MITSUBISHI ELECTRIC ENGINEERING

Spring Clamp Junction Terminal Blocks for Mitsubishi Electric AC Servo Systems

For network-based servo amplifiers

FLS/RLS/DOG signal-specialized network amplifier terminal block

Junction terminal block for servo motors with brakes

Network amplifier junction terminal block

For general-purpose interface servo amplifiers

General-purpose interface amplifier junction terminal block

FA Goods Products e-F@ctory

Recommended products for MELSERVO-J5 series

Special purpose junction terminal blocks and cables for easy and reliable wiring

MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED

Are you searching for solutions to these kinds of problems?

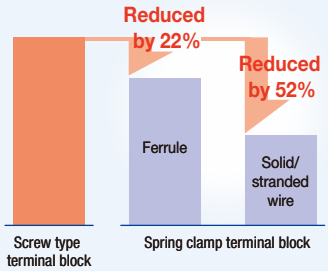
Issue

Productivity improvement

Solution

Significant reduction in wiring time thanks to spring clamp terminals

* Calculated by comparing the time taken by non-experts with two years of experience (Data sourced from Japan Switchboard & control system Industries Association)

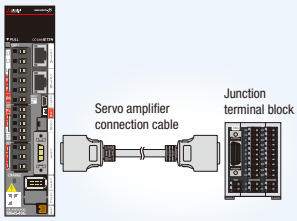


Issue

Time and quality problems for making cables

Solution

Easy and reliable wiring using a junction terminal block and a cable

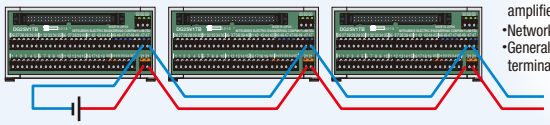


Issue

Power supply branching with spring clamp terminals

Solution

Connecting the power supply in series across branching common terminal blocks



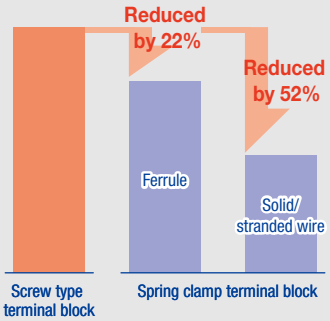
- FLS/RLS/DOG signal-specialized network amplifier terminal block
- Network amplifier junction terminal block
- General-purpose interface amplifier junction terminal block

For details, refer to the relevant manual.

Benefits of the spring clamp type

Significant reduction in wiring time

Significant reduction in man-hours required for screw tightening.
Wires can be pushed into terminals without a screwdriver. Using solid or stranded wires further reduces wiring work.



* Calculated by comparing the time taken by non-experts with two years of experience (Data sourced from Japan Switchboard & control system Industries Association)

Reliable connections

Spring clamp type connection eliminates the risk of loosening of screws due to vibrations, impacts, or long-time use, and does not require screw-tightening skill.

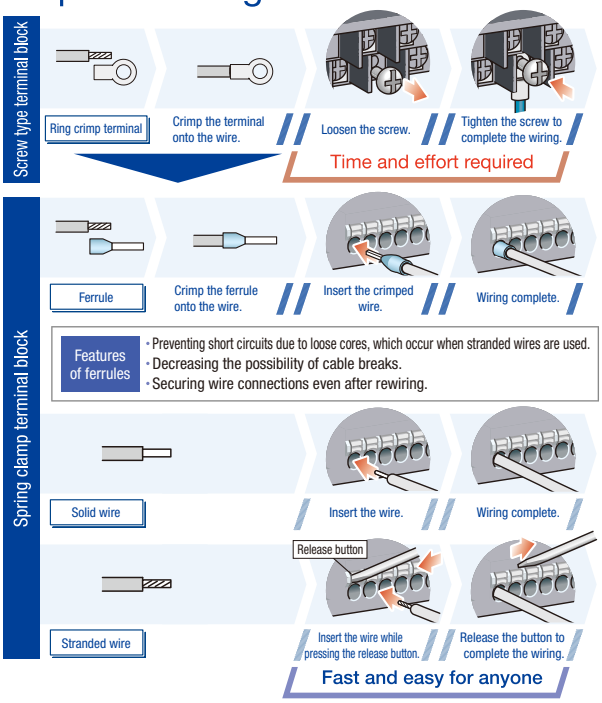
Maintenance-free

Screw tightening is not required at the time of delivery or inspection of the control panel or the mechanical system.

Space-saving

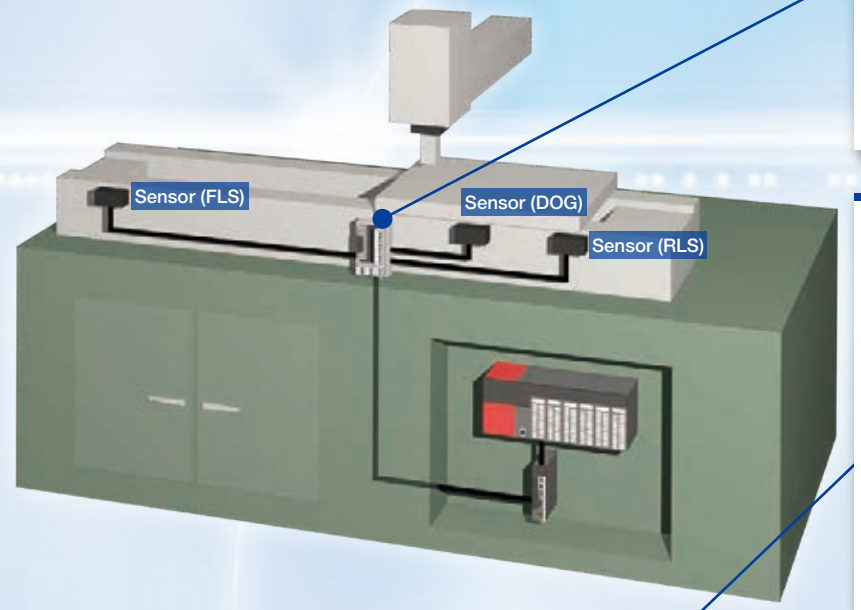
The installation space can be reduced compared to the space required for the screw type.

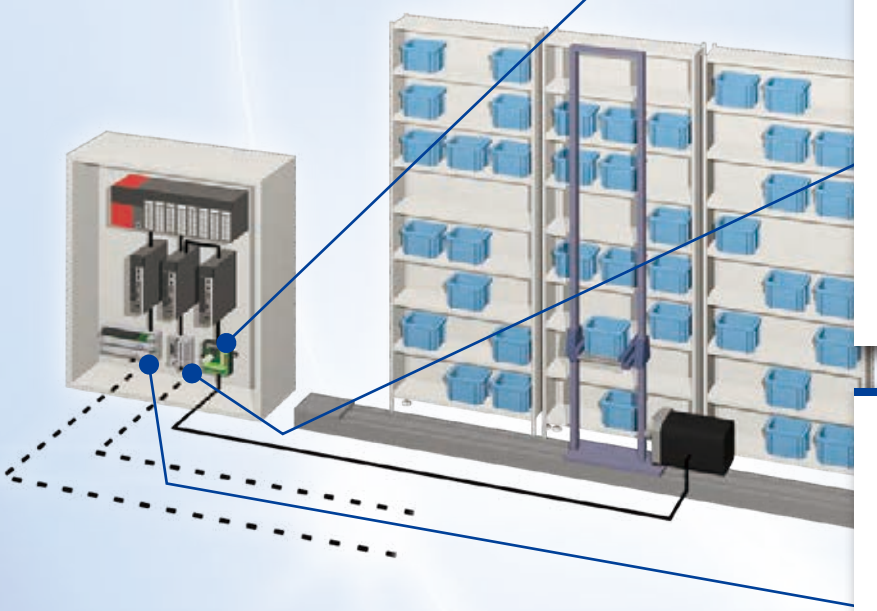
Steps for wiring



* The release button can be pressed using a tool with a thin tip such as a flathead screwdriver.

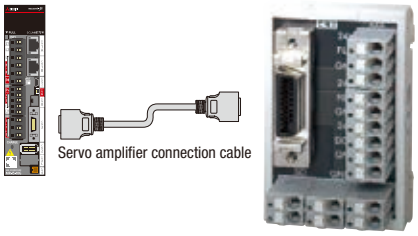
Select the spring clamp terminal block best suited for your application.





Easy to wire stroke limit and proximity dog signals

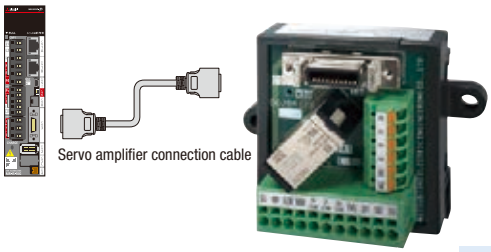
MR-J5-G
MR-J5W-G
MR-J4-B
MR-J4-GF
MR-J4W-B



FLS/RLS/DOG signal-specialized network amplifier terminal block P. 4

Reduces the space required by brake circuits for servo motors with brakes

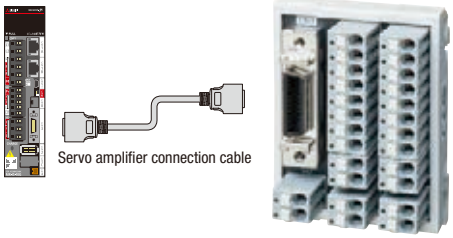
MR-J5-G
MR-J4-B
MR-J4-GF



Junction terminal block for servo motors with brakes P. 5

Easy to wire external signals thanks to spring clamp terminals

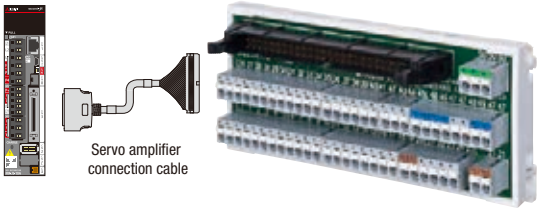
MR-J5-G
MR-J4-B
MR-J4-GF



Network amplifier junction terminal block P. 6

Easy to wire external signals thanks to spring clamp terminals

MR-J5-A
MR-J4-A



General-purpose interface amplifier junction terminal block P. 6

Easy to wire stroke limit and proximity dog signals

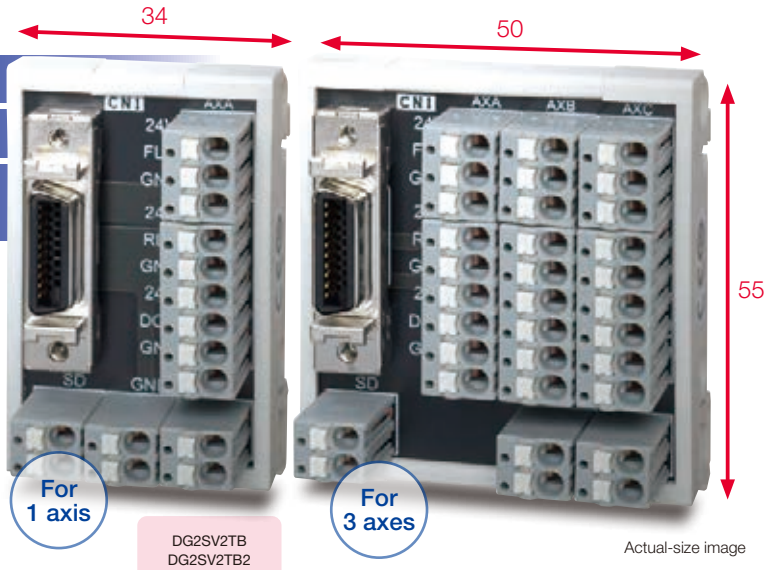
FLS/RLS/DOG signal-specialized network amplifier terminal block

MR-J5-G MR-J5W-G MR-J4-B MR-J4-GF MR-J4W-B

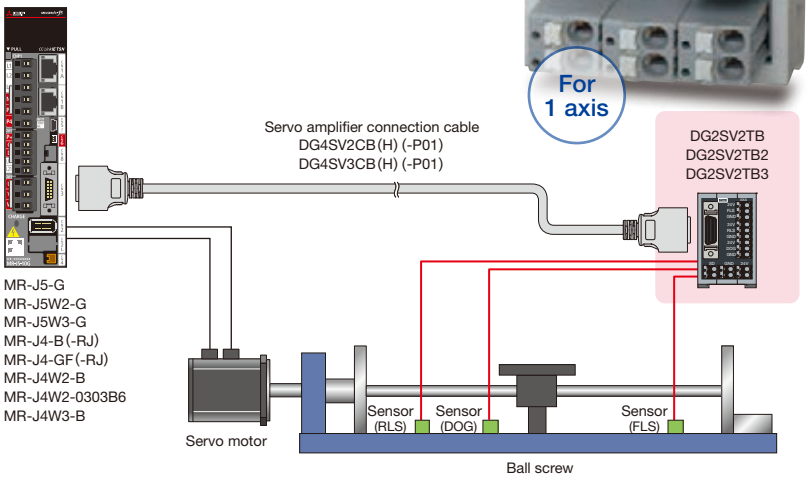
DG2SV2TB / DG2SV2TB2 / DG2SV2TB3

(for 1 axis) (for 2 axes) (for 3 axes)

- Common terminals make wiring neat and compact.
- Signal name markings prevent erroneous wiring.
- Using a long length, high flex life cable allows installation in the mechanical section or on movable parts.



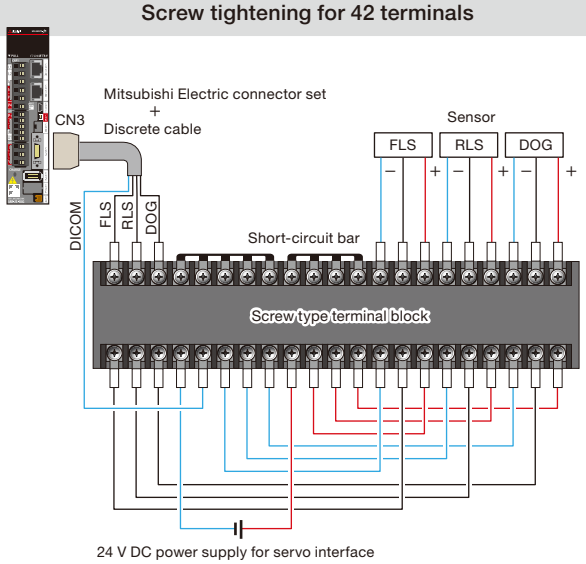
Connection diagram



Example of reduction in wiring work

Before

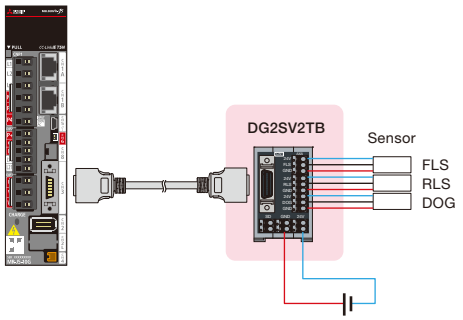
Screw tightening for 42 terminals



After

Push-in connection for 12 terminals

30 terminals reduced



For information on the combination of equipment, refer to page 7.

Reduces the space required by brake circuits for servo motors with brakes

Junction terminal block for servo motors with brakes

MR-J5-G | MR-J4-B | MR-J4-GF

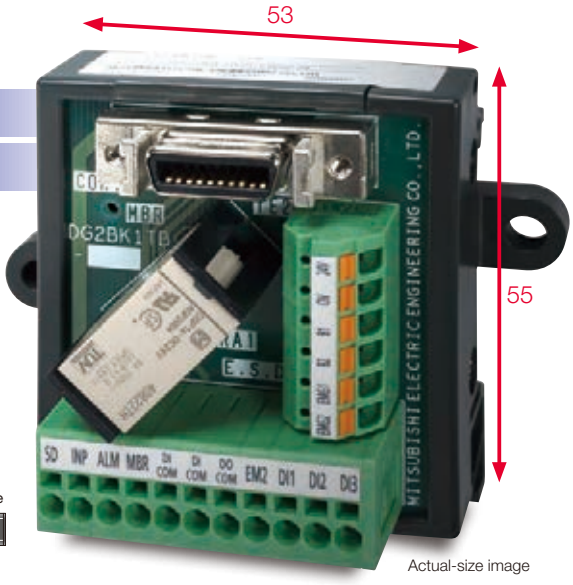
DG2BK1TB(-D) / DG2BK1TB-P01(-D)

(sink type) (source type)

* (-D): Models for DIN rail installation

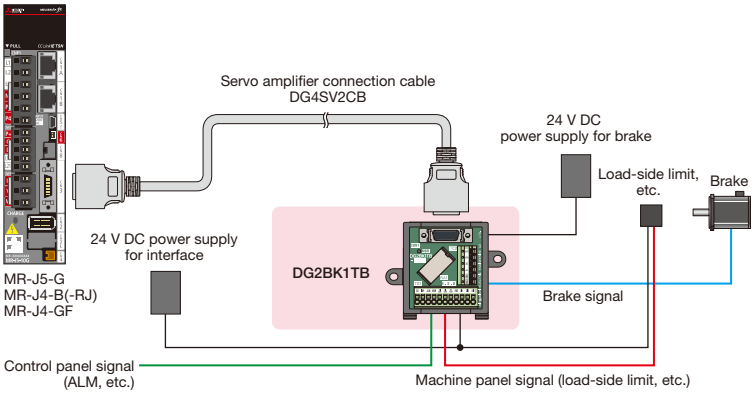
A brake sequence circuit (Mitsubishi Electric recommended) is built in.

Signal name markings prevent erroneous wiring.



Actual-size image

Connection diagram

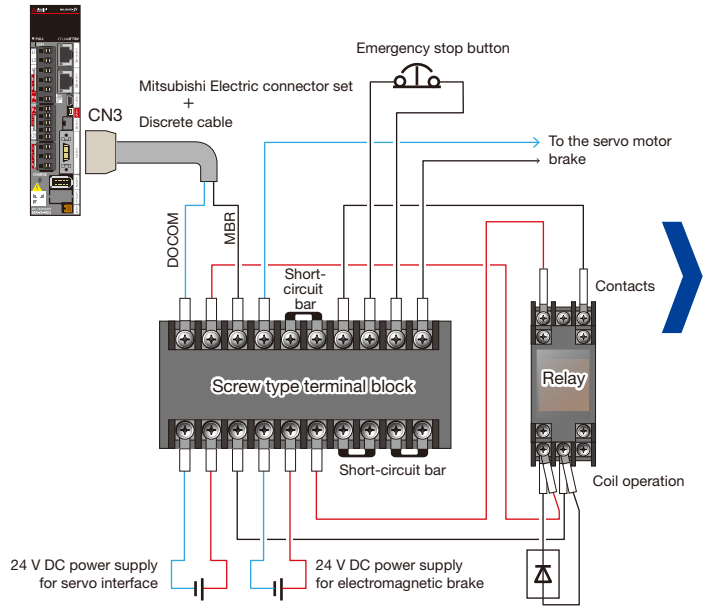


The brake sequence circuit that is built into this junction terminal block is recommended for servo amplifiers and contains the necessary relays, which optimally reduces the installation area and wiring work.

Example of reduction in wiring work

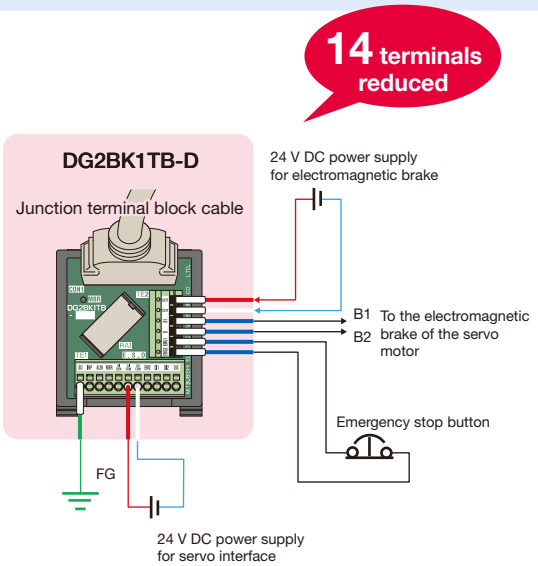
Before

Screw tightening for 24 terminals



After

Push-in connection for 10 terminals



For information on the combination of equipment, refer to page 7.

Easy to wire external signals thanks to spring clamp terminals

For customers using fabricated cables (soldered)

Eliminate cable fabrication time and improve connection quality with our dedicated cable.

For customers using screw type junction terminal blocks

Spring clamp terminals reduce wiring time and save space.

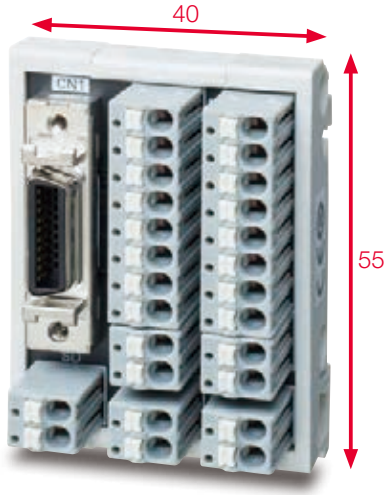
Network amplifier junction terminal block

DG2SV3TB

MR-J5-G MR-J4-B MR-J4-GF

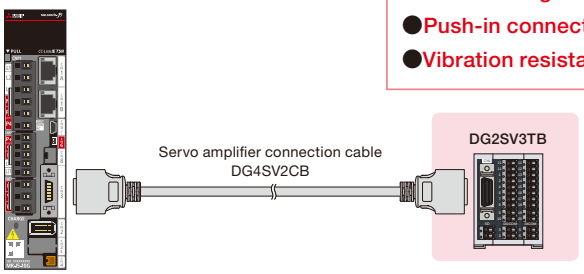
A standard connector cable makes reliable wiring connections.

Spring clamp terminals make wiring easier.



Actual-size image

Connection diagram



MR-J5-G
MR-J4-B(-RJ)
MR-J4-GF(-RJ)

POINT

- Easy connection in a single step
- No soldering required for connectors
- Push-in connection reduces wiring time
- Vibration resistance

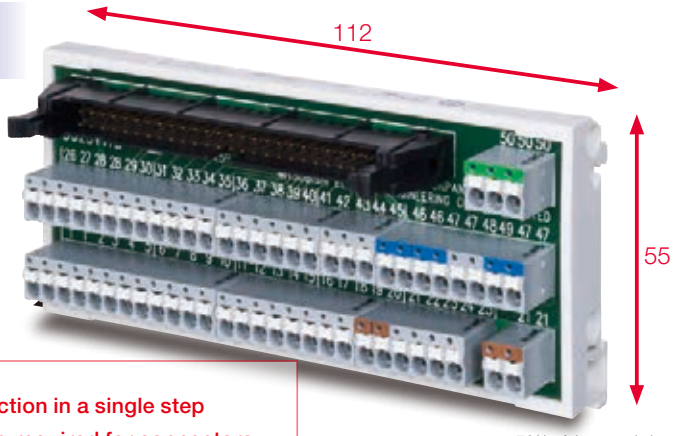
For information on the combination of equipment, refer to page 7.

General-purpose interface amplifier junction terminal block

DG2SV1TB

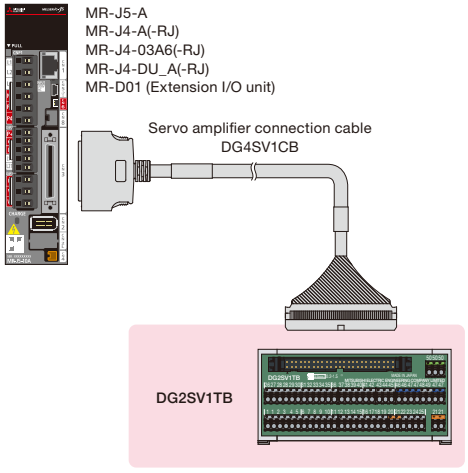
MR-J5-A MR-J4-A

The installation space is reduced by about 40% compared to that of the screw type.



70% of the actual size

Connection diagram



POINT

- Easy connection in a single step
- No soldering required for connectors
- Push-in connection reduces wiring time
- Vibration resistance

For information on the combination of equipment, refer to page 7.

Product list

Connected servo amplifier	Item	Model	Description
MR-J5-G MR-J4-B(-RJ) MR-J4-GF(-RJ)	FLS/RLS/DOG signal-specialized network amplifier terminal block (for 1 axis)	DG2SV2TB	For network-based 1-axis servo amplifier Sink/source common type, dedicated for FLS/RLS/DOG signals External power supply voltage: 24 V DC ±10% Maximum usable current: 0.5 A for signal / 6 A for common line
	Sink-interface servo amplifier connection cable (for 1-axis servo amplifier)	DG4SV2CB05	Length: 0.5 m
		DG4SV2CB10	Length: 1 m
		DG4SV2CB50	Length: 5 m
	Sink-interface servo amplifier connection cable (for 1-axis servo amplifier / high flex life)	DG4SV2CB50H	Length: 5 m
		DG4SV2CB100H	Length: 10 m
	Source-interface servo amplifier connection cable (for 1-axis servo amplifier)	DG4SV2CB05-P01	Length: 0.5 m
		DG4SV2CB10-P01	Length: 1 m
		DG4SV2CB50-P01	Length: 5 m
	Source-interface servo amplifier connection cable (for 1-axis servo amplifier / high flex life)	DG4SV2CB50H-P01	Length: 5 m
		DG4SV2CB100H-P01	Length: 10 m
MR-J5W2-G MR-J5W3-G MR-J4W2-B MR-J4W2-0303B6 MR-J4W3-B	FLS/RLS/DOG signal-specialized network amplifier terminal block (for 2-axis/3-axis integrated servo amplifier)	DG2SV2TB2	For network-based 2-axis integrated servo amplifier Sink/source common type, dedicated for FLS/RLS/DOG signals External power supply voltage: 24 V DC ±10% Maximum usable current: 0.5 A for signal / 6 A for common line
		DG2SV2TB3	For network-based 3-axis integrated servo amplifier Sink/source common type, dedicated for FLS/RLS/DOG signals External power supply voltage: 24 V DC ±10% Maximum usable current: 0.5 A for signal / 6 A for common line
	Sink-interface servo amplifier connection cable (for 2-axis/3-axis integrated servo amplifier)	DG4SV3CB05	Length: 0.5 m
		DG4SV3CB10	Length: 1 m
		DG4SV3CB50	Length: 5 m
	Sink-interface servo amplifier connection cable (for 2-axis/3-axis integrated servo amplifier / high flex life)	DG4SV3CB50H	Length: 5 m
		DG4SV3CB100H	Length: 10 m
	Source-interface servo amplifier connection cable (for 2-axis/3-axis integrated servo amplifier)	DG4SV3CB05-P01	Length: 0.5 m
		DG4SV3CB10-P01	Length: 1 m
		DG4SV3CB50-P01	Length: 5 m
	Source-interface servo amplifier connection cable (for 2-axis/3-axis integrated servo amplifier / high flex life)	DG4SV3CB50H-P01	Length: 5 m
		DG4SV3CB100H-P01	Length: 10 m

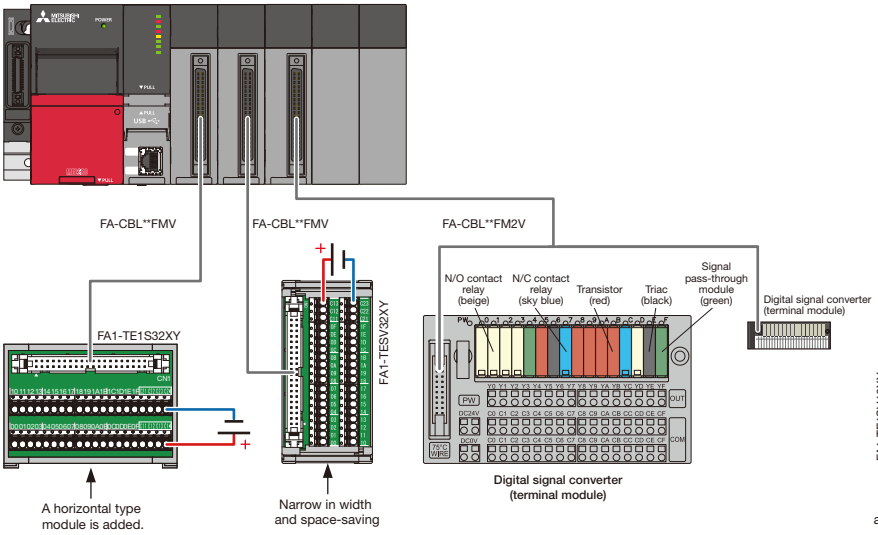
Connected servo amplifier	Item	Model	Description
MR-J5-G MR-J4-B(-RJ) MR-J4-GF	Junction terminal block for servo motors with brakes Applicable servo motor capacity: 50 W to 22 kW External power supply voltage For servo amplifier interface: 24 V DC ±10%, 0.3 A (max) For electromagnetic brake: 24 V DC 0/-10%, 1.43 A (max) Relay: DSP1a-DC24V (Panasonic Corporation)	DG2BK1TB	For network-based 1-axis servo amplifier, sink type
		DG2BK1TB-D	For network-based 1-axis servo amplifier, sink type For DIN rail installation
		DG2BK1TB-P01	For network-based 1-axis servo amplifier, source type
		DG2BK1TB-P01-D	For network-based 1-axis servo amplifier, source type For DIN rail installation
	Servo amplifier connection cable	DG4SV2CB05	Length: 0.5 m
		DG4SV2CB10	Length: 1 m
		DG4SV2CB50	Length: 5 m

Connected servo amplifier	Item	Model	Description
MR-J5-G MR-J4-B(-RJ) MR-J4-GF(-RJ)	Network amplifier junction terminal block	DG2SV3TB	For network-based 1-axis servo amplifier, sink/source common type External power supply voltage: 24 V DC ±10% Maximum usable current: 0.5 A for signal / 6 A for common line
	Servo amplifier connection cable	DG4SV2CB05	Length: 0.5 m
		DG4SV2CB10	Length: 1 m
		DG4SV2CB50	Length: 5 m

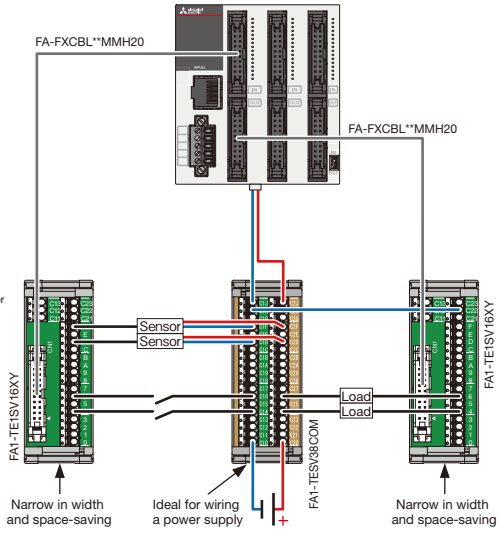
Connected servo amplifier	Item	Model	Description
MR-J5-A MR-J4-A(-RJ) MR-J4-03A6(-RJ) MR-J4-DU_A(-RJ) MR-D01 (Extension I/O unit)	General-purpose interface amplifier junction terminal block	DG2SV1TB	For general-purpose interface servo amplifier, sink/source common type External power supply voltage: 24 V DC ±10%, current capacity 1 A (max)
	Servo amplifier connection cable	DG4SV1CB05	Length: 0.5 m
		DG4SV1CB10	Length: 1 m

Spring clamp terminal blocks for programmable controllers

MELSEC iQ-R series



MELSEC iQ-F series



Junction terminal blocks

Control method		Connection type	Model
Vertical type	16-point input/output, 1-wire type	Spring clamp	FA1-TE1SV16XY
Horizontal type	32-point input/output, 1-wire type		FA1-TE1S32XY
Vertical type	32-point input/output, 1-wire type		FA1-TESV32XY
Vertical type	38 points, common terminal block		FA1-TESV38COM

Digital signal converter (terminal module)

Control method		Connection type	Model
Base unit (user selectable modules)	16-point output, independent (sink)	Spring clamp	FA1-TH16Y2SC20S1E
	16-point output, independent (source)		FA1-TH1E16Y2SC20S1E
N/O contact relay (standard modules)	16-point output, independent (sink)		FA1-TH16Y2RA20S1E
	16-point output, independent (source)		FA1-TH1E16Y2RA20S1E
Triac (standard modules)	16-point output, independent (sink)		FA1-TH16Y1SR20S1E
	16-point output, independent (source)		FA1-TH1E16Y1SR20S1E
Transistor (standard modules)	16-point output, independent (sink)		FA1-TH16Y1TR20S1E
	16-point output, independent (source)		FA1-TH1E16Y1TR20S1E

MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED

NAGOYA ENGINEERING OFFICE | 1-9, Daiko-Minami, 1-Chome, Higashi-ku, Nagoya, Aichi 461-0047 Japan

Precautions for Choosing the Products

Mitsubishi Electric Engineering will not be held liable for damage caused by factors found not to be the cause of Mitsubishi Electric Engineering; opportunity losses or lost profits caused by faults in the Mitsubishi Electric Engineering products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi Electric Engineering; damages to products other than Mitsubishi Electric Engineering products; and to other duties.
The information is intended for the Japanese market.

For safe use

- To use the products given in this publication properly, always read the relevant manuals before beginning operation.
- The products have been manufactured as general-purpose parts for general industries, and are not designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the products for special purposes such as nuclear power, electric power, aerospace, medicine or passenger-carrying vehicles, consult with Mitsubishi Electric Engineering.
- The products have been manufactured under strict quality control. However, when installing the products where major accidents or losses could occur if the products fail, install appropriate backup or fail-safe functions in the system.

MEIC191JE•206 (2104) MEE

Published in April 2021
Specifications are subject to change without notice.