

MITSUBISHI ELECTRIC

GT23 General Description

GT2310-VTBA GT2310-VTBD
GT2308-VTBA GT2308-VTBD

Thank you for purchasing the GOT2000 Series.

Prior to use, please read both this manual and the detailed manual thoroughly to fully understand the product.

MODEL	GT23-U-GD-E
Model code	1D7M14
IB(NA)-0800503ENG-J(2109)MEAMC	

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SAFETY PRECAUTIONS
(Always read these precautions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly. The precautions given in this manual are concerned with this product. In this manual, the safety precautions are ranked as "WARNING" and "CAUTION".

WARNING Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.

CAUTION Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Note that the CAUTION level may lead to a serious accident according to the circumstances. Always follow the instructions of both levels because they are important to personal safety. Please save this manual to make it accessible when required and always forward it to the end user.

DESIGN PRECAUTIONS

WARNING

- Some failures of the GOT, communication unit or cable may keep the outputs on or off.
- Some failures of a touch panel may cause malfunction of the input objects such as a touch switch.
- Do not use the GOT as the warning device that may cause a serious accident.
- The GOT backlight failure disables the operation on the touch switch(es). When the GOT backlight has a failure, the POWER LED blinks (orange/blue) and the display section dims. In such a case, the input by the touch switch(es) is disabled.
- The display section of the GOT is an analog-resistive type touch panel. Do not touch two points or more simultaneously on the display section. Doing so may cause a touch switch near the touched points to operate unexpectedly, or may cause an accident due to an incorrect output or malfunction.
- When programs or parameters of the controller (such as a PLC) that is monitored by the GOT are changed, be sure to reset the GOT, or turn on the unit again after shutting off the power as soon as possible.
- If a communication fault (including cable disconnection) occurs during monitoring on the GOT, communication between the GOT and PLC CPU is suspended and the GOT becomes inoperative.

DESIGN PRECAUTIONS

WARNING

- To maintain the security (confidentiality, integrity, and availability) of the GOT and the system against unauthorized access, DoS¹ attacks, computer viruses, and other cyberattacks from unreliable networks and devices via network, take appropriate measures such as firewalls, virtual private networks (VPNs), and antivirus solutions.

CAUTION

- Do not bundle the control and communication cables with main-circuit, power or other wiring.
- Do not press the GOT display section with a pointed material as a pen or driver.
- When the GOT is connected to the Ethernet network, the available IP address is restricted according to the system configuration.

MOUNTING PRECAUTIONS

WARNING

- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the GOT main unit to/from the panel.

CAUTION

- Use the GOT in the environment that satisfies the general specifications described in this manual.
- When mounting the GOT to the control panel, tighten the mounting screws in the specified torque range (0.36 N·m to 0.48 N·m) with a Phillips-head screwdriver No. 2.
- Remove the protective film of the GOT.

WIRING PRECAUTIONS

WARNING

- Be sure to shut off all phases of the external power supply used by the system before wiring.

CAUTION

- Make sure to ground the FG terminal and LG terminal of the GOT power supply section to the protective ground conductors dedicated to the GOT with a ground resistance of 100 Ω or less.
- Terminal screws which are not to be used must be tightened always at torque 0.5 N·m to 0.8 N·m.

WIRING PRECAUTIONS

CAUTION

- Correctly wire the GOT power supply section after confirming the rated voltage and terminal arrangement of the product.
- Tighten the terminal screws of the GOT power supply section in the specified torque range (0.5 N·m to 0.8 N·m).
- Exercise care to avoid foreign matter such as chips and wire offcuts entering the GOT.

TEST OPERATION PRECAUTIONS

WARNING

- Before performing the test operations of the user creation monitor screen (such as turning ON or OFF bit device, changing the word device current value, changing the settings or current values of the timer or counter, and changing the buffer memory current value), read through the manual carefully and make yourself familiar with the operation method.

STARTUP/MAINTENANCE PRECAUTIONS

WARNING

- When power is on, do not touch the terminals.
- Correctly connect the battery connector.
- Before starting cleaning or terminal screw retightening, always switch off the power externally in all phases.

CAUTION

- Do not disassemble or modify the unit.
- Do not touch the conductive and electronic parts of the unit directly.
- The cables connected to the unit must be in ducts or clamped.
- When unplugging the cable connected to the unit, do not hold and pull from the cable portion.
- Do not drop the module or subject it to strong shock.
- Do not drop or give an impact to the battery mounted to the unit.
- Before touching the unit, always touch grounded metals, etc. to discharge static electricity from human body, etc.
- Use the battery manufactured by Mitsubishi Electric Corporation.

TOUCH PANEL PRECAUTIONS

CAUTION

- For the analog-resistive film type touch panels, normally the adjustment is not required.
- When any difference between a touched position and the object position occurs, execute the touch panel calibration.

PRECAUTIONS WHEN THE DATA STORAGE IS IN USE

WARNING

- If the SD card mounted on drive A of the GOT is removed while the GOT is accessed, processing for the GOT might be interrupted about for 20 seconds.

CAUTION

- If the data storage mounted on the GOT is removed while the GOT is accessed, the data storage and files are damaged.
- Turning off the GOT while it accesses the SD card results in damage to the SD card and files.
- When inserting a SD card into the GOT, make sure to close the SD card cover.

DISPOSAL PRECAUTIONS

CAUTION

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

TRANSPORTATION PRECAUTIONS

CAUTION

- When transporting lithium batteries, make sure to treat them based on the transport regulations.
- Make sure to transport the GOT main unit and/or relevant unit(s) in the manner they will not be exposed to the impact exceeding the impact resistance described in the general specifications of this manual.

Manual

The following shows the manuals relevant to this product.

Manual name	Manual number (Model code)
GOT2000 Series User's Manual (Hardware)	SH-081194ENG(1D7MJ5)
GOT2000 Series User's Manual (Utility)	SH-081195ENG(1D7MJ6)

For detailed manuals and relevant manuals, refer to the e-Manual or PDF manuals stored in the DVD-ROM for the screen design software used.

Compliance with the new China RoHS directive

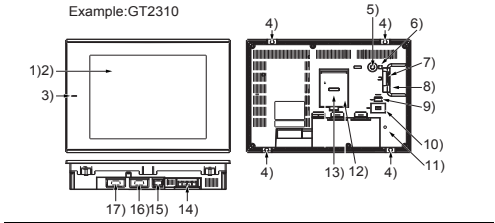
GOT 相关的基于“电器电子产品有害物质限制使用管理办法”要求的表示方法

Note: This symbol mark is for China only.

含有害6物质的名称、含有量、含有部件
本产品中所含的有害6物质的名称、含有量、含有部件如下表所示。

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电路板组件	×	○	○	○	○	○
树脂壳体、电缆、膜材	○	○	○	○	○	○
钣金部件、螺丝等金属部件	×	○	○	○	○	○

2. PART NAMES AND SETTINGS



No.	Name	Description
1)	Display screen	Displays the utility and the user-created screen.
2)	Touch Pane	For operating the touch switches in the utility and the user-created screen
3)	POWER LED	Lit in blue : Power is properly supplied. Lit in orange : Screen saving Blinks in orange/blue : Backlight failure Not lit : Power is not supplied
4)	Unit installation fitting	Mounting fixtures for fixing the GOT to the control panel
5)	Installation switch	Used for OS installations at the GOT startup
6)	SD card access LED	Lit: SD card mounted Blinking: SC card accessed or SD card mounted (removable)
7)	SD card interface	For installing a SD card
8)	SD card cover	With a switching function for accepting and stopping the access to the SD card When the cover is opened : Access is prohibited When the cover is closed : Access is allowed
9)	USB interface (Host)	For connecting a USB mouse, connecting a USB keyboard, data transfer, and data storage (connector type: TYPE-A)
10)	USB interface (Device)	For connecting a personal computer (connector type: Mini-B)
11)	Hole for attaching a cable clamp	Hole for attaching a cable clamp for preventing USB cable from being pulled out (Recommended product: RSG-130-V0 of KITAGAWA INDUSTRIES CO.,LTD. or equivalent)
12)	Terminating resistor setting switch (inside cover)	For switching on and off of the terminating resistor for the RS-422 and RS-485 communication port (Default (Off))
13)	Battery holder	Houses the battery
14)	Power terminal	Power input terminal, LG terminal, FG terminal
15)	Ethernet interface	For communicating with a controller or connecting a personal computer (connector type: RJ45 (modular jack))
16)	RS-232 interface	For communicating with a controller (Connector type: D sub 9-pin (male))
17)	RS-422/485 interface	For communicating with a controller (Connector type: D sub 9-pin (female))

3. SPECIFICATIONS

3.1 General Specifications

Item	Specifications
Operating ambient temperature ¹ Température ambiante de fonctionnement ¹	0 to 55°C ² °F 0 à 55°C ² °F
Storage ambient temperature	-20 to 60°C
Operating ambient humidity	10 to 90% RH, non-condensing ²
Storage ambient humidity	10 to 90% RH, non-condensing ²
Vibration resistance	Compliant with JIS B 3502 and IEC 61131-2 Under intermittent vibration: 5 to 8.4Hz, 8.4 to 150Hz, 9.8m/s ² Under continuous vibration: 5 to 8.4Hz, 8.4 to 150Hz, 4.9m/s ²
Shock resistance	Compliant with JIS B 3502 and IEC 61131-2 (147 m/s ² (15G)), 3 times each in X, Y and Z directions)
Operating atmosphere	No greasy fumes, corrosive gas, flammable gas, excessive conductive dust, and direct sunlight (Same as storage atmosphere)
Operating altitude ³	2000 m (6562 ft) max.
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 by using a ground cable that has a cross-sectional area of 2 mm ² or more. If possible, connect the ground cable to the control panel.

¹: The operating ambient temperature indicates the temperature inside the enclosure of the control panel to which the GOT is installed.
La température ambiante de fonctionnement indique la température à l'intérieur du boîtier du tableau de commande sur lequel le GOT est installé.

²: If ambient temperature exceeds 40°C, do not exceed absolute humidity 40°C 90%.
Si la température ambiante dépasse 40°C, ne dépassez pas l'humidité absolue de 40°C 90%.

³: Do not use or store the GOT under pressure higher than the atmospheric pressure of altitude 0m (0ft).
Failure to observe this instruction may cause a malfunction.
When an air purge is made inside the control panel by adding pressure, there may be a clearance between the surface sheet and the screen making it difficult to use the touch panel, or the sheet may 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 surge voltage withstand level for up to the rated voltage of 300 V is 2500 V.

⁵: This index indicates the degree to which conductive material is generated in the environment where the equipment is used.
In pollution degree 2, only non-conductive pollution occurs but temporary conductivity may be produced due to condensation.

⁶: When a protective cover for oil is mounted on the GOT, the maximum operating ambient temperature must be 5°C lower than the one described above.
Lors de l'installation du couvercle de protection contre l'huile, la température ambiante de fonctionnement doit être réduite de 5°C par rapport aux valeurs maximales dans les spécifications générales.

3.2 Power Supply Specifications

The following indicates the power supply specifications for GT23.

Note

- Operation at momentary failure
- If an instantaneous power failure occurs in the power supply and continues for more than the permissible period, the GOT will be reset.
- Make sure to power on the unit more than 5 seconds after power-off.

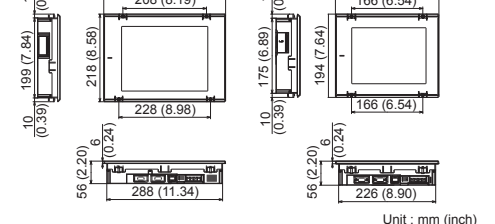
3.2.1 For GOTs powered from the 100 to 240VAC power supply

Item	Specifications	
	GT2310-VTBA	GT2308-VTBA
Power supply voltage	AC100 to 240VAC (+10%, -15%)	
Power frequency	50, 60Hz ± 5%	
Input max. apparent power	44VA (maximum load)	30VA (maximum load)
Power consumption	maximum load	18W or less
	Stand alone	15W
Inrush current	Stand alone with backlight off	8W
	Stand alone	9W
Allowable momentary power failure time	Stand alone with backlight off	6W
	Stand alone	40A or less (4ms, operating ambient temperature 25°C, maximum load)
Noise immunity	1,500Vp-p noise voltage, 1μs noise width (when measuring with a noise simulator under 25 to 60Hz noise frequency)	
Dielectric withstand voltage	1500VAC for 1 minute across power terminals and earth	
Insulation resistance	10M or more across power terminals and earth by a 500V DC insulation resistance tester	
Applicable wire size	0.75[mm ²] to 2[mm ²]	
Applicable solderless terminal	Solderless terminal for M3 screw RAV1.25-3, V2-S3.3, V2-N3A, FV2-N3A	
Applicable tightening torque (Terminal block terminal screw)	0.5[N·m] to 0.8[N·m]	

3.2.2 For GOTs powered from the 24VDC power supply

Item	Specifications	
	GT2310-VTBD	GT2308-VTBD
Power supply voltage	DC24V (+25%, -20%)	
Power consu mption	Maximum load	16W or less
	Stand alone	13W
Inrush current	Stand alone with backlight off	7W
	Stand alone	8W
Allowable momentary power failure time	Stand alone with backlight off	6W
	Stand alone	40A or less (2ms, operating ambient temperature 25°C, maximum load)
Noise immunity	500Vp-p noise voltage, 1μs noise width (when measuring with a noise simulator under 25 to 60Hz noise frequency)	
Dielectric withstand voltage	350VAC for 1 minute across power terminals and earth	
Insulation resistance	10M or more across power terminals and earth by a 500V DC insulation resistance tester	
Applicable wire size	0.75[mm ²] to 2[mm ²]	
Applicable solderless terminal	Solderless terminal for M3 screw RAV1.25-3, V2-S3.3, V2-N3A, FV2-N3A	
Applicable tightening torque (Terminal block terminal screw)	0.5[N·m] to 0.8[N·m]	

3.3 External Dimensions



1. FEATURES

- Abundant standard equipment
 - Variety of connection with FA devices
 - SD card interface compatible with the SDHC card having a large capacity and allowing high-speed communication
 - Connection with various peripheral devices with the USB host
- Improved usability
 - Abundant troubleshooting
 - Easy and clear screen creation
 - PC-like operation screen
- Enhanced compatibility with Mitsubishi Electric FA devices
- Easy replacement
- LED backlight

4. EMC AND LOW VOLTAGE DIRECTIVE

For electromagnetic compatibility (EMC) and electrical safety, regulatory standards are established in each country. Especially, for the products to be sold in European countries, conformance to the EMC Directive, which is one of the European Directives, has been mandatory as the EMC standards since 1996. In addition, conformance to the Low Voltage Directive, another European Directive, has also been mandatory as the electrical safety standards since 1997. In European countries, if a product meets the requirements of the EMC Directive or the Low Voltage Directive, the product's manufacturer must declare conformity of the product and affix the CE mark to the product. In some countries or regions other than European countries, the product's manufacturer also must declare conformity of the product and affix a designated mark to the product (example: UKCA mark in the UK).

• Authorized representative in the EU and the UK
The authorized representative in the EU and the UK is shown below.
Name :Mitsubishi Electric Europe BV
Address :Mitsubishi-Electric-Platz 1, 40882 Ratingen, Germany
This section describes the EMC Directive and Low Voltage Directive as examples for conformance to EMC and electrical safety standards. EMC and electrical safety standards in each country are stipulated to be consistent with the corresponding international standards. When the requirements are consistent with the same standards, common measures are taken to conform to the standards in different countries. For the EMC Directive, regulatory compliance with equivalent EMC standards are required for example in the UK and Korea. For the Low Voltage Directive, regulatory compliance with equivalent electrical safety standards are required for example in the UK.

4.1 Requirements to Meet EMC Directive

EMC Directives are those which require "any strong electromagnetic force is not output to the external. Emission (electromagnetic interference)" and "It is not influenced by the electromagnetic wave from the external.: Immunity (electromagnetic sensitivity)".
Items 4.1.1 through 4.1.3 summarize the precautions to use GOT and configure the mechanical unit in order to match the EMC directives. Though the data described herein are produced with our best on the basis of the requirement items and standards of the restrictions gathered by Mitsubishi Electric, they do not completely guaranteed that all mechanical unit manufactured according to the data do not always match the above.

4.1.1 EMC directive

The standards of the EMC Directive are shown below.

Applied standard	Test standard	Test details	Standard value
EN61131-2 : 2007	IEC61000-4-8 Power supply frequency magnetic field immunity	Test for checking normal operations under the circumstance exposed to the ferromagnetic field noise of the power supply frequency (50/60Hz).	30 A/m
	IEC61000-4-11 Instantaneous power failure and voltage dips immunity	Test for checking normal operations at instantaneous power failure.	AC power type 0.5 cycle 0% (interval 1 to 10s) 250/300 cycle 0% 10/12 cycle 40% 25/30 cycle 70%
	CISPR16-2-3 Radiated noise ^{*1}	Electromagnetic emissions from the product are measured.	30M-230MHz QP: 30dB μ V/m (30m in measurement range) ^{*2, *3} 230M-1000MHz QP: 37dB μ V/m (30m in measurement range) ^{*2, *3}
	CISPR16-2-1 Conducted noise ^{*1}	Electromagnetic emissions from the product to the power line is measured.	150K-500KHz QP: 75dB, Mean: 66dB ^{*2} 500K-30MHz QP: 73dB, Mean: 60dB ^{*2}
EN61131-2 : 2007	IEC61000-4-2 Electrostatic immunity ^{*1}	Immunity test in which static electricity is applied to the cabinet of the equipment.	\pm 4kV Contact discharge \pm 8kV Aerial discharge
	IEC61000-4-3 Radiated electromagnetic field AM modulation	Immunity test in which field is irradiated to the product.	80-1000MHz 10V/m 1.4-2GHz 3V/m 2.0-2.7GHz 1V/m 80%AM modulation@1KHz
	IEC61000-4-4 Fast transient burst noise ^{*1}	Immunity test in which burst noise is applied to the power line and signal lines.	Power cable: 2kV Digital I/O: 1kV Analog I/O: 1kV Signal cable: 1kV
	IEC61000-4-5 Surge immunity ^{*1}	Immunity test in which lightning surge is applied to the product.	AC power type Power line (between line and ground): \pm 2kV Power line (between lines): \pm 1kV Data communication port: \pm 1kV DC power type Power line (between line and ground): \pm 0.5kV Power line (between lines): \pm 0.5kV Data communication port: \pm 1kV
IEC61000-4-6 Conducted RF immunity ^{*1}	Immunity test in which a noise induced on the power and signal lines is applied.	Power line: 10V Data communication port: 10V	

Applied standard	Test standard	Test details	Standard value
EN61131-2 : 2007	IEC61000-4-8 Power supply frequency magnetic field immunity	Test for checking normal operations under the circumstance exposed to the ferromagnetic field noise of the power supply frequency (50/60Hz).	30 A/m
	IEC61000-4-11 Instantaneous power failure and voltage dips immunity	Test for checking normal operations at instantaneous power failure.	AC power type 0.5 cycle 0% (interval 1 to 10s) 250/300 cycle 0% 10/12 cycle 40% 25/30 cycle 70%

*1: The GOT is an open type device (device installed to another device) and must be installed in a conductive control panel.
The above test items are conducted in the condition where the GOT is installed on the conductive control panel and combined with the Mitsubishi Electric PLC.
*2: QP (Quasi-Peak): Quasi-peak value. Mean: Average value
*3: The above test items are conducted in the following conditions.
30M-230MHz QP : 40dB μ V/m (10m in measurement range)
230M-1000MHz QP : 47dB μ V/m (10m in measurement range)

4.1.2 Control panel

The GOT is an open type device (device installed to another device) and must be installed in a conductive control panel. It not only assure the safety but also has a large effect to shut down the noise generated from GOT, on the control panel.

- Control Panel
 - The control panel must be conductive.
 - When fixing a top or bottom plate of the control panel with bolts, do not coat the plate and bolt surfaces so that they will come into contact.
And connect the door and box using a thick grounding cable in order to ensure the low impedance under high frequency.
 - When using an inner plate to ensure electric conductivity with the control panel, do not coat the fixing bolt area of the inner plate and control panel to ensure conductivity in the largest area as possible.
 - Ground the control panel using a thick grounding cable in order to ensure the low impedance under high frequency.
 - The diameter of cable holes in the control panel must be 10cm (3.94in.). In order to reduce the chance of radio waves leaking out, ensure that the space between the control panel and its door is small as possible.

Paste the EMI gasket directly on the painted surface to seal the space so that the leak of electric wave can be suppressed. Our test has been carried out on a panel having the damping characteristics of 37dB max. and 30dB mean (measured by 3m method with 30 to 300MHz).

- Connection of power and ground wires
Ground and power supply wires for the GOT must be connected as described below.
 - Provide a grounding point near the GOT. Short-circuit the LG and FG terminals of the GOT (LG: line ground, FG: frame ground) and ground them with the thickest and shortest wire possible (The wire length must be 30cm (11.81in.) or shorter.)
The LG and FG terminals function is to pass the noise generated in the PC system to the ground, so an impedance that is as low as possible must be ensured. As the wires are used to relieve the noise, the wire itself carries a large noise content and thus short wiring means that the wire is prevented from acting as an antenna.
Note) A long conductor will become a more efficient antenna at high frequency.
 - The earth wire led from the earthing point must be twisted with the power supply wires.
By twisting with the earthing wire, noise flowing from the power supply wires can be relieved to the earthing. However, if a filter is installed on the power supply wires, the wires and the earthing wire may not need to be twisted.

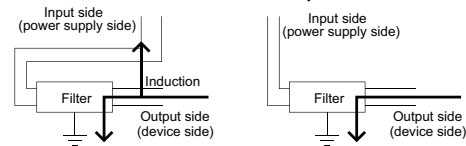
4.1.3 Noise filter (power supply line filter)

The noise filter (power supply line filter) is a device effective to reduce conducted noise. Except some models, installation of a noise filter onto the power supply lines is not necessary. However conducted noise can be reduced if it is installed. (The noise filter is generally effective for reducing conducted noise in the band of 10MHz or less.) Usage of the following filters is recommended.

Model name	FN343-3/05	FN660-6/06	RSHN-2003
Manufacturer	SCHAFFNER	SCHAFFNER	TDK
Rated current	3A	6A	3A
Rated voltage	250V		

The precautions required when installing a noise filter are described below.

- Do not install the input and output cables of the noise filter together to prevent the output side noise will be induced into the input side cable where noise has been eliminated by the noise filter.



- Installing the input and output cables together will cause noise induction.
 - Separate the input cable from the output cable.
- Connect the noise filter's ground terminal to the control panel with the shortest cable as possible (approx. 10cm (3.94 in.) or less).

4.2 Requirements for Compliance with the Low Voltage Directive

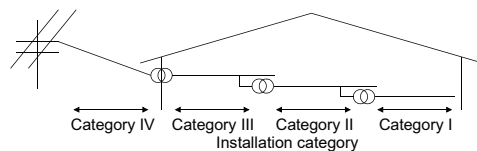
The Low Voltage Directive requires each device which operates with power supply ranging from 50VAC to 1000V and 75VDC to 1500V to satisfy necessary safety items.
In the Sections from 4.2.1 to 4.2.5, cautions on installation and wiring of the GOT to conform to the Low Voltage Directive requires are described. We have put the maximum effort to develop this material based on the requirements and standards of the Directive that we have collected. However, compatibility of the devices which are fabricated according to the contents of this manual to the above Directive is not guaranteed. Each manufacturer who fabricates such device should make the final judgement about the application method of the Low Voltage Directive and the product compatibility.

4.2.1 Standard subject to GOT

Standard applied to GOT : EN61131-2 Programmable controllers - Equipment requirements and tests

4.2.2 Power supply

The insulation specification of the GOT was designed assuming installation category II. Be sure to use the installation category II power supply to the GOT.
The installation category indicates the durability level against surge voltage generated by lightning strike.
Category I has the lowest durability; category IV has the highest durability.



Category II indicates a power supply whose voltage has been reduced by two or more levels of isolating transformers from the public power distribution.

4.2.3 Control panel

Because the GOT is open type equipment (device designed to be stored within another device), be sure to use it only when installed in a control panel.

- Shock Protection
In order to prevent those who are unfamiliar with power facility, e.g., an operator, from getting a shock, make sure to take the following measures on the control panel.
 - Store the GOT within the control panel locked, and allow only those who are familiar with power facility to unlock the panel.
 - Build the structure in order that the power supply will be shut off when the control panel is opened.
- Dustproof and waterproof features
The control panel also provides protection from dust, water and other substances. Insufficient ingress protection may lower the insulation withstand voltage, resulting in insulation destruction.
The insulation in the GOT is designed to cope with the pollution level 2, so use in an environment with pollution level 2 or better.

Pollution level 1: An environment where the air is dry and conductive dust does not exist.

Pollution level 2: An environment where conductive dust does not usually exist, but occasional temporary conductivity occurs due to the accumulated dust. Generally, this is the level for inside the control panel equivalent a control room or on the floor of a typical factory.

- Pollution level 3: An environment where conductive dust exists and conductivity may be generated due to the accumulated dust.
An environment for a typical factory floor.
- Pollution level 4: Continuous conductivity may occur due to rain, snow, etc. An outdoor environment.

4.2.4 Grounding

The following are applicable ground terminals. Use them in the grounded state.
Be sure to ground the GOT for ensuring the safety and complying with the EMC Directive.

Functional grounding \perp : Improves the noise resistance.

4.2.5 External wiring

- External devices
When a device with a hazardous voltage circuit is externally connected to the GOT, select a model which complies with the Low Voltage Directive's requirements for isolation between the primary and secondary circuits.(2)Insulation requirements
Dielectric withstand voltages are shown in the following table.
Reinforced Insulation Withstand Voltage
(Installation Category II, source : IEC664)

Rated voltage of hazardous voltage area	Surge withstand voltage (1.2/50 μ s)
150 VAC or below	2500V
300 VAC or below	4000V

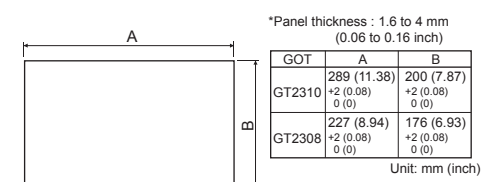
5. INSTALLATION

5.1 Control Panel Inside Dimensions for Mounting GOT

Install the GOT on the control panel out of the way for the equipment inside the control panel. Do not install the GOT and the unit in prohibited areas for the installation.

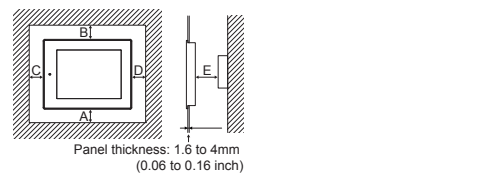
Point
Applicable cable Some cables may need to be longer than the specified dimensions when connecting to the GOT. Therefore, consider the connector dimensions and bending radius of the cable as well for installation.

5.2 Panel Cutting Dimensions



5.3 Mounting Position

When mounting the GOT, the following clearances must be maintained from other structures and devices.
Some cables may need to be longer than the specified dimensions when connecting to the GOT.
Therefore, consider the connector dimensions and bending radius of the cable as well for installation.
For the lead-in allowance for cables at the bottom of the GOT, refer to the GOT2000 Series User's Manual (Hardware).



According to the dimensions in the following table, leave clearances between the GOT and the other devices. The values enclosed in square brackets apply to the case where no other equipment generating radiated noise (such as a contactor) or heat is installed near the GOT. However, keep the ambient temperature of the GOT to 55°C or lower.

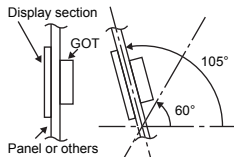
Item	Unit : mm (inch)	
	GT2310	GT2308
A	48(1.89) or more [18(0.71) or more]	
B	78(3.07) or more [18(0.71) or more]	
C	When the SD card is used 50(1.97) or more [20(0.79) or more]	50(1.97) or more
	When the SD card is not used 50(1.97) or more [20(0.79) or more]	
D	50(1.97) or more [20(0.79) or more]	
E ^{*1}	100(3.94) or more [20(0.79) or more]	

*1: When opening or closing the battery cover: 72(2.83) or more

5.4 Control Panel Inside Temperature and Installation Angle

When installing the GOT to a panel, set the display section as shown below.
Using the GOT with the installation angle other than the following deteriorates the GOT earlier.

When installing the GOT with the installation angle between 60 to 105°, the temperature inside the control panel must be within 55°C.
When installing the GOT with the installation angle other than between 60 to 105°, the temperature inside the control panel must be within 40°C.



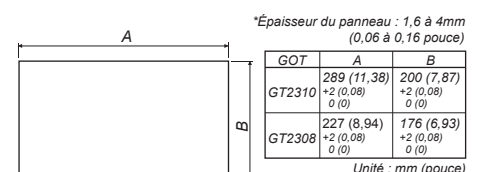
5. INSTALLATION

5.1 Dimensions intérieures du tableau de commande pour le montage du GOT

Installez le GOT sur le tableau de commande en laissant de l'espace pour le dispositif à l'intérieur du tableau de commande. N'installez pas le GOT et le module dans des zones où l'installation est interdite.

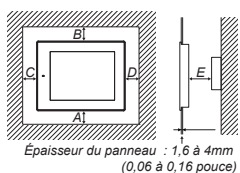
Point
Câble applicable Certains câbles peuvent être plus longs que les dimensions spécifiées lors de la connexion au GOT. Par conséquent, prenez également en compte les dimensions du connecteur et le rayon de courbure du câble pour l'installation.

5.2 Cotes de découpe du panneau



5.3 Position de montage

Lors du montage du GOT, laissez les espaces suivants pour les autres structures et dispositifs.
Certains câbles peuvent être plus longs que les dimensions spécifiées lors de la connexion au GOT.
Par conséquent, prenez également en compte les dimensions du connecteur et le rayon de courbure du câble pour l'installation.
Pour connaître l'espace à laisser pour les câbles sous le GOT, référez-vous au manuel GOT2000 Series User's Manual (Hardware).



Laissez les espaces entre le GOT et les autres dispositifs en fonction des dimensions contenues dans le tableau suivant. Les valeurs entre parenthèses s'appliquent au cas où aucun dispositif générant des émissions sonores (comme un contacteur) ou de la chaleur n'est installé près du GOT. Toutefois, maintenez la température ambiante du GOT à 55°C ou moins.

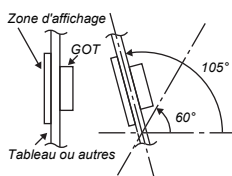
Article	Unité : mm (pouce)	
	GT2310	GT2308
A	48 (1.89) ou plus [18 (0.71) ou plus]	
B	78 (3.07) ou plus [18 (0.71) ou plus]	
C	Quand la carte SD est utilisée 50 (1.97) ou plus [20 (0.79) ou plus]	50 (1.97) ou plus
	Quand la carte SD n'est pas utilisée 50 (1.97) ou plus [20 (0.79) ou plus]	
D	50 (1.97) ou plus [20 (0.79) ou plus]	
E ^{*1}	100 (3.94) ou plus [20 (0.79) ou plus]	

*1: Pour ouvrir ou fermer le couvercle de la batterie : 72 (2,83) ou plus

5.4 Température intérieure et angle d'installation du tableau de commande

Lors de l'installation du GOT sur un panneau, réglez la zone d'affichage comme indiqué ci-dessous.
Si l'angle d'installation est différent de celui indiqué, le GOT se détériore plus tôt.

Lors de l'installation du GOT avec un angle d'installation compris entre 60 et 105°, la température à l'intérieur du tableau de commande doit être d'environ 55°C.
Lors de l'installation du GOT avec un angle d'installation non compris entre 60 et 105°, la température à l'intérieur du tableau de commande doit être d'environ 40°C.



6. MAINTENANCE AND INSPECTION

Refer to the GOT2000 Series User's Manual (Hardware) for maintenance and inspection for the GOT.

Warranty

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