

MP2200 - MECHATROLINK-II

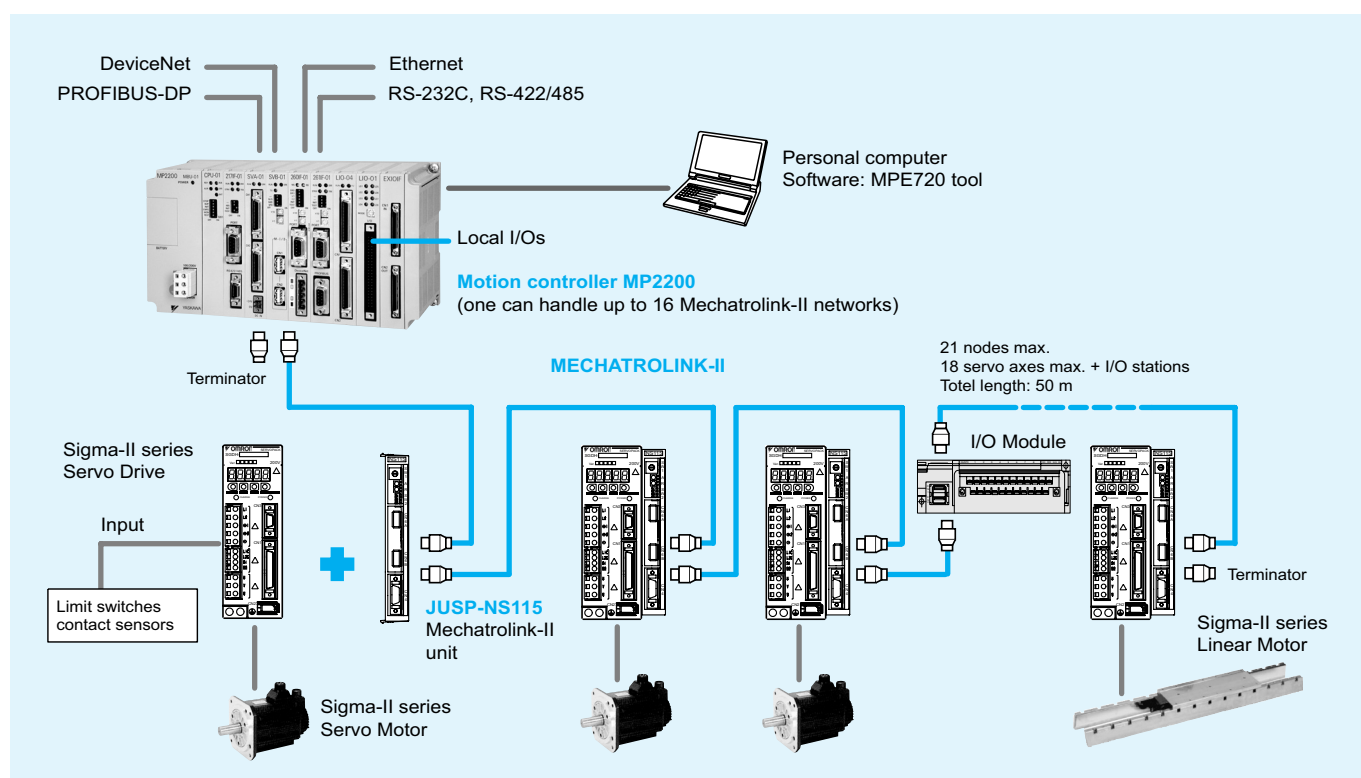
Motion controller

Stand-alone solution for advanced motion control

- Up to 256 axes controlled with minimum wiring
- Self configuration of nodes for an easy setup
- DeviceNet, PROFIBUS and ethernet network interfaces provide easy connectivity to any system
- Supports position, speed and torque control
- Electronic CAM profiles and axes synchronization
- The high-speed bus MECHATROLINK-II is specially designed for motion control
- Support for I/Os and pulse inputs locally and over the network
- Access to the complete system from one point.



System configuration



Specifications

General specifications

Hardware specifications

| Items | Specifications |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environmental conditions | Ambient operating temperature 0 to 55 °C |
| | Ambient storage temperature -25 to 85 °C |
| | Ambient operating humidity 30% to 95% (with no condensation) |
| | Ambient storage humidity 5% to 95% (with no condensation) |
| | Pollution level Pollution level 1 (conforming to JIS B 3501) |
| | Corrosive gas There must be no combustible or corrosive gas. |
| | Operating altitude 2,000 m above sea level or lower |
| Mechanical operating conditions | Vibration resistance Conforming to JIS B 3502: 10 to 57 Hz with single-amplitude of 0.075 mm 57 to 150 Hz with fixed acceleration of 1 G 10 sweeps each in X, Y, and Z directions (sweep time: 1 octave/min) |
| | Shock resistance Conforming to JIS B 3502: Peak acceleration of 147 m/s ² (15 G) twice for 11 ms each in the X, Y, and Z directions |
| Electrical operating conditions | Noise resistance Conforming to EN 61000-6-2, EN 55011 (Group 1, Class A) |
| Installation requirements | Ground Ground to 100 Ω max. |
| | Cooling method Natural cooling |


Sequential function specifications

| Items | Specifications |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Control method | Sequence: High-speed and low-speed scan methods |
| Programming language | Ladder diagram: Relay circuit |
| | Text-type language: Numeric operations, logic operations, etc. |
| Scanning | Two scan levels: High-speed scan and low-speed scan |
| | High-speed scan time setting: 0.5 to 32 ms (integral multiple of MECHATROLINK communication cycle) |
| | Low-speed scan time setting: 2 to 300 ms (integral multiple of MECHATROLINK communication cycle) |
| User drawings, functions and motion programs | Startup drawings (DWG.A): 64 drawings max. up to three hierarchical drawing levels |
| | Interrupt processing drawings (DWG.I): 64 drawings max. up to three hierarchical drawing levels |
| | High-speed scan process drawings (DWG.H): 200 drawings max. up to three hierarchical drawing levels |
| | Low-speed scan process drawings (DWG.L): 500 drawings max. up to three hierarchical drawing levels |
| | Number of steps: Up to 1,000 steps per drawing |
| | User functions: Up to 500 functions |
| | Motion programs: Up to 256 |
| Data memory | Revision history of drawings and motion programs |
| | Security function for drawings and motion programs |
| | Common data (M) registers: 64 Kwords |
| | System (S) registers: 8 Kwords |
| | Drawing local (D) registers: Up to 16 Kwords per drawing |
| | Drawing constant (#) registers: Up to 16 Kwords per drawing |
| | Input (I) registers: 5 Kwords (including internal input registers) |
| Trace memory | Output (O) registers: 5 Kwords (including internal output registers) |
| | Constant (C) registers: 16 Kwords |
| Trace memory | Data trace: 128 Kwords (32 Kwords, 4 groups), 16 points defined |
| Memory backup | Program memory: Flash memory: 8 MBytes (User area: 5.5 MBytes) definition files, ladder programs, motion programs, etc. |
| | Data memory: Battery backup: 256 Kbytes, M registers, S registers, alarm history, trace data |
| Data types | Bit (relay): ON/OFF |
| | Integer: -32768 to +32767 |
| | Double-length integer: -2147483648 to +2147483647 |
| | Real number: ± (1.175E-38 to 3.402E+38) |
| Register designation method | Register number: Direct designation of register number |
| | Symbolic designation: Up to 8 alphanumeric characters (up to 200 symbols per drawing) With automatic number or symbol assignment |


Motion control function specifications

| Item | | Specifications | | |
|---------------------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-----|
| Interface | | MECHATROLINK-I, MECHATROLINK-II | | |
| Number of controlled axes/module | | Up to 16 axes | | |
| Control specifications | PTP control | | Linear, rotary, and infinite-length | |
| | Interpolation | | Up to 16 linear axes, 2 circular axes, and 3 helical axes | |
| | Speed reference output | | Yes | |
| | Torque reference output | | Yes | |
| | Phase control | | Yes | |
| | Position control | Positioning | | Yes |
| | | External positioning | | Yes |
| | | Zero point return | | Yes |
| | | Interpolation | | Yes |
| | | Interpolation with position detection function | | Yes |
| | | JOG operation | | Yes |
| STEP operation | | Yes | | |
| Parameter changes during motion command execution | | Yes | | |
| Reference unit | | mm, inch, deg, or pulse | | |
| Reference unit minimum setting | | 1, 0.1, 0.01, 0.001, 0.0001, 0.00001 | | |
| Maximum programmable value | | -2147483648 to +2147483647 (signed 32-bit value) | | |
| Speed reference unit | | Reference unit/s designation: mm/s, inch/s, deg/s, pulse/s Reference unit/min. designation: mm/min, inch/ min, deg/min, pulse/min Percentage designation: Percentage of rated speed | | |
| Acceleration/deceleration type | | Linear, asymmetric, S-curve, exponent | | |
| Acceleration/deceleration reference unit | | Reference unit/s ² designation: mm/s ² , inch/s ² , deg/s ² , pulse/s ² Acceleration/deceleration time constant: Time from 0 to rated speed (ms) | | |
| Override function | | Positioning: 0.01% to 327.67% by axis | | |
| Coordinate system | | Rectangular coordinates | | |
| Zero point re- turn | DEC1+ phase-C pulse | | Yes | |
| | ZERO signal | | Yes | |
| | DEC1+ ZERO signal | | Yes | |
| | Phase-C pulse | | Yes | |
| | Only phase-C pulse | | Yes | |
| | POT and phase-C pulse | | Yes | |
| | POT | | Yes | |
| | Home limit switch and phase-C pulse | | Yes | |
| | HOME | | Yes | |
| | NOT and phase-C pulse | | Yes | |
| | NOT | | Yes | |
| INPUT and phase-C pulse | | Yes | | |
| INPUT | | Yes | | |
| Applicable servo drives | | SGDH-□□□E-OY + NS115 | | |
| Applicable frequency inverters | | Varispeed V7, F7, G7 with MECHATROLINK-II interface (for inverter version support contact your OMRON sales office) | | |
| Encoders | | Incremental encoder Yaskawa absolute encoder | | |

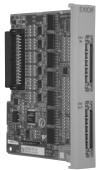
MP2200 base units

| Items | Specifications | | <div></div> |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Model | JEPMC-BU2200 (MBU-01) | JEPMC-BU2210 (MBU-02) | |
| Power supply | Input power voltage: 85 VAC to 276 VAC Current consumption: 1.5 A or less with I/O rating Inrush current: 10 A or less when completely discharged, 200 VAC input, output rating | Input power voltage: 24 VDC±20% Current consumption: 3.0 A or less with I/O rating Inrush current: 10 A or less when completely discharged, output rating | |
| Motion network | Not available for the base unit | | |
| I/O signals | Not available for the base unit | | |
| Slot for optional modules | 9 slots | | |
| Expansion configuration | Maximum of 4 base units can be connected using the EXIOIF. | | |
| Dimensions (mm) | 130x240x108 (HxWxD) | | |
| Weight | 665 g | 640 g | |


CPU module (CPU-01)

| Items | Specifications | Appearance |
|--------------------------------|-----------------------------------------|---------------------------------------------------------------------------------------|
| Model | JAPMC-CP2200 |  |
| Max. number of controlled axes | 256 axes | |
| High-speed scan | 0.5 ms to 32 ms (in units of 0.5 ms) | |
| Low-speed scan | 2.0 ms to 300.0 ms (in units of 0.5 ms) | |
| User memory capacity | 8 MB | |
| Weight | 80 g | |


Connection module between racks (EXIOIF)

| Items | Specifications | Appearance |
|---------------------------|--------------------------|-------------------------------------------------------------------------------------|
| Model | JAPMC-EX2200 |  |
| Number of expansion racks | 4 racks max. | |
| Rack No. | Automatically identified | |
| Weight | 70 g | |


General-purpose serial communication module (217IF-01)

| Items | Specifications | Appearance |
|----------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model | JAPMC-CM2310 |  |
| Port | For RS-232C communication | |
| Interface | One port | |
| Connector | D-sub 9 pins (female) | |
| Max. transmission distance | 15 m | |
| Transmission speed | 76.8 kbps | |
| Access mode | Asynchronous (start-stop synchronization) | |
| Communication protocols | MEMOBUS (master or slave) MELSEC, HostLink, or non-protocol | |
| Media access control method | 1:1 | |
| Transmission format (can be set) | Data bit length: 7 or 8 bits Stop bits: 1 or 2 bits Parity bits: even, odd, or none | |
| | For RS-422/485 communication | |
| | One port (RS-422 or -485) | |
| | MDR 14 pins (female) | |
| | 300 m | |
| | 76.8 kbps | |
| | Asynchronous (start-stop synchronization) | |
| | MEMOBUS (master or slave) MELSEC, HostLink, or non-protocol | |
| | 1:1 (RS-422), 1:N (RS-485) | |
| | Data bit length: 7 or 8 bits Stop bits: 1 or 2 bits Parity bits: even, odd, or none | |


Ethernet communication module (218IF-01)

| Items | Specifications | Appearance |
|--------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Model | JAPMC-CM2300 |  |
| Port | For ethernet communication | |
| Interface | One port (10BaseT) (RJ-45 modular jack) | |
| Max. segment length | 100m | |
| Transmission speed | 10 Mbps | |
| Access mode | IEEE802.3 | |
| Flame format | Ethernet ver.2 (conforming to DIX) | |
| Connections | TCP/UDP/IP/ARP | |
| Max. number of words in transmission | 512 words (1024 bytes) | |
| Communication protocols | Extended MEMOBUS, MEMOBUS, MELSEC-A, non-protocol, or MODBUS/TCP | |
| Max. number of connections | 20 stations | |
| | For RS-232C communication | |
| | One port | |
| | D-sub 9 pins (female) | |
| | 15 m | |
| | 76.8 kbps | |
| | Asynchronous (Start-stop synchronization) | |
| | MEMOBUS (master or slave) MELSEC, HostLink, or non-protocol | |
| | 1:1 | |
| | Data bit length: 7 or 8 bits Stop bits: 1 or 2 bits Parity bits: Even, odd, or none | |


DeviceNet communication module (260IF-01)

| Items | Specifications | Appearance |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Model | JAPMC-CM2320 |  |
| Port | For DeviceNet communication | |
| Number of circuits | 1 | |
| Applicable communication | Conforms to DeviceNet master or slave - I/O transmission (polled I/O and bistrobbed I/O) - Explicit messaging | |
| I/O communication | Max. number of slaves Max. I/O bytes | |
| | 63 Nodes 1024 bytes, 256 bytes per node | |
| Message Communication (only for master) | Max. number of nodes Max. message length Executed functions | |
| | 63 Nodes (Synchronous communications possible: 8 nodes) 256 bytes MSG-SND function | |
| Switches on the front | Two rotary switches: Node address settings DIP switch: Settings for transmission speed and switching master or slave | |
| Indicators | 2 LEDs: MS or NS | |
| Power voltage for communication | 24 VDC±10% (Using the specially designed cable) | |
| Max. current consumption | Communication power: 45 mA (supplied by transmission connectors) | |
| | For RS-232C communication | |
| | One Port | |
| | D-sub 9 pins (female) | |
| | 15m | |
| | 76.8kbps | |
| | Asynchronous (start-stop synchronization) | |
| | MEMOBUS (master or slave) MELSEC, HostLink, or non-protocol | |
| | 1:1 | |
| | Data bit length: 7 or 8 bits Stop bits: 1 or 2 bits Parity bits: Even, odd, or none | |

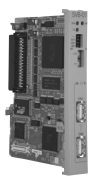
PROFIBUS communication module (261IF-01)

| Items | Specifications | | | <div>Appearance</div>  |
|----------------------|------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Model | JAPMC-CM2330 | | | |
| Port | For PROFIBUS communication | Port | For RS-232C communication | |
| Functions | DP slave | Interface | One port | |
| | Cyclic communication (DP standard function) | Connector | D-sub 9 pins (female) | |
| Transmission speed | 12M/6M/4M/3M/1.5M/750k/500k/187.5k/93.75k/19.2k/9.6kbps (automatic detection) | Max. transmission distance | 15 m | |
| Configuration | By PROFIBUS master | | | |
| Slave address | 1 to 64 | Transmission speed | 76.8 kbps | |
| I/O processing | Total capacity of IW/OW registers: 64 words Max. I/O allocation (IN and OUT each): 64 words | Access mode | Asynchronous (start-stop synchronization) | |
| | | Communication protocols | MEMOBUS (master or slave) MELSEC, HostLink, or non-protocol | |
| Diagnostic functions | Display for status and slave status using the EWS. I/O error display for SW registers | Media access control method | 1:1 | |
| | | Transmission format (can be set) | Data bit length: 7 or 8 bits Stop bits: 1 or 2 bits Parity bits: Even, odd, or none | |



Analogue reference motion control module (SVA-01)

| Items | Specifications | Appearance |
|----------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model | JAPMC-MC2300 |  |
| Number of axes | 2 axes (CN1 & CN2) analogue output and encoder input. | |
| Digital inputs (per axis) | 6 inputs, PNP or NPN (including alarm, ready, zero and latch) | |
| Digital outputs (per axis) | 6 outputs, (including servo_on, alarm_reset, control_mode_select and SEN) | |
| Encoder input (per axis) | Differential line-driver (A./A./B./B./Z./Z.). 4 Mpps (before multiplication). | |
| Analog outputs (per axis) | 2 outputs ± 10 V 16 bits (typically speed and torque references) | |
| Analog inputs (per axis) | 2 inputs ± 10 V 16 bits | |
| External supply | 24 VDC (in CN3) | |
| LED's | RUN (green) ERR(red) | |


MECHATROLINK-II motion control module (SVB-01)

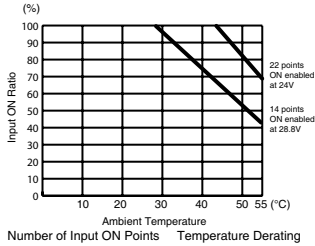
| Items | Specifications | Appearance |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Model | JAPMC-MC2310 |  |
| Communication circuits | 1 circuit | |
| Communication ports | 2 ports | |
| Terminator | External resistor (JEPMC-W6022 required) | |
| Transmission speed | 10 Mbps | |
| Communication cycle | 0.5 ms, 1 ms, 1.5 ms, 2 ms | |
| Number of connecting stations | 21 stations (16 axes for servo drives and inverters) /2ms, 15 stations (15 axes for servo drives) /1.5 ms, 9 stations (9 axes for servo drives) /1 ms, 4 stations (4 axes for servo drives) /0.5 ms | |
| Retry function | Available with MECHATROLINK-II | |
| Slave function | Available with MECHATROLINK-II | |
| Transmission distance | See "MECHATROLINK-II repeater" | |

I/O modules (LIO-01/02)


| Items | Specifications | Appearance |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Models | JAPMC-IO2300 (NPN output), JAPMC-IO2301 (PNP output) |   |
| Digital I/O | | |
| Input signals | 16 points (all connected) and 24 VDC $\pm 20\%$, 5 mA (TYP) Sink mode or source mode input and photocoupler isolation Min. ON voltage/current: 15 V/1.6 mA Max. OFF voltage/current: 5 V/1.0 mA Max. response time: OFF \rightarrow ON 1 ms and ON \rightarrow OFF 1 ms Interruption (DI-00): DI-00 can be used for interruptions. If an interruption is enabled, the interrupt drawing is started when DI-00 is set to ON. Pulse latch (DI-01): DI-01 can be used for pulse latching. If pulse latching is enabled, the pulse counter is latched when DI-01 is set to ON. | |
| Output signals | 16 points (all connected) and 24 VDC $\pm 20\%$, 100 mA max. Open collector: Sink mode output (LIO-01 module) Source mode output (LIO-02 module) Photocoupler isolation and max. OFF current: 0.1 mA Max. response time: OFF \rightarrow ON 1 ms and ON \rightarrow OFF 1 ms Output protection: Fuse (for protection against fires caused by an overcurrent when outputting after a short circuit occurred) If circuit protection is required, provide a fuse for each output circuit. | |
| Pulse input | | |
| Number of channels | 1 (phase A, B, or Z input) | |
| Input circuit | Phase A/B: 5 V differential inputs, no insulation, and max. frequency 4 MHz Phase Z: 5 V/12 V photocoupler inputs and max. frequency 500 kHz | |
| Input method | A/B (1, 2, or 4 multipliers), sign (1 or 2 multipliers), UP/DOWN (1 or 2 multipliers) | |
| Latch input | Pulse latch with phase Z or DI-01 Min. response time: 5 μ s when input with phase Z; 60 μ s when input with DI-01 | |
| Others | Coincident detection; preset and clear functions for counter values | |

I/O modules (LIO-04)


| Items | Specifications | Appearance |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model | JAPMC-IO2303 |  |
| Input signals | <p>32 points (8 points common) and 24 VDC\pm20%, 5 mA (TYP) Sink mode or source mode input and photocoupler isolation Min. ON voltage/current: 15 V/1.6 mA Max. OFF voltage/current: 5 V/1.0 mA Max. response time: OFF\rightarrowON 0.5 ms and ON\rightarrowOFF 0.5 ms Interruption (DI-00, DI-01, DI-16, DI-17): DI-00, DI-01, DI-16, and DI-17 can be used for interruptions. If an interruption is enabled, the interrupt drawing is started when DI-00, DI-01, DI-16, or DI-17 is set to ON. Note: See right for the derating conditions</p> | |
| Output signals | <p>32 points (8 points common) and 24 VDC\pm20%, 100 mA max. Open collector: Sink mode output (NPN) and photocoupler isolation Max. OFF current: 0.1 mA Max. response time: OFF\rightarrowON 0.5 ms and ON\rightarrowOFF 1 ms Output protection: Fuse (for protection against fires caused by an overcurrent when outputting after a short-circuit occurred) If circuit protection is required, provide a fuse for each output circuit.</p> | |




MECHATROLINK-II, 64 point I/O module (IO2310)

| Items | Specifications | Appearance |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model | JEPMC-IO2310 |  |
| I/O signals | <p>Input: 64 points, 24 VDC, 5mA, sink/source mode input Output: 64 points, 24 VDC, 50mA when all points ON, (The Max. rating is 100 mA per point) sink mode output (NPN) Signal connection method: Connector (FCN360 series)</p> | |
| Module power supply | <p>24 VDC (20.4 V to 28.8 V) Rated current: 0.5 A Inrush current: 1 A</p> | |
| Weight | 590 g | |


MECHATROLINK-II, counter module (PL2900)

| Items | Specifications | Appearance |
|---------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Model | JEPMC-PL2900 |  |
| Number of input channels | 2 | |
| Functions | Pulse counter, notch output, registration input | |
| Pulse input method | Sign (1/2 multipliers), A/B (1/2/4 multipliers), UP/DOWN (1/2 multipliers) | |
| Max. counter speed | 1200 kpps (4 multipliers) | |
| Pulse input voltage | 3/5/12/24 VDC | |
| External power supply | 24 VDC, 120 mA or less | |
| Weight | 300 g | |


MECHATROLINK-II, pulse output module (PL2910)

| Items | Specifications | Appearance |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Model | JEPMC-PL2910 |  |
| Number of output channels | 2 | |
| Functions | Pulse positioning, JOG run, zero-point return | |
| Pulse output method | CW, CCW pulse, sign | |
| Max. output speed | 500 kpps | |
| Pulse output voltage | 5 VDC | |
| Pulse interface circuit | Open collector output 5 VDC, 10 mA/circuit | |
| External control signal | Digital input: 8 points/module, 5 VDC x 4 points, 24 VDC x 4 points Digital output: 6 points/module, 5 VDC x 4 points, 24 VDC x 2 points | |
| Weight | 300 g | |


MECHATROLINK-II, analog input module (AN2900)

| Items | Specifications | Appearance |
|---------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Model | JEPMC-AN2900 |  |
| Number of input channels | 4 | |
| Input voltage range | -10 V to +10 V | |
| Input impedance | 1 M Ω min. | |
| Data format | Binary, -32000 to +32000 | |
| Input delay time | 4ms max. | |
| Error | \pm 0.5% F.S. (at 25 °C), \pm 1.0% F.S. (at 0 °C to 60 °C) | |
| External power supply | 24 VDC (20.4 VDC to 26.4 VDC), 120 mA max. | |
| Weight | 300 g | |


MECHATROLINK-II, analog output module (AN2910)

| Items | Specifications | Appearance |
|-----------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model | JEPMC-AN2910 |  |
| Number of output channels | 2 | |
| Output voltage range | -10 V to +10 V | |
| Max. allowable load current | ± 5 mA (2 kΩ) | |
| Data format | Binary, -32000 to +32000 | |
| Output delay time | 1 ms | |
| Error | ± 0.2% F.S. (at 25 °C), ± 0.5% F.S. (at 0 °C to 60 °C) | |
| External power supply | 24VDC (20.4 VDC to 26.4 VDC), 120mA max. | |
| Weight | 300 g | |

MECHATROLINK-II repeater

| Items | Specifications | Appearance |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Model | JEPMC-REP2000 |  |
| Communication type | MECHATROLINK-II | |
| Cable length | Between controller and repeater: 50 m., after repeater: 50 m | |
| Max. connected stations | Total stations on both sides of repeater: 30 (limited to the max. number of connectable stations of the controller (e.g., 21 stations for the MP2300 series)) | |
| Restrictions | Between controller and repeater - Total cable length ≤ 30m: 15 stations max. including I/O and servo, etc. - 30m < total cable length ≤ 50m: 14 stations max. including I/O and servo, etc. After repeater: - Total cable length ≤ 30m: 16 stations max. including I/O and servo, etc. - 30m < total cable length ≤ 50m: 15 stations max. including I/O and servo, etc. | |
| Power supply | 24VDC, 100mA | |
| Weight | 340 g | |
| Dimensions (mm) | 30x160x77 (HxWxD) | |

MECHATROLINK-II servo drive interface unit

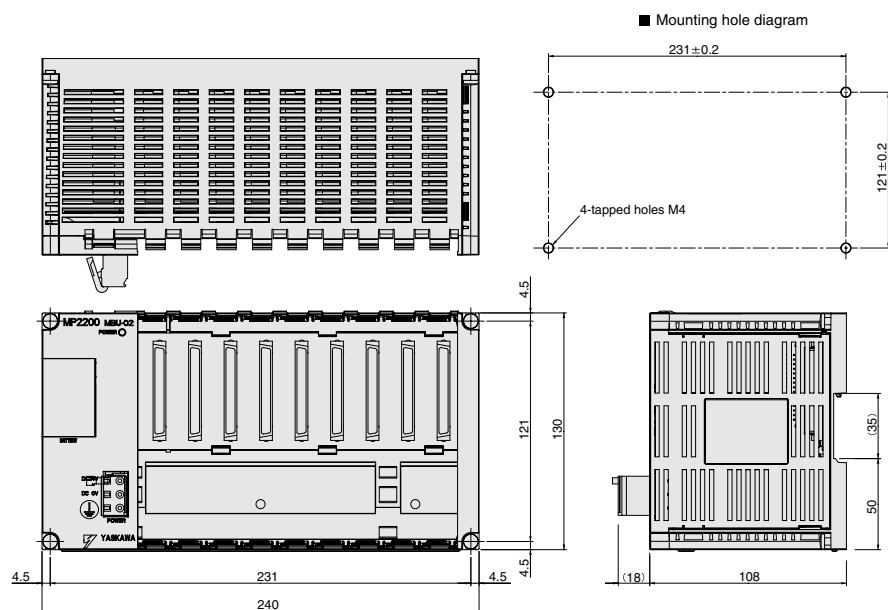
| Item | Details |  |
|------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Type | JUSP-NS115 | |
| Applicable servo drive | SGDH-□□□□E models (version 38 or later) | |
| Installation method | Mounted on the SGDh servo drive side: CN10. | |
| Basic specifications | Power supply method | Supplied from the servo drive control power supply. |
| | Power consumption | 2 W |
| MECHATROLINK-II communications | Baud rate/transmission cycle | 10 Mbps / 1 ms or more. MECHATROLINK-II communications |
| Command format | Operation specification | Positioning using MECHATROLINK-I/II communications. |
| | Reference input | MECHATROLINK-I/II communications Commands: position, speed, torque, parameter read/write, monitor output |
| Position control functions | Acceleration/deceleration method | Linear first/second-step, asymmetric, exponential, S-curve |
| | Fully closed control | Position control with fully closed feedback is possible. |
| Fully closed system specifications | Encoder pulse output in the servo drive | 5 V differential line-driver output (complies with EIA Standard RS-422A) |
| | Fully closed encoder pulse signal | A quad B line-driver |
| | Maximum receivable frequency for servo drive | 1 Mpps |
| | Power supply for fully closed encoder | To be prepared by customer. |
| Input signals in the servo drive | Signal allocation changes possible | Forward/reverse run prohibited, zero point return deceleration LS External latch signals 1, 2, 3 Forward/reverse torque control |
| | Position data latch function | Position data latching is possible using phase C, and external signals 1, 2, 3 |
| Internal functions | Protection | Parameters damage, parameter setting errors, communications errors, WDT errors, fully closed encoder detecting disconnection |
| | LED indicators | A: Alarm, R: MECHATROLINK-I/II communicating |

MECHATROLINK-II, frequency inverter interface units

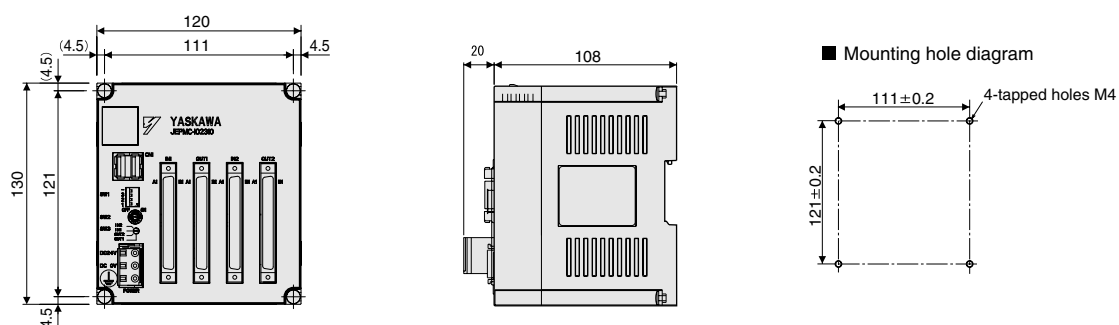
| Item | Details | |
|--------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Type | SI-T/V7 | SI-T |
| Applicable inverter | CIMR-V7 / 3G3-MV (firmware 5740 or newer) | CIMR-G7 / CIMR-F7 (firmware 656x/for G7 / 4011 or newer for F7) |
| | Contact your OMRON sales office for information about firmware compatibility | |
| Installation method | Mounted on the inverter | |
| Power supply | Supplied from the inverter | |
| MECHATROLINK-II communications | 10 MHz, 0.5 ms to 8 ms for MECHATROLINK-II | |
| Operation | Read and write registers, read monitors, inverter operation, speed reference, torque reference (G7/F7 only). | |
| Inputs and outputs | The inputs and outputs in the inverter can be read and set by the MLII master | |
| Connectors | ML-II bus connector. DPRAM connector for the inverter | |
| Switches | Rotary switch for ML-II address (low byte) | |
| | Dip switch for: ML-II address (high bit). ML-II/ML-I selection. 17 byte/32 byte data length selection. | |

Dimensions

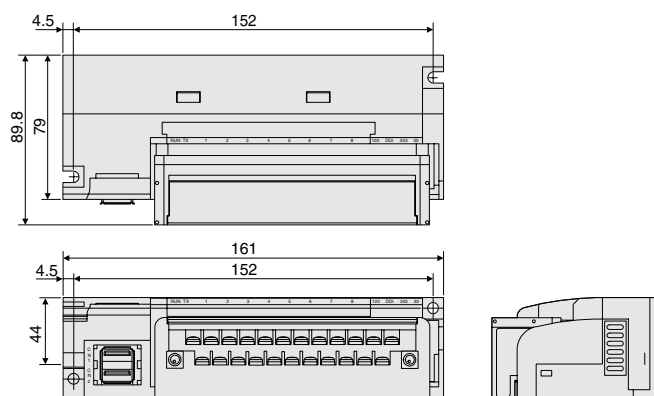
MP2200 basic unit



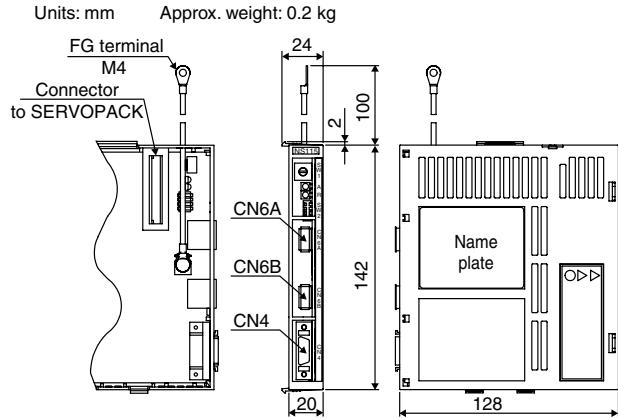
IO2310 I/O module



I/O modules PL2900, PL2910, AN2900, AN2910



MECHATROLINK-II servo drive interface unit



Ordering information

MP2200 - motion controller base unit

| Name | Model name | Model |
|---------------------------------------------------|------------|--------------|
| MP2200 base unit, 100 VAC/200 VAC input base unit | MBU-01 | JEPMC-BU2200 |
| MP2200 base unit, 24 VDC input base unit | MBU-02 | JEPMC-BU2210 |

MP2200 - CPU module

| Name | Model name | Model |
|----------------|------------|--------------|
| CPU for MP2200 | CPU-01 | JAPMC-CP2200 |

MP2200 - motion control modules

| Name | Model name | Model |
|---------------------------------------------------|------------|--------------|
| Analogue reference motion control module (2 axes) | SVA-01 | JAPMC-MC2300 |
| 1 channel for MECHATROLINK-II communication | SVB-01 | JAPMC-MC2310 |

MP2200 - communication modules

| Name | Model name | Model |
|-----------------------------------------------------------------------------|------------|--------------|
| General-purpose serial communication module (RS-232C / RS422 communication) | 217IF-01 | JAPMC-CM2310 |
| Ethernet communication module (RS-232C / ethernet communication) | 218IF-01 | JAPMC-CM2300 |
| DeviceNet communication module (RS-232C / DeviceNet communication) | 260IF-01 | JAPMC-CM2320 |
| PROFIBUS communication module (RS-232C / PROFIBUS communication) | 261IF-01 | JAPMC-CM2330 |

MP2200 - I/O and expansion modules

| Name | Model name | Model |
|-------------------------------------------------------------------------------------|------------|--------------|
| 16-point input, 16-point output (sink mode output / NPN), and 1-point pulse input | LIO-01 | JAPMC-IO2300 |
| 16-point input, 16-point output (source mode output / PNP), and 1-point pulse input | LIO-02 | JAPMC-IO2301 |
| 32-point input and 32-point output | LIO-04 | JAPMC-IO2303 |
| Expansion interface for MP2200 | EXIOIF | JAPMC-EX2200 |

MECHATROLINK-II - elated devices

| Name | Remarks | Model |
|--------------------------------|--------------------------------------------------------------------------------------------------|----------------|
| Distributed I/O modules | 64-point input and 64-point output | JEPMC-IO2310 |
| | Reversible counter: 2 channels | JEPMC-PL2900 |
| | Pulse output: 2 channels | JEPMC-PL2910 |
| | Analog input: -10 V to +10 V, 4 channels | JEPMC-AN2900 |
| | Analog output: -10 V to +10 V, 2 channels | JEPMC-AN2910 |
| MECHATROLINK-II cables | 0.5 meter | JEPMC-W6003-A5 |
| | 1 meter | JEPMC-W6003-01 |
| | 3 meters | JEPMC-W6003-03 |
| | 5 meters | JEPMC-W6003-05 |
| | 10 meters | JEPMC-W6003-10 |
| | 20 meters | JEPMC-W6003-20 |
| | 30 meters | JEPMC-W6003-30 |
| MECHATROLINK-II terminator | Terminating resistor | JEPMC-W6022 |
| MECHATROLINK-II interface unit | For Sigma-II series servo drives (firmware version 38 or later) | JUSP-NS115 |
| | For Varispeed V7 inverter (for inverter's version supported contact your OMRON sales office) | SI-T/V7 |
| MECHATROLINK-II repeater | For Varispeed F7, G7 inverter (for inverter's version supported contact your OMRON sales office) | SI-T |
| | MECHATROLINK-II repeater | JEPMC-REP2000 |

I/O cables

| | Remarks | Length m | Model |
|--------------------------|----------------------------------------|----------|-----------------|
| I/O cable for LIO-01, 02 | With connector on the LIO-01, -02 side | 0.5 | JEPMC-W2061-A5 |
| | | 1.0 | JEPMC-W2061-01 |
| | | 3.0 | JEPMC-W2061-03 |
| I/O cable for LIO-04 | With connector on the LIO-04 side | 0.5 | JEPMC-W6060-05 |
| | | 1.0 | JEPMC-W6060-10 |
| | | 3.0 | JEPMC-W6060-30 |
| I/O cable for IO2310 | With connector on the IO2310 side | 0.5 | JEPMC-W5410-05 |
| | | 1.0 | JEPMC-W5410-10 |
| | | 3.0 | JEPMC-W5410-30 |
| EXIOIF cable | With connector on both sides | 0.5 | JEPMC-W2091-A5 |
| | | 1.0 | JEPMC-W2091-01 |
| | | 3.0 | JEPMC-W2091-2A5 |

Accessories

| Name | Model |
|-----------------------|--------------|
| Battery ER3V 3.6V | JZSP-BA01 |
| Empty slot cover | JEPMC-OP2300 |
| Brackets for DIN rail | JEPMC-OP300 |

Computer software

| Specifications | Model |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Programming software support from system design to maintenance. Intuitive ladder programming and editing functions. CAM data generation. Windows-based (Windows 95/98/NT4.0/2000/XP) | CPMC-MPE720 |

Servo system

Note: Refer to servo systems section for detailed information

Frequency inverters

Note: Refer to frequency inverters section for detailed information

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.