

MITSUBISHI

PROGRAMMABLE CONTROLLER

MELSEC-A

User's Manual

Relay Terminal Unit type A6TE2-16SR

INTRODUCTION

Thank you for choosing the Mitsubishi MELSEC-A Series of General Purpose Programmable Controllers. Please read this manual carefully so that the equipment is used to its optimum. A copy of this manual should be forwarded to the end User.

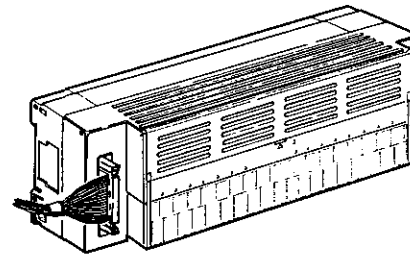
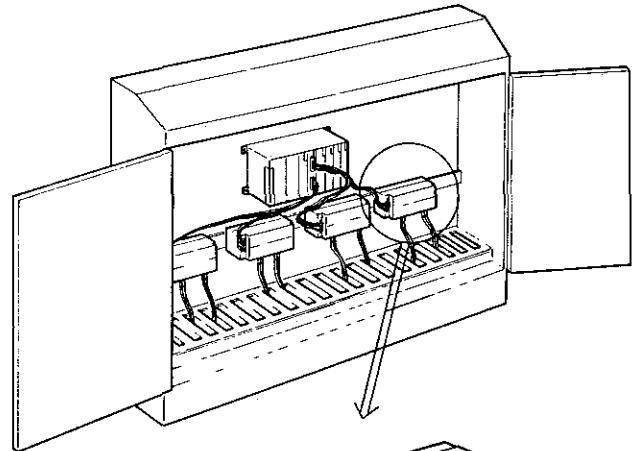
 **MITSUBISHI ELECTRIC**
IB (NA) 66573-A

1. GENERAL DESCRIPTION

1. GENERAL DESCRIPTION

This manual gives the specifications and part names of the A6TE2-16SR relay terminal unit (hereafter called the "A6TE2-16SR").

The A6TE2-16SR serves as a convenient relay terminal block and on-panel relay in a control panel to simplify the wiring between the programmable controller, relay terminal block, and on-panel relay.



A6TE2-16SR

- (1) The A6TE2-16SR can be used in combination with a sink-type output unit provided with any of the following A-Series 24 VDC connectors
AY42, AY42-S1, AY42-S3, AY42-S4, AH42
A1SY41, A1SY42, A1SH42
- (2) Two A6TE2-16SRs and a cable (to be obtained separately [See Fig. 4.2]) are used for 32 points (one connector).
- (3) A special cable allows this relay terminal unit to be located a maximum of 10 m away from the equipment to which it is connected.
- (4) The special cable is available in five lengths.
- (5) Since the provided relays are of the socket type, they can be replaced individually.
 - This relay terminal unit is designed to seat relays securely so that they do not fall out due to vibration.
 - A relay remover is provided as a standard accessory.
- (6) Since the supplied power is converted to relay output, this relay terminal unit can be used with either AC or DC power, and the output has a larger current capacity.
- (7) The terminal screws are self-up screws, which do not easily come out.
- (8) A relay code sheet makes wiring easy.
- (9) This unit can be mounted on a DIN rail only.
- (10) 2-wire loads can be connected to this unit.

The United States	Mitsubishi Electronics America, Inc. (Industrial Automation Division) 800 Biermann Court, Mt. Prospect, IL 60056 Phone: (708)298-9223
Canada	Mitsubishi Electric Sales Canada, Inc. (Industrial Automation Division) 4299 14th Avenue, Markham Ontario L3R 0J2 Phone: (416)475-7728
United Kingdom	Mitsubishi Electric UK Ltd. (Industrial Sales Division) Travellers Lane, Hatfield Herts AL10 8XB Phone: (0707)276100
Germany	Mitsubishi Electric Europe GmbH (Industrial Automation Division) Gothaer Strasse 8, Postfach 1548 D 4030 Ratingen 1 Phone: (02102)4860
Taiwan	Setuyo Enterprise Co., Ltd., (106) 11th Fl., Chung Ling Bldg. 363 Sec 2 Fu Heing S Rd., Taipei Taiwan R.O.C. Phone: (02)732-0161
Hongkong (& China)	Ryoden International Ltd., (Industrial & Electrical Controls Division) 10/F Manulife Tower 169 Electric Rd. North Point Hong Kong Phone: 8878870
Singapore (& Malaysia)	MELCO Sales Singapore Pte. Ltd. (Industrial Division) 307 Alexandra Rd #05 01/02 Mitsubishi Electric Bldg., Singapore 0315 Phone: 4732308
Thailand	F.A. Tech Co. Ltd., 1138/33-34 Rama 3 Rd., Yannawa Bangkok 10120 Phone: (02)295 2861-4
Australia	Mitsubishi Electric Australia Pty Ltd (Industrial Controls Division) 348 Victoria Rd., Rydalmere N.S.W. 2116 Phone: (02)684-7200
Republic of South Africa	M.S.A. Manufacturing (Pty) Ltd (Factory Automation Division) P.O. Box 39733, Bramley Johannesburg 2018 Phone: (011)444 8080

 **MITSUBISHI ELECTRIC CORPORATION**
HEAD OFFICE: MITSUBISHI DENKI BLDG. MARUNOUCHI TOKYO 100 TEL: 2032 JAPAN CABLE: MELCO TOKYO
NAGOYA WORKS: 1-14 YAKUSHIMARU 5, HIGASHI-KU, NAGOYA, JAPAN

When exported from Japan, this manual does not require application to the Ministry of International Trade and Industry for service transaction permission.

IB (NA) 66573-A (9/07)MEE Printed in Japan

Specifications subject to change without notice

2. PERFORMANCE SPECIFICATIONS

2. PERFORMANCE SPECIFICATIONS

Item	Specification	
Number of output points	16 points	
Insulation system	Relay	
Rated switching voltage and current	24 VDC: 2 A (resistance load)/point 8 A/common 240 VAC: 2 A (COSφ=1)/point	
Min switching load	5 VDC, 1 mA	
Max switching voltage	264 VAC, 125 VDC	
Response time	OFF→ON	10 ms or less (not including the delay of the PC output unit)
	ON→OFF	12 ms or less (not including the delay of the PC output unit)
Life	Mechanical	20 million operations or more
	Electrical *1	100 thousand operations or more at the rated switching voltage and current load
		100 thousand operations or more at 200 VAC and 1.5 A, or 240 VAC and 1 A (COSφ=0.7)
		100 thousand operations or more at 200 VAC and 1 A, or 240 VAC and 0.5 A (COSφ=0.35)
	100 thousand operations or more at 24 VDC and 1 A, or 100 VDC and 0.1 A (L/R=7 msec)	
Max switching frequency *2	3600 times/hour	
Surge suppressor	None	
Fuse	None	
Common	8 points/common (Common terminal: TB19, TB21)	
Operation indicator	ON (LED)	
External wiring system	38-point terminal block connector (M3 screws)	
Applicable wire size	0.75 to 1.25 mm: Max 2 wires/point (Applicable tightening torque: 60 to 100 N cm (6 to 10 kg cm) [5.3 to 8.8 lb inches])	
Applicable solderless terminals	1.25-3, 1.25-MS3, 1.25-B3A, 1.25-C3A, V1 25 3, V1 25-MS3, V1 25-B3A: Max 2 wires/point	
Applicable DIN rail	TH35-7 5Fe, TH35-7 5Al	
Accessories	Relay remover (RV9Z-T01)	
External power supply	Voltage	24 VDC ±10 %, ripple: 4 Vp-p or less
	Current	350 mA (TYP 24 VDC, all points ON)
Internal current consumption (5 VDC)	—	
Weight (kg) [lb]	0.35 [0.77]	
Replacement relays	RV3S-3B24S	
Note	24 VDC, connector sink type for output, 2-wire terminal block connector	

*1 See Fig 2 1 for details

*2 The maximum switching frequency that should be used to drive a load L is ON for at least 1 second and OFF for at least 1 second

REMARK

For the general specifications of this relay terminal unit, see the User's Manual for the PC CPU to be used

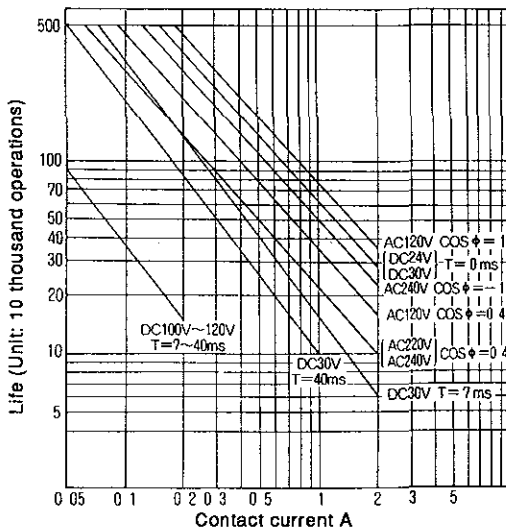
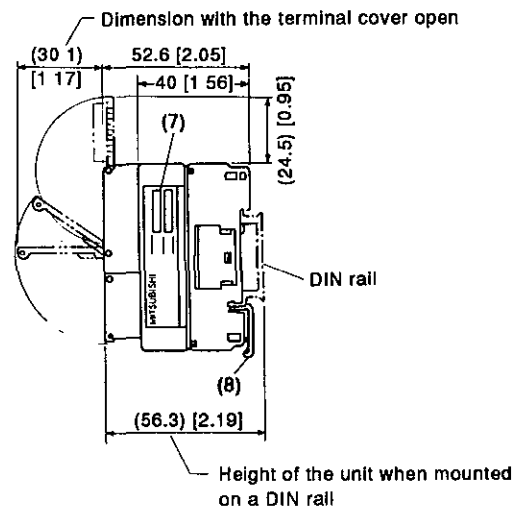
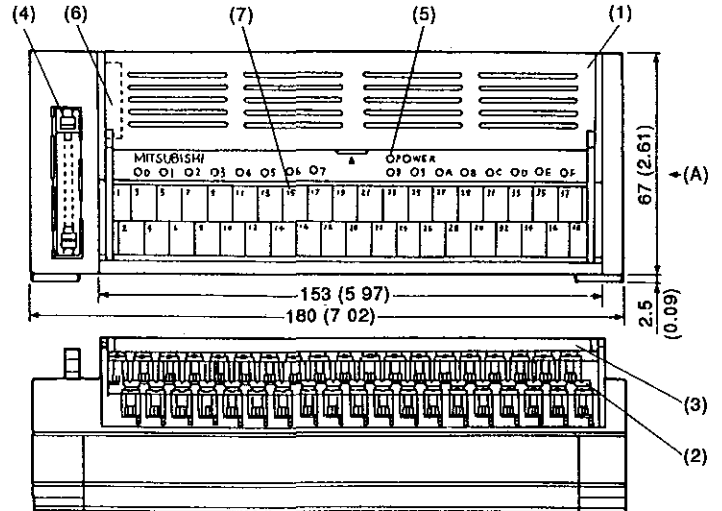


Fig 2 1 Electrical Life Curve of Relays

3. NOMENCLATURE AND OUTSIDE DIMENSIONS

3. NOMENCLATURE AND OUTSIDE DIMENSIONS



View from (A)

Unit mm (inch)

1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37
F24V	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	COM1	COM2	Y8	Y9	YA	YB	YC	YD	YE	YF
2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
24S	COM2	COM2	COM2	COM2	COM2	COM2	COM2	COM2	COM2	COM2	COM2	COM2	COM2	COM2	COM2	COM2	COM2	COM2

Back of relay code sheet (7)

Number	Name
(1)	Cover
(2)	Terminal block
(3)	Terminal cover
(4)	Connector
(5)	LED (for confirming output)
(6)	Relay remover
(7)	Relay code sheet
(8)	Hook (for releasing the unit from the rail)

4. WIRING

4. WIRING

4.1 Wiring

Perform wiring in accordance with Fig 4.1, using the connecting cables as described in Section 4.2

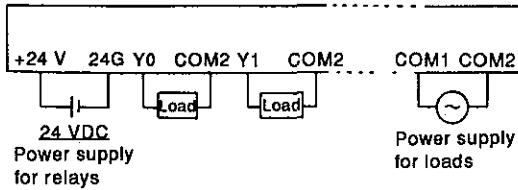
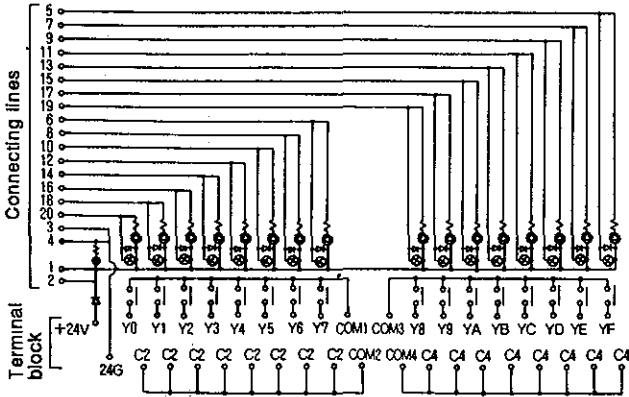


Fig 4.1 Wiring Diagram

4.2 Connecting cables

The table below lists the cables that can be used for wiring the A6TE2-16SR

Model name	Length
AC06TE	0.6 m
AC10TE	1 m
AC30TE	3 m
AC50TE	5 m
AC100TE	10 m

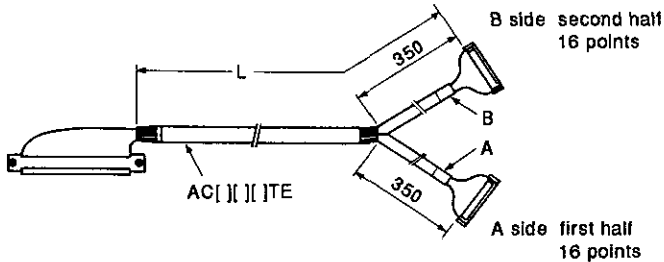


Fig 4.2 Connecting Cable

5. MOUNTING

5. MOUNTING

5.1 Mounting Orientation

Fig 5.1 shows correct and incorrect mounting orientations

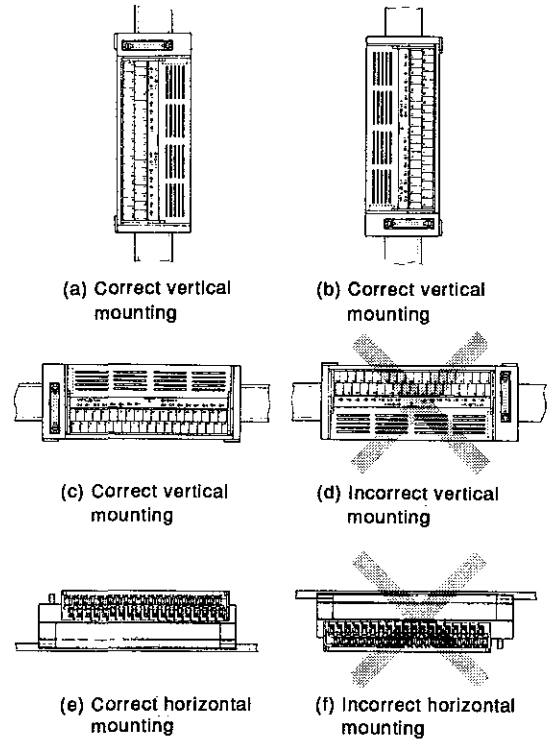


Fig 5.1 Mounting Orientations (Elevation Views)

POINT

Be sure that all the relays are securely fitted before turning ON the power for the first time after mounting

5.2 Replacing a Relay

Follow the procedure below to replace a relay

- (1) Open the lid at the top of the unit
- (2) Pull out the relay remover at the left end
- (3) Fit the remover over the relevant relay and pull it out

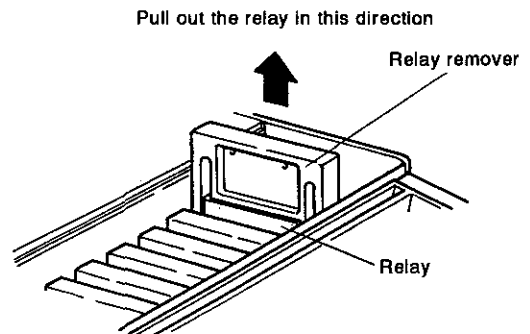


Fig 5.2 How to Remove a Relay

- (4) Fit the replacement relay in the correct mounting direction
- (5) Make sure that the replacement relay is fitted snugly and that the lead line is not twisted before turning ON the power

5.3 How to Mount/Remove the Unit on/from a DIN Rail

(1) Mounting procedure

- (a) Engage the DIN groove with the rail flange by lowering the unit onto the rail
- (b) Push the unit onto the rail to secure it

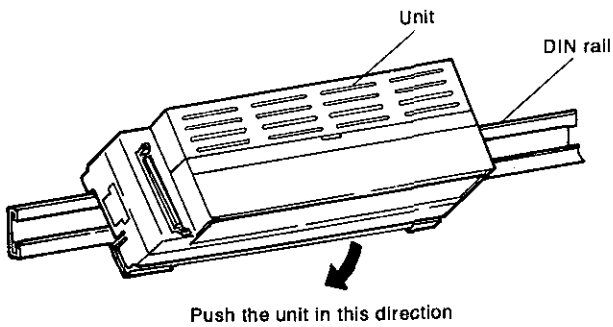


Fig 5.3 How to Mount the Unit on a DIN Rail

(2) Removal procedure

- (a) Pull down the hooks on the bottom of the unit with a flat-tipped screwdriver
- (b) Remove the unit from the rail while the hooks are pulled down

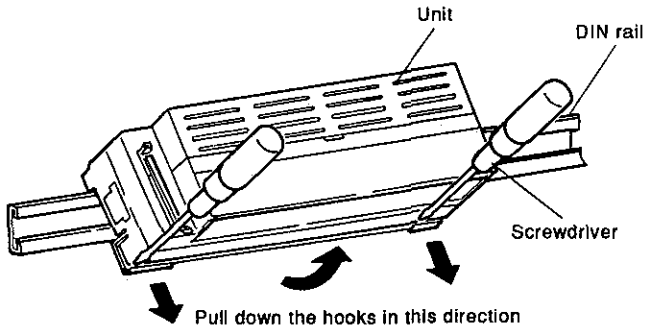


Fig 5.4 How to Remove the Unit from a DIN Rail

REVISION

A	
Jul., 1995	

IMPORTANT

- (1) Design the configuration of a system to provide an external protective or safety interlocking circuit for the PCs
- (2) The components on the printed circuit boards will be damaged by static electricity, so avoid handling them directly. If it is necessary to handle them, take the following precautions:
 - (a) Ground human body and work bench
 - (b) Do not touch the conductive areas of the printed circuit board and its electrical parts with and non-grounded tools etc

Under no circumstances will Mitsubishi Electric be liable or responsible for any consequential damage that may arise as a result of the installation or use of this equipment

All examples and diagrams shown in this manual are intended only as an aid to understanding the text, not to guarantee operation. Mitsubishi Electric will accept no responsibility for actual use of the product based on these illustrative examples.

Owing to the very great variety in possible applications of this equipment, you must satisfy yourself as to its suitability for your specific application.