MITSUBISHI

A8GT-SWR2
RS-232C Switch Adapter for A810GOT

MITSUBISHI Graphic Operation Terminal
User's Manual

Thank you for buying the Mitsubishi General Use PC MELSEC-GOT
Series. Before use, please read this manual carefully and correctly
operate the module with a sufficient understanding of the GOT series PC
functions and performance. Please place this manual in a location where
it is available to end users.

GOT
MELSEC

MODEL	A8GT-SWR2-U-E
MODEL CODE	13JL60

● SAFETY PRECAUTIONS ●

(Read these precautions before using.)

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 Mitsubishi equipment. Refer to the CPU module user's manual for a description of the PC system safety precautions.

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

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

[DESIGN PRECAUTIONS]

⚠DANGER
• There are no precautions with regard to the design of this module.
Remarks
The display monitors with touch sensor that can be connected to this module are TSD-17GZ and TSD-21GII-A (manufactured by Mitsubishi Electric Engineering, K.K..) Since this manual is for the A8GT-SWR2, it does not cover the contents originally written for the monitors, but as long as you are using a touch sensor display monitor take note of the following points.
• Two points on the touch sensor display monitor cannot be touched. Since there is a risk that touching two points will cause an error in output (see Chapter 6), decide on the touch switches after fully considering their setting positions and provide an interlock circuit by using a sequence program for the write device so that the system can always be safely operated. An error in operation can lead to accidents.

[INSTALLATION PRECAUTIONS]

⚠CAUTION

- Use this module in an environment that meets the general specifications contained in GOT User's Manual. Using this module in an environment outside the range of the general specifications could result in electric shock, fire, malfunction, and damage to or deterioration of the product.
- Make sure to switch all phases of the external GOT's power supply off before connection the connection cable to this module and GOT main module.
  If you don not switch off the external power supply, it will cause failure or malfunction of the module.
- Install the connection cable to the connector of this module and GOT main module, and then tighten the connector of the connector installation screws within the range of specified torque.
  If the connector installation screws are loose, it may result in short circuit, or malfunction.
  Tightening the connector installation screws too far may cause damages to the screws and/or the module, resulting in short circuits or malfunction.
- When this module is installed to the control panel etc., tighten the module installation screws within the range of specified torque.
  If the module installation screws are loose, it may result in fallout, short circuit,or malfunction.
  Tightening the module installation screws too far may cause damages to the screws and/or the module, resulting in fallout, short circuits or malfunction.

[OPERATING PRECAUTIONS]

⚠CAUTION

- There are no precautions with regard to the operation of this module.

| Remarks |

The display monitors with touch sensor that can be connected to this module are TSD-17GZ and TSD-21GII-A (manufactured by Mitsubishi Electric Engineering, K.K..)
Since this manual is for the A8GT-SWR2, it does not cover the contents originally written for the monitors, but as long as you are using a touch sensor display monitor take note of the following points.
- Do not touch two items on the touch sensor display monitor.
  An error or malfunctions can lead to accidents.

[STARTING AND MAINTENANCE PRECAUTIONS]

⚠ CAUTION

- Do not disassemble or modify this module.
  Doing so could cause failure, malfunction, injury or fire.
- Do not touch the conducted area or electric parts of this module.
  Doing so could cause malfunction or failure of the module.
- Make sure to secure connection cable connected to the module is stored in
  the conduct or fixed with cramps.
  Failure to do so may cause a damage to the module or cables due to
  dampling, shifting or inadvertent handling of cables, or malfunction of bad
  cable contacts.
- Do not grab on the cable when removing the connection cable connected to
  the module.
  When removing the cable with a connector, hold the connector on the side
  that is connected to the module.
  Pulling the cable that is still connected to the module may cause a damage to
  the module or cable, or malfunction due to bad cable contacts.

[DISPOSAL PRECAUTIONS]

⚠ CAUTION

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

About This Manual

The following are manuals related to this product.
Request for the manuals as needed according to the chart below.

Related Manual

Manual Name	Manual No. (Type code)
A870GOT Graphic Operation Terminal User's Manual (Packed in A870GOT, A810GOT)	IB-(NA)-66628 (13J830)
A810GOT Graphic Operation Terminal Additional Manual (Packed in A810GOT)	IB-(NA)-66766 (13JL14)
SW3NIW-A8GOTP Graphic Setting Software Package Operating Manual (Introductory Manual) (Sold separately)	IB-66792 (13J926)
SW3NIW-A8GOTP Graphic Setting Software Package Operating Manual (Startup Manual) (Sold separately)	IB-66791 (13J925)
SW3NIW-A8GOTP Graphic Setting Software Package Operating Manual (Monitor Screen Creation Manual) (Sold separately)	IB-66793 (13J927)
SW3NIW-A8GOTP Graphic Setting Software Package Operating Manual (Data Transmission/Debugging/Document Creation Manual) (Sold separately)	IB-66794 (13J928)
SW3NIW-A8GOTP Graphic Setting Software Package Operating Manual (Report Functions Manual) (Sold separately)	IB-66795 (13J929)
GOT800 Series Operating Manual (Expanded Functions Manual) (Sold separately)	IB-66796 (13J930)
Other's Programmable Controller · Bar-code Connection System Manual (Sold separately)	IB-66797 (13JL31)

Revisions

Table of Contents About This Manual

1. Overview

This user's manual describes the specifications, handling and other topics regarding A8GT-SWR2-type RS-232C switch adapter for A810GOT (hereinafter referred to as A8GT-SWR2).

The A8GT-SWR2 is a module that enables operations from the screen, which was not possible with the A810GOT, by connecting the display monitor that is equipped with touch sensors (hereinafter referred to as the touch-sensor monitor) to the RS-232C interface of the A810GOT-type graphic operation terminal module (hereinafter referred to as A810GOT).

Also, because the A8GT-SWR2 connects to the RS-232C interface of the A810GOT, a personal computer for data transfer by nature cannot be connected at the same time. However, by connecting a personal computer for data transfer to the RS-232C interface of the A8GT-SWR2 and by switching as necessary, functions such as data transfer and debugging can be performed.
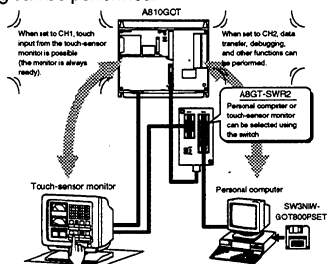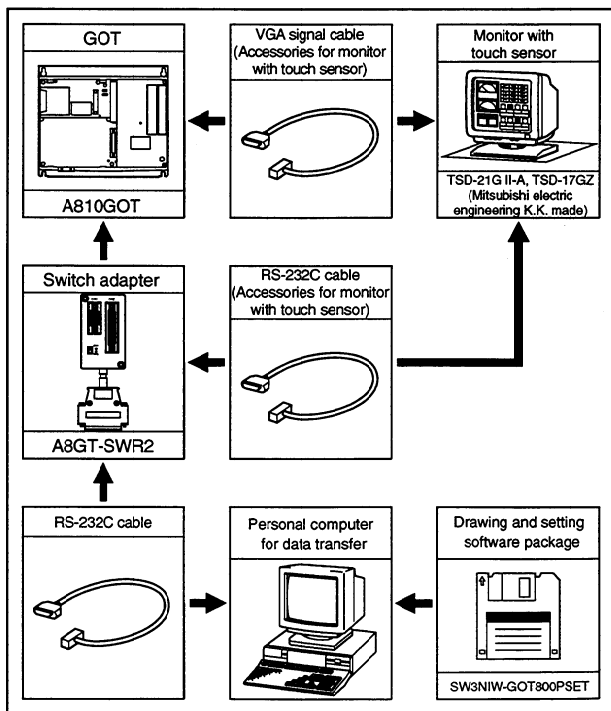

Point
When connecting a display monitor with touch sensor to this module, take note of the restrictions described below. See Chapter 6 for further details.

- Perform only one-point touch entry in the touch sensor area. Two points cannot be touched at the same time.
- Similar to when a normal CRT is connected to the A810GOT, the utility functions (circuit monitoring function, system monitoring function, special module monitoring function, etc.) cannot be used. If you should happen to open the utility function menu, turn the power for the GOT off and then on again, and restore the monitor screen.
- The monitor cannot be connected to the MELSECNET/B or MELSECNET II.

2. System Configuration

2.1 System Configuration

The following shows the system configuration when using the A8GT-SWR2.

GOT	VGA signal cable (Accessories for monitor with touch sensor)	Monitor with touch sensor
A810GOT		TSD-21G II-A, TSD-17GZ (Mitsubishi electric engineering K.K. made)
Switch adapter	RS-232C cable (Accessories for monitor with touch sensor)	
A8GT-SWR2		
RS-232C cable	Personal computer for data transfer	Drawing and setting software package
		SW3NIW-GOT800PSET

2.2　Precautions when Configuring a System

The following describes the precautions when configuring a system using the A8GT-SWR2.

(1) The GOT type that can use the A8GT-SWR2

The GOT type that can use the A8GT-SWR2 is shown below.

| Item	Type
A810GOT	A8GT-10GOT-C

(2) GOT compatible software version when the A8GT-SWR2 is used.

When creating a GOT screen, make sure to install the operating system of software versions listed below or later.

Drawing software　　　　　　: SW3NIW-A8GOTP version F or later

OS program　　　　　　　　: SW3NIW-A8SYSP version F or later

The software version can be checked with the rated plate on the product floppy disks.
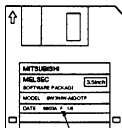
Indicates the software version.

Point

The setting contents for the OS program which must be installed to the A810GOT and for creating the screen when using the A8GT-SWR2 are described below.
Refer to the SW3NIW-A8GOTP operating manual for further details on the installation and setting methods for the OS program in the drawing software.

- ROM BIOS
  If the version is T or earlier, install version U or later.
- Basic OS
  Install the corresponding basic OS to the A810GOT.
- Option driver
  Install a driver (touch monitor) for connecting the touch sensor monitor.
- Expansion function OS
  The expansion function cannot be used so do not install this OS.
- Communication driver
  Since this module cannot be connected to the MELSECNET/B or MELSECNET II, do not install the MNET2/B.
- Settings when creating screen data
  Set [A870GOT-TFT, STN/A810GOT] for the GOT type.

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(3) Connecting a touch-sensor monitor

The following describes the touch-sensor monitors that can be used with the A8GT-SWR2.

Use the accessory cable supplied with the touch-sensor monitor for the connecting cable.

Refer to the instruction manual of the touch-sensor monitor regarding the specifications and handling of the usable touch-sensor monitors.

Type	Size	Accessory cable	Manufacturer
TSD-17GZ	17 inch	RS-232C cable VGA signal cable (Cable length: 1.8 m, 1 piece each)	Mitsubishi Electric. Engineering K.K
TSD-21GII-A	21 inch		

(4) Connecting to a personal computer for data transfer

The same cable as for connecting a personal computer directly to the A810GOT can be used.

Refer to the user's manual of the A810GOT for details on the usable personal computers and cables.
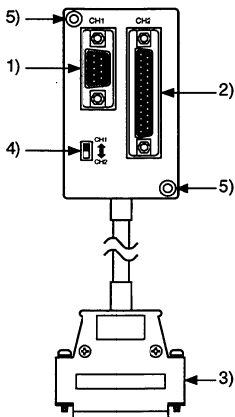
3. Specification

3.1   General Specification

Refer to the user's manual of the GOT to be used for the general specifications.

3.2   Performance Specification

Item	Specification
RS-232C interface (1 channel each)	For personal computer connection (D-sub 25 pin, female, mm screw)
	For touch-sensor monitor connection (D-sub 9 pin, male, inch screw)
	For A810GOT connection (D-sub 25 pin, male, mm screw)
Select switch	For switching between touch-sensor monitor and personal computer
Switch life [times]	10000
Cable length [m(ft.)]	0.5(4.9) (between A810GOT and A8GT-SWR2)
Connection distance to monitor with touch sensor [m(ft)]	1.8(5.9) (Between monitor with touch sensor and A8GT-SWR2)
External dimensions [mm(in.)]	48(1.9)(H) × 80(3.15)(W) × 20(0.79)(D)
Weight [kg(lb.)]	0.11(0.24)

4. Names of Each Parts

No.	Name	Description
1)	CH1 RS-232C interface	Interface for connecting a touch-sensor monitor
2)	CH2 RS-232C interface	Interface for connecting a personal computer
3)	RS-232C connector with cable	Connector with cable for connecting RS-232C interface of the A810GOT Cable length: 0.5 m (19.7 in.) Minimum depth dimension when connecting to A810GOT: 110 m (361 ft.)
4)	CH1/CH2 select switch	The switch to select touch-sensor monitor or personal computer. CH1 side: Enables communication with the touch-sensor monitor side. CH2 side: Enables communication with the personal computer side.
5)	Screw hole for module installation	Screw hole for the module installation screw (user arranged) when installing the A8GT-SWR2 onto a control panel, etc. Screw hole size: ϕ3.5 Screw head size: ϕ6.5 Recommended screws for user arrangement: P pan-head screws with PW M3 $\times$ 0.5 $\times$ 10 (2 pieces)

5. How to Install

The following shows how to install the A8GT-SWR2.

1) Create screw holes on the control panel, etc., to which the A8GT-SWR2 is installed.
   Create screw holes in suitable positions so that the RS-232C connector with cable of the A8GT-SWR2 can be securely installed to RS-232C interface of the A810GOT.
   When installing the A8GT-SWR2 on the rear side of the control panel door, use caution so that the screw holes do not appear on the control panel surface.

2) Tighten the module installation screws (2 pieces, user arranged) within the specified torque range (36.3 to 48.0 N·cm (3.7 to 4.9 kg·cm)) and fix them.

3) Install RS-232C connector with cable of the A8GT-SWR2, to the RS-232C interface of the A810GOT and tighten the connector installation screw within the specified torque range (20.9 to 28.1 N·cm (2.2 to 2.8 kg·cm)).

4) Install the CRT connection cable from the touch-sensor monitor to the analog RGB interface of the A810GOT, and tighten the connector installation screw within the specified torque range (35.7 to 48.3N·cm (3.7 to 4.9 kg·cm)).

5) Install the RS-232C cable from the touch-sensor monitor to the CH1 RS-232C interface of the A8GT-SWR2, and tighten the connector installation screw within the specified torque range (35.7 to 48.3N·cm (3.7 to 4.9 kg·cm)).

6) Install the RS-232C cable from the personal computer to the CH2 RS-232C interface of the A8GT-SWR2, and tighten the connector installation screw within the specified torque range (35.7 to 48.3N·cm (3.7 to 4.9 kg·cm)).

6   Operation Limitations

As with the A870GOT, the A810GOT to which a monitor with touch sensor has been connected using the A8GT-SWR2, can be operated from the display screen but take note of the following restrictions that apply.
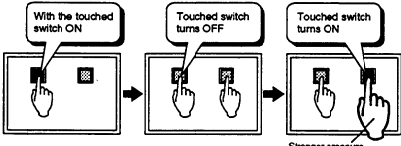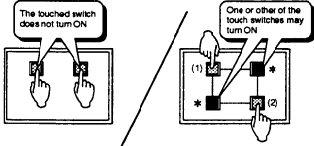
(1) Two-point touching on the monitor with touch sensor

Do not press two points on the monitor with touch sensor.

The actions described below that occur when two points are pressed, pose a danger.

Decide on the touch switches after fully considering their setting positions and provide an interlock circuit by using a sequence program for the write device so that the system can always be safely operated.

An error or malfunctions can lead to accidents.

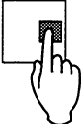| Type of two-point touching	Monitor with touch sensor action
Delay between touching two-points	When a new point is touched while the original is pressed, the switch which was first touched turns off. If one of the two points is touched with even greater pressure, the switch touched with the greater pressure turns on.
Two points touched simultaneously	Either the touched switch does not turn on at all, or one or the other of the two points (in the figure below (1), (2)) that are the other two vertex of the rectangular whose two vertex points (in the figure below*) have been touched simultaneously may turn on.

(2) Effective area of the touch keys

Some of the effective key areas assigned to each key in the key window used in the numeric value input function or panel kit provided by the drawing software are offset from the center of the key.

Example) Panel kit [102 ABC/NUM KEY]
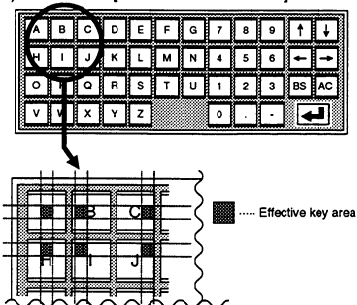
The switch size and size of the effective key area change as illustrated below according to the screen size of the monitor being used. The larger the screen size, the larger the ineffective area of the key.

A870GOT	TSD-17GZ	TSD-21G II-A
Screen size : 10 inch	Screen size : 17 inch	Screen size : 21 inch

Because of this, the key does not respond unless the effective key area is touched accurately.

Point
When creating the monitor screen, the user should make the effective key area for each switch as large as possible. Refer to the SW3N1W-A8GOTP Operating Manual (the volume on creating a monitor screen) on how to change the effective area.

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(3) Adjusting the screen of the monitor with touch sensor

If the monitor screen size does not match the display contents in the touch sensor monitor, the positions of the display contents and the touch sensor will be out of alignment.

Referring to the monitor with touch sensor manual, adjust the screen so that the display contents and screen size match.

Display contents and screen size match   Display contents and screen size do not match

Normally ON

ON when positions are not in alignment
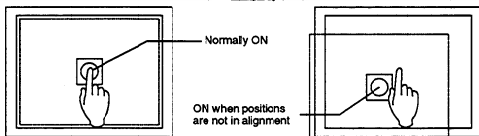
(4) Monitoring functions that can be used with the A810GOT

The monitoring functions that can be performed with the A810GOT when a monitor with touch sensor is connected are indicated in the table below.

Also, refer to the SW3NIW-A8GOTP Operating Manual for further details on each function and the range accessible with the monitor.

> **Point**
>
> Take note that the functions listed below cannot be used with the A810GOT to which a monitor with touch sensor is connected, the same as when a regular CRT is connected.
> - Utility functions
>   System monitoring, special module monitoring, screen copy, set-up, self-diagnostic function, memory information, circuit monitoring, clock setting, screen cleanup, file function

Function		Usable or not	
		When a monitor with touch sensor is connected	When a regular CRT is connected
Numeric display function		○	○
Data list display function		○	△ (Scroll display cannot be used)
ASCII display function		○	○
Clock display function		○	○
Comment display	Bit	○	○
	Word	○	○
Alarm list display	System alarm	○	○
	User alarm	○	△ (Scroll display cannot be used)

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Function		Usable or not	
		When a monitor with touch sensor is connected	When a regular CRT is connected
Parts	Bit	○	○
	Word		
Part move display		○	○
Lamp display	Bit	○	○
	Word	○	○
Panel meter display function		○	○
Trend graph display function		○	○
Polygonal line graph display function		○	○
Bar graph display function		○	○
Level display function		○	○
Touch switch function	Bit	○	×
	Word		
	Base screen switching		
	Window screen switching		
	Expansion		
	Key code setting		
Numeric input function		○	×
ASCII input function		○	×
System information function		○	○
Hard copy function		○	△ (Hard copy cannot be started from touch switch input)
Report function		○	○
Status monitoring function		○	○
Alarm history function		○	×
External I/O function		○	○

○ : Can be used   △: Can be used but restrictions apply   × : Cannot be use

(5) Measures when displaying the utility function menu
When a monitor with touch sensor is connected to the A810GOT, the utility functions (circuit monitoring function, system monitoring function, special module monitoring function, etc.) cannot be used, the same as when a regular CRT is connected.
If you should happen to open the utility function menu, turn the power for the GOT off and then on again, and restore the monitor screen.

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7. External Dimensions Diagram

Indicates the image when the touch-sensor monitor's accessory cable is installed.

Unit: mm (in.)

12
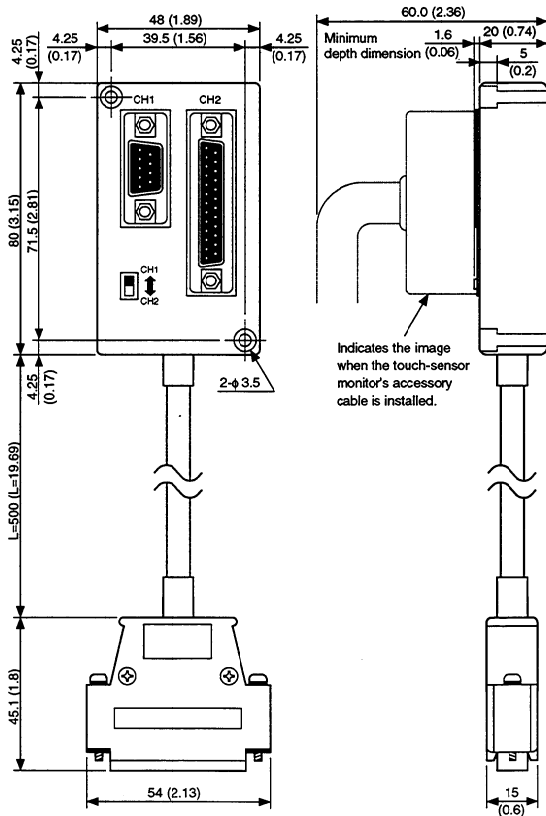
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