# MITSUBISHI ELECTRIC ENGINEERING

General-purpose interface amplifier junction terminal block MODEL DG2SV1TB

User's Manual

(Detailed Edition)

Time and Wire Saving Devices

# • SAFETY PRECAUTIONS •

Before Using the Product

Do not attempt to install, operate, maintain, or inspect this product until you have carefully read through this User's Manual and relevant documents and can use the equipment correctly. Do not use this product until you have a full knowledge of the equipment, safety information, and instructions. In this manual, the safety instruction levels are classified into "WARNING" and "CAUTION."

Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under "ACAUTION" may lead to serious consequences. Observe the precautions of both levels because they are important for personal and system safety. After reading this manual, keep the manual in a safe place for future reference.

# 1. Electric Shock Prevention

### A WARNING

- Make sure that all wiring work and inspections are performed by professional engineers.
- Do not damage, apply unreasonable stress to, place heavy objects on, or pinch the cables. Doing so results in the risk of electric shock.
- To avoid electric shock, insulate the connection area of the power supply terminal.
- Be sure to shut off all phases of the external power supply used by the system before performing work such as installation and wiring. Failure to do so results in the risk of electric shock and product damage.

# 2. Fire Prevention

# ▲ CAUTION

- Be sure to install this product in a non-flammable object. Directly installing the product in a flammable object or installing the product near a flammable object results in the risk of fire.
- Do not allow any conductive foreign objects, such as a screw or metal fragments, or flammable foreign objects, such as oil, to enter the product interior.

### 3. Injury Prevention

### ▲ CAUTION

- · Be careful to connect terminals correctly. Failure to do so results in the risk of explosion, damage, and the like.
- The polarity (+ and -) must be correct. Failure to do so results in the risk of explosion, damage, and the like.

# 4. General Precautions

Also note the following precautions. Incorrect handling may cause failure, injury, electric shock, and the like.

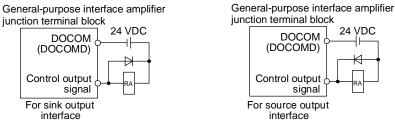
#### (1) Transportation and Installation

- CAUTION
   This product is a precision instrument. During transportation, avoid impacts larger than those specified in general specifications. Failure to do so results in the risk of failure.
- Do not stand or rest heavy objects on the product.
- Do not install or operate units that are damaged or have missing parts.
- This product is a precision instrument. Do not drop or apply strong impact to the product.
- Use this product in an environment that reflects the general specifications set forth in the User's Manual. Usage in an environment outside of the scope of the general specifications results in the risk of electric shock, fire, malfunction, product damage, and/or product deterioration.
- When handling the product, be careful of sharp areas such as product corners.
- Be sure to place this product inside a metal enclosure.
- Reliably secure the module using a DIN rail. If the module is not properly mounted, risk of malfunction, failure, and falling results. If using the product in an environment with high vibration, secure the product with screws.
- Fumigants that contain halogen materials such as fluorine, chlorine, bromine, and iodine used for disinfecting
  and protecting wooden packaging from insects will cause malfunction in Mitsubishi Electric Engineering
  products. Please take necessary precautions to ensure that residual fumigants do not enter the product, or
  treat packaging with methods other than fumigation (heat method, etc.). Additionally, disinfect and protect
  wood from insects before packing.
- Noises are classified into external noises which enter the servo amplifier to cause it to malfunction and those
  radiated by the servo amplifier to cause peripheral equipment to malfunction. Since the servo amplifier is an
  electronic device which handles small signals, the general noise reduction techniques are required. Referring
  to the Servo Amplifier Instruction Manual for using, take the countermeasures.

### (2) Wiring

# ▲ CAUTION

- This product is dedicated for general-purpose AC servo amplifiers and extension I/O units for general-purpose AC servo amplifiers manufactured by Mitsubishi Electric Corporation, and SSCNET-Compatible Hydraulic Control units manufactured by Mitsubishi Electric Engineering Company Limited. Do not use the product for the products other than the specified products. For the connectable models, refer to chapter 4.
- Be sure to wire the product correctly. Failure to do so results in the risk of unexpected servo motor operation.
- The connection drawings in this manual are based on a sink interface, unless otherwise specified.
- Be careful to properly set the orientation of the diodes for surge absorption, which are attached to the DC relay for servo amplifier control output signals. Incorrect orientation results in the risk of the servo amplifier failure, which can cause signal output failure and malfunction of protective circuits such as emergency stop.



- Always verify that the wiring is properly secured to the terminal block. Failure to adequately secure the wiring results in the risk of poor contact, which can cause heat generation from the wiring and terminal block.
- Properly connect the wiring to the module after first verifying the module rated voltage and terminal layout. Inputting or connecting the power supply to voltage that differs from the rated voltage and miswiring result in the risk of fire and product failure.
- Securely install the connector to the module. Failure to do so results in the risk of malfunction.
- Be sure that foreign matter such as dust and wire shavings does not enter the module interior. Failure to do so results in the risk of fire, failure, and malfunction.
- Be sure to secure the power lines and cables connected to the module by clamping them or placing them in a duct. If not, dangling cables may swing, move, or inadvertently be pulled, resulting in damage to the module or cables, or malfunction due to poor cable connection.

# ▲ CAUTION

- When disconnecting the cable connected to the module, do not pull the cable by the cable part. For cables
  with connectors, take hold of the connector connected to the module and then disconnect the connector. For
  cables connected to the terminal block, unlock the terminal board spring lock and then disconnect the
  connector. Pulling the connected cable may result in malfunction or damage to the module or cable.
- When connecting the servo amplifier, etc., verify that the product configuration is correct. Connecting the
- servo amplifier with a wrong configuration results in the risk of failure and malfunction.

#### (3) Usage

# ▲ CAUTION

- Do not disassemble, repair, or modify the product.
- Never attempt to burn or disassemble the product. Doing so may cause generation of poisonous gas.
- Be careful when changing the output device assignments in servo amplifier parameters. Changing the MBR (electromagnetic brake interlock) signal assignments, in particular, may cause unexpected operation of the servo motor, damage, falling, and malfunction.

#### (4) Emergency Handling

### ▲ CAUTION

 Ensure safety by confirming the power off, etc. before performing corrective actions. Otherwise, it may cause an accident.

#### (5) Maintenance and Inspection

## 

- Before removing or installing the module, cut off all phases of the power supply externally. Failure to do so may cause module failure, malfunction, or damage.
- Connection/disconnection of the cables after the first use of the product shall be limited to 50 times.
- Before handling the module, touch a grounded metal object to discharge the static electricity from your body. Failure to release the static electricity may cause the module to fail or malfunction.

#### (6) General Instruction

When disposing of this product, treat it as industrial waste.

#### REVISIONS

*The manual	number is noted of	on the lower left	of the back cover.

Print Date	*Manual Number		Revision
	50EN-070184-A	First edition	
April 2017			
May 2019	50EN-070184-B	4. General Precautions	Correction of errors
		Chapter 1	The sentences are changed.
		Chapter 2	The table is changed.
		Chapter 3	The table is changed.
		Chapter 4	The table is changed. Note is added.
		Chapter 5	The part of diagram is changed.
		Section 6-1	Partially changed.
		Section 6-2	Partially changed.
		Section 6-3	The sentences are changed.
		Section 6-4	Correction of errors
		Section 6-5	Newly added.
		Section 8-1	Partially changed. The part of diagram is changed.
		Section 8-2	The diagram is changed.
		Section 8-3	The diagram is changed.
		Section 8-4	The diagram is changed.
		Chapter 9	Note is changed.
			, , , , , , , , , , , , , , , , , , ,
May 2022	50EN-070184-C	Front cover	The product pame is partially changed
May 2023	JUEIN-0/0104-C	Front cover	The product name is partially changed.
		Chapter 1	The product name is partially changed. Connection models are added.
		Chapter 4	
		Continue C. 1	The product name is partially changed.
		Section 6-1	Connection servo amplifiers are added.
			The product name is partially changed.
		Section 6-2	The product name is partially changed.
		Section 7-3	The product name is partially changed.
		Section 8-1	Connection servo amplifiers are added.
		Section 8-2	(5) is added.
		Section 8-4	The product name is partially changed.

This manual confers no industrial property rights or rights of any other kind, nor does it confer any patent licenses. Mitsubishi Electric Corporation cannot be held responsible for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual.

© 2017 MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED

# CONTENTS

1. OVERVIEW 1								
2. GENERAL SPECIFICATIONS 1								
3. PERFORMANCE SPECIFICATIONS 1								
4. CONNECTABLE MODELS AND CONNECTION CABLE 1								
5. DIMENSIONS 2	2							
6. INSTALLATION PROCEDURE 2 - 6	3							
6-2       Connection with SSCNET-Compatible Hydraulic Control unit	Connection with SSCNET-Compatible Hydraulic Control unit							
7. CONNECTION DIAGRAM 6 – 9	}							
7-1       Internal connection diagram of DG2SV1TB       6         7-2       Connection diagram of DG4SV1CB_       7         7-3       Connection diagram of DG4AF3CB_       8         7-4       Connector dimensions       9	7 3							
8. EXTERNAL CONNECTION EXAMPLE 9 - 22	>							
<ul> <li>8-1 Branch of digital interface power supply</li></ul>	) )							
9. APPLICABLE CRIMPING TERMINAL 23	<b>)</b>							

# 1. OVERVIEW

This User's Manual describes the specifications of the general-purpose interface amplifier junction terminal block DG2SV1TB (herewith described as DG2SV1TB) used with general-purpose AC servo amplifiers and extension I/O units for general-purpose AC servo amplifiers manufactured by Mitsubishi Electric Corporation, and SSCNET-Compatible Hydraulic Control units manufactured by Mitsubishi Electric Engineering Company Limited.

# 2. GENERAL SPECIFICATIONS

Item		Specifications				
Ambient	Operating	0°C to 55°C (non-freezing)				
temperature	Storage	-20°C to 65°C (non-freezing)				
Ambient	Operating	5 % PH to 00 % PH (non condensing)				
humidity	Storage	5 %RH to 90 %RH (non-condensing)				
Ambience		Indoors (no direct sunlight),				
Amplence		free from corrosive gas, flammable gas, oil mist, dust, and dirt				
Altitude		2000 m or less above sea level				
Vibration resistance		5.9 m/s <sup>2</sup> , at 10 to 55 Hz (in X, Y and Z directions)				

# 3. PERFORMANCE SPECIFICATIONS

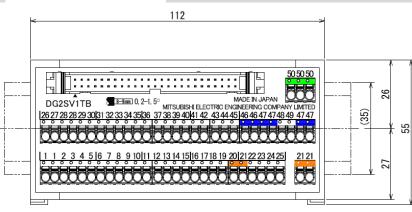
Item	Model	DG2SV1TB				
External	Voltage	24 VDC ±10 %				
power supply	Maximum working current	1A				
Terrerinel	Number of points	60 points (wire: 1 /wire insertion hole)				
Terminal block	Applicable wire	Solid wire, twisted wire: 0.2 to 1.5 mm <sup>2</sup> (AWG 24 to 16) film $\varphi$ 2.8 mm or less				
section	Wire strip length	8 to 9 mm (Maximum wire film dimension φ2.8 mm or less)				
Global compliance standard	UL standard	UL61800-5-1				
Module mounting	DIN rail	Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC60715 compliant)				
Weight		Approx. 80 g				

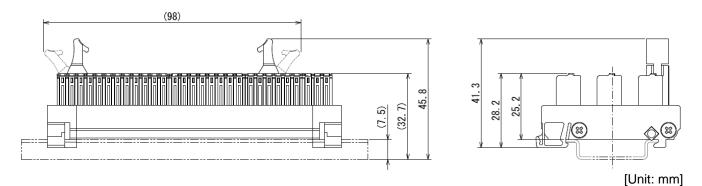
# 4. CONNECTABLE MODELS AND CONNECTION CABLE

Connectable mo	Connection cable model	
MELSERVO-J5 general-purpose compatible Servo amplifier	MR-J5A_(-RJ)	
MELSERVO-J4 general-purpose compatible Servo amplifier	MR-J4A_(-RJ) MR-J4-03A6(-RJ) MR-J4DU_A_(-RJ)	DG4SV1CB05 (Length: 0.5 m) DG4SV1CB10 (Length: 1 m)
MELSERVO-J4 extension I/O unit	MR-D01	
SSCNET-Compatible Hydraulic Control unit	DG2AF3N(-P01)	DG4AF3CB05 (Length: 0.5 m) DG4AF3CB10 (Length: 1 m)

\*1: MELSERVO is a registered trademark of Mitsubishi Electric Corporation.

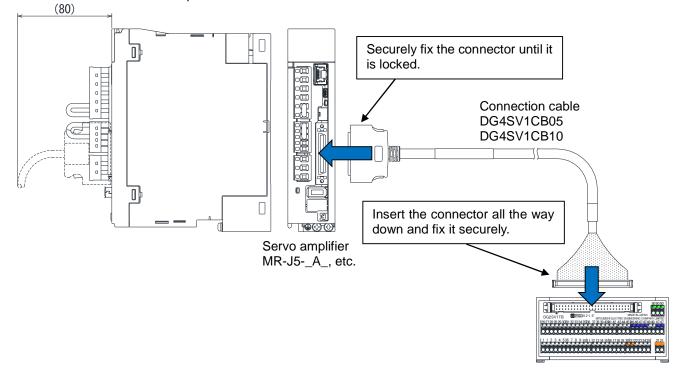
# 5. DIMENSIONS





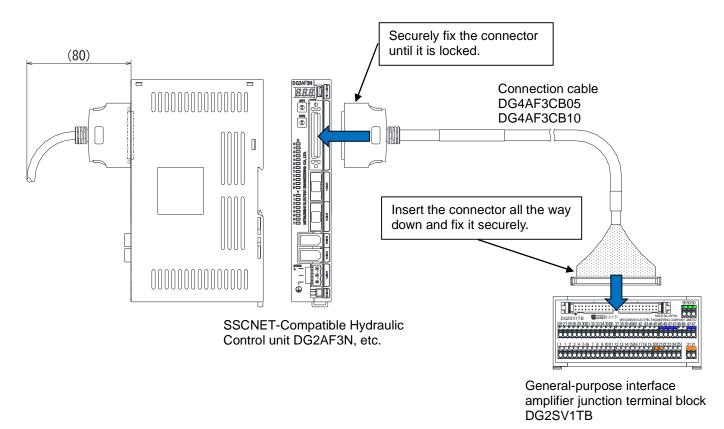
6. INSTALLATION PROCEDURE

6-1. Connection with servo amplifier



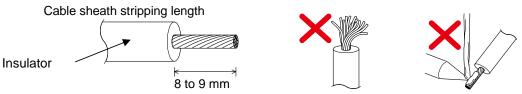
General-purpose interface amplifier junction terminal block DG2SV1TB

#### 6-2. Connection with SSCNET-Compatible Hydraulic Control unit



- 6-3. Wiring to spring clamp terminal block
- (1) Cable routing
  - (a) Fabrication on cable insulator

Strip the cable as follows. If the length of the sheath peeled is too long, a short circuit may occur with neighboring wires. If the length is too short, wires might come off. Wire the stripped cable after twisting it to prevent it from becoming loose. In addition, do not solder it.

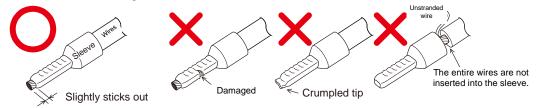


(b) Using a ferrule terminal

Insert wires to a ferrule terminal and crimp it.

Make sure that core wire slightly comes out of the ferrule.

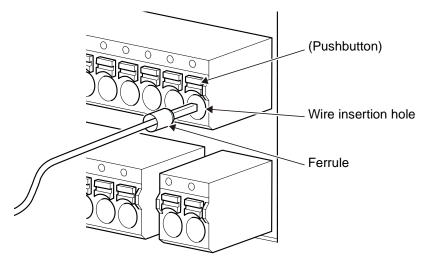
Check the condition of the ferrule terminal after crimping. Do not use a ferrule terminal of which the crimping is inappropriate, or the face is damaged.



Refer to chapter 9 for the applicable ferrule terminal.

#### (c) Inserting cable

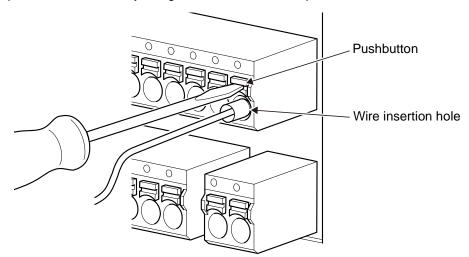
The cable with ferrule or solid cable can be inserted into the cable insertion hole. After inserting, pull the wire lightly to confirm that the cable is surely connected.



When binding twisted wires, press the push button using the screw driver, then insert the twisted wires into the cable insertion hole.

#### (2) Cable removal

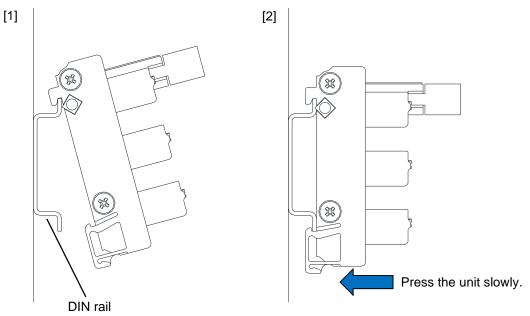
Press the push button all the way using the screw driver, then pull out the wire.



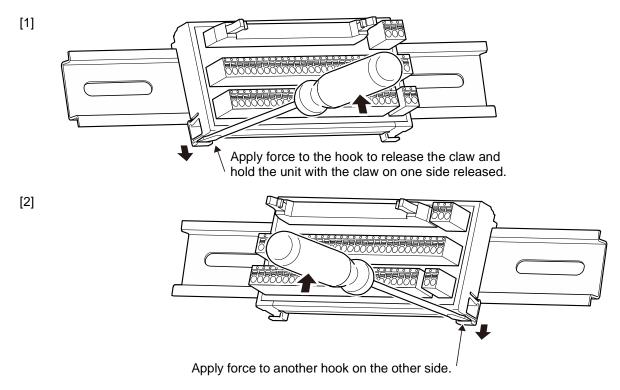
Use the screw driver shown in the table below.

Recommended tool (screw driver)							
Manufacturer Model Blade edge size							
	210-119SB						
WAGO Company of	(Mini type)	2 5 v 0 4 mm					
Japan, Ltd	210-719	2.5 x 0.4 mm					
	(Insulation shaft type)						

- 6-4. Attaching/detaching to the DIN rail
- (1) Mounting to the DIN rail
  - 1) Place the DIN rail mounting groove onto the DIN rail to fit in place.
  - 2) Press the unit slowly toward the DIN rail until the unit clicks in place.



- (2) Removal from the DIN rail
  - 1) Insert a flathead screwdriver into the hook on one side and pry the screwdriver to release the claw. Hold the unit with the claw on one side released.
  - 2) Insert the screwdriver into the hook on another side and pry the screwdriver to detach the unit from the DIN rail.



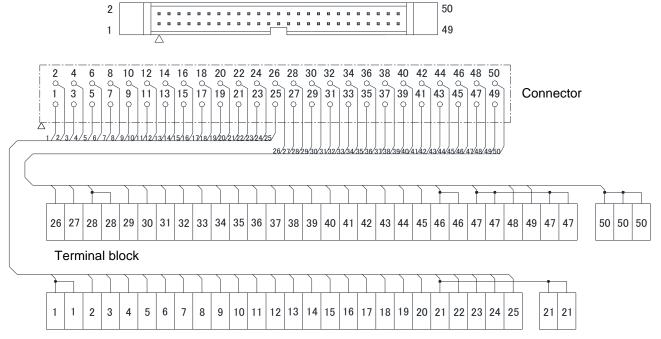
#### 6-5. Inspection items

It is recommended that the following points periodically be checked.

- (1) Check the cables and the like for scratches or cracks.
- (2) Check that the cable connector is securely connected.
- (3) Check that the wires are not coming out from the connector.
- (4) Check for dust accumulation on the terminal block.

# 7. CONNECTION DIAGRAM

7-1. Internal connection diagram of DG2SV1TB



Terminal block

#### 7-2. Connection diagram of DG4SV1CB\_

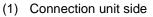
D7950-B500FL

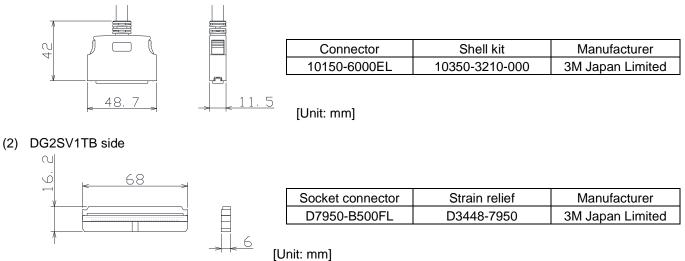
50-6000 amplifie	r side)	(junction	
Pin No.			Pin N
1			1
	Empty	Empty	
2			2
3			3
4			4
5			5
6			6
7			7
8			8
9			9
10			10
11			- 11
12			12
	Empty	Empty	
13			13
14			14
15			15
16			16
17			17
18			18
19			19
	Empty	Empty	
20			20
46			46
21		/	21
		· /	
49		-{/-	- 49
22			22
	Empty	Empty	
23			23
	Empty	Empty	
24			24
	Empty	Empty	
25			25
	Empty	Empty	
26			26
30			30
29	$\overline{}$	/	29
27			27
28		)	- 28
31			31
32			- 32
33		(	- 33
34			- 34
35			- 35
36			- 36
37			37
38		)	- 38
39			- 39
40			40
41		(	41
47			47
42		(	42
43			43
44	1	(	- 44
45			45
48			- 48
	Empty	Empty	
50	<u> </u>		- 50
Plate	1 2 🔨		

### 7-3. Connection diagram of DG4AF3CB\_

Control เ	unit side	lydraulic D a) (junction	iermina
Signal name	Pin No.		Pin No
AG	1		1
AI1	2		2
AG	3		3
AI3	4		- 4
AG	5	· (	5
AG	6		6
A01	7	· · · · · · · · · · · · · · · · · · ·	- 7
AG	8		- 8
AO3	9	(	- 9
AG	10		10
	11		- 11
DIO	12		12
DIO			
DI2	13	-	13
DI4	14		14
DI6	15		15
DI8	16		16
DIA	17		17
DICOM	18		18
EMG	19		19
	20		20
DO0	21	(	21
DO2	22		22
DO4	23		23
DO6	24		24
DOCOM	25	(	25
		Empty — Empty	
AG	26		26
AI2	20		20
	27		27
AG			
AI4	29		29
AG	30		30
AG	31		31
A01	32		32
AG	33	· · · · · · · · · · · · · · · · · · ·	33
A04	34		34
AG	35		35
	36	(	36
DI1	37		37
DI3	38	(	- 38
DI5	39		- 39
DI7	40		- 40
DI9	41		41
DIB	42	· · · · · · · · · · · · · · · · · · ·	42
DICOM	43	ļ	43
EMGCOM	44	· · · · · · · · · · · · · · · · · · ·	- 44
	45	ļ	45
DO1	46	(	46
DO1 DO3	40		40
	48 49		48
DO5			- 49
D05 D07	49 50		50

#### 7-4. Connector dimensions

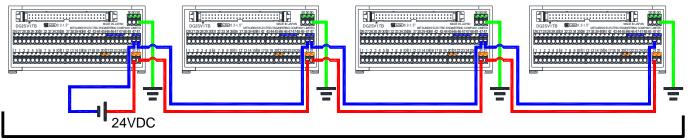




# 8. EXTERNAL CONNECTION EXAMPLE

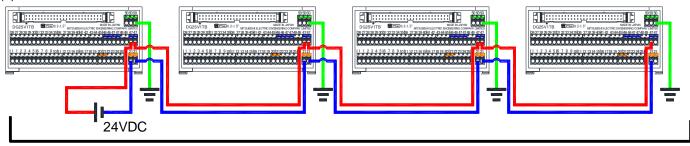
8-1. Branch of digital interface power supply When this unit is connected with a servo amplifier, up to four digital interface power supplies can be connected. Target servo amplifier: MR-J5-\_A\_(-RJ), MR-J4-\_A\_(-RJ), MR-J4-03A6(-RJ), MR-J4-\_DU\_A\_(-RJ)

(1) For sink I/O interface



Up to four digital interface power supplies can be connected.

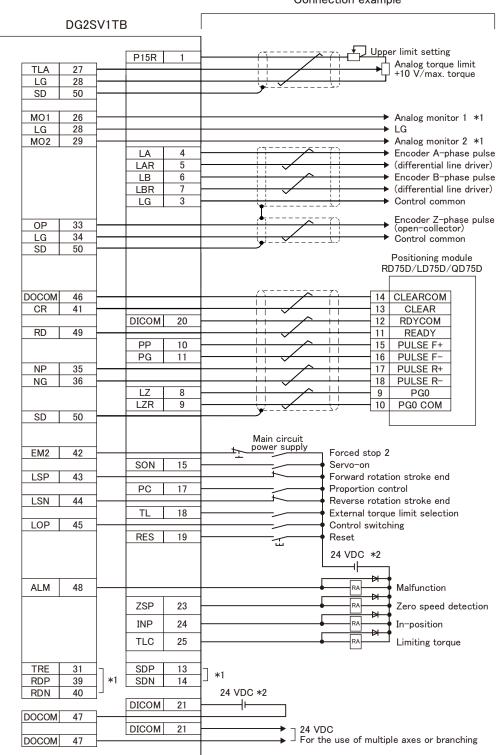
#### (2) For source I/O interface



Up to four digital interface power supplies can be connected.

- 8-2. Connection with MR-J5-\_A\_(-RJ), MR-J4-\_A\_(-RJ), MR-J4-03A6(-RJ), or MR-J4-\_DU\_A\_(-RJ)
- (1) Position control mode Differential line driver type
  - 1) For sink I/O interface

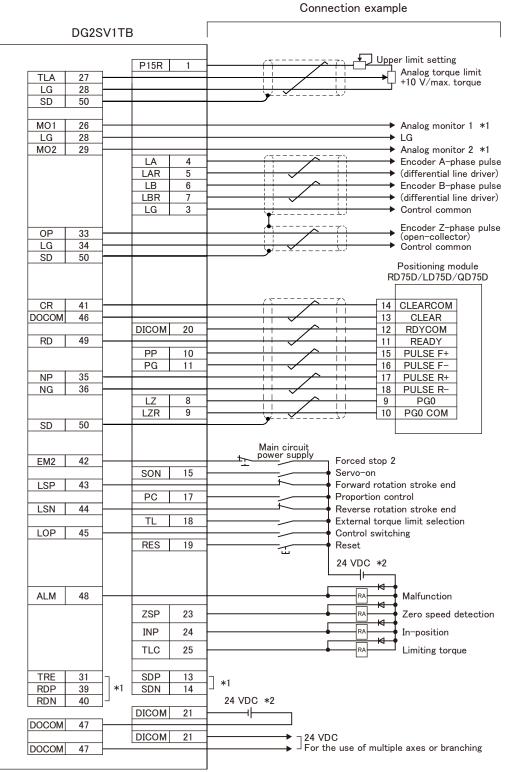
Connection example



\*1: MR-J4-03A6(-RJ) only

- \*2: The illustration of the 24 VDC power supply is divided for convenience. However, they can be configured by one.
- \*3: For actual wiring, be sure to refer to the Servo Amplifier Instruction Manual and Servo Motor Instruction Manual for each product.

#### 2) For source I/O interface

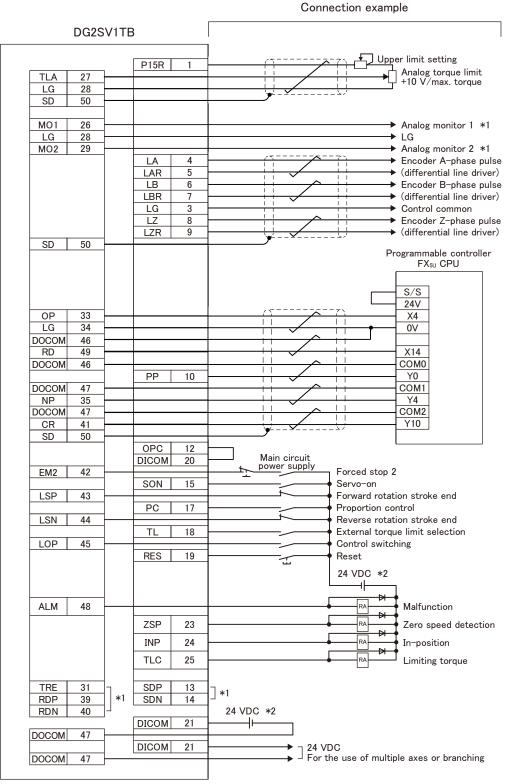


\*1: MR-J4-03A6(-RJ) only

\*2: The illustration of the 24 VDC power supply is divided for convenience. However, they can be configured by one.

\*3: For actual wiring, be sure to refer to the Servo Amplifier Instruction Manual and Servo Motor Instruction Manual for each product.

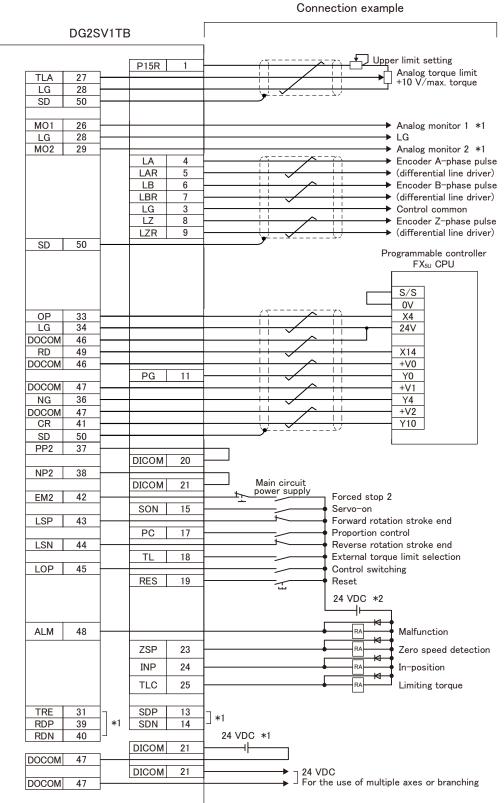
(2) Position control mode Open-collector type1) For sink I/O interface



\*1: MR-J4-03A6(-RJ) only

- \*2: The illustration of the 24 VDC power supply is divided for convenience. However, they can be configured by one.
- \*3: For actual wiring, be sure to refer to the Servo Amplifier Instruction Manual and Servo Motor Instruction Manual for each product.

#### 2) For source I/O interface

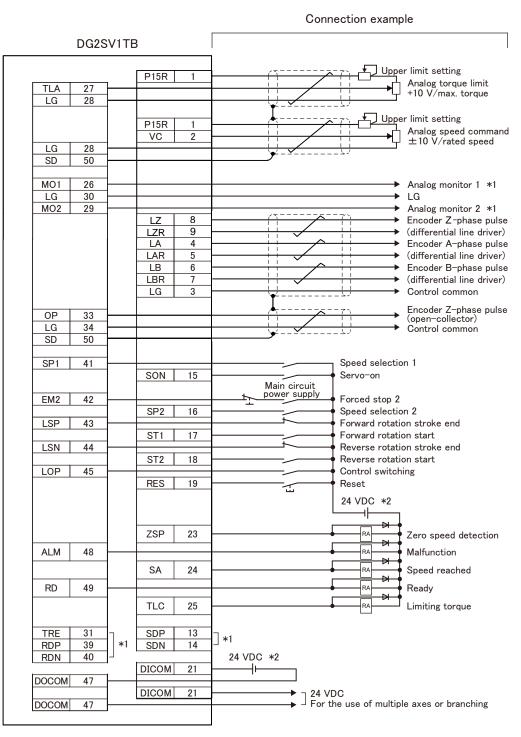


\*1: MR-J4-03A6(-RJ) only

- \*2: The illustration of the 24 VDC power supply is divided for convenience. However, they can be configured by one.
- \*3: For actual wiring, be sure to refer to the Servo Amplifier Instruction Manual and Servo Motor Instruction Manual for each product.

### (3) Speed control mode

1) For sink I/O interface

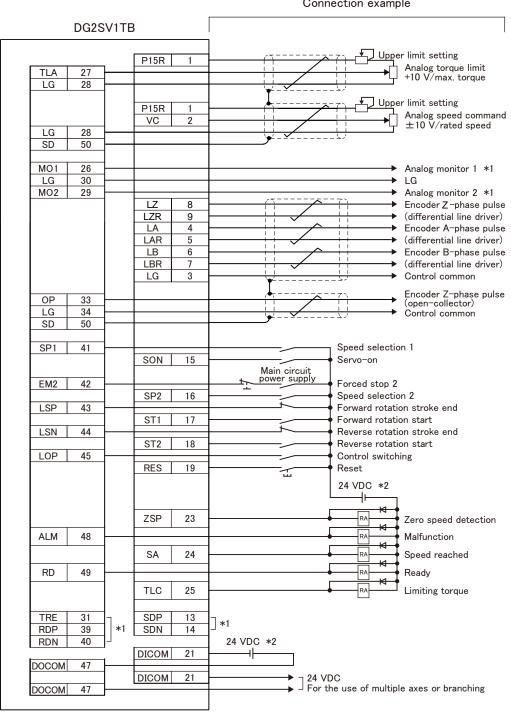


\*1: MR-J4-03A6(-RJ) only

\*2: The illustration of the 24 VDC power supply is divided for convenience. However, they can be configured by one.

\*3: For actual wiring, be sure to refer to the Servo Amplifier Instruction Manual and Servo Motor Instruction Manual for each product.

#### 2) For source I/O interface



Connection example

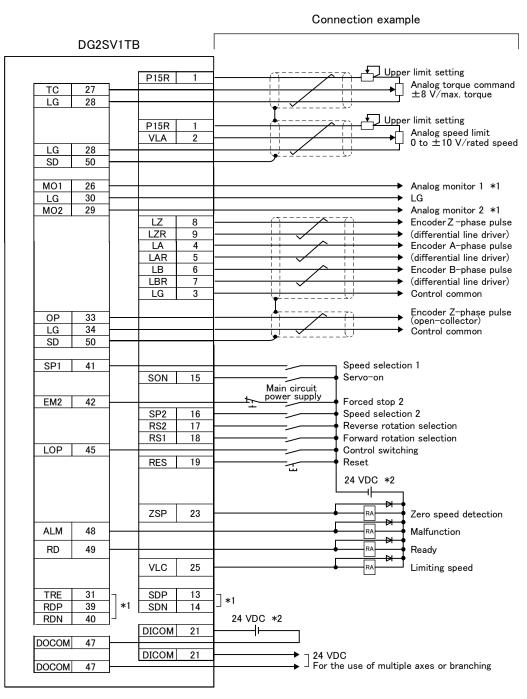
\*1: MR-J4-03A6(-RJ) only

\*2: The illustration of the 24 VDC power supply is divided for convenience. However, they can be configured by one.

\*3: For actual wiring, be sure to refer to the Servo Amplifier Instruction Manual and Servo Motor Instruction Manual for each product.

# (4) Torque control mode

1) For sink I/O interface

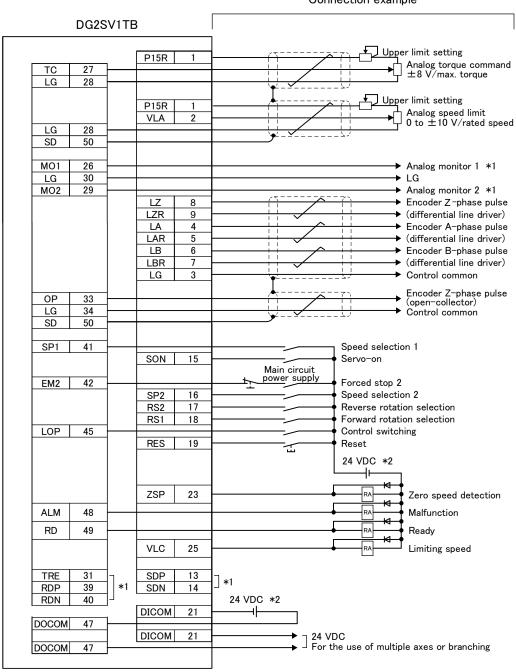


\*1: MR-J4-03A6(-RJ) only

<sup>\*2:</sup> The illustration of the 24 VDC power supply is divided for convenience. However, they can be configured by one.

<sup>\*3:</sup> For actual wiring, be sure to refer to the Servo Amplifier Instruction Manual and Servo Motor Instruction Manual for each product.

#### 2) For source I/O interface



Connection example

\*1: MR-J4-03A6(-RJ) only

- \*2: The illustration of the 24 VDC power supply is divided for convenience. However, they can be configured by one.
- \*3: For actual wiring, be sure to refer to the Servo Amplifier Instruction Manual and Servo Motor Instruction Manual for each product.

(5) Positioning mode (MR-J4-\_A\_-RJ, MR-J4-03A6-RJ) For details on device assignment of the CN1 connector in positioning mode, refer to your Servo Amplifier Instruction Manual.

#### 8-3. Connection with MR-D01

#### (1) Point table method

1) For sink I/O interface

				Connection example				
	DG	i2SV1T	В					
RES	26	1	DIO 1	_			Point table No. selection 1 Reset	
TL	27						External torque limit selection	
TL1	28		DI1 2	_	=		Point table No. selection 2 Internal torgue limit selection	
		-	DI2 3				Point table No. selection 3	
TP0 TP1	29 30						<ul> <li>Manual pulse generator multiplication</li> <li>Manual pulse generator multiplication</li> </ul>	
	01		DI3 4				Point table No. selection 4	
OVR	31	-	DI4 5		=		<ul> <li>Override selection</li> <li>Point table No. selection 5</li> </ul>	
MD0	32		DI5 6	_			Operation mode selection 1 Point table No. selection 6	
TSTP	33			_			Temporary stop/restart	
PC	34		DI6 7	_			Point table No. selection 7 Proportion control	
			DI7 8				Point table No. selection 8	
ST1 ST2	<u>35</u> 36						<ul> <li>Forward rotation start</li> <li>Reverse rotation start</li> </ul>	
		1	SON 21	_			Servo-on	
			DICOMD 13		24 VDC *	I		
r		-	· · · · ·	24 VDC	*1			
DOCOMD	37						•	
MCD00	38				<b>_</b>		M code 1 (bit 0)	
MCD01	39				<b>_</b>		M code 2 (bit 1)	
MCD02	40				<b>_</b>		M code 3 (bit 2)	
MCD03	41						M code 4 (bit 3)	
MCD10	42				<b>_</b>		M code 5 (bit 4)	
MCD11	43						M code 6 (bit 5)	
MCD12	44						M code 7 (bit 6)	
MCD13	45					RA	M code 8 (bit 7)	
PUS	46					RA	During a temporary stop	
MEND	47	ļ			<b>_</b>		Travel completion	
		1	ACD0 22		<b>F</b>		Alarm code 0	
			ACD1 23				Alarm code 1	
CP0	48	İ					Rough match	
I.		1	ACD2 24		<b>_</b>		Alarm code 2	
INP	49			-	<b>_</b>		In-position	
	47	J J	ACD3 25	-	<b>_</b>		Alarm code 3	
MEND MEND	<u>47</u> 47	] *2		_				
		L	SON 21 SON 21	_] *2				

- \*1: The illustration of the 24 VDC power supply is divided for convenience. However, they can be configured by one.
- \*2: When MR-D01 is used, the branch connection of the digital interface power supply is not available.
- \*3: For actual wiring, be sure to refer to the Servo Amplifier Instruction Manual and Servo Motor Instruction Manual for each product.

#### 2) For source I/O interface

DG2SV1TB           DI0         1           RES         26           TL         27           DI1         2           TL         27           TL         28           TP0         29           TP1         30           DI3         4           OVR         31           DI4         5           Moo         32           DI5         6           TSTP         33           DI6         7           PC         34           DD7         8           TSTP         33           DI6         7           PC         34           DI7         8           ST1         35           ST2         36           SON         21           24 VDC *1           DICOMD         13           24 VDC *1           DICOMD         13           MCD02         40           MCD02         40           MCD02         40           MCD03         40           MCD04         40           MCD02 <td< th=""><th></th><th>DOG</th><th>יט איז די</th><th>D</th><th></th><th></th><th></th><th></th><th></th></td<>		DOG	יט איז די	D					
RES         26           TL         27           TL         28           TL         28           TL         28           TL         28           TL         28           DI2         3           TPO         29           DI3         4           OVR         31           DI4         5           MD0         32           DI5         6           TSTP         33           DI6         7           PC         34           DI7         8           TSTP         33           DI6         7           PC         34           DI7         8           ST1         35           SON         21           DCOMD         13           DCOMD         13           DCOMD         13           DCOMD         14           MCD00         38           MCD10         39           MCD10         44           MCD11         44           MCD11         44           MCD11         44 <td></td> <td>DG2</td> <td>.57111</td> <td>D</td> <td></td> <td></td> <td></td> <td></td> <td></td>		DG2	.57111	D					
TL         27         DI1         2           TL1         28         DI2         3         Point table No. selection 2           TP0         29         DI3         4         Point table No. selection 3           TP1         30         DI3         4         Point table No. selection 4           OVR         31         DI3         4         Point table No. selection 4           OVR         31         DI3         4         Point table No. selection 4           OVR         31         DI3         4         Point table No. selection 4           OVR         31         DI3         4         Point table No. selection 5           MOD         32         DI5         6         Point table No. selection 7           Proportion control         35         Point table No. selection 7         Proportion control           STI         35         SON         21         24 VDC *1         Point table No. selection 7           Proportion control         33         DI6         7         Point table No. selection 7           MCD00         38         SON         21         24 VDC *1         Point table No. selection 8           MCD013         SON         21         24 VDC *1         Mode 4 (				DI0 1					
DI1         2           TL1         28         DI2         3           TPO         29         DI2         3           TPO         29         DI3         4           OVR         31         DI3         4           OVR         31         DI4         5           MD0         32         DI5         6           TSTP         33         DI6         7           PC         34         DI7         8           ST1         35         DI7         8           ST1         35         DI7         8           SON         21         24 VDC *1         Point table No. selection 7           Proportion contation start         Serveron         Serveron           MCD00         38         A         A           MCD01         39         A         A           MCD01         44         M code 1 (bit 0)           McD01         44         M code 2 (bit 1)           MCD02         40         A           MCD03         41         A           MCD04         A         A           MCD03         41         A           MC	-								
TL1       28       DI2       3       International torque limit selection         TP0       29       DI2       3       Point table No. selection 3         MD0       32       DI4       5       Point table No. selection 1         MD0       32       DI5       6       Point table No. selection 1         PC       34       DI6       7       Point table No. selection 1         PC       34       DI7       8       Point table No. selection 1         PC       34       DI7       8       Point table No. selection 1         PC       34       DI7       8       Point table No. selection 1         PC       34       DI7       8       Point table No. selection 1         Proportion control       Point table No. selection 1       Point table No. selection 1         Proportion control       Point table No. selection 1       Point table No. selection 1         Proportion control       Point table No. selection 1       Point table No. selection 1         Proportion control       Point table No. selection 1       Point table No. selection 1         MCD00       38       McD00       McCD01       McCD01         MCD01       39       McD00       McOde 2 (bit 1)       McOde 3 (bit 2)     <				DI1 2	_				·
DI2         3         Point table No. selection 3           OVR         31         DI3         4         Manual pulse generator multiplicat           OVR         31         DI4         5         Point table No. selection 4           OVR         31         DI4         5         Point table No. selection 4           OVR         32         DI5         6         Point table No. selection 7           PC         34         DI6         7         Point table No. selection 7           PC         34         DI7         8         Point table No. selection 7           PC         34         DI7         8         Point table No. selection 7           PC         34         DI7         8         Point table No. selection 8           ST1         35         SON         21         24 VDC *1           DICOMD         13         24 VDC *1         N code 1 (bit 0)           McD00         38         A         A         A           MCD01         39         A         A         A           MCD01         40         A         A         A           MCD01         41         A         A         A           MCD01         42 <td>TL1</td> <td>28 -</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	TL1	28 -							
TP1         30         DI3         4           OVR         31         DI3         4         Point table No. selection 4           OVR         31         DI4         5         Point table No. selection 5           MD0         32         DI5         6         Point table No. selection 7           PC         34         DI6         7         Point table No. selection 7           PC         34         DI7         8         Point table No. selection 7           Proportion control         Point table No. selection 7         Proportion control         Point table No. selection 8           ST1         36         SON         21         24 VDC *1         Point table No. selection 8           DICOMD         13         24 VDC *1         Point table No. selection 8         Forward rotation start           DICOMD         13         24 VDC *1         M code 1 (bit 0)         M code 2 (bit 1)           MCD00         38         M code 3 (bit 2)         M code 3 (bit 2)         M code 6 (bit 3)           MCD01         40         M code 4 (bit 3)         M code 6 (bit 5)         M code 6 (bit 5)           MCD11         43         M code 2 (bit 1)         M code 8 (bit 7)         During a temporary stop           PUS				DI2 3					
DI3         4         Point table No. selection 4           OVR         31         DI4         5           MD0         32         DI5         6           TSTP         33         DI6         7           PC         34         DI7         8           STI         35									
OVR         31         DI4         5         Overalise         Point table No. selection 5         Operation mode selection 1         Point table No. selection 6           TSTP         33         DI6         7         Point table No. selection 7         Proportion control         Point table No. selection 7           PC         34         DI7         8         Point table No. selection 7         Proportion control           STI         35         SON         21         24 VDC *1         Point table No. selection 8           D0COMD         37         SON         21         24 VDC *1         Proportion control           D0COMD         38         SON         21         24 VDC *1         Proportion control           D0COMD         38         SON         21         24 VDC *1         M code 1 (bit 0)           MCD00         38         M code 2 (bit 1)         M code 4 (bit 3)         M code 4 (bit 3)           MCD01         39         M code 5 (bit 4)         M code 6 (bit 5)         M code 6 (bit 5)           MCD11         43         M code 7 (bit 6)         M code 6 (bit 5)         M code 6 (bit 5)           MCD12         44         M code 7 (bit 6)         M code 7 (bit 6)         M code 7 (bit 6)           MCD12         44 </td <td></td> <td>30 -</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		30 -							
DI4         5         Point table No. selection 5           MD0         32         DI5         6           TSTP         33         DI6         7           PC         34         DI6         7           PC         34         DI7         8           ST1         35         DI7         8           ST2         36         SON         21           DCOMD         37         24 VDC *1         Point table No. selection 8           DICOMD         13         24 VDC *1         Point table No. selection 8           DOCOMD         37         Acbox         Acbox         Acbox           MCD00         38         Acbox         Acbox         Acbox           MCD01         39         Acbox         Acbox         Acbox           MCD11         43         Acbox         Acbox         Acbox           MCD12         44         Acbox         Acbox         Acbox           PUS         46         Acbox         Acbox         Acbox         Acbox           MEND         47         Acbox         Acbox         Acbox         Acbox         Acbox           MEND         47         Acbox         Z	OVR	31 -		010 4	_				
DI5         6         Point table No. selection 6           TSTP         33         DI6         7           PC         34         DI7         8           ST1         35         Proportion control         Point table No. selection 7           Proportion control         Point table No. selection 7         Proportion control           ST1         35         SON         21           24 VDC *1         DICOMD         13         24 VDC *1           DICOMD         13         24 VDC *1         Serve-on           MCD00         38         M code 1 (bit 0)         M code 2 (bit 1)           MCD02         40         M code 3 (bit 2)         M code 4 (bit 3)           MCD10         42         M code 5 (bit 4)         M code 6 (bit 5)           MCD11         43         M code 7 (bit 6)         M code 7 (bit 6)           MCD11         43         M code 7 (bit 6)         M code 8 (bit 7)           PUS         46         M code 1         Marm code 0           ALCD1         23         Rad         Alarm code 1           Reverser cotation start         Rad         Rad         Alarm code 2           MEND         47         ACD0         22         Rad				DI4 5					
TSTP       33       Dife       7         PC       34       Dif       7         PC       34       Dif       8         ST1       35       9       90       13         ST2       36       SON       21       24 VDC *1       Proportion control         D0COMD       37       1       24 VDC *1       Serve-on       Serve-on         MCD00       38       1       7       M code 1 (bit 0)       M code 2 (bit 1)         MCD02       40       7       7       M code 2 (bit 1)       M code 2 (bit 1)         MCD03       41       7       44       M code 1 (bit 3)       M code 6 (bit 3)         MCD10       42       7       44       M code 6 (bit 5)       M code 6 (bit 5)         MCD11       43       7       7       44       M code 6 (bit 5)       M code 8 (bit 7)         PUS       46       7       7       7       7       7       7       7         PUS       46       7       7       7       7       7       7       7         PUS       46       7       7       7       7       7       7       7       7       7	MD0	32 -		DIE	_				
DI6         7         Point table No. selection 7           PC         34         DI7         8           ST1         35         SON         21           ST2         36         SON         21           DICOMD         13         24 VDC *1         Point table No. selection 8           DCCOMD         37         Accol 2 (bit 1)         M code 1 (bit 0)           MCD00         38         Accol 2 (bit 1)         M code 3 (bit 2)           MCD01         39         Accol 2 (bit 1)         M code 4 (bit 3)           MCD10         42         Accol 2 (bit 2)         M code 6 (bit 5)           MCD11         43         Accol 2 (bit 2)         M code 6 (bit 5)           MCD12         44         Accol 2 (bit 2)         M code 8 (bit 7)           PUS         46         Accol 2 (bit 2)         Accol 2 (bit 3)           MEND         47         Accol 2 (bit 2)         Accol 4 (bit 3)           MEND         47         Accol 2 (bit 2)         Accol 4 (bit 3)           MEND         47         Accol 2 (bit 4)         M code 6 (bit 5)           MEND         47         Accol 2 (bit 2)         Accol 4 (bit 3)           MEND         47         Accol 2 (bit 3) <t< td=""><td>TSTP</td><td>33</td><td></td><td>D15 6</td><td></td><td></td><td></td><td></td><td></td></t<>	TSTP	33		D15 6					
DI7         8         Point table No. selection 8           ST1         35         SON         21         24 VDC *1           DICOMD         13         24 VDC *1         Serve-on           DICOMD         13         24 VDC *1         M code 1 (bit 0)           MCD00         38         M code 2 (bit 1)         M code 3 (bit 2)           MCD01         39         M code 3 (bit 2)         M code 4 (bit 3)           MCD02         40         M code 5 (bit 4)         M code 6 (bit 5)           MCD10         42         M code 7 (bit 6)         M code 8 (bit 7)           MCD11         43         M code 7 (bit 6)         M code 8 (bit 7)           MCD12         44         M code 7 (bit 6)         M code 8 (bit 7)           PUS         46         M code 1         AcD0         22           ACD1         23         RA         M code 1         Alarm code 0           Alarm code 1         Rough match         Alarm code 2         In-position         Alarm code 3           MEND         47         ACD3         25         RA         Alarm code 3         Alarm code 3				DI6 7					
ST1       35       SON       21       Porward rotation start         DCOMD       36       SON       21       24 VDC *1       Serve on         DCOMD       37       24 VDC *1       M code 1 (bit 0)       M code 2 (bit 1)         MCD00       38       M code 3 (bit 2)       M code 4 (bit 3)         MCD02       40       M code 5 (bit 4)       M code 6 (bit 5)         MCD10       42       M code 7 (bit 6)       M code 8 (bit 7)         MCD12       44       M code 1       M code 0         MCD13       45       M code 1       M code 1         PUS       46       M code 1       RA       M code 0         MEND       47       ACD0       22       RA       M code 1         MEND       47       ACD3       25       RA       M code 3         MEND       47       ACD3       25       RA       Alarm code 3	PC	34 -							- Proportion control
ST2       36       SON       21       24 VDC *1       Reverse rotation start         D0C0MD       37       24 VDC *1       M code 1 (bit 0)       M code 2 (bit 1)         MCD00       38       M code 3 (bit 2)       M code 3 (bit 2)         MCD02       40       RA       M code 3 (bit 2)         MCD03       41       RA       M code 5 (bit 4)         MCD10       42       RA       M code 6 (bit 5)         MCD11       43       RA       M code 6 (bit 5)         MCD12       44       RA       M code 6 (bit 5)         MCD13       45       RA       M code 6 (bit 7)         PUS       46       RA       RA       M code 1         MEND       47       ACD0       22       RA       RA         MEND       47       ACD2       24       RA       Alarm code 1         MEND       47       ACD3       25       RA       Alarm code 3	0.7.1	05		DI7 8	_				
SON         21         24 VDC *1         Servo-on           DOCOMD         37         24 VDC *1         M code 1 (bit 0)           MCD00         38         M code 2 (bit 1)         M code 3 (bit 2)           MCD02         40         RA         M code 4 (bit 3)           MCD10         42         RA         M code 5 (bit 4)           MCD10         42         RA         M code 6 (bit 5)           MCD11         43         M code 6 (bit 5)         M code 6 (bit 7)           PUS         46         RA         RA         M code 1 (bit 0)           MEND         47         ACD0         22         RA         M code 6 (bit 5)           MEND         47         ACD0         22         RA         M code 1 (bit 0)           MEND         47         ACD0         22         RA         M code 2 (bit 7)           PUS         46         ACD1         23         RA         M code 1 (bit 0)           MEND         47         ACD0         22         RA         Alarm code 1 (bit 0)           MEND         47         ACD3         25         RA         Alarm code 3									
DICOMD         13         24 VDC *1           MCD00         38         M code 1 (bit 0)           MCD01         39         RA         M code 2 (bit 1)           MCD02         40         RA         M code 3 (bit 2)           MCD03         41         RA         M code 5 (bit 4)           MCD10         42         RA         M code 6 (bit 5)           MCD11         43         RA         RA           MCD12         44         RA         M code 6 (bit 5)           MCD12         44         RA         RA           MCD13         45         RA         M code 6 (bit 7)           PUS         46         RA         RA         M code 1           MEND         47         ACD1         23         RA         H           MEND         47         ACD2         24         RA         Alarm code 2           INP         49         ACD3         25         RA         Alarm code 3	012			SON 21					
DOCOMD       37       24 VDC *1         MCD00       38       M code 1 (bit 0)         MCD01       39       M code 2 (bit 1)         MCD02       40       PA         MCD03       41       PA         MCD01       42       PA         MCD02       40       M code 3 (bit 2)         MCD03       41       M code 4 (bit 3)         MCD10       42       PA         MCD11       43       PA         MCD12       44       PA         MCD13       45       PA         PUS       46       PA         MEND       47       ACD2       24         MCD1       23       PA         MEND       47       ACD2       24         MEND       47       ACD3       25         MEND       47       ACD3       25         MEND       47       ACD3       25							; *1		
DOCOMD       37       Image: Constraint of the second seco				DICOMD 13	_	I⊢			
MCD00       38       M code 1 (bit 0)         MCD01       39       RA       M code 2 (bit 1)         MCD02       40       RA       M code 3 (bit 2)         MCD03       41       RA       M code 4 (bit 3)         MCD10       42       RA       M code 6 (bit 5)         MCD11       43       RA       M code 6 (bit 5)         MCD12       44       M code 8 (bit 7)         PUS       46       RA       RA         MEND       47       ACD0       22         ACD1       23       RA       RA         MEND       47       ACD2       RA         MEND       47       ACD3       25         MEND       47       ACD3       25         MEND       47       ACD3       25									
MCD01       39       M code 2 (bit 1)         MCD02       40       M code 2 (bit 1)         MCD03       41       M code 3 (bit 2)         MCD10       42       M code 5 (bit 4)         MCD11       43       M code 6 (bit 5)         MCD12       44       M code 7 (bit 6)         MCD13       45       M code 8 (bit 7)         PUS       46       M code 1         MEND       47       ACD0       22         MCD1       23       RA         MEND       47       ACD2       RA         MEND       47       ACD3       25         MEND       47       ACD3       25         MEND       47       ACD3       25	DOCOMD	37							F•
MCD02       40       Ra       M code 3 (bit 2)         MCD03       41       Ra       M code 4 (bit 3)         MCD10       42       Ra       M code 5 (bit 4)         MCD11       43       Ra       M code 6 (bit 5)         MCD12       44       Ra       M code 6 (bit 5)         MCD13       45       Ra       M code 8 (bit 7)         PUS       46       Ra       Ra       M code 1         MEND       47       ACD0       22       Ra       Alarm code 0         ACD1       23       Ra       Ra       Alarm code 2       In -position         MEND       47       ACD2       24       Ra       Alarm code 3         MEND       47       SON       21       x2	MCD00	38							M code 1 (bit 0)
MCD03       41       RA       M code 4 (bit 3)         MCD10       42       RA       M code 5 (bit 4)         MCD11       43       RA       M code 6 (bit 5)         MCD12       44       RA       M code 7 (bit 6)         MCD13       45       RA       M code 8 (bit 7)         PUS       46       RA       RA       M code 0         MEND       47       ACD0       22       RA       Alarm code 1         CP0       48       ACD2       24       RA       RA       Alarm code 2         INP       49       ACD3       25       RA       Alarm code 3       Alarm code 3	MCD01	39						RA	M code 2 (bit 1)
MCD 10       42       RA       M code 5 (bit 4)         MCD 11       43       RA       M code 6 (bit 5)         MCD 12       44       RA       M code 7 (bit 6)         MCD 13       45       RA       M code 8 (bit 7)         PUS       46       RA       RA       M code 0         MEND       47       ACD0       22       RA       Alarm code 0         ACD1       23       RA       RA       Ra       Alarm code 1         Rough match       Alarm code 2       In-position       Alarm code 3       Alarm code 3	MCD02	40						RA	M code 3 (bit 2)
MCD10       42       RA       M code 5 (bit 4)         MCD11       43       RA       M code 6 (bit 5)         MCD12       44       RA       M code 7 (bit 6)         MCD13       45       RA       M code 8 (bit 7)         PUS       46       RA       M code 0         MEND       47       ACD0       22       RA         ACD1       23       RA       Alarm code 1         Rough match       Alarm code 2       In-position         ACD2       24       RA       Alarm code 3	MCD03	41							
MCD11       43       Mcd12       44       Mcd12       Mcd12       Mcd13	MCD10	42							
MCD12       44       M code 7 (bit 6)         MCD13       45       M code 8 (bit 7)         PUS       46       RA       M code 8 (bit 7)         MEND       47       ACD0       22       RA       M code 0         ACD1       23       RA       M code 1       Rough match         ACD2       24       RA       RA       Ra       Alarm code 2         INP       49       ACD3       25       RA       Alarm code 3	MCD11	43						RA	M code 6 (bit 5)
MCD13       45       M code 8 (bit 7)         PUS       46       RA       M code 8 (bit 7)         MEND       47       RA       RA       M code 8 (bit 7)         MEND       47       ACD0       22       RA       H         ACD1       23       RA       Alarm code 0       Alarm code 1         CP0       48       RA       RA       Alarm code 2       In-position         INP       49       ACD3       25       RA       Alarm code 3	MCD12	44						RA	M code 7 (bit 6)
PUS     46     Pus     Acbo     Pus     Pus     During a temporary stop       MEND     47     Acbo     22     RA     Travel completion       Acbo     22     RA     Alarm code 0       Acbo     23     RA     Alarm code 1       CP0     48     Acbo     RA       Acbo     24     RA     RA       INP     49     RA     RA       MEND     47     *2	MCD13	45 -						RA	M code 8 (bit 7)
MEND       47       ACD0       22       RA       Travel completion         ACD0       22       RA       Alarm code 0       Alarm code 1         ACD1       23       RA       Ra       Alarm code 1         CP0       48       ACD2       24       Ra       Alarm code 2         INP       49       ACD3       25       Ra       Alarm code 3         MEND       47       *2       SON       21       *2	PUS	46						RA	During a temporary stop
ACD0     22     RA     Alarm code 0       ACD1     23     RA     Alarm code 1       CP0     48     RA     RA       ACD2     24     RA     Ra       INP     49     ACD3     25       MEND     47     *2     SON     21	MEND	47			-			RA	Travel completion
ACD1     23       CP0     48       ACD2     24       RA     RA       ACD2     24       RA     RA       ACD2     24       RA     RA       ACD3     25       SON     21				ACD0 22					
CP0     48     ACD2     24     Rough match       INP     49     RACD3     25     RA     Alarm code 2       MEND     47     *2     SON     21     *2									<b>⊢</b> ••
ACD2     24     RA     Alarm code 2       INP     49     RA     In-position       MEND     47     *2     SON     21				AGDT 23	_	•		<b>K</b>	
ACD2     24     RA     Alarm code 2       INP     49     RA     In-position       MEND     47     *2     RA     Alarm code 3	CP0	48 -					•		Rough match
INP     49       MEND     47       MEND     47       SON     21				ACD2 24				RA	Alarm code 2
$\begin{bmatrix} MEND & 47 \\ MEND & 47 \end{bmatrix} *2$ $\begin{bmatrix} ACD3 & 25 \\ SON & 21 \end{bmatrix} *2$ $\begin{bmatrix} RA \\ RA \end{bmatrix}$ $Alarm code 3$	INP	49						RA	In-position
MEND     47       MEND     47       SON     21				ACD2 25				╡╺	⊨•• '
<u>SON</u> 21			*2	A0D3 23					Alariii code s
	MEND	47 -	_ •• <b>∠</b>	SON 21	$\dashv$				
					*2				

Connection example

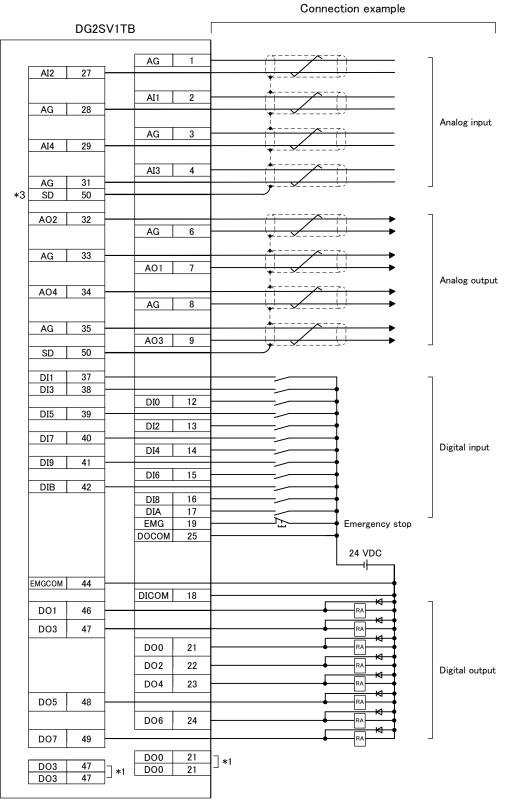
\*3: For actual wiring, be sure to refer to the Servo Amplifier Instruction Manual and Servo Motor Instruction Manual for each product.

<sup>\*1:</sup> The illustration of the 24 VDC power supply is divided for convenience. However, they can be configured by one.

<sup>\*2:</sup> When MR-D01 is used, the branch connection of the digital interface power supply is not available.

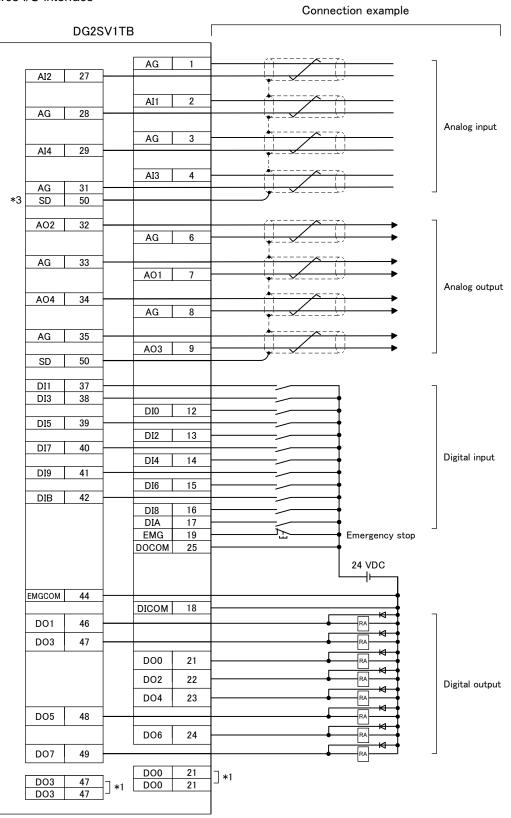
## 8-4. Connection with DG2AF3N(-P01)

1) For sink I/O interface



- \*1: When the SSCNET-Compatible Hydraulic Control unit is used, branch connection of the digital interface power supply is not available.
- \*2: For actual wiring, be sure to refer to the User's Manual (Hardware) and User's Manual (Detailed) for each product.
- \*3: Pin No. 50 of this product is SD terminals. Do not connect DOCOM to them.

#### 2) For source I/O interface



\*1: When the SSCNET-Compatible Hydraulic Control unit is used, branch connection of the digital interface power supply is not available.

- \*2: For actual wiring, be sure to refer to the User's Manual (Hardware) and User's Manual (Detailed) for each product.
- \*3: Pin No. 50 of this product is SD terminals. Do not connect DOCOM to them.

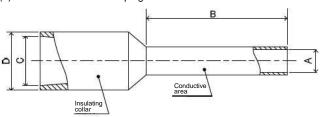
# 9. APPLICABLE CRIMPING TERMINAL

Туре		Applicable ferrule terminal	Crimping tool	
Manufacturer	Applicable wire size	Applicable lerrule terminal	Chiliping tool	
	0.08 mm <sup>2</sup> to 0.34 mm <sup>2</sup> / AWG 28 to 22	216-302	206-220	
WAGO Company of Japan, Ltd	0.34 mm <sup>2</sup> / AWG 24 and 22	216-302		
	0.5 mm <sup>2</sup> / AWG 22 and 20	216-201	206-204	
	0.75 mm <sup>2</sup> / AWG 20 and 18	216-202		

\*: The solid wire and stranded wire used are the UL-certified products.

#### • Ferrule dimensions

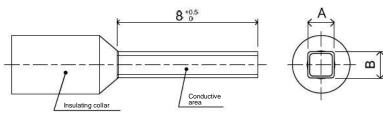
(1) Dimensions before crimping



Dimensions					
/	A	B	С	D	
MAX	1.3	8	2.8	3.5	
MIN	0.8	8	2.0	1 -	

(2) Dimensions after crimping

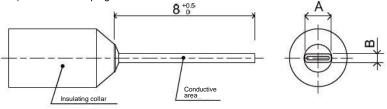
1) When the crimping tool 206-204 is used



D	imensi	ons⁺¹	
/	A	в	
MAX	1.6	1.6	
MIN	0.3	0.3	

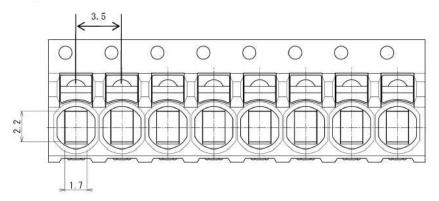
[Unit: mm]

2) When the crimping tool 206-220 is used



\*1: The dimensions must not be smaller than 0.48  $\,\mathrm{mm^2}$ .

• Shape of terminal block



[Unit: mm]

# [Warranty]

### 1. Warranty period and coverage

If any failure or defect hereinafter referred to as "failure" in our FA equipment hereinafter referred to as the "Product" has arisen during warranty period due to causes for which we are responsible, we will offer a substitute for the defective Product at no charge in exchange for the Product through the distributor from which you purchased the Product.

We are not responsible for any on-site readjustment and/or trial run that may be required after a defective unit are repaired or replaced.

[Term]

The term of warranty for Product is twelve (12) months after your purchase or delivery of the Product to a place designated by you or eighteen (18) months from the date of manufacture whichever comes first ("Warranty Period").

Warranty period for repaired Product cannot exceed beyond the original warranty period before any repair work.

#### [Limitations]

(1) This limited warranty applies only when the condition, method, environment, etc. of use are in compliance with the terms and conditions and instructions that are set forth in the instruction manual and User's Manual for the Product.

(2) Even during the term of warranty, the replacement cost will be charged on you in the following cases;

- (i) a failure caused by your improper storing or handling, carelessness or negligence, etc., and a failure caused by your hardware or software problem
- (ii) a failure caused by any alteration, etc. to the Product made on your side without our approval
- (iii) a failure recognized as avoidable if your equipment in which the Product is incorporated is equipped with a safety device required by applicable laws, or has any function or structure considered to be indispensable according to a common sense in the industry
- (iv) a failure recognized as preventable if consumable products specified in the instruction manual, etc. were normally maintained and replaced.
- (v) any replacement of consumable parts (relays, etc.)
- (vi) a failure caused by external factors such as inevitable accidents, including without limitation fire and abnormal fluctuation of voltage, and acts of God, including without limitation earthquake, lightning and natural disasters
- (vii) a failure generated by an unforeseeable cause with a scientific technology that was not available at the time of the shipment of the Product from our company
- (viii) any other failures which we are not responsible for or which you acknowledge we are not responsible for
- 2. Term of warranty after the stop of production
  - (1) We may accept the repair at charge for another seven (7) years after the production of the Product is discontinued.

The announcement of the stop of production for each model can be seen in our website MEEFAN. (URL: https://www.mee.co.jp/sales/fa/meefan/)

- (2) Please note that the Product (including its spare parts) cannot be ordered after its stop of production.
- 3. Service in overseas countries

Service in overseas countries is out of the warranty.

- 4. Exclusion of loss in opportunity and secondary loss from warranty liability
- Regardless of the gratis warranty term, Mitsubishi Electric Engineering shall not be liable for compensation to: damages caused by any cause found not to be the responsibility of Mitsubishi Electric Engineering, loss in opportunity and lost profits incurred to the user by failures of Mitsubishi Electric Engineering products, special damages and secondary damages whether foreseeable or not, compensation for accidents, compensation for damages to products other than Mitsubishi Electric Engineering products, replacement by the user, maintenance of on-site equipment, start-up test run, and other tasks.
- 5. Change of Product specifications Specifications listed in our catalogs, manuals or technical documents may be changed without notice.

#### 6. Conditions of use for the Product

- (1) For the use of this Product, its applications should be those that may not result in a serious damage even if any failure or malfunction occurs in the equipment, and a backup or fail-safe function should operate on an external system to the equipment when any failure or malfunction occurs.
- (2) This Product is designed and manufactured as a general purpose product for use at general industries.

Therefore, applications substantially influential on the public interest for such as atomic power plants and other power plants of electric power companies, and also which require a special quality assurance system, including applications for railway companies and government or public offices are not recommended, and we assume no responsibility for any failure caused by these applications when used.

In addition, applications which may be substantially influential to human lives or properties for such as airlines, medical treatments, railway service, incineration and fuel systems, man-operated material handling equipment, entertainment machines, etc. are not recommended, and we assume no responsibility for any failure caused by these applications when used.

Note that if the user consults with Mitsubishi Electric Engineering customer service in advance with regard to such an application and the user accepts that the application is to be limited and a special quality is not to be required, application shall be made possible upon exchange of required documents.

# MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED

NAGOYA ENGINEERING OFFICE | 1-9, Daiko-Minami, 1-Chome, Higashi-ku, Nagoya, Aichi 461-0047 Japan Phone +81-52-6495 URL:https://www.mitsubishielectricengineering.com/

Model DG2SV1TB-MAN-E

50EN-070184-C(2305)MEE

New publication, effective May 2023. Specifications subject to change without notice.