

RC7M Robot Controller Specifications

| Item | | Specifications | | | | | |
|-------------------------|--|---|---|---|--|--------------------------------------|--|
| Robot series | | VM Series | VS Series | VP Series | HM Series | HS Series | XR Series |
| Model (RC7M-) | | VM 6***-** | VS 6****-** | VP/VPG2 5/6****-** | HM 4****-** | HS 4****-** | XR 4****-** |
| Controllable axes | | 6 axes | | 5 or 6 axes | 4 axes | | |
| Control system | | PTP, CP 3-dimensional linear, 3-dimensional circular | | | | | |
| Drive system | | All axes: Full-digital AC servo | | | | | |
| Language used | | DENSO robot language (conforming to SLIM) | | | | | |
| Memory capacity | | 3.25 MB (equivalent to 10,000 steps, 30,000 points) | | | | | |
| Teaching system | | 1) Remote teaching 2) Numerical input (MDI) | | | 1) Direct teaching 2) Remote teaching 3) Numerical input (MDI) | | 1) Remote teaching 2) Numerical input (MDI) |
| External signals (I/O)* | Standard I/O | Mini I/O | Input: 8 user open points + 11 fixed system points Output: 8 user open points + 14 fixed system points | | | | |
| | | Hand I/O | Input: 8 user open points Output: 8 fixed system points | | | | |
| | Safety I/O | | Input: 6 fixed system points Output: 5 fixed system points | | | | |
| | Parallel I/O extension boards (option) | 2 boards mounted | Input: 80 user open points Output: 96 user open points | | | | |
| | | Single board mounted | Input: 40 user open points Output: 48 user open points | | | | |
| | DeviceNet board (option) | Master/Slave | Input: 1024 points (master) + 256 points (slave) Output: 1024 points (master) + 256 points (slave) | | | | |
| | | Master | Input: 1024 points Output: 1024 points | | | | |
| | | Slave | Input: 256 points Output: 256 points | | | | |
| | CC-Link board (option) | Slave | Input: 384 points Output: 384 points (including remote registers RWw and RWr) | | | | |
| | External communication | | RS-232C: 1 line** Ethernet: 1 line USB: 2 lines (Supporting flash memory) | | | | |
| Extension slots | | 3 (For optional boards) | | | | | |
| Self-diagnosis function | | Overrun, servo error, memory error, input error, etc. | | | | | |
| Timer function | | 0.02 to 10 sec. (in units of 1/60 sec.) | | | | | |
| Error display | | Error codes will be outputted on the external I/O. Error messages will be displayed in English on the teach pendant (option). Error codes will be displayed on the mini-pendant (option). | | | | | |
| Cables | Robot control cable (option) | 2 m, 4 m, 6 m, 12 m, 20 m (standard type/splash-proof type) | 2 m, 4 m, 6 m, 12 m, 20 m (standard) | 2 m, 4 m, 6 m, 12 m, 20 m (standard type/splash-proof type) | 4 m, 6 m (standard) | 2 m, 4 m, 6 m, 12 m, 20 m (standard) | |
| | I/O cable (option) | 8 m, 15 m (for Mini I/O, Hand I/O, Parallel I/O extension boards, Safety I/O board) | | | | | |
| | Power cable | 5 m | | | | | |

* PROFIBUS Slave, S-Link V and Ethernet/IP available as third-party options

** RS-232C expansion board (extra 2 lines) available as third-party option

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|---|---|--|---|--|
| Environmental conditions (in operation) | | Temperature: 0 to 40°C Humidity: 90% RH or less (no condensation allowed) Altitude: 1,000 m or less | | |
| Power source | VM Series | Three-phase, 200 VAC -15% to 230 VAC +10%, 50/60 Hz, 3.3 kVA | | |
| | VS Series | Three-phase, 200 VAC -15% to 230 VAC +10%, 50/60 Hz, 1.85 kVA Single-phase, 230 VAC -10% to 230 VAC +10%, 50/60 Hz, 1.85 kVA | | |
| | VP Series | 200 VAC type | Three-phase, 200 VAC -15% to 230 VAC +10%, 50/60 Hz, 1 kVA Single-phase, 230 VAC -10% to 230 VAC +10%, 50/60 Hz, 1 kVA | |
| | | 100 VAC type | Single-phase, 100 VAC -10% to 110 VAC +10%, 50/60 Hz, 1 kVA | |
| | HM Series | Three-phase, 200 VAC -15% to 230 VAC +10%, 50/60 Hz, 2.45 kVA Single-phase, 230 VAC -10% to 230 VAC +10%, 50/60 Hz, 2.45 kVA | | |
| | HS Series | Three-phase, 200 VAC -15% to 230 VAC +10%, 50/60 Hz, 1.8 kVA Single-phase, 230 VAC -10% to 230 VAC +10%, 50/60 Hz, 1.8 kVA | | |
| XR Series | Three-phase, 200 VAC -15% to 230 VAC +10%, 50/60 Hz, 1.8 kVA Single-phase, 230 VAC -10% to 230 VAC +10%, 50/60 Hz, 1.8 kVA | | | |
| I/O power source | External power source | 24 VDC ±10% should be supplied from external equipment | | |
| | Internal power source | 24 VDC ±10% should be supplied internally in the robot controller | | |
| Rated output current | | VM Series: Approx. 20 A VS Series: Approx. 11 A VP Series: Approx. 5 A HM Series: Approx. 19 A HS Series: Approx. 14 A XR Series: Approx. 10A | | |
| Safety category | | With safety board: Compliant with safety category 3 With safety box: Compliant with safety category 4 | | |
| Degree of protection | | IP20 | | |
| Weight (Mass) | | 4-axis global type, UL-Listed (with safety board): Approx. 18 kg 6-axis global type, UL-Listed (with safety board): Approx. 19 kg 4-axis global type, UL-Listed (with safety box): Approx. 21 kg 6-axis global type, UL-Listed (with safety box): Approx. 22 kg | | |


Controller Handling Notes

WARNING

- DO NOT touch fins. Their hot surfaces may cause severe burns.
- DO NOT insert fingers or foreign objects into openings. Doing so may cause bodily injury.
- Before opening the controller cover and accessing the inside of the controller for maintenance, be sure to turn off the power switch, disconnect the power cable, and wait 3 minutes or more. This is for protecting you from electric shock.
- DO NOT connect or disconnect connectors to/from the controller when the AC power or the 24 VDC power for I/O is being supplied. Doing so may cause electric shock or controller failure.

CAUTION IN INSTALLATION

- This controller is not designed to be dust-, splash-, or explosion-proof.
- Read operation manuals before installation.
- Do not place anything on the controller or apply an impact or shock to the controller.
- Avoid mounting the controller in an environment where excessive vibration is applied to the controller.

 CAUTION: The robot controller connectors are of a screw-lock type or ring-lock type. Lock the connectors securely. If even one of the connectors is not locked, weak contact may result thereby causing an error. Be sure to turn the robot controller OFF before connecting/disconnecting the power connector or motor connector. Otherwise, the internal circuits of the robot controller may be damaged.

Outer Dimensions

