox"/> 3	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 3
	JP5	Off*	On**	Off*	On**
	JP6	Off*	On**	Off*	On**
	JP9	Off*	Off*	Off*	Off*
	JP10	Off*	Off*	Off*	Off*
	JP37	<input type="checkbox"/> 1	<input type="checkbox"/> 3	<input type="checkbox"/> 1	<input type="checkbox"/> 3
2	JP3	<input type="checkbox"/> 3	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 3
	JP4	<input type="checkbox"/> 3	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 3
	JP7	Off*	On**	Off*	On**
	JP8	Off*	On**	Off*	On**
	JP15	Off*	Off*	Off*	Off*
	JP16	Off*	Off*	Off*	Off*
	JP38	<input type="checkbox"/> 1	<input type="checkbox"/> 3	<input type="checkbox"/> 1	<input type="checkbox"/> 3
3 through 16***	JP11 - JP14 & JP17- JP36	Off*	Off*	Off*	Off*

\* Off means that the jumper is installed on one pin or completely removed.

\*\* On means that the jumper is installed on both pins.

\*\*\* Asynchronous operation only. See Table 1 to set RS-422 mode, if necessary

1  3 Means that the jumper is installed over pins 2 and 3.

† If port 1 is set to synchronous mode, you lose modem control on port 3. If port 2 is set to synchronous mode, you lose modem control on port 4. Only Ports 1 and 2 can be configured for RS-232 synchronous operation. Ports 1 and 2 support DSR in any mode at the expense of modem control on port 5.

†† Ports 3 and 4 are unavailable when ports 1 and 2 are configured for RS-422 synchronous operation. Only Ports 1 and 2 can be configured for synchronous operation.

## Installing the Interface Box

Use the following procedure to install the interface unit:

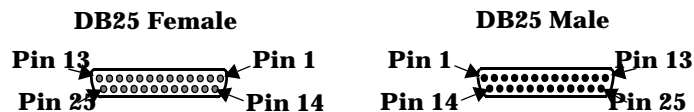
1. Turn the system power off.
2. Plug the interface box cable into the controller's connector.
3. **Manually** twist the plug's thumbscrews into the connector, being careful not to overtighten.

If you need pinout information for the cable connector that attaches to the controller, see the documentation that came with the controller.

## Attaching the Peripherals

Use the following steps to attach your peripherals:

1. With the system power still off, connect your peripherals to the interface box. The ports on the interface box are numbered from 1 to 16.
2. Use the following figures and table if you need information about the DB25 connector pinouts.



**Note:** Table 3 only lists pins that Control supports.

**Table 3. RS-232/422 Interface Box Port Pinouts**

Port	RS-232 Signal	Pin	Notes	RS-422 Signals	Pin	Notes
1	TX	2		RXCLK+	9	Note 7
	RX	3		RXCLK-	10	Note 7
	RTS	4		TXCLK+	12	Note 7
	CTS	5		TXCLK-	13	Note 7
	DSR	6	Note 1	RX+	15	
	GND	7		RX-	17	
	CD	8		TX+	19	
	TXCLK	15	Note 2	TX-	25	
	RXCLK	17	Note 3			
	DTR	20				
2	TX	2		RXCLK+	9	Note 8
	RX	3		RXCLK-	10	Note 8
	RTS	4		TXCLK+	12	Note 8
	CTS	5		TXCLK-	13	Note 8
	DSR	6	Note 4			
	GND	7				
	CD	8				
	TXCLK	15	Note 5			
	RXCLK	17	Note 6			
	DTR	20				

**Table 3. RS-232/422 Interface Box Port Pinouts**

3 - 10	TX	2		RX+	15
	RX	3		RX-	17
	RTS	4		TX+	19
	CTS	5		TX-	25
	GND	7			
	CD	8			
	DTR	20			
11 - 12	TX	2		RX+	15
	RX	3		RX-	17
	RTS	4		TX+	19
	CTS	5		TX-	25
	GND	7			
	CD	8			
13 - 16	TX	2		RX+	15
	RX	3		RX-	17
	RTS	4		TX+	19
	CTS	5		TX-	25
	GND	7			
	CD	8			
	DTR	20			

**Note:** Synchronous support is available only on Ports 1 and 2 at the expense of the control lines on Ports 3, 4, and 5. DTR is not supported on Ports 11 and 12.

- 1: Port 5 CTS is disabled in RS-232 mode and DSR1 read from Port 5 CTS. Port 5 RS-422 mode is not allowed when DSR is used.
- 2: Port 3 CD is disabled in RS-232 mode and TXCLK is input to Port 1 when TXCLK is used.
- 3: Port 3 CTS is disabled in RS-232 mode and RXCLK is input to Port 1. Port 3 RS-422 mode is not allowed when TXCLK is used.
- 4: Port 5 CD is disabled in RS-232 mode and DSR2 is read from Port 5 CD when DSR is used.
- 5: Port 4 CD is disabled in RS-232 mode and TXCLK is input to Port 1 when TXCLK2 is used.
- 6: Port 4 CTS is disabled in RS-232 mode and RXCLK is input to Port 2 when RXCLK2 is used. Port 4 RS-422 mode is not allowed.
- 7: Port 3 is unavailable in any mode, set Port 3 on the controller to RS-422 mode.
- 8: Port 4 is unavailable in any mode, set Port 4 on the controller to RS-422 mode.

## Shielding Cables

The interface falls within the limits for a Class A computing device established by the FCC. To comply with these limits, the serial cables used to connect the controller to external devices should be shielded.

The shield should be connected to a metal or metallized connector shroud on each end of the cable. It is not necessary to connect the chassis ground pin of the DB25 connector.

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## Warranty

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Control Corporation provides:

- A 30-day money-back guarantee
- A five year limited warranty (US and Canada)
- Support for your Control controller for 5 years from the date of purchase.

Check with your distributor for guarantee conditions in countries other than the U.S.A. and Canada.

### Limited Warranty

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Control Corporation, Inc. ("the Company") and its affiliate (Control Europe, Ltd.) make no representations or warranties, expressed or implied including warranties of merchantability, noninfringement, and fitness for a particular purpose except as provided below.

### Hardware

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Control warrants to the original purchaser that its controller is free of defect in design, materials and workmanship for five years from the date of delivery of a new controller. Control (or its authorized repair center), at its option, will repair or replace, at the business location of Control each part of the controller which is proven to the satisfaction of Control to have been defective in design, material or workmanship.

This warranty shall not apply to any part of the controller which, in the judgment of Control, has been subjected to misuse, negligence, alteration, accident, improper maintenance, or damage by excessive physical or electrical stress. Adjustment of the controller, where warning labels and operation manuals warn against such adjustments, will void this warranty.

This warranty is void if the serial number of the controller has been defaced, altered or removed. This warranty does not apply to expendable components such as fuses or bulbs. Repair and replacement parts will be furnished on an exchange basis and may be either reconditioned or new. All replaced parts or controllers become the property of Control.

The sole remedy for breach of warranty shall be repair, replacement, or refund, at the option of Control, of the defective product as provided follows.

### Return Procedure

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To qualify for the previously discussed warranty, the original purchaser must follow the procedure outlined below:

1. Control must be notified in writing within thirty (30) days of the date that the defect is discovered. Control will then issue a Return Material Authorization (RMA) number which the purchaser must include with all correspondence and display on the outside of the shipping container when returning the controller.

2. All controllers must be shipped freight and insurance prepaid, in the original shipping container, or in a container providing equal or better protection, with the RMA number displayed on the outside of the container in a prominent manner.
3. A written description of the defect together with a copy of your receipt or other proof of purchase, and the name of the dealer who sold you the Control product, must be shipped with the controller. All defects must be reproducible at Control's location to qualify for this limited warranty. Ship the controller to:

Control Corporation  
Distribution/Repair  
1791 Buerkle Circle  
White Bear Lake, MN 55110

Control will return a controller which qualifies under this warranty, freight and insurance prepaid. Control will repair or replace controllers that do not qualify under the terms of this warranty at the option of the purchaser, in which case the purchaser will pay the cost of repair or replacement, and return freight and insurance.

This limited warranty is in lieu of all other warranties and conditions expressed, implied or statutory including merchantability, fitness for purpose, non-infringement, course of dealing, trade or performance and all other liabilities of Control all of which are hereby disclaimed.

In no event will Control be liable for damages, including lost profits, lost savings or other special, punitive, incidental, or consequential damages arising out of the use of or inability to use the controller, even if Control or an authorized dealer has been advised of the possibility of such damages, or for any claim by any other party. This warranty gives you specific legal rights and you may also have other rights that vary from state to state (U.S.) or in your home country.

### Limited Liability

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Independent of the warranty or any other agreement between you and Control, regardless of the basis for any claim, neither Control nor anyone else who has been involved in the creation, production, or delivery of this software or hardware shall be liable for any direct, indirect, consequential or incidental damages; Control's maximum liability shall be limited to refund of the purchase price. Some consumer laws may not allow the limitation or exclusion of incidental or consequential damages for consumer products, so the above limitations or exclusions may not apply to you. The price of the materials and programs reflects this allocation of risk.

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## Technical Support

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Comtrol has a staff of support technicians available to help you. Before you call, please have the following information available: controller model, interface type, I/O address selection, IRQ used, operating system type and release, device driver release number, and computer make, model, and processor speed.

### Corporate Headquarters:

- email: [support@comtrol.com](mailto:support@comtrol.com)
- FAX: (651) 631-8117
- Phone: (651) 631-7654
- FTP Site: <ftp://ftp.comtrol.com>
- Web Site: <http://www.comtrol.com>

### Comtrol Europe:

- email: [support@comtrol.co.uk](mailto:support@comtrol.co.uk)
- FAX: +44 (0) 1 869-323-211
- Phone: +44 (0) 1 869-323-220
- Web Site: <http://www.comtrol.co.uk>

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