

Technical Note

MECHATROLINK-I Distributed I/O Replacement

Applicable Product: MECHATROLINK Distributed I/O

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Subject: Technical Note	Product: MECHATROLINK	Doc#: TN.MCD.12
Title: MECHATROLINK-I Distributed I/O Replacement		

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References:

Machine Controller MP2000 Series MECHATROLINK System USER's MANUAL
Doc# SIE-C887-5.1

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1. Product

Replace From	Replace to
JAMSC-120DDI34330 24VDC 16-point Input Module	JAMSC-IO2900-E
JAMSC-120DDO34340 24VDC 16-point Output Module	JAMSC-IO2910-E
JAMSC-120DAI53330 100VAC 8-points Input Module	-
JAMSC-120DAI73330 200VAC 8-point Input Module	-
JAMSC-120DAO83330 100/200VAC 8-point Input Module	JAMSC-IO2950-E
JAMSC-120DRA83030 Relay Contact 8-point Output Nodule	JAMSC-IO2950-E

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2 JAMSC-120DDI34330

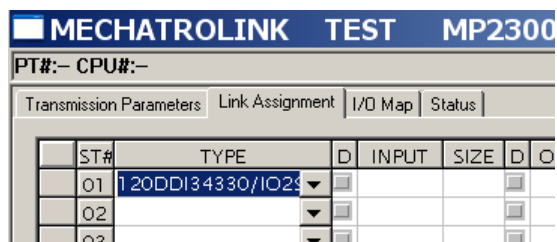
(1) Replacement to JAMSC-IO2900-E

(2) Comparison

Type	JAMSC-120DDI34330	JAMSC-IO2900-E
Dimension	152mmx44mmx71.8mm	
Performance Specification	Same Refer Appendix 1.	
MECHATROLINK		
Baud rate	1 or 4Mbps	4 or 10Mbps
Data length	17 bytes	17 or 31 bytes
UL	Yes	No

(3) Replacement

- a. Wiring ... Nothing changes
- b. Switch setting ... Check following switches
 - SW6 OFF (17 bytes)
 - SW8 OFF (4Mbps)
- c. Module configuration ... Nothing changes
 - Select "120DDI34330/IO2900" in the module configuration.



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3 JAMSC-120DDO34340

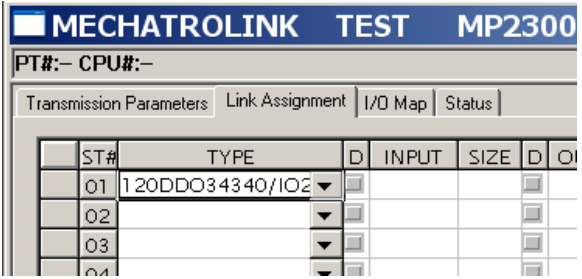
(1) Replacement to JAMSC-IO2910-E

(2) Comparison

Type	JAMSC-120DDO34340	JAMSC-IO2910-E
Dimension	152mmx44mmx71.8mm	
Performance Specification	Same Refer Appendix 2.	
MECHATROLINK		
Baud rate	1 or 4Mbps	4 or 10Mbps
Data length	17 bytes	17 or 31 bytes
UL	Yes	No

(3) Replacement

- a. Wiring ... Nothing changes
- b. Switch setting ... Check following switches
 - SW6 OFF (17 bytes)
 - SW8 OFF (4Mbps)
- c. Module configuration ... Nothing changes
 - Select "120DDO34340/IO2910" in the module configuration.



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(1) Replacement to JAMSC-IO2950-E

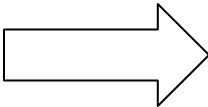
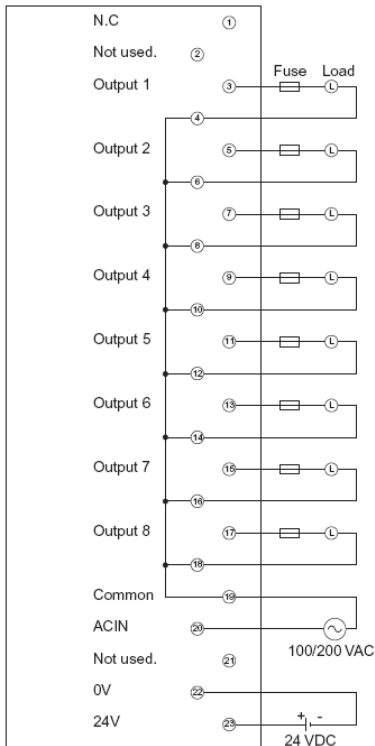
(2) Comparison

Type	JAMSC-120DAO83330	JAMSC-IO2950-E
Dimension	152mmx44mmx71.8mm	
Performance Specification	Refer Appendix 3 and 4 to find differences.	
MECHATROLINK		
Baud rate	1 or 4Mbps	4 or 10Mbps
Data length	17 bytes	17 or 31 bytes
UL	Yes	No

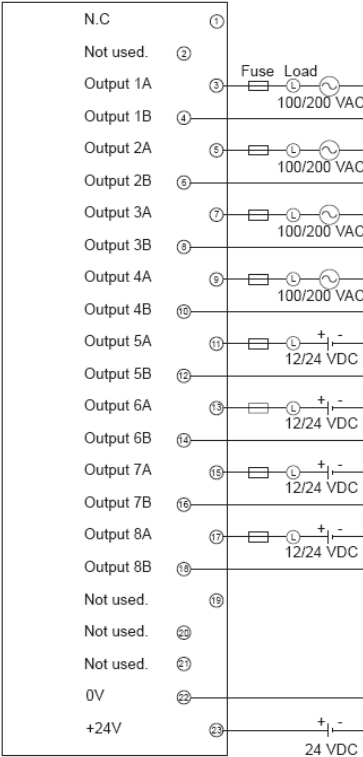
(3) Replacement

a. Wiring ... Refer below.

JAMSC-120DAO83330



JAMSC-IO2950-E



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- b. Switch setting ... Check following switches
 - SW6 OFF (17 bytes)
 - SW8 OFF (4Mbps)
- c. Module configuration ... Need to change device type selection.
 - Select "120DRA83030/IO2" in the module configuration.

MECHATROLINK TEST MP2300

PT#:- CPU#:-

Transmission Parameters | Link Assignment | I/O Map | Status

ST#	TYPE	D	INPUT	SIZE	D	C
01	120DRA83030/IO2					
02						
03						

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5 JAMSC-120DRA83030

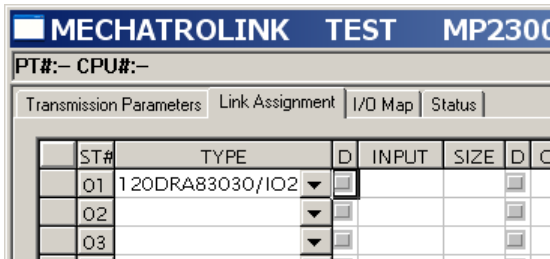
(1) Replacement to JAMSC-IO2950-E

(2) Comparison

Type	JAMSC-120DRA83030	JAMSC-IO2950-E
Dimension	152mmx44mmx71.8mm	
Performance Specification	Refer Appendix 4 to find differences.	
MECHATROLINK		
Baud rate	1 or 4Mbps	4 or 10Mbps
Data length	17 bytes	17 or 31 bytes
UL	Yes	No

(3) Replacement

- a. Wiring ... Nothing changes
- b. Switch setting ... Check following switches
 - SW6 OFF (17 bytes)
 - SW8 OFF (4Mbps)
- c. Module configuration ... Nothing changes
 - Select "120DRA83030/IO2950" in the module configuration.



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Appendix 1: Specification - JAMSC-120DDI34330/JAMSC-IO2900-E

Item	Specifications	
	12 VDC	24 VDC
Name	24-VDC 16-point Input Module	
Model Description	V_DC24VIN-16P	
Model Number	JAMSC-120DDI34300	
Rated Voltage	12 or 24 VDC	
Maximum Allowable Voltage	30 VDC	
Input Format	Sourcing and sinking	
Rated Current	2.5 mA	5 mA
Input Impedance	4.8 kΩ	
Standard Operating Ranges	Minimum ON voltage: 9 VDC Maximum OFF voltage: 5 VDC	
Input Type	Not compliant with JIS B 3501 standards	DC type 2 (according to JIS B 3501)
Input Delay Times	OFF to ON: 5 ms max. ON to OFF: 5 ms max.	
Number of Commons	2	
Number of Inputs per Common	8 points/common	
External Connections	Removable terminal block with 23 M3 screw terminals	
Number of Inputs	16 points	
Input Signal Indication	One LED indicator for each input; lit when input is ON. Status saved in internal logic.	
Status Indication	External power supply normal: RUN indicator lit. Data being transmitted: TX indicator lit.	
Input Circuit Isolation	Isolation Method	Photocoupler
	Dielectric Strength	1,500 VAC for 1 minute between input terminals and internal circuits
	Insulation Resistance	100 MΩ min. at 500 VDC between input terminals and internal circuits (at room temperature and humidity)
External Power Supply	Input signal power supply: 12 VDC	Input signal power supply: 24 VDC
	Main external power supply: 24 VDC (20.4 to 26.4 VDC), 90 mA max. when all inputs are ON	
Derating Conditions	The maximum ambient operating temperature is limited with some mounting directions. Refer to 3.1.2 <i>Mounting Orientation</i> for details.	
Maximum Heating Value	2.16 W	
Hot Swapping	Terminal block: Not permitted Communication connector: Permitted	
Mass	Approx. 300 g	
Dimensions (mm)	152 × 44 × 71.8 (W × H × D)	

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Appendix 2: Specification - JAMSC-120DDO34340/JAMSC-IO2910-E

Item		Specifications
Name		24-VDC 16-point Output Module (Sinking)
Model Description		V_DC24OUT-16P
Model Number		JAMSC-120DDO34340
Rated Voltage		12/24 VDC
Allowable Voltage Range		10.2 to 30.0 VDC
Output Format		Sinking
Maximum Load Current		0.3 A/output
Output Voltage Drop		1.5 V max. (0.3 A)
Output Delay Times		OFF to ON: 1 ms max. ON to OFF: 1 ms max.
Leakage Current when OFF		1 mA max. at 24 VDC
Output Type		Transistor outputs
Number of Commons		2
Number of Outputs per Common		8 points/common
External Connections		Removable terminal block with 23 M3 screw terminals
Output Protection Type		Unprotected outputs (according to JIS B 3501)
Built-in Fuse		Two 3.5-A fuses (1 fuse/common) (Opening time: 5 seconds max. at 200% of rated current)
Surge Suppression		None
Other Output Protection		None
Number of Outputs		16 points
Output Signal Indication		One LED indicator for each output; lit when output is ON. Status saved in internal logic.
Status Indication		External power supply normal: RUN indicator lit. Data being transmitted: TX indicator lit. Blown fuse or load power supply disconnected: ERR indicator lit.
Output Circuit Isolation	Isolation Method	Photocoupler
	Dielectric Strength	1,500 VAC for 1 minute between output terminals and internal circuits.
	Insulation Resistance	100 M Ω min. at 500 VDC between input terminals and internal circuits (at room temperature and humidity)
External Power Supply		12/24 VDC supplied to drive loads Main external power supply: 24 VDC (20.4 to 26.4 VDC), 110 mA when all outputs are ON
Derating Conditions		The maximum ambient operating temperature is limited with some mounting directions. Refer to 3.1.2 <i>Mounting Orientation</i> for details.
Maximum Heating Value		2.64 W
Hot Swapping		Terminal block: Not permitted Communication connector: Permitted
Mass		Approx. 300 g
Dimensions (mm)		152 × 44 × 71.8 (W × H × D)

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Appendix 3: Specification - JAMSC-120DAO83330

Item	Specifications	
Name	100/200-VAC 8-point Output Module	
Model Description	V_ACOUT-8P	
Model Number	JAMSC-120DAO83330	
Rated Voltage	100/200 VAC	
Allowable Voltage Range	80 to 264 VAC	
Rated Frequency	50 or 60 Hz	
Allowable Frequency Range	47 to 63 Hz	
Maximum Load Current	0.6 Arms/output, 2.4 A/common	
Output Voltage Drop	1.0 V rms	
Output Delay Times	OFF to ON: 10 ms max. ON to OFF: 1/2 cycle + 5 ms max.	
Leakage Current when OFF	2 mA max. at 240 VAC, 50 Hz	
Minimum Switching Voltage/Current	10 mA rms	
Output Type	Triac outputs	
Number of Commons	1	
External Connections	Removable terminal block with M3 screw terminals	
Output Protection Type	Unprotected outputs (according to JIS B 3501)	
Built-in Fuse	One 3-A fuse (1 fuse/common) (Opening time: 1 second max. at 200% of rated current)	
Surge Suppression	Varistor	
Other Output Protection	None	
Number of Outputs	8 points	
Output Signal Indication	One LED indicator for each output; lit when output is ON. Status saved in internal logic.	
Status Indication	External power supply normal: RUN indicator lit. Data being transmitted: TX indicator lit. Blown fuse or load power supply disconnected: ERR indicator lit.	
Output Circuit Isolation	Isolation Method	Phototriac
	Dielectric Strength	1,500 VAC for 1 minute between output terminals and internal circuits.
	Insulation Resistance	100 MΩ min. at 500 VDC between input terminals and internal circuits (at room temperature and humidity)
External Power Supply	100/200 VAC supplied to drive loads Main external power supply: 24 VDC (20.4 to 26.4 VDC), 100 mA when all outputs are ON	
Derating Conditions	The maximum ambient operating temperature is limited with some mounting directions. Refer to 3.1.2 <i>Mounting Orientation</i> for details.	
Maximum Heating Value	2.4 W	
Hot Swapping	Terminal block: Not permitted Communication connector: Permitted	
Mass	Approx. 300 g	
Dimensions (mm)	152 × 44 × 71.8 (W × H × D)	

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Appendix 4: Specification - JAMSC-120DRA83330/JAMSC-IO2950-E

Item		Specifications		
		120DRA83030	IO2950	
Name		Relay Contact 8-point Output Module		
Model Description		V_RELAY-8P	IO2950	
Model Number		JAMSC-120DRA83030	JAMSC-IO2950-E	
Contact Specification	Rated Voltage/Current	200VAC, 1A, resistive load 24VDC, 1A, resistive load		
	Maximum Switching Power	AC load: 750VA DC load: 90W		
	Maximum Switching Voltage	264VAC, 125VDC		
	Minimum Switching Voltage/Current	100mVDC, 0.1mA		
	Contact Resistance	100m Ω max.		
	Electrical Contact Life	30VDC, 5 A, resistive load: 100,000 operations min.	30VDC, 5A, resistive load: 70,000 operations min.	30VDC, 2A resistive load: 300,000 operations min.
		250VAC, 3A, resistive load: 150,000 operations min.	250VAC, 5A, resistive load: 70,000 operations min.	250VAC, 2A, resistive load: 300,000 operations min.
Mechanical Contact Life	20,000,000 operations min.			
Output Delay Times		OFF to ON: 10ms max. ON to OFF: 15ms max.		
Output Type		Relay contact outputs		
External Connections		Removable terminal block with M3 screw terminals		
Output Protection		Unprotected outputs (according to JIS B 3502)		
Built-in Fuse		None		
Surge Suppression		None		
Other Output Protection		None		
Number of Outputs		8 points		
Output signal Indication		One LED indicator for each output; lit when output is ON. Status saved in internal logic.		
Status Indication		External power supply normal: RUN indicator lit. Data being transmitted: TX indicator lit.		
Output Circuit Isolation	Isolation Method	Relay		
	Dielectric Strength	1,500VAC for 1 minute between output terminals and internal circuits		
	Insulation Resistance	100M Ω min. at 500VDC between output terminals and internal circuits (at room temperature and humidity)		

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External Power Supply	100/200VAC or 24VDC supplied to drive loads Main external power supply: 24VDC (20.4V to 26.4VDC), 100mA when all outputs are ON	100/200VAC or 24VDC supplied to drive loads Main external power supply: 24VDC (20.4V to 26.4VDC), 90mA when all outputs are ON
Derating Conditions	The maximum ambient operation temperature is limited with some mounting directions.	
Maximum Heating Value	2.64W	2.24W
How Swapping	Terminal block: Not permitted Communication connector: Permitted	
Mass	Approx. 300g	
Dimensions (mm)	152 x 44 x 71.8 (W x H x D)	