MITSUBISHI ELECTRIC
Changes for the Better

Mitsubishi Graphic Operation Terminal
GOT2000 Series Open Frame Model

Quick cooling machine operation monitor

Temp. −20°C
Time 40:00

System status display
Motion error
Error occurred
Quick cooling machine running

Run
Stop

MENU   MONITOR   ALARM

12.1" SVGA

8.4" VGA   **10.4" VGA**

A new style of
GOT2000

A new style of GOT2000

GOT complements machine design

Installing the GOT2000 from the back side of the control panel complements the machine-design surface. Using a stainless-look environmental protection sheet allows the touch panel to blend into the production machines for the pharmaceutical and food industries.

Environmental protection sheet

Easy installation

Adjustable to various panels

The installation fitting is adjustable from 1.5 mm to 4 mm of the control panel thickness. GOT can adjust the difference of the control panel thickness. Vertical installation is also available.

Designed for safe installation

The edge of the touch panel is protected to prevent damage to the touch panel or injury by touching the sharp edge. It is possible to safely install the GOT.
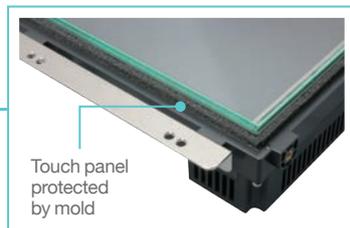
Dedicated installation fittings

Installation fittings (vertical/horizontal) and screws are included with GOT. Attach appropriate installation fittings depending on the installation orientation.

* : Studs should be prepared by the users. (Not included)

Installation fitting (panel thickness: 1.5 mm to 4 mm (0.06 inch to 0.16 inch))
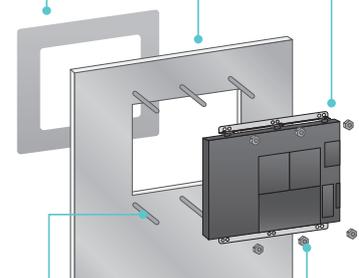
Touch panel protected by mold

Designed for safe installation

Installation instructions

Environmental protection sheet
(optional or should be prepared by the users)
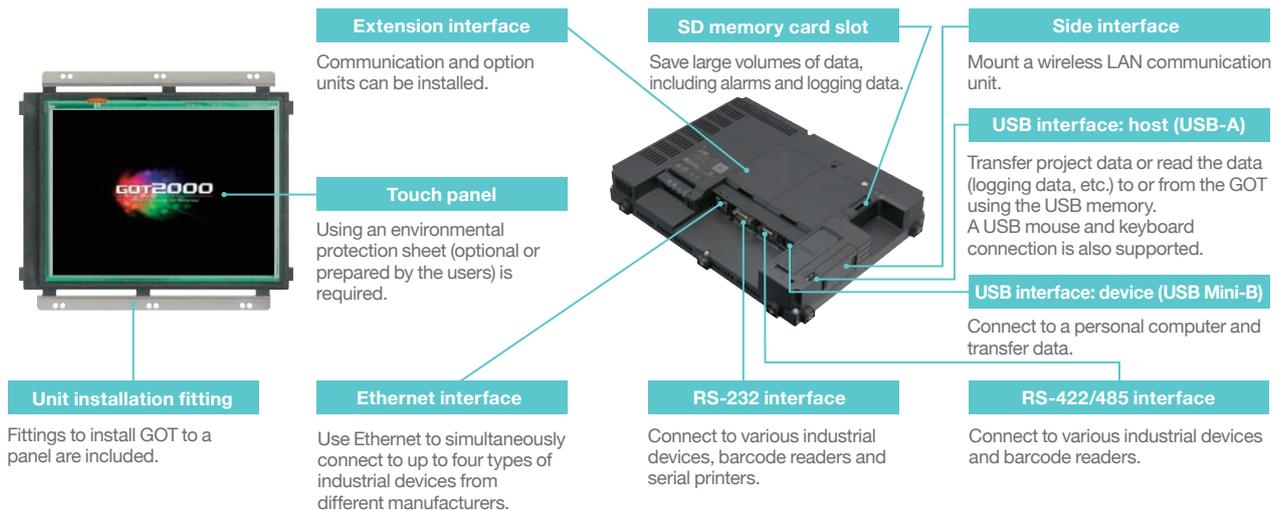
Control panel surface

GOT

Stud
(should be prepared by the users)

Unit installation fitting
Unit installation screw

External appearance/Components names

Extension interface
Communication and option units can be installed.

SD memory card slot
Save large volumes of data, including alarms and logging data.

Side interface
Mount a wireless LAN communication unit.

USB interface: host (USB-A)
Transfer project data or read the data (logging data, etc.) to or from the GOT using the USB memory.
A USB mouse and keyboard connection is also supported.

Touch panel
Using an environmental protection sheet (optional or prepared by the users) is required.

USB interface: device (USB Mini-B)
Connect to a personal computer and transfer data.

Unit installation fitting
Fittings to install GOT to a panel are included.

Ethernet interface
Use Ethernet to simultaneously connect to up to four types of industrial devices from different manufacturers.

RS-232 interface
Connect to various industrial devices, barcode readers and serial printers.

RS-422/485 interface
Connect to various industrial devices and barcode readers.

IP67F protection

To conform to IP67F, attach an environmental protection sheet.*
GOT can be operated with wet hands, wiped with a damp cloth, and washed with water.

* : Note that the structure does not guarantee protection in all users' environments. The GOT may not be used in certain environments where it is subjected to splashing oil or chemicals for a long period of time or soaked in oil mist.
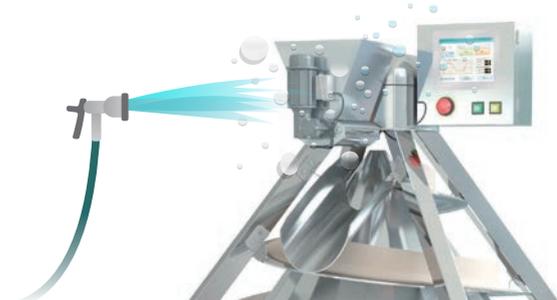
Suitable for pharmaceutical and food industries

Flush surface without any gaps and grooves prevents dust, dirt, and debris from accumulated on the edge.

Before

After

3

Easy data collection

Logging & Graph/List

GOT collects the data from programmable controllers and temperature controllers and displays the collected data in a graph and list. The logging data can be saved in a built-in SRAM or SD memory card even when the power supply has failed.

PLC

Temperature controllers

Buffering area (memory on GOT)

SD memory card,etc.

Graph display

List display
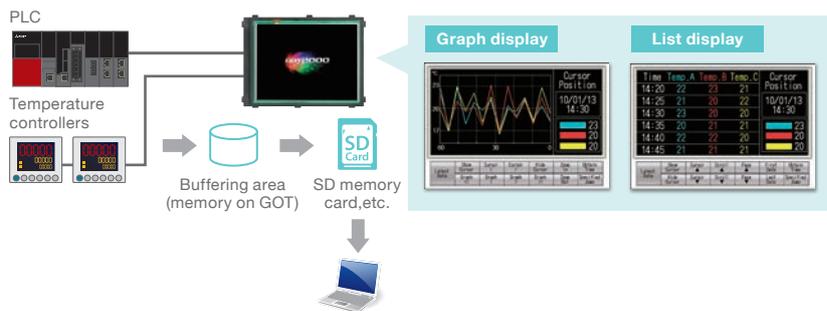
Enhanced security and operation management

Operator authentication function

Login OK

Login failed

Not displayed

Manage login information using operator names and passwords.

Operation log function

Operation log list

Detailed information

For more details
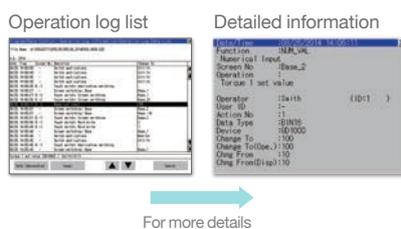
GOT records the operation information in chronological order in an SD memory card or USB memory.

Advantage of using together

Setting the operation authority and the viewing authority achieves "enhanced security" and "access management per operator".

Use of the operator authentication function combined with the operation log function enables you to check that "who, when, how, for what purpose" the operation was performed.

Quick changeover

Recipe function

GOT saves recipe information for individual product. You can select a recipe to be written to the programmable controller, which achieves the quick changeover for the production line.
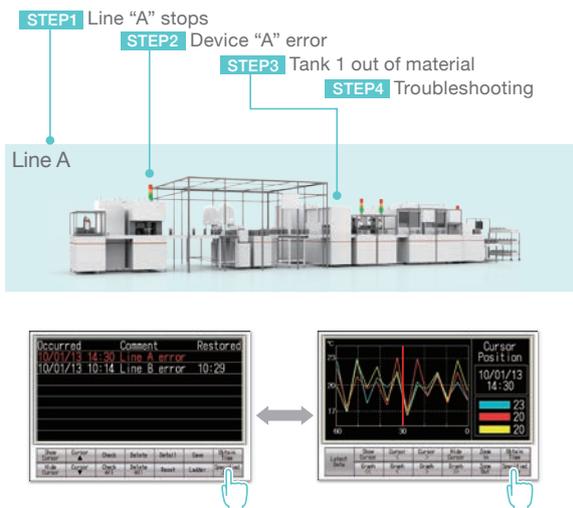
Device	D1000	D2000	D2001	D2002
Device format	Character string	BIN	BIN	BIN
Device comment	Product name	Beef	Chicken	Seafood
Device value	Beef curry	300	0	0
Device value	Chicken curry	0	300	0
Device value	Seafood curry	0	0	150

Recipe A
Recipe B
Recipe C

PLC

Identify error cause and perform quick troubleshooting

Alarm function

STEP1 Line "A" stops
STEP2 Device "A" error
STEP3 Tank 1 out of material
STEP4 Troubleshooting

Line A

Alarms are displayed with a station No. and CPU No. in the list grouped by system or level. It helps you to identify the location where the error occurred in a large system, leading to quick troubleshooting. Check error data by interacting alarms with the historical trend graph.

Document display function

Store document data

Insert SD memory card to GOT
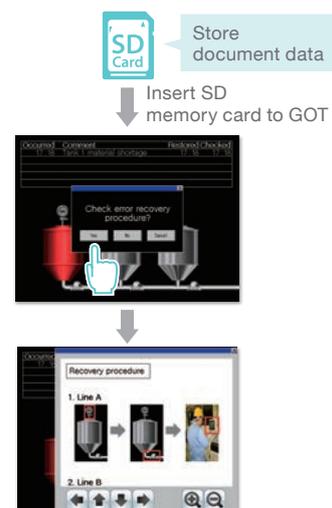
GOT displays various documents such as manuals. GOT displays documents that are linked to the selected alarm. There is no need to bring printed manuals to production sites for troubleshooting.

Quick startup, easy debugging

FA transparent function & Wireless LAN connection*

Just by connecting a personal computer to the GOT, you can use the GOT as a transparent gateway to enable programming, startup, and adjustment of industrial devices. Users do not have to bother with opening the cabinet or changing cable connections. The wireless LAN connection* between GOT and a personal computer is supported. You can startup and adjust industrial automation systems even without a cable connection.
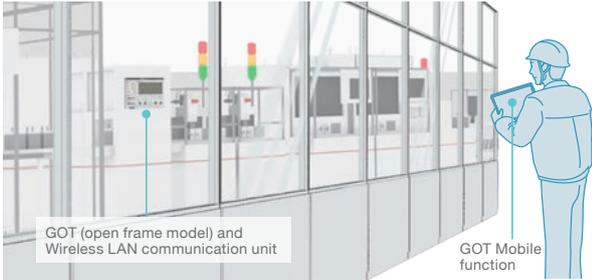
* : To use the wireless LAN connection on GOT, the wireless LAN communication unit (GT25-WLAN) should be installed on the GOT. For the details of the wireless LAN communication unit and precautions for using the wireless LAN connection, please refer to the appropriate manual.

PLC

Personal computer for programming and setup software
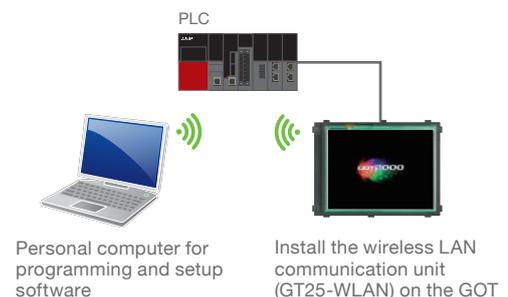
Install the wireless LAN communication unit (GT25-WLAN) on the GOT

Reduce total cost of production

GOT Mobile function*1 & Wireless LAN connection*2

GOT (open frame model) and
Wireless LAN communication unit
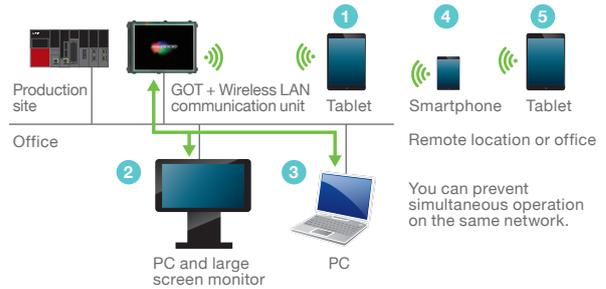
GOT Mobile
function

The status of equipment can be monitored using tablets from

outside of the clean room or from a remote location.

*1 : For the precautions for using the GOT Mobile function, please refer to the
appropriate manual.
*2 : To use the wireless LAN connection on GOT, the wireless LAN communication unit
(GT25-WLAN) should be installed on the GOT. For the details of the wireless LAN
communication unit and precautions for using the wireless LAN connection, please
refer to the appropriate manual.

Production
site

GOT + Wireless LAN
communication unit

Tablet

Smartphone

Tablet

Office

PC and large
screen monitor

PC

Remote location or office

You can prevent
simultaneous operation
on the same network.

Up to 5 information devices can connect to a GOT at the

same time. Multiple maintenance personnel can access the

GOT simultaneously to check the status of equipment from

different production sites or offices.

Useful for troubleshooting

Backup/Restoration function

Backup or restore the programs and parameters of programmable controller CPUs or other devices to or from the GOT's SD memory
card or USB memory. With a backup of data in the GOT, all replacement and restoration can be completed with just the GOT without
using a personal computer.

Replace CPU

Restore
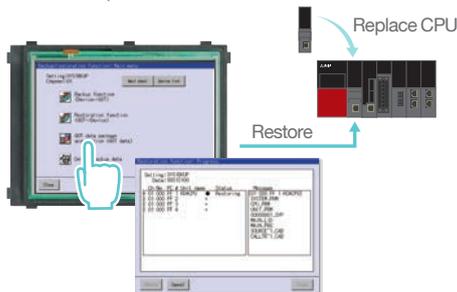
Back up multiple controllers

Multiple controllers on Ethernet can be backed up at the same time,
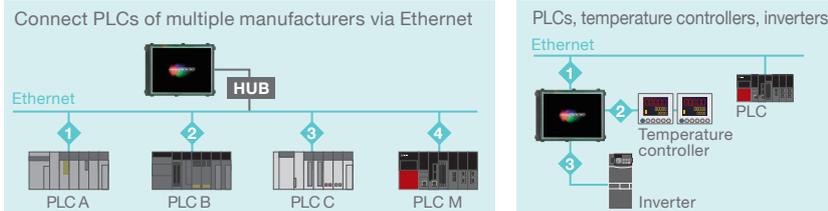reducing the time needed to back up each controller separately.

Automatic backup

Besides manual backup from touch switches, specify a trigger device,
a day of the week, and time for automatic backup to perform quick
troubleshooting of unexpected problems.

Interaction with various industrial devices

Various connection types

Application examples

Connect PLCs of multiple manufacturers via Ethernet

Ethernet

HUB

Ethernet

PLC A

PLC B

PLC C

PLC M

PLCs, temperature controllers, inverters

Ethernet

Temperature
controller

PLC

Inverter

GOT supports various industrial devices and connection types. With the multi-channel

function and the device data transfer function, multiple types of industrial devices of

different manufacturers can be monitored.

System launcher function

System configuration diagram   Extended function list
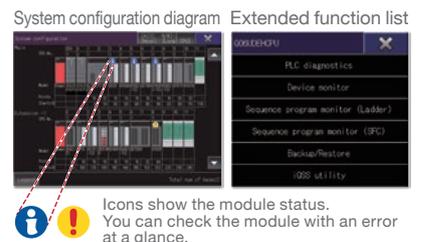
Icons show the module status.
You can check the module with an error
at a glance.

The programmable controller system can easily

be checked on the GOT. You do not need to

have a personal computer at the worksite.

Specifications

General specifications

Item	Specifications				
Operating ambient temperature[*1]	0°C to 55°C[*2]				
Storage ambient temperature	-20°C to 60°C				
Operating/ Storage ambient humidity	10% RH to 90% RH, non-condensing				
	Compliant with JIS B 3502 and IEC 61131-2		Frequency	Acceleration	Half amplitude	Sweep count
Vibration resistance		Under intermittent vibration	5 to 8.4 Hz	—	3.5 mm	10 times in each X, Y, or Z direction
			8.4 to 150 Hz	9.8 m/s²	—	
		Under continuous vibration	5 to 8.4 Hz	—	1.75 mm	—
			8.4 to 150 Hz	4.9 m/s²	—	
Shock resistance	Compliant with JIS B 3502 and IEC 61131-2 (147 m/s² (15G), 3 times in each X, Y, or Z direction)				
Operating atmosphere	No greasy fumes, corrosive gas, flammable gas, excessive conductive dust, and direct sunlight (as well as at storage)				
Operating altitude[*3]	2000 m (6562 ft) or less				
Installation location	Inside control panel				
Overvoltage category[*4]	II or less				
Pollution degree[*5]	2 or less				
Cooling method	Self-cooling				
Grounding	Grounding with a ground resistance of 100 Ω or less. If impossible, connect the ground cable to the control panel.				

[*1] : The operating ambient temperature includes the temperature inside the enclosure of the control panel to which the GOT is installed.
[*2] : When any of the following units is mounted, the maximum operating ambient temperature must be 5°C lower than the one described in the general specifications: MELSECNET/H communication unit (GT15-J71LP23-25, GT15-J71BR13), CC-Link communication unit (GT15-J61BT13).
[*3] : Do not use or store the GOT under a pressure higher than the atmospheric pressure at altitude 0 m. Doing so may cause a malfunction. Air purging by applying pressure to the control panel may create clearance between the surface sheet and the touch panel. This may cause the touch panel to be not sensitive enough or the sheet to come off.
[*4] : This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within the premises. Category II applies to equipment for which electrical power is supplied from fixed facilities. The withstand surge voltage for the equipment with the rated voltage up to 300 V is 2500 V.
[*5] : This indicates the occurrence rate of conductive material in an environment where a device is used. Pollution degree 2 indicates an environment where only non-conductive pollution occurs normally and a temporary conductivity caused by condensation shall be expected depending on the conditions.

> Operate and store the GOT in environments without direct sunlight, high temperature, dust, humidity, and vibrations.

> Open frame models conform to safety standards (CE, UL/cUL) and radio laws (KC).

Power supply specifications

Item		Specifications					
		GT2512F-STNA	GT2510F-VTNA	GT2508F-VTNA	GT2512F-STND	GT2510F-VTND	GT2508F-VTND
Power supply voltage		100 V AC to 240 V AC (+10%, -15%)			24 V DC (+25%, -20%)		
Power supply frequency		50 Hz/60 Hz (±5%)			—		
Power consumption	Under the maximum load	35 W or less	34 W or less	31 W or less	37 W or less	33 W or less	31 W or less
	Main unit	14 W	12 W	11 W	13 W	10 W	8 W
	Main unit (backlight OFF)	7 W	7 W	7 W	6 W	6 W	6 W
Inrush current		60 A or less (2 ms, ambient temperature: 25°C, under the maximum load)			5 A or less (20 ms, ambient temperature: 25°C, under the maximum load)		
Permissible instantaneous power failure time		20 ms or less (100 V AC or more)			10 ms or less		
Noise immunity		Noise voltage: 1500 Vp-p, noise width: 1 µs, measured by a noise simulator with noise frequency ranging from 25 Hz to 60 Hz			Noise voltage: 500 Vp-p, noise width: 1 µs, measured by a noise simulator with noise frequency ranging from 25 Hz to 60 Hz		
Withstand voltage		1500 V AC for 1 minute across power terminals and earth			350 V AC for 1 minute across power terminals and earth		
Insulation resistance		500 V DC across power terminals and earth, 10 MΩ or more by an insulation resistance tester					

Performance specifications

Item		Specifications		
		GT2512F-STNA GT2512F-STND	GT2510F-VTNA GT2510F-VTND	GT2508F-VTNA GT2508F-VTND
Display section[*1][*2]	Display device	TFT color LCD		
	Screen size	12.1"	10.4"	8.4"
	Resolution	SVGA: 800 × 600 dots	VGA: 640 × 480 dots	
	Display size (W × H)	246 × 184.5 mm (9.685 × 7.264 inch)	211.2 × 158.4 mm (8.315 × 6.236 inch)	170.9 × 128.2 mm (6.728 × 5.047 inch)
	Number of displayed characters	16-dot standard font: 50 characters × 37 lines (two-byte characters) 12-dot standard font: 66 characters × 50 lines (two-byte characters)	16-dot standard font: 40 characters × 30 lines (two-byte characters) 12-dot standard font: 53 characters × 40 lines (two-byte characters)	
	Display color	65536 colors		
	Brightness adjustment	32 levels		
	Backlight	LED (not replaceable)		
	Backlight life [*4]	Approx. 60000 h (operating ambient temperature: 25°C, display intensity: 50%)		
Touch panel[*3]	Type	Analog resistive film		
	Key size	Minimum 2 × 2 dots (per key)		
	Simultaneous press	Not available[*5] (Only 1 point can be touched.)		
	Life	1 million touches or more (operating force: 0.98 N or less)		
Human sensor		—		
User memory	User memory capacity	Memory for storage (ROM): 32 MB Memory for operation (RAM): 80 MB		
	Life (number of write times)	100000 times		
Built-in clock precision		±90 seconds/month (ambient temperature: 25°C)		
Battery		GT11-50BAT lithium battery		
	Life	Approx. 5 years (ambient temperature: 25°C)		
Built-in interface	RS-232	1 channel Transmission speed: 115200, 57600, 38400, 19200, 9600, 4800 bps Connector shape: D-sub 9-pin (male)		
	RS-422/485	1 channel Transmission speed: 115200, 57600, 38400, 19200, 9600, 4800 bps Connector shape: D-sub 9-pin (female)		
	Ethernet	1 channel Data transfer method: 10BASE-T, 100BASE-TX Connector shape: RJ-45 (modular jack)		
	USB (host)	1 channel (rear face) Maximum transfer rate: High-Speed 480 Mbps Connector shape: USB-A		
	USB (device)	1 channel (rear face) Maximum transfer rate: High-Speed 480 Mbps Connector shape: USB Mini-B		
	SD memory card	1 channel, SDHC compliant (maximum 32 GB)		
	Extension interface	For installing a communication unit or an option unit		
	Auxiliary extension interface	—		
	Side interface	For installing a communication unit		
Buzzer output		Single tone (tone and tone length adjustable)		
POWER LED		2 colors (blue and orange)		
Protective structure		Front: IP67F[*6] Inside control panel: IP2X		
External dimensions (W × H × D)		311 × 237 × 54 mm (12.24 × 9.33 × 2.13 inch)	298 × 209 × 54 mm (11.73 × 8.23 × 2.13 inch)	236 × 185 × 54 mm (9.29 × 7.28 × 2.13 inch)
Panel cut dimensions (W × H)		269 × 214 mm (10.59 × 8.43 inch)	234 × 187 mm (9.21 × 7.36 inch)	194 × 158 mm (7.64 × 6.22 inch)
Weight (excluding a fitting)		2.4 kg (5.3 lb)	2.1 kg (4.6 lb)	1.5 kg (3.3 lb)
Compatible software package		GT Works3 Version1.150G or later		

[*1] : As a characteristic of liquid crystal display panels, bright dots (always lit) and dark dots (never lit) may appear on the panel. Since liquid crystal display panels comprise a great number of display elements, the appearance of bright and dark dots cannot be reduced to zero. Individual differences in liquid crystal display panels may cause differences in color, uneven brightness and flickering. Note that these phenomena are characteristics of liquid crystal display panels and it does not mean the products are defective or damaged.
[*2] : Flickering may occur due to vibration, shock, or the display colors.
[*3] : When a stylus is used, the touch panel has a life of 100 thousand touches. The stylus must satisfy the following specifications.
   • Material: polyacetal resin   • Tip radius: 0.8 mm or more
[*4] : To prevent the display section from burning in and lengthen the backlight life, enable the screen save function and turn off the backlight.
[*5] : If you touch two points or more simultaneously on the touch panel, a touch switch near the touched points may operate unexpectedly. Do not touch two points or more simultaneously on the touch panel.
[*6] : To conform to IP67F, attach the environmental protection sheet. Note that the structure does not guarantee protection in all users' environments. The GOT may not be used in certain environments where it is subjected to splashing oil or chemicals for a long period of time or soaked in oil mist.

Mitsubishi Graphic Operation Terminal
GOT2000 Series Open Frame Model

External dimensions

* : The fittings must be installed on the top and bottom, or the right and left of the GOT.

Unit: mm (inch)

GT2512F / GT2510F / GT2508F external dimension drawings
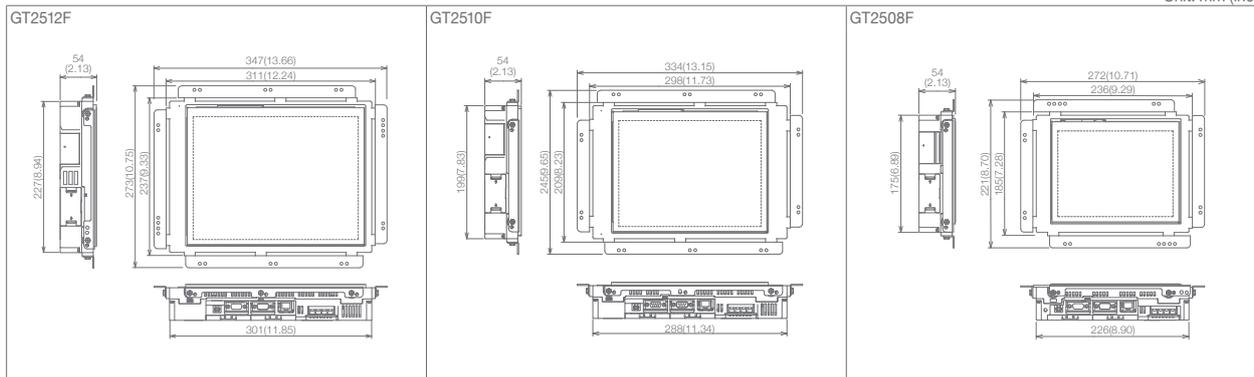
Panel cut dimensions/Distance between studs

Unit: mm (inch)

Model	Panel cut dimensions			Screen center		
	X	Y	X1	X2	Y1	Y2
GT2512F	214(8.43) (+2(0.08), 0(0))	269(10.59) (+2(0.08), 0(0))	103(4.06) (+2(0.08), 0(0))	111(4.37)	134.5(5.30) (+1(0.04), 0(0))	134.5(5.30)
GT2510F	187(7.36) (+2(0.08), 0(0))	234(9.21) (+2(0.08), 0(0))	89.5(3.52) (+1(0.04), 0(0))	97.5(3.84)	117(4.61) (+1(0.04), 0(0))	117(4.61)
GT2508F	158(6.22) (+2(0.08), 0(0))	194(7.64) (+2(0.08), 0(0))	75.25(2.96) (+1(0.04), 0(0))	82.75(3.26)	97.5(3.84) (+1(0.04), 0(0))	96.5(3.80)

Model	Distance between studs*				
	A1	A2	A3	B1	B2
GT2512F	98(3.86)± 0.15(0.01)	113(4.45)± 0.15(0.01)	7.5(0.30)± 0.15(0.01)	75.5(2.97)± 0.15(0.01)	79.5(3.13)± 0.15(0.01)
GT2510F	105.5(4.15)± 0.15(0.01)	105.5(4.15)± 0.15(0.01)	0(0)	58(2.28)± 0.15(0.01)	58(2.28)± 0.15(0.01)
GT2508F	64.5(2.54)± 0.15(0.01)	74.5(2.93)± 0.15(0.01)	—	58(2.28)± 0.15(0.01)	58(2.28)± 0.15(0.01)

Model	Distance between studs*								
	C1	C2	C3	C4	C5	D1	D2	D3	D4
GT2512F	98(3.86)± 0.15(0.01)	113(4.45)± 0.15(0.01)	7.5(0.30)± 0.15(0.01)	160(6.30)± 0.15(0.01)	175(6.89)± 0.15(0.01)	128.5(5.06)± 0.15(0.01)	132.5(5.22)± 0.15(0.01)	75.5(2.97)± 0.15(0.01)	79.5(3.13)± 0.15(0.01)
GT2510F	105.5(4.15)± 0.15(0.01)	105.5(4.15)± 0.15(0.01)	0(0)	161(6.34)± 0.15(0.01)	161(6.34)± 0.15(0.01)	114.5(4.51)± 0.15(0.01)	118.5(4.67)± 0.15(0.01)	58(2.28)± 0.15(0.01)	58(2.28)± 0.15(0.01)
GT2508F	64.5(2.54)± 0.15(0.01)	74.5(2.93)± 0.15(0.01)	—	126(4.96)± 0.15(0.01)	134(5.28)± 0.15(0.01)	104.5(4.11)± 0.15(0.01)	104.5(4.11)± 0.15(0.01)	58(2.28)± 0.15(0.01)	58(2.28)± 0.15(0.01)

• Horizontal — Back of the control panel

• Vertical — Back of the control panel

* : To mount the GOT on the control panel, studs are necessary. Align the studs with the installation holes of the fittings, and install the studs.
The fittings must be installed on the top and bottom, or the right and left of the GOT. For GT2512F, you are recommended to install the fittings on the long sides of the GOT.
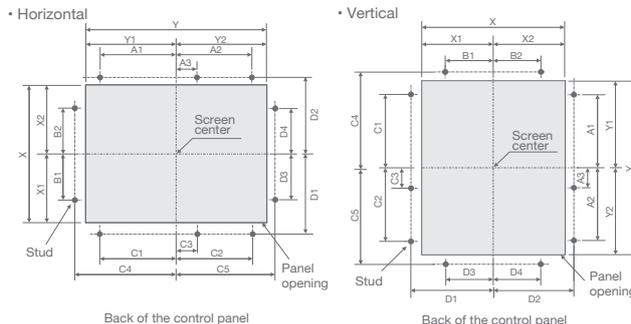
Product list

Classification	Model	Screen size	Display section/ Productive structure	Panel color/ Sheet color	Power
GT25 open frame model GOT*	GT2512F-STNA	12.1" SVGA	TFT color 65536 colors	No frame	100 to 240 V AC
	GT2512F-STND				24 V DC
	GT2510F-VTNA	10.4" VGA			100 to 240 V AC
	GT2510F-VTND				24 V DC
	GT2508F-VTNA	8.4" VGA			100 to 240 V AC
	GT2508F-VTND				24 V DC
Environmental protection sheet for GT25 open frame model	GT25F-12ESGS	For 12.1"	IP67F	Slivery 1 sheet	—
	GT25F-10ESGS	For 10.4"			
	GT25F-08ESGS	For 8.4"			

* : Always attach an environmental protection sheet dedicated to the open frame model (sold separately) to the display section. Or, attach a user-prepared environmental protection sheet. Not doing so may damage or soil the GOT or cause foreign matter to enter the GOT, resulting in a failure or malfunction.

⚠ Precautions for safe use
To use the products given in this publication properly, always read the relevant manuals before beginning operation.

Trademarks and registered trademarks
ETHERNET is a registered trademark of Xerox Corp.
SD and SDHC Logos are registered trademarks or trademarks of SD-3C, LLC.
Other product and company names are either trademarks or registered trademarks of their respective owners.

The release date varies depending on the product and your region. For details, please contact your local sales office.

The actual color may differ slightly from the pictures in this catalog. The actual display may differ from what are shown on GOT screen images.

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
NAGOYA WORKS: 1-14, YADA-MINAMI 5, HIGASHI-KU, NAGOYA, JAPAN

Country/Region	Sales office						
USA	+1-847-478-2100	Singapore	+65-6473-2308	Germany	+49-2102-486-0	Turkey	+90-216-526-3990
Mexico	+52-55-3067-7511	Thailand	+66-2682-6522 to 31	UK	+44-1707-28-8780	Poland	+48-12-347-65-00
Brazil	+55-11-4689-3000	Indonesia	+62-21-3192-6461	Italy	+39-039-60531	Russia	+7-812-633-3497
China	+86-21-2322-3030	Vietnam	+84-8-3910-5945	Spain	+34-935-65-3131	South Africa	+27-11-658-8100
Taiwan	+886-2-2299-2499	India	+91-20-2710-2000	France	+33-1-55-68-55-68		
Korea	+82-2-3660-9530	Australia	+61-2-9684-7777	Czech	+420-251-551-470		