

# MECHATROLINK Products of MMA Members Brochure

October 2024



## Introduction

In recent years, systems for manufacturing and production are becoming increasingly complex. More motorized devices are being used in manufacturing or production lines to attain the complex motions that are required for today's sophisticated manufacturing techniques. Analog control has been used to control the devices in these lines, but the vast amount of wiring required for analog control makes it difficult to connect a large number of devices. The functions that analog control can offer are too limited to satisfy the demand for higher levels of control. Today, control using digital communications is increasing in demand and replacing analog control. Also, to meet the demand for increased productivity, a cycle time that is one second or even one millisecond shorter will result in a shorter control cycle between control devices. Accordingly, the demand for high-speed digital communications is on the rise to attain these desired results.

Customers frequently change models and manufacturers for their control devices to take advantage of rapidly decreasing prices and improvements in function and control performance. They expect a rich selection of control devices and technologies to be readily available so they can connect an ever-increasing number of devices from various vendors. Most manufacturing equipment consists of two sections: a drive section and an I/O control section. Customers want to control both sections with the use of only one digital communications line.

MECHATROLINK can meet these demands through digital communications. We offer a full line-up of MECHATROLINK-compliant products, including master controllers, I/O devices, and various types of drives, such as servos, inverters, and stepper drives. These products can be connected to a single communications line. MECHATROLINK is an open network, and its technical information is available (for disclosure) to all members of the MECHATROLINK MEMBERS ASSOCIATION (MMA).

Already, more than 7,750,000 nodes exist on the MECHA-TROLINK network because of the products that have been shipped and are in use worldwide. The MMA is a group of companies who promote the use of MECHATROLINK communications. More than 3,324 companies from all over the world have joined the MMA as of October 2019 and have developed a variety of new MECHATROLINK-compliant products

The MMA website, which includes pages for members only, introduces various MECHATROLINK products and provides technical information on MECHATROLINK.

MECHATROLINK can provide high-speed communications in transmission cycles from 31.25 sec at 100 Mbps. Up to 62 nodes can be connected, and fully synchronized control between nodes can be achieved. Two-mode Master and Slave ASIC, economical compact Slave Only ASIC, and an IP core for FPGA allows you to construct the best configuration of hardware for your applications. In addition to FPGA, we will continue to develop MECHATROLINK- III, which is built into various MPUs, to help construct easier MECHA-TROLINK-compliant systems.

To further widen the global MECHATROLINK network, the MMA established eight offices in major markets overseas. The MMA is also planning to set up booths in several exhibitions and trade shows to increase people's familiarity with MECHATROLINK.

The MMA continues its efforts to encourage even wider use of MECHATROLINK with a larger number of products and to be positioned as an industry standard for easy-to-use motion networks.

MECHATROLINK is an open-end network, with a wide selection of MECHATROLINK products available that are mainly focused on motion control. We hope that you will find this catalog, containing all the information you require to understand the wonders of MECHATROLINK, useful.

# **CONTENTS**

#### MDevice

#### 컨트롤러

MDevice Product Categorization by Implemented Commands

1

MEGUATROLINIK III I'		
MECHATROLINK-III compliant		
ALGOSYSTEM CO.,LTD.	MECHATROLINK-III Master Modules	2
KEYENCE CORPORATION	Positioning/Motion unit KV-XH04ML, KV-XH16ML	3
SYSTEC Corporation	PCI Express MECHATROLINK-III Interface Card	4
TECHNO HORIZON Co.,Ltd.	PCI Motion control board 169002-MBY-LE01 series	5
NEXCOM International Co., Ltd.	NControl series - the Comprehensive CNC Solution for 2D/3D Special Machining	6
Micronet Co.	RSI-2111T/RSI-2111TM (MECHATROLINK-III driver for INtime)	7
YASKAWA ELECTRIC CORPORATION	Board-type Machine Controller MP2111T, MP2111TM, MP2111TMCP	8
YASKAWA ELECTRIC CORPORATION	Integrated Machine Controller MP3200	9
YASKAWA ELECTRIC CORPORATION	PCI Standard MECHATROLINK-III Interface Card JAPMC-NT112A-E	10
YASKAWA ELECTRIC CORPORATION	MECHATROLINK-III Motion control module SVC-01	11
YASKAWA ELECTRIC CORPORATION	MECHATROLINK-III Motion control module (with CPU function) MPU-01	12
한국요꼬가와전기	Leading Edge Controller (with MECHATROLINK-III Interface)	13
주식회사 아진엑스텍	PCI Master Controller PCI-R6200-MLIII	14
COMIZOA	COMI-LX530	15

MECHATROLINK-II compliant		
ALGOSYSTEM CO.,LTD.	A-LINK V2.0 + MECHATROLINK- II Dual-field-bus-master PCI Board	16
LSIS Co., Ltd	XGT PLC Motion control module	17
OMRON Corporation	SYSMAC CS/CJ Series Position Control Units CJ1W-NCF71, CS1W-NCF71	18
KOYO ELECTRONICS INDUSTRIES CO., LTD.	MECHATROLINK MODULE for DL06 series D0-MLINK	19
KOYO ELECTRONICS INDUSTRIES CO., LTD.	MECHATROLINK MODULE for DL205 series D2-MLINK	20
TECHNO CO., LTD.	PLC Motion Controller	21
Micronet Co.	RSI-2110 (MECHATROLINK- II driver for INtime)	22
MYCOM, INC.	PCI-bus Host controller board MLH20-1030	23
YASKAWA ELECTRIC CORPORATION	Board-type Machine Controller MP2100, MP2100M	24
YASKAWA ELECTRIC CORPORATION	Board-type Machine Controller MP2110, MP2110CP, MP2110M, MP2110MCP	25
YASKAWA ELECTRIC CORPORATION	Flexible Machine Controller MP2200	26
YASKAWA ELECTRIC CORPORATION	All-in-one Machine Controller MP2300	27
YASKAWA ELECTRIC CORPORATION	Compact All-in-one Machine Controller MP2300S	28
YASKAWA ELECTRIC CORPORATION	Compact Machine Controller MP2400	29
YASKAWA ELECTRIC CORPORATION	PCI Standard MECHATROLINK- II Interface Card JAPMC-NT110, JAPMC-NT111	30
한국요꼬가와전기	Leading Edge Controller (with MECHATROLINK- II Interface)	31
Advantech-Lnc Technology CO., Ltd.	LNC-M600id System	32
ESA/GV s.r.l.	KVARA 6	33
Guangzhou LokShun CNC Equipment Ltd.,	Controller SGDS9-6CNCH2	34
ISAC S.r.l.	CNC 2001M	35
Manufacturing Data Systems, Inc.	CNC machine controller, HMI FlashCNC	36
Manufacturing Data Systems, Inc.	CNC machine controller, HMI OpenCNC	37
Prima Electro S.p.A.	10/S CNC BLACK BOX	38
Shenyang Golding NC Tech. Co. Ltd.	CNC System	39
OMRON Europe B.V.	The advanced motion controller that puts you in control	40

#### os

# MECHATROLINK-II • MECHATROLINK-III compliant Micronet Co. Real-time OS Intime 41

#### **SDevice**

#### 서보 드라이브

#### **MECHATROLINK-III compliant**

KEYENCE CORPORATION AC servo system SV2 Series 42

SANYO DENKI CO.,LTD.	SANMOTION R ADVANCED MODEL	43
CKD니키덴소 주식회사	AC Servo System VC II series	44
YASKAWA ELECTRIC CORPORATION	AC Servo Drives $\Sigma$ -7-Series SERVOPACKs $\Sigma$ -7C Two-Axis SERVOPACKs with Built-in	45
YASKAWA ELECTRIC CORPORATION	Controller  MECHATROLINK-III Σ-V series AC Servo Drives	
YASKAWA ELECTRIC CORPORATION  YASKAWA ELECTRIC CORPORATION	MECHATROLINK-III 2-V series ac Servo Drives  MECHATROLINK-III 2-V mini Ultra-Compact AC Servo Drives	4
TASKAWA ELECTRIC CORPORATION	MECHAT ROLINK-III 2-VIIIIIII Ottia-CompactAc Servo Drives	
MECHATROLINK-II compliant		
OMRON Corporation	OMNUC W Series AC Servo Drivers R88D-WN□-ML2	48
Harmonic Drive Systems Inc.	AC Servo Drivers HA-680ML series	49
Harmonic Drive Systems Inc.	AC Servo Drivers HA-800B series	50
YASKAWA ELECTRIC CORPORATION	MECHATROLINK- II Σ-V series AC Servo Drives	5.
YASKAWA ELECTRIC CORPORATION	MECHATROLINK- II Σ-V mini Ultra-Compact AC Servo Drives	52
인버터 드라이브		
MECHATROLINK-II • MECHATROLINK	K-III compliant	
YASKAWA ELECTRIC CORPORATION	Low Harmonics Regenerative Matrix Converter U1000	53
YASKAWA ELECTRIC CORPORATION	High Performance Vector Control AC Drive A1000	54
YASKAWA ELECTRIC CORPORATION	Compact Vector Control Drive AC Drive V1000	55
MECHATROLINK-II compliant		
YASKAWA ELECTRIC CORPORATION	Current Vector Control General-Purpose Inverter Varispeed G7	56
액츄에이터		
MECHATROLINK-III compliant		
IAI CORPORATION.	SCON Series Controllers for Robocylinders	57
I/O		
MECHATROLINK-III compliant		
ALGOSYSTEM CO.,LTD.	MECHATROLINK-III Slave I/O Modules	58
1/0		
MECHATROLINK-III compliant		
MG Co., Ltd.	MECHATROLINK-III REMOTE I/O R7 Series	59
MG Co., Ltd.	Multi-channel, Mixed Signal Remote I/O R3 Series	60
YASKAWA ELECTRIC CORPORATION	MECHATROLINK-III 64-points I/O Module MTD2310	61
YASKAWA ELECTRIC CORPORATION	Analog Input Module MTA2900	62
YASKAWA ELECTRIC CORPORATION	Analog Output Module MTA2910	63
YASKAWA ELECTRIC CORPORATION	Pulse Input Module MTP2900	64
YASKAWA ELECTRIC CORPORATION	Pulse Output Module MTP2910	65
MECHATROLINK-II compliant		
MG Co., Ltd.	MECHATROLINK- II REMOTE I/O R7 Series	66
YASKAWA ELECTRIC CORPORATION	Slave Devices for MECHATROLINK- II IO2310, IO2330, PL2900, PL2910, AN2900, AN2910	67
YASKAWA ELECTRIC CORPORATION	Slave Devices for MECHATROLINK- II IO2900, IO2910, IO2920, IO2950	68
센서		
MECHATROLINK-III compliant		

High-Accuracy Position Sensors K1G-C04M

69

Azbil Corporation

Temperature Control for Inline MECHATROLINK Bus Coupler  Network Machine Vision System MYVIS YV260  Module type digital temperature controller	7( 7: 72
Module type digital temperature controller	
	72
DODG C. I. J. R.C. J. H. ACON/DON/CCONC. : (MECHATROLINI/T)	
DODO C I' I MC II II ACON/DCON/CCONC ' (AFCHATDOLINI/T )	
ROBO Cylinder® Controller ACON/PCON/SCON Series (MECHATROLINK Type)	73
Stepping Motor αSTEP AZ Series AC Power Input Driver MECHATROLINK-III Compatible	74
Stepping Motor αSTEP AZ Series Axes Driver MECHATROLINK-III Compatible	75
Network Converter for Controlled Motors NETC01-M3	76
Natwork Convertor for Controlled Motors NETCO1 M2	7
* *	78 79
GP4000 Series SP5000 Series	80
SP5000 Series	
	83
SP5000 Series  FROTOCAP」 -GAT® Slip Ring for MECHATROLINK-III	82
SP5000 Series  FROTOCAP」 -GAT® Slip Ring for MECHATROLINK-III  Optical repeater for MECHATROLINK-III	82
SP5000 Series  FROTOCAP」 -GAT® Slip Ring for MECHATROLINK-III  Optical repeater for MECHATROLINK-III	82
	Stepping Motor αSTEP AZ Series Axes Driver MECHATROLINK-III Compatible

MECHATROLINK-III Network Cable

MECHATROLINK-III Connector KIT P/N 2040008-2

MECHATROLINK-III Connector KIT Bulk Pack Style P/N 2069578-2

89

90

91

JMACS Japan Co., Ltd.

TE Connectivity Corporation.

TE Connectivity Corporation.

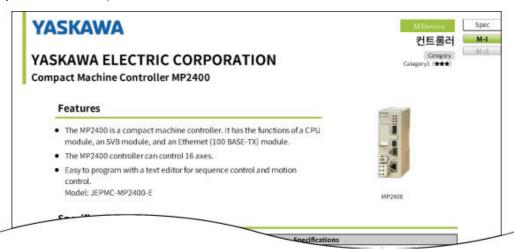
DYDEN CORPORATION	Cable for MECHATROLINK-III	92
Nichigoh Communication Electric Wire Co.,	MECHATROLINK-III Network Cables	93
Ltd. YASKAWA CONTROLS CO., LTD.	MECHATROLINK-III Network Cables	94
KUNSHAN FUJIX ELECTRONIC CO.,LTD	MECHATROLINK-III Network Cables  MECHATROLINK-III Communication Cable	9.
RONSHANT OSIA ELECTRONIC CO.,ETD	MECHAT ROLINK-III COMMUNICATION CADIE	<u> </u>
MECHATROLINK-II compliant		
TE Connectivity Corporation.	MECHATROLINK- II Connector KIT P/N 1827525-1	96
TE Connectivity Corporation.	MECHATROLINK- II Connector KIT Bulk Pack Style P/N 2013706-1	9
DYDEN CORPORATION	Cable for MECHATROLINK- II	98
YASKAWA CONTROLS CO., LTD.	MECHATROLINK- II Network Cables	99
YASKAWA CONTROLS CO., LTD.	MECHATROLINK- II Network Cable (Flexible Type)	100
내장부품(ASIC등)		
MECHATROLINK-III • MECHATROLINK-4	compliant	
YASKAWA ELECTRIC CORPORATION	MECHATROLINK-4/MECHATROLINK-III Communication LSI JL-L000A Sample Kit JZPMC-OPM 4 SK-1-E	10
YASKAWA ELECTRIC CORPORATION	MECHATROLINK-4/MECHATROLINK-III Master/Slave Communication LSI JL-L000A	10
MECHATROLINK-III compliant		
Tokyo Electron Device Ltd.	MECHATROLINK-III Master/Slave IP core	10
YASKAWA ELECTRIC CORPORATION	·	
YASKAWA ELECTRIC CORPORATION	MECHATROLINK-III Sample Kit JEPMC-OPM3SK-3-E, JEPMC-OPM3SK-4-E	105
YASKAWA ELECTRIC CORPORATION	MECHATROLINK-III Master/Slave Communication LSI JL-100A, JL-101A	100
YASKAWA ELECTRIC CORPORATION	MECHATROLINK-III Slave Communication LSI JL-102A, JL-103A	107
MECHATROLINK-II compliant		
YASKAWA ELECTRIC CORPORATION	MECHATROLINK- II Sample Kit JL-080, JL-052, JL-098	108
YASKAWA ELECTRIC CORPORATION	MECHATROLINK- II Slave Exclusive Communication LSI JL-052C	109
YASKAWA ELECTRIC CORPORATION	MECHATROLINK-   /    Master Communication LSI JL-080B	110
YASKAWA ELECTRIC CORPORATION	MECHATROLINK- I / II , Master Communication LSI JL-098B	11:
YASKAWA ELECTRIC CORPORATION	MECHATROLINK- II Pulse Transformer T202004ND	112
개발 툴		
MECHATROLINK-III compliant		
Hilscher Japan KK	MECHATROLINK-III Analyzer	113
MECHATROLINK협회	MECHATROLINK-III Utility Software	114
MECHATROLINK협회	MECHATROLINK-III Sample application	115
=		
개발 툴		
개발 툴 MECHATROLINK-II compliant		
	Network Analyzer for MECHATROLINK-   /    87215-95121-S0103	11

# MDevice Product Categorization by Implemented Commands



In this brochure, MDevice products are classi ed into three categories according to the commands they implement, as described in the next page. The category is shown above the introduction of each MDevice product to let you know at a glance what class of commands it implements.

<Category indication example>



#### **Implemented Commands and Specifications for Each Category**

#### MECHATROLINK-II

M-II

MDevice Product Category	Required Communications Specifications	
Category 3 (★ ★ ★)	Servo commands Stepper commands I/O commands (Intelligent/Simple Inverted commands	1/2 msec 17/32 byte mode Synchronous/asynchronous mode
Category 2 (★★)	Servo commands Stepper commands I/O commands (Intelligent/Simple)	1/2 ms 17/32 byte mode Synchronous or asynchronous mode
Category 1 (★)	Servo commands	2 ms 17-byte or 32-byte mode Synchronous or asynchronous mode

#### MECHATROLINK-III

M-III

MDevice Product Category	Implemented Commands (When basic operations are supported)	Required Communications Specifications	
Category 3 (★ ★ ★)	Servo commands Stepper commands I/O commands (Intelligent/Simple) Inverter commands	0.5/1 ms Servo,Stepper: 32/48 byte mode Inverter: 32/64 byte mode I/O: 16/32/48/64 byte mode Synchronous or asynchronous mode	
Category 2 (★★)	Servo commands Stepper commands I/O commands (Intelligent/Simple)	0.5/1 ms Servo,Stepper: 32/48 byte mode I/O: 16/32/48/64 byte mode Synchronous or asynchronous mode	
Category 1 (★)	Servo commands	1 ms 32-byte or 48-byte mode Synchronous or asynchronous mode	



## ALGOSYSTEM CO.,LTD.

# 컨트롤러

Category1 (★)

Category

M-III
M-II

#### **MECHATROLINK-III Master Modules**

#### **Features**

- Intel Core i7/Celeron embedded Industrial Computers:
   AP/APW & FP product families LCD touch-paned installed FC product
   family for more PCIe slots without LDC panel.
- High speed Field Buses available on R/T OS INtime Bundled MECHATROLINK-III Master capability & Library on the R/T OS
- High speed, extremely fine and multifunctional Motion Controlling utilized on the PC architecture platform above.
   Various motion controlling can be realized on single platform.
- Various tools prepared:
   Precision analysis for multi-axial control, torque and etc.
   Tools to tune for optimized control, for example.



#### **Specifications (AP302EX)**

Item	Specification
Interface and Protocol	MECHATROLINK-III Compliant
Transmission Speed	100 Mbps
Communication Cycle Time	31.25 micro-sec 8 mili-sec.
Communication Mode	Cyclic Transfer
Connection Topology	Cascade-type / Star-type
Maximum Transmission Length	100m
Minimum Length between Slave Nodes	0.2m
System Bus	PCIe (specialized)
Maximum Nodes	62 nodes
Presumed OS	INtime4.2 Windows Embedded Standard 2009 Windows Embedded Standard 7
Connectors	8 pin - industrial I/O connectors × 2 recommended connector model: 2040008-2 (Tyco Electronics)

#### **MECHATROLINK** specifications

			M-III			
		16-byte	32-byte	48-byte	64-byte	
	Standard servo	-	×	×	-	
Profile	Standard I/O	×	×	×	×	
Profile	Standard Stepping Motor Drivers	-	-	-	-	
	Standard Inverter	-	-	-	-	
Transmiss	sion cycle	31.25µs to 8ms				

#### **Contact Information**

ALGOSYSTEM CO., LTD.

656 Kobirao, Mihara-ku, Sakai, Osaka 587-0021, Japan

URL: http://www.algosystem.co.jp





Category

Category1 (★)

M-4

Spec

M-III M-II

## **KEYENCE CORPORATION**

### Positioning/Motion unit KV-XH04ML, KV-XH16ML

#### **Features**

- Incorporated with a 1GHz Dual Core SoC motion control CPU for high-speed motion control
- Units are able to execute programs autonomously, allowing for highly responsive motor control. Furthermore, processing can be decentralized, allowing CPU load to become lighter for stable system control.
- Synchronicity with less than 1 µs of variability between PLC system and servo amplifier is
- Full coverage for positioning, speed, torque, interpolation (linear/arc/helical) and synchronization control with just 1 unit.
- Supported programming: ladder program, flow and C language.
- Line-up: 4-axis type (KV-XH04ML), 16-axis type (KV-XH16ML)



KV-XH04ML KV-XH16ML

#### **Specifications**

Itam	Specifiication		
Item	KV-XH16ML	KV-XH04ML	
Control mode	MECHATROLINK-III (Positioning/speed/torque/ML-III/I/O control)		
No. of control axes	16 axes (total including virtual axes) 4 axes (total including virtual axes)		
Connectable CPU unit	KV-7500/7300		
Max. number of connectable units	7	16	
Control period	62.5 μs or more	500 μs or more	
Axis control function execution method	Ladder program, unit program (flow, C language)  Ladder program, unit program (flow)		
Unit program capacity	3MB		
Position unit	mm, deg (angle), PLS (number of pulses) Decimal point position from 0 to 9 digits, unit conversion function available		
Positioning control	Absolute/relative value, linear/arc/helical interpolation		
Synchronization control	Input: external reference, instruction coordinates, current coordinates Cam resolution: 2048 to 32768, Data points: 4 to 64 Compensation: compensation via auxiliary input, phase compensation, and step angle compensation		
Origin return method	Data set type, dog type (push), dog type (selectable from "with Z phase" or "without Z phase"), dog type sizing (selectable from "with Z phase" or "without Z phase"), immediate Z phase, origin sensor and Z phase, rising edge of limit switch, origin sensor midpoint/rising edge		

#### **MECHATROLINK Specifications**

		M-III			
		16-byte	32-byte	48-byte	64-byte
	Standard servo	-	-	×	=
D Cl.	Standard I/O	×	×	×	×
Profile	Standard Stepping Motor Drivers	-	-	×	-
	Standard Inverter	-	-	-	×
Transmission cycle					

#### **Contact Information**

**KEYENCE CORPORATION** 

1-3-14, Higashinakajima Higashiyodogawa-ku, Osaka 533-8555, FAX: +81-6-6379-1270 TEL: +81-6-6379-1271

E-mail: seigyo-qa@keyence.co.jp URL: http://www.keyence.co.jp





## **SYSTEC Corporation**

#### MDevice 컨트롤러

M-III
M-II

## Category Category1 (★)

**Features** 

- By connecting to a PCI Express slot (PC, etc.) with a dedicated MECHATROLINK-III communication driver, a PC based High-Speed and High-Performance control can be achieved.
- The Cyclic Communication of MECHATROLINK-III ASIC is automatically controlled by FPGA.
- The Command/Response data between PC and MECHATROLINK-III ASIC is automatically transmitted by the DMA function of the FPGA. (Using a dedicated library for automatic transfer)
- Supports Master/Slave External Synchronization.

PCI Express MECHATROLINK-III Interface Card

- API library for INtime is separately provided.
- Support up to 62 node connection / 62 axis controls. (The maximum number of connection depends on the host application)



SY-M3-01

#### **Specifications**

Item	Specifications	
Bus standard	Gen1×1 PCI Express bus	
Communication	MECHATROLINK-III Master (C1 Master)	
No. of MECHATROLINK channels	(IMI Connector × 2)	
External synchronization	With optional connector, 1 master can control 5 slaves.	
Supported OS	INtime5 or later	
Power supply	12V (PCI Express slot power)	
Board size	130mm × 69mm (Supports Low Profi le bracket)	

#### **MECHATROLINK** specifications

			M-III			
		16-byte	32-byte	48-byte	64-byte	
Profile	Standard servo	-	×	×	-	
	Standard I/O	×	×	×	×	
	Standard Stepping Motor Drivers	-	×	×	-	
	Standard Inverter	-	×	-	×	
Transmission cycle		31.25 μ	s to 8ms	62.5 μs	to 8ms	

#### **Contact Information**

**SYSTEC Corporation** 

1-9-9 Shin-Miyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, TEL: +81-53-428-4931

431-2103 Japan

E-mail: sys-ip@systec.co.jp URL: http://www.systec.co.jp/ FAX:+81-53-428-4310





# TECHNO HORIZON Co.,Ltd.

Category
Category1 (★)

M-III
M-II

PCI Motion control board 169002-MBY-LE01 series

#### **Features**

It is suitable for motion control system application.

- Maximum 31 axes synchronization can be possible.
- Pulse output type software compatibility is available on this motion control board. So it is
  easer to convert current pulse interface to the network, also it can be realize in low cost.
- Support variety of external interface such as AE-LINK, external 2 inputs, external 1 input. It is possible to connect many slave devices from this board. And if large number of Input/Output points are necessary, it also supports Remote IO function (Cunet).
- Software library is available to support customer software development.



169002-MBY-LE01/01

Transmission cycle (ms)	Maximum notes
0.25	8
0.5	14
1	21
2	31

#### **Specifications**

It	ems	Specifications		
	CPU	SH4 HD6417750R 200MHz		
		FRASH ROM 8MB		
D		SDRAM 16MB		
Processer	Memory	SRAM 128KB (Backup memory)		
		EEPROM 8KB		
		Shared memory 128KB (For data trasfer)		
Servo I/F	Connector	RJ-45×2		
Servor	Interface	MECHATROLINK-III		
External inp	ut	2PORT (sink/source switch)		
External out	put	1PORT (sink/source switch)		
Remote I/O		Cunet (MKY40)		
Serial I/F	Interface	AE-LINK		
	Board rate	115.2Kbps (Maxmimum)		
Support OS		Microsoft WindowsXP (Please ask for other OS)		

#### **MECHATROLINK** specifications

			M-III		
		16-byte	32-byte	48-byte	64-byte
Profile	Standard servo	-	-	×	-
	Standard I/O	-	-	-	-
	Standard Stepping Motor Drivers	-	-	-	-
	Standard Inverter	-	-	-	-
Transmission cycle			0.25ms, 0.5n	ns, 1ms, 2ms	

#### **Contact Information**

TECHNO HORIZON Co.,Ltd.

Updated on: Apr 4, 2019

Sales Dept. 1-3-4 Shioya-cho, Minami-ku, Nagoya, 457-0078 TEL: +81-52-824-7373 FAX: +81-52-811-4737

Japan

URL: https://www.technohorizon.co.jp/





Category Category1 (★) M-II

## **NEXCOM International Co., Ltd.**

**NControl series - the Comprehensive CNC** Solution for 2D/3D Special Machining

#### **Features**

NControl series provides a comprehensive CNC solution to 2D and 3D machining. Providing high level CNC functionalities, such as TCP for 5-axis machining and high speed machining with look ahead and polynomial, NControl series ensures high machining precision with high speed.



NControl 30

#### **Specifications**

Item	Specifications	
Controlled Axes	Up to 14	
Machining Channels	Up to 2	
Fieldbus	MECHATROLINK-III	
Servo Driver	YASKAWA Σ-V MECHATROLINK-III Series	
High Speed I/O	4in/4out	
Manual Pulser Input	1(A/B/Z)	
Analog I/O	1in (16-bit)/1out(16-bit)	
Display port	Dual VGA or VGA/DVI Independent Display	
Ethernet	$2 \times 10/100/1000  \mathrm{MHz}$	
USB	6 × USB 2.0	
COM port	$4 \times RS232$ (COM2: RS232/422/485 with Auto Flow Control)	
Operating system	Windows CE 6.0	
Power Supply	24V DC	
Power Consumption	2.5 Amp at 24V DC	
Dimensions	195mm (W) $\times$ 268mm (D) $\times$ 101mm (H) (7.7" $\times$ 10.5" $\times$ 3.98")	

### **MECHATROLINK** specifications

			M-III			
		16-byte	32-byte	48-byte	64-byte	
	Standard servo	-	-	×	-	
Profile	Standard I/O	-	-	-	-	
Profile	Standard Stepping Motor Drivers	-	-	-	-	
	Standard Inverter	-	-	-	-	
Transmission cycle			0.5ms, 1ms, 2	ms, 4ms, 8m	S	

#### **Contact Information**

NEXCOM International Co., Ltd.

9F, No.920, Chung-Cheng Rd., Zhonghe Dist., New Taipei City, TEL: +886-2-8226-7786 FAX: +886-2-8226-7782

Taiwan 23586, R.O.C.

E-mail: sales@nexcom-jp.com URL: http://www.nexcom.com/





#### MDevice **커트롤러**

M-III
M-II

#### Category Category1 (★)

# Micronet Co. RSI-2111T/RSI-2111TM

## (MECHATROLINK-III driver for INtime)

#### **Features**

RSI-2111T/RSI-2111TM is a driver software of YASKAWA motion controllers (MP2111T/MP2111TM) for INtime (Realtime extension OS for Windows).

• Super-high precision and Advanced high-speed motion control The control performance has been improved by speeding up of CPU and the motion network (MECHATROLINK). You can realize advanced high-speed controls such as 1 ms / 21 axes, 0.5 ms / 14 axes, 0.25 ms / 8 axes. You can realize synchronous controls with high accuracy since controlling position, speed and torque is possible with MECHATROLINK-III network.

You can refer to latest monitoring data at any time since all monitoring data on shared memories are undated per each communicaton.

You can dissolve timing slippage between changing adjustable-speed and positioning instructions since it's possible to instruct adjustable-speed per a positioning instruction.

- Powerful PC motion-control functions
   More than 40 kinds of motion-control APIs help users to create PC application programs with
   Clanguage and so on.
- Hight extensibility
   You can mount a maximum of 4 machine controller boards to 1 host PC. 1 machine controller board can control a maximum of 21 stations. Among them you are free to select how you



#### **Specifications**

control servo or I/O...

I have	Specifications				
Item	MP2111	MP2111TM			
FieldNetwork	MECHATI	ROLINK-III			
Number of channels	1	2			
Number of control axis Each channel - 21 axex (Servo axis or I/O)		•			
Control performance  Each channel - 8 axes / 0.25 ms (Communication cycle) - 14 axes / 0.5 ms (Communication cycle) - 21 axes / 1 ms (Communication cycle)					
Available equipment Servo, Linear, DDmotor, Inverter, other various IO					

#### **MECHATROLINK** specifications

			M-III			
		16-byte	32-byte	48-byte	64-byte	
	Standard servo	-	×	×	-	
Drafila	Standard I/O	×	×	×	×	
Profile	Standard Stepping Motor Drivers	-	-	-	-	
	Standard Inverter	-	-	-	-	
Transmission cycle			250μs, 500μ	s, 1ms, 2ms		

#### **Contact Information**

Micronet Co.

3-8-11 Horiwari, Kamisu-shi, Ibaraki 314-0135, Japan

E-mail: efg@mnc.co.jp URL: https://www.mnc.co.jp TEL:+81-299-90-1733 FAX:+81-299-92-8557





## MDevice

M-III
M-II

Category
Category1 (★)

### YASKAWA ELECTRIC CORPORATION

Board-type Machine Controller MP2111T, MP2111TM, MP2111TMCP

#### **Features**

- MP2111T and MP2111TM and MP2111TMCP machine controllers provide improved throughput from host computers to servomotors with MECHATROLINK-III. The MP2111T and MP2111TM has a half-size PCI bus and the MP2111TMCP has a 6U Compact PCI bus. Attain high-speed motion and I/O control of connected devices from the host computer. The shared memory has been publicly disclosed, so the host computer is not limited to running any one operating system (OS).
- With a two-channel MECHATROLINK port, the processing speed of the MP2111TM and MP2111TMCP machine controllers is twice that of the MP2111T machine controllers.

Models:

JAPMC-MC2112T-E (MP2111T)
JAPMC-MC2132T-E (MP2111TM)
JAPMC-MC2172T-E (MP2111TMCP)



#### **Specifications**

Item	Specifications
Control Method	Motion control with MECHATROLINK-III using position, speed, and torque references.
Number of Controlled Axes	MP2111T : 21 axes max. MP2111TM, MP2111TMCP: 42 axes max.
Applicable Servo Drivers	SGDV
Reference Unit Minimum Setting	1=1 reference unit
Max. Programmable Value	-2147483648 to 2147483647 pulses (signed 32-bit value)
Operating System	MECHATROLINK mode/command mode: Any OS can be used. API mode: RTLinux, RTX, INtime are available.
Fast-forward Speed	1 to 2097152000 [reference unit/s]
Interpolation Feed Speed	1 to 131068000 [reference unit/s]
Acceleration/Deceleration Control	Linear, asymmetric, S-curve, and index.

#### **MECHATROLINK** specifications

			M-	-111	
		16-byte	32-byte	48-byte	64-byte
Profile	Standard servo	-	-	×	-
	Standard I/O	×	×	×	×
	Standard Stepping Motor Drivers	-	-	×	-
	Standard Inverter	-	×	-	×
Transmission cycle 125 μs, 250 μs, 500 μs, 1ms		5			

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



M-III
M-II

## 커드

Category Category3 (★★★)

## Integrated Machine Controller MP3200

#### **Features**

- Realized optimal machine system by fusioning the motion, vision, and robot system that essential to machine controlling.
- Productivity improved by high-speed application processing, maximum speed, 125μs.

YASKAWA ELECTRIC CORPORATION

Multi-function (MECHATROLINK-III, Ethernet port and USB port)



MP3200

Power Supply Unit	JEPMC-PSA3012-E	AC Power Supply Unit (AC85 to 276V input)	
Power Supply Offic	JEPMC-PSD3012-E	DC Power Supply Unit (DC24V input)	
	JEPMC-CP3201-E	High-Speed Scan setting (minimum scan setting : 125μs)	
CPU Unit	JEFMC-CF3201-E	Program Memory: 32MB, M register <sup>*1</sup> : 1M word, G register <sup>*2</sup> : 2M word	
CFOOIIIL	JEPMC-CP3202-E	High-Speed Scan setting (minimum scan setting : 125 s)	
	JEPMC-CP3202-E	Program Memory: 32MB, M register⁺1: 1M word, G register⁺2: 2M word	
MP2000 Option/Base Unit	JEPMC-BUB3005-E	5 slots (for MP2000 option module)	
MP2000 Option/base offic	JEPMC-BUB3008-E	8 slots (for MP2000 option module)	
Vision Unit         JEPMC-YVD3001-E         5 million pixel degital camera × 4 system, standalone trigger, easy-vision progr		5 million pixel degital camera×4 system, standalone trigger, easy-vision programming	

 $<sup>^{\</sup>star}1: Battery\,back-up\,data.\,^{\star}2: General\,use\,of\,Medium\,capacity\,register\,with\,no\,battery\,back-up.$ 

#### **Specifications**

Item	Specifications
Control functions	MECHATROLINK-III is a standard feature (MECHATROLINK-I / II / III: available with option module)
Number of Controlled Axes	MECHATROLINK-III: 32 axes (built-in), Maximum 256 axes (with option module) (MECHATROLINK- I : 14 axes/lines, MECHATROLINK-II : axes/lines)
Controlled Servo Drive	MECHATROLINK- I : SGD- \ \ \ SGDB \ Series, SGDB- \ Series, SGDB \ Series, SGDH \ Series + JUSP-NS115 \ or JUSP-NS110 \ MECHATROLINK- II : SGDV \ Series \ MECHATROLINK- III : SGDV \ Series \ MECHATROLINK- III : SGDV \ Series
Controlled Unit (minimum reference unit)	1/0.1/0.01/0.001/0.0001/0.0001 (unit: mm, inch, deg, pulse)
Functions controlled by the motion program	positioning, linear interpolation, cicular interpolation, homing, skip-reference, time-setting positioning and external positioning
Rapid traverse speed	1 to 2147483647 (reference unit)
Interpolation traverse speed	1 to 2147483647 (reference unit)
Override	0.001 to 327.67% (positioning axes unit, interpolation:set with group unit)
Accel/decel Processing	linear, non-symmetric, S-curve

### **MECHATROLINK** specifications

			M-III			
		16-byte	32-byte	48-byte	64-byte	
	Standard servo	-	-	×	-	
Profile	Standard I/O	×	×	×	×	
Profile	Standard Stepping Motor Drivers	-	-	×	-	
	Standard Inverter	-	×	-	×	
Transmission	n cycle	125 μs, 250 μs, 500 μs, 1ms				

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

 ${\it YASKAWA}\ has\ sales\ and\ after-sales\ service\ all\ around\ the\ world.$ 

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India

Europe: Germany, Sweden, Israel, Italy, France, Spain, Finland, Netherlands, Slovenia, Czech republic, Turkey, Spain, S





# MDevice

M-4 M-III

M-II

Category
Category3 (★★★)

## YASKAWA ELECTRIC CORPORATION

# PCI Standard MECHATROLINK-III Interface Card JAPMC-NT112A-E

#### **Features**

When this board is installed in a PCI Standard PC, it allows MECHATROLINK-III communication. Applying this board to the MECHATROLINK Communication Port reduces the board development work for the Master of MECHATROLINK.



JAPMC-NT112A-E

#### **Specifications**

Item	Specifications
Product name	PCI Standard MECHATROLINK-III Interface Card
Dimensions (mm)	Board part: 120.81 $ imes$ 64.41, Face plate: 21.4 $ imes$ 121
Bus	PCI bus
Power voltage	5VDC $\pm$ 5%
Baud rate	100Mbps
No. of MECHATROLINK channels	1
No. of connecting stations	62 stations Note: Max. number of stations varies with each host application.
Host OS	1. RTX64 2014, RTX64 3.0 or later (Model: CPMC-NTA710) 2. Windows7/8/8.1/10 (only applicable to asynchronous communication command) (Model: CPMC-NTA711) 3. INtime5.2, INtime6.3 (Model: CPMC-NTA712)

#### **MECHATROLINK** specifications

			M-III				
		16-byte	32-byte	48-byte	64-byte		
D (!)	Standard servo	×	×	×	×		
	Standard I/O	×	×	×	×		
Profile	Standard Stepping Motor Drivers	×	×	×	×		
	Standard Inverter	×	×	×	×		
Transmission cycle		3	31.25 μs to 64m	ıs	62.5 μs to 64ms		

Note: Communication LSI and its peripheral circuit are installed, but the CPU is not in this PC-board. Therefore, this specification can be determined by host applications using this PC-board. The specifications are selectable only from the host side.

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



## YASKAWA ELECTRIC CORPORATION

**MECHATROLINK-III Motion control module SVC-01** 

## MDevice **컨트롤러**

M-III
M-II

#### Category Category1 (★)

#### **Features**

The SVC-01 module is a motion module equipped with the interface for MECHATROLINK-III.

A multi axes control with less wiring can be made by adopting MECHATROLINK. The MECHATROLINK-III enables position, speed, torque, and phase control for highly accurate synchronized control. In addition, sophisticated machine operations can be performed by switching the control mode while the axis is moving.

Models: JAPMC-MC2320-E



SVC-01

#### **Specifications**

Item	Specifications
Control Method	Motion control with MECHATROLINK-III using position, speed, and torque references.
Number of Controlled Axes	16 axes max.
Applicable Servo Drivers	SGDV-\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Reference Unit Minimum Setting	1, 0.1, 0.01, 0.001, 0.0001, 0.00001 (Units: mm, inch, deg, pulse, μm)
Max. Programmable Value	-2147483648 to 2147483647 pulses (signed 32-bit value). Unlimited feeding is also available.
Motion Commands	Positioning, linear interpolation, circular interpolation, zero-point return, skip, set time positioning, and external positioning.
Fast-forward Speed	1 to 2147483647 [Reference Units/min]
Interpolation Feed Speed	1 to 2147483647 [Reference Units/min]
Override Function	0.01% to 327.67% (Positioning: by axis; Interpolation: by group)
Acceleration/Deceleration Control	Linear, asymmetric, S-curve, and index.

#### **MECHATROLINK** specifications

			M-III		
		16-byte	32-byte	48-byte	64-byte
	Standard servo	-	-	×	-
Profile	Standard I/O	×	×	×	×
Profile	Standard Stepping Motor Drivers	-	-	×	-
	Standard Inverter	-	×	-	×
Transmiss	sion cycle	125 μs, 250 μs, 500 μs, 1ms			5

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



Category

Category1 (★)

M-4 M-III

M-II

## YASKAWA ELECTRIC CORPORATION

## **MECHATROLINK-III Motion control module** (with CPU function) MPU-01

#### **Features**

- The MPU-01 is an optional multi-CPU module equipped with SVC module function.
- One controller can be mounted with maximum 16 MPU-01 modules.
- The MPU-01 module can be used combining with upper controller such as MP2100M, MP2300S, MP2310, CPU-03, or CPU-04.

Models: JAPMC-CP2700-E



MPU-01

#### **Specifications**

Item	Specifications
Control Method	Motion control with MECHATROLINK-III using position, speed, and torque references.
Number of Controlled Axes	16 axes max.
Applicable Servo Drivers	SGDV
Reference Unit Minimum Setting	1, 0.1, 0.01, 0.001, 0.0001, 0.00001 (Units: mm, inch, deg, pulse, μm)
Max. Programmable Value	-2147483648 to 2147483647 pulses (signed 32-bit value). Unlimited feeding is also available.
Motion Commands	Positioning, linear interpolation, circular interpolation, zero-point return, skip, set time positioning, and external positioning.
Fast-forward Speed	1 to 2147483647 [Reference Units/min]
Interpolation Feed Speed	1 to 2147483647 [Reference Units/min]
Override Function	0.01% to 327.67% (Positioning: by axis; Interpolation: by group)
Acceleration/Deceleration Control	Linear, asymmetric, S-curve, and index.

### **MECHATROLINK** specifications

			M-III		
		16-byte	32-byte	48-byte	64-byte
	Standard servo	-	-	×	-
Profile	Standard I/O	×	×	×	×
Prome	Standard Stepping Motor Drivers	-	-	×	-
	Standard Inverter	-	×	-	×
Transmiss	ion cycle	125 μs, 250 μs, 500 μs, 1ms			

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



## 한국요꼬가와전기

#### MDevice 커트로2

M-4 M-III M-III M-III

Category Category3 (★★★)

## Leading Edge Controller (with MECHATROLINK-III Interface)

#### **Features**

FA-M3V is the result of a quest for high performance and advances functionality. FA-M3R features minimum scan time of  $100\mu s$  and is faster than microcomputer boards. F3NC97-0N Positioning Module supports MECHATROLINK-III, an open field network standard designed for high-speed motion control, and is the No.1 choice for configuring a system involving many controlled axes.

- The module implements position control for up to 15 axes from a single slot. It can be
  networked with servo drives, servomotors and other external equipment using fewer cables
  terminated with easy-toattach connectors, contributing to lower wiring cost.
- High transmission rate of 100 Mbps and short cycle time of 0.25, 0.5, or 1 ms for 4-, 8-, or 15axis control respectively enable shorter control cycle, faster startup, better control performance, shorter tact time, and higher productivity.
- Statuses (target position, current position, speed, torque and other statuses) for up to 8 axes can be read concurrently for better monitoring of external equipment operation.
- Control by transmitted commands enables full exploitation of motor performance (high speed and high resolution) to achieve fast and accurate position control.



Positioning Module F3NC97-0N (with MECHATROLINK-III Interface)

#### **Specifications**

	Item	Specifications		
Interface		MECHATROLINK-III compliant		
Physical laye	r	Ethernet		
Transmission	ı rate	100Mbps		
Cycle time/ n	o. of stations	0.25 ms for 4 axes, 0.5 ms for 8 axes or 1.0 ms for 15 axes		
Transmission	n byte	16, 32, 48, or 64 bytes (mixed usage allowed)		
Communicat	tion method	Cyclic communication		
Network Top	ology	Cascade or star		
Transmission	n media	Ethernet STP Cat5e (dedicated cable)		
Max. transmis	ssion distance	100 m (between stations)		
Min. distance	between stations	0.2m		
Supported p	rofiles	Standard servo profile     Standard I/O profile		
	Position reference	-2,147,483,648 to 2,147,483,647 (reference unit)		
Positioning functions	Functions	Independent axis movement using standard servo profile commands (availability dependent on connected external equipment and supported standard servo profile commands) Linear interpolation movement (starting and stopping multiple axes simultaneously) and speed/target position change during movement		
	Others	Status monitoring of external equipment (target position, current position, speed, and torque)     Reading and writing of parameters of external equipment     Input from and output to external equipment using standard I/O profile commands		

#### **MECHATROLINK** specifications

			M-III		
		16-byte	32-byte	48-byte	64-byte
	Standard servo	-	×	×	-
Profile	Standard I/O	×	×	×	×
Profile	Standard Stepping Motor Drivers	-	×	×	-
	Standard Inverter	-	×	-	×
Transmissi	on cycle		250 μs, 500 μs, 1ms, 2ms		

#### **Contact Information**

Yokogawa Electric Corporation 2-9-32, Nakacho, Musashino-shi, Tokyo 180-8750, Japan

 $E\text{-}mail:plc\_message@csv.yokogawa.co.jp}$ 

URL: http://www.yokogawa.com

.... MECHATROLINK

FAX: +81-422-52-9802

TEL: +81-422-52-5616



## 주식회사 아진엑스텍

M-III M-II

M-4

#### Category Category1 (★)

### PCI Master Controller PCI-R6200-MLIII

#### **Features**

- MECHATROLINK-III Master PCI Baord
- Max. 62 axes control (Async)
- Support Fixed postion move, jog, signal dection, velocity/postion override move, 2 to 4 axes liner & 2 axes arc interpolation, continuous interpolation and 3 axes helical interpolation
- Automatic generation of trapezoid, S-curve velocity profile
- Support firmware upgrade
- Provide EzSoftware RM software



PCI-R6200-MLIII

#### **Specifications**

Item	Specifications
Communication port	4 port (Up to 16 salves can be installed on each port)
Max. Number of nodes	62
Network Topology	Cascade, Start, Point to Point, Start & Cascade mix
Support profiles	Standard servo profiles, Standard I/O profiles
Indicator	LINK LED×4 (each PORT), ERROR LED×2 (each NET)
Connector	Industrial mini Connector×4
Bus Interface	PCI 2.2, Memory Access, 32bit
Power supply	DC 5V/1.5A
Operating temperature / Humidity	0°C to 60° C / Humidity Below 80%
Exterior dimension of product	174.63 (W) mm×106.00 (L) mm (Standard PCI Half size)

#### **MECHATROLINK** specifications

			M-III		
		16-byte	32-byte	48-byte	64-byte
	Standard servo	-	×	×	-
  Profile	Standard I/O	×	×	×	×
Prome	Standard Stepping Motor Drivers	-	-	-	-
	Standard Inverter	-	-	-	-
Transmiss	ion cycle	0.5ms to 4ms			

#### **Contact Information**

조신히	1 L	$\cap L X$	M	ᆺᄗ
수의기	ΛГ	UF	911	

본사 대구광역시 달서구 성서공단로11길 27 TEL: 053-593-3700 FAX: 053-593-3703

중부사무소 Korea Business Developmemtn Center-TEL: +86-159-0078-3698

Shanghai Tower

A21F 85 LoushanguanRd, Chang Ning Distric,

Shanghai, CHINA

중부사무소 충남 천안시 서북구 한들1로 95 천안백석기계공구단지 TEL: 041-555-9771 FAX: 041-555-9773

경인사무소 경기도 군포시 고산로 148번길 17(당정동) 군포아이티 TEL: 031-360-2182 FAX: 031-360-2183

밸리 A-1703~5호





### **COMIZOA**

Category Category1 (★)

#### M-4 M-III M-II

## COMI-LX530 (MECHATROLINK-III)

#### **Features**

- 강력한 Motion Control 기능 사용자의 유연한 모션제어를 위하여 S-Curve 가-감속 프로파일을 포함한 직 선보간(16축), 원호보간(2축), 스플라인(Spline)보간, 헬리컬(Helical)보간 기능 등 다양한 보간 기능, 연속 보간(Listed Motion)과 구동 중 보정기능(Override)을 탑재
- 안정성 제어 보드내에 모션구동과 통신을 담당하는 Processor(DSP)가 별도 내장되어 PC의 부하 상황과 상 관없이 통신 네트워크 및 모션 구동에 대한 안정성을 확보
- 다양한 입출력 Slave와의 호환성 자사의 다양한 Slave (Digital I/O, Analog I/O, Pulse Motion 등)를 이용 하여 사용자의 자유로운 시스템 구성이 가능 MECHATROLINK의 표준 프로토콜에 따라 타사 MECHATROLINK-III 제품군과도 완벽한 호환성을 보장



COMI-LX530 (MECHATROLINK-III)

#### 사양

항목	사양
Communication Port	2 Port (Up to 16 slaves can be installed on each port)
Max. Number of nodes	32
Network Topology	Cascade, Star, Point to Point, Star & Cascade
Support profile	Standard Servo, Standard I/O
Indicator	LINK & ERROR × 2
Connector	Industrial Mini Connector × 2
PCI BUS Interface	PCI Rev. 2.2, 32bit
Power supply	DC5V/900mA
Operating Temperature	0°C to 50°C
Operating Humidity	5% to 90%RH, non-condensing
Dimension of Product	190mm × 114 mm

#### **MECHATROLINK** specifications

			M-	·III	
		16-byte	32-byte	48-byte	64-byte
	Standard servo	-	×	-	-
Profile	Standard I/O	-	-	-	-
Profile	Standard Stepping Motor Drivers	-	-	-	-
Standard Inverter		-	-	-	-
Transmission cycle 0.5s, to 1ms					

#### **Contact Information**

COMIZOA

대전광역시 유성구 테크노 2 로 314 TEL: +82-42-936-6500 FAX: +82-42-936-6507 본사

314, Techno 2-ro, Yuseong-gu, Daejeon, Republic of

TEL:+86-21-5170-1597 FAX: +86-21-5170-1599 중국지사 Podium Building Room 219, 2nd Floor, San Lu Road

#3279, Minhang District, Shanghai CHINA COMIZOA Shanghai Co., Ltd. 中国上海市闵行区三鲁公路3279号裙楼2楼219室

(201112)

E-mail: sales@comizoa.com URL: http://www.comizoa.co.kr/ 中国支社Mobile: +86-1590-2188-309





Category

Category1 (★)

M-II

# ALGOSYSTEM CO.,LTD.

**A-LINK V2.0 + MECHATROLINK-II Dual-field-bus-master PCI Board** 

#### **Features**

- The both of A-Link and MECHATROLINK-II capabilities fabricated on a half-hight PCI board.
- Further less-wiring in equipment.
- Distributed High-speed Control
  - allows 2016 I/O points maximum with 0.96ms high speed scanning on A-Link and 16-axis with 2ms or 30-axis 4ms control on MECHATROLINK- II simultaneously.
- Just a board can control maximum 30 axes servo-driver units or manage maximum 15 axes independent linear interpolation motion, positioning and changing speed/destination after moving (except interpolated axis).
- Embedding bundled software makes it possible to realize applications easier on PC platforms.



PCILM01-0

#### **Specifications**

Network	A-Link	MECHATROLINK-II
Transmission Speed	6 or 12 Mbps	10 Mbps
Maximum Transmission Length	200 m (6 Mbps) or 100 m (12 Mbps) - extension available with HUB	50 m - 50 m maximum with repeater
Available Nodes	63 slave nodes maximum	15 slave nodes max. or 30 max. with repeater
Connection (Transmission Cable)	Multi-drop type (pulse transformer isolated) – specific shielded cable (i.e. shielded Ethernet cable equal or more than category-3)	Multi-drop type (pulse transformer isolated) – MECHATROLINK- II specific cable (i.e. shielded and twisted-pair cable with characteristic impedance 130 ohm)
Maximum I/O points	2016 points (1008 for input and 1008 for output)	N/A
Transmission Cycle-time	Full-duplex: 0.955 ms / 2016 points (63 nodes / 12 Mbps) Half-duplex: 1.859 ms / 2016 points (63 nodes / 12 Mbps)	1 ms (LT or EQ 6 axes), 2 ms (7-16 axes), 4 ms (17- 30 axes) Note: repeater required for 15 or more axes.

#### **MECHATROLINK** specifications

		M- I	M-	·II
		17-byte	17-byte	32-byte
	Servo	-	×	-
	Stepping Motor Drivers	-	-	-
Command	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle			1ms, 2ms, 4ms	

#### **Contact Information**

ALGOSYSTEM CO., LTD.

656 Kobirao, Mihara-ku, Sakai, Osaka 587-0021, Japan TEL: +81-72-362-5067 FAX: +81-72-362-4856

URL: http://www.algosystem.co.jp



M-4 M-III M-II

Spec

#### Category Category1 (★)

# LSIS Co., Ltd

#### **XGT PLC Motion control module**

#### **Features**

Motion control module adopting MECHATROLINK- II

- Transmission speed: 10Mbps
- Transmission: 1ms/1.5ms/2ms

Enhanced performance of motion synchronization

- Perfect synchronization of Max. 16 axes
- High-speed synchronous motion control by synchronizing execution period of application with transmission period of network.

Efficient system

- Wiring reduction with motion control system via network
- Enhanced stability and efficiency of system through absolute coordinate operation

Multi-function engineering tool→ M16M software package

- Providing various function from system design to maintenance
- Automatic setting of communication & servo parameter by
- 'Self-Configuration'



XGF-M16M

#### **Specifications**

Item		Specifications		
Control axis		Moiton: 6 axes/1ms, MOV: 16 axes/2ms		
Control   performance	Data transmission time	9 axes/1 port (M    −1ms), 15 axes/1 port (M    −1.5ms) 16 axes/1 port (M    −2ms), 15 axes/1 port (M    −17byte −1ms)		
Max. number of con	trol axis	16 axis		
Max. transmission d	istance	50m		
Count range		Signed 32 Bit (-2,147,483,648 to 2,147,483,647)		
Scan time setting		1.0 to 32.0ms (Unit: 0.5ms)		
	RAM	32MB (SDRAM) // 512kB (SRAM)		
Memory capacity	FLASH	8MB (Firm 2MB/User 6MB)		
	User Memory	6MB		
Data Trace	•	128kW (32kW × 4Gr)		
Program language Motion language		No. of program: 256, No. of command: about 70, No. of simultaneous execution: 16		
Memory backup		FLASH		
Engineering port		RS-232C × 1		

#### **MECHATROLINK** specifications

		M- I	M-	·II
		17-byte	17-byte	32-byte
	Servo	×	×	×
	Stepping Motor Drivers	-	-	-
Command	Intelligent I/O	×	×	×
	Simple I/O	×	×	×
	Inverter	×	×	×
Transmission cycle			1ms, 1.5ms, 2ms	

#### **Contact Information**

LSIS Co., Ltd

Yonsei Jaedan Severance Bldg., 84-11, Namdaemunno 5-ga, Jung-FAX: +82-2-2034-4713 TEL: +82-2-2034-4872

gu, Seoul 100-753, Korea URL: http://www.lsis.com/ko/





### MDevice

## **트롤러** M-4

M-III

#### Category Category1 (★)

# SYSMAC CS/CJ Series Position Control Units CJ1W-NCF71, CS1W- NCF71

**OMRON Corporation** 

### **Features**

- Control up to 16 aces with one Unit.
- Make the most of motor performance: No upper limit to speed command to Servo Driver because communications are used.
- Use direct operation to directly specify the target position and target speed from the PLC's CPU Unit.
- Perform speed control or torque control, or switch between speed and torque control.
- Supports motors with absolute encoders.
- Set and monitor Servo Driver parameters from the PLC's CPU Unit.





CJ1W-NCF71

CS1W-NCF71

#### **Specifications**

Item	Specifications
Control method	MECHATROLINK- II Position commands, Speed commands, Torque commands
Number of control axis	16 axes max.
Controlled drivers	OMRON W-series Servo Drivers R88D-WN□□□-ML (built-in MECHATROLINK-II communications) R88D-WT□□□+MECHATROLINK-II Interface Unit
Maximum position command value	— 2147483648 to 2147483647 command units Command unit: Depends on electronic gear setting in Servo parameters.
Control functions	Servo lock/unlock, position control, establishing the origin, jogging, interrupt feeding, speed control, torque control, stop functions, acceleration/ deceleration curves, torque limit, overrides, servo parameter transfers, monitoring, software limits, and backlash compensation

#### **MECHATROLINK** specifications

		M- I	M- I M-II	
		17-byte	17-byte	32-byte
	Servo	-	-	×
	Stepping Motor Drivers	-	-	-
Command	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle				0.25 ms, 0.5 ms, 1 to 8 ms (See note.)

Note: User can set communications cycle to 0.25 ms or 0.5 ms, or to 1 to 8 ms in increments of 1 ms-

#### **Contact Information**

URL: http://www.omron.com/

OMRON Corporation			
Drive Div.	Shiokoji Horikawa, Shimogyo-ku, Kyoto, 600-8530 Japan	TEL: +81-75-344-7233	FAX: +81-75-344-7107
Regional H.Q. OMRON EUROPE B.V.	Wegalaan 67-69, NL-2132 JD Hoofddorf, The Netherlands	TEL: +31-2356-81-300	FAX: +31-2356-81-388
OMRON ELECTRONICS LLC	1 East Commerce Drive Schaumburg, IL 60173 U.S.A	TEL: +1-847-843-7900	FAX: +1-847-843-8568
OMRON ASIA PACIFIC PTE. LTD.	83 Clemenceau Avenue, #11-01, UE Square, Singapore 239920	TEL: +65-6835-3011	FAX: +65-6835-2711
OMRON (CHINA) CO., LTD.	Room 2211, Bank of China Tower, 200 Yin Cheng Zhong Road, PuDong New Area, Shanghai, 200120 China	TEL: +86-21-5037-2222	FAX: +86-21-5037-2200





M-4 M-III

Category M-II Category1 (★)

## KOYO ELECTRONICS INDUSTRIES CO., LTD.

### **MECHATROLINK MODULE for DL06 series D0-MLINK**

#### **Features**

- Achieved the motion control function using the small size PLC.
- Enabled DL06 to be used as a motion controller. (Scheduling to execute by DL05)
- By installing D0-MLINK, it is possible to connect easily with various actuators; such as the servo motor and the stepping motors as well as I/O equipment. In addition, the motion system for the wiring-saving can be constructed.
- Positioning of seven independent axes can be executed with DL06. (DL05 is scheduled to execute up to two independent axes.)
- Only setting the parameter in the data register of PLC, high accuracy positioning can be achieved easily and at low cost.



D0-MLINK

#### **Specifications**

Item	Specifications
Function	MECHATROLINK Master
Control method	MECHATROLINK-   : 4Mbps MECHATROLINK-   : 10Mbps
Number of Axis to control	DL06: 7axes DL05: 2axes (Being scheduled)
Transmission distance	The maximum total extension 50m Minimum distance between stations 0.5m
Data transmission method	Transmitting / receiving the data through the data register. Transmission: Setting the data by the ladder program. (command to each axis) Receiving: D0-MLINK sets the status of each axis in the data register.
Number of stations to connect	DL06: Up to seven slave stations DL05: Up to two slave stations. (Being scheduled)

#### **MECHATROLINK Specifications**

		M- I	М	- 11
		17-byte	17-byte	32-byte
	Servo	×	×	×
Command	Stepping Motor Drivers	×	×	×
	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle		2ms	2ms	2ms

#### **Contact Information**

Koyo Electronics Industries Co., Ltd.

OVERSEAS SALES Dept. 1-171, Tenjin-cho, Kodaira, Tokyo 187-0004, TEL:+81-42-341-7711 FAX: +81-42-342-6871

Japan

URL: http://www.koyoele.co.jp





M-4 M-III

M-II

# Category

Category1 (★)

## KOYO ELECTRONICS INDUSTRIES CO., LTD.

### **MECHATROLINK MODULE for DL205 series D2-MLINK**

#### **Features**

- Achieved the motion control function by the small PLC.
- By installing D2-MLINK, it is possible to connect easily with various actuators; such as the servo motor and the stepping motors. In addition, D2- MLINK offers wiring-saving motion system.
- 15 axes can be support per one module.
- 4 modules can be installed on one system.
- Supported Straight line interpolation and Circle interpolation
- Easy operation by only setting the parameter in the data memory of PLC.
- It corresponds to various control exibly supported by many command of MECHATROLINK.
- System performance will be up if D2-265 CPU used.



D2-MLINK

#### **Specifications**

Item	Specifications
Function	MECHATROLINK-II Master
Number of Axis to control	15 axis per module, maximum 60 axis (with four D2-MLINKs)
Maximum command value	-2,147,483,647 to +2,147,483,647
Maximum velocity value	-40,000,000 to 40,000,000
Accel/decel type	Asymmetric trapezoid or S curve
Accel/decel time	1 to 60,000ms
Emergency stop time	1 to 60,000ms
Programming language	Ladder
Command type	Absolute or incremental
Motion control functions	PTP positioning, Liner / circular interpolation, constant rate of feeding (Include an limited position axis), Zero pointiting serch, Interrupt constant rate of feeding, Velocity control, Torque control

#### **MECHATROLINK** specifications

		M- I	M	-11
		17-byte	17-byte	32-byte
	Servo	-	=	×
Command	Stepping Motor Drivers	-	-	×
	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle			1 to 8ms (S	ynchronus)

#### **Contact Information**

Koyo Electronics Industries Co., Ltd.

OVERSEAS SALES Dept. 1-171, Tenjin-cho, Kodaira, Tokyo 187-0004, TEL:+81-42-341-7711 FAX: +81-42-342-6871

Japan

URL: http://www.koyoele.co.jp





# TECHNO CO., LTD.

#### Category Category1 (★)

# M-III M-III

Spec

#### **PLC Motion Controller**

#### **Features**

It is a motion controller with built-in PLC (FA-M3 made of Yokogawa Electric Corporation). It is a standalone type, and it controls NC and robot without the load of the ladder. It integrates the exact motion functions such as multi axes interpolation, synchronous control, contouring and electronic cam. It is possible to connect with PC easily, and the operation is possible from EXCEL and VB software by DLL application. It can be operated from the PLC ladder, then PC/PLC/MC operate jointly. Moreover, one PLC can easily do the line controls of the transportation, the processing, assembly, and the inspection, etc. by the parallel run of PLMC.



#### **Application examples**

Multi axes control, Robot control (Scalar, link and parallel), Semiconductor manufacturing equipment, High-speed press (Servo press and Feeder), Machining, Grinding, Bending, Cutting (Glass, Cloth, Rubber and metal), Spooling machine, Electronic cam, Handling machine, DNC processing machine, Metal processing machine, Optical forming, Transportation machine and Packaging machine

#### **Specifications**

Item	Specifications
Number of controlled axes	Standard: 4 or 9 axes (Exclusive: 15 axes)
Axis control functions	Spindle (SPIN), Same command for 2 axes (Parallel axes), Tangent control, Rotary axis surroundings processing (Infinity rotation), Flexible electronic cam, Axis unit system conversion, Sensor latch, and Diameter command (Lathe specification)
Accel./decel. control	Linear type, Exponential type and S character type
Axis command	Positioning, Linear interpolation, Circular interpolation, Helical interpolation, Point positioning, Torque command and Independent multi axes control
IO command	Output ON/OFF, M code, and Input judgment
Other command	Timer, JMP, and Logical origin setting
Coordinate system	Logical coordinates and Machine coordinates
Contouring	Path operation (No stop between blocks), Continuous operation of minute interpolations and Form compensation
Compensation functions	BL compensation, PE compensation, Tool length/Tool diameter compensation
Network	Ethernet connection (By way of PLC)
PC communication	DLL connection (By way of PLC), Standard operation software and DLL
Ladder operation	It instructs and controls all functionses of PLMC from the ladder.
A large amount of data	Dynamic data loading (PLC)
Operation language	G code, Techno code, Subprogram and Times specification CALL
Operation	Manual operation, Memory operation, teaching and DNC operation (PC/PLC)
Multitasking	Mastering, Slave, Reset, Background, EXIT and Alarm
Macro-function	Variable, Arithmetic operation, and Condition judgment
Input processing (By way of PLC)	Emergency stop, ONSW, Origin (Each axis), Logical origin setting, General purpose inputs (Ri0-48), Handle palser axis selection, Handle palser magnification, Override function, Operation mode, Effective/invalid of panel, Axis operation (Bit/code specification), and Program selection
M- II input	Servo alarm and Over travel (Each axis)
Output control (By way of PLC)	SVM (Servo main power supply), ALARM, INPOS, READY, RUN, PAUSE, PRDY, MODE 0-2 (Mode output), Spindle control, General purpose outputs (Ro0-63)
M- II output	Servo ON (Each axis) and Servo reset (Each axis)
Operation panel (By way of PLC)	Various automatic/manual operations and Override
Axis operation analysis	Time series loging of multi axes
Exclusive use	Coordinates conversion (Link and parallel) and Others
MECHATROLINK connection	Σ servo, MYVIS (Image processing system), Spindle inverter

#### **MECHATROLINK** specifications

	_	M- I	M-II	
		17-byte	17-byte	32-byte
Command	Servo	-	×	×
	Stepping Motor Drivers	-	-	-
	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle			0.5ms	to 4ms

#### **Contact Information**

TECHNO CO., LTD.

1304-5 Shimofujisawa, Iruma, Saitama, 358-0011 Japan

E-mail: mail@open-mc.com URL: http://www.open-mc.com

.... MECHATROLINK

FAX: +81-4-2964-3322

TEL: +81-4-2964-3677



## **Micronet Co.**

# 컨트롤러 Category

Category3 (★★★)

M-III
M-III

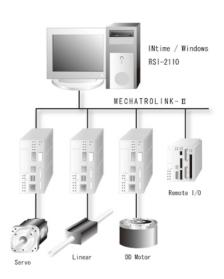
#### RSI-2110 (MECHATROLINK-II driver for INtime)

#### **Features**

RSI-2110 is a driver software for INtime (Real-time extension for Windows) of the motion controller (MP2110/MP2110M) made by YASKAWA.

MP2110/MP2110M are the motion controller built-in the PCI/Compact PCI bus of the host computer. It can control the drive equipment and the I/O equipment at high speed via MECHATROLINK- II network.

- Super-high precision and advanced high-speed motion control Controlling position, speed
  and torque with high accuracy of synchronization are capable with the MECHATROLINK- II
  network. Online switching of control mode is available and complex machine behaviour can
  be realized.
- Powerful motion-control functions
   More than 40 of motion-control APIs in C language help users to create an application
   program.
- Hight extendibility
   MP2110 can control maximum 21 stations whereas MP2110M can do maximum 42. It is flexible
   to choose out the stations and decide how many axes to use for servo or I/O.
- Work on INtime (Realtime OS)
   By combination with INtime, a deterministic hard-realtime capability is capable on a personal computer system.



#### **Specifications**

IA a ma	Specifications			
Item	MP2110	MP2110M		
FieldNetwork	MECHATROLINK- I / MECHATROLINK- II			
Channels	1	2		
Number of control axis	each 21 channels (Servo axis or I/O)			
Control performance	Each cannnel 6 axes/0.5ms (Communication cycle) 15 axes/1ms (Communication cycle) 21 axes/2ms (Communication cycle)			
Local DIO	Digital Input 5 channels, Digital Output 4 channels			
Connectable equipment	Servo, Linear, DDmotor, Inverter, other various I/O			

### **MECHATROLINK** specifications

		M- I	M	- II
		17-byte	17-byte	32-byte
	Servo	×	×	×
Command	Stepping Motor Drivers	×	×	×
	Intelligent I/O	×	×	×
	Simple I/O	×	×	×
	Inverter	×	×	×
Transmission cycle		2ms	0.5ms, 1	.ms, 2ms

#### **Contact Information**



## MYCOM, INC.

M-4 M-III

Category3 (★★★)

## Category M-II

## PCI-bus Host controller board MLH20-1030

#### **Features**

- Available to control up to maximum 30 modules corresponding to MECHATROLINK-II. One controller board can control maximum 30 modules such as stepping motor and servomotor corresponding to MECHATROLINK-II.
- Wiring saving is available. Complicated wring is unnecessary. Low cost and simple system construction are available.
- One package control of modules corresponding to MECHATROLINK-II is available.  $A vailable \, to \, Control \, parameter, \, motion \, program \, and \, so \, on \, by \, one \, package.$
- Device driver+DLL (VisualC++) and driving sample software (optional) are prepared. Available to control maximum 2 boards.



MLH20-1030

### **Specifications**

Item		specifications
Bus specification	PCI Bus	
Communication type	MECHATROLINK-II conformity	
Control target	Device corresponding to MECI	HATROLINK- I / II
Numbers of control module	Maximum 30 modules	
	MECHATROLINK- II communication port	1ch.
External I/F	2 Inputs (Start, Emergency stop)	Input circuit: Photo coupler Control capacity: Less than 10mA at most, External input power DC24V use
	1 Output (RDY)	Output circuit: Photo coupler Control capacity: Less than 10mA at most, External Output power DC24V use
	Memory space	Occupies 256 byte (100H) from base address assigned by PCI configuration.
PC side source for use.	I/O space	Occupies 4 byte (04H) from base address assigned by PCI configuration.
	Interrupt I/F	Uses one IRQ assigned by PCI configuration.
Power	Bus logic power	+5VDC ±1.0A or less
Power	Power for sensor I/F	+24VDC (supplied externally) 0.1A or less
Board size	64.0mm (H) × 120.0mm (W) × 20.0mm (D)	
Mass	55 g	

### **MECHATROLINK** specifications

		M- I	М	- 11
		17-byte	17-byte	32-byte
	Servo	×	×	×
Command	Stepping Motor Drivers	×	×	×
	Intelligent I/O	×	×	×
	Simple I/O	×	×	×
	Inverter	×	×	×
Transmission cycle		2ms	0.5ms to 8ms (ea	ich 0.5ms setting)

#### **Contact Information**

MYCOM, INC.

Head Office 1-29, Ohara, Goryo, Nishikyo, Kyoto 651-8245, Japan FAX: +81-75-382-1570 TEL: +81-75-382-1580 Tokyo Office 1-8 Suda-cho, kanda, Chiyoda-ku, Tokyo 101-0047, Japan TEL: +81-3-3251-5415 FAX: +81-3-3251-5485 TEL: +65-6743-4476 FAX: +65-6743-4576 Singapore Taiwan TEL: +886-2-2778-9021 FAX: +886-2-2778-9750

E-mail:support@mycom-japan.co.jp URL: http://www.mycom-japan.co.jp/





M-4

M-III M-II

### Category Category3 (★★★)

## YASKAWA ELECTRIC CORPORATION

#### Board-type Machine Controller MP2100, MP2100M

#### **Features**

- The MP2100 machine controller is half the size of a standard PCI board. It completely blends motion control with sequence control. Simply mount the plug-and-play MP2100 board in a PC, and it is ready for high-speed communications. Total support from design to maintenance is also available.
- The MP2100M has the same specifications as the MP2100 except that it contains a board that has functions similar to the SVB-01 module. Models:

JAPMC-MC2100 (MP2100), JAPMC-MC2140 (MP2100M)



MP2100, MP2100M

#### **Specifications**

Item	Specifications
Control Method	Motion control with MECHATROLINK-   or-    using position, speed, and torque references.
Number of Controlled Axes	MP2100 : 16 axes max. MP2100M : 32 axes max.
Applicable Servo Drivers	MECHATROLINK- I: SERVOPACKs in the SGD- \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Reference Unit Minimum Setting	1, 0.1, 0.01, 0.001, 0.0001, 0.00001 (Units: mm, inch, deg, pulse, μm)
Max. Programmable Value	-2147483648 to $2147483647$ pulses (signed 32-bit value). Unlimited feeding is also available.
Motion Commands	Positioning, linear interpolation, circular interpolation, zero-point return, skip, set time positioning, and external positioning.
Fast-forward Speed	1 to 2147483647 [Reference Units/min]
Interpolation Feed Speed	1 to 2147483647 [Reference Units/min]
Override Function	0.01% to 327.67% (Positioning: by axis; Interpolation: by group)
Acceleration/Deceleration Control	Linear, asymmetric, S-curve, and index.

### **MECHATROLINK** specifications

		M- I	M-	·II
		17-byte	17-byte	32-byte
	Servo	×	×	×
	Stepping Motor Drivers	×	×	×
Command	Intelligent I/O	×	×	×
	Simple I/O	×	×	×
	Inverter	×	×	×
Transmission cycle		2ms	MP2100:1ms,1. MP2100M:0.5ms 2ms	5ms, 2ms s, 1ms, 1.5ms,

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



M-III

Category M-II Category3 (★★★)

### YASKAWA ELECTRIC CORPORATION

Board-type Machine Controller MP2110, MP2110CP, MP2110M, MP2110MCP

#### **Features**

• MP2110 and MP2110CP machine controllers provide improved throughput from host computers to servomotors.

The MP2110 has a half-size PCI bus and the MP2110CP has a 3U Compact PCI bus. Attain high-speed motion and I/O control of connected devices from the host computer.

The shared memory has been publicly disclosed, so the host computer is not limited to running any one operating system (OS).

• With a two-channel MECHATROLINK port, the processing speed of the MP2110M and MP2110MCP machine controllers is twice that of the MP2110 machine controllers.

Models:

JAPMC-MC2110 (MP2110), JAPMC-MC2130 (MP2110M) JAPMC-MC2150 (MP2110CP), JAPMC-MC2170 (MP2110MCP)



MP2110, MP2110CP MP2110M, MP2110MCP

#### **Specifications**

Item	Specifications
Control Method	Motion control with MECHATROLINK-   or -    using position, speed, and torque references.
Number of Controlled Axes	MP2110CP : 21 axes max. MP2110MCP : 42 axes max.
Applicable Servo Drivers	MECHATROLINK- I: SERVOPACKs in the SGDS or SGDH series with a JUSP-NS115 or JUSP-NS100 application module.  MECHATROLINK- II: SERVOPACKs in the SGDV, SGDS, or SGDH series with JUSP-NS115 application module.
Reference Unit Minimum Setting	1=1 reference unit
Max. Programmable Value	-2147483648 to 2147483647 pulses (signed 32-bit value)
Operating System	MECHATROLINK mode/command mode: Any OS can be used. APi mode: RTLinux (Model: CPMC-MPA710) RTX (Model: CPMC-MPA711) INtime (Model: CPMC-MPA713) Windows Driver (Model: CPMC-MPA712T1)
Fast-forward Speed	1 to 131068000 [reference unit/s]
Interpolation Feed Speed	1 to 65535999 [reference unit/s]
Acceleration/Deceleration Control	Linear, asymmetric, S-curve, and index.

#### **MECHATROLINK** specifications

		M- I	M	- 11
		17-byte	17-byte	32-byte
	Servo	×	×	×
Command	Stepping Motor Drivers	×	×	×
	Intelligent I/O	×	×	×
	Simple I/O	×	×	×
	Inverter	×	×	×
Transmission cycle		2ms	0.5ms, 1	.ms, 2ms

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



M-4 M-III

M-II

## Category Category3 (★★★)

## YASKAWA ELECTRIC CORPORATION Flexible Machine Controller MP2200

#### **Features**

- The MP2200 can be greatly expanded. 9 optional modules can be mounted in one rack and 4 racks can be connected.
- The CPU modules for the MP2200 can be used to realize a highspeed, motion-control cycle of 0.5 ms and control of 256 axes.

Models:

[Base Units]

JEPMC-BU2200 (85 VAC to 276 VAC)

JEPMC-BU2210 (24 VDC  $\pm$  20%)

[CPU Modules (indispensable)]

JAPMC-CP2200 (Memory: 7.5Mbytes)

JAPMC-CP2210

(USB port  $\times$  1, Compact Flash card slot  $\times$  1, Memory: 11.5Mbytes)



MP2200

#### **Specifications**

Item	Specifications
Control Method	Motion control with MECHATROLINK-   or -    using position, speed, and torque references.
Number of Controlled Axes	MECHATROLINK- I: 14 axes max. MECHATROLINK- II: 16 axes max. (when one SVB-01 module is mounted), and 256 axes max. (when sixteen SVB-01 modules are mounted)
Applicable Servo Drivers	MECHATROLINK- I: SERVOPACKs in the SGD-□□□N, SGDB-□□, SGDS, or SGDH series with a JUSP-NS110 or JUSP-NS115 application module.  MECHATROLINK- II: SERVOPACKs in the SGDS or SGDH series with a JUSP-NS115 application module.
Reference Unit Minimum Setting	1, 0.1, 0.01, 0.001, 0.0001, 0.00001 (Units: mm, inch, deg, pulse, μm)
Max. Programmable Value	-2147483648 to 2147483647 pulses (signed 32-bit value). Unlimited feeding is also available.
Motion Commands	Positioning, linear interpolation, circular interpolation, zero-point return, skip, set time positioning, and external positioning.
Fast-forward Speed	1 to 2147483647 [Reference Units/min]
Interpolation Feed Speed	1 to 2147483647 [Reference Units/min]
Override Function	0.01% to 327.67% (Positioning: by axis; Interpolation: by group)
Acceleration/Deceleration Control	Linear, asymmetric, S-curve, and index.

#### **MECHATROLINK** specifications

		M- I	M- I M- II	
		17-byte	17-byte	32-byte
	Servo	×	×	×
	Stepping Motor Drivers	×	×	×
Command	Intelligent I/O	×	×	×
	Simple I/O	×	×	×
	Inverter	×	×	×
Transmission cycle		2ms	0.5ms, 1ms, 1.5ms, 2ms	

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



M-4 M-III

#### Category M-II Category3 (★★★)

## YASKAWA ELECTRIC CORPORATION

#### All-in-one Machine Controller MP2300

#### **Features**

- The MP2300 is an all-in-one machine controller. It has three slots for other modules and a basic module whose standard functions include those of a CPU module, an SVB module, and an I/O module.
- The CPU can be used to control 48 axes (when two SVB-01 modules are mounted).
- Most modules used with the MP2200 controller can be mounted in the MP2300 empty slots.

Model:JEPMC-MP2300-□□□

Note: The alphanumeric character indicated by the square,  $(\Box)$ , varies in accordance with the combination of modules mounted in the empty slots.



MP2300

#### **Specifications**

Item	Specifications
Control Method	Motion control with MECHATROLINK-   or -    using position, speed, and torque references.
Number of Controlled Axes	MECHATROLINK-   : 14 axes max. MECHATROLINK-    : 16 axes max. (when only a basic module is mounted), and 48 axes max. (when two SVB-01 modules are mounted)
Applicable Servo Drivers	MECHATROLINK- I: SERVOPACKs in the SGD- \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Reference Unit Minimum Setting	1, 0.1, 0.01, 0.001, 0.0001, 0.00001 (Units: mm, inch, deg, pulse, μm)
Max. Programmable Value	-2147483648 to 2147483647 pulses (signed 32-bit value). Unlimited feeding is also available.
Motion Commands	Positioning, linear interpolation, circular interpolation, zero-point return, skip, set time positioning, and external positioning.
Fast-forward Speed	1 to 2147483647 [Reference Units/min]
Interpolation Feed Speed	1 to 2147483647 [Reference Units/min]
Override Function	0.001 to 327.67% (Positioning: by axis; Interpolation: by group)
Acceleration/Deceleration Control	Linear, asymmetric, S-curve

#### **MECHATROLINK** specifications

		M- I	M-II	
		17-byte	17-byte	32-byte
	Servo	×	×	×
Command	Stepping Motor Drivers	×	×	×
	Intelligent I/O	×	×	×
	Simple I/O	×	×	×
	Inverter	×	×	×
Transmission cycle		2ms	0.5ms, 1ms, 1.5ms, 2ms	

#### **Contact Information**

Please access **YASKAWA** website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



Category3 (★★★)

Category

M-4 M-III

M-II

## YASKAWA ELECTRIC CORPORATION

#### Compact All-in-one Machine Controller MP2300S

#### **Features**

- The MP2300S is a compact all-in-one machine controller. It has one empty slot to add another module and also a basic module whose standard functions include those of a CPU module, an SVB module, and an Ethernet (100 BASE-TX) module.
- The MP2300S controller can control 32 axes when an SVB-01 module is mounted.
- A synchronous distributed system for synchronous control of slave CPUs can be constructed with MECHATROLINK.
- Most modules used with the MP2200 controller can also be mounted in the MP2300S empty slot.





MP2300S

#### **Specifications**

Item	Specifications
Control Method	Motion control with MECHATROLINK-   or    using position, speed, and torque references
Number of Controlled Axes	MECHATROLINK-   : 14 axes max. MECHATROLINK-    : 16 axes max. (when only a basic module is mounted), and 32 axes max. (when one SVB-01 module is mounted)
Applicable Servo Drivers	MECHATROLINK- I: SERVOPACKs in the SGD- \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Reference Unit Minimum Setting	1, 0.1, 0.01, 0.001, 0.0001, 0.00001 (Units: mm, inch, deg, pulse, μm)
Max. Programmable Value	-2147483648 to 2147483647 pulses (signed 32-bit value). Unlimited feeding is also available.
Motion Commands	Positioning, linear interpolation, circular interpolation, zero-point return, skip, set time positioning, and external positioning
Fast-forward Speed	1 to 2147483647 [Reference Units/min]
Interpolation Feed Speed	1 to 2147483647 [Reference Units/min]
Override Function	0.01% to 327.67% (Positioning: by axis; Interpolation: by group)
Acceleration/Deceleration Control	Linear, asymmetric, and S-curve

### **MECHATROLINK specifications**

		M- I	M-II	
		17-byte	17-byte	32-byte
	Servo	×	×	×
Command	Stepping Motor Drivers	×	×	×
	Intelligent I/O	×	×	×
	Simple I/O	×	×	×
	Inverter	×	×	×
Transmission cycle		2ms	0.5ms, 1ms, 1.5ms, 2ms	

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



M-4 M-III

Category Category3 (★★★)

# M-II

## YASKAWA ELECTRIC CORPORATION

#### **Compact Machine Controller MP2400**

#### **Features**

- The MP2400 is a compact machine controller. It has the functions of a CPU module, an SVB module, and an Ethernet (100 BASE-TX) module.
- The MP2400 controller can control 16 axes.
- Easy to program with a text editor for sequence control and motion control.

Model: JEPMC-MP2400-E



MP2400

#### **Specifications**

Item	Specifications
Control Method	Motion control with MECHATROLINK-   or    using position, speed, and torque references
Number of Controlled Axes	MECHATROLINK- I : 14 axes max. MECHATROLINK- II : 16 axes max.
Applicable Servo Drivers	MECHATROLINK- I: SERVOPACKs in the SGD-□□N, SGDB-□□, SGDS, or SGDH series with a JUSP-NS115 or JUSP-NS100 application module MECHATROLINK- II: SERVOPACKs in the SGDS or SGDH series with a JUSP-NS115 application module, and SERVOPACKs in the SJDE-□□AN□ series
Reference Unit Minimum Setting	1, 0.1, 0.01, 0.001, 0.0001, 0.00001 (Units: mm, inch, deg, pulse, μm)
Max. Programmable Value	-2147483648 to 2147483647 pulses (signed 32-bit value). Unlimited feeding is also available.
Motion Commands	Positioning, linear interpolation, circular interpolation, zero-point return, skip, set time positioning, and external positioning
Fast-forward Speed	1 to 2147483647 [Reference Units/min]
Interpolation Feed Speed	1 to 2147483647 [Reference Units/min]
Override Function	0.01% to 327.67% (Positioning: by axis; Interpolation: by group)
Acceleration/Deceleration Control	Linear, asymmetric, and S-curve

#### **MECHATROLINK** specifications

		M- I	M	M-II	
		17-byte	17-byte	32-byte	
	Servo	×	×	×	
	Stepping Motor Drivers	×	×	×	
Command	Intelligent I/O	×	×	×	
	Simple I/O	×	×	×	
	Inverter	×	×	×	
Transmission cycle		2ms	0.5ms, 1ms, 1.5ms, 2ms		

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



M-4 M-III

Category M-II Category1 (★)

### YASKAWA ELECTRIC CORPORATION

**PCI Standard MECHATROLINK-II** Interface Card JAPMC-NT110, JAPMC-NT111

#### **Features**

When this board is installed in a PCI Standard PC, it allows MECHATROLINK communication. Applying this board to the MECHATROLINK Communication Port reduces the board development work for the Master of MECHATROLINK. Standard PCI type (NT110) and Low Profile PCI type (NT111) boards are available. (Main PC boards are the same for both NT110 and NT111.)



JAPMC-NT110

JAPMC-NT111

#### **Specifications**

Item	Specifications
Product name	PCI bus applied MECHATROLINK Communication Interface Card
Dimensions (mm)	Board part: 120.81 $\times$ 64.41, Face plate: 21.4 $\times$ 121(NT110), 22.0 $\times$ 80.2 (NT111)
Bus	PCI bus
Power voltage	5VDC ± 5%
Baud rate	4Mbps (MECHATROLINK-   ), 10Mbps (MECHATROLINK-    )
No. of MECHATROLINK channels	1
No. of connecting stations	MECHATROLINK- I: 14 stations max., MECHATROLINK- II: 30 stations Note: Max. number of stations varies with each host application.
Host OS	1. RTX64 2014, RTX64 3.0 or later (Model: CPMC-NTA700) 2. Windows7/8/8.1/10 (only applicable to asynchronous communication command) (Model: CPMC-NTA701) 3. INtime5.2, INtime6.3 (Model: CPMC-NTA702)

#### **MECHATROLINK** specifications

		M- I	M- I M- II	
		17-byte	17-byte	32-byte
	Servo	×	×	×
	Stepping Motor Drivers	×	×	×
Command	Intelligent I/O	×	×	×
	Simple I/O	×	×	×
	Inverter	×	×	×
Transmission cycle		2ms	0.25 to 8ms	

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



#### M-4 M-III

Category M-II Category1 (★)

# 한국요꼬가와전기

### Leading Edge Controller (with MECHATROLINK- II Interface)

#### **Features**

FA-M3V is the result of a quest for high performance and advances functionality. FA-M3R features minimum scan time of  $100\mu s$  and is faster than microcomputer boards.

F3NC96-0N Positioning Module supports MECHATROLINK-II, an open field network standard designed for high-speed motion control, and is the No.1 choice for configuring a system involving many controlled axes.

- Occupying a single slot of the base module, the module can control up to 15 axes (motors), and can be easily connected to motors using connectors, requiring minimal wiring time and
- A high baud rate of 10 Mbps supports a short cycle time of 1 ms per set of 8 axes, which means quicker response and better synchronization with peripheral devices.
- Command transmission enables maximum utilization of motor performance (high speed and resolution) to achieve fast and accurate positioning control.



Positioning Module F3NC96-0N (with MECHATROLINK- II Interface)

### **Specifications**

Item		Specifications		
Interface		MECHATROLINK- II compliant		
Transmission rate		10Mbps		
Transmission byte		32 bytes		
Cycle time/ n	o. of stations	1.0 ms for up to 8 axes, 2.0 ms for up to 15 axes (user selectable)		
Network Topology		Bus (multi-drop)		
Communicat	ion method	Master/slave synchronous		
Transmission	media	2-wire shielded twisted pair cable (proprietary cable)		
Max. transmis	ssion distance	50 m (total length)		
Min. distance	between stations	0.5m		
Position reference		-2,147,483,648 to 2,147,483,647 (reference unit)		
Positioning functions	Functions	Linear interpolation movement (starting and stopping multiple axes simultaneously)     Independent axis movement using MECHATROLINK- II commands     (dependant on connected external equipment and supported MECHATROLINK- II commands)		
	Others	Reading of statuses (target position, current position, etc.) of external equipment     Reading and writing of parameters of external equipment		

### **MECHATROLINK** specifications

		M- I	M	-11
		17-byte	17-byte	32-byte
Command	Servo	-	-	×
	Stepping Motor Drivers	-	-	×
	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle				1ms, 2ms

#### **Contact Information**

Yokogawa Electric Corporation

2-9-32, Nakacho, Musashino-shi, Tokyo 180-8750, Japan

E-mail:plc\_message@csv.yokogawa.co.jp

URL: http://www.yokogawa.com

TEL: +81-422-52-5616 FAX:+81-422-52-9802

# Advantech-Lnc Technology CO., Ltd.

### **LNC-M600id System**



#### **Features**

• With Yaskawa MECHATROLINK-II high speed configuration, LNC-M600id offers you high speed, easy wiring, broadband, and anti-noise intelligent processing functions for your machines to work on different materials.



LNC-M600id

### **Specifications**

Item	Specifications	
Monitor	10.4-inch TFT LCD	
Memory / CF Card	64M Bytes / Industrial 64M Bytes or above	
Control axes	4 Axes M-    servo axes + 3 axes M-    servo spindle / 4 Axes M-    servo axes + 1 axis variable-frequency spindle or electric spindle	
MPG	3 in 1 MPG	
Standard I/O	20 INPUT / 16 OUTPUT	
Expansion I/O	REMOTE 1/2 (Max. 256 INPUT / 256 OUTPUT)	
Multi-blocks Look Ahead	600 Single Blocks	
Serial Communication	RS-232C: 1 PORT	
USB	Offer USB / CF Card Interface, hot plugging: 1 PORT	
LAN	Ethernet: 1 PORT	
OP	MDIOP-8500 (Also offer customized design type)	

### **MECHATROLINK** specifications

		M- I	M-	II
		17-byte	17-byte	32-byte
	Servo	-	Х	Х
Command	Stepping Motor Drivers	-	-	-
	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle			3ms,	4ms

#### **Contact Information**

Advantech-Lnc Technology CO., Ltd.

40764 6F., No.633, Sec. 2, Taiwan Blvd., Xitun Dist., Taichung

City 407, Taiwan (R.O.C.)

E-mail : Service@Advantech-Lnc.com.tw URL : http://www.advantech-lnc.com/

TEL: +886-4-24636889 FAX: +886-4-24635558





# ESA/GV s.r.l. KVARA 6



#### **Features**

The "numerical control" is the very heart of the range of products offered by Esa/G.v. for automation purposes. It represents the cutting edge of Esa/G.v.'s pluriennal experience in various application sectors: it's the answer to the requirements of our present and future customers.

Various optionals can be added to its powerful and versatile basic structure in order to form the hardware and software composition that suits your particular needs.



KVARA 6

### **Specifications**

Item	Specifications
Programmable logic controller  Programmable scanning time, use of several PLCs in the same CNC  PLC programs stored on Flash memory Programming and debugging through a PC Symbolic, structured and parametric programming, links to C/C ++ functions Programmable scanning time, use of several PLCs in the same CNC Back-up and restore functions via USB or serial port	
ISO interpreter	ISO multichannel interpreter (max 32 channels)     Standard ISO language     Extended automation language     Interpolation algorithm able to drive axes with different characteristics     Electronic cammes, electrical shaft, gantry axes, cut on fly     Jerk control and limitation, look-ahead, synchronized axes, on/off axes with and without inverter     Hold, Repos, Retrace interactive functions available     Overstore function to restore part program status after an Hold     M, T, D and S functions customizable and linked to xed cycles     Customizing of advanced trajectories generator (i.e. warp engine)
Development kit	The development aids, as the simulation and debugging packages, can run on a PC Standard Esa/G.v. Software available; easy links to OEM Software Several graphic tools are available for customizing the Graphic User Interface Digital oscilloscope with 4 traces, log and capture functions
General specifications	24Vac/dc 100W max single-phase power supply     Integrated PLC, ISO interpreter     DNC capabilities, PLC and axes Watch-dog
Axes	Standard 4 axes, max 6 axes; 5V or 12V incremental encoder inputs, single ended o line-driver, maximum input frequency 500Khz Analog +/-10V outputs for servos SERCOS, MECHATROLINK and CAN-BUS (canopen protocol) communication board
Inputs/Outputs	<ul> <li>32 digital PNP optoinsulated inputs (24Vdc), protected against wrong connection</li> <li>32 digital optoinsulated outputs (24Vdc 1A), protected against short circuit</li> <li>2 analog inputs and 2 analog outputs (8 bits resolution)</li> <li>4 fast digital inputs (via interrupt)</li> </ul>
Communication ports	2 serial ports RS-232     1 USB 2.0 port     Opticfiber fast communication port (optional)     Panel Link to communicate with kvara B, BP, FPT240, FMC (optional)     SERCOS, MECHATROLINK and CAN-BUS (canopen protocol) communication board
Options	2 axes board     32 + 32 digital inputs and outputs board     4 analog outputs, 8 analog inputs, 2 current outputs     1/O ring communication board     Optic fiber fast communication board     SERCOS, MECHATROLINK and CAN-BUS (canopen protocol) communication board     Silicon Disk (flash disk)

#### **Contact Information**

ESA/Gv s.r.l.

15 via Zamboni - c.p. 43 41011 Campogalliano MO - Italy TEL: +39-059-851414 FAX: +39-059-851313

E-mail: info@esagv.it URL: http://www.esagv.it





# **Guangzhou LokShun CNC Equipment Ltd.,**

컨트롤러 M-4

M-II

Category1 (★)

### **Controller SGDS9-6CNCH2**

#### **Features**

• CPU processing speed, support for floating-point operations and greatly enhance the movement interpolation calculation speed and accuracy.



SGDS9-6CNCH2

### **Specifications**

Item	Specifications	
Control method	Motion control by MECHATROLINK-II (Position, Velocity, Torque)	
Number of control axis	6-axis	
Control Servo Drivers	MECHATROLINK-II; SGDS series, SGDH series+JUSP-NS115; SGDV series.	
Minimum Control Unit	0.00001, 0.000001, 0.0001 (unit: mm, inch, deg)	
Interpolation	Linear, Circular, Helical, Thread Milling	
Control Mode	Closed Loop Control, Using the serial high speed raster ruler for feed back.	
G0 Rapid Feed Rate	120m/min	
G1 Cutting Feed Rate	60m/min	
Programme Transmission	USB, Ethernet	
Display Unit	12.1 inch TFT	

### **MECHATROLINK** specifications

		M- I	M	- 11
		17-byte	17-byte	32-byte
	Servo	-	×	-
Command	Stepping Motor Drivers	-	-	-
	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle			0.25ms	

### **Contact Information**

Guangzhou LokShun CNC Equipment Ltd.,

No.16, dongxi road, xilang, Liwan District, Guanzhou. CHINA TEL: +86-20-81617181





# ISAC S.r.l. **CNC 2001M**

M-4 M-III

Category Category1 (★) M-II

#### **Features**

The CNC 2001M is a Machine Controller with small dimension and great features, innovative and reliable.

It controls up 12 axes and can be inserted in a network in order to control up to 36 axes.

It offers the most common standard communication interfaces (PS/2, parallel, serial RS-232, USB, Ethernet 10/100 Mb/s), LVDS or VGA for the display connection, and CANopen interface for I/O devices.

It includes a powerful and easily programmable PLC with libraries and tools to accomplish most all the needs. The Remote Machine Interface software allows remote PCs to manage the CNC and program and debug the PLC.



CNC 2001M

### **Specifications**

Item	Specifications
Control method	Motion control by MECHATROLINK-   or -    (Position, Velocity)
Number of control axis	12 axes (up to 36 axes in CNC network)
Control Servo Drivers	MECHATROLINK-∣; SGD-□□□N series, SGDB-□□AN series, SGDS series, SGDM series SGDH series + JUSP-NS115/NS110 /NS001, MECHATROLINK-∥; SGDS series, SGDH series+JUSP-NS115
Unit (minimum control unit)	1, 0.1, 0.01, 0.001, 0.0001 (unit: mm, inch, deg, pulse)
Maximum command value	-2147483648 to 2147483647 pulse (32 bit with sign) unlimited feed also possible
Motion program functions	Positioning through Interpolation or in independent axis by axis way. Linear, Circular, Helical and Tabular Interpolation. Zero point search cycle: freely con gurable and with height memorizing at switching off. Control of axes with clamps and brakes, up to three electronic hand-wheels and compensation. Electric gear. Following sunchronization. Electric CAM.
Rapid traverse feed rate	1 to 2147483647 [command unit/min]
Interpolation traverse feed rate	1 to 2147483647 [command unit/min]
Override	0 to 255 % (command unit 1%, possible to set by axis or task)
Accel/Decel control	Accel, Decel tim: Maximum 60.000ms (trapezoid or S curve), S curve

### **MECHATROLINK** specifications

		M- I	М	- II
		17-byte	17-byte	32-byte
	Servo	×	×	×
Command	Stepping Motor Drivers	-	-	-
	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle		2ms	1ms, 1.5	ims, 2ms

#### **Contact Information**

ISAC S.r.l.

Via Maestri del Lavoro, 30 - 56021 Cascina (PI), Italy

E-mail: info@isacsrl.it URL: http://www.isacsrl.eu/ TEL: +39-050-711131 FAX: +39-050-711472







M-4 M-III

Category Category1 (★) M-II

# Manufacturing Data Systems, Inc.

### **CNC machine controller, HMI FlashCNC**

#### **Features**

A compact, rugged CNC or motion controller based on MDSI's OpenCNC®, WinMotion®, or Grinder.

Supports MECHATROLINK servos and I/O.

Pentium IV-class processor.

Windows XP® Embedded on CompactFlash® card.

Optional Windows XP® Pro on high-reliability hard disk drive.



FlashCNC

### **Specifications**

Item	Specifications		
Control method	MECHATROLINK-   or -    (Position, Velocity, Torque)		
Number of control axis	up to 8 axes		
Control Servo Drivers	MECHATROLINK- I; SGD-□□□N series, SGDB-□□AN series, SGDS series, SGDH series +JUSP-NS115 or JUSP-NS110, MECHATROLINK- II; SGDS series, SGDH series +JUSP-NS115		
Unit (minimum control unit)	1, 0.1, 0.01, 0.001, 0.0001 (unit: mm, inch, deg, pulse)		
Maximum command value	-2147483648 to 2147483647 pulse (32bit with sign) unlimited feed also possible		
Motion program functions  Positioning, Liner Interpolation, Circular Interpolation, Zero point search, Interruption fee constance positioning, Traverse function, Electric CAM, Synchronous electric CAM, Line a gear, Following synchronization, Velocity command, Torque command			
Rapid traverse feed rate	1 to 2147483647 [command unit/min]		
Interpolation traverse feed rate	1 to 2147483647 [command unit/min]		
Override 0.00 to 327.67% (command unit: 0.01%, possible to set by axis or task)			
Accel/Decel control	Accel, Decel tim: Maximum 60.000ms (trapezoid or S curve), S curve Constance: Maximum 30.000ms		

### **MECHATROLINK** specifications

		M- I	M-	·
		17-byte	17-byte	32-byte
	Servo	×	×	-
Command	Stepping Motor Drivers	-	-	-
	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle		2ms	1ms t	o 2ms

#### **Contact Information**

Manufacturing Data Systems, Inc.

U.S.A 3885 Research Park Drive Suite A, Ann TEL: +1-888-OpenCNC (673-6262)

Arbor, MI 48108

TEL: +55-11-3104-7100 Brazil Pca. Pe. Manoel da Nobrega, 21 16° andar,

01015-010 Sao Paulo - SP, Brazil

URL: http://www.mdsi2.com/







M-4 M-III M-II

Category1 (★)

Category

### **CNC machine controller, HMI OpenCNC**

Manufacturing Data Systems, Inc.

#### **Features**

OpenCNC® software is a production-proven, unbundled, software CNC that has logged millions of hours since 1993.

Unlike traditional CNC controls, OpenCNC® software requires no proprietary hardware or motion control cards. Combining a soft CNC, soft PLC and HMI in one application, OpenCNC's open, modular, all-software architecture provides robust CNC control, connectivity to MAXIMUM Factory and easy integration of third party software. MDSI customers have increased productivity, streamlined manufacturing processes, reduced machine tool control costs, and extended the productive life of their machine tools.



OpenCNC

### **Specifications**

Item	Specifications Specifications Specifications Specifications Specification Specificatio	
Control method	MECHATROLINK-   or -    (Position, Velocity, Torque)	
Number of control axis	up to 8 axes	
Control Servo Drivers	MECHATROLINK- I; SGD-□□□N series, SGDB-□□AN series, SGDS series, SGDH series +JUSP-NS115 or JUSP-NS110, MECHATROLINK- II; SGDS series, SGDH series +JUSP-NS115	
Unit (minimum control unit)	0.00001, 0.000001, 0.0001(unit: mm,inch,deg)	
Maximum command value	-2147483648 to 2147483647 pulse (32bit with sign) unlimited feed also possible	
Motion program functions  Positioning, Liner Interpolation, Circular Interpolation, Zero point search, Interruption for constance positioning, Traverse function, Electric CAM, Synchronous electric CAM, Line gear, Following synchronization, Velocity command, Torque command		
Rapid traverse feed rate	1 to 2147483647 [command unit/min]	
Interpolation traverse feed rate	1 to 2147483647 [command unit/min]	
Override 0.00 to 327.67% (command unit: 0.01%, possible to set by axis or task)		
Accel/Decel control	Accel, Decel tim: Maximum 60.000ms (trapezoid or S curve), S curve Constance: Maximum 30.000ms	

### **MECHATROLINK** specifications

		M- I	M-	·II
		17-byte	17-byte	32-byte
	Servo	×	×	-
Command	Stepping Motor Drivers	-	-	-
	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter		-	-
Transmission cycle 2ms		1ms t	o 2ms	

#### **Contact Information**

Manufacturing Data Systems, Inc.

U.S.A 3885 Research Park Drive Suite A, Ann TEL: +1-888-OpenCNC (673-6262)

Arbor, MI 48108

Brazil Pca. Pe. Manoel da Nobrega, 21 16° andar, TEL: +55-11-3104-7100

01015-010 Sao Paulo - SP, Brazil

URL: http://www.mdsi2.com/



# Prima Electro S.p.A.

### 10/S CNC BLACK BOX





OSAI 10/510 Light CNC is an open-architecture CNC with integrated PLC, based on a real-time operating system, fully customizable at machine code level.

The 10/510 Light Can manage Multi-channel and Multi-control architectures, controlling up to 30 axes and 20 processes, with advanced CNC features. Its network-based Operator Interface, executed in MS-Windows? environment is fully customisable by the Machine Tool Builder. OSAI WinMedia range of intelligent Operator Panels, is the most appropriate user interface, an high specification Panel PC which marks a great visual, tactile and ergonomic innovation of the machine-operator interface concept.



### **Specifications**

10/510 Light

- 510s: 600 MHz CPU
- 510i: 1 GHz CPU
- Black box configuration or interfaced with Panel PC
- Hard Disk unit or Silicon Disk Mass Memory, granting unlimited Part-Program size
- Axes Options: MECHATROLINK-1 (2 channels, 30 axes max), Analogue or OS-Wire Digital interface
- Fieldbus Options: CANOpen, Interbus or OS-Wire Digital Interface
- ISO Standard Programming Language, Special Instruction super-set (Asset Language)
- Up to 20 individual processes, Axes can be transferred between Processes
- Advanced control of dynamics: high speed algorithms, non linear acceleration ramps
- Configurable Look-ahead (up to 124 blocks)
- Sophisticated Tool Center Point for 5 axes machines
- Cartesian, Cylindrical, Polynomial Interpolation, 3D plan rotation and translation
- Multi-block retrace, Return on the Profile, Master Slave and Gantry Axes, Multi-axes Electronic Camming

### **MECHATROLINK** specifications

		M- I	M-	·II
		17-byte	17-byte	32-byte
	Servo	×	-	_
Command	Stepping Motor Drivers	-	-	-
	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle		2ms, 4ms		

#### **Contact Information**

Prima Electro S.p.A.

Sales & Marketing HQ Via Torino 14 - 10010 Barone C.se (TO) - Italy TEL: +39-0119899711 FAX: +39-011-9899808

E-mail: sales-OSIA@primaelectronics.com URL: http://www.primaelectro.com/



<sup>\*</sup> OSAI is a Brand of PRIMA ELECTRONICS



# **Shenyang Golding NC Tech. Co. Ltd.** CNC System

M-III M-II

Category Category1 (★)

#### **Features**

GJ-210 is a high-performance CNC system, can be used to control lathe, miller and machining center:

• Open architecture based on IPC



GJ-210

### **Specifications**

Item	Specifications
Control method	Motion control by MECHATROLINK-II (Position)
Number of control axis	4 axes, maximum 5 axes
Control Servo Drivers	MECHATROLINK-II; SGDS series, SGDH series +JUSP-NS115
Unit (minimum control unit)	0.0001,0.0001 (unit: mm,deg)
Maximum command value	-2147483648 to 2147483647 pulses (signed 32-bit data) unlimited feed also possible
Motion program functions	Positioning, Liner Interpolation, Circular Interpolation, Zero point search, Time constance positioning, Line action, Electric gear, Following synchronization, Velocity command, Torque command, Small segment continuously processing function
Rapid traverse feed rate	1 to 2147483647 [command unit/min]
Interpolation traverse feed rate	1 to 2147483647 [command unit/min]
Override	0.00 to 327.67% (command unit0.01%, possible to set by axis or task)
Accel/Decel control	Accel, Decel tim: Maximum 60.000ms (trapezoid, exponential and S curve), S curve Constance: Maximum 30.000ms

### **MECHATROLINK** specifications

		M- I		M-II
		17-byte	17-byte	32-byte
	Servo	-	×	×
Command	Stepping Motor Drivers	-	-	-
	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle			2ms	1ms, 1.5ms, 2ms

#### **Contact Information**

Shenyang Golding NC Tech. Co. Ltd.

 ${\tt No.16, East\ Nanping\ Road, Hunnan\ High-tech.\ Industrial}$ 

Development Zone, Shenyang, 110171 PRC

URL: http://golding.sict.ac.cn

TEL: +86-24-2469-6018 FAX: +86-24-2469-6000





M-4 M-111

Category Category1 (★) M-II

# **OMRON Europe B.V.**

### The advanced motion controller that puts you in control

#### **Features**

Trajexia is Omron's new motion platform that offers you the performance of a dedicated motion system, the ease of use you get from an automation specialist and the peace of mind you have from a global player.

• Each axis can run complex interpolation moves, e-cams and egearboxes



Trajexia MC16

### **Specifications**

Item	Specifications
Control method	Motion control (Position, Velocity, Torque) by (1) MECHATROLINK-II (TJ1-ML16 module) & (2) Analog output or Pulse train (TJ1-FL02 module)
Number of control axis	16 servo axes + 8 inverters
Control Servo Drivers	MECHATROLINK- II; SGDS series, SGDH series + JUSP-NS115, SJDE-**ANA
Unit (minimum control unit)	32 bit IEEE Floating Point (User de ned engineering units)
Maximum command value	32 bit IEEE Floating Point (User de ned engineering units)
Motion program functions	Positioning, Liner Interpolation, Circular Interpolation, Zero point search, Interruption feed, Time constance positioning, Traverse function, Electric CAM, Synchronus electric CAM, Line action, Electric gear, Following synchronization, Velocity command, Torque command
Number of MECHATROLINK- II master units	Up to 4 MECHATROLINK- II master units TJ1-ML16 can be connected
Total cycle time	Selectable 0.5 ms, 1 ms or 2 ms
Multi-tasking	Up to 14 tasks running simultaneously
Digital I/O	16 Inputs and 8 Outputs freely configurable
Measurement units	User definable
Available memory for user programs	500KB
Data storage capacity	Up to 2 MB flash data storage
Communication ports	1 Ethernet port and 2 serial ports
Firmware update	Via Trajexia software tool

### **MECHATROLINK** specifications

		M- I		M-II
		17-byte	17-byte	32-byte
	Servo	-	-	×
	Stepping Motor Drivers	-	-	-
Command	Intelligent I/O	-	-	-
	Simple I/O	-	-	-
	Inverter	-	-	-
Transmission cycle				0.5ms, 1ms, 2ms

### **Contact Information**

OMRON Europe B.V.

Wegalaan 67-69, NL-2132 JD, Hoofddorp, The Netherlands

E-mail: www.omron-industrial.com

URL: https://industrial.omron.eu/en/products/trajexia

TEL: +31-0-23-568-13-00

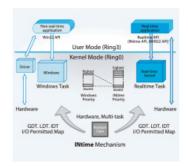


# Micronet Co.

### **Real-time OS INtime**

#### **Features**

INtime is real-time OS and works with Windows OS (XP/Xpe/2000) on a same PC hardware. It is possible to connect a standard PC hardware to MECHATROLINK device and have both highperformance real-time control by INtime and easy man-machine interface by Windows OS at the same time.



### **Specifications**

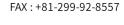
Item	Specifications
Priority Levels	0 (the highest) to 255 (the lowest)
Kernel Tick	One of: 100, 200, 250, 500 microsec, 1, 2, 5, 10ms
Round Robin Scheduling	Corresponding priority threshold level is adjustable from 10ms to 100ms.
Mail Box	FIFO type /Priority type
Semaphores	FIFO type /Priority type
Segments	1 byte to 4 Giga bytes
Interruption	Handler and thread structure. IRQ sharing is available. APIC compatible.
Developing Environment	Microsoft Visual Studio 6.0/2005/2008
Debugger	Spider debugger (Standard kit), Microsoft VisualStudio.NET
Real-time Network	Real-time TCP/IP, UDP/IP (Standard kit). Socket APIs.
Max of Objects	8192
MECHATROLINK I/F	Driver for MP2110

#### **Contact Information**

Micronet Co.

3-8-11 Horiwari, Kamisu-shi,Ibaraki 314-0135, Japan TEL : +81-299-90-1733

E-mail : efg@mnc.co.jp URL : https://www.mnc.co.jp









M-III M-II

## **KEYENCE CORPORATION**

### **AC servo system SV2 Series**

#### **Features**

- Response delays for commands can be reduced to the utmost by speed response frequency
- Synchronization of communication cycles (125  $\mu$ s) with the host controller make highspeed, high accuracy operation possible.
- Due to significantly higher accuracy with 22-bit encoder resolution
- Incorporated analog feedback function to ensure the load applied to the work-piece coincides with the target value.
- The 2-stage notch filter is automatically configured, and manually notch filter configurable
- Complies with IEC 61800-5-2 (STO), ISO 13849-1 (PLe), and IEC 61508 (SIL3).



SV2 Series

### **Specifications**

Ite	m	Specifications	
MECHATROLINK-III	Operating specifications	Position control / speed control / torque control via MECHATROLINK-III	
communication	Command input	MECHATROLINK-III command (sequence, motion, monitor, adjustment, etc.)	
Compatible motor ca	pacity	50W to 5kW	
Performance		Speed frequency response frequency: 2.6kHz, Torque control accuracy (reproducibility: ±1%)	
Encoder resolution		22bit (Absolute type)	
	Number of inputs	7 (3 high-speed input, 4 general input)	
Input signal	Function	Forced stop (FSTOP), external latch signals 1 to 3 (EXT1, EXT2, EXT3), origin return deceleration switch (DEC), forward limit switch (LSP), reverse limit switch (LSN), forward torque limit selection (PTL), reverse torque limit selection (NTL) *Full signal assignment, logic-settable	
	Number of outputs	4	
Output signal Function		Alarm (ALARM), in position (INPOS), speed matching (VCMP), zero speed detection (ZSP), operation preparation complete (RDY), torque limiting (TLM), speed limiting (VLM), electromagnetic brake timing (BRAKE), warning (WARN), Positioning proximity (NEAR) *Individual signal assignment excluding ALARM signal, logic-settable alarm	
Analogue feedback function		Max. input voltage: ±12V, Accuracy: ±1% of F.S., Resolution: ±12bit	
Available option function		Fully closed control (When using fully closed module)	
Safety function		IEC61800-5-2(STO), ISO13849-1(PLe), IEC61508(SIL3) Input: Base block signal for power module Output: Built-in safety circuit status monitoring	

### **MECHATROLINK** specifications

	M-III
Profile	Standard servo
Data size	32byte, 48byte
Transmission cycle	125μs, 250μs, 500μs, 750μs, 1ms to 4ms (in 0.5ms unit)

#### **Contact Information**

**KEYENCE CORPORATION** 

1-3-14, Higashinakajima Higashiyodogawa-ku, Osaka 533-8555,

Japan

E-mail: seigyo-qa@keyence.co.jp URL: http://www.keyence.co.jp

TEL:+81-6-6379-1271 FAX:+81-6-6379-1270



# **SANYO DENKI**

## SDevice 서보 드라이브

M-4

IVI-4

M-III M-II

# SANYO DENKI CO.,LTD.

#### SANMOTION R ADVANCED MODEL

#### **Features**

- With feed-forward vibration suppression control, vibrations at the processing point and base of a machine can be suppressed through simple tuning procedures.
  - Vibration control frequencies are selectable.
- Model-based tracking control enables an improved target response curve, enhanced disturbance suppression, and greater robustness.
- With auto-tuning, servo amplifier automatically optimizes servo gain and filter frequency in realtime.
- Since this model safely shuts down motor torque, safety systems are more easily installed on the equipment. In addition, this model meets requirements for "IEC61508 (SIL2), IEC62061 (SILCL2)" and "ISO13849-1 (Cat.3, PL=d)"



RS2□□□A2M□5

### **Specifications**

Iten	n	Specifications
MECHATROLINK Control Specification		Position control, speed control, and torque control via MECHATROLINK-III communications
Communications	Command Type	MECHATROLINK commands for sequence, motion, data writing/reading, monitoring, adjustment, etc.
Applicable Motor	Capacity	30 W to 15 kW
Encoder	Resolution	17bit, 20bit
Liicodei	Туре	Battery-less optical absolute encoder, Optical absolute encoder for incremental systems
Innut Signals	Number of channels	Interactive photo coupler (sink, source connection) ×6 inputs
Input Signals	Function	Forward direction limit switch, Reverse direction limit switch, External trip, Forced discharge, Emergency stop.
	Number of channels	Photorelay output (sink, source connection) $ imes$ 2 outputs
Output Signals	Function	Servo ready, Power ON, Servo ON, Holding brake timing, Torque limiting, Low speed, Velocity attainment, Matching speed, Zero speed, Command acceptable, Status of gain switch, Velocity loop proportional control status, Control mode switchover status, Forward/Reverse direction limit, Reverse OT, Warning, Alarm code (3bits), etc.
Protection functions		Over current, Current detection error, Overload, Regeneration error, Magnetic pole position estimation error, Amplifi er overheating, External overheating, Over voltage, Main circuit power low voltage, Main circuit power supply open phase, Control power supply low voltage, Encoder error, Over speed, Speed control error, Speed feedback error, Excessive position, Position command error, Built-in memory error, Parameter error
Safety standard		UL, CE marking (EMC directive, low voltage directive), Function safety standards (Model with safety function)

### **MECHATROLINK** specifications

	M-III
Profile	Standard servo
Data size	32 / 48 byte
Transmission cycle	0.25 ms to 8 ms

#### **Contact Information**

SANYO DENKI CO.,LTD.

3-33-1, Minami-Otsuka, Toshima-ku, Tokyo, 170-8451, Japan TEL: +81-3-5927-1039

E-mail: cs@sanyodenki.com URL: https://www.sanyodenki.com/







M-III M-II

# CKD니키덴소 주식회사

### **AC Servo System VC II series**

#### **Features**

It corresponds not only to high function direct drive servomotor (DD motor), but it is also able to fit to linear servomotor and synchroneous and induction type AC servomotor to bring out the optimal perfomance of these motors from high response to ultra low speed range.

Funtions to optimaize the motor performance

- Auto notch filter to improve the efficency for the esonance control operation
- 4 kinds of Gain selction functions to choose the suitable gain to match with the load condition
- Effective resonance control filter function to control resonance at the distal end of machine.
- Smooth startup can be done by using the special data edting software with opration function, monitoring, editing, and analysis function



AC servo driver

 $DD\ motor\tau\, DISC$ 

### **Specifications**

Item		Specifications	
	Behavioral specification	Position control by MECHATROLINK-III communication	
Conmmunication	Command input	MECHATROLINK-III command (Alarm/Warning readout, Interpolation feeding, Positioning, etc.)	
_		50 to 200W (AC100V to 115V 50/60Hz Single phase)	
Output capacity (Input power sourc	·e)	0.1 to 37kW (AC200V to 230V 50/60Hz 3-phase)	
(input power source	,	0.26 to 55kW (AC400 to 460V 50/60Hz 3-phase)	
Number of control	axes	Single axis	
Control input	Number of channels	4 points (see "Note")	
signal '	Function	Emergency stop*, Zero point deceleration, Speed over ride, Positive/Negative over travel*	
Control output	Number of channels	4 points Allocating to each signals (see "Note")	
signal	Function	Servo ready, Alarm (*), Warning (*), Positioning complete, Speed zero, Torque limiting, Brake release, Soft limit switch, Marker output, Speed/Torque/Rough positioning/Pulse train mode running	
Auto tuning functions		Possible to tune for the case with relatively large inertia ratio by parameter setting	
Gain selection fuctions		<ul> <li>4 kinds of gain selection are possible by High-level controller</li> <li>Capable to correspond to the position loop gain for the Gain selection</li> </ul>	

Note: The signal with  $^{\star}$  is Negative logic, and The signal with  $(^{\star})$  is possible to for changing logic by the parameters.

### **MECHATROLINK** specifications

	M-III
Profile	Standard servo
Data size	32byte, 48byte
Transmission cycle	0.5ms to 4.0ms

#### **Contact Information**

CKD니키덴소 주식회사

Updated on: Oct 24, 2019

카나가와현 가와사키시 미야마에구 아리마 2-8-24 Sales Dept. TEL: +81-44-855-4311 FAX: +81-44-856-4831

URL: http://www.nikkidenso.co.jp/kr/







M-III M-II

### YASKAWA ELECTRIC CORPORATION

AC Servo Drives  $\Sigma$ -7-Series SERVOPACKs  $\Sigma$ -7C Two-Axis SERVOPACKs with Built-in Controller

#### **Features**

- Integrating a Two-Axis SERVOPACK and Controller saves 34 mm in width.
- The I/O required for equipment control and an Ethernet port are provided as standard features to allow you to build a small-scale equipment system based around just this one unit (no PLC required).
- Up to six axes can be configured (two internal axes plus four external axes connected via MECHATROLINK-III).
- $\bullet \quad \text{You can use } \Sigma\text{-7C SERVOPACKs for equipment modularization or for distributed control systems}.$



Σ-7C

### **Specifications**

Item	Specifications
Number of Controlled Axes	2
Capacity	200 W, 400 W, 750 W, 1 kW
I/O Voltage	200 VAC
Response Frequency	3.1 kHz
Servo I/O	12 discrete inputs and 7 discrete outputs
Safety Functions (Optional)	HWBB function (STO)
Reference Method	Position control, speed control, and torque control from built-in Controller (SVD)
Connected Motors	Σ-7-Series Rotary Servomotors, Linear Servomotors, and Direct Drive Servomotors
Analog Monitor	None
Dynamic Brake (DB)	Mounted.
Regenerative Processing	Built-in.
Overtravel (OT) Prevention	DB stop, deceleration to a stop, or coast to a stop for P-OT or N-OT
Protective Functions	Overcurrent, overvoltage, low voltage, overload, regeneration error, etc.
Utility Functions	Gain adjustment, alarm history, jogging, origin search, etc.
Engineering Tool	SigmaWin+ (USB connection and Controller connection)

Controller Functi	on Module		
	Item	Specifications	
Communications int	erface	Ethernet (100 Mbps)	
Scan Time Settings	H Scan	500 μs to 32 ms (in 250-μs increments)	
Scan Time Settings	L Scan	2.0 ms to 200 ms (in 0.5-ms increments)	
MECHATROLINK		Built-in MECHATROLINK-III Minimum communications cycle: 125 µs	
Applicable Devices		I/O, AC Drives, Servo Drives, and Stepping Motor Drives	
	Built-in SVC	4 axes	
Number of	SVD	2 axes	
Controlled Axes	SVR (virtual axis)	4 axes	
	Maximum Number of Controlled Axes	6 axes	
USB Interface		Provided (for storage device).	
Onboard I/O		16 discrete inputs, 16 discrete outputs, and 1 pulse input channel for Controller	
Backup Memory Mem	nory Capacity	Non-volatile memory (No battery required.)	
	Data Tracing	256 Kwords	
Memory Capacity	Table Data	1 Mbyte	
	M Registers	1 Mword	
Memory Capacity (Flash Memory) Program		15 Mbytes	
Calendar Backup		EDLC (No external battery required.)	

MPE720 version 7

### **MECHATROLINK** specifications

			M-III			
		16-byte	32-byte	48-byte	64-byte	
Profile	Standard servo	-	-	×	-	
	Standard I/O	×	×	×	×	
	Standard Stepping Motor Drivers	-	-	×	-	
	Standard Inverter	-	×	-	×	
Transmission cycle			125µs, 250µs	, 500μs, 1ms		

#### **Contact Information**

Please access <u>YASKAWA website</u> (<u>Please click. Then you can access.)</u>

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India

Europe: Germany, Sweden, Israel, Italy, France, Spain, Finland, Netherlands, Slovenia, Czech republic, Turkey



Engineering Tool





M-III M-II

### YASKAWA ELECTRIC CORPORATION

### MECHATROLINK-III $\Sigma$ -V series AC Servo Drives

#### **Features**

• Superlative Performance

The best amplifier response in the industry slashes settling time. Standard use of highresolution encoder has enabled high-precision positioning and fine processing.

Simple Start-up

New Tuning-less Function

–Get up and running quickly after hooking up the motor

New Advanced Autotuning

-Realize optimal machine performance

New "One-parameter" Tuning

—Get the most from your machine

• Outstanding Expandability

Extensive variety of motors from 50W to 5kW. Support for linear servomotors, direct drive servomotors and linear sliders.

Wide selection of option module will be released in the future.

Type: SGDV- $\square$  $\square$  $\square$ 2 $\square$  ( $\square$ : dependent on a spec.)



Σ-V

### **Specifications**

Item		Specifications	
Performance		Speed Frequency Characteristics: 1.6kHz (load condition: load moment of inertia JL=Motor moment of inertia Jm)	
		Tolrque control tolerance (repeatability): $\pm 1\%$	
MECHATROLINIK	Performance	Position control, speed control, and torque control through MECHATROLINK-III communications	
MECHATROLINK Communications	Command Input	MECHATROLINK commands (for sequence, motion, data setting/reference, monitor, adjustment, and other commands.)	
Applicable servo mo	tor capacity	50W to 5kW	
Encoder resolution		20-bit (incremental/absolute encoder), 13-bit (only for incremental encoder of SGMJV servomotors)	
1	Number of channels	7ch. Signal alllocations and positive/negative logics can be modified.	
Input Signals	Function	Forward run prohibited, Reverse run prohibited, Forward torque limit, Reverse torque limit, Extaernal latch signal, Homing deceleration switch signal	
Output Signals  Number of channels  Function		3ch. Signal alllocations and positive/negative logics can be modified.	
		Positioning completion, Speed coincidence detection, Servomotor rotation detection, Servo ready, Torque limit detection, Speed limit detection, Break interlock, Warning, NEAR	
Protective Functions		Overcurrent, Overvoltage, Low voltage, Overload, Regeneratio error, Over speed, etc.	
Option Module Functions		Serial encoder communication input for fully-closed loop control	
Compliant Standards		UL*, CE marking (EMC directive, low voltage directive)*, Safety*, RoHS	
Safety Functions		EN954 category 3 Stop category 0, IEC61508 SIL 2 Input : Power module base block signal. Output : Safety circuit status monitor	

<sup>\*:</sup> Planning

### **MECHATROLINK** specifications

	M-III
Profile	Standard servo
Data size	32byte, 48byte
Transmission cycle	0.125ms to 4ms

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India







M-III M-II

### YASKAWA ELECTRIC CORPORATION

### MECHATROLINK-III $\Sigma$ -V mini Ultra-Compact AC Servo Drives

#### **Features**

• More compact than ever
The ultra-compact drive enables more effective use of limited space, and opens up more

space for the controller and equipment.

- DC power input supported
   The battery-powered, ultra-compact, and high-performance servo drives makes battery-powered transport systems such as clean robots and clean Automatic Guided Vehicles (AGV)
- Cutting edge technologies for superior performance and ease of use The new advanced auto tuning function allows you to achieve an optimal setup for your system in minimal time. The following functions are also provided: Model following control to minimize positioning time, vibration suppression function to suppress vibrations from equipment, friction compensation function for high load-variation applications, and the new tuning less function for system operation startup and for high load-variation applications.

  Type: SGDV-



### **Specifications**

much more efficient.

Item	1	Specifications	
D (		Speed - Frequency characteristics: 1.6 kHz (Load conditions: Load inertia JL=Motor inertia JM)	
Performance		Torque control accuracy Repeatability) : $\pm 1\%$	
MECHATROLINK Control Specifications		Position control, speed control and torque control through MECHATROLINK-III communications	
Communications	Command Type	MECHATROLINK commands for sequence, motion, data writing/reading, monitoring, adjustment, etc.	
Applicable Motor Ca	pacity	3.3 W to 30 W	
Encoder Resolution		17 bits (absolute encoder only)	
la aut Cianala	Number of channels	3ch. Signal alllocations and positive/negative logics can be modified.	
Input Signals	Function	Forward run prohibited, Reverse run prohibited, Forward torque limit, Reverse torque limit, Extaernal latch signal, Homing deceleration switch signal	
Outrot Cianala	Number of channels	3ch. Signal alllocations and positive/negative logics can be modified.	
Output Signals Function		Positioning completion, Speed coincidence detection, Servomotor rotation detection, Servo ready, Torque limit detection, Speed limit detection, Break interlock, Warning, NEAR	
Protective Functions		Overcurrent, Overvoltage, Low voltage, Overload, Regeneratio error, Over speed, etc.	
Standards Compliance		UL, CE (EMC, Low Voltage Directive), RoHS Directive	
Mounting		Base-mounted	

### **MECHATROLINK** specifications

	M-III
Profile	Standard servo
Data size	32byte, 48byte
Transmission cycle	0.125ms to 4ms

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

 ${\it YASKAWA}\ has\ sales\ and\ after-sales\ service\ all\ around\ the\ world.$ 

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India







M-III

# **OMRON Corporation**

**OMNUC G5 Series AC Servo Drivers** 

R88D-KN□-ML2

#### **Features**

Preeminent Servo performance: High-speed response, High-speed rotation, and High-accuracy control. Contribute to machine performance and productivity improvement.

- Industry Top-class Tracking Performance.
  - Speed Response Frequency of 2 kHz.
  - Realtime Autotuning Function shortens the stabilization time in lowrigidity systems as well as high-rigidity systems.
- Offer solution for a wide variety of applications.
  - Comes with IEC61800-5-2 (STO) function as a standard function.
  - External encoder I/F for full-closing control



R88D-KN□-ML2

### **Specifications**

Item Specifications		Specifications	
MECHATROLINK Protocol		Protocol	MECHATROLINK-II
communicat	ions	Node address setting	41 to 5F hex
Command m	athod	Operation specifications	Position, speed, or torque control via MECHATROLINK-II communications
Command	ietilou	Command inputs	MECHATROLINK-II commands
Position control functions Acceleration/ deceleration functions deceleration functions deceleration functions		First step asymmetric linear acceleration/deceleration, moving average acceleration/deceleration	
	Sequence inputs Signal allocation can be changed		Selective from the following: Emergency stop input, Forward drive prohibition (POT), reverse drive prohibition (NOT), origin proximity input, Forward External Torque Limit Input (PCL), Reverse External Torque Limit Input (NCL), External Latch Input 1, 2 and 3.
I/O signala		Fixed outputs	Alarms
I/O signais	I/O signals Sequence outputs Signal allocation can be changed		Servo ready completed output (READY), Brake interlock output (BKIR), Positioning Completion Output 1 (INP1), Positioning Completion Output 2 (INP2), Motor Rotation Speed Detection Output (TGON), Torque Limiting Output (TLIMT), Zero Speed Detection Output (ZSP), Speed Conformity Output (VCMP), Warning Output (WARNI), Position Command Status Output (PCMD), Speed Limiting Output (VLIMT), Alarm Clear Attribute Output (ALM-ATB), Speed Command Status Output (VCMD)
Other	Analog monitor function Other		Output voltage: +/-10VDC Built-in analog monitor connector to monitor speed, torque, or other command signals
specifi- cations			Personal computer
cations Functions		Functions	Status display, user constant settings, monitor display, alarm traceback display, and jogging

### **MECHATROLINK** specifications

		M- I	M-	· II
		17-byte	17-byte	32-byte
Command Servo		-	-	×
Transmission cycle				1ms to 4ms

### **Contact Information**

OMRON Corporation			
Drive Div.	Shiokoji Horikawa, Shimogyo-ku, Kyoto, 600-8530 Japan	TEL:+81-75-344-7233	FAX:+81-75-344-7107
Regional H.Q. OMRON EUROPE B.V.	Wegalaan 67-69, NL-2132 JD Hoofddorf, The Netherlands	TEL:+31-2356-81-300	FAX:+31-2356-81-388
OMRON ELECTRONICS LLC	1 East Commerce Drive Schaumburg, IL 60173 U.S.A	TEL: +1-847-843-7900	FAX:+1-847-843-8568
OMRON ASIA PACIFIC PTE. LTD.	83 Clemenceau Avenue, #11-01, UE Square, Singapore 239920	TEL:+65-6835-3011	FAX:+65-6835-2711
OMRON (CHINA) CO., LTD.	Room 2211, Bank of China Tower, 200 Yin Cheng Zhong Road, PuDong New Area, Shanghai, 200120	TEL:+86-21-5037-2222	FAX:+86-21-5037-2200

URL: http://www.omron.com/

M-II

# **Harmonic Drive Systems Inc.**

### **AC Servo Drivers HA-680ML series**

#### **Features**

- Small and compact design
   It is about half the size of a postcard, just the size of a card case. Its ultralight design with a weight of 230 g is useful for small, space-saving devices.
- Substantial functions
   Position control, speed control, and torque control are provided as standard. It is compact and has substantial functions at the same time.
- Easy function setting Parameters can be set easily using dedicated communication software PSF-520.



HA-680ML

### **Specifications**

	Item	Specifications	
MECHATROLINK Protocol		MECHATROLINK-II	
communications	Node address setting	41H to 5FH (Max. number of slaves: 30)	
Supply voltage		DC24V (20 to 28V)	
Control method		Sinusoidal PWM control switching frequency 12.5kHz	
Encoder		4-line specification, serial transmission method, line driver input	
Encoder monitor		Phase-A, B, Z line driver output	
I/O signal		DI: 5 points (insulation with photo coupler) DO: 5 points (insulation with photo coupler)	
Protection function		Overload, Max. deviation, Encoder break detection, encoder reception error, UVW error, regenerative error, operating temperature error, system error, overcurrent, load short circuit, memory error, overspeed	
Regenerative absorption circuit		Incorporated (with an external capacitor/resistor installation terminal). The built-in resistance has a fuse.	

### **MECHATROLINK** specifications

		M- I	M-II	
		17-byte	17-byte 32-byte	
Command	Servo	_	×	×
Transmission cycle		1ms, 2ms, 3ms, 4ms, 5ms		

#### **Contact Information**

Harmonic Drive Systems Inc.

Head Office 6-25-3 Minami-Ohi, Shinagawa-ku, Tokyo, 140- TEL: +81-3-5471-7800 FAX: +81-3-5471-7811

0013. Japan

Overseas Division 1856-1 Hotakamaki, Azumino-shi, Nagano, 399 TEL: +81-263-83-6935 FAX: +81-263-83-6901

8305, Japan

HOTAKA Plant 1856-1 Hotakamaki, Azumino-shi, Nagano, 399- TEL: +81-263-83-6800 FAX: +81-263-83-6901

8305, Japan

URL: https://www.hds.co.jp/english/







### M-4 M-III

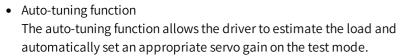
M-II

# **Harmonic Drive Systems Inc.**

#### **AC Servo Drivers HA-800B series**

#### **Features**

- Shorter positioning stabilization time using original control logic By utilizing the characteristics of HarmonicDrive in the control logic, positioning overshoot and undershoot are suppressed and the positioning stabilization time is reduced significantly.
- Adopting an I/O signal function assignment method Desired functions can be selected from a wide range of functions and assigned to I/O signals according to specific applications.
  - Also, multiple functions can be assigned to a single input terminal for an input signal, which adds to usability.





HA-800B series

### **Specifications**

Item		Specifications
MECHATROLINK Profile		MECHATROLINK- II
MECHAIROLINK	Address	41H to 5FH
	Control	AC100V to 115V (Single phase) or AC200V to 230V (Single phase) +10 to $-15\%$
Input Voltage Control		AC100V to 115V (Single/Three phase) or AC200V to 230V (Single/Three phase) +10 to $-15\%$ (By the actuator)
Control method	•	Sine wave PWM
Encoder		Lesswire incremental, 14wire incremental, 13bitAbsolute, 17bitAbsolute
Encoder monitor	•	A, B, Z line driver output
I/O signal		IN:5 OUT:4 Insulation by photo coupler
Security Alarm		Emergency stop, overspeed, overload, IPM error (overcurrent), Encoder error, Over posittion, Memory error, FPGA error
function	Warning	Battery voltage Low, Over Load, FAN stop, Main Power voltage Low, MECHATROLINK command data error, MECHATROLINK command error, Comunication error, Forward stop, Reverse stop
Control mode		Position, Speed, Trqu (By the MECHATROLINK)

### **MECHATROLINK** specifications

-		M- I	M-II	
		17-byte	17-byte 32-byte	
Command	Servo	-	×	×
Transmission cycle		1ms, 1.5ms, 2ms, 3ms, 4ms, 5ms		ıs, 5ms

#### **Contact Information**

Harmonic Drive Systems Inc.

**Head Office** 6-25-3 Minami-Ohi, Shinagawa-ku, Tokyo, 140-FAX: +81-3-5471-7811

0013, Japan

**Overseas Division** 1856-1 Hotakamaki, Azumino-shi, Nagano, 399- TEL: +81-263-83-6935 FAX: +81-263-83-6901

8305, Japan

**HOTAKA Plant** 1856-1 Hotakamaki, Azumino-shi, Nagano, 399- TEL: +81-263-83-6800 FAX: +81-263-83-6901

8305, Japan

URL: https://www.hds.co.jp/english/







M-III

### YASKAWA ELECTRIC CORPORATION

#### MECHATROLINK- II $\Sigma$ -V series AC Servo Drives

#### **Features**

• Superlative Performance

The best amplifier response in the industry slashes settling time. Standard use of high-resolution encoder has enabled high-precision positioning and fine processing.

• Simple Start-up

New Tuning-less Function

——Get up and running quickly after hooking up the motor

New Advanced Autotuning

----Realize optimal machine performance

New "One-parameter" Tuning

—Get the most from your machine

• Outstanding Expandability

Extensive variety of motors from 50W to 15kW. Support for linear servomotors, direct drive servomotors and linear sliders.

Wide selection of option module will be released in the future.



Σ-

### **Specifications**

Item	)	Specifications
Performance		Speed Frequency Characteristics: 1.6kHz (load condition: load moment of inertia JL=Motor moment of inertia Jm)
		Tolrque control tolerance (repeatability) : $\pm 1\%$
MECHATROLINK	Performance	Position control, speed control, and torque control through MECHATROLINK- II communications
Communications	Command Input	MECHATROLINK commands (for sequence, motion, data setting/reference, monitor, adjustment, and other commands.)
Applicable servo r capacity	notor	50W to 15kW
Encoder resolutio	n	20-bit (incremental/absolute encoder), 13-bit (only for incremental encoder of SGMJV servomotors)
la a cot Ci a a a la	Number of channels	7ch. Signal alllocations and positive/negative logics can be modified.
Input Signals	Function	Forward run prohibited, Reverse run prohibited, Forward torque limit, Reverse torque limit, Extaernal latch signal, Homing deceleration switch signal
Output Signals	Number of channels	3ch. Signal alllocations and positive/negative logics can be modified.
Output Signals	Function	Positioning completion, Speed coincidence detection, Servomotor rotation detection, Servo ready, Torque limit detection, Speed limit detection, Break interlock, Warning, NEAR
Protective Function	ons	Overcurrent, Overvoltage, Low voltage, Overload, Regeneratio error, Over speed, etc.
Option Module Functions		Serial encoder communication input for fully-closed loop control
Compliant Standa	ırds	UL, CE marking (EMC directive, low voltage directive), Safety, RoHS
Safety Functions		EN954 category 3 Stop category 0, IEC61508 SIL 2 Input : Power module base block signal. Output : Safety circuit status monitor

### **MECHATROLINK** specifications

		M- I	M- II	
		17-byte	17-byte 32-byte	
Command	Servo	×	×	×
Transmission cycle		2ms	0.125ms to 4ms	0.5ms to 4ms

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India







# M-4 M-111

### YASKAWA ELECTRIC CORPORATION

### MECHATROLINK- II $\Sigma$ -V mini Ultra-Compact AC Servo Drives

#### **Features**

• More compact than ever

The ultra-compact drive enables more effective use of limited space, and opens up more space for the controller and equipment.

• DC power input supported

The battery-powered, ultra-compact, and high-performance servo drives makes battery-powered transport systems such as clean robots and clean Automatic Guided Vehicles (AGV) much more efficient.

Cutting edge technologies for superior performance and ease of use

The new advanced auto tuning function allows you to achieve an optimal setup for your system in minimal time. The following functions are also provided: Model following control to minimize positioning time, vibration suppression function to suppress vibrations from equipment, friction compensation function for high load-variation applications, and the new tuning less function for system operation startup and for high load-variation applications. Type: SGDV-\( \subseteq \subseteq \text{E11} \subseteq (\subseteq \text{dependent on a spec.})



### **Specifications**

Iter	n	Specifications
Performance		Speed - Frequency characteristics: 1.6 kHz (Load conditions: Load inertia JL=Motor inertia JM)
Periormance		Torque control accuracy Repeatability) : ±1%
Control Specification		Position control, speed control and torque control through MECHATROLINK- II communications
Communications	Command Type	MECHATROLINK commands for sequence, motion, data writing/reading, monitoring, adjustment, etc.
Applicable Motor	Capacity	3.3 W to 30 W
Encoder Resolution	n	17 bits (absolute encoder only)
Input Cignals	Number of channels	3ch. Signal alllocations and positive/negative logics can be modified.
Input Signals	Function	Forward run prohibited, Reverse run prohibited, Forward torque limit, Reverse torque limit, Extaernal latch signal, Homing deceleration switch signal
Output Cignals	Number of channels	3ch. Signal alllocations and positive/negative logics can be modified.
Output Signals Function		Positioning completion, Speed coincidence detection, Servomotor rotation detection, Servo ready, Torque limit detection, Speed limit detection, Break interlock, Warning, NEAR
Protective Functions		Overcurrent, Overvoltage, Low voltage, Overload, Regeneratio error, Over speed, etc.
Standards Compli	ance	UL, CE (EMC, Low Voltage Directive), RoHS Directive
Mounting		Base-mounted

### **MECHATROLINK** specifications

		M- I	M- II	
		17-byte	17-byte	32-byte
Command	Servo	-	×	×
Transmission cycle			0.25ms to 4ms	

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India







M-4 M-III

M-III M- II

### YASKAWA ELECTRIC CORPORATION

### **Low Harmonics Regenerative Matrix Converter U1000**

#### **Features**

 ${\tt U1000}\,is\,the\,product\,applies\,matrix\,converter\,technology\,for\,the\,first\,time\,in\,the\,world.$ 

It wipes out the existing system problems in harmonic measures and power regeneration, also contribute to the customers with energy-saving performance more than conventional inverter.

The U1000 was awarded the Minister's Prize of the Economy, Trade and Industry in 2015 which is the highest award in the Energy Conservation Grand Prize.

- Power Regeneration to Save Energy!
   Generate electric power when rotate the motor and achieve energy saving with utilizing the energy
   efficiently.
- Low Harmonics!

Achieve the less harmonic since the sinusoidal input current is the almost same as commercial power supply.

Also, correspond to downsizing of the power supply capacity as well as Harmonic Suppression Guidelines easily.



Harmonic countermeasures that were previously required to connect a converter, such as input AC reactors, harmonic filter reactors, and capacitors, are not necessary, which helps you save wiring, space, and energy costs.



U1000

### **Specifications**

	Item	Specifications
Rated	Max. Output Voltage	Depends on input voltage
Input/Output	Max. Output Frequency	400 Hz
	Rated Voltage/ Rated Frequency	Three-phase AC power supply 200 V Class: 200 to 240 Vac 50/60 Hz, 400 V Class: 380 to 480 Vac 50/60 Hz
Power Supply	Allowable Voltage Fluctuation	-15% to +10%
Characteristics	Allowable Frequency Fluctuation	$\pm$ 3% (Frequency fluctuation rate: 1 Hz/100 ms or less)
	Allowable Power Voltage Imbalance between Phases	less than 2%
	Control Method	Sine-wave PWM [V/f control, V/f Control with PG, Open Loop vector control, Closed Loop Vector Control, Open Loop Vector Control for PM, Advanced Open Loop Vector Control for PM, Closed Loop Vector Control for PM (switched by parameter setting)]
Control	Harmonic Current Distortion Rate	5% or less (IEEE 519)
Characteristics	Input Power Factor	0.98 or more (for rated load)
	Overload Tolerance	HD Rating: 150% of rated output current for 60 s, ND Rating: 120% of rated output current for 60 s (Derating may be required for repetitive loads)
Status Output		1 C-relay output at failures, 1 a contact output (multi-function) during operation, 2 multi-function PHC outputs selectable at alarms, 2 multi-function analog outputs selectable for analog outputs, Pulse train output: 1 (multi-function)

### **MECHATROLINK** specifications

		M- I	M-II	
		17-byte	17-byte	32-byte
Command	Inverter	×	×	×
Transmission cycle	=Comm. Cycle	2ms	500μs to 8ms	1ms to 8ms
	≠Comm. Cycle		2ms to 8ms	

	M-III
Profile	Standard Inverter
Data size 32byte, 48byte	
Transmission cycle	0.250ms to 8ms

#### **Contact Information**

#### YASKAWA ELECTRIC CORPORATION

Contanct Yaskawa's Product and Technical Website "e-mechatronics.com".

e-mechatronics.com <a href="http://www.e-mechatronics.com/en/">http://www.e-mechatronics.com/en/</a>





M-4

#### M-III M-II

## YASKAWA ELECTRIC CORPORATION

### **High Performance Vector Control AC Drive A1000**

#### **Features**

With decades of experience in just about every application, Yaskawa offers a High Performance Vector Control drive.

- Motor Drive Performance Leading the Pack Capable of driving any kind of motor for the most advanced drive technology.
- The Drive for a Greener World Combining the high efficiency of a synchronous motor along with A1000's Energy Saving control capabilities allows for unparalled energy saving.
- Transforming the Application Installation with Unparalleled Performance Yaskawa continues to make applications even smaller by combining the world's smallest drive in its class with a synchronous motor.



YASKAWA AC Drive A1000

### **Specifications**

Item	Specifications		
Power Supply	200 V (Three-Phase)	400 V (Three-Phase)	
Capacity Range	0.4 kW to 110 kW	0.4 kW to 630 kW <sup>*</sup>	
Control Method	V/f Control, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control with PG, Open Loop Vector for PM, Advanced Open Loop Vector for PM, Closed Loop Vector for PM		
Frequency Control Range	0.01 to 400 Hz		
Overload Tolerance	Normal Duty Rating: 120% of rated output current for 60 s. Heavy Duty Rating: 150% of rated output current for 60 s.		
Accel/Decel Time	0.00 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)		
Protection Functions	Motor Protection, Momentary Overcurrent Protection, Overload Protection, Overvoltage Protection, Undervoltage Protection, Ground Fault Protection		
Main Control Functions	Torque Control, Droop Control, Feed Forward Control, Zero Servo Control, Momentary Power Loss Ride- Thru, Speed Search, Auto-Tuning, Overexcitation Deceleration, High Slip Braking, PID Control, Energy Saving Control, DriveWorksEZ (customization software), Removable Terminal Block with Parameter Backup		
Interface	MECHATROLINK-II (optional), RS-232C, RS422/485		

<sup>\*:</sup> Some capacities not yet available

### **MECHATROLINK** specifications

		M- I	M-II	
		17-byte	17-byte	32-byte
Command	Inverter	×	×	×
Transmission	=Comm. Cycle	2mc	500μs to 8ms	1ms to 8ms
cycle	≠Comm. Cycle	- 2ms	2ms to 8ms	

#### **Contact Information**

#### YASKAWA ELECTRIC CORPORATION

Contanct Yaskawa's Product and Technical Website "e-mechatronics.com".

e-mechatronics.com <a href="http://www.e-mechatronics.com/en/">http://www.e-mechatronics.com/en/</a>





### M-4 M-III M- II

## YASKAWA ELECTRIC CORPORATION

### **Compact Vector Control Drive AC Drive V1000**

#### **Features**

Always making application control easier, Yaskawa presents a powerful, extremely compact vector control drive.

- So advanced!
   A single drive with so many uses, benefiting your application the more you use it.
- So easy!

  Quick and easy installation, ready to run your application in no time. You'll be amazed how simple it is to use.
- Smallest in the world!

  Top performance for its class. Loaded with functions and features in an unbelievably small package.



YASKAWA AC Drive V1000

### **Specifications**

Item	Specifications			
Power Supply	200 V (Three-Phase)	200 V (Single-Phase)	400 V (Three-Phase)	
Capacity Range	0.1 kW to 18.5 kW	0.1 kW to 3.7 kW	0.4 kW to 630 kW	
Control Method	Open Loop Vector Control (C	Open Loop Vector Control (Current Vector), V/f Control, PM Open Loop Vector Control		
Frequency Control Range	0.01 to 400 Hz	0.01 to 400 Hz		
Overload Tolerance	Normal Duty Rating: 120% of Heavy Duty Rating: 150% of r	Normal Duty Rating: 120% of rated output current for 60s. Heavy Duty Rating: 150% of rated output current for 60s.		
Accel/Decel Time	0.00 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)			
Protection Functions	Motor Protection, Momentary Protection, Undervoltage Pro	Motor Protection, Momentary Overcurrent Protection, Overload Protection, Overvoltage Protection, Undervoltage Protection, Ground Fault Protection		
Main Control Functions	Momentary Power Loss Ride Tuning, Overexcitation DeceloriveWorksEZ (customization	Momentary Power Loss Ride-Thru, Speed Search, Torque Limit, Accel/Decel Time Switch, Auto-Tuning, Overexcitation Deceleration, High Slip Braking, PID Control, Energy Saving Control, DriveWorksEZ (customization software), Removable Terminal Block with Parameter Backup		
Interface	MECHATROLINK-II (optional), RS-232C, RS422/485			

## **MECHATROLINK** specifications

		M- I	M-II	
		17-byte	17-byte	32-byte
Command	Inverter	×	×	×
Transmission	=Comm. Cycle	2mc	500μs to 8ms	1ms to 8ms
cycle	≠Comm. Cycle	2ms	2ms to 8ms	

	M-III
Profile	Standard Inverter
Data size	32byte, 48byte
Transmission cycle	0.250ms to 8ms

#### **Contact Information**

#### YASKAWA ELECTRIC CORPORATION

Contanct Yaskawa's Product and Technical Website "e-mechatronics.com". e-mechatronics.com <a href="http://www.e-mechatronics.com/en/">http://www.e-mechatronics.com/en/</a>







# M-4 M-III

### YASKAWA ELECTRIC CORPORATION

**Current Vector Control General-Purpose Inverter Varispeed G7** 

#### **Features**

The world's very first inverter drive to use current vector control employing 3-level control.

- 3-level control puts to rest potential concerns with 400V class inverters such as surge voltage.
- Provides high performance and high functionality through realistic current vector control, operating a vast array of applications with tremendous accuracy.
- Fully MECHATROLINK compatible with an optional communication card.



Varispeed G7

### **Specifications**

Item	Specifications	
Power Supply	200V (3-Phase)	400V (3-Phase)
Capacity Range	0.4kW to 110kW	0.4kW to 300kW
Control Method	Sine Wave PWM V/f, Vector Control, Open Loop Vector Control	
Output Frequency Range	0.01 to 400Hz	
Overload Tolerance	150% for 1 minute	
Accel/Decel Time	0.01 to 6000.0 sec (acceleration and deceleration times can be set separately)	
Protective Functions	Motor Protection, Momentary Overcurrent, Overload, Overvoltage, Undervoltage, Stall Prevention	
Main Control Functions	PID Control, Energy Saving Control, Momentary Power Loss, Speed Search, Auto-Tuning	
Interface	MECHATROLINK, RS-232C, RS422/485	

### **MECHATROLINK** specifications

		M- I	M-II	
		17-byte	17-byte	32-byte
Command	Inverter	×	×	×
Transmission	=Comm. Cycle	2,000	500μs to 8ms	1ms to 8ms
cycle	≠Comm. Cycle	2ms	2ms t	o 8ms

#### **Contact Information**

#### YASKAWA ELECTRIC CORPORATION

Contanct Yaskawa's Product and Technical Website "e-mechatronics.com".

e-mechatronics.com <a href="http://www.e-mechatronics.com/en/">http://www.e-mechatronics.com/en/</a>







M-III M-II

## IAI CORPORATION.

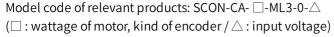
### **SCON Series Controllers for Robocylinders**

#### **Features**

• Allows the connection with various types of electric actuators such as slider type, rod type, table type, rotary types, and gripper type.



- Equipped with the function of off-board tuning for the optimized operation setting to a given payload.
- Allows recognizing the best time of maintenance from cumulative rotation count and cumulative travelling distance.
- Allows retaining the time data of alarm occurrence with the calendar function.





**SCON Series** 

### **Specifications**

Item		Specifications	
MECHATROLINK	Operation specifications	Location control by the MECHATROLINK-III standard servo profile command.	
communication	Command input	Interpolation feed, positioning, constant speed feed, alarm/warning clearing, alarm/warning readout, forcible brake release	
Number of control axes		1 axis	
Connectable actuators		RCS2/RCS3 series (AC200V servo motor type actuators)	
Drive power voltage		AC100 to 115V±10%/AC200 to 230V±10%	
Exterior dimensions		(Less than 400W): 58mm wide, 121mm deep, 194mm high (400W or more): 72mm wide, 121mm deep, 194mm high	

### **MECHATROLINK** specifications

	M-III
Compatible profiles	Standard servo
Number of transmission bytes	32byte, 48byte
Transmission cycle	0.5 to 4ms (0.5ms increment)

#### **Contact Information**

IA KOREA CORP

A-501, Bundang Suji U-Tower, 767, Sinsu-ro, Suji-gu, Yongin-si, TEL: +82-31-525-3500 FAX: +82-31-525-3515

Gyeonggi-do 16827 KOREA URL: http://www.iakorea.co.kr/



# ALGOSYSTEM CO.,LTD.

# MECHATROLINK-III Slave I/O Modules

#### **Features**

- Specific I/O Modules available for various applications Mounted quickly on DIN rails
- Digital Output Modules (NPN type) Choice of comm. error recovery: data retain or reset
- Analog Input/Output Modules
   Setting range of input/output with Dip SW
   Arithmetic average or moving average for input
- Encoder Modules
   Available pulse input: phase difference pulse between phases (A/B),
   sign+pulse or adding/subtracting pulse





M3EPW00

M3EPF00

#### **Models**

Model No.	Name	
M3EPF00	16 digital inputs module	
M3EP0F0	16 digital outputs module	
M3EPW00	32 digital inputs module	
M3EP0W0	32 digital outputs module	
M3EPFF0	16 digital inputs / 16 outputs module	
M3EA400	4 analog inputs module	
M3EA040	4 analog outputs module	
M3EC200	2 encoder module (line receiver input type)	
M3EC201	2 encoder module (open collector input type)	

### **Specifications**

Item	Specifications	
Voltage rating	DC24V (permissible range DC 20.4V — 26.4V)	
Operating temperature	0 — 55 deg.C	
Storage temperature	-25 - +70 deg.C	
Operating humidity	30 — 90% RH (non-condensing)	
Storage humidity	30 — 90% RH (non-condensing)	
Signal LEDs	PWR (G), CON (G), ERR (R), Link1 (G), Link2 (G)	
Connector	RJ45×2	

### **MECHATROLINK** specifications

	M-III
Profile	Standard I/O
Data size	48byte
Transmission cycle	62.5 μs to 8ms

#### **Contact Information**

ALGOSYSTEM CO., LTD.

656 Kobirao, Mihara-ku, Sakai, Osaka 587-0021, Japan

URL: http://www.algosystem.co.jp

TEL: +81-72-362-5067

FAX: +81-72-362-4856



# MG Co., Ltd.

### **MECHATROLINK-III REMOTE I/O R7 Series**

#### **Features**

- Compact, all-in-one modules
- Max. 4 points of analog or 16/32 points of discrete I/O signals
- High-speed analog I/O modules are also available.
- Removable terminal blocks make the module replaceable without disconnecting wiring.
- Zero adjustment and other settings can be handled by message commands. (Message commands may not be usable for all models.)









R7G4HML3 Series (W130xH50xD57 mm)

#### Model No. Identification

MODEL	FUNCTION	POWER / I/O CONNECTION
R7G4FML3-6-DA16	16-point contact input (NPN/PNP)	M3 screw terminal
R7K4FML3-6-DA32	32-point contact input (NPN/PNP, external excitaion 24V)	M3 screw terminal
R7K4FML3-6-DA32-1	32-point contact input (NPN/PNP, external excitaion 12V)	M3 screw terminal
R7G4FML3-6-DC16A	16-point transistor output (NPN)	M3 screw terminal
R7G4FML3-6-DC16B	16-point transistor output (PNP)	M3 screw terminal
R7K4FML3-6-DC32A	32-point transistor output (NPN, external excitaion 24V)	M3 screw terminal
R7K4FML3-6-DC32A1	32-point transistor output (NPN, external excitaion 12V)	M3 screw terminal
R7K4FML3-6-DC32B	32-point transistor output (PNP, external excitaion 24V)	M3 screw terminal
R7F4HML3-D-DAC32A	16-point contact input (NPN/PNP) / 16-point transistor output (NPN)	Tension clamp terminal /MIL connector
R7F4HML3-D-DAC32B	16-point contact input (NPN/PNP) / 16-point transistor output (PNP)	Tension clamp terminal /MIL connector
R7G4HML3-6-SV4	4-point DC voltage/current input (isolated)	M3 screw terminal
R7G4HML3-6-SVF4	4-point high speed DC voltage/current input (isolated, conversion rate 200 μs/4 chs)	M3 screw terminal
R7G4HML3-6-TS4	4-point thermocouple input (isolated)	M3 screw terminal
R7G4HML3-6-LC2	2-point strain gauge input (message command)	M3 screw terminal
R7G4HML3-6-LC2A	2-point Nireco tension sensor input (Nireco MB/MG tension sensor, message command)	M3 screw terminal
R7G4HML3-6-STYVS1	1-point self-synch input / 1-point DC voltage/current output (message command)	M3 screw terminal
R7G4HML3-6-PA1J	1-point rotary encoder speed/position input (RS-422 line driver)	M3 screw terminal
R7G4HML3-6-PA1A1	1-point rotary encoder speed/position input (5V open collector)	M3 screw terminal
R7G4HML3-6-PA1A4	1-point rotary encoder speed/position input (12V open collector)	M3 screw terminal
R7G4HML3-6-PA1A7	1-point rotary encoder speed/position input (24V open collector)	M3 screw terminal
R7G4HML3-6-YVF4	4-point high speed DC voltage output (isolated)	M3 screw terminal
R7G4HML3-6-YSF4	4-point high speed DC current output (isolated)	M3 screw terminal

### **MECHATROLINK** specifications

	M-III
Profile	Standard I/O
Data size	16byte
Transmission cycle	125μs, 250μs, 500μs, 1 to 64ms (1-ms increments)

### **Contact Information**

MG Co., Ltd.

13th floor, Tradepia Yodoyabashi, 2-5-8 Imabashi, Chuo-ku, Osaka TEL:+81-(0)6-7525-8801

541-0042 JAPAN E-mail:info@mgco.jp URL: https://www.mgco.jp/



FAX: +81-(0)6-7525-8810

# MG Co., Ltd.

### Multi-channel, Mixed Signal Remote I/O R3 Series

#### **Features**

- Network module model R3-NML3 is designed for MECHATROLINK-III.
- Wide selection of I/O modules including DC, AC, temperature, strain gauge, pulse trains, AC power
- 4 isolated to 16 non-isolated analog inputs per module



R3 Series

### **Specifications**

Item	Specifications	
Network module model No.	R3-NML3	
I/O module types	Di 16 to 64, Do 16 to 64, DC voltage and current, thermocouple, RTD, potentiometer, twowire transmitter, strain gauge, AC voltage and current, power, totalized pulse, encoder, alarm, BCD	
Power input	100 to 120V AC, 200 to 240V AC, 24V DC	
Dielectric strength	1500V AC @ 1 minute (MECHATROLINK to internal bus or internal power to power input to RUN output to FG)	
Insulation resistance	100M ohms or greater with 500V DC	
Operating temperature	−10 to +55 deg.C	
Operating humidity 30 to 90%RH (non-condensing)		
Atmosphere	No corrosive gas or heavy dust	
Mounting	Installation Base (model: R3-BSx)	

### **MECHATROLINK** specifications

	M-III
Profile	Standard I/O
Data size	16, 32, 48, 64byte
Transmission cycle	0.5ms, 1ms to 64ms

#### **Contact Information**

MG Co., Ltd.

13th floor, Tradepia Yodoyabashi, 2-5-8 Imabashi, Chuo-ku, TEL: +81-(0)6-7525-8801 FAX: +81-(0)6-7525-8810

Osaka 541-0042 JAPAN E-mail: info@mgco.jp URL: https://www.mgco.jp/







M-III M-II

## YASKAWA ELECTRIC CORPORATION

### MECHATROLINK-III 64-points I/O Module MTD2310

#### **Features**

- MTD2310 is the 64-points I/O module. It has 64-points for input and 64-points for output.
- Pin placement of the input/output connector and specifications are totally same as JEPMC-IO2310-E (MECHATROLINK-II 64-points I/O module).

Model: JEPMC-MTD2310-E (MTD2310)



MTD2310

### **Specifications**

Item		Specifications
	Number of Input Points	64 points (32 points × 2)
	Input Method	Combined sink/source
Input Circuit	Insulation Method	By photocoupler
Circuit	Input Voltage	24 VDC (20.4 to 28.8)
	Input Current	5 mA/point
	Number of Input Points	64 points (32 points × 2)
	Input Method	Transistor/open collector/sink output
Output	Insulation	Method By photocoupler
Circuit	Output Voltage	24 VDC (20.4 to 28.8)
	Output Current	50 mA/point
	Fuse	For each common terminal there is a fuse for protection against fire on shorting of outputs
External Power Suppuly		24 VDC (20.4 to 28.8)
External Dimensions		Width: 120 mm, height: 130 mm, depth: 105 mm

### **MECHATROLINK** specifications

M-III	
Profile	Standard I/O
Data size	16byte
Transmission cycle	0.25ms, 0.5ms, 0.75ms, 1ms to 8ms (multiple of 0.5ms)

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India







0

M-4 M-III M- II

# YASKAWA ELECTRIC CORPORATION

### **Analog Input Module MTA2900**

#### **Features**

- MTA2900 is the analog input module. It has 8 channels for analog input.
   [(4 channels/1 connector) ×2]
- Every channel can choose the analog input range among -10 to +10V and 0 to 20mA by setting parameters.

Model: JEPMC-MTA2900-E (MTA2900)



MTA2900

### **Specifications**

Item		Specifications	
	Analog Input Range	-10 to +10 V	0 mA to 20 mA
	Number of Channels	8 [(4 channels/1connector) ×2]	
	Number of Channels to be Used	1 to 8	
Analog	Isolation	Between channels: Not isolated	
Input	Max. Rated Input	±15 V	±30 mA
	Input Impedance	20 kΩ	250 Ω
	Resolution	16 bits (-3127 to +31276)	15 bits (0 to +31276)
	Accuracy (0° to 55°C)	±0.3 % (±30 mV)	±0.3 % (±0.06 mA)
	Input Conversion Time	1.4 ms max.	
Module	Power Supply	24 VDC (20.4 V to 28.8 V), 500 mA max.	
Dimens	sion	$46$ mm(W) $\times$ $130$ mm(H) $\times$ $108$ mm(D)	

### **MECHATROLINK** specifications

	M-III
Profile	Standard I/O
Data size	32 byte
Transmission cycle $125\mu s$ , $250\mu s$ , $500\mu s$ , $1ms$ to $8ms$ (multiple of 0.	

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India







1/0

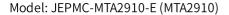
M-III M-II

# YASKAWA ELECTRIC CORPORATION

### **Analog Output Module MTA2910**

#### **Features**

- MTA2910 is the analog output module. It has 4 channels for analog input. (4 channels/1 connector)
- Every channel can choose the analog output range among -10V to +10V and 0V to +10V by setting parameters.





MTA2910

### **Specifications**

Item			Speci	fications	
	Analog Output Range		-10 V to +10 V	0 V to +10 V	
	Number of Ch	annels	4	4	
	Number of Channels to be Used		1 to 4	1 to 4	
	Isolation		Between channels: Not isolated		
Analog Output	Resolution		16 bits (-3/127 to +31276)	15 bits (0 to +31276)	
	Maximum Allowable Load Current		±5 mA		
	Accuracy	25°C	±0.1 % (±10 mV)		
		0°C to 55°C	±0.3 % (±30 mV)		
	Output Delay Time		1.2 ms max. (After change with a full scale of $-10$ to $+10$ V)		
Module Power Supply		24 VDC (20.4 V to 28.8 V), 500 mA	24 VDC (20.4 V to 28.8 V), 500 mA max.		
Dimension		46mm(W) × 130mm(H) × 108mm(D)			

### **MECHATROLINK** specifications

M-III	
Profile	Standard I/O
Data size	16byte
Transmission cycle	125μs, 250μs, 500μs, 1ms to 8ms (multiple of 0.5ms)

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India





# YASKAWA ELECTRIC CORPORATION

### **Pulse Input Module MTP2900**

#### **Features**

- The MTP2900 module is a pulse input module of 32 bits counting the pulse output of the pulse outbreak machinery such as rotary encoders.
- Every channel can choose the pulse input method among A/B method, UP/DOWN method and sign method by setting parameter.
   Model: JEPMC-MTP2900-E (MTP2900)



MTP2900

### **Specifications**

Item		Specifications
	Number of Channels	2
	Input Circuit (Selected by software)	5-V differential: 4-MHz response frequency (RS-422, not isolated) 12 V: 120-kHz response frequency (12 V, 7 mA, current source mode input, and photocoupler isolation)
	Input Method	A/B (1, 2, or 4 multipliers), UP/DOWN (1 or 2 multipliers), and sign (1 or 2 multipliers)
Pulse Input	Counter Functions	Reversible counter, interval counter, and frequency measurement
	Maximum Frequency	4 MHz with 5-V differential input (16 MHz with 4 multipliers)
	Coincident Output	2 points, 24 V, 50 mA current sink mode output, and photocoupler isolation
	DO Output	2 points, 24 V, 50 mA, current sink mode output, and photocoupler isolation (zone output, speed-coincidence output, and frequency-coincidence output)
	PI Latch Input	2 points, 24 V, source mode input, and photocoupler isolation
Input Method		Sign, UP/DOWN and A/B pulse
Module Power upply		24 VDC (20.4 V to 28.8 V), 500 mA max.
Dimension		$46$ mm(W) $\times$ $130$ mm(H) $\times$ $108$ mm(D)

### **MECHATROLINK** specifications

	M-III	
Profile	Standard I/O	
Data size	64byte	
Transmission cycle	125μs, 250μs, 500μs, 1ms to 8ms (multiple of 0.5ms)	

Note: The MTP2900 works as a multi-slave.

### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India







**I/O** 

#### M-III M-II

# YASKAWA ELECTRIC CORPORATION

### **Pulse Output Module MTP2910**

#### **Features**

- The MTP2910 module is a motion module of the pulse output type with the interface of 4 axes. It can apply to connection with stepping motors and Servo dreives.
- Every channel can choose the pulse output method among CW/CCW method, sign + pulse method and phase A/B method by setting parameter.

Model: JEPMC-MTP2910-E (MTP2910)



MTP2910

### **Specifications**

Item		Specifications
	Number of Controlled Axes	4
Pulse Output	Pulse Output	Output Method: CW/CCW, sign + pulse, and phase A/B Maximum Frequency: 4 Mpps with CW/CCW or sign + pulse, 1 Mpps with phase A/B (before multiplication) Pulse Output Interface: 5-V differential outputs
	Digital Input	5 points × 4 channels, source mode input DI_0 : Separate for each power supply 5 V/3.9 mA, 12 V/10.9 mA, 24 V/4.1 mA DI_1 to DI_4: Power supply shared 24 V/4.1 mA
	Digital Output	4 points × 4 channels Open collector and sink mode output (24 V/100 mA)
Module	Power upply	24 VDC (20.4 V to 28.8 V), 500 mA max.
Dimension		$46$ mm(W) $\times$ $130$ mm(H) $\times$ $108$ mm(D)

### **MECHATROLINK** specifications

	M-III
Profile	Standard I/O
Data size	64byte
Transmission cycle	125μs, 250μs, 500μs, 1ms to 8ms (multiple of 0.5ms)

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



### M-III M-II

# MG Co., Ltd.

### MECHATROLINK-II REMOTE I/O R7 Series

#### **Features**

- Compact, all-in-one modules
- A wide variety of sensor signal inputs
- Removable terminal blocks make the module replaceable without disconnecting wiring.
- Discrete I/O module can be attached to base analog module (R7ML Series)





R7ML Series W115xH50xD54 mm, nsion module W85xH50xD64 or W94xH50xD54 mm R7G4HML Series (W130xH50xD57 mm)





R7K4FML Series (W210xH50xD47 mm)

R7K4DML Series (W210xH50xD41 mm)

#### Model No. Identification

#### R7ML Series

MODEL		FUNCTION	POWER / I/O CONNECTION
	R7ML-DA16	16-point contact input (NPN/PNP)	M3 screw terminal
	R7ML-DC16A	16-point transistor output (NPN)	M3 screw terminal
	R7ML-DC16B	16-point transistor output (PNP)	M3 screw terminal
	R7ML-DC16D	16-point transistor output (PNP, shortcircuit protection)	M3 screw terminal
BASIC	R7ML-SV4	4-point DC voltage/current input (isolated)	M3 screw terminal
MODULE	R7ML-TS4	4-point thermocouple input (isolated)	M3 screw terminal
	R7ML-RS4	4-point RTD input (isolated)	M3 screw terminal
	R7ML-LC2	2-point high speed strain gauge input (isolated)	M3 screw terminal
	R7ML-YV2	2-point DC voltage output (isolated)	M3 screw terminal
	R7ML-YS2	2-point DC current output (isolated)	M3 screw terminal
	R7ML-EA8	8-point extension contact input (NPN/PNP)	M3 screw terminal
	R7ML-EA16	16-point extension contact input (NPN/PNP)	M3 screw terminal
	R7ML-EC8A	8-point extension transistor output (NPN)	M3 screw terminal
EXTENSION	R7ML-EC16A	16-point extension transistor output (NPN)	M3 screw terminal
MODULE	R7ML-EC8B	8-point extension transistor output (PNP)	M3 screw terminal
	R7ML-EC16B	16-point extension transistor output (PNP)	M3 screw terminal
	R7ML-EC8D	8-point extension transistor output (PNP, shortcircuit protection)	M3 screw terminal
	R7ML-EC16D	16-point extension transistor output (PNP, shortcircuit protection)	M3 screw terminal

#### R7K4FML Series

MODEL	FUNCTION	POWER / I/O CONNECTION
R7K4FML-6-DA32	32-point contact input (NPN/PNP)	M3 screw terminal
R7K4FML-6-DCA32A	16-point transistor output (NPN) / 16-point contact input (NPN/PNP)	M3 screw terminal
R7K4FML-6-DC32A	32-point transistor output (NPN)	M3 screw terminal
R7K4FML-6-DC32B	32-point transistor output (PNP)	M3 screw terminal

#### R7K4DML Series

KTK1DML Series				
R7K4DML-B-DAC32A	16-point contact input (PNP) / 16-point transistor output (NPN)	Tension clamp terminal / e-CON connector		
R7K4DML-B-DAC32B	16-point contact input (NPN) / 16-point transistor output (PNP)	Tension clamp terminal / e-CON connector		
R7K4DML-B-DAC32C	16-point contact input (NPN) / 16-point transistor output (NPN)	Tension clamp terminal / e-CON connector		
R7K4DML-B-DAC32D	16-point contact input (PNP) / 16-point transistor output (PNP)	Tension clamp terminal / e-CON connector		

#### R7G4HML Series

R7G4HML-6-SVF4	4-point high speed DC voltage/current input (isolated)	M3 screw terminal
R7G4HML-6-YVF4	4-point high speed DC voltage output (isolated)	M3 screw terminal

# **MECHATROLINK** specifications

R7ML / R7G4HML Series		M- I	M-II	
		17-byte	17-byte	32-byte
Command	Intelligent I/O	×	×	×
Transmission cycle		2ms	0.5ms, 1ms, 1.5ms, 2ms, 4ms, 8ms	

R7K4FML / R7K4DML Series		M- I	M-II	
		17-byte 17-byte		32-byte
Command	Intelligent I/O	×	×	×
Transmission cycle		2ms	0.25ms, 0.5ms, 1ms, 1.5ms, 2ms, 4ms, 8ms	

<sup>※2.5</sup>ms, 3ms available for R7K4DML

#### **Contact Information**

MG Co., Ltd.

13th floor, Tradepia Yodoyabashi, 2-5-8 Imabashi, Chuo-ku, Osaka

541-0042 JAPAN E-mail:info@mgco.jp URL: https://www.mgco.jp/ TEL: +81-(0)6-7525-8801

FAX: +81-(0)6-7525-8810







Spec

1/0

M-III M-III

## YASKAWA ELECTRIC CORPORATION

Slave Devices for MECHATROLINK- II IO2310, IO2330, PL2900, PL2910, AN2900, AN2910

#### **Features**

PL2900, PL2910, AN2900, AN2910

Models:

JEPMC-PL2900 (Counter) / PL2910 (Pulse Output) JEPMC-AN2900 (Analog Input) / AN2910 (Analog Output)



## **Specifications**

Module Name	Item	Specifications
64-point I/O Modules (IO2310/IO2330)	I/O Signals	Input: 64 points, 24 VDC, 5 mA, sink/source mode input Output: 64 points, 24 VDC, 50 mA when all points 0N <sup>*</sup> sink mode output (IO2310), source mode output (IO2330) *: The max. rating is 100 mA per point (depending on derating conditions).
	Number of Input Channels	2
Counter Module (PL2900)	Functions	Pulse counter, notch output
Counter Module (PL2900)	Pulse Input Method	Sign+pulse (1/2 multipliers), A/B (1/2/4 multipliers), UP/DOWN (1/2 multipliers)
	Max. Counter Speed	1200 kpps (4 multipliers)
	Number of Output Channels	2
Pulse Output Module (PL2910)	Functions	Pulse positioning, JOG run, zero-point return
Puise Output Module (PL2910)	Pulse Output Method	CW, CCW pulse, sign+pulse
	Max. Output Speed	500 kpps
	Number of Output Channels	4
Analog Input Module (AN2900)	Input Voltage Range	-10V to +10V
Anatog input Module (AN2500)	Input Impedance	1MΩ min.
	Data Format (Binary)	-32000 to +32000
	Number of Output Channels	2
Analog Output Module	Output Voltage Range	-10V to +10V
(AN2910)	Max. Allowable Load Current	$\pm 5$ mA ( $2$ k $\Omega$ )
	Data Format (Binary)	-32000 to +32000

## **MECHATROLINK** specifications

102310, 102330

		M- I	M-	·II
		17-byte	17-byte	32-byte
Command	Simple I/O	×	×	×
Transmission cycle		2ms	1ms, 1.5	ms, 2ms

PL2900, PL2910, AN2900, AN2910

		M- I	M-	- II
		17-byte	17-byte	32-byte
Command	Simple I/O	×	×	×
Transmission cycle		2ms	1ms, 1.5	īms, 2ms

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India

Europe: Germany, Sweden, Israel, Italy, France, Spain, Finland, Netherlands, Slovenia, Czech republic, Turkey





SDevice

Spe

M-4

M-III

## YASKAWA ELECTRIC CORPORATION

Slave Devices for MECHATROLINK- II 102900, 102910, 102920, 102950

#### **Features**

IO2900, IO2910, IO2920, IO2950

Models:

JAMSC-IO2900-E (16-point Input) /IO2910-E (16-point Output) JAMSC-IO2920-E (8-point I/O) /IO2950-E (Relay Output)



### **Specifications**

Module Name	Item	Specifications	
	Number of inputs	16	
	Voltage rating	12/24VDC	
16-point Input Module (IO2900-E)	Current rating	2.5mA/5mA	
(102300 2)	Input type	Sink/source mode input	
	External power supply	24VDC (20.4 to 28.8V), 90mA	
	Number of outputs	16	
	Voltage rating	12/24VDC	
16-point Output Module   (IO2910-E)	Current rating	0.3A	
(102310 2)	Output type	Sink mode output	
	External power supply	24VDC (20.4 to 28.8V), 110mA	
	Number of I/O	Input: 8 Output: 8	
	Voltage rating	12/24VDC	
8-point I/O Module (IO2920-E)	Current rating	Input: 2.5mA/5mA Output: 0.3A	
(102020 2)	I/O type	Input: Sink/source mode input Output: Sink mode output	
	External power supply	24VDC (20.4 to 28.8V), 90mA	
	Number of outputs	8	
	Voltage rating	12/24VDC, 100/200VAC	
Relay Output Module (IO2950-E)	Current rating	1.0A	
(.02000 2)	Output type	Contact output	
	External power supply	24VDC (20.4 to 28.8V), 150mA	

## **MECHATROLINK** specifications

		M- I	M-	·II
		17-byte	17-byte	32-byte
Command	Simple I/O	×	×	×
Transmission cycle		2ms	1ms, 1.5	ms, 2ms

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India

Europe: Germany, Sweden, Israel, Italy, France, Spain, Finland, Netherlands, Slovenia, Czech republic, Turkey







## M-III M-II

## **Azbil Corporation**

## **High-Accuracy Position Sensors K1G-C04M**

#### **Features**

- The controller, K1G-C04M supports MECHATROLINK-III.
- It achieves high-speed at a baud rate of 100 Mbps and high-reliability communications, furthermore, realizes the synchronous communication.
- Only two wires are required between the PC/PLC and the K1G-C04M for wiring. You can reduce greatly wiring time and save space.
- Using the Pro-face GP4000 series allows the setting and checking of a parameters used by the K1G series.
- The Pro-face Remote HMI allows the setting and checking of parameters using a Wi-Fi-equipped tablet.



K1G-C04M

### **Specifications**

Catalog listing		ing	K1G-C04/K1G-C04G	K1G-C04M/K1G-C04MG	
Compatil	Compatible sensor		K1G-S□□		
Max. nun	nber of connect	ed sensors	4		
	Min. display ur	nit	0.1 μm		
Reading	Display range	With K1G-S07	0 to 7 mm -3.5 to +3.5mm c	an be selected	
	Display range	With K1G-S15	0 to 15 mm -7.5 to +7.5mm o	can be selected	
	ment cycle update cycle)	•	250μm/500μm/1ms (sv	vitchover)	
Analog o	Analog output		4 outputs: 4-20 mA or 1-5 V (all outputs are switched over at once)	-	
Digital output			8 outputs: NPN or PNP transistor (all outputs are switched over at once)	-	
Digital input			4 inputs: non-voltage contacts and NPN or PNP open collector (all points are switched over at once)	-	
Communications			RS-485 (Modbus RTU)	MECHATROLINK-III	
Supply po	ower		DC12 to 24±10	%	
Operating temperature 0 to 50°C (0 to 35°C if gang-mounted)		g-mounted)			
Storage temperature			-20 to 70°C (without freezing)		
Operating humidity			30 to 85 % RH (without condensation)		
Vibration resistance			2m/s <sup>2</sup> (10 to 60 Hz), 2 h each in X, Y, and Z directions		
Protection circuit			Power reverse connection protection		

## **MECHATROLINK** specifications

	M-III
Profile	Standard I/O
Data size	32byte, 48byte
Transmission cycle	0.25/0.5/1-64 ms [Selectable by 0.5ms]

#### **Contact Information**

Azbil Corporation Advanced Automation Company

1-12-2, Kawana, Fujisawa-shi, Kanagawa-ken, FAX: +81-466-20-2193 Marketing Dept., Sensor TEL: +81-466-20-2232

Group2 251-8522, Japan

E-mail: n.kiire.uf@azbil.com URL: http://www.azbil.com/







**从** M-4

M-III M-II

## **Phoenix Contact Inc.**

# Temperature Control for Inline MECHATROLINK Bus Coupler

### **Features**

The Inline multi-channel temperature controller is a freely parameterizable slave for the Inline installation system which controls up to 8 zones.

The temperature controller features

• Eight analog inputs for thermocouples



IB TEMPCON UTH-PAC IB TEMPCON RTD-PAC

## **Specifications**

Item	Specifications
Part number	2861807 (UTH) 2861771 (RTD)
Network Interface	MECHATROLINK- I and through IL M II BK DI8 DO4-PAC
Degree of protection	IP-20
Number of Control Zones	8
Type of sensor connection	2-wire technology with or without shielding
Thermal Couple Type	Type B, C, D, E, J, K, L, N, R, S, T
Type of actuator connection	1-wire technology
Output voltage	24 V (70 mA, maximum)
Configuration Interface	V.24 (RS-232)

## **MECHATROLINK** specifications

		M- I	M-	·II
		17-byte	17-byte	32-byte
Command	Intelligent I/O	×	×	×
Transmission cycle		2ms	1ms, 1.5	ms, 2ms

#### **Price**

\$924.00 USD

#### **Contact Information**

Phoenix Contact Inc.

P.O. Box 4100 Harrisburg, PA 17111-0100

E-mail: info@phoenixcon.com

URL: https://www.phoenixcontact.com/

TEL:+1-800-888-7388 FAX:+1-717-944-1300







Spec

너 <u>\_</u>

M-4 M-111 M-11

## YASKAWA ELECTRIC CORPORATION

### **Network Machine Vision System MYVIS YV260**

#### **Features**

With the network machine vision system, the present positions of the servo's axes are constantly obtained, and the images are processed using the servo coordinates.

- Instant alignment (Positioning with no retries required.)
- Non-stop alignment (Object does not stop in front of camera.)
- Correspondence to the high-resolution camera (5,000,000 pixels)
- High-speed, high-precision image processing
- Preprocessing function with hardware
- Easily created application software
- Reduced wiring with networking

Models:

[Unit Type] [Board Type]

JEVSA-YV260A□-E (AC100V/200V) JEVSA-YV260S□-E (DC12V)

JEVSA-YV260D□-E (DC24V) □1: Analog 2: Digital



MYVIS YV260

### **Specifications**

Item		Specifications		
Image Proces	ssing	Gray scale pattern matching, binary image analysis, preprocessing		
	Template Storage Memory	CF cards (2 GB max.), Required as external memory (Sold separately.)		
Memory	Image Memory-Frame Memory	$4096 \times 4096 \times 8$ bits $\times$ 4 images (640 $\times$ 480 $\times$ 8 bits $\times$ 192 images)		
	Image Memory-Template Memory	16MB		
	Community	Analog: New EIAJ 12-pin connector ×4 Four A/D conversion circuits		
	Camera Interface	Digtal: CameraLink 26-pin connector ×4		
	Camera Sync Mode	Analog: internal/external sync Digital: internal sync		
Image Input	Number of the camera pixels	Analog: 300,000 - 1,400,000 pixels Digital: 300,000 - 5,000,000 pixels		
	Dan dans Trians a Charles Comments of	Analog: Sync-nonreset, sync-reset, single VD or V reset		
	Random Trigger Shutter Supported	Digital: Sync-nonrese		
	Simultaneous number of taking	Four		
	Marita a Outrant	VGA monitor (15-pin D-sub)		
Monitor	Monitor Output	VGA (640×480), XGA (1024×768)		
Image Dis	Image Display	Simultaneous reduction for two or four cameras, scalable, and binary display.		
	Network	MECHATROLINK-   /    , Ethernet (10BASE-T/100BASE-TX)		
	Serial	RS-232C × 2 ch (9 pin D-sub) 1200 bps to 115200 bps		
I/O	Track Ball	USB mouse		
	Parallel	16 general-purpose inputs and 4 specific inputs 16 general-purpose outputs and 2 specific outputs Photocoupler insulation		

## **MECHATROLINK** specifications

		M- I	M-	-11
		17-byte	17-byte	32-byte
Command	Intelligent I/O	×	×	×
**Transmission cycle		2ms	0.5ms t	o 4.0ms

<sup>\*</sup>The transmission cycle time of the MYVIS is 2 ms.

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

 $Asia\ Pacific:\ China,\ Korea,\ Taiwan,\ Singapore,\ India$ 

Europe: Germany, Sweden, Israel, Italy, France, Spain, Finland, Netherlands, Slovenia, Czech republic, Turkey, Carebana, Czech republic, Turkey, Czech republic, Czech repub







M-111 M-II

## **RKC INSTRUMENT INC.**

### Module type digital temperature controller

#### **Features**

Multi-zone temperature control system can be easily achieved by connecting temperature control modules to a communication converter module for MECHATROLINK.

Temperature control module can be selected from 2-zone or 4-zone modules. Maximum of 31 temperature control modules (64 zones) can be connected.

Digital input/output modules can be also connected to handle contact signals for temperature alarm output and operation mode switching. Module model code

Communication converter module: COM-MY

Temperature control module: Z-TIO Digital input/output module: Z-DIO



SRZ

## **Specifications**

Item	Specifications
Measuring input	Number of inputs: 2 points/module, 4 points/module Input type: Thermocouple, RTD, DC current, DC voltage *Universal input (Z-TIO)
Control method	PID control with autotuning, ON/OFF control (Z-TIO)
Control output	Relay contact output, Voltage pulse output 0/12V DC, Continuous DC voltage output DC current output, Triac output, Open collector output (Z-TIO)
Alarm	Temperature alarm, Heater break alarm, Control loop break alarm (Z-TIO)
Digital input	Number of input: 8 points/module Input method: Voltage contact input (Open: Less than 5V DC, Close: More than 17.5V DC) Function: Run/Stop, Remote/Local, Auto/Manual, Memory area selection, Alarm interlock reset (Z-DIO)
Digital output	Number of output: 8 points/module Output method: Relay contact output, Open collector output Function: Alarm output (Temperature alarm, Heater break alarm, Control loop break alarm) (Z-DIO)
Host communication	Communication method: RS-485, RS-422A Communication protocol: ANSI X3.28-1976 sub-category 2.5B4 (RKC standard)
Power supply	24V DC

## **MECHATROLINK** specifications

			M-	-11
		17-byte	17-byte	32-byte
Command Intelligent I/O		×	×	×
Transmission cycle		2ms	1ms t	o 8ms

#### **Contact Information**

RKC INSTRUMENT INC.

16-6 Kugahara 5 Chome Ohtaku Tokyo 146-8515 Japan

URL: https://www.rkcinst.co.jp/

TEL: +81-3-3751-8111 FAX: +81-3-3754-3316









M-4 M-111 **M-11** 

## IAI CORPORATION.

# ROBO Cylinder® Controller ACON/PCON/SCON Series (MECHATROLINK Type)

#### **Features**

• Easy operation of various types such as slider, rod, rotary and gripper types of electric actuator products is enabled using I/O operation from the network master (host PLC).



- For the position data creation, easy setting is enabled with the value entry using the PC software or teaching pendant, or direct teaching.
- The position can be moved to the destination that is specified using the values, and monitoring for the current position, speed or command-current value, etc., is enabled. Model No.:

 $\label{eq:acon-c/cg--ml-0-0} ACON-C/CG- \hdisplays Index (a) a constant of the constant of t$ 

 $SCON-CA-\Box-ML-0-\triangle$ 

 $(\Box: Motor flange size , Encoder / \triangle: Input Source Voltage)$ 



## **Specifications**

Item	Specifications
Control system	Positioner Operation with MECHATROLINK-   /    Intelligent I/O commands
Number of control axes	1 axis
Connected actuator	ACON Series: RCA/RCA2 Series actuator (Servo motor) PCON Series: RCP2/RCP3/RCP4 Series actuator (Stepper motor) SCON Series: RCS2/RCS3 Series actuator (Servo motor)
No. of Locating Position Table Points	(Maximum) 768 points (In the case of the operation with the direct value specification, the number of locating position table points is unlimited
Positioner Functions	Positioning operation, pitching (incremental) movement, pressing operation (movement with torque restriction), short-cut control, speed change during the movement
I/O Functions	Servo ON, Home return, Pausing input, Jog/Inching movement input, Alarm reset, Current position capturing, Positioning completion, Home return completion, Zone signal output, alarm output, Emergency stop status output, Current position/speed/command-current monitoring, etc.
Order Value Minimum Unit	Position Order: 0.01mm, Speed Order: 1mm/sec, Acceleration/Deceleration Order: 0.01G, Pressing Current Limit Value: 100% / 256 Levels (RCS2-RA13R: 200%)
Input Source Voltage	ACON, PCON Series : DC24V $\pm$ 10% SCON Series : AC100 to 150V $\pm$ 10% / AC200 to 230V $\pm$ 10%
External dimensions(※)	ACON, PCON Series : Width 35mm, Depth 69mm, Height 178mm SCON Series (less than 400-watts) : Width 58mm, Depth 121mm, Height 194mm (over 400-watts) : Width 72mm, Depth 121mm, Height 194mm

(※) MECHATROLINK connector not included

## **MECHATROLINK** specifications

		M- I		M-II	
		17-byte	17-byte	32-byte	
Command	Intelligent I/O	×	×	×	
Transmission cycle		2ms	1ms or more (Following the value in the master)		

#### **Contact Information**

IA KOREA CORP

A-501,BundangSuji U-Tower, 767, Sinsu-ro, Suji-gu, Yongin-si, TEL: +82-31-525-3500 FAX: +82-31-525-3515

Gyeonggi-do 16827 KOREA URL: http://www.iakorea.co.kr/





스테핑 모터

M-4

## M-III M-11

## **ORIENTAL MOTOR Co.,Ltd.**

Stepping Motor  $\alpha$  STEP **AZ Series AC Power Input Driver MECHATROLINK-III Compatible** 

#### **Features**

 MECHATROLINK-III Stepping Driver .

• 「Open Loop 」「Closed Loop 」 , Stepping Motor Motor .

Batteryless



αSTEP AZ Series

## **Specifications**

	Item	Specifications
	Protocol	MECHATROLINK-III
	Baud Rate	100Mbps
MECHATROLINK communications	Transmission cycle	0.5ms to 4.0ms (increments of 0.5ms)
Communications	Communication cycle	0.5ms to 32ms (increments of 0.5ms)
	Node address	03h to EFh (initial value: 03h)
Command metho	od (Operation function)	Interpolation feed (INTERPOLATE), Positioning (POSING), Constant-speed feed (FEED), Positioning at Constant-speed by external input (EX_FEED), Positioning by external input (EX_POSING), Return-to-home (ZRET)
Monitor		Command position, Command speed, Feedback position, Feedback speed, Alarm code, Status of driver
1/0 -:  -	Input signal	Input: 4 points (Signal allocation can be changed) Forward drive prohibition Input (FW-BLK), Reverse drive prohibition Input(RV-BLK), Homing deceleration switch Input (DEC), Latch Input1 (EXT1)
I/O signals	Output signal	Output: 3 points (Signal allocation can be changed) Alarm Output (ALM-B), Driver ready completed Output (READY), Motor operating Output (MOVE)
Power supply	Main power supply	Single-phase 100-120V -15 to +6% (50/60Hz) : 2.7 ~ 6.4A   Single-phase 200-240V -15 to +6% (50/60Hz) : 1.6 ~ 3.9A   Three-phase 200-240V -15 to +6% (50/60Hz) : 1.0 ~ 2.3A
	Control power supply	DC24V±5% Power supply current capacity : 0.25A (0.5A for motor with electromagnetic brake.)
Operating ambient temperature and humidity		Ambient temperature: 0 to+55°C (+32 to +131°F) (non-freezing) Humidity: 85% or less (non-condensing)

## **MECHATROLINK** specifications

	M-III
Profile	Standard Stepping Motor Drivers
Fronte	Standard servo
Data size	32byte, 48byte
Transmission cycle	0.5ms to 4ms (increments of 0.5ms)

#### **Contact Information**

ORIENTAL MOTOR CO.,Ltd.

4-8-1 Higashiueno, Taito-ku, Tokyo 110-8536 Japan

URL: https://www.orientalmotor.co.jp/

FAX: +81-3-5826-2575



TEL: +81-3-6744-0351



스테핑 모터

M-4

## M-III M-11

## **ORIENTAL MOTOR Co.,Ltd.**

Stepping Motor  $\alpha$  STEP **AZ Series Axes Driver MECHATROLINK-III Compatible** 

#### **Features**

- MECHATROLINK-III 2,3,4
- 「Open Loop 」「Closed Loop 」 , Stepping Motor Motor .
- Batteryless





αSTEP AZ Series

### **Specifications**

	Item	Specifications	
	Protocol	MECHATROLINK-III	
	Baud Rate	100Mbps	
MECHATROLINK	Transmission cycle	0.5ms, 1.0ms, 2.0ms, 4.0ms	
communications	Communication cycle	0.5ms to 32ms (increments of 0.5ms)	
	Node address	03h to EFh (initial value: 03h) **AS for the master controller, extended address-compliant is required.	
Command metho	od (Operation function)	Interpolation feed (INTERPOLATE), Positioning (POSING), Constant-speed feed (FEED), Positioning at Constant-speed by external input (EX_FEED), Positioning by external input (EX_POSING), Return-to-home (ZRET)	
Monitor		Command position, Command speed, Feedback position, Feedback speed, Alarm code, Status of driver	
I/O signala	Input signal	Input: 4 points (Signal allocation can be changed) Forward drive prohibition Input (FW-BLK), Reverse drive prohibition Input(RV-BLK), Homing deceleration switch Input (DEC), Latch Input1 (EXT1)	
I/O signals	Output signal	Output: 3 points (Signal allocation can be changed) Alarm Output (ALM-B), Driver ready completed Output (READY), Motor operating Output (MOVE)	
Power supply	Main power supply	DC24V±10% or DC48V±10% Power supply current capacity: 7.0A	
r ower supply	Control power supply	DC24V $\pm$ 10% Power supply current capacity 2-axis: 1.0A, 3-axis: 1.25A, 4-axis: 1.5A	
Operating ambient temperature and humidity		Ambient temperature : 0 to+50°C (+32 to +122°F) (non-freezing) Humidity: 85% or less (non-condensing)	

## **MECHATROLINK** specifications

M-III	
Profile	Standard Stepping Motor Drivers
Profile	Standard servo
Data size	32byte, 48byte
Transmission cycle	0.5ms to 4ms (increments of 0.5ms)

### **Contact Information**

ORIENTAL MOTOR CO.,Ltd.

4-8-1 Higashiueno, Taito-ku, Tokyo 110-8536 Japan

URL: https://www.orientalmotor.co.jp/

TEL: +81-3-6744-0351



FAX: +81-3-5826-2575



SDevice 스테핑 모터

M-4 M-III

M-III M-II

## **ORIENTAL MOTOR Co.,Ltd.**

Network Converter for Controlled Motors NETC01-M3

#### **Features**

NETC01-M3 converts MECHATROLINK-III communication protocol to RS-485 communication protocol.

With NETC01-M3, you can transparently control up to 16 of our RS-485 products by Standard I/O commands from a MECHATROLINK-III master.

In addition to stepping motors, wide variety of products such as sliders, cylinders, and blushless motors will be able to connect to NETC01-M3 in the future.



NETC01-M3

## **Specifications**

Item		Specifications	
Baud Rate		10Mbps	
Communication C	Cycle	0.5ms / 1.0ms / 1.5ms / 2.0ms / 2.5ms / 3.0ms / 3.5ms / 4.0ms / 8.0ms	
Station Address		03h to 0EFh	
Corresponding Profile		MECHATROLINK-III I/O M-III standard	
RS-485 Communication Specification	Electric characteristics	In conformance with EIA-485	
	Baud Rate	625kbps	
	Physicallayer	Asynchronous mode (8 bits, 1 stop bit, no parity)	
	Protocol	GW Protocol Ver.2 (Open protocol established by ORIENTAL MOTOR Co.,Ltd.)	
Connection pattern		16 units Max.	

### **MECHATROLINK** specifications

	M-III
Profile	Standard I/O
Data size	16, 32, 48, 64byte
Transmission cycle	0.5ms, 1.0ms, 1.5ms, 2.0ms, 2.5ms, 3.0ms, 3.5ms, 4.0ms, 8.0ms

#### **Contact Information**

ORIENTAL MOTOR CO., Ltd.

4-8-1 Higashiueno,Taito-ku,Tokyo 110-8536 Japan

URL: https://www.orientalmotor.co.jp/

TEL: +81-3-6744-0351

FAX:+81-3-5826-2575





SDevice 스테핑 모터

M-III M-III

## ORIENTAL MOTOR Co.,Ltd.

Network Converter for Controlled Motors NETC01-M2

#### **Features**

NETC01-M2 converts MECHATROLINK-  $\mbox{\ II\ }$  communication protocol to RS-485 communication protocol.

With NETC01-M2, you can transparently control up to 16 of our RS-485 products by intelligent I/O commands from a MECHATROLINK- II master. In addition to stepping motors, wide variety of products such as sliders, cylinders, and blushless motors will be able to connect to NETC01-M2 in the future.



NETC01-M2

## **Specifications**

Item		Specifications
Baud Rate		10Mbps
Communication C	ycle	0.5ms / 1.0ms / 1.5ms / 2.0ms / 2.5ms / 3.0ms / 3.5ms / 4.0ms / 8.0ms
Station Address		60h to 7Fh
Corresponding Profile		Intelligent I/O
RS-485 Communication Specification	Electric characteristics	In conformance with EIA-485
	Baud Rate	625kbps
	Physicallayer	Asynchronous mode (8 bits, 1 stop bit, no parity)
	Protocol	GW Protocol Ver.2 (Open protocol established by ORIENTAL MOTOR Co.,Ltd.)
Connection pattern		16 units Max.

## **MECHATROLINK** specifications

		M- I	M-II	
		17-byte	17-byte	32-byte
Command	Intelligent I/O	×	×	×
Transmission cycle		2.0ms	0.5ms, 1.0ms, 1.5ms, 2.0ms, 2.5ms, 3.0ms, 3.5ms, 4.0ms, 8.	

#### **Contact Information**

ORIENTAL MOTOR CO.,Ltd.

4-8-1 Higashiueno,Taito-ku,Tokyo 110-8536 Japan

URL: https://www.orientalmotor.co.jp/

TEL: +81-3-6744-0351 FAX: +81-3-5826-2575







## MYCOM, INC.

## 2-Phase NanoDrive™ Stepping Motor Driver

#### **Features**

- Nano Resolution up to 200,000 Steps per Revolution.
- 16 Different Resolution Modes from 1 Full Step to 1/1000th Step.
- Event output (hard output) is available at the time of designated pulse attainment.



MLN20-110/210

## **Specifications**

Item	Specifications
Network Interface	MECHATROLINK-   and MECHATROLINK-
Action function	Fast feeding positioning, Constant feeding, Interpolation feeding, Home searching, External input positioning
Monitor	Current position, Action speed, Encoder counting value, Driver condition
Control function	Near positioning output, Electric gear, Software limit, Auto-backlash correction, Closed control
Input signal I/F	Deceleration limit, Home, Forward rotation prohibition, Reverse rotation prohibition, External clutch (three), Stop
Output signal I/F	Alarm , Brake , Event , SensorOn
Encoder I/F	A/B/Z phases
Applicable motor	2-Phase Stepping Motor PF264-A (B), PF265-A (B), PF268-A (B), PF464-02A (B), PF466-02A (B), PF468-02A (B)
Resolution	Basic step is divided by: 1, 2, 2.5, 5, 8, 10, 20, 25, 40, 50, 100, 125, 200, 250, 500 or 1000
Driver Type	NanoDrive™, Star Bi-Polar, Constant Current Chopper
Phase Current	MLN20-110 : 1.0A/Phase / MLN20-210 : 2.0A/Phase
Input Voltage	AC 100 to 120V $\pm$ 10%

## **MECHATROLINK** specifications

		M- I	M-II	
		17-byte	17-byte	32-byte
Command	Stepping Motor Drivers	×	×	×
Transmission cycle		2ms	0.5ms to 8ms	

#### **Contact Information**

MYCOM, INC.

Head Office 1-29, Ohara, Goryo, Nishikyo, Kyoto 651-8245, TEL: +81-75-382-1580 FAX: +81-75-382-1570

Japan

Tokyo Office 1-8 Suda-cho, kanda, Chiyoda-ku, Tokyo 101- TEL: +81-3-3251-5415 FAX: +81-3-3251-5485

0047, Japan

 Singapore
 TEL:+65-6743-4476
 FAX:+65-6743-4576

 Taiwan
 TEL:+886-2-2778-9021
 FAX:+886-2-2778-9750

E-mail: support@mycom-japan.co.jp URL: http://www.mycom-japan.co.jp/







M-II

## MYCOM, INC.

## 5-Phase NanoDrive™ Stepping Motor Driver

#### **Features**

- Nano Resolution up to 500,000 Steps per Revolution.
- 16 Different Resolution Modes from 1 Full Step to 1/1000th Step.
- Event output (hard output) is available at the time of designated pulse attainment.



MLN50-110/120

## **Specifications**

Item	Specifications
Network Interface	MECHATROLINK-   and MECHATROLINK-
Action function	Fast feeding positioning, Constant feeding, Interpolation feeding, Home searching, External input positioning
Monitor	Current position, Action speed, Encoder counting value, Driver condition
Control function	Near positioning output, Electric gear, Software limit, Auto-backlash correction, Closed control
Input signal I/F	Deceleration limit, Home, Forward rotation prohibition, Reverse rotation prohibition, External clutch (three), Stop
Output signal I/F	Alarm, Brake, Event, SensorOn
Encoder I/F	A/B/Z phases
Applicable motor	5-Phase Stepping Motor PCE5641-AC (BC), PCE5661-AC (BC), PCE5691-AC (BC), PCE5961-AC (BC), PCE5991-AC (BC), PCE59131-AC (BC)
Resolution	Basic step is divided by: 1, 2, 2.5, 5, 8, 10, 20, 25, 40, 50, 100, 125, 200, 250, 500 or 1000
Driver Type	NanoDrive™, Star Bi-Polar, Constant Current Chopper
Phase Current	1.4A/Phase
Input Voltage	AC 100 to 120V $\pm$ 10% (MLU50-110), AC 200 to 220V $\pm$ 10% (MLU50-120)

## **MECHATROLINK** specifications

		M- I	M-II	
		17-byte	17-byte	32-byte
Command	Stepping Motor Drivers	×	×	×
Transmission cycle		2ms	0.5ms to 8ms	

#### **Contact Information**

MYCOM, INC.

Head Office 1-29, Ohara, Goryo, Nishikyo, Kyoto 651-8245, TEL: +81-75-382-1580 FAX: +81-75-382-1570

Japan

Tokyo Office 1-8 Suda-cho, kanda, Chiyoda-ku, Tokyo 101- TEL: +81-3-3251-5415 FAX: +81-3-3251-5485

0047, Japan

 Singapore
 TEL:+65-6743-4476
 FAX:+65-6743-4576

 Taiwan
 TEL:+886-2-2778-9021
 FAX:+886-2-2778-9750

E-mail: support@mycom-japan.co.jp URL: http://www.mycom-japan.co.jp/







M-II

## Schneider Electric Japan Holdings Ltd.

#### **GP4000 Series**

#### **Features**

GP4000 series offers touch screen displays with extensive simultaneous multi-protocol connectivity.

All models in the GP4000 series feature a power-saving 65,536-color TFT display. We accomplished a maximum reduction in power consumption of 84% (compared to previous 12.1" and 10.4" models when using our lighting adjustment function). Previously only our high-end models had a 65,536-color TFT LCD-now the whole lineup of the GP4000 series adopts the 65,536-color TFT display as a standard feature. This offers higher visibility at production sites, and thus contributes to reducing human errors and oversights, as well as enabling more efficient operation and display.



GP4000 Series

### **Specifications**

	Standard Model	W Model
Display Size	3.5" to 12.1"	3.5" to 10.4"
Application Memory	16MB to 32MB	8MB to 16MB
Rated Voltage	DC24V/AC100 to 240V	DC24V
Customizing	Coating: Yes Color: Yes	Coating: Yes Color: Yes

#### **Contact Information**

Schneider Electric Japan Holdings Ltd.

Schneider Electric Osaka Building, 4-4-9 Kitahama, Chuo-ku, TEL: +81-(0)570-056-800

541-0041 Osaka

E-mail:support@proface.co.jp URL:https://www.proface.com/ FAX:+81-(0)6-6208-3134







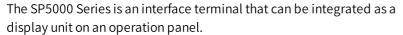
M-III M-II

## Schneider Electric Japan Holdings Ltd.

SP5000 Series

#### **Features**

SP5000 Series is the first Smart Portal product for satisfying customers' needs utilizing large volumes of data and connecting securely both upper networks (office) and lower networks (factory).



Equipped with 2 Ethernet ports, the SP5000 Series can easily and securely create segmented networks.

In addition, SP5000 can stably process production-related big data by combining in one unit the reliability of an HMI and the versatility of an IPC compatible with Windows applications.



SP5000 Series

### **Specifications**

Premium	Screen size: 10" to 15" 16,777,216 color Rated Voltage: DC12V to DC24V
Advanced	Screen size: 7" to 12" 262,144 color Rated Voltage: DC12V to DC24V

#### × Available in 13 patterns

Application Memory: 64MB (CFast Card) Backup Memory: NVRAM 320KB
Application Memory: 64MB (SD Card) Backup Memory: NVRAM 320KB

#### **Contact Information**

Schneider Electric Japan Holdings Ltd.

Schneider Electric Osaka Building, 4-4-9 Kitahama, Chuo-ku, TEL: +81-(0)570-056-800

541-0041 Osaka

E-mail: support@proface.co.jp URL: https://www.proface.com/ FAX: +81-(0)6-6208-3134







배선용기기 M-III M-II

## **SEAL TECH INC.**

## 「ROTOCAP」 -GAT® Slip Ring for MECHATROLINK-III

#### **Features**

- Non-contacting, capacitive data transmission for 100Mbps Fast Ethernet
- Maintenance-free slip ring
- Combined with contacting gold/gold technology for power supply etc.
- For all standard 100BASE-TX protocols
- High resistance against EMI and ESD



**ROTOCAP** series

## **Specifications**

Item	Specifications
Housing outer diameter	φ160mm
Supported protocols	100BASE-TX (Fast Ethernet, EtherCAT, Profinet, POWERLINK, Sercos III, MECHATROLINK-III)
Bit error rate max.	<1×10 <sup>-12</sup>
Latency [μs]	<2μs
Operating temperature	-40°C to +80°C
Supply voltage [VDC]	5, 12, 24VDC
Typical life span	Non-contacting portion / Maintenance-free Gold / Gold contact portion / 100 mil. Rotations
Protection class	IP64 (standard) up to IP65
Option	One air channel available in slip ring unit

### **Contact Information**

SEAL TECH INC.

Head office SHIN-YOKOHAMA IC BLDG. 8F 18-9, SHIN-TEL: +81-45-473-7001 FAX: +81-45-473-7017

YOKOHAMA 3-CHOME, KOHOKU-KU,

YOKOHAMA-SHI, KANAGAWA 222-0033, JAPAN

E-mail: sales@sealtech.co.jp URL: http://www.sealtech.co.jp/







M-III M-II

## HOKUYO AUTOMATIC CO., LTD.

## Optical repeater for MECHATROLINK-III

#### **Features**

This device is an optical repeater with 100Mbps transmission speed. It can be directly connected to MECHATROLINK-III network. Its transmission distance is Max. 100m.

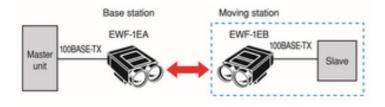
This wireless optical communication enables the non-contact communication between mobile machines. There will be no concerns about cable damages because cables will not be used for communication between the two repeaters.



EWF-0,1EA/B-N

### **Specifications**

Item	Specifi	cations
Model No.	EWF-0EA/B-N	EWF-1EA/B-N
Transmission distance	50m	100m
Directional angle	Full angle 1.4°	Full angle 1.0°
Power source	24VDC (±10%)	
Current consumption	120mA (24VDC)	
Laser safety standard	Class 1	
Transmission system	Full-duplex two-way transmission	
Transmission speed	100Mbps	
Interface	Ethernet	
Communication standard	IEEE802.3u 100BASE-TX Auto-negotiation compliant	
Modulation system	Direct modulation	
Connection	Mini clamp connector (Power/CD signal), Modular jack RJ-45 (Ethernet)	
Reception output (CD)	Photo-coupler open-collector (Withstand pressure 36 voltage 1.5V)	6V), ON when receiving light (Max.50mA, residual
Level voltage output (Analog output)	Approx.0 to 3V, connector S2B-PH-K-S (JST) This is available only when adjusting the optical axis.	External wiring is forbidden.
Ambient illuminance	10,000 lux or less to (Halogen/mercury lamp)	
Ambient temperature	-10°C to +50°C	
Ambient humidity	85%RH or less (non icing)	
Impact resistance	490m/s <sup>2</sup> , Each 10 times in X, Y and Z directions	
Vibration resistance	Double amplitude 1.5mm, 10 to 55Hz, each 2 hours in X, Y and Z direction	
Protective structure	IP40	



#### **Contact Information**

HOKUYO AUTOMATIC CO., LTD.

International Sales Dept. Higobashi Union Building, 1-9-6 Edobori, Nishi- TEL: +81-6-6441-2239 FAX: +81-6-6441-2204

ku, Osaka, 550-0002 Japan

E-mail: info@hokuyo-aut.jp

URL: https://www.hokuyo-aut.co.jp/



M-II

## 배선용기기

# YASKAWA ELECTRIC CORPORATION

## **HUB module for MECHATROLINK-III MT2000**

#### **Features**

• MT2000 enables mixture of star connection and star connection and the cascade connection in a hub module for MECHATROLINK-III.



MT2000

## **Specifications**

Item	Specifications
Data Transfer Method	MECHATROLINK-III
Baud Rate	100Mbps
Transmission Medium	MECHATROLINK-III cable model JEPMC-W6012-□□-E
Number of MECHATROLINK Ports	Master-side port: 1 (CNM1) to connect the master station Slave-side port: 8 (CNS1 to CNS8) to connect slave stations
Arbiteration	FIFO arbiteration discipline Error when multiple slave-side ports receive data at the same time
Transmission Delay Time between Ports	600ns (typ)
Indicators	1 indicator for power supply ON/OFF, 9 indicators for port link status
External Power Supply	+24VDC (±20%) 0.5A (CN1)
Installation Orientation	Vertical or horizontal
Dimensions (mm)	$185 (H) \times 50 (W) \times 115 (D)$
Mass	0.8kg
Exterior	Painted

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India

Europe: Germany, Sweden, Israel, Italy, France, Spain, Finland, Netherlands, Slovenia, Czech republic, Turkey



M-II

## 배선용기기

## TOYO ELECTRIC CORP.

## TOYO ELECTRIC CORP. MECHATROLINK-II (Under development)

#### **Features**

Space Optical Transfer Unit corresponding to MECHATROLINK-II. I realize the reliable wireless communication that was not able to be realized in infrared rays by the wireless communication of the electric wave method.

Space Optical Transfer Unit for MECHATROLINK suggests "the ultimate wiring that can solve problems such as guidance of the wiring or the extension of the communications distance-saving" for the FA device in the next generation.



## **Specifications**

Item	Specifications
Control method	A Optical repeater by MECHATROLINK- II
Transmission rate	10Mbps
Power voltage	Rated voltage: 24VDC
Connected to	MECHATROLINK-II I/F
Transmission distance	from 0.2m to 100m

Note: The sale time / a model / the price is undecided because of a product is under development examination inside now.

#### **Contact Information**

TOYO ELECTRIC CORP.

ELECTRIC DEV. 1-39 HIKISAWA KAGIYA-CHO KASUGAI-CITY Aichi, TEL: +81-568-88-1181 FAX: +81-568-88-3086

480-0393, Japan

URL: http://www.toyo-elec.co.jp/en/





Peripheral Devices 배선용기기

## M-4 M-III

M-II

## YASKAWA ELECTRIC CORPORATION

### Repeater for MECHATROLINK-II JEPMC-REP2000

#### **Features**

The JEPMC-REP2000 is the repeater for MECHATROLINK- II. It expands the network and increases the number of slaves which can be connected. The REP2000 has two MECHATROLINK- II connection ports. One is at the end of the master network side and the other is at the beginning of the expanded side. The ports have no functional differences, and incorporate a termination resistor.



JEPMC-REP2000

Receiving signal wave distortion due to reflections or noise on the transmission routes is removed by the internal circuit, resulting in correct waveform transmission.

## **Specifications**

Item	Specifications
Applied communication method	MECHATROLINK- II
Master side port	Master side network connection 50m up to 14 slaves or 30m with 15 slaves However, the number of slaves which are allowed connection should be supported by the master product specifications.
Expanded side port	Expanded side network connection 50m up to 15 slaves or 30m with 16 slaves However, the number of slaves which are allowed connection should be supported by the master product specifications.
Indicator	LED 3 points (Power ON during transmission for both master side and slave side)
External power	+24VDC (+19.2 to +28.8V), 100mA
Dimensions	Width 30mm × Height 160mm × Depth 77mm

Note: One Network allows the connection of only one repeater.

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India

Europe: Germany, Sweden, Israel, Italy, France, Spain, Finland, Netherlands, Slovenia, Czech republic, Turkey







Spec M-4

M-III M-II

## **KEYENCE CORPORATION**

#### **MECHATROLINK-III communication cable**

#### **Features**

- MECHATROLINK-III cable (RJ45 on both ends)
   →0.2m/0.5m/1m/3m/5m/10m/20m
- MECHATROLINK-III cable (RJ45/IMI conversion) →0.5m/1m/3m/5m/10m/20m
- Selectable as required connector on the controller and servo amplifier.



SV2-Lxx (RJ45 on both ends) SV2-LxxA (RJ45/IMI conversion)

## **Specifications**

Item	Specifications
Transmission media/cable	Category 5e-compliant, STP cross cable
Cable color	Green
	SV2-Lxx: RJ45 on both ends SV2-LxxA: RJ45 and IMI

#### **Contact Information**

#### **KEYENCE CORPORATION**

1-3-14, Higashinakajima Higashiyodogawa-ku, Osaka 533- TEL: +81-6-6379-1271 FAX: +81-6-6379-1270

8555, Japan

E-mail : seigyo-qa@keyence.co.jp URL : http://www.keyence.co.jp





M-II

## 케이블 • 커넥터

## JMACS Japan Co., Ltd.

## **MECHATROLINK-III Communication Cable (Movable)**

#### **Features**

- RX-PNET/C Cables are industrial Ethernet cables with shielding and EMI protection and used for MECHATROLINK-III.
  - 1. Communication characteristic.
    - · Meets electrical frequency standard of ISO/IEC11801 (Cat.5) and TIA/EIA-568C.2 (Cat.5e)
  - 2. Complies with UL and cUL standards.
    - · AWM 20276, CSA C22.2 No.210
  - 3. Bending resistant.
  - · 90 degrees left and right bending cycle test. Passed bending test of 10 million times or
  - 4. Environmental characteristic-resistant.
    - $\cdot \, \text{Standard jacket material is oil and heat-resistant PVC.} (Complies \, \text{with RoHS directive})$
  - - $\cdot$  Length marks imprinted on the cable make measuring easy.

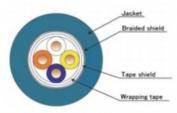


RX-PNET/C

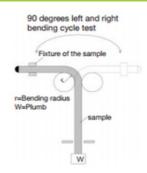
### **Specifications**

Item	Specifications
Conductor size	27AWG (0.1mm <sup>2</sup> , Special conductor)
Number of cores	2p (4c)
Insulation color	White, Yellow, Blue, Orange
Shield	AL/PET + Braided shield
Jacket color (standard)	Blue
Cable outer diameter (mm)	Approx. 4.5
Approximate weight (kg/km)	30
Transmission distance (at 20°C)	30m
Use connectors	Industrial mini I/O connector, RJ-45 connector

#### **Cross Section**



#I cut it into length you like and sell the cable



#### **Contact Information**

JMACS Japan Co., Ltd.

Head office/Osaka Office 11F KM Nishiumeda bldg, 7-20-1 Fukushima, TEL: +81-6-4796-0080 FAX: +81-6-4796-0090

Fukushima-ku, Osaka-city, Osaka, 553-0003

Tokyo Office 4F Halifax kudan bldg, 2-4-4 Kudanminami, Chiyoda- TEL: +81-3-3239-5204 FAX: +81-3-3556-1240

ku, Tokyo, 102-0074

URL: http://www.jmacs-j.co.jp/en/





M-III

## JMACS Japan Co., Ltd.

#### **MECHATROLINK-III Network cable**

#### **Features**

PNET/B from JMACS is a industrial Ethernet cable with the necessary shielding and EMI protection for MECHATROLINK-III.

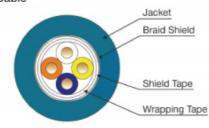
- 1. Transmission characteristic
  - ISO/IEC11801 (Cat.5), TIA/EIA-568C.2 (Cat.5e)
- 2. Safety Standard
  - UL/c-UL Listing (UL444 CM, CSA C22.2 No.214)
- 3. Environmental Regulation
  - Lead-Free, Oil and heat resistant PVC jacket
  - RoHS Directive REACH Regulation (SVHC)
- 4. Other Features
  - Excellent flexibility
  - · Length marks imprinted on the cable make measuring easy.



### **Specifications**

Item	Specifications
Cross Sectional Area	22AWG (0.34mm <sup>2</sup> , Stranded Conductor)
No. of core	2p (4c)
Insulation color	White, Yellow, Blue, Orange
Shield	AL/PET+Braid
Jacket color	Blue
Overall diameter (mm)	Approx. 6.5
Approx.Mass (kg/km)	60
Max.Transmission Distance (m)	100
Connector	Industrial Mini I/O Connectors, RJ-45

#### Cross-Section of Cable



\*\* Also available cable with connectors. Please contact us.

#### **Contact Information**

JMACS Japan Co., Ltd.

Head office/Osaka Office 11F KM Nishiumeda bldg, 7-20-1 Fukushima, TEL: +81-6-4796-0080 FAX: +81-6-4796-0090

Fukushima-ku, Osaka-city, Osaka, 553-0003

Tokyo Office 4F Halifax kudan bldg, 2-4-4 Kudanminami, TEL: +81-3-3239-5204 FAX: +81-3-3556-1240

Chiyoda-ku, Tokyo, 102-0074

URL: http://www.jmacs-j.co.jp/en/







M-III

## **TE Connectivity Corporation.**

# MECHATROLINK-III Connector KIT P/N 2040008-2

#### **Features**

- Connector Kit specially designed for MECHATROLINK-III
- The connector for the cable to be applied on one end is packed in a package.
- Crimp tool for the shield is available.
- A RoHS compliant product.



1891800-1



2040008-2

### **Specifications**

- Specially designed for MECHATROLINK-III
- Acceptable wire: DYDEN CORPORATION (RS-M 20276 AWG 22/4C).
- Please refer to the instruction sheet 114-5431 for the correct installation of the connector to the cable.
- Mini Press with Die kit P/N 1891800-2 for the shields is also available.

#### **Contact Information**

Tyco Electronics Japan G.K.

Communications & Industrial Solutions (CIS)

Japan - Kawasaki 3-5-8 Hisamoto, Takatsuku, Kawasaki City, TEL: +81-44-844-8111

Kanagawa

 China - Shanghai
 TEL: +86-21-6485-0000

 Germany - Bensheim
 TEL: +49-6251-133-0

 United States - Harrisburg,
 TEL: +1-717-564-0100

PA

 Korea - Seoul
 TEL: +82-2-3415-4500

 Italy - Torino
 TEL: +39-011-401-2111







M-II

케이블 • 커넥터

## **TE Connectivity Corporation.**

## MECHATROLINK-III Connector KIT Bulk Pack Style P/N 2069578-2

#### **Features**

- 1000 sets of connector kits specially designed for MECHATROLINK-III
- 1000 sets of the connectors to be applied on the one end of the cable are packed in a box.
- Crimp tool for the shied is available.
- A RoHS compliant product



2069578-2 1000 set - pack

### **Specifications**

- Specially designed for MECHATROLINK-III
- Applicable wire: DAIDEN Co., Ltd (RS-M3 20276 AWG 22/4C)
- The instruction sheet 114-5431 contains information essential for proper assembly of the connector.
- Mini Press with Die kit P/N 1891771-2 for the shields is also available.

#### **Contact Information**

Tyco Electronics Japan G.K.

Communications & Industrial Solutions (CIS)

Japan - Kawasaki 3-5-8 Hisamoto, Takatsuku, Kawasaki City, TEL: +81-44-844-8111

Kanagawa

China - Shanghai TEL: +86-21-6485-0000 Germany - Bensheim TEL: +49-6251-133-0 TEL: +1-717-564-0100 United States - Harrisburg,

Korea - Seoul TEL: +82-2-3415-4500 Italy - Torino TEL: +39-011-401-2111







M-11

## **DYDEN CORPORATION**

#### Cable for MECHATROLINK-III

#### **Features**

- MECHATROLINK-III conformity
- Oil-resistant, Flame-retardant Jacket
- UL Recognized Component (AWM style 20276)

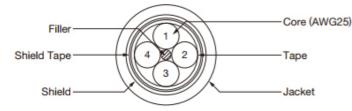


RS-MIII (20276) AWG22/4C

## **Specifications**

Item	Specifications
Size	AWG22×4Core
Insulation color	Orange • White • Yellow • Blue
Insulation diameter (mm)	1.50
Jacket color	Blue
Overall diameter (mm)	6.4 (max 6.7)
Approx. Mass (kg/km)	65
Dielectric strength (V/min)	AC 500
Impedance (Ω)	85 to 115 (at 1 to 100MHz)

#### Cross-Section of Cable



CoreNo.	Color
1	Orenge
2	White
3	Yellow
4	Blue

### **MECHATROLINK** specifications

Matching Connector Kit: 2040008-2 (Tyco Electronics Japan G.k.)

#### **Contact Information**

DYDEN CORPORATION			
U.S.A. Sun-Wa Technos	Woodfield Executive Plaza 1051 Perimeter	TEL:+1-847-969-0081	FAX:+1-847-969-0083
America, Inc.	Drive, Suite 625, Schaumburg, IL., 60173, U.S.A.		
EUROPE Sun-Wa Technos	Kaiserstr. 7, D-60311 Frankfurt am Main,	TEL:+49-69-1338-950	FAX: +49-69-1338-9511
(Europe) GmbH	Germany		
CHINA Shanghai Sun-Wa	Room 1205, South Tower, Hongkong Plaza, 283	TEL:+86-21-6390-6600	FAX:+86-21-6390-6590
Technos Co., Ltd.	Huaihai zhong Rd. Shanghai, P.R.C.		
OTHERS Sun-Wa Technos	Sanno Office	TEL:+81-3778-1225	FAX:+81-3776-8330
Corporation	Yamada Sanno Building, 14-3, 4-Chome, Sanno,		
	Ota-ku, Tokyo 143-8560 Japan		

URL: http://www.dydencables.com/





M-III
M-II

# Nichigoh Communication Electric Wire Co., Ltd.

## **MECHATROLINK-III Network Cables**

#### **Features**

- ① Safety Standard: Refar to Cable Standard
- @ Characteristic for Communication: ISO/IEC 11801 2nd, TIA/EIA 568B Cat5e
- $\textcircled{4} \ Conductor \ Composition: Concentric-lay-stranded } \\$
- $\bigcirc$  Insertion loss:  $\le$  18.0dB/100m (100MHz)
- **6** Environmental Regulation : RoHS Directive



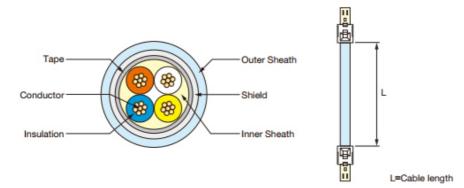
ML3-C0005

### **Specifications**

Item	Specifications
Cross Sectional Area	0.34mm <sup>2</sup> (22AWG)
No.ofcore	4c
Sheald	Braid
Cable Color	Light Blue
Max. Transmission Distance	100m
Connector	Industrial Mini Connectors

#### Cable Standard

04515 014114414		
Item	Safety Standard	
CE	ISO/IEC 11801	
UL (Listing)	UL 444	
c-UL (Listing)	CSA C22.2 No.214	
UL(AWM)	UL758 AWM Style 20276	
GOST-R	GOST 18404.0	



Product model	Cable length
ML3-C0002	0.2m
ML3-C0005	0.5m
ML3-C0030	3m
ML3-C0050	5m
ML3-C0100	10m
ML3-C0300	30m

93

#### **Contact Information**

Meiho Electronics Co.,LTD.

Updated on: Apr 4, 2019

218, Takayanagi, Meito, Nagoya, Aichi, 465-0034, Japan.

TEL: +81-52-776-6431

FAX:+81-52-776-6535







M-III

M-II

## 케이블 • 커넥터

## YASKAWA CONTROLS CO., LTD.

#### **MECHATROLINK-III Network Cables**

#### **Features**

High-quality cables can be used to connect segments in a MECHATROLINK-III network to transfer information and signals. A variety of segments, such as host controllers, servo drives, stepping motor drives, inverters, I/O signals, and sensors are available for MECHATROLINK-III networks.

- Strict quality management, from material inspection to production.
- RoHS-compliant.



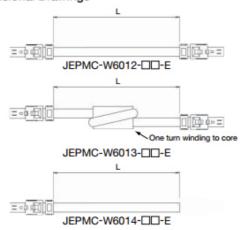
Model: JEPMC-W6012-□□-E JEPMC-W6013-□□-E JEPMC-W601□-□□-E

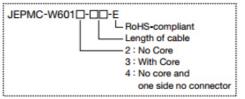
### **Specifications**

Item	Specifications
Transmission Cable	Four a-core shielded twisted-pair wire Category-5 E
Cable Color	Blue
Maximum Transmission Distance	100m
Minimum Distance between Stations	0.2m
Connector	IMI connectors use

Note: For more information, contact our international business dept.

#### **Dimensional Drawings**





We provide various kinds of cables attached RJ-45 connector for MECHATROLINK-III networks. For more information, contact our international business dept.

#### **Contact Information**

YASKAWA CONTROLS CO., LTD.

U.S.A. 2121 Norman Drive South Waukegan IL 60085, TEL: +1-847-887-7206 FAX: +1-847-887-7030

USA

Representative Office Hauptstraße 185, 65760 Eschborn, Germany TEL: +49-6196/569-322 FAX: +49-6196/569-398

Europe

c/o Yaskawa Electric Corporation Yukuhashi Overseas Sales Div. TEL: +81-930-24-8630 FAX: +81-930-24-8637

Division 2-13-1 Nishimiyaichi, Yukuhashi,

Fukuoka, 824-8511 Japan

URL: http://yaskawa-control.co.jp/







M-III

## **KUNSHAN FUJIX ELECTRONIC CO.,LTD**

#### **MECHATROLINK-III Communication Cable**

#### **Features**

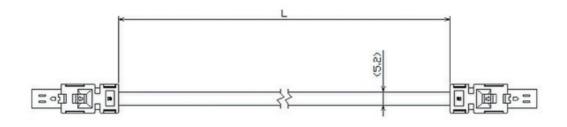
- MLCC-3 is High quality, High-speed communication of MECHATROLINK-III system is realized.
- Slim type (Conductor Size AWG26 / Outside Diameter 5.2mm)
- Communications Features TIA/EIA 568B Cat5e Compliance
- Safety Standard UL20379
- The PVC jacket excellent in heat resistance and oil resistance
- RoHS Compliance



## **Product Specification**

Item	Specification
Conductor Size	26AWG
The number of cores	2P (4c)
Shield	Braid Shield
Color of Cable	Blue (Lusterless)
Outside diameter of Cable	5.2mm
Maximum Transmission Distance	100m
Minimum Distance Between Stations	0.2m
Terminal Connector	Industrial Mini I/O Connectors

Part number	Length (L)
MLCC-3-002	0.2m
MLCC-3-005	0.5m
MLCC-3-010	1m
MLCC-3-020	2m
MLCC-3-030	3m
MLCC-3-040	4m
MLCC-3-050	5m
MLCC-3-100	10m
MLCC-3-200	20m
MLCC-3-300	30m
MLCC-3-500	50m



#### **Contact Information**

KUNSHAN FUJIX ELECTRONIC CO., LTD.

Lisheng Road 77, Huaqiao Town, Kunshan, Jiangsu, China

E-mail:taneike@fujix-net.co.jp URL:http://web.fujix-net.com/ TEL:+86-512-57696297 FAX:+86-512-57696296







## 케이블 • 커넥터

M-4 M-III M-II

## **TE Connectivity Corporation.**

## MECHATROLINK-II Connector KIT P/N 1827525-1

#### **Features**

- Connector Kit specially designed for MECHATROLINK-II
- The connector for the cable to be applied on one end is packed in a package.
- Crimp tool for the shield is available.
- A RoHS compliant product.







1891800-1

## **Specifications**

- Specially designed for MECHATROLINK- II.
- Acceptable wire: DYDEN CORPORATION (HRZFV-SB AWG 25  $\times$  2C).
- Please refer to the instruction sheet 114-5404 for the correct installation of the connector to the cable.
- Die Kit P/N 1891771-1 for the shields is also available.



1891771-1

#### **Contact Information**

Tyco Electronics Japan G.K.

Communications & Industrial Solutions (CIS)

Japan - Kawasaki 3-5-8 Hisamoto, Takatsuku, Kawasaki City, TEL: +81-44-844-8111

Kanagawa

China - Shanghai TEL: +86-21-6485-0000 Germany - Bensheim TEL: +49-6251-133-0 United States - Harrisburg, TEL: +1-717-564-0100

PΑ

Korea - Seoul TEL: +82-2-3415-4500 Italy - Torino TEL: +39-011-401-2111







M-II

## **TE Connectivity Corporation.**

# MECHATROLINK- II Connector KIT Bulk Pack Style P/N 2013706-1

#### **Features**

- 500 sets of connector kits specially designed for MECHATROLINK-II.
- 500 sets of the connectors to be applied on the one end of the cable are packed in a box.
- Crimp tool for the shied is available.
- A RoHS compliant product





500 set - pack

### **Specifications**

- Specially designed for MECHATROLINK- II
- Applicable wire: DYDEN CORPORATION (HRZFV-SB AWG 25  $\times$  2C)
- The instruction sheet 114-5404 contains information essential for proper assembly of the connector.
- Die Kit P/N 1891771-1 for the shields is available.

#### **Contact Information**

Tyco Electronics Japan G.K.

Communications & Industrial Solutions (CIS)

Japan - Kawasaki 3-5-8 Hisamoto, Takatsuku, Kawasaki City, TEL: +81-44-844-8111

Kanagawa

 China - Shanghai
 TEL: +86-21-6485-0000

 Germany - Bensheim
 TEL: +49-6251-133-0

 United States - Harrisburg,
 TEL: +1-717-564-0100

PA

 Korea - Seoul
 TEL: +82-2-3415-4500

 Italy - Torino
 TEL: +39-011-401-2111





#### Peripheral Devices 케이블 • 커넥터

## M-4 M-III

M-II

## **DYDEN CORPORATION**

#### Cable for MECHATROLINK-II

#### **Features**

- MECHATROLINK- II conformity
- Oil-resistant, Flame-retardant Jacket

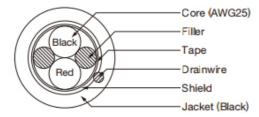


HRZFV-SBAWG25/2C

## **Specifications**

Item	Specifications
Size	AWG25 × 2Core
Insulation color	Black, Red
Insulation diameter (mm)	1.34
Jacket color	Black
Overall diameter (mm)	4.8±0.2
Approx. Mass (kg/km)	30
Dielectric strength	AC 1000

#### Cross-Section of Cable



## **MECHATROLINK** specifications

Matching Connector Kit: 1827525-1 (Tyco Electronics Japan G.K.)

## **Contact Information**

DYDEN CORPORATION			
U.S.A. Sun-Wa Technos	Woodfield Executive Plaza 1051 Perimeter	TEL: +1-847-969-0081	FAX:+1-847-969-0083
America, Inc.	Drive, Suite 625, Schaumburg, IL., 60173, U.S.A.		
EUROPE Sun-Wa Technos	Kaiserstr. 7, D-60311 Frankfurt am Main,	TEL:+49-69-1338-950	FAX:+49-69-1338-9511
(Europe) GmbH	Germany		
CHINA Shanghai Sun-Wa	Room 1205, South Tower, Hongkong Plaza, 283	TEL: +86-21-6390-6600	FAX:+86-21-6390-6590
Technos Co., Ltd.	Huaihai zhong Rd. Shanghai, P.R.C.		
OTHERS Sun-Wa Technos	Sanno Office	TEL:+81-3778-1225	FAX:+81-3776-8330
Corporation	Yamada Sanno Building, 14-3, 4-Chome, Sanno,		
	Ota-ku, Tokyo 143-8560 Japan		

URL: http://www.dydencables.com/







# 케이블 • 커넥터 M-III

M-II

## YASKAWA CONTROLS CO., LTD.

#### **MECHATROLINK-II Network Cables**

#### **Features**

High-quality cables can be used to connect segments in a MECHATROLINK-II network to transfer information and signals. A variety of segments, such as host controllers, servo drives, stepping motor drives, inverters, I/O signals, and sensors are available for MECHATROLINK-II networks.

- Strict quality management, from material inspection to production.
- Off-the-shelf cables of standard lengths for quick delivery.
- RoHS-compliant.



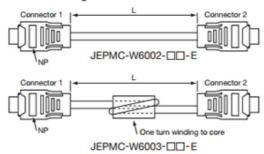
Model: JEPMC-W6002-□□-E JEPMC-W6003-□□-E (with ferrite core)

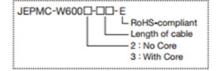
### **Specifications**

Item	Specifications
Transmission Cable	Two-core shielded twisted-pair wire
Cable Color	Black
Maximum Transmission Distance	50m (100m with a repeater.)
Minimum Distance between Stations	0.5m
Terminator	130Ω

Note: For more information, contact our international business dept.

#### **Dimensional Drawings**





#### **Contact Information**

YASKAWA CONTROLS CO., LTD.

U.S.A. 2121 Norman Drive South Waukegan IL 60085, TEL: +1-847-887-7206 FAX: +1-847-887-7030

USA

Representative Office Hauptstraße 185, 65760 Eschborn, Germany TEL: +49-6196/569-322 FAX: +49-6196/569-398

Europe

Overseas Sales Div. c/o Yaskawa Electric Corporation Yukuhashi TEL: +81-930-24-8630 FAX: +81-930-24-8637

Division 2-13-1 Nishimiyaichi, Yukuhashi,

Fukuoka, 824-8511 Japan

URL: http://yaskawa-control.co.jp/





#### M-4 케이블 • 커넥터 M-III

M-II

## YASKAWA CONTROLS CO., LTD.

## MECHATROLINK-II Network Cable (Flexible Type)

#### **Features**

Made under the same strict quality control standards as standard cables, this flexible cable can be used for MECHATROLINK-II communications. It is more flexible than an optical cable and is best suited for wiring with a cable bearer.

- Durable with a fatigue strength of 10 million cycles in U-bend testing.
- Reinforced bending capability between the wire and a connector.
- Can be used with a standard cable, and communicated up to 20 m.
- All flexible cables are RoHS-compliant.



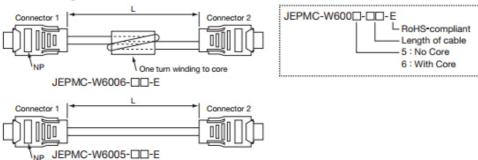
#### Model: JEPMC-W6006-05-E (with ferrite core) JEPMC-W6006-10-E (with ferrite core) JEPMC-W6006-15-E (with ferrite core) JEPMC-W6005-05-E (No ferrite core) JEPMC-W6005-10-E (No ferrite core) JEPMC-W6005-15-E (No ferrite core)

## **Specifications**

Item	Specifications
Transmission Cable	Two-core shielded twisted-pair wire (Flexible type)
Cable Color	Black
Maximum Transmission Distance	20 m (when using flexible cable)
Minimum Distance between Distance	0.5 m
Terminator	130Ω

<sup>\*:</sup> For more information, contact your Yaskawa Controls sales representative.

#### **Dimensional Drawings**



#### **Contact Information**

YASKAWA CONTROLS CO., LTD.

U.S.A. 2121 Norman Drive South Waukegan IL 60085, TEL: +1-847-887-7206 FAX: +1-847-887-7030

Representative Office Hauptstraße 185, 65760 Eschborn, Germany TEL: +49-6196/569-322

Overseas Sales Div. c/o Yaskawa Electric Corporation Yukuhashi

TEL: +81-930-24-8630 FAX: +81-930-24-8637

Division 2-13-1 Nishimiyaichi, Yukuhashi,

Fukuoka, 824-8511 Japan

URL: http://yaskawa-control.co.jp/



FAX: +49-6196/569-398

Europe



Peripheral Devices 내장부품(ASIC등)

M-4 M-III

M-II

## YASKAWA ELECTRIC CORPORATION

MECHATROLINK-4/MECHATROLINK-III Communication LSI JL-L000A Sample Kit JZPMC-OPM 4 SK-1-E

#### **Features**

- This kit contains 5 set of main component parts for MECHATROLINK-4 standard circuit.
- It is convenient for prototype development.



JZPMC-OPM4SK-1-E

### **Specifications**

Item	Specification
Model number	JZPMC-OPM4SK-1-E
One set contains the following items	JL-L000A (ASIC) 5 pcs. FLASH for JL-L000 5pcs. DP83849IVS/NOPB (PHY) 5pcs. S558-5999-Z5-F (pulse transformer) 10pcs. BLM18SG121TN1D (filter) 20pcs. MPZ2012S300AT (filter) 5pcs. BLM21BB201SN1D (filter) 40pcs. 2294415-2 (IMI connector) 10pcs.

Note: Use a sample kit as a trial kit. All parts in the sample kit are not covered under warranty of our company.

#### **Attention**

To purchase this product, it is necessary to join the MECHATROLINK Members Association (MMA) with Board, Executive, User, Regular Membership.

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India

Europe: Germany, Sweden, Israel, Italy, France, Spain, Finland, Netherlands, Slovenia, Czech republic, Turkey



Peripheral Devices

M-4 M-III

M-II

## 내장부품(ASIC등)

## YASKAWA ELECTRIC CORPORATION

# MECHATROLINK-4/MECHATROLINK-III Master/Slave Communication LSI JL-L000A

### **Features**

- A product with MECHATROLINK-4 can develop easily in the combination of this LSI and Host CPU.
- It also supports MECHATROLINK-III.
- A FLASH memory dedicated to this ASIC is also included.
- RoHS-compliant



JL-L000A

## **Specifications**

Item	Specification	
Model	JZPMC-MD001A-60P	
Application	MECHATROLINK-4/MECHATROLINK-III master/slave	
Packing unit	60 pcs.	
Dimension	JL-L000A: PFBGA (0.8mm pitch) 481pin 21x21mm	
Notes	JL-L000A dedicated FLASH(8pin SOP 5.2x7.9 mm)are included(60pcs.).	

#### **Attention**

To purchase this LSI, it is necessary to join the MECHAROLINK members Association (MMA) with Board, Executive, User, Regular Membership.

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India

Europe: Germany, Sweden, Israel, Italy, France, Spain, Finland, Netherlands, Slovenia, Czech republic, Turkey





M-4

M-III M-II

# **Tokyo Electron Device Ltd.**

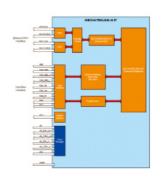
### **MECHATROLINK-III Master / Slave IP core**

#### **Features**

MECHATROLINK-III is a communication standard meets the demands of the motion field network market that required higher transmission speed, transmission cycle, transmission distance, maximum slave number, more than ever.

By adopting this IP core provided by Tokyo Electron Device Co., Ltd. for Xilinx's FPGA enables to reduce number of parts, development cost and development period greatly.

- Master function or Slave function
- Built-in CPU in FPGA enables to perform intelligent function using RTOS with one chip
- Synchronized to a clock of up to 66 MHz, connectable to a high-speed synchronous bus such as PCI without reduced throughput



### **Specification**

Item	Specifications	
Target FPGA	(ilinx Spartan®-6 LX FPGA / Spartan-6 LXT FPGA / Zynq®-7000 SoC	
Network Interface	MECHATROLINK-III Network ×2 port (M II I/F 100Mbps Full Duplex designated)	
Host Interface	32bit shared memory interface / 32bit register interface	
Host Interrupt	2 level Interrupt request output	
Host Interface Byte Order	Little endian	
Product Type	TIP-ML3MST-S6/7Z-PROJ (MECHATROLINK-III Master Dedicated IP) TIP-ML3SLV-S6/7Z-PROJ (MECHATROLINK-III Slave Dedicated IP)	

#### Attention

To purchase this LSI, it is necessary to join the MECHATROLINK Members Association (MMA) with Board, Executive, Regular Membership.

#### **Contact Information**

TOKYO ELECTRON DEVICE LIMITED

Yokohama East Square 1-4, Kinko-cho, Kanagawa-ku, TEL: +81-45-443-4034 FAX: +81-45-443-4059

Yokohama City, Kanagawa 221-0056, Japan

URL: http://www.inrevium.com/product/industry/tip-ml3mst-proj.html





Peripheral Devices 내장부품(ASIC등)

M-4

M-III M-II

# YASKAWA ELECTRIC CORPORATION

MECHATROLINK-III Sample Kit JEPMC-OPM3SK-1-E, JEPMC-OPM3SK-2-E

#### **Features**

This kit contains 5 set of main component parts for MECHATROLINK-III standard circuit.

It is convenient for prototype development.



JEPMC-OPM3SK-1-E JEPMC-OPM3SK-2-E

# **Specifications**

JL-100 Samplekit	
Model Number	JEPMC-OPM3SK-1-E
One set contains the following five items	JL-100A (ASIC's 144pins 12mm) 5parts H1102NL (pulse transformer) 10parts BLM21BB201SN1D (filter) 40parts DP83849IVS (PHY) 5parts 1981386-1 (connector) 10parts

JL-101 Samplekit	
Model Number	JEPMC-OPM3SK-2-E
One set contains the following five items	JL-101A (ASIC's 144pins 20mm) 5parts H1102NL (pulse transformer) 10parts BLM21BB201SN1D (filter) 40parts DP83849IVS (PHY) 5parts 1981386-1 (connector) 10parts

 $Note: Use \ a \ sample \ kit \ as \ a \ trial \ kit. \ All \ parts \ in \ the \ sample \ kit \ are \ not \ covered \ under \ warranty \ of \ our \ company.$ 

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



Peripheral Devices 내장부품(ASIC등)

M-4

M-III M-II

# YASKAWA ELECTRIC CORPORATION

MECHATROLINK-III Sample Kit JEPMC-OPM3SK-3-E, JEPMC-OPM3SK-4-E

#### **Features**

This kit contains 5 set of main component parts for MECHATROLINK-III standard circuit. It is convenient for prototype development.



JEPMC-OPM3SK-3-E JEPMC-OPM3SK-4-E

# **Specifications**

JL-102 Samplekit	
Model Number	JEPMC-OPM3SK-3-E
One set contains the following five items	JL-102A (ASIC's 144pins 12mm) 5parts H1102NL (pulse transformer) 10parts BLM21BB201SN1D (filter) 40parts DP83849IVS (PHY) 5parts 1981386-1 (connector) 10parts

JL-103 Samplekit	
Model Number	JEPMC-OPM3SK-4-E
One set contains the following five items	JL-103A (ASIC's 100pins 14mm) 5parts H1102NL (pulse transformer) 10parts BLM21BB201SN1D (filter) 40parts DP83849IVS (PHY) 5parts 1981386-1 (connector) 10parts

 $Note: Use \ a \ sample \ kit \ as \ a \ trial \ kit. \ All \ parts \ in \ the \ sample \ kit \ are \ not \ covered \ under \ warranty \ of \ our \ company.$ 

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India





내장부품(ASIC등)

Spec M-4

M-III M-II

# YASKAWA ELECTRIC CORPORATION

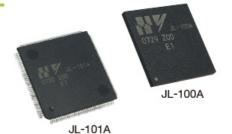
MECHATROLINK-III Master/Slave Communication LSI JL-100A, JL-101A

## **Features**

- A product with MECHATROLINK-III can develop easily in the combination of this LSI and Host CPU.
- JL-100A/JL-101A is compatibility with functional. Only packages differ.

JL-100A: FBGA 144pins JL-101A: LQFP 144pins

RoHS-compliant



### **Specifications**

JL-100A		
Item	Specifications	
Model	JL-100A-FBGA-76P	JL-100A-FBGA-304P
Application	MECHATROLINK-III, master/slave-use	
Packing unit	76 pcs.	304 pcs.
LSI dimensions	FBGA (0.8mm pitch Ball Grid Array Package) 144pins 12 $ imes$ 12mm BODY, pin interval 0.8mm	

JL-101A		
Item	Specifications	
Model	JL-101A-LQFP-60P	JL-101A-LQFP-300P
Application	MECHATROLINK-III, master/slave-use	
Packing unit	60 pcs.	300 pcs.
LSI dimensions	LQFP (Low Profile Quad FLAT Package) 144 pins 20 × 20mm BODY, pin interval 0.5mm	

#### **Attention**

• To purchase this LSI, it is necessary to join the MECHATROLINK Members Association (MMA) with Board, Executive, Regular Membership.

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



M-4

M-III

M-II

# 내장부품(ASIC등)

# YASKAWA ELECTRIC CORPORATION

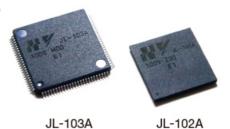
MECHATROLINK-III Slave Communication LSI JL-102A, JL-103A

#### **Features**

- A slave product with MECHATROLINK-III can develop easily in the combination of this LSI and Host CPU.
- JL-102A/JL-103A is compatibility with functional.

Only packages differ. JL-102A: FBGA 144pins JL-103A: LQFP 100pins

RoHS-compliant



### **Specifications**

JL-102A			
Item	Specifications		
Model	JL-102A-FBGA-76P	JL-102A-FBGA-304P	
Application	MECHATROLINK-III, slave-use		
Packing unit	76 pcs.	304 pcs.	
LSI dimensions	FBGA (0.8mm pitch Ball Grid Array Packa	FBGA (0.8mm pitch Ball Grid Array Package) 144pins 12 × 12mm BODY, pin interval 0.8mm	

JL-103A		
Item	Specifications	
Model	JL-103A-LQFP-90P	JL-103A-LQFP-450P
Application	MECHATROLINK-III, slave-use	•
Packing unit	90 pcs.	450 pcs.
LSI dimensions	LQFP (Low Profile Quad FLAT Package) 100pins 14 × 14mm BODY, pin interval 0.5mm	

#### **Attention**

• To purchase this LSI, it is necessary to join the MECHATROLINK Members Association (MMA) with Board, Executive, Regular Membership.

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India





M-4

M-III

M-II

# 내장부품(ASIC등)

# YASKAWA ELECTRIC CORPORATION

MECHATROLINK-II Sample Kit JL-080, JL-052, JL-098

#### **Features**

JL-080 (Master and slave)

JL-052 (slave only)

JL-098 (Master only)

This kit contains 5 set of main component parts for MECHATROLINK-III standard circuit.

It is convenient for prototype development.



Model: JEPMC-OPM2SK-□-E

### **Specifications**

JL-080 Sample Kit	
Model Number	JEPMC-OPM2SK-1-E
Qty. 5 of five different parts (total of 25 parts)	JL-080B (ASICs 144 pins □ 20 mm) T202004DT (pulse transformer) SN65HVD05DR (driver/receiver) SG-8002JC 40 MHz (crystal oscillator) 1903815-1 (USB 2-stage connector)

JL-052 Sample Kit	
Model Number	JEPMC-OPM2SK-2-E
Qty. 5 of five different parts (total of 25 parts)	JL-052C (ASICs 100 pins □ 14 mm) T202004DT (pulse transformer) SN65HVD05DR (driver/receiver) FA-365 15 MHz (crystal oscillator) 1903815-1 (USB 2-stage connector)

JL-098 Sample Kit	
Model Number	JEPMC-OPM2SK-3-E
Qty. 5 of five different parts (total of 25 parts)	JL-098B (ASICs 144pins □ 20 mm) T202004DT (pulse transformer) SN65HVD05DR (driver/receiver) SG-8002CE 25MHz (crystal oscillator) 1903815-1 (USB 2-stage connector)

Note: Use a sample kit as a trial kit. All parts in the sample kit are not covered under warranty of our company.

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India







M-4 M-III

M-II

# YASKAWA ELECTRIC CORPORATION

MECHATROLINK- II Slave Exclusive Communication LSI JL-052C

#### **Features**

- A product with MECHATROLINK can easily be developed, whatever the communication protocol.
- This LSI applies only to MECHATROLINK-II.
- Because of the slave-exclusive design, this product is cheaper and more economical than the JL-080 to develop a MECHATROLINK- II slave device.
- RoHS-compliant



JL-052C

# **Specifications**

JL-052C		
Item	Specifications	
Model	TC220EA002EFGA2JDZ	TC220EA002EFG-A2
Application	MECHATROLINK- II , slave-use	
Packing unit	90 pcs. 450 pcs.	
LSI dimensions	LQFP (Low Profile Quad FLAT Package), 100 pins, 14mm × 14mm BODY, pin interval 0.5mm	

#### **Attention**

• To purchase this LSI, it is necessary to join the MECHATROLINK Members Association (MMA) with Board, Executive, Regular Membership.

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India







M-4 M-III

M-II

# 내장무품(A

# YASKAWA ELECTRIC CORPORATION

# MECHATROLINK- I / II Master Communication LSI JL-080B

#### **Features**

- A product with MECHATROLINK can easily be developed, whatever the communication protocol.
- This LSI applies to both MECHATROLINK- | and MECHATROLINK- || .
- RoHS-compliant



JL-080B

# **Specifications**

JL-080B		
Item	Specifications	
Model	190C640EFG005JDZ TC190C640EFG-005	
Application	MECHATROLINK- I / II , master use	
Packing unit	60 pcs. 300 pcs.	
LSI dimensions	LQFP (Low Profile Quad FLAT Package), 144 pins, 20mm × 20mm BODY, pin interval 0.5mm	

#### **Attention**

• To purchase this LSI, it is necessary to join the MECHATROLINK Members Association (MMA) with Board, Executive, Regular Membership.

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India





M-4 M-III

M-II

# 내장부품(ASIC등)

# YASKAWA ELECTRIC CORPORATION

# MECHATROLINK- I / II, Master Communication LSI JL-098B

#### **Features**

- A product with MECHATROLINK- I, II can develop easily in the combination of this LSI and Host CPU.
- Power supply voltage is a 3.3V single power supply.
- RoHS-compliant.



JL-098B

# **Specifications**

JL-098B	
Item Specifications	
Model	TC220C620EFG104JDZ
Application	MECHATROLINK-   ,    master use
Packing unit	300pcs
LSI dimensions	LQFP (Low Profile Quad FLAT Package) 144pins 20 × 20mm Body, pin interval 0.5mm

### **Attention**

• To purchase this LSI, it is necessary to join the MECHATROLINK Members Association (MMA) with Board, Executive, Regular Membership.

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India



M-4 M-III M-II

# 내장부품(ASIC등)

# YASKAWA ELECTRIC CORPORATION

#### **MECHATROLINK-II Pulse Transformer T202004ND**

#### **Features**

- Exclusively for MECHATROLINK
- For JL-080B, J-052C, JL-098B standard circuits
- RoHS-compliant



T202004ND

# **Specifications**

Item	Specifications	
Model	T202004ND	
Application	MECHATROLINK- II master/slave-use	
Packing unit	300 pcs. (1 reel)	
Dimensions	Width 11mm × Height 9mm × Depth 11mm, 8pins SMD	

#### **Attention**

• To purchase this Pulse Transformer, it is necessary to join the MECHATROLINK Member Association (MMA) with Board, Executive, Regular Membership.

#### **Price**

Item	Specifications
Model	T202004ND
Packing unit	300 pcs. (1 reel)
Price	¥105,000

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India

M-4

M-II

#### 개발 툴 M-III

# Hilscher Japan KK

# **MECHATROLINK-III Analyzer**

#### **Features**

- Real time precise measurement of delay and jitter
- Passive recording with zero-delay
- TAP (Test Access Points) with 4 Ethernet ports
- Possible to find out real network performance beside catalogue data
- Suitable for predictive maintenance, trouble shooting, development and evaluation
- Third-party software for MECHATROLINK-III Analyzer



https://github.com/mechatrolink-analyzer/mechatrolink-analyzer

• Supporting Multi-protocol by one hardware for all Real Time Ethernet

# **Specifications**

#### Basic Specification & Characteristic

Model	NANL-C500-RE NANL-B500G-RE	
Host PC Interface	PCI Gigabit Ethernet	
Device Type	Built-in Portable	
Capture Interface	$4 \times 10/100$ Ethernet, $4 \times$ digital IO 3.3 V $4 \times 10/100$ Ethernet, $4 \times$ digital IO 3.3 V/24 V	
Network Access	Zero Delay / Test Access Point	
Capture Behavior	Fully Passive / 10 ns Resolution / Capture Error Fram	nes

#### PC Hardware requirements

CPU	Intel compatible CPU, approx. 2 GHz or faster
RAM	1GB Min. RAM
Display	SVGA 1024×768 16bit colors or better
Drive	DVD ROM Drive (Software installation)
Hard disk	20MB HDD space available (netANALYZER) Min. 1GB HDD space available (Log data)

#### PC Software requirements

OS	Windows XP professional SP3 (32bit, 64bit) Windows Vista (32bit, 64bit) Windows 7 (32bit, 64bit)
Related Software	Microsoft .NET Framework Version 2.0 WireShark (Free software)

#### **Contact Information**

Hilscher Japan KK

Ichome Sanbankan Bldg. 1-3-12 Shinjuku, Shinjuku-ku, Tokyo,

160-0022 Japan

E-mail: info@hilscher.jp

URL: https://www.hilscher.com/



개발 툴

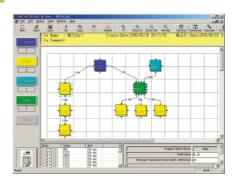
M-4 M-III M- II

# MECHATROLINK협회

# **MECHATROLINK-III Utility Software**

#### **Features**

- System configuration is defined by putting the icons (C1/C2 master, slave, Hub) and connecting them with lines in the canvas and setting the parameters such as communication data size, cable length, retry times, and so on. This software calculates the minimum transmission cycle time in that system.
- This software is free for MMA members. MMA members can download it from MMA website for MMA members only.



### **Contact Information**

MECHATROLINK 협회			
일본 본부	(우)358-0013 사이타마현 이루마시 카미후지사와 480번지	TEL:+81-4-2962-7920	FAX:+81-4-2962-6343
독일 지부	Hauptstr. 185 65760 Eschborn Germany	TEL:+49-6196-569420	
미국 지부	2121 Norman Drive South, Waukegan, IL 60085, U.S.A.	TEL:+1-847-887-7231	
한국 지부	서울특별시 영등포구 국제금융로 10 Three IFC 35층	TEL:+82-2-368-8875	
중국 지부	No.16, East Nanping Road, Hunnan High-tech.	TEL: +86-24-24696016	
(심양 사무국)	Industrial Development Zone, Shenyang, 110171 CHINA		
중국 지부	22/F One Corporate Avenue No.222 Hubin	TEL:+86-21-53852070	
(상해 사무국)	Road, Huangpu District Shanghai, 200021 CHINA		
대만 지부	12F., No.207, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)	TEL:+886-2-8913-1333	
MMA Asean	151 Lorong Chuan, #04-02A, New Tech Park, SINGAPORE 556741	TEL:+65 6488 8365	
인도 지부	17/A, 2nd Main, Electronic City, Phase-1, Hosur Road, Bengaluru - 560 100, INDIA	TEL: +91-80-4244-1920	

E-mail: mma@mechatrolink.org URL: http://www.mechatrolink.org



개발 툴

M-4 M-III M-11

# MECHATROLINK협회

# **MECHATROLINK-III Sample application**

#### **Features**

Sample application (C language source code) is prepared as an aid in software development.

- Sample application includes the example of initialization, command process and so on as C source code.
- Sample for C1 master: Standard servo profile commands are used. (Not all commands)
- Sample for slave: Standard I/O profile commands are used. (Not all commands)
- This software is free for MMA members. MMAmembers can download it from MMA website for MMA members only.



### **Contact Information**

MECHATROLINK 협회			
일본 본부	(우)358-0013 사이타마현 이루마시 카미후지사와 480번지	TEL: +81-4-2962-7920	FAX:+81-4-2962-6343
독일 지부	Hauptstr. 185 65760 Eschborn Germany	TEL: +49-6196-569420	
미국 지부	2121 Norman Drive South, Waukegan, IL 60085, U.S.A.	TEL:+1-847-887-7231	
한국 지부	서울특별시 영등포구 국제금융로 10 Three IFC 35층	TEL: +82-2-368-8875	
중국 지부	No.16, East Nanping Road, Hunnan High-tech.	TEL: +86-24-24696016	
(심양 사무국)	Industrial Development Zone, Shenyang, 110171 CHINA		
중국 지부	22/F One Corporate Avenue No.222 Hubin	TEL: +86-21-53852070	
(상해 사무국)	Road, Huangpu District Shanghai, 200021 CHINA		
대만 지부	12F., No.207, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)	TEL:+886-2-8913-1333	
MMA Asean	151 Lorong Chuan, #04-02A, New Tech Park, SINGAPORE 556741	TEL: +65 6488 8365	
인도 지부	17/A, 2nd Main, Electronic City, Phase-1, Hosur Road, Bengaluru - 560 100, INDIA	TEL:+91-80-4244-1920	
E mail , mma@machatralin	l. a.a.		

E-mail: mma@mechatrolink.org URL: http://www.mechatrolink.org







개발 툴

M-111 M-111

# H말 둘

# YASKAWA ELECTRIC CORPORATION

Network Analyzer for MECHATROLINK- I / II 87215-95121-S0103

#### **Features**

The Network Analyzer can perform the following:

• The communication of MECHATROLINK per station is displayed online. (Network Status Display)



87215-95121-S0103

# **Specifications**

Item	Specifications
Product name	MECHATROLINK- I / II Applied Network Analyzer
Product model	87215-9512x-S010y (x and y indicate design order)
Input power & power consumption	100VAC (85 to 132 VAC) 50/60Hz, 10W
Operation temperature	0 to 55℃
Storage temperature	-20 to +85°C
Mass	850g
Tool (Software) model	JEPMC-NWAN700 (Media is CD-ROM. Connection cable between unit and PC attached.) (Note: This software is not included in the Network Analyzer Main Unit, and should ordered separately if necessary.)

# **System Configurations**

The Network Analyzer consists of main unit and tool (software to operate after installation on the PC). The PC for tool installation should be supplied at your end. The PC required specifications are as follow:

Item	Specifications
PC model	PC/AT compatible machine
OS	Windows98/2000/XP, WindowsNT4.0
Memory required	32Mbytes and above
Hard disk capacity	100Mbytes and above
Screen resolution	$800 \times 600$ dots and above
COM port	1 port available as exclusive port

 $Note: MECHATROLINK\ cable\ to\ connect\ the\ Network\ Analyzer\ to\ the\ transmission\ circuit,\ to\ be\ separately\ ordered\ if\ necessary.$ 

#### **Contact Information**

Please access YASKAWA website (Please click. Then you can access.)

YASKAWA has sales and after-sales service all around the world.

America: U.S.A., Brazil, Canada, Mexico

Asia Pacific: China, Korea, Taiwan, Singapore, India





개발 틀

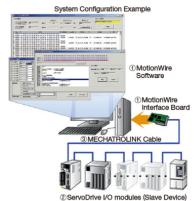
M-4 M-III M- II

# **YE DIGITAL Corporation**

#### **MotionWire StarterKit**

#### **Features**

- Easy setup the MECHATROLINK Network Starter kit consists of Windows-based PC and PCI bus-interface board. You can use the network easily and immediately without complected configuration, after set up the hardware, put interface board to PC and install application.
- Just prepare this master-controller for the slave device development It was necessary to prepare all the corresponding master controllers in the slave developing equipment before. But this starter kit can freely compose the command issuing a master controller and apply as a virtual master controller, and also can add them easily an arbitrary command of an original protocol to say nothing of the standard command protocol with the command definitions.
- Embedded the monitoring function of Network Analyzer class Starter kit realizes the trace monitoring function on the interface board, which is monitoring the sending/receiving data between specified stations using the advantage of the own master control function. The confuguration of trigger condition enables to get the communication log (the maximum 16MB) in pinpoint and also collect communication data every communication cycle as well as the Network Analyzer.
- Realize the communication sequence control with script Easy command script can control up to 21 slave communication command issues. It realizes the power when the programed communication sequence perform repeatedly like the  $\,$ communication examinations.



Hardware: Use the MECHATROLINK Interface Boardfor MotionWi only, which enables PC to be embedded the M-1/2 communication interface.

Software: sets up the communication of embedded interface board, transports the MECHATROLINK command and displays the communication data, for user easily.

© Slave device
Prepare the MECHATROLINK-capable products. All devices including
MECHATROLINK-capable general device enable to connect.

③ MECHATROLINK cables
Terminator is necessary to connect the terminal of the
MECHATROLINK-2-capable cable and connector. (\*)

★: not including in starter kit, please prepare separately.

# **Specifications**

Item	Specifications			
PC	PC/AT DOS/V Compatibility			
CPU	Pentium II 300MHz more			
Main memory	128MB more (recommended 256MB more)			
Amount of HDD space	20MB more			
Resolution	XGA monitor (1024×768)			
Color number	256 more (recommended 65536 more)			
OS	WindowsXP SP1 or later, Windows2000 SP2 or later			
PCI bus	1 empty slot more			
Others	Need CD-ROM drive (in install only)			

# **MECHATROLINK** specifications

		M- I	M- I M- II	
		17-byte	17-byte	32-byte
Command	Servo	×	×	×
	Stepping Motor Drivers	×	×	×
	Intelligent I/O	×	×	×
	Simple I/O	×	×	×
	Inverter	×	×	×
Transmission cycle		2ms	0.25ms to 8ms	

Note: It operates as a master equipment.

#### **Contact Information**

YE DIGITAL Corporation

Updated on: Mar 1, 2019

Iruma office 480, Kamifujisawa, Iruma, Saitama 358-8555, Japan TEL: +81-4-2962-5973 FAX: +81-4-2966-0748

URL: https://www.ye-digital.com



117

# 업데이트 내역

#### 업데이트 날짜:2024/10/22

#### ■업데이트

• Micronet Co.: Contact Information is updated

#### 업데이트 날짜:2024/09/11

#### ■업데이트

• MG Co., Ltd.: Contact Information is updated

#### 업데이트 날짜:2024/05/17

#### ■업데이트

• HOKUYO AUTOMATIC CO., LTD.: Contact Information is updated

#### 업데이트 날짜:2024/02/08

#### ■삭제

- Anywire Corporation: MECHATROLINK-III Bit Distributed I/O Terminal AB023-M2
- Anywire Corporation: MECHATROLINK Bit Distributed I/O Terminal AB023-M1

#### 업데이트 날짜:2023/11/21

#### ■추가

- YASKAWA ELECTRIC CORPORATION: MECHATROLINK-4/MECHATROLINK-III Communication LSI JL-L000A Sample Kit JZPMC-OPM 4 SK-1-E
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK-4/MECHATROLINK-III Master/Slave Communication LSI JL-L000A

#### ■업데이트

- 한국요꼬가와전기 : Leading Edge Controller (with MECHATROLINK-III Interface)
- Anywire Corporation: MECHATROLINK-III Bit Distributed I/O Terminal AB023-M2
- HOKUYO AUTOMATIC CO., LTD.: Optical repeater for MECHATROLINK-III

### 업데이트 날짜:2022/11/29

#### ■업데이트

- Hilscher Japan KK: MECHATROLINK-III Analyzer
- Hilscher Japan KK: Contact Information is updated

#### 업데이트 날짜:2022/02/01

#### ■추가

• ORIENTAL MOTOR Co.,Ltd.: Stepping Motor αSTEP AZ Series AC Power Input Driver MECHATROLINK-III Compatible

#### 업데이트 날짜:2022/01/18

#### ■추가

• ORIENTAL MOTOR Co.,Ltd.: Stepping Motor αSTEP AZ Series AC Power Input Driver MECHATROLINK-III Compatible

#### ■업데이트

• ORIENTAL MOTOR Co., Ltd.: Stepping Motor αSTEP AZ Series Axes Driver MECHATROLINK-III Compatible

#### 업데이트 날짜:2022/01/06

#### ■업데이트

• ORIENTAL MOTOR Co.,Ltd.: Stepping Motor αSTEP AZ Series Axes Driver MECHATROLINK-III Compatible

#### 업데이트 날짜:2022/01/05

#### ■업데이트

- ORIENTAL MOTOR Co., Ltd.: Stepping Motor αSTEP AZ Series Axes Driver MECHATROLINK-III Compatible
- ORIENTAL MOTOR CO.,Ltd.: Contact Information is updated

#### 업데이트 날짜:2021/05/18

#### ■업데이트

• TECHNO HORIZON Co., Ltd.: Contact Information is updated

#### 업데이트 날짜:2021/05/17

#### ■업데이트

• TECHNO HORIZON Co., Ltd.: Contact Information is updated

#### 업데이트 날짜:2021/01/07

#### ■업데이트

- DYDEN CORPORATION: Cable for MECHATROLINK-III
- DYDEN CORPORATION: Cable for MECHATROLINK-II
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK-III Sample Kit JEPMC-OPM3SK-1-E, JEPMC-OPM3SK-2-E
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK-III Sample Kit JEPMC-OPM3SK-3-E, JEPMC-OPM3SK-4-E
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK- II Sample Kit JL-080, JL-052, JL-098

#### 업데이트 날짜:2020/09/14

#### ■삭제

• DELTA TAU Data Systems Inc.: Turbo PMAC2 Motion Controller Using MECHATROLINK-III

#### 업데이트 날짜:2020/06/08

#### ■업데이트

• OMRON Corporation: Contact Information is updated

#### 업데이트 날짜:2020/06/05

#### ■삭제

YASKAWA ELECTRIC CORPORATION: Direct Drive Motor DYNASERV Intelligent Drive DrvGIII

#### 업데이트 날짜:2020/04/23

#### ■업데이트

- YASKAWA ELECTRIC CORPORATION: PCI Standard MECHATROLINK-III Interface Card JAPMC-NT112A-E
- YASKAWA ELECTRIC CORPORATION: PCI Standard MECHATROLINK-II Interface Card JAPMC-NT110, JAPMC-NT111

#### 업데이트 날짜:2019/03/05

#### ■업데이트

• Anywire Corporation: MECHATROLINK Bit Distributed I/O Terminal AB023-M1

#### 업데이트 날짜:2019/01/29

#### ■삭제

- Sky Link Corporation: MECHATROLINK-III StarterKit
- Sky Link Corporation: MECHATROLINK-III Analyzer

#### 업데이트 날짜:2019/01/28

#### ■삭제

• ORIENTAL MOTOR Co.,Ltd.: Stepping Motor and Driver Package α STEP High-Efficiency ARL series

#### 업데이트 날짜:2018/06/02

#### ■업데이트

• ALGOSYSTEM CO.,LTD.: MECHATROLINK-III Master Modules

#### 업데이트 날짜:2018/04/29

#### ■업데이트

• Micronet Co.: Real-time OS Intime

#### 업데이트 날짜:2018/02/06

#### ■업데이트

• MECHATROLINK Members Association: MECHATROLINK-III Sample application

#### 업데이트 날짜:2017/12/27

#### ■업데이트

- YASKAWA ELECTRIC CORPORATION: Board-type Machine Controller MP2100, MP2100M
- YASKAWA ELECTRIC CORPORATION: Board-type Machine Controller MP2110, MP2110CP, MP2110M, MP2110MCP
- YASKAWA ELECTRIC CORPORATION: Flexible Machine Controller MP2200
- YASKAWA ELECTRIC CORPORATION: All-in-one Machine Controller MP2300
- YASKAWA ELECTRIC CORPORATION: Compact All-in-one Machine Controller MP2300S
- YASKAWA ELECTRIC CORPORATION: Compact Machine Controller MP2400
- YASKAWA ELECTRIC CORPORATION : PCI Standard MECHATROLINK- II Interface Card JAPMC-NT110, JAPMC-NT111
- YASKAWA ELECTRIC CORPORATION: Board-type Machine Controller MP2111T, MP2111TM, MP2111TMCP
- YASKAWA ELECTRIC CORPORATION: Integrated Machine Controller MP3200
- YASKAWA ELECTRIC CORPORATION: PCI Standard MECHATROLINK-III Interface Card JAPMC-NT112A-E
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK-III Motion control module SVC-01
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK-III Motion control module (with CPU function) MPU-01
- YASKAWA ELECTRIC CORPORATION : MECHATROLINK- II  $\Sigma$ -V series AC Servo Drives
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK- II Σ-V mini Ultra-Compact AC Servo Drives
- YASKAWA ELECTRIC CORPORATION: Direct Drive Motor DYNASERV Intelligent Drive DrvGIII
- YASKAWA ELECTRIC CORPORATION : AC Servo Drives  $\Sigma$ -7-Series SERVOPACKs  $\Sigma$ -7C Two-Axis SERVOPACKs with Built-in Controller
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK-III Σ-V series AC Servo Drives
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK-III Σ-V mini Ultra-Compact AC Servo Drives
- YASKAWA ELECTRIC CORPORATION: Slave Devices for MECHATROLINK-II IO2310, IO2330, PL2900, PL2910, AN2900, AN2910
- YASKAWA ELECTRIC CORPORATION: Slave Devices for MECHATROLINK-II IO2900, IO2910, IO2920, IO2950
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK-III 64-points I/O Module MTD2310
- YASKAWA ELECTRIC CORPORATION: Analog Input Module MTA2900
- YASKAWA ELECTRIC CORPORATION : Analog Output Module MTA2910
- YASKAWA ELECTRIC CORPORATION: Pulse Input Module MTP2900

- YASKAWA ELECTRIC CORPORATION: Pulse Output Module MTP2910
- YASKAWA ELECTRIC CORPORATION: Network Machine Vision System MYVIS YV260
- YASKAWA ELECTRIC CORPORATION: Repeater for MECHATROLINK-II JEPMC-REP2000
- YASKAWA ELECTRIC CORPORATION: HUB module for MECHATROLINK-III MT2000
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK- II Slave Exclusive Communication LSI JL-052C
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK- | / || Master Communication LSI JL-080B
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK- 1/II, Master Communication LSI JL-098B
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK- II Pulse Transformer T202004ND
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK-III Master/Slave Communication LSI JL-100A, JL-101A
- YASKAWA ELECTRIC CORPORATION: MECHATROLINK-III Slave Communication LSI JL-102A, JL-103A
- YASKAWA ELECTRIC CORPORATION: Network Analyzer for MECHATROLINK- | / || 87215-95121-S0103

#### 업데이트 날짜:2017/12/09

#### ■삭제

• MOVENSYS Inc.: High-End General Motion Controller SMP Series



MECHATROLINK is the trademark of MECHATROLINK Members Association.

#### Contact:

If you wnat to join the MECHATROLINK Members Association or have any inquiries, please contact us below:



### **MECHATROLINK Members Association**

URL: http://www.mechatrolink.org/

MMA Japan (Head Office)

480 Kamifujisawa, Iruma, Saitama, 358-0013 Japan

• Phone: +81-4-2962-7920

• FAX: +81-4-2962-6343

• e-mail: mma@mechatrolink.org

MMA Germany | Hauptstr. 185 65760 Eschborn Germany

• Phone: +49-6196-569420

• e-mail: mma@mechatrolink.de

MMA U.S.

2121 Norman Drive South, Waukegan, IL 60085, U.S.A.

• Phone: +1-847-887-7231

• e-mail: mma-us@mechatrolink.org

MMA Korea

35F, Three IFC, 10 Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul

• Phone: +82-2-368-8875

• e-mail: mma-kr@mechatrolink.org

MMA China

**Shenyang Office** 

No.16, East Nanping Road, Hunnan High-tech. Industrial Development Zone,

Shenyang, 110171 CHINA

• Phone: +86-24-24696016

• e-mail: mma-cn@mechatrolink.org

Shanghai Office

22/F One Corporate Avenue No.222 Hubin Road, Huangpu District Shanghai, 200021 CHINA

• Phone: +86-21-53852070

• e-mail: mma-sh@mechatrolink.org

**MMA Taiwan** 

12F., No.207, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)

• Phone: +886-2-8913-1333

• e-mail: mma-tw@mechatrolink.org

MMA Asean

151 Lorong Chuan, #04-02A, New Tech Park, SINGAPORE 556741

• Phone: +65 6488 8365

• e-mail: mma-sg@mechatrolink.org

MMA India

17/A, 2nd Main, Electronic City, Phase-1, Hosur Road, Bengaluru - 560 100, INDIA

• Phone: +91-80-4244-1920

e-mail: mma-in@mechatrolink.org

Published in Japan October 2024