

mitsubishi
TRANSISTORIZED AC SERVO
MELSERVO-H

INSTRUCTION MANUAL

PULSE TRAIN OUTPUT TYPE ENCODER OPTION CARD
MR-H-E02

Thank you for choosing the option card for Mitsubishi MELSERVO-H AC Servo. This instruction manual gives information on the MR-H-E02 option card used when the MR-H series servo amplifier is employed to drive a servo motor provided with a pulse train output type encoder.

When this option card is used with the battery option, the built-in memory of the option card can hold data before alarm occurs if the power is switched off.

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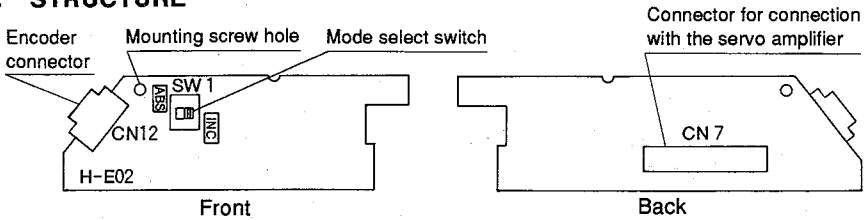
1. SPECIFICATIONS

Item	Specifications
Function	Pulse train output type encoder connection, extension data memory
Acceptable motor	HA-SA, HA-SA-L, HA-SA-U, HA-SC, HA-FE, HA-SE
Memory contents and memory capacity	Data before alarm : 256 data x 2 channels (selected by parameter) Monitored data : 1 data x 16 types

2. ALARM CODES

Amplifier LED Display	Parameter Unit Screen Display		Cause of Occurrence	Check Point	Remedy
	Current alarm (Name and definition)	Cause of alarm occurrence			
AL16	PLG error 1	PLG con. left	Pr 0 setting incorrect. Connector disconnected.	Change the Pr 0 setting. Make visual check (for disconnection).	Set properly. Connect properly.
		PLG trouble	Pr 0 setting incorrect. Encoder signal faulty.	Change the motor and examine.	Change the motor.
		PLG cable has trouble	Cable faulty (open cable or short circuit)	Check the cable. (Change the cable and examine.)	Correct or change the cable.
AL70	PLG error 3	PLG con. left	Connector disconnected.	Make visual check (for disconnection or half disconnection).	Connect properly.
		PLG trouble	Encoder signal faulty.	Change the motor and examine.	Change the motor.
		PLG cable has trouble	Cable faulty (open cable or short circuit)	Check the cable. (Change the cable and examine.)	Correct or change the cable.
AL71	PLG error 4	PLG con. left	Connector disconnected.	Make visual check (for disconnection or half disconnection).	Connect properly.
		PLG trouble	Encoder signal faulty.	Change the motor and examine.	Change the motor.
		PLG cable has trouble	Cable faulty (open cable or short circuit)	Check the cable. (Change the cable and examine.)	Correct or change the cable.
AL74	OP memory error 1	OP. board error	Memory in the option card faulty.	Change the option card and examine.	Change the printed board.

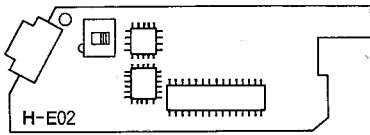
3. STRUCTURE



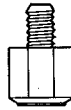
4. INSTALLATION TO THE SERVO AMPLIFIER

After unpacking, check that the following set is complete and that the printed circuit board is intact. After that, install the option card to the servo amplifier in the following procedure.

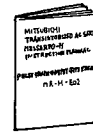
Before installing the option card to the servo amplifier, ensure that the power is off.



1 X MR-H-E02 option card

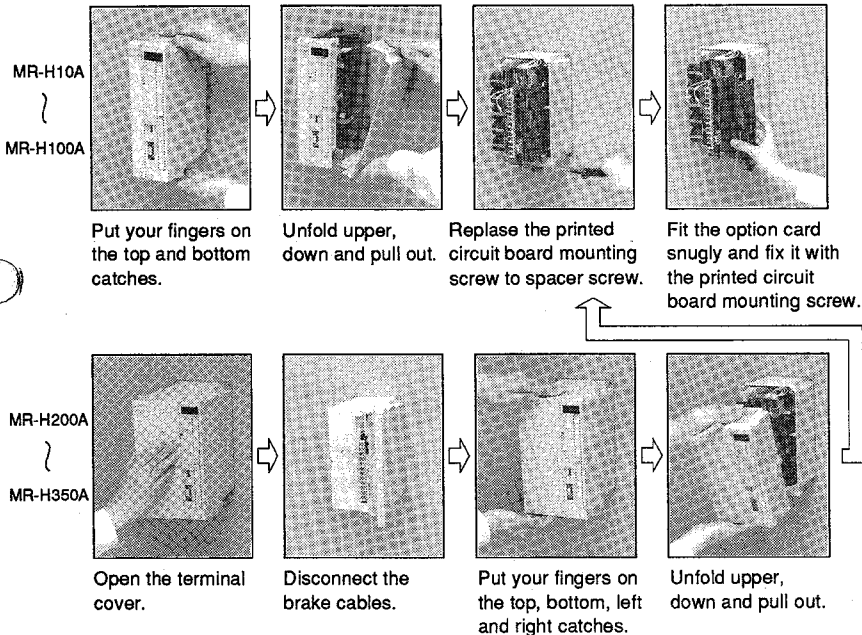


1 X spacer screw



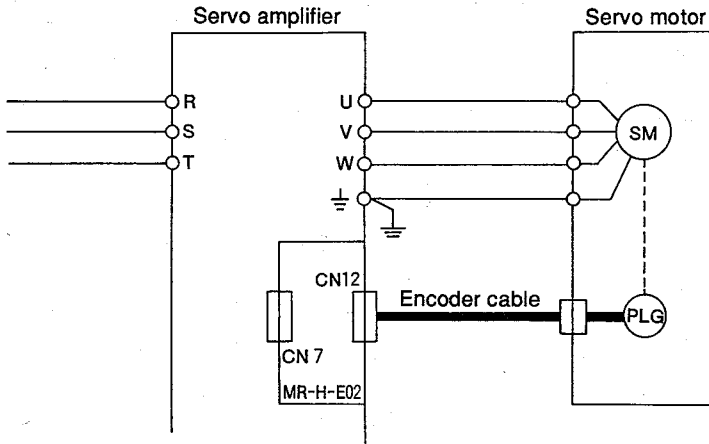
1 X instruction manual
(this manual)

Installation Procedure



Fold the connector protection cover at the bottom (inclined area) of the cover removed and reinstall the cover.

5. WIRING



The encoder cable depends on the motor used.

Motor	Encoder Cable
HA-SA	MR-SACBL □ M
HA-SA-L low inertia	MR-SACBL □ M
HA-SA-U flat	MR-SACBL □ M
HA-SC	MR-SCCBL □ M
HA-FE	MR-SCCBL □ M
HA-SE	MR-SACBL □ M

Connector pinouts

CN12 (PLG signal connector)

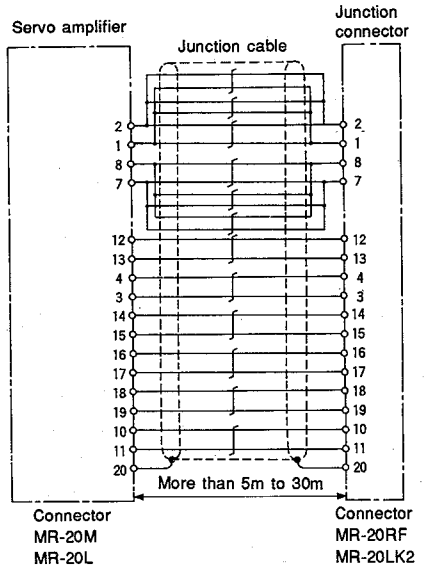
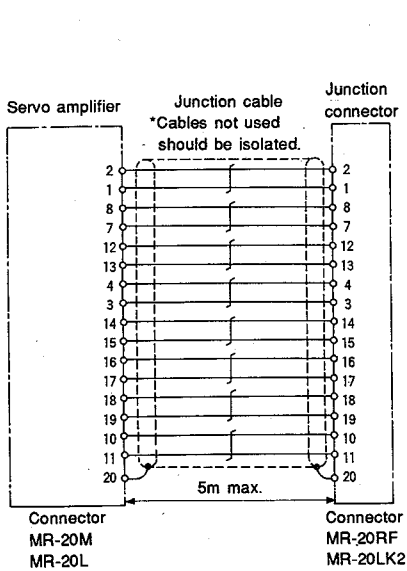
Type MR-20F (servo amplifier side)

14	15	16	17	18	19	20
PZ	PZR	PU	PUR	PV	PVR	SHD
8	9	10	11	12	13	
P5	P5	PW	PWR	PA	PAR	
1	2	3	4	5	6	7
5G	P5	PBR	PB			5G

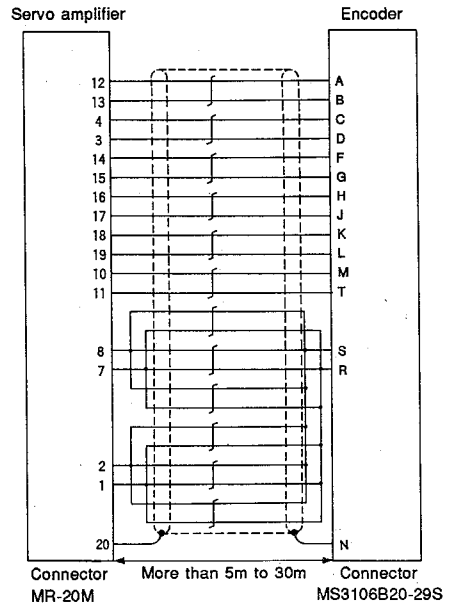
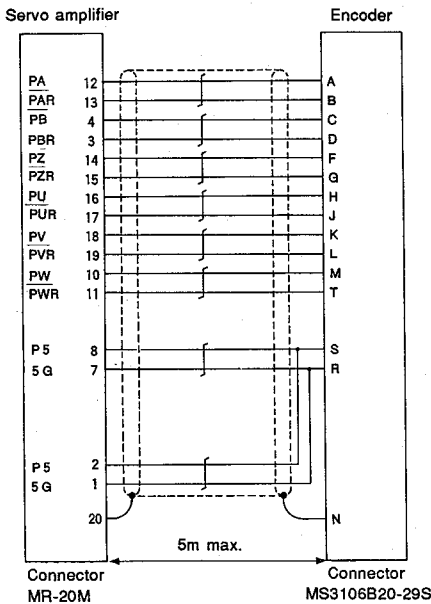
Pin number
Signal name

Encoder Cables

(1) For the HA-SC, HA-FE motors



(2) For the HA-SA, HA-SE motors



6. PARAMETERS

To use this option card to drive the motor provided with the pulse train output type encoder, the following parameters must also be set in addition to the parameter setting given in the MR-H servo amplifier instruction manual. **The following parameters need not be set when this option card is only used as alarm data memory.**

Class	No.	Code	Name and Function	Control Mode	Initial Value	Increments	Setting Range												
Basic parameter	0	*MSR	Motor series: Used to select the motor series. <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Set Value</th> <th>Motor Series</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>HA-SH standard</td> </tr> <tr> <td>1</td> <td>HA-LH low inertia</td> </tr> <tr> <td>3</td> <td>HA-FH</td> </tr> <tr> <td>→ 10</td> <td>Motor with pulse train output type encoder</td> </tr> </tbody> </table> <p>Set 10 in this parameter.</p>	Set Value	Motor Series	0	HA-SH standard	1	HA-LH low inertia	3	HA-FH	→ 10	Motor with pulse train output type encoder		—		0 to 10		
	Set Value	Motor Series																	
0	HA-SH standard																		
1	HA-LH low inertia																		
3	HA-FH																		
→ 10	Motor with pulse train output type encoder																		
1	*MTY	Motor type: When 10 is set in Pr. 0, Pr 65 to Pr 67 are used for further setting and Pr 1 need not be set.																	
Option board parameter	65	*EMC	Encoder type: Used to select the type of the pulse train encoder. <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Set Value</th> <th>Encoder Type</th> <th>Acceptable Motor</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>inc3000p/r</td> <td>HA-SA, HA-SA-L, HA-SA-U</td> </tr> <tr> <td>1</td> <td>inc2000p/r</td> <td>HA-SC</td> </tr> <tr> <td>2</td> <td>inc1000p/r</td> <td>HA-FE, HA-SE</td> </tr> </tbody> </table>	Set Value	Encoder Type	Acceptable Motor	0	inc3000p/r	HA-SA, HA-SA-L, HA-SA-U	1	inc2000p/r	HA-SC	2	inc1000p/r	HA-FE, HA-SE		0		0 to 3
	Set Value	Encoder Type	Acceptable Motor																
0	inc3000p/r	HA-SA, HA-SA-L, HA-SA-U																	
1	inc2000p/r	HA-SC																	
2	inc1000p/r	HA-FE, HA-SE																	
66	*AMS	Motor series: Used to select the motor series. <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Set Value</th> <th>Motor Series</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>HA-SA, HA-SE</td> </tr> <tr> <td>1</td> <td>HA-SA-L</td> </tr> <tr> <td>2</td> <td>HA-SA-U</td> </tr> <tr> <td>3</td> <td>HA-FE</td> </tr> <tr> <td>4</td> <td>HA-SC</td> </tr> </tbody> </table>	Set Value	Motor Series	0	HA-SA, HA-SE	1	HA-SA-L	2	HA-SA-U	3	HA-FE	4	HA-SC		0 (600W or more) 3 (400W or less)		0 to 4	
Set Value	Motor Series																		
0	HA-SA, HA-SE																		
1	HA-SA-L																		
2	HA-SA-U																		
3	HA-FE																		
4	HA-SC																		



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