MITSUBISHI

PROGRAMMABLE CONTROLLER

MELSEC-A

User's Manual

MELSECNET/B data link module type A1SJ72T25B (Hardware)

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

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 OJ2 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	Setsuyo Enterprise Co Ltd (106) 11th Fl., Chung Ling Bldg 363 Sec 2 Fu Hsing 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 Shingapore 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 Rama3 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 8060

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE MITSUBISHI DENKI BLDG MARUNOUCHI TOKYO (ee TELEX: J24532 CABLE MELCO TOKYO

NAGOYA WORKS: 1 14, YADA-MINAMI 5, HIGASHI-KU, NAGOYA, JAPAN

IB (NA) 66465 A (9404) MEE Printed in Japan

1. GENERAL DESCRIPTION

1 GENERAL DESCRIPTION

(1) This manual describes the specifications, part names, and self-diagnostic tests of the A1SJ72T25B

An A1SJ72T25B is used with the AnS series CPU in the MELSECNET/B data link system (Bus system)

(2) The followings give application, applicable cable, and installation location of the A1SJ72T25B:

- Application : As a remote I/O station
- Applicable cable : Twisted wire pair cable
- Module installation location CPU slot of a main base unit

(3) The following manual gives details of the MELSECNET/B data link system

MELSECNET, MELSECNET/B data link system reference manual

(IB(NA)-66350)

2. SPECIFICATIONS

2 SPECIFICATIONS

2 1 General Specifications

Item	Specifications				
Operating ambient temperature	0 to 55 °C (See the important notice described below)				
Storage ambient temperature	–20 to 75 °C				
Operating ambient humidity	10 to 90% RH, non-condensing				
Storage ambient temperature	10 to 90% RH, non-condensing				
Vibration resistance	Conforms to *2JIS C 0911	Frequency	Acceleration	Amplitude	Sweep Count
		10 to 55 Hz	—	0 075 mm (0 003 in)	10 times *1 (1 octave/ minute)
		55 to 150 Hz	9 8 m/s^2 (1g)	—	
Shock resistance	Conforms to *2JIS C 0912 (98 m/s^2 (10g) x 3 times in 3 directions)				
Noise durability	By noise simulator of 1500 Vpp voltage,1 μsec noise width and 25 to 60 Hz noise frequency				
Dielectric withstand voltage	1500 VAC for 1 minute across AC external terminals and ground				
Insulation resistance	5 MΩ or greater by 500 VDC insulation resistance tester across AC external terminals and ground				
Grounding	Class 3 grounding; Ground to the panel if proper grounding is not available				
Operating ambience	Free of corrosive gases Dust should be minimal				
Cooling method	Self-cooling				

REMARKS

(1) One octave marked *1 indicates a change from the initial frequency to double or half frequency For example, any of the changes from 10 to 20 Hz, from 20 to 40 Hz, or 20 to 10 Hz are referred to as one octave

(2) *2JIS: Japanese Industrial Standard

IMPORTANT

Restriction for UL standard approved products

In order to be recognized as UL listed products, the following restrictions apply;

(1) Operating ambient temperature is limited from 0 to 50°C

(2) A class 2 power supply recognized by the UL standard must be used

3. HANDLING

3 HANDLING

3 1 Handling Instructions

Handle the A1SJ72T25B as indicated below:

(1) Protect the case from impact, since it is made from resin

(2) Do not touch or remove the printed circuit boards from the case

(3) When wiring, make every effort to keep wire offcuts from entering the module Make sure to remove any which do enter the module

(4) To install the module to the base unit, tighten the screws as indicated

Screw Location	Tightening Torque Range N cm (kg cm) [lb inch]
Cable terminal screw (M3 5 screw)	58 8 (6) [5 2] to 88 2 (9) [7 79]
Terminal block mounting screw (M3.5 screw)	58 8 (6) [5 2] to 88 2 (9) [7 79]
Module mounting screw (M4 screw)	78 4 (8) [6 93] to 117 6 (12) [10 39]

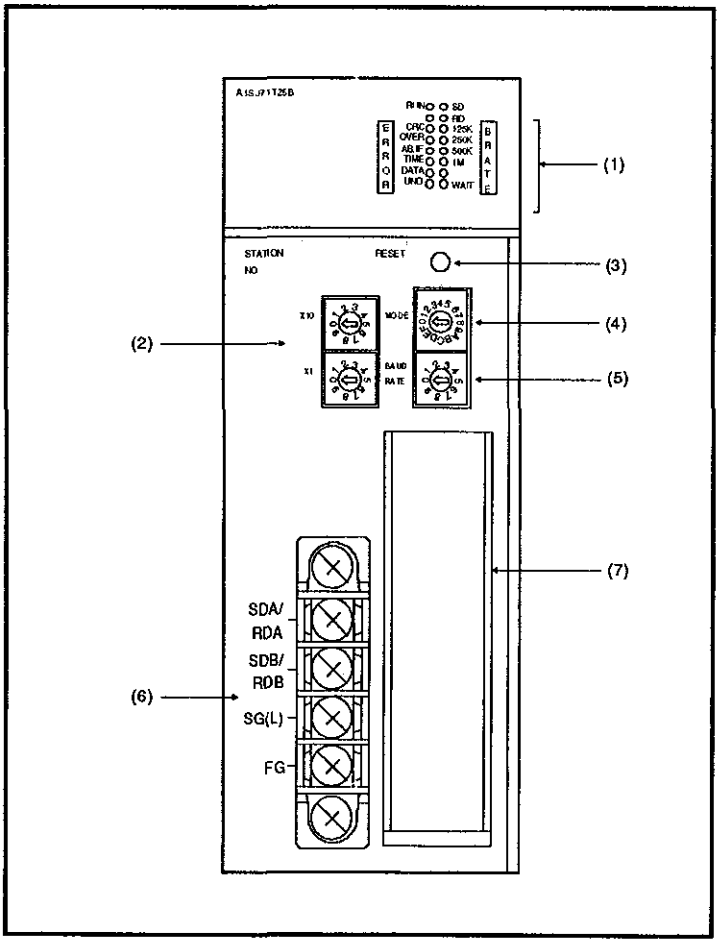
2 2 Performance Specifications

Item		Specifications
Model		A1SJ72T25B
Max number of I/O points	Input (X) Output (Y)	X, Y total 512 points (When A1SCPU is used as the master station up to 250 points)
MELSECNET mode	Max link points for one station	$\frac{X\text{ (points)} + Y\text{ (points)}}{8} + 2 \times W\text{ (points)} \leq 512$ bytes
MELSECNET II composite mode	Max link points for one station	$\frac{X\text{ (points)} + Y\text{ (points)}}{8} + 2 \times W\text{ (points)} \leq 512$ bytes
Current consumption (5 VDC)		0 3 A
Weight Kg (lb)		0 4 (0 88)
Allowable momentary power failure time		20 msec
Communication speeds		125K bps/250K bps/500K bps/1M bps
Communication method		Half duplex bit serial method
Synchronous method		Frame synchronous method
Transmission path method		Bus type
Overall extension distance		Varies according to the communication speed
Number of connected stations		Max 32 units (1 master station 31 local or remote I/O stations)
Modulation method		NRZI method
Transmission format		Conforms to HDLC (frame method)
Error control system		Retry due to CRC (generating polynomial X16 + X12 + X5 + 1) and timeout
RAS function		Diagnostic function such as host link line
Connecting terminal		Terminal block
Applicable cable		Shielded twisted wire pair cable (KNPEV SB 0 5SQ x 1P)

REMARK

Refer to the A1SJ71AT21B user's manual about the overall extension distance

3 2 Part Names

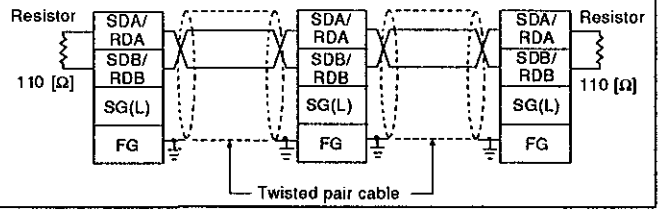


No.	Name (Enlarged View)	Description			
(1)	Operation Status and Error Indication LED	LED	Operation	LED	Operation
	RUN O O SD O O RD ERROR: CRC O O 125K; OVER O O 250K; AB IF O O 500K; TIME O O 1M; DATA O O; UND O O WAIT (BRATE)	RUN	Goes ON when data link is normal.	SD	ON during data sending
		CRC	Goes ON when a code check error is detected	RD	ON during data receiving
		OVER	Goes ON when a data read is delayed	125K	Indicate the baud rate
		AB IF	ON when all data consists of 1s	250K	
		TIME	Goes ON when a timeout occurs.	500K	
		DATA	Goes ON when a data error occurs.	1M	
		UNDER	Goes ON when an underrun error occurs	WAIT	ON during wait for the communication with special function module
(2)	Station Number Setting Switch STATION NO X10 X1	• Set these switches within the range of 01 to 31			
(3)	Reset Switch RESET ◎	This is a reset switch for the station Press the switch after changing station number			

No	Name (Enlarged View)	Application
(6)	Terminal Block SDA/RDA SDB/RDB SG(L) FG	• How to wire the stations is shown in the POINT below *1 Master station: SDA/RDA, SDB/RDB, SG(L), FG Station 1: SDA/RDA, SDB/RDB, SG(L), FG Station 2: SDA/RDA, SDB/RDB, SG(L), FG Twisted wire pair cable
(7)	RS-422 Connector	• Used to connect to peripheral devices • Convered when not in use

POINT

*1 Attach 110 [Ω] resistors to the terminal blocks of both end stations in the MELSECNET/B



No	Name (Enlarged View)	Application		
(4)	Mode Selection Switch MODE	• The following modes can be selected by the mode selection switch.		
		Setting Number	Name	Description
		0	Online (A R)	Automatically returns when the module operates normally.
		1	Online (U R)	Does not automatically return when the module operates normally.
		2	Offline	Releases the self station
		3 4	—	Unused*
		5	Test 1 (B M)	Inter-station test mode (master station)
		6	Test 2 (B S)	Inter station test mode (slave station)
		7	Test 3 (S R)	Self-loopback test
		8 to F	—	Unusable*
		* If the switch is set to any number from 4 to F, the LED (DATA) goes ON and the module goes into the offline state		
(5)	Baud Rate Switch BAUD RATE	Setting Number	Baud Rate	
		0	125K bps	
		1	250K bps	
		2	500K bps	
		3	1M bps	
		4 to F	Unused	
		* If the switch is set to any number from 4 to F, the LED (DATA) goes ON and the module goes into the offline state		

3 3 Settings of Each Part

(1) Set the link module in the data link system as shown below

(a) Station number switch setting

Specify the station number of the A1SJ72T25B within the range of 01 to 31

(b) Mode switch setting

Sets the operation mode and the self-diagnosis mode

(c) Link parameter

The link parameter is required in a master station

(2) The MELSECNET, MELSECNET/B data link reference manual gives details

4. SELF-DIAGNOSTIC TESTING

4 SELF-DIAGNOSTIC TESTING

Refer to the A1SJ71AT21B user's manual about the self-diagnostic testing

REVISIONS

A Apr., 1994	

IMPORTANT

(1) Design the configuration of a system to provide an external protective or safety interlocking circuit for the CPs

(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

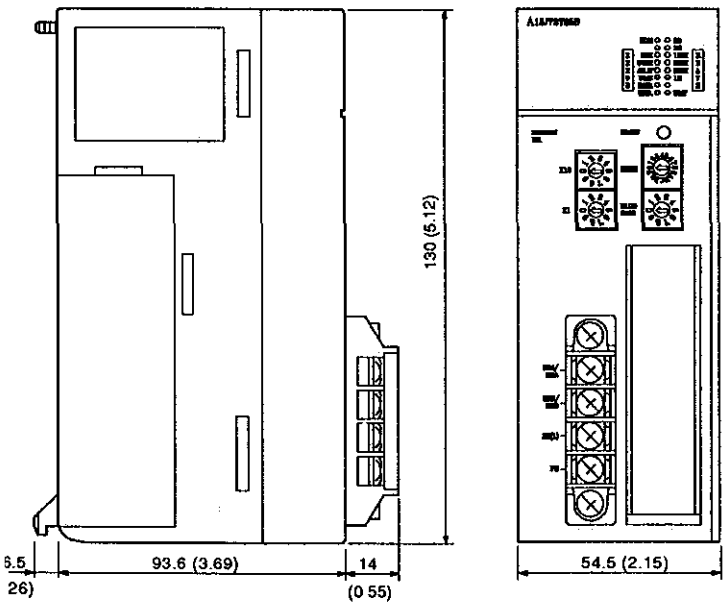
(a) Ground human body and work bench

(b) Do not touch the conductive areas of the printed circuit board and its electrical parts with and non-grounded tools etc

APPENDIX

APPENDIX

APPENDIX 1 OUTSIDE DIMENSIONS



Unit: mm (inch)