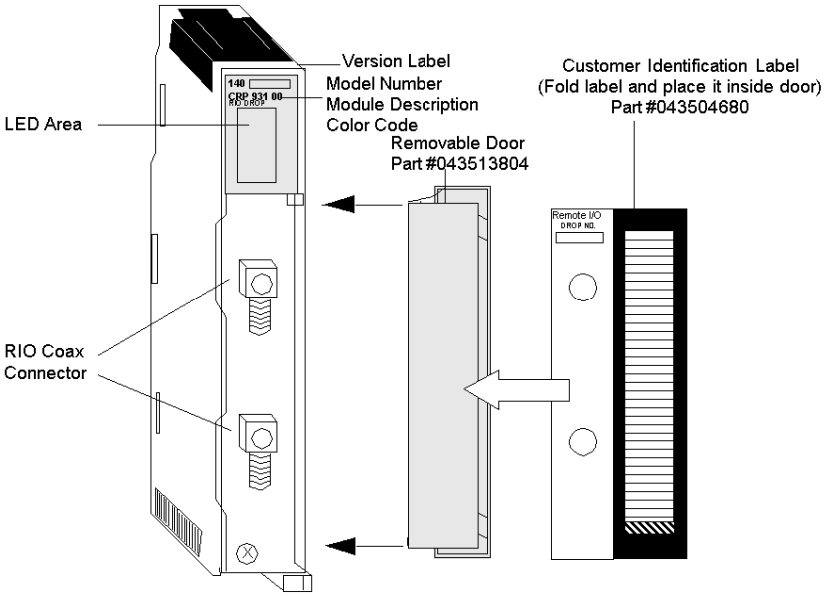
140CRP93X00 Remote I/O (RIO) Head Single and Dual Channel Module

Overview

The Remote I/O Head Single and Dual Channel modules are installed in the same backplane as the system controlling CPU modules. The RIO head is used to transfer data bi-directionally between the CPU and RIO drop modules installed in separate backplanes. A coaxial cable network is used to interconnect the RIO head module and one or more RIO drop modules.

RIO Head Module

The following figure shows the Remote I/O (RIO) module's parts. The specific module illustrated is the 140CRP93200.



Specifications

The following table shows the specifications for the Remote I/O Head Single and Dual Channel modules.

Specifications		
Drop Type	Quantum, 200 Series, 500 Series, 800 Series, or SY/MAX (any mix)	
Drops	31 max	
Words/Drop	64 In / 64 Out	
ASCII	2 ports/drop, 32 ports (16 drops) max	
	Requires the use of AS-P892-000, AS-J892-101/102, or AS-J290-0X0 at the RIO drops.	
Coax Termination	Internal 75Ω	
Coax Shield	Tied to chassis ground	
Data Transfer Rate	1.544 mb	
Dynamic Range	35 dB	
External Connections		
One Channel (CRP93100)	One "F" type female connector with a right angle adapter	
Two Channels (CRP93200)	Two "F" type female connectors with a right angle adapter	
General		
Diagnostics	**Power Up**	**Power Up and Runtime**
	Dual Port Memory Check	Executive Checksum
	LAN Controller Check	RAM Address/Data
Maximum Number of CRPs Supported by the Controller	1	
Bus Current Required (Typical)	Single Channel: 600 mA	
	Dual Channel: 750 mA	
Power Dissipation (Typical)	Single Channel: 3 W	
	Dual Channel: 3.8 W	

⚠ CAUTION

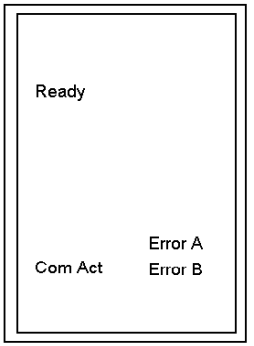
Connectivity Compliance

To maintain CE compliance with the European Directive on EMC (89/336/EEC), the RIO head module must be connected using quad shielded cable (see the Remote I/O Cable System Planning and Installation Guide, 890USE10000, V2.0).

Failure to follow these instructions can result in injury or equipment damage.

LED Indicators and Descriptions

The following figure shows the LED indicators for the RIO Head module.



The following table shows the LED descriptions for the RIO Head module.

LED Descriptions		
LEDS	**Color**	**Indication When On**
Ready	**Green**	**The module has passed powerup diagnostics.**
Com Act	Green	The module is communicating on the RIO network.
Error A	Red	There is a loss of communication on Channel A with one or more of the drops.
Error B	Red	There is a loss of communication on Channel B with one or more of the drops (dual cable only).

LED Error Codes

The Blinking Com Act LED error codes for the RIO Head module table show the number of times the Com Act LED on the RIO Head module blinks for each type of error and the crash codes for each (all codes are in hex).

LED Error Codes		
Number of Blinks	**Code**	**Error**
Slow (steady)	0000	Requested Kernel Mode
2	6820	hcb frame pattern error
	6822	head cntrl blk diag error
	6823	mod personality diag error
	682A	fatal start I/O error
	682B	bad read I/O pers request
	682C	bad execute diag request

LED Error Codes		
Number of Blinks	**Code**	**Error**
	6840	ASCII input xfer state
	6841	ASCII output xfer state
	6842	I/O input comm. state
	6843	I/O output comm. state
	6844	ASCII abort comm. state
	6845	ASCII pause comm. state
	6846	ASCII input comm. state
	6847	ASCII output comm. state
	6849	building 10 byte packet
	684A	building 12 byte packet
	684B	building 16 byte packet
	684C	illegal I/O drop number
3	6729	984 interface bus ack stuck high
4	6616	coax cable initialization error
	6617	coax cable dma xfer error
	6619	coax cable dumped data error
	681A	coax cable DRQ line hung
	681C	coax cable DRQ hung
5	6503	ram address test error
6	6402	ram data test error
7	6300	prom checksum error (Exec not loaded)
	6301	prom checksum error
8	8001	Kernal prom checksum error
	8002	Flash prog / erase error
	8003	Unexpected executive return