

Model 2703AP Quick Reference Guide

Product Overview

This section describes the Model 2703AP faceplate and the Model 2346 distribution board.

Figure 1. 2703AP CPU Faceplate

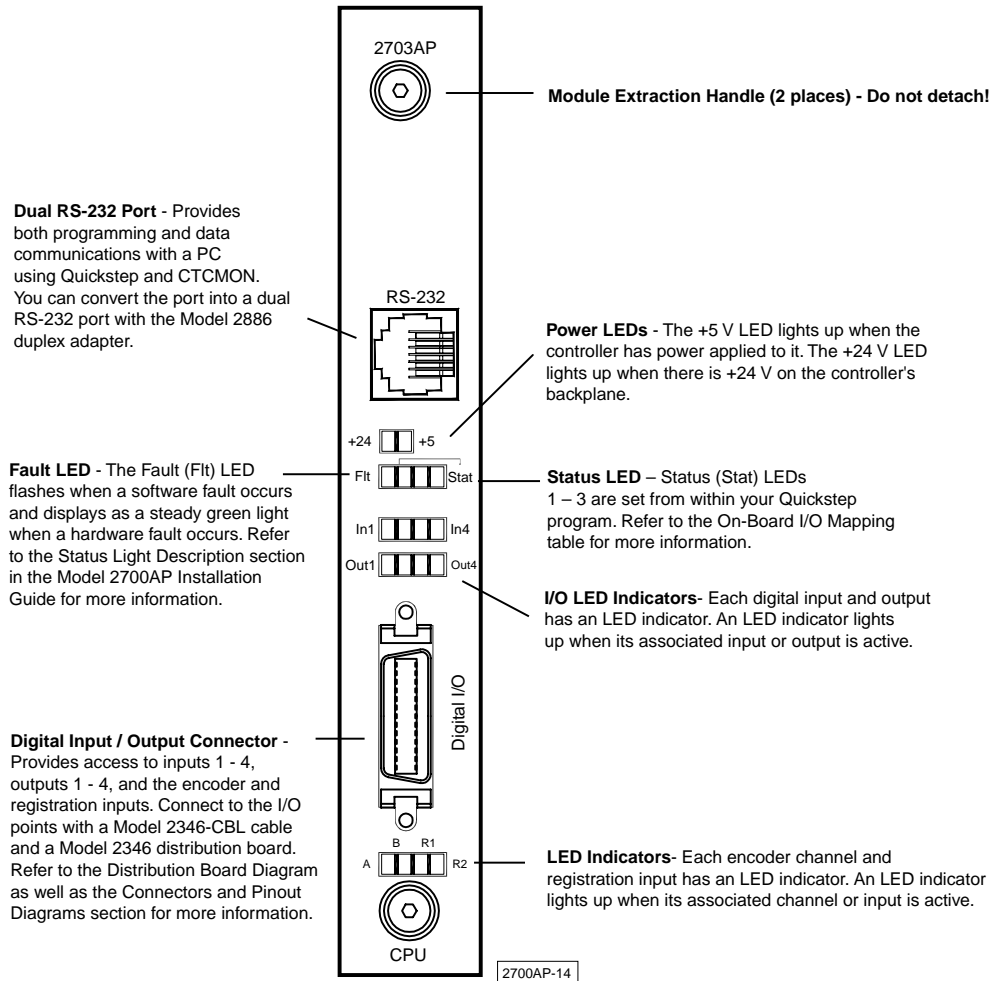
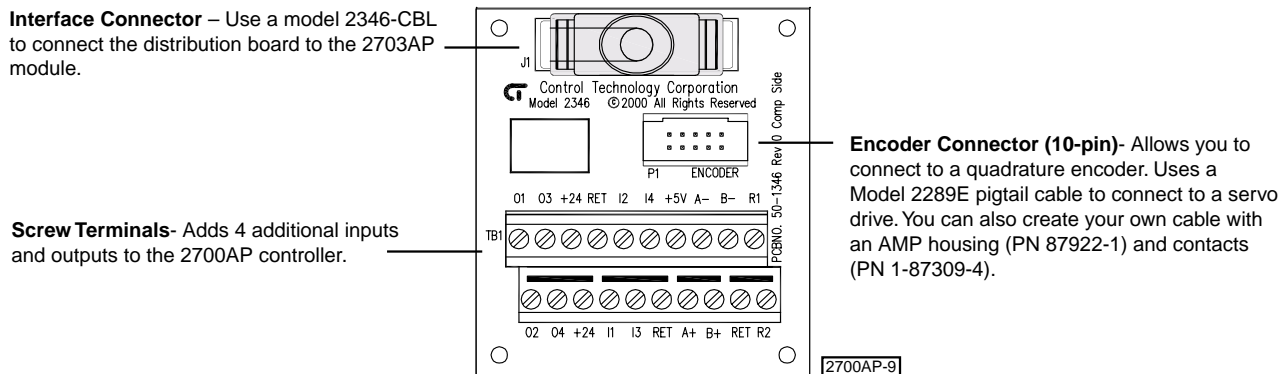
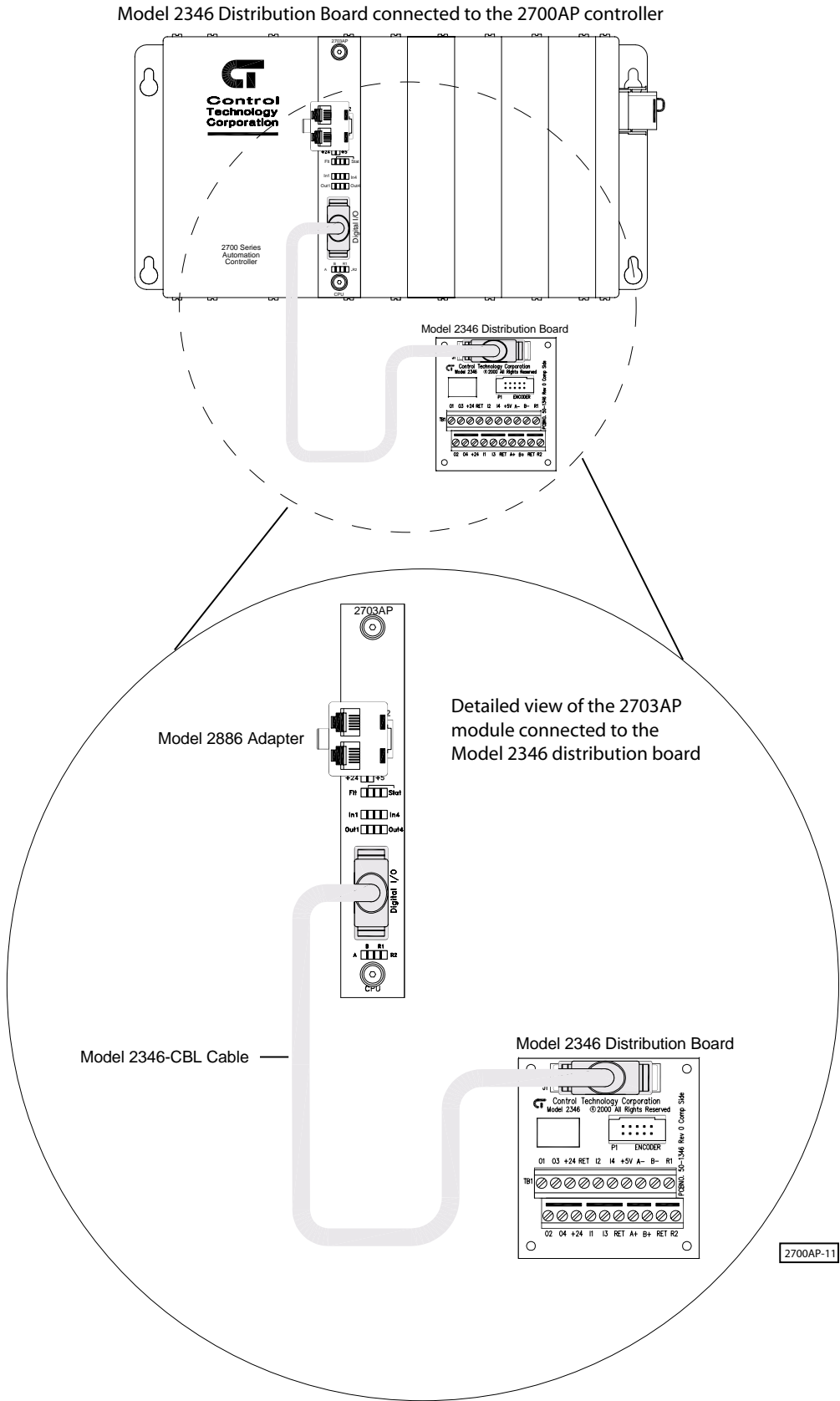


Figure 2. Model 2346 Distribution Board Description



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Product Overview**

Figure 3. Model 2346 Distribution Board Connection Diagram



Connectors and Pinout Diagrams

I/O Connector Distribution Contacts (located on Model 2346 distribution board)	Pin #	Signal	Pin #	Signal
	1	Output 1	11	Output 2
	2	Output 3	12	Output 4
	3	+24 V	13	+24 V
	4	Return	14	Input 1
	5	Input 2	15	Input 3
	6	Input 4	16	Return
	7	+5 V	17	Phase A+
	8	Phase A-	18	Phase B+
	9	Phase B-	19	Return
	10	Registration Input 1	20	Registration Input 2

Interface Connector (located on 2703AP module and 2346 distribution board)	Pin #	Signal	Pin #	Signal
	1	+5VE	14	RET
	2	Phase B+	15	Phase B-
	3	Phase A+	16	Phase A-
	4	RET	17	RET
	5	REG1	18	REG2
	6	IN3	19	IN4
	7	IN1	20	IN2
	8	+24V	21	+24V
	9	OUT4	22	OUT4
	10	OUT3	23	OUT3
	11	OUT2	24	OUT2
	12	OUT1	25	OUT1
	13	+24V	26	+24V

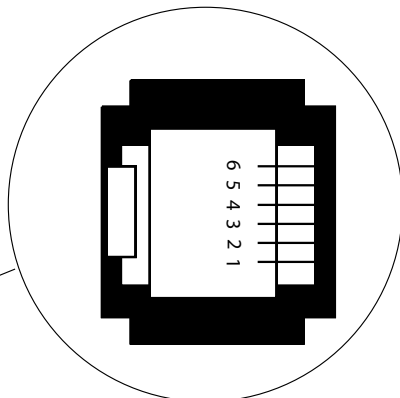
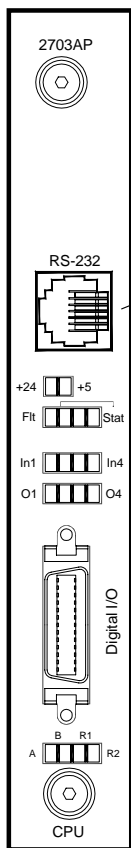
Encoder Connector (located on the Model 2346 distribution board)		Pin #	Signal	Pin #	Signal
		1	Phase A (+)	6	5 Volt Return
		2	Phase A (-)	7	+5 VDC (for encoder)
		3	NC	8	Phase B (+)
		4	NC	9	Phase B (-)
		5	Index (-)	10	Index (+)

On-Board I/O Mapping in Quickstep

2703AP Input	QS Resource	2703AP Output	QS Resource
1	Input 993	1	Output 993
2	Input 994	2	Output 994
3	Input 995	3	Output 995
4	Input 996	4	Output 996
	Input 998	Status LED 1	Output 998
Registration Input 1	Input 999	Status LED 2	Output 999
Registration Input 2	Input 1000	Status LED 3	Output 1000

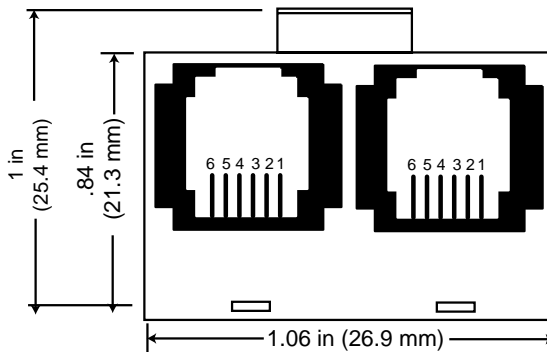
RS-232 Wiring Diagrams

RS-232 Wiring Diagram – Single Port

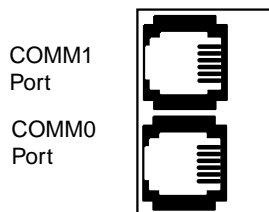


- 1 - TxD Outbound (Comm1)
- 2 - TxD Outbound (Comm0)
- 3 - Common
- 4 - Common
- 5 - RxD Inbound (Comm0)
- 6 - RxD Inbound (Comm1)

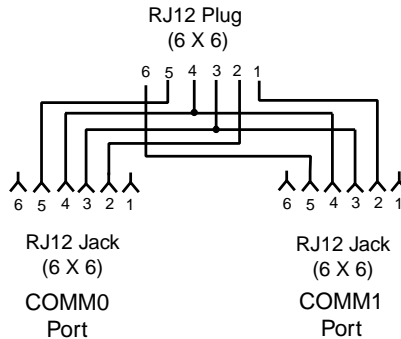
RS-232 Wiring Diagram – Dual Port with the Model 2886 Adapter



Orientation of connector when plugged into 2703AP



Wiring Diagram



2700AP-2

General Specifications

Description	Min.	Typical	Max.	Units
Absolute Maximum Ratings				
Ambient Temperature				
Operating	0		+50	°C
Storage	-20		+80	°C
User memory capacity (4 years unpowered lithium-cell RAM)		128K		Bytes
<i>The main CPU is an Hitachi SH2 processor running at 24.576 MHz.</i>				
Power Supply Capacities				
Common mode voltage range	-10		+10	VDC
Encoder power supply capacity (+5 V)			250.0	mA
CPU power requirement (5 V)		0.4	0.6	A
Communications Characteristics				
RS-232 transmitters		± 5	± 12	VDC
RS-232 receivers		± 5	± 12	VDC
Controller Resource Summary				
Multi-tasking (tasks)			84	
Volatile registers (32-bit)			500	
Non-volatile registers (32-bit)			4500	
Data table elements (16-bit, non-volatile)			16000	
Input-linkable counters			8	
Flags			32	
Program steps			4096	
On-Board I/O				
Digital inputs ¹			4	
Digital outputs ¹			4	
Encoder inputs ¹			1	
Registration inputs ¹			2	
RS-232 ports ²			2	
<ol style="list-style-type: none"> 1. These inputs and outputs require a Model 2346 distribution board. 2. The second communications port requires a Model 2886 adapter. 3. Specifications are at 25°C unless otherwise specified. 				

Electrical Specifications

Description	Min.	Typical	Max.	Units
Absolute Maximum Ratings				
Applied input voltage	0		27.0	VDC
Applied output voltage	0		24.0	VDC
Operating Characteristics				
Differential encoder inputs				
Nominal input range	0.0		+5.0	VDC
Open-circuit voltage ($I_i = 0$ mA)		5.0	5.38	VDC
Logic-low current ($V_i = 0$ V)		1.1	1.2	mA
Maximum counting rate ¹			3.0	MHz
Counting range	-2,147,483,648		+2,147,483,647	Counts
Output on voltage ($I_o = 500$ mA) ²		1.0	1.5	VDC
Output off leakage (applied voltage = 24V) ³		1.0	100.0	μ A
Input off voltage ($I_i = 0$ mA)		24.0	26.4	VDC
Input on current ($V_i = 0$ V) ⁴		-4.4	-5.0	mA
Input on current threshold ($V_i = 6$ V typical)		-3.2	-3.5	mA
Input off current (typical leakage current allowable)			-250	μ A

1. This value assumes a 50% duty cycle, which means that the ON time = OFF time.
2. An on-board protection diode returns to +24 V from each output.
3. In the off state, unconnected outputs are internally pulled to +5 V through a diode and an LED indicator.
4. Under normal operation, no external input voltage is applied. Inputs should be externally switched to the input common.
5. Specifications are at 25°C unless otherwise specified.

Hardware / Firmware Revision Levels

Model Number	Hardware Revision Level	Firmware Revision Level ^{1 2}
2703AP	A or greater	3.05

1. You can confirm firmware revision levels by doing a register read in Quickstep's monitor program. Use register 13003 to confirm the firmware revision in a MultiPro controller.
2. Firmware revision levels are not equivalent to standard decimal numbers. For example, firmware revision level 3.05 translates to:

Major Revision Level 3
Minor Revision Level 05

If this value changes to 3.10, it translates to:

Major Revision Level 3
Minor Revision Level 10 (not revision level 1)