

MITSUBISHI

A8GT-TK type Numeric Keypad Panel

User's Manual (Hardware)

Thank you for choosing the MELSEC-GOT Series.

To ensure correct use of this equipment, please read this manual carefully before operating it.



MODEL	A8GT-TK-U
MODEL CODE	1DM093
IB(NA)-68934-C(0406)MEE	

● SAFETY PRECAUTIONS ●

(Always read before starting use)

When using Mitsubishi equipment, thoroughly read this manual and the associated manuals introduced in the manual. Also pay careful attention to safety and handle the module properly.

These precautions apply only to the installation of Mitsubishi equipment and the wiring with the external device. Refer to the user's manual of the CPU module to be used for a description of the PLC system safety precautions.


These ● SAFETY PRECAUTIONS ● classify the safety precautions into two categories: "DANGER" and "CAUTION".



Procedures which may lead to a dangerous condition and cause death or serious injury if not carried out properly.



Procedures which may lead to a dangerous condition and cause superficial to medium injury, or physical damage only, if not carried out properly.

Depending on circumstances, procedures indicated by  **CAUTION** may also be linked to serious results.

In any case, it is important to follow the directions for usage.

Store this manual in a safe place so that you can take it out and read it whenever necessary. Always forward it to the end user.

[PRECAUTIONS REGARDING ASSEMBLY]

DANGER

- When connecting the connection cable to the Numeric Keypad Panel, always switch off GOT power externally in all phases.
A failure to do so can cause misoperation due to miss-input.

CAUTION

- Use the Numeric Keypad Panel in the environment defined in the general specifications given in the GOT user's manual.
Using it in other environment can cause an electric shock, fire, misoperation, or product damage or deterioration.
- When plugging the connection cable, insert it into the Numeric Keypad Panel connector until it "clicks".
After plugging, check that the cable is inserted far enough.
Otherwise, mis-input can occur due to a contact fault.
- Plug the connection cable into the connector of the external I/O module and tighten the connector fixing screws within the specified torque range.
Undertightening can cause mis-input due to a contact fault.
Overtightening can cause mis-input due to damaged screws or external I/O module or a contact fault.
- When installing the Numeric Keypad Panel to a control box, mount or the like, tighten the fixing screws within the specified torque range.
Undertightening can cause a drop.
Overtightening can cause a drop due to damaged screws or Numeric Keypad Panel.

[PRECAUTIONS REGARDING WIRING]

DANGER

- Before starting wiring work, always switch power off externally in all phases. A failure to do so can cause an electric shock, product damage or misoperation.

CAUTION

- The FG wire of the connection cable and the FG terminal of the GOT's power supply terminal block must be connected to ground separately using a Class D or higher (Class 3 or higher) grounding method.

[PRECAUTIONS REGARDING AND MAINTENANCE]

CAUTION

- Do not disassemble or modify the Numeric Keypad Panel.
This can cause a failure, misoperation, injury or fire.
- The Numeric Keypad Panel case is made of resin. Do not drop it or give it hard impact. This can cause the product to be damaged or fail.
- Always secure the connection cable connected to the Numeric Keypad Panel and the power wires drawn from the connection cable, e.g. run them in conduits or clamp them.
Otherwise, the Numeric Keypad Panel or cable can be damaged due to dangling, moved or accidentally pulled cable or misoperation can occur due to improper cable connection.
- Do not hold and pull the cable part when unplugging the connection cable connected to the Numeric Keypad Panel or the power wires drawn from the connection cable.
When the cable is fitted with a connector, hold the connector of the cable part connected to the Numeric Keypad Panel.
If you pull the cable connected to the Numeric Keypad Panel, the Numeric Keypad Panel or cable can be damaged or misoperation can occur due to a contact fault.

[PRECAUTIONS REGARDING PRODUCT DISPOSAL]

CAUTION

- When disposing of this product, handle it as industrial waste.

Revisions

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

Print Date	*Manual Number	Revision
Nov., 1997	IB(NA)-68934-A	First printing
Apr., 2001	IB(NA)-68934-B	<div style="border: 1px solid black; padding: 2px;">Partial addition</div> Chapter 1, Section 2.1, Section 2.2 <div style="border: 1px solid black; padding: 2px;">Models added</div> A9GT-70KBF
Jun., 2004	IB(NA)-68934-C	<div style="border: 1px solid black; padding: 2px;">Partial correction</div> About the Manuals <div style="border: 1px solid black; padding: 2px;">MODEL CODE change</div> Changed from 13JM76 to 1DM093

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About the Manuals

The following product are available for this equipment.
Refer to the table given below to choose suitable manuals.

Relevant Manual

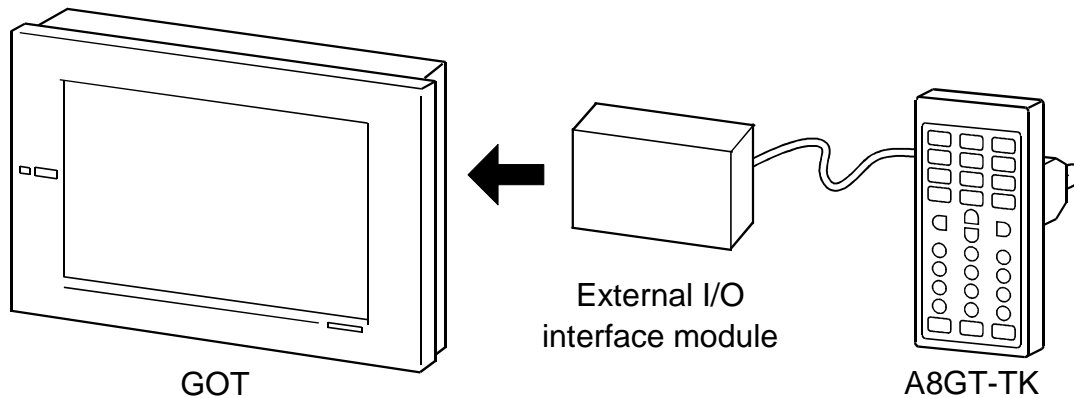
Manual name	Manual No. (Model code)
A9GT-70KBF type external I/O interface module User's Manual (Found in the packing of the A9GT-70KBF)	IB-80018 (1DM115)
A8GT-70KBF type external I/O interface module User's Manual (Found in the packing of the A8GT-70KBF)	IB-66769 (1DM064)
A8GT-50KBF type external I/O interface module User's Manual (Found in the packing of the A8GT-50KBF)	IB-68908 (1DM053)
GOT-A900 Series User's Manual (GT Works Version5/GT Designer Version5 compatible Connection System Manual) (Available as an Option)	SH-080119 (1DM189)

1. Introduction

This user's manual gives specifications, handling instructions and other information of the A8GT-TK Numeric Keypad Panel (hereafter referred to as the "Numeric Keypad Panel").

First, please refer to the user's manual of the A9GT-70KBF/A8GT-70KBF/A8GT-50KBF external I/O module (hereafter referred to as the "external I/O module") being used.

The Numeric Keypad Panel is designed to be mountable onto a control box or the like. It is connected to the external I/O module or terminal block conversion module as a data entry Numeric Keypad Panel dedicated to the GOT900 series /GOT800 series (hereafter referred to as the "GOT").



Restrictions on use

- Do not press two or more switches of the Numeric Keypad Panel at the same time.
Pressing two or more switches simultaneously can cause mis-input.
- When setting any operation to each key of the Numeric Keypad Panel on the GT Designer or the SW3NIW-A8GOTP graphic settings software package, re-set the default key code of each key to "FFFF".
Otherwise, operation setting will be invalid.

Performance Specifications		
Connection interface	A9GT-70KBF/A8GT-70KBF/A8GT-50KBF	
Application	Data entry from keyboard	
Keyboard	Number of keys	31
	Key makeup	Function keys, cursor keys, ten-key pad, other function keys
	Operational life	200,000 times
Online connection/disconnection	Disallowed	
Outline dimensions(mm/inch)	197/7.76(H)×70/2.76(W)×15/0.59(D)	
Weight(kg/lb)	0.13/0.29	

For general specifications, refer to the user's manual of the GOT used.

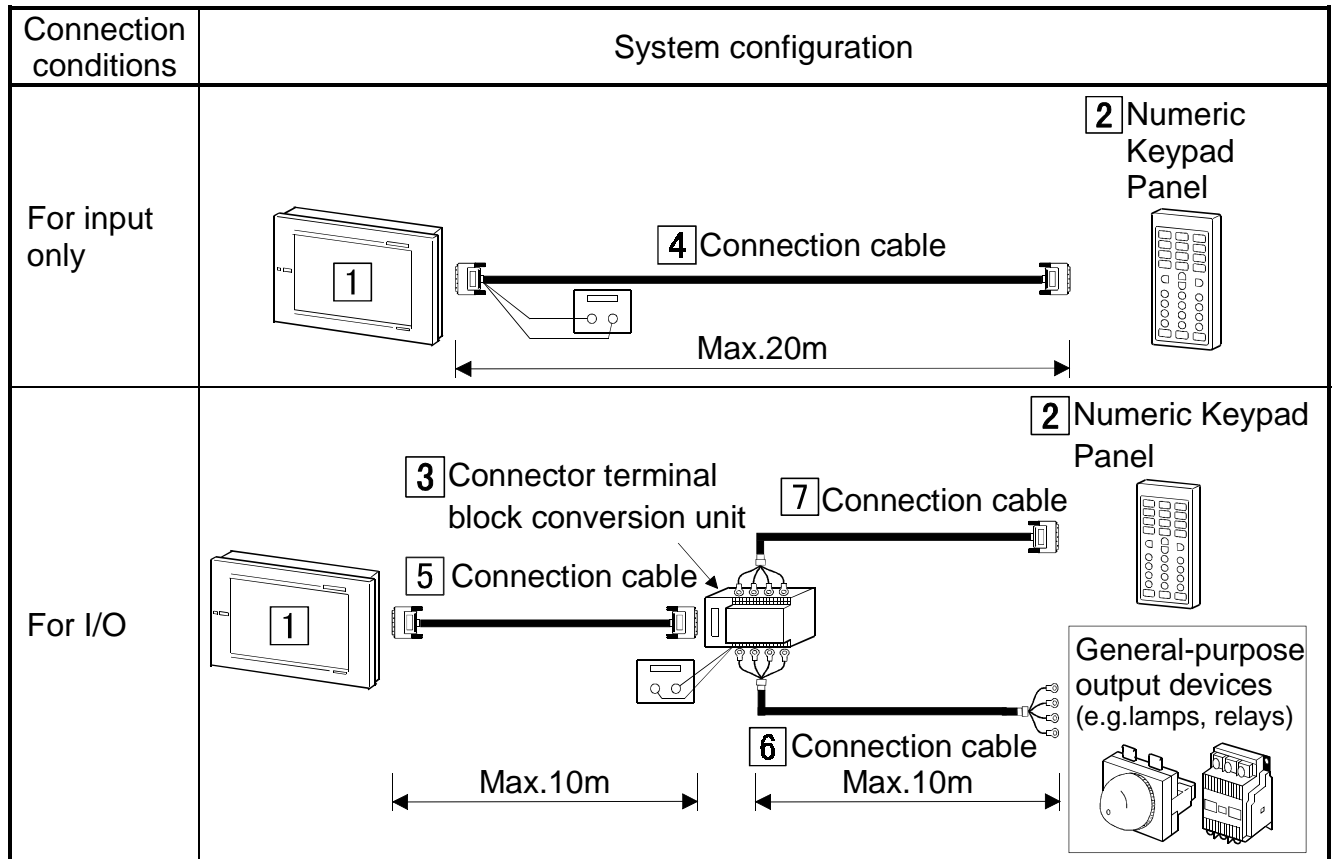
2. System Configurations

(1) System configurations and connection conditions

The following system configuration assumes connection of a printer.

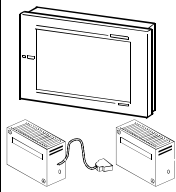
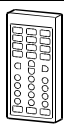

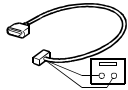
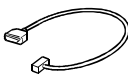

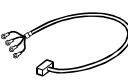
The numbers (1) to (7) given in the system configurations denote the numbers (1) to (7) in "(2) System equipment".

Refer to these numbers when you want to confirm the types and applications.



(2) System equipment

The following table indicates the system equipment needed for connection of external I/O equipment.

Image	No.	Applicatin	Type	
			GOT unit	External I/O interface module
	1	External I/O equipment-connected GOT	A985GOT, A97*GOT, A960GOT	A9GT-70KBF
			A870GOT, A810GOT	A8GT-70KBF
			A956WGOT, A95*GOT, A85*GOT	A8GT-50KBF
	2	Numeric keypad panel	A8GT-TK	
	3	Connector terminal block conversion unit*1	A6TBY36-E, A6TBY54-E	
	4	Connection cable between [GOT] and [numeric keypad panel]*1*2	A8GT-C05TK(0.5m)	
	5	Connection cable between [GOT] and [connector terminal block conversion unit]*1*3	A8GT-C30TB(3m)	
	6	Connection cable between [connector terminal block conversion unit] and [general-purpose I/O equipment]*4	Fabricate on user side	
	7	Connection cable between [connector terminal block conversion unit] and [numeric keypad panel]	(Refer to Section 3.2 and fabricate on user side.)	

*1 12/24VDC power must be supplied for external I/O units.

*2 The connection cable may also be fabricated on user side.

Refer to Section 3.1 for details of the fabricating method.

*3 The connection cable may also be fabricated on user side.

Refer to the following manuals for details of the fabricating method.

GOT used	Manual Name
When the GOT-A900 Series is used	GOT-A900 Series User's Manual (GT Works Version5/GT Designer Version5 compatible Connection System Manual)
When the GOT800 Series is used	A8GT-50KBF type External I/O interface module User's Manual

*4 The connection cable must be prepared by the user.

Refer to *3 manual for details of the fabricating method.

3. Connection Cables

This chapter provides how to wire and fabricate the connection cables.

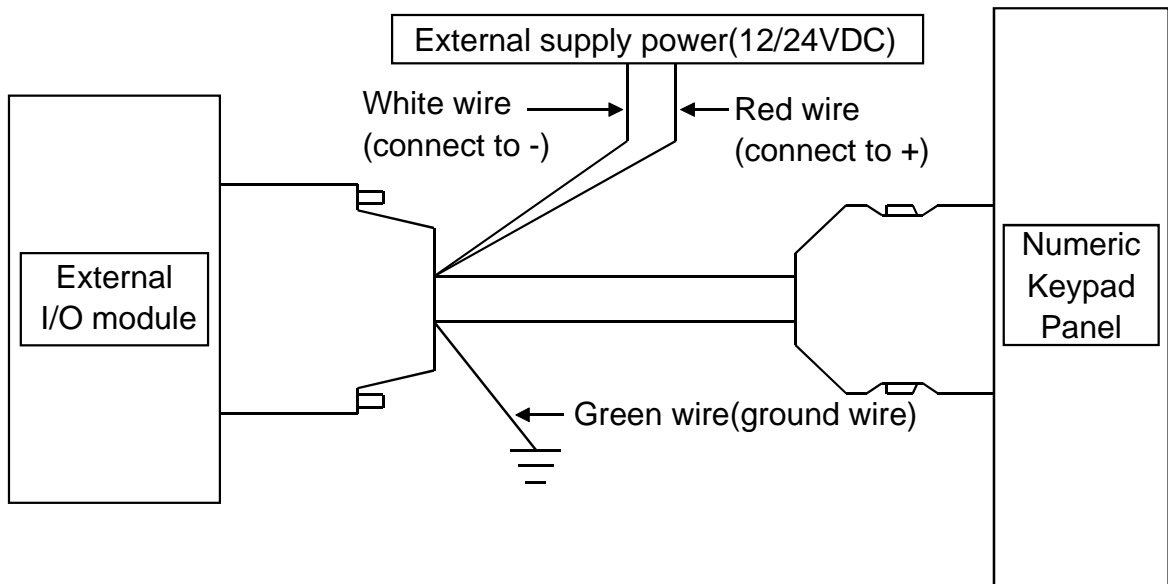
3.1 Cable for Connection between External I/O Module and Numeric Keypad Panel

Use the following cable for connection between the external I/O module and Numeric Keypad Panel.

- Type A8GT-C05TK Numeric Keypad Panel connection cable (cable length:50cm (19.65 inch))
- User-fabricated connection cable (max. cable length:20m (65.62feet.))

3.1.1 Wiring method

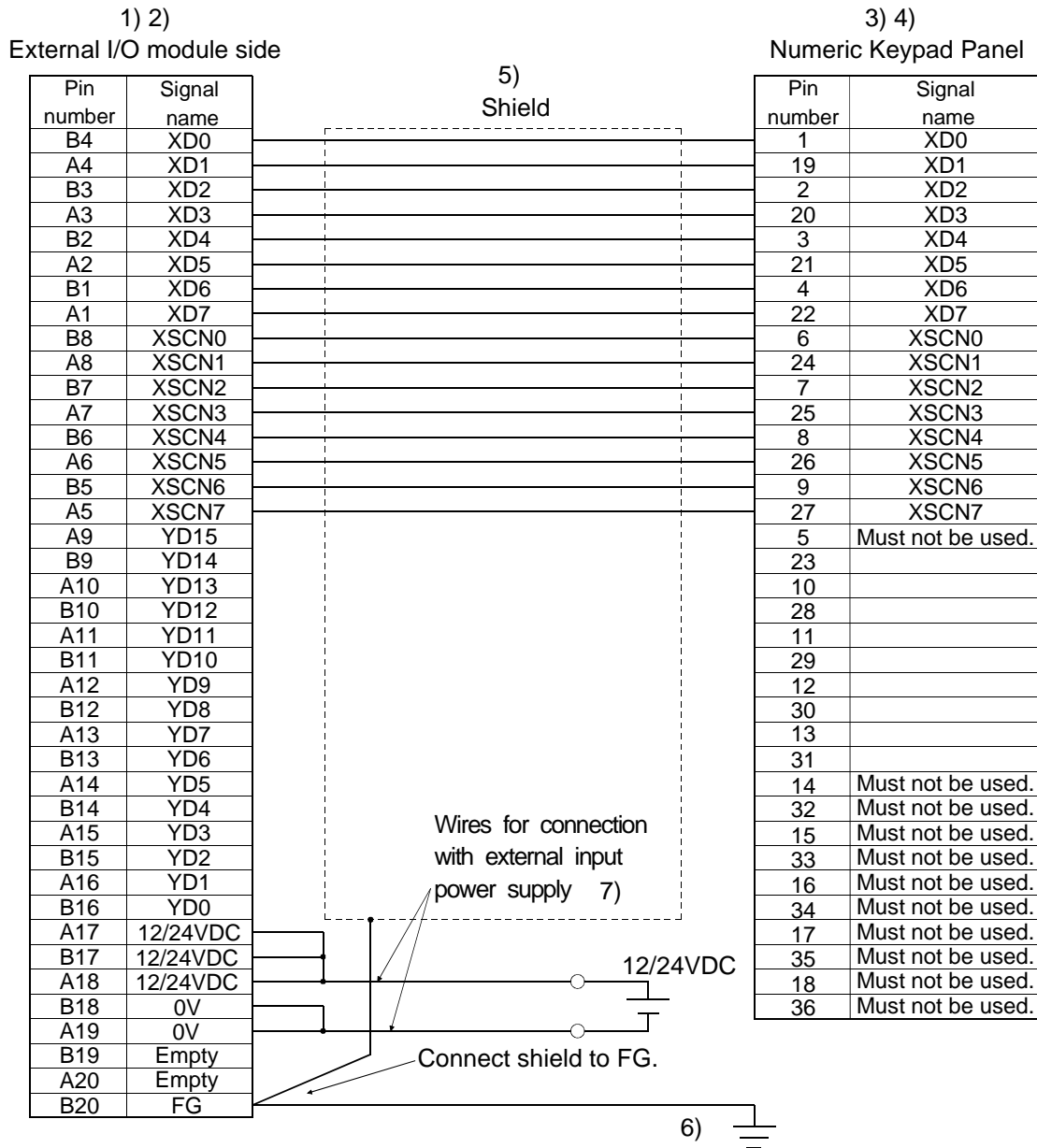
The following diagram shows how to wire the cable for connection between the external I/O module and Numeric Keypad Panel.



3.1.2 How to fabricate the cable

When you do not use the A8GT-C05TK Numeric Keypad Panel connection cable, fabricate the connection cable in accordance with the following wiring diagram and parts list (max. cable length: 20m (65.62 feet)).

(1) Wiring diagram



(2) Parts list

Number	Name	Type	Maker	Qty
1)	Connector	FCN-361J040-AU	FUJITSU LTD.	1
2)	Connector cover	FCN-360C040-B Tightening torque range: 35 to 48N-cm		1
3)	Connector	D05-36PC-F0	Japan Aviation Electronics Industry, Ltd.	1
4)	Connector cover	D05-36H-S		

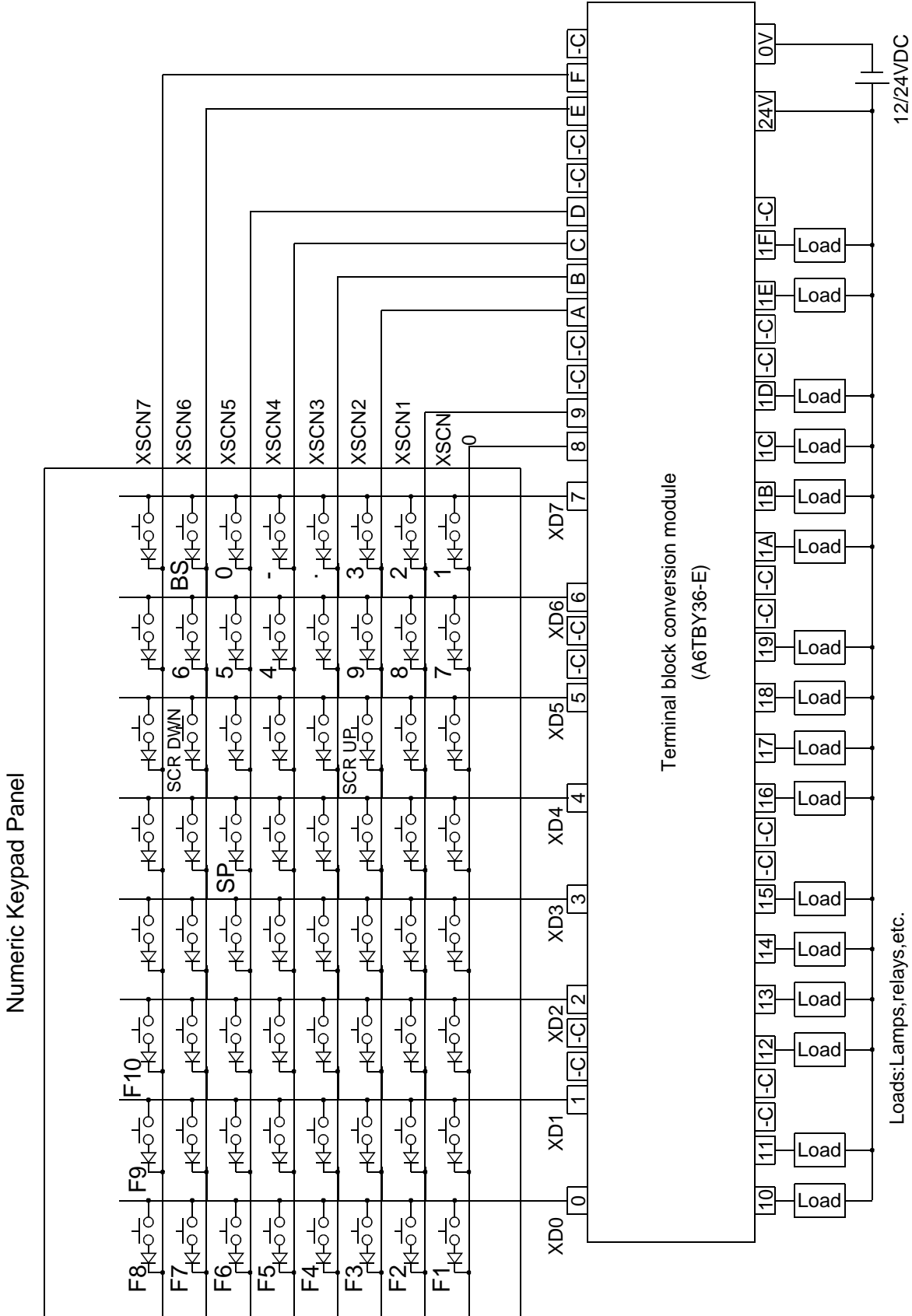
Number	Name	Type	Qty
5)	Twisted pair shielded cable	Conductor OD:1.0mm (0.04 inch) (equivalent to UL 2935 AWG28)	1
6)	FG wire	Conductor OD:1.8mm (0.07 inch) (equivalent to UL 1015 AWG14)	1
7)	External input power supply connecting wire	Conductor OD:0.6mm (0.02 inch) (equivalent to UL 1007 AWG24)	2

3.2 Cable for Connection between Terminal Block Conversion Module and Numeric Keypad Panel

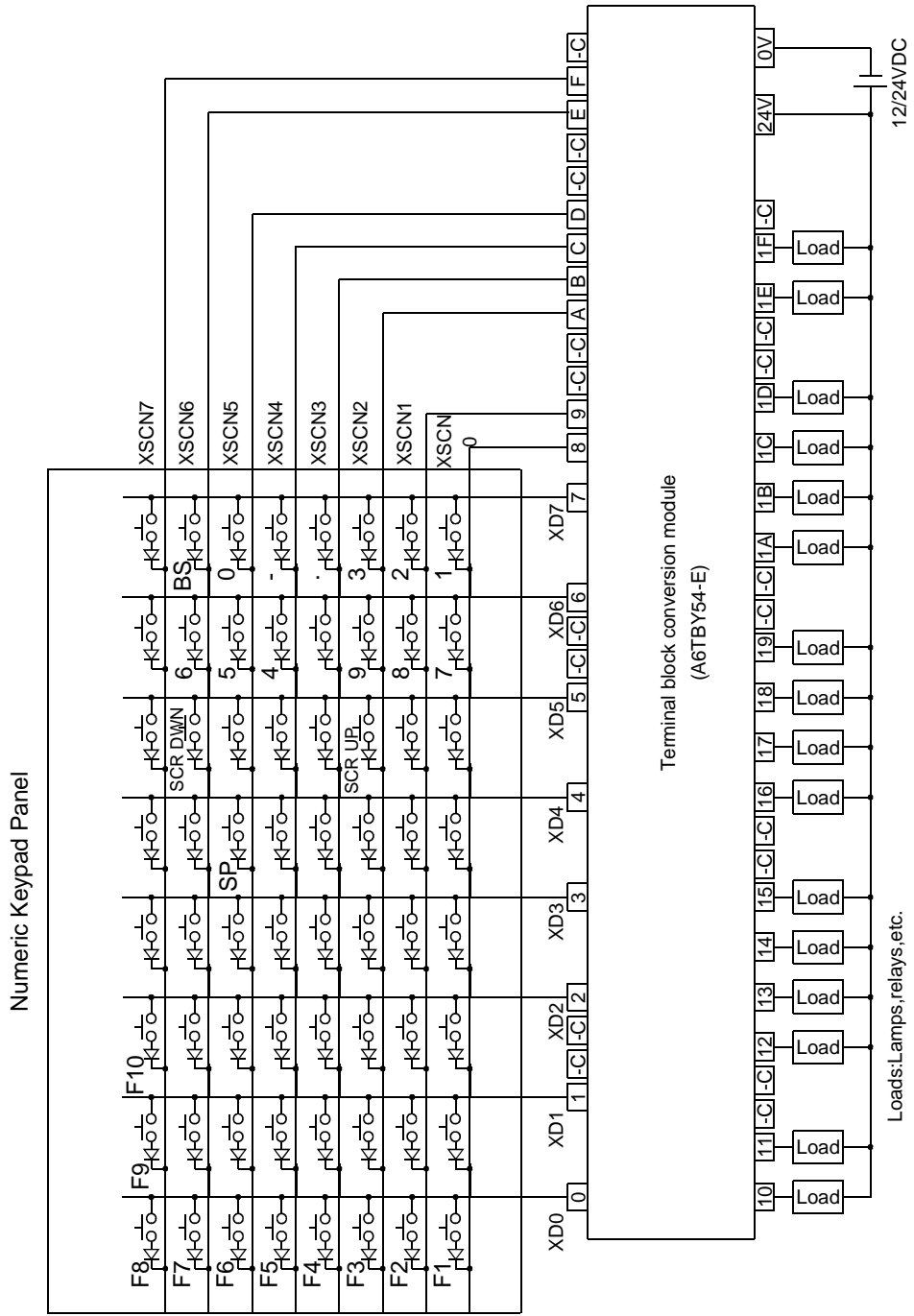
Fabricate the cable for connection between terminal block conversion module and Numeric Keypad Panel in accordance with the following wiring diagram, parts list and assembly diagram (max. cable length: 10m (32.79feet)).

(1) Wiring diagram

(a) For use of the terminal block conversion module (A6TBY36-E)



(b) For use of the terminal block conversion module (A6TBY54-E)

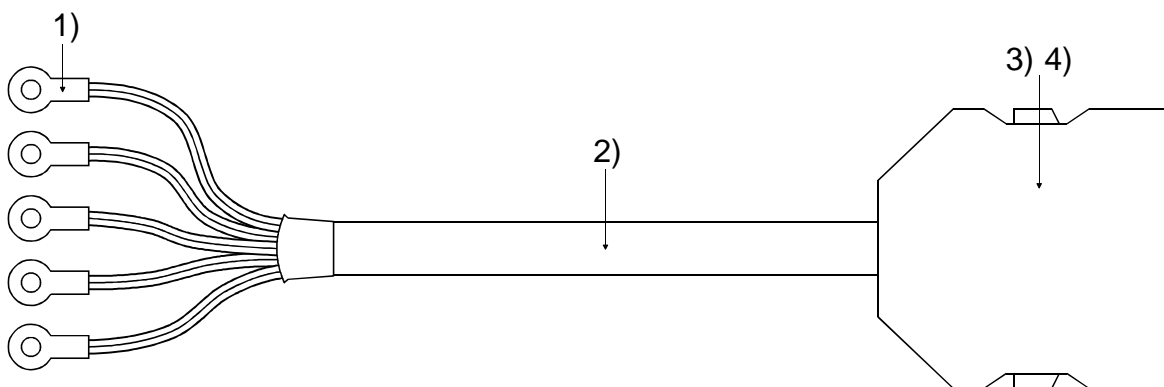


(2) Parts list

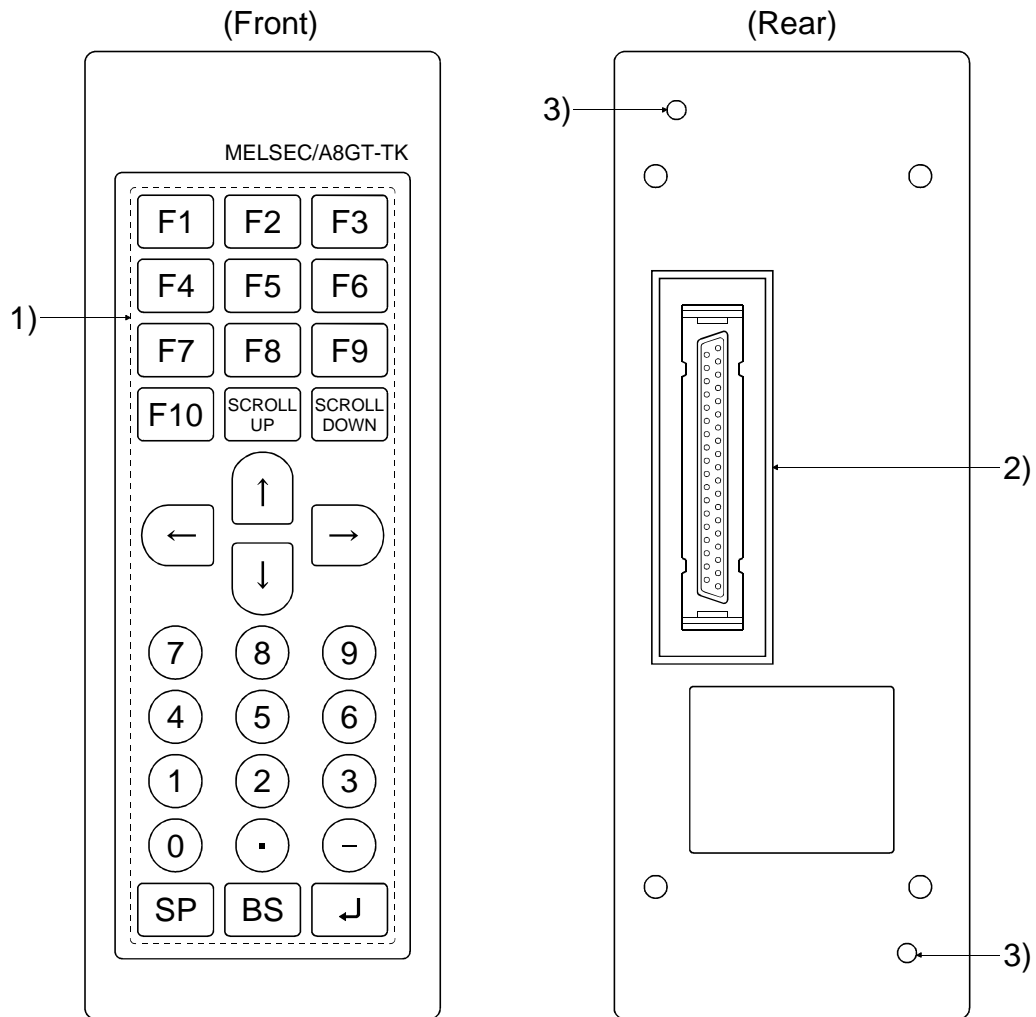
Number	Name	Specifications	Qty
1)	Solderless terminal (with insulation sleeve)	1.25-3.5	16
2)	Twisted pair shielded cable	Conductor OD: 1mm (0.04 inch) (equivalent to UL 2935 AWG28)	1

Number	Name	Type	Maker	Qty
3)	Connector	D05-36PC-F0	Japan Aviation Electronics Industry, Ltd.	1
4)	Connector cover	D05-36H-S		

(3) Assembly diagram



4. Structure

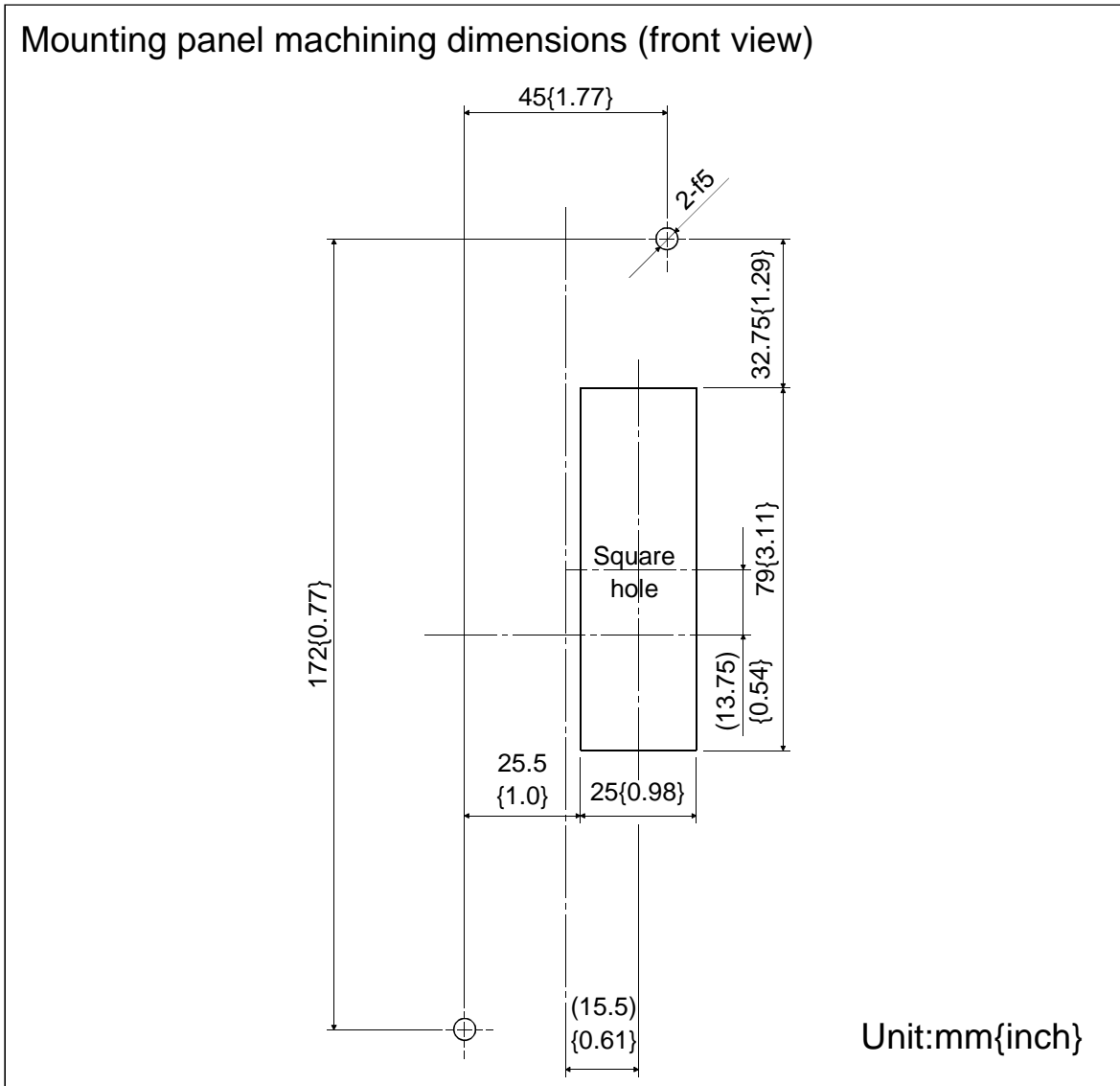


Number	Name	Description
1)	Keys	Used to enter data.
2)	Connector	Connector for connection of the cable to the external I/O module or terminal block conversion module.
3)	Installation screw holes (for M4 screws)	When the Numeric Keypad Panel is installed on a control box or the like, it is fixed with M4 screws (user prepared). Screw hole depth: 5mm(0.20inch) Tightening torque range: 62 to 83.5N·cm

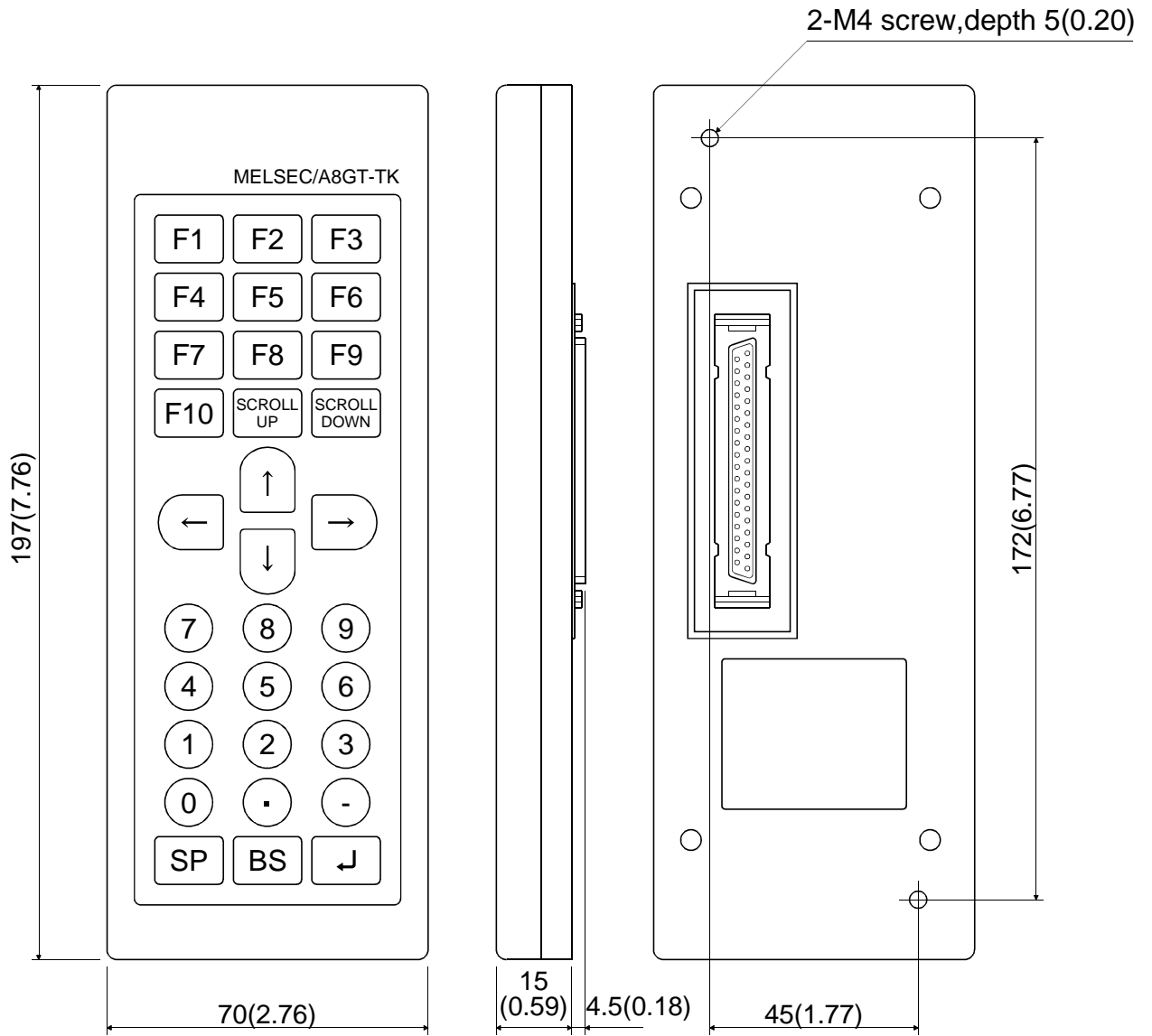
5. Installation

When installing the Numeric Keypad Panel on a control box door, mount or the like, the door or mount must be machined.

The following diagram shows mounting panel machining dimensions.



6. Outline Drawing



Unit: mm (inch)

Warranty

Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi; machine damage or lost profits caused by faults in the Mitsubishi products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi; damages to products other than Mitsubishi products; and to other duties.

⚠ For safe use

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi.
- This product has been manufactured under strict quality control. However, when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

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