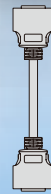


Spring Clamp Junction Terminal Blocks for Mitsubishi Electric AC Servo Systems

MITSUBISHI SERVO AMPLIFIERS & MOTORS
MELSERVO



**For network-based
servo amplifiers**



**For general-purpose
interface servo amplifiers**



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



Junction terminal block
for servo motors with
brakes



Network amplifier
junction terminal block



General-purpose interface amplifier
junction terminal block

FA Goods
Products

e-Factory

Recommended products for MELSERVO-J5 series
Special purpose junction terminal blocks
and cables for easy and reliable wiring


Wire-saving and
process time reduction



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

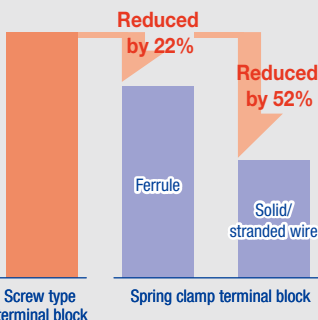
- FLS/RLS/DOG signal-specialized network amplifier terminal block
- Network amplifier junction terminal block
- General-purpose interface amplifier junction terminal block

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

Screw type terminal block

Ring crimp terminal // Crimp the terminal onto the wire. // Loosen the screw. // Tighten the screw to complete the wiring. // **Time and effort required**

Spring clamp terminal block

Ferrule // Crimp the ferrule onto the wire. // Insert the crimped wire. // Wiring complete. //

Features of ferrules

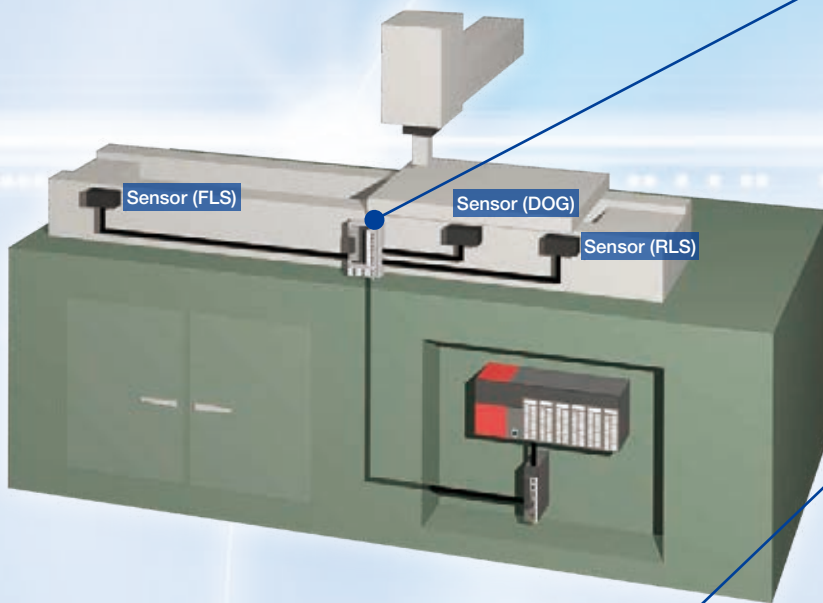
- Preventing short circuits due to loose cores, which occur when stranded wires are used.
- Decreasing the possibility of cable breaks.
- Securing wire connections even after rewiring.

Solid wire // Insert the wire. // Wiring complete. //

Stranded wire // Insert the wire while pressing the release button. // Release the button to complete the wiring. // **Fast and easy for anyone**

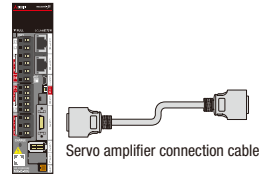
* The release button can be pressed using a tool with a thin tip such as a flathead screwdriver.

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



Servo amplifier connection cable

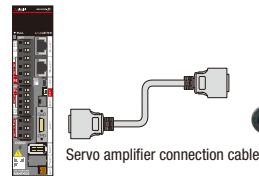


FLS/RLS/DOG signal-specialized network amplifier terminal block

P. 4

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

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



Servo amplifier connection cable

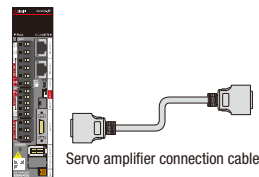


Junction terminal block for servo motors with brakes

P. 5

Easy to wire external signals thanks to spring clamp terminals

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



Servo amplifier connection cable

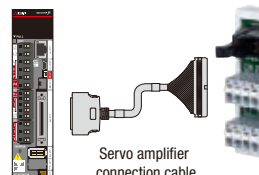


Network amplifier junction terminal block

P. 6

Easy to wire external signals thanks to spring clamp terminals

- MR-J5-A
- MR-J4-A



Servo amplifier connection cable



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

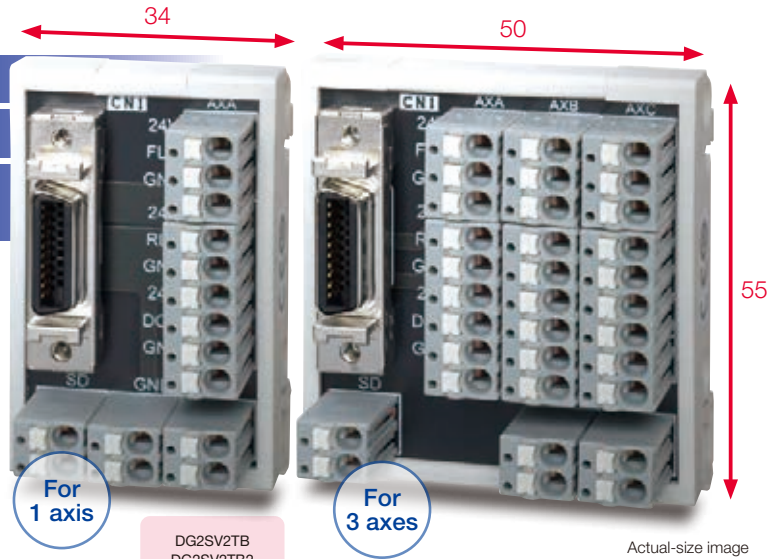
DG2SV2TB / DG2SV2TB2 / DG2SV2TB3

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

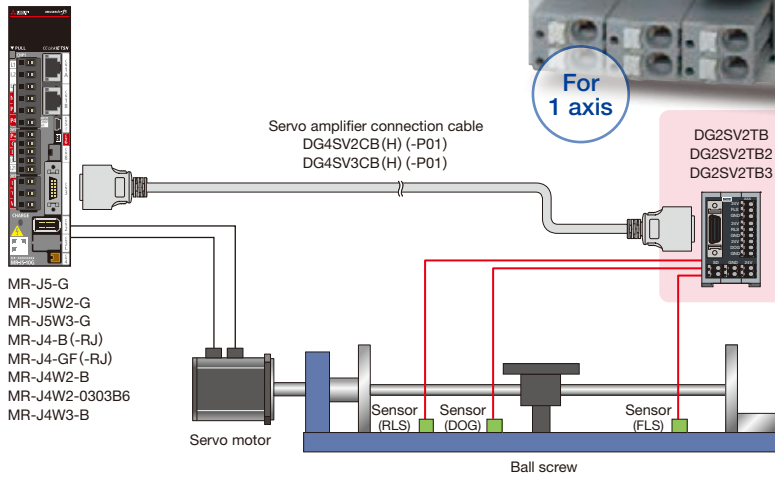
Common terminals make wiring neat and compact.

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



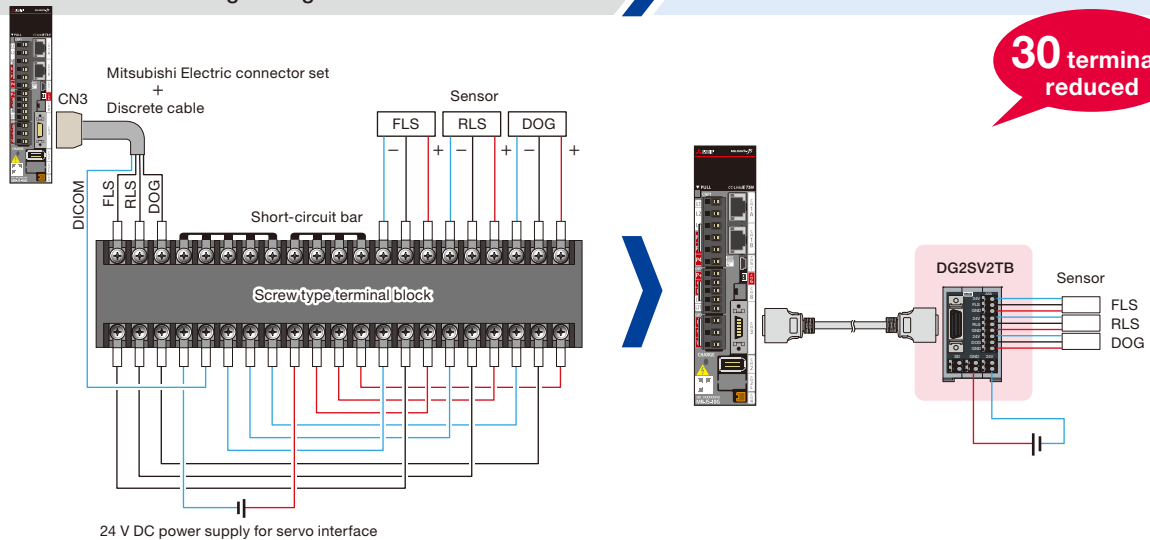
Example of reduction in wiring work

Before

After

Screw tightening for 42 terminals

Push-in connection for 12 terminals



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)

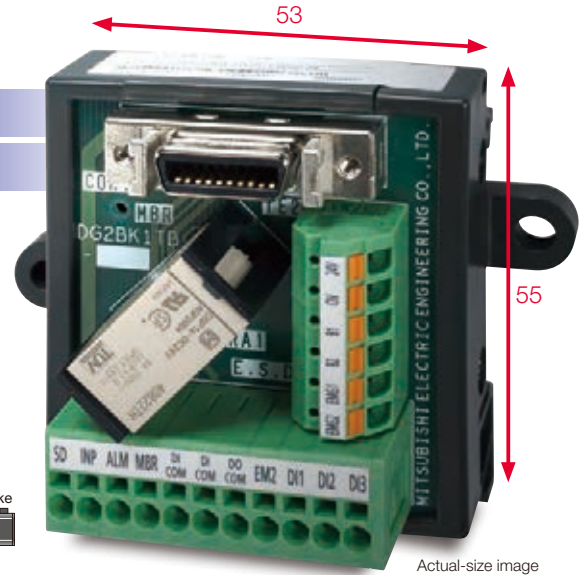
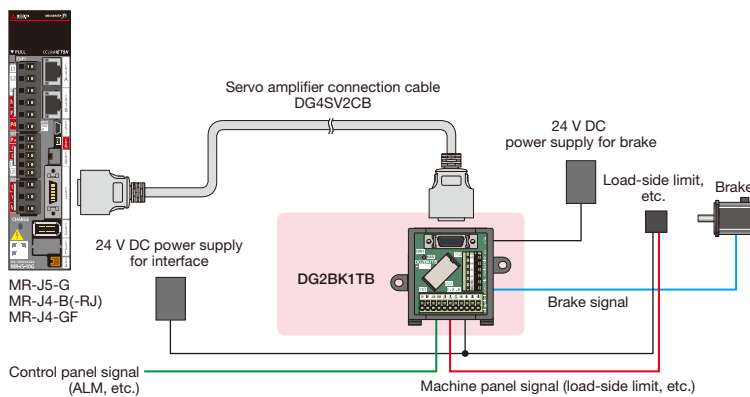
(source type)

* (-D): Models for DIN rail installation

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

Signal name markings prevent erroneous wiring.

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.

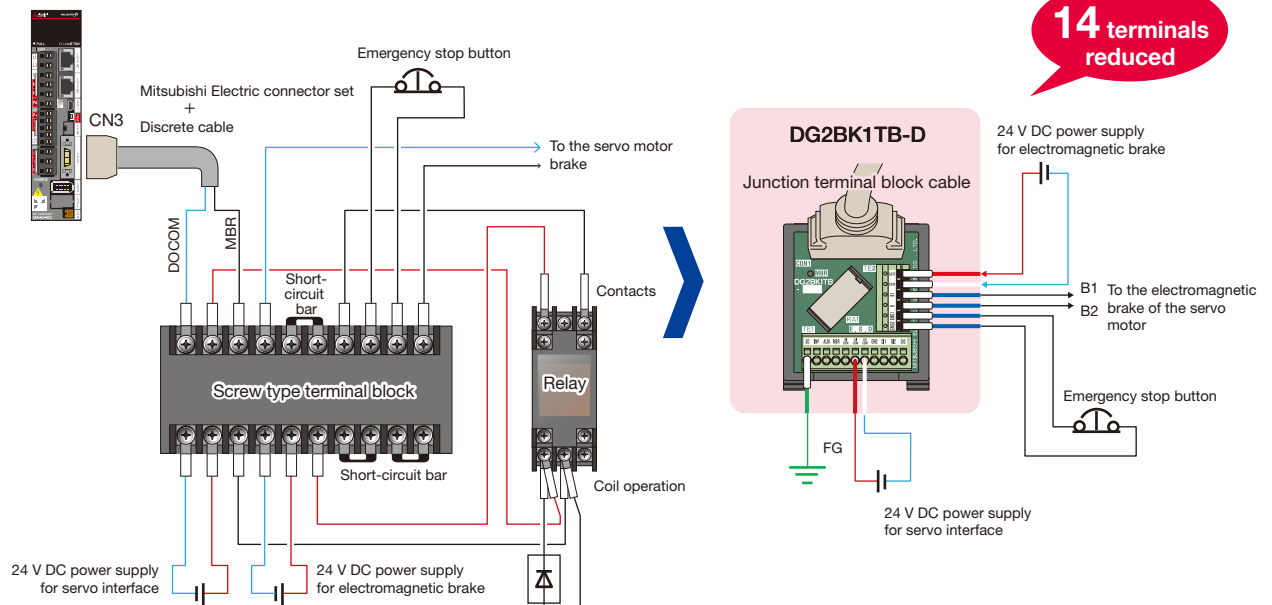
Example of reduction in wiring work

Before

After

Screw tightening for 24 terminals

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)

For customers using screw type junction terminal blocks

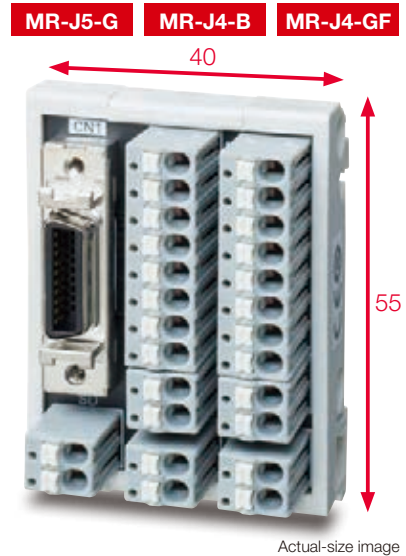
Eliminate cable fabrication time and improve connection quality with our dedicated cable.

Spring clamp terminals reduce wiring time and save space.

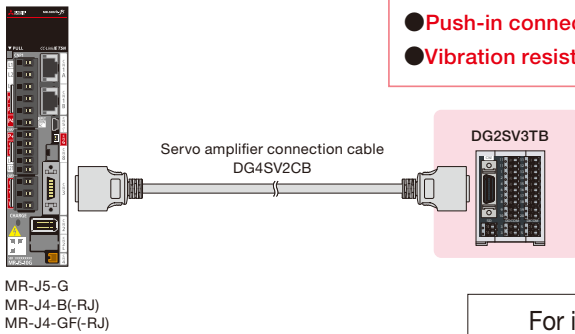
Network amplifier junction terminal block DG2SV3TB

A standard connector cable makes reliable wiring connections.

Spring clamp terminals make wiring easier.



Connection diagram



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

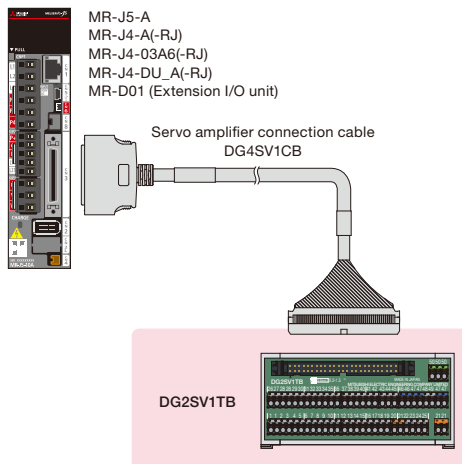
For information on the combination of equipment, refer to page 7.

General-purpose interface amplifier junction terminal block DG2SV1TB

MR-J5-A MR-J4-A

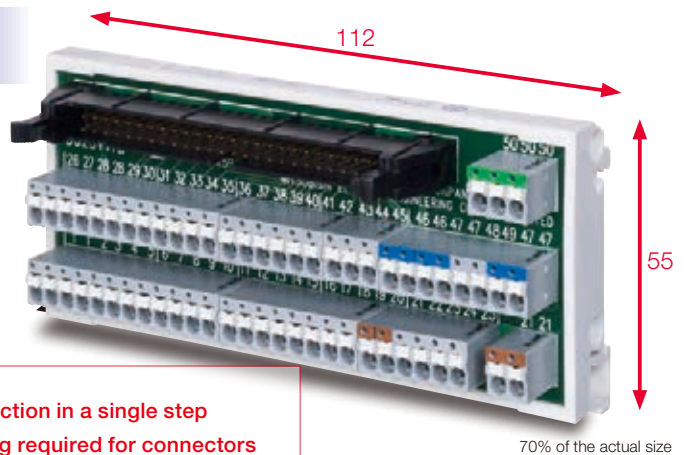
The installation space is reduced by about 40% compared to that of the screw type.

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.

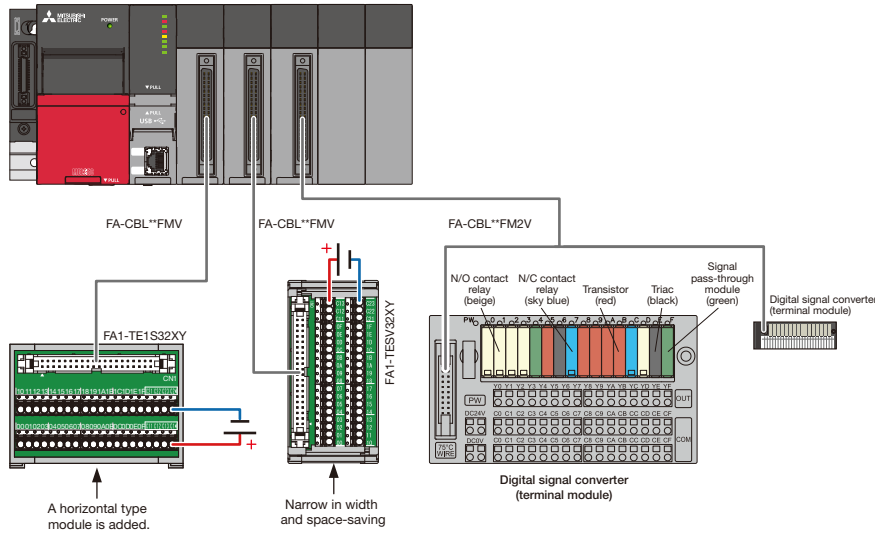


Product list

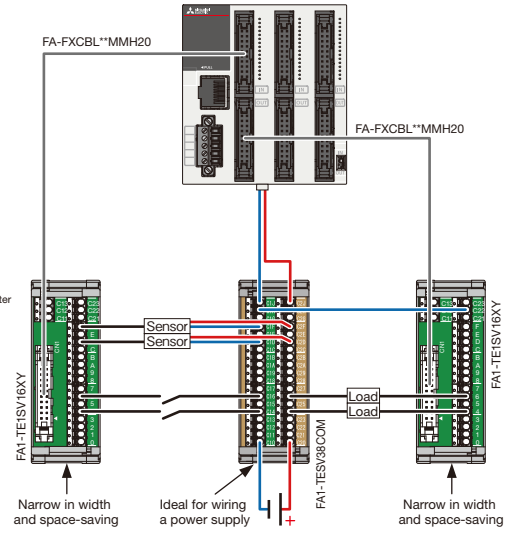
Connected servo amplifier	Item	Model	Description	
MR-J5-G MR-J4-B(-RJ) MR-J4-GF(-RJ)	FLS/RLS/DOG signal-specialized network amplifier terminal block (for 1 axis)	DG2SV2TB	For network-based 1-axis servo amplifier Sink/source common type, dedicated for FLS/RLS/DOG signals External power supply voltage: 24 V DC \pm 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 \pm 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 \pm 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	
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 \pm 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
		DG4SV2CB10		Length: 1 m
	DG4SV2CB50	Length: 5 m		
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 \pm 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	
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 \pm 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	Spring clamp	FA1-TE1SV16XY
Horizontal type		FA1-TE1S32XY
Vertical type		FA1-TESV32XY
Vertical type		FA1-TESV38COM

Digital signal converter (terminal module)

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

The company names and product names mentioned in this document are either registered trademarks or trademarks of their respective companies.

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.

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.