

Panel Mount Speaker Unit FA1-GT0S04W User's Manual

Before using the product, please read this manual carefully to handle the products correctly.

50D-FG0438-A

MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED
Hulic KUDAN BLDG.1-13-5, KUDANKITA CHIYODA-KU, TOKYO 102-0073, JAPAN

SAFETY PRECAUTIONS

(Always read these precautions before using this product.)

Before using the product, read this manual carefully, and use the product properly while paying full attention to safety.

The safety precautions are divided into the following levels: 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 minor or moderate injury or property damage.

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

Design Precautions

WARNING

Do not use the product as a warning device that may cause a serious accident. For a device that outputs a serious warning, provide independent redundant hardware or mechanical interlock. Not doing so may cause an accident due to an incorrect output or malfunction.

CAUTION

Do not run the audio cable together with or near the main circuit cables, power line cables, or other cables. Keep a distance of 100 mm or more between them as a guide. Not doing so may cause a malfunction due to noise.

Installation Precautions

WARNING

Before installing or removing the product on or from the control panel, shut off all phases of the external power supply used by the system. Not doing so may cause a product failure or malfunction.

CAUTION

Use the product in the environment described in the general specifications and performance specifications of the product. Not doing so may cause a breakage, failure, malfunction, fire, or deterioration. Secure the product to the control panel by tightening within the specified torque range. Undertightening may cause the product to drop. Overtightening may damage the product. Do not use or store the product in an environment subject to direct sunlight, high temperatures, dust, high humidity, or frequent vibration.

Wiring Precautions

WARNING

Before wiring, make sure to shut off the external power supply in all phases. Not doing so may result in an electric shock or product damage.

CAUTION

Correctly wire the power supply after confirming the rated voltage and terminal arrangement of the product. Not doing so may cause a fire or failure. Secure the power supply connector to the speaker by tightening within the specified torque range. Not doing so may cause a short circuit, fire, or malfunction. Overtightening may cause the product to drop, short-circuit, or malfunction due to the damage of the screw or conversion adapter. Make sure that no foreign matter, such as chips and wire offcuts, enters the speaker. Not doing so may cause a fire, failure or malfunction.

Startup and Maintenance Precautions

CAUTION

Use the volume control rotary switch to increase the volume in levels. When the volume is set high, an unexpected loud sounds may cause hearing impairment. Do not disassemble or modify the product. Doing so may cause a failure, malfunction, or fire. Do not touch the conductive part of the product directly. Doing so may cause a malfunction or failure. Do not drop the product or subject it to strong shock. Doing so may cause a breakage. Before touching the product, always touch grounded metals or others to discharge static electricity from the human body. Not doing so may cause a product failure or malfunction. When removing a cable from the product, do not pull the cable portion. Doing so may damage the product or cable, or cause a malfunction due to a cable connection failure. The cables connected to the product must be housed in ducts or clamped down. If not, a loose/dangling cable may be accidentally pulled, which may damage the cable or product, or cause a malfunction in the product due to a cable connection failure.

Precautions for use

CAUTION

The product is not waterproofed. Water ingress may cause a failure, malfunction, or fire.

Disposal Precautions

CAUTION

Dispose of the product as industrial waste.

Transportation Precautions

CAUTION

The product is a precision device. During transportation, make sure that the product will not be subject to shocks beyond the general specifications described in the user's manual. Not doing so may result in a failure. Check if the product operates correctly after transportation. Prevent the entry of halogens (including fluorine, chlorine, bromine, and iodine) contained in fumigants used for fumigating wood packaging materials, or a product failure may occur. Make sure that fumigant residues will not enter the product, or use an alternative (heat treatment or others) to fumigation. Before packing the product, disinfect wood packaging materials and eliminate insects from the materials.

FOR SAFE OPERATIONS

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 Engineering. 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 fail-safe functions in the system.

安全注意事项

(使用前请务必仔细阅读)

使用本产品时, 务必在熟读本用户手册的同时充分注意安全事宜, 正确使用。在本“安全注意事项”中, 以“警告”和“注意”对安全注意事项进行等级区分。

警告 表示错误操作可能造成危险后果, 导致死亡或重伤事故。

注意 表示错误操作可能造成危险后果, 导致中度伤害、轻伤及设备损失。

此外, 即使是注意的事项, 因具体情况不同, 也可能引发重大事故。由于记载的都是重要的内容, 所以请务必遵守。请妥善保管本手册, 以备必要时取阅, 并且务必将其交至最终用户。

【设计注意事项】

警告

请勿将扬声器作为报警装置使用, 否则会导致重大事故。输出重要警报的装置, 应使用独立并具有冗余性的硬件或设置机械互锁。否则可能会由于误输出、误动作而导致事故。

注意

请勿将音频电缆与主电路及动力线等捆扎在一起或相互靠得太近。应相距100mm以上。否则可能会因噪声而导致误动作。

【安装注意事项】

警告

在控制柜中拆装扬声器时, 务必在切断系统中正在使用的外部供电电源的所有相后再进行操作。如果未全部切断, 则可能会导致故障或发生误动作。

注意

应在符合一般规格及性能规格的环境下使用本产品。如果在超出规格范围的环境下使用, 则会导致发生损坏、故障、误动作、火灾、产品性能变差。在控制柜中进行安装时, 应在规定的转矩范围内切实地固定。如果固定过松, 则扬声器可能会掉落。如果固定过紧, 则可能会导致扬声器损坏。请勿在有阳光直射或会被雨水淋到的场所以及高温、有粉尘、有湿气或振动大的场所使用以及保管本产品。

【配线注意事项】

警告

务必在外部切断电源的所有相后再进行接线作业。如果未全部切断, 则可能会导致发生触电及产品损坏。

注意

对电源进行接线时, 应在确认了电压及端子排列后再进行正确的操作。连接了与额定电压不匹配的电源或者弄错极性, 可能会导致火灾、故障。连接电源连接器时, 应在规定的转矩范围内切实地固定至扬声器。否则可能会导致短路、火灾、误动作。如果螺丝拧得过紧, 则可能会因螺丝及转换适配器的损坏而导致短路、误动作。应注意防止切屑及线头等异物掉入扬声器内部。

【启动/维护注意事项】

注意

调整音量时, 应使用调整用旋转开关逐步调大音量。如果将音量设定得较大, 则可能会突然发出过大的声音而导致听力受损。请勿拆卸、改造设备。否则会导致故障、误动作、火灾。请勿直接接触导电部位。否则会导致误动作、故障。请勿使产品掉落或使其受到强烈撞击。否则会导致损坏。在触碰扬声器之前, 请务必先与接地的金属物等接触, 以释放人体等所积累的静电。如果不释放静电, 则可能会导致故障或发生误动作。在拆卸扬声器所连接的电缆时, 请勿用手拉拽电缆部分。若在与扬声器连接的状态下拉拽电缆, 则可能会导致扬声器及电缆损坏、电缆接触不良而引起误动作。扬声器所连接的电缆, 务必收入套管中或用夹具进行固定处理。如果未将电缆收入套管或未用夹具进行固定处理, 则可能会由于电缆的晃动及移动、不经意的拉拽等造成扬声器及电缆损坏、电缆接触不良从而导致误动作。

【使用时的注意事项】

注意

规格为非防水规格。如果进水, 会导致误动作、火灾。

【报废处理注意事项】

注意

产品报废时, 应作为工业废弃物处理。

【运输注意事项】

注意

本产品为精密设备, 运输时应避免使其受到的撞击超过本产品使用手册中记载的一般规格值。否则会导致故障。应在运输后进行动作确认。用于木质包装材料的消毒、杀虫的熏蒸剂中所含有的卤素物质(氟、氯、溴、碘等)一旦渗入本产品, 将会导致故障。应采取相应措施防止残留的熏蒸剂渗入到本产品中, 或采取熏蒸剂以外的方法(热处理等)进行处理。而且应在木材用于包装前实施消毒、杀虫措施。

使用时的安全注意事项

本产品是以一般工业用途等为对象设计和制造的通用产品, 不可用于涉及人员生命健康安全的情况下所使用的设备或系统。计划将本产品应用于原子能、电力、航空航天、医疗、载人移动设备或系统等特殊用途时, 请咨询本公司的营业窗口。虽然本产品是在严格的质量管理体系下进行制造的, 但是在计划将本产品应用于受本产品的故障影响可能会发生重大事故或者损失的设备时, 应系统地设置备用设备及失效安全功能。

EMC Directive

Applicable standards EMI:EN55011,Class A
EMS:EN61000-6-2

For the products to be sold in European countries, conformance to the EMC Directive, which is one of the European Directives, has been mandatory since 1996.

If a product meets the requirements of the EMC Directive, the manufacturer of the product must declare conformity of the product and affix the "CE mark" to the product.

(1) Sales representative in the EU member states.

The following shows the sales representative in the EU member states.

Company: Mitsubishi Electric Europe B.V.

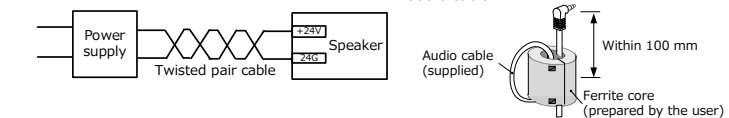
Address: Mitsubishi Electric-Platz 1, 40882 Ratingen, Germany

(2) Conformance to the EMC Directive

To supply a 24 V DC power to the speaker, use a PS5R-VF24 (manufactured by IDEC Corporation) for the power supply and a twisted pair cable for the power cable. Install a ferrite core (ZCAT3035-1330, manufactured by TDK Corporation) to the power cable and to the audio cable within 100 mm of the speaker, with two turns on each core.

The power cable and the audio cable must be shorter than 3 m.

[Connection of the speaker and power supply] (Example) Installing a ferrite core to the audio cable



Included Items

Speaker (1)	Audio cable (1)	Power supply connector (1)	Cable clamp (1)	Manual

Overview

This manual explains the specifications of the panel mount speaker used with a Mitsubishi Electric human machine interface (GOT series, MELIPC series).

General Specifications

Item	Specifications					
Operating ambient temperature	0 to +55°C					
Storage ambient temperature	-15 to +60°C					
Operating ambient humidity	10 to 90% RH, non-condensing					
Storage ambient humidity	10 to 90% RH, non-condensing					
Vibration resistance	Compliant with JIS B 3502 and IEC 61131-2	Frequency	Constant acceleration	Half amplitude	Sweep count	
	Under intermittent vibration	5 to 8.4Hz	-	3.5mm	10 times each in X, Y, and Z directions	
	Under continuous vibration	8.4 to 150Hz	9.8m/s ²	-	-	-
		8.4 to 150Hz	4.9m/s ²	-	-	-
Shock resistance	Compliant with JIS B 3502 and IEC 61131-2 (147 m/s ² (15 G), 3 sweeps each in X, Y, and Z directions)					
Operating atmosphere	No greasy fumes, corrosive gas, flammable gas, and excessive conductive dust					
Operating altitude*1	2000 m or less					
Installation location	Inside the control panel					
Overtolerance category*2	II or less					
Pollution degree*3	2 or less					

*1: Do not use or store the speaker under a pressure higher than the atmospheric pressure at altitude 0 m.

*2: 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.

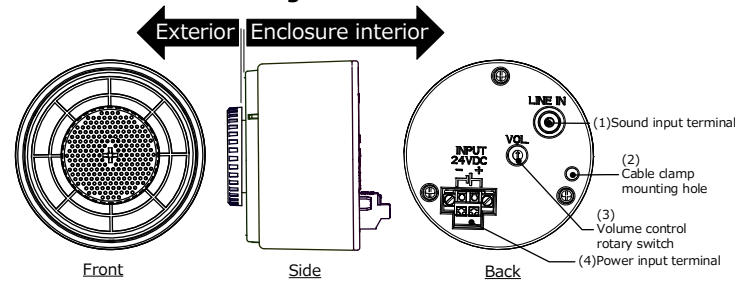
*3: This indicates the occurrence rate of conductive material in an environment where a device is used.

Performance Specifications

Item	Specifications				
Power supply voltage	24VDC +20%, -15%				
Current consumption	0.28A				
Wiring method	Wiring to the supplied power supply connector				
Applicable wire size	0.2 to 2.5mm ² (AWG12 to 24)				
Power supply to the built-in amplifier	Applicable ferrule terminal	Wire size (mm ² /AWG)	Applicable ferrule terminal	Strip length (mm)	Crimping tool
	PHOENIX CONTACT K.K.	0.25/24 0.3,0.34/22 0.5/20 0.75/18	AI 0,25-10 YE, AI 0,25-8 YE AI 0,34-10 TO, AI 0,34-8 TO AI 0,5-10 WH, AI 0,5-8 WH AI 0,75-10 GY, AI 0,75-8 GY	12, 10 13, 11	CRIMPFOX 6
WAGO Company of Japan, Ltd	0.08 to 0.34/28 to 22	216-302	9.5	206-220	
	0.34/24,22 0.5/22,20 0.75/20	216-302 216-201 216-202	9.5	206-1204	
Noise immunity	500 Vp-p or higher, pulse width: 1 μs (measured by a noise simulator)				
Protective structure	Front:IP2X Enclosure interior:IP2X				
Sound	Input terminal	φ 3.5 mini jack			
	Maximum output	3.5W			
Sound pressure level	Max. 90 dB at 1 m *1				
Volume control	10 levels (Use the rotary switch of the speaker.)				
Weight	175g				
Connectable GOTs (manufactured by Mitsubishi Electric Corporation)	GOT2000 Series	GT125 wide model (Built-in sound output interface)		Sound output unit (GT15-SOUT) needs to be mounted on the extension interface.	
	GT125 model	GT15 model (Except GT2505-VTBD) GT25 Open Frame Model			
Connectable MELIPCs (manufactured by Mitsubishi Electric Corporation)	GOT1000 Series	GT16 model, GT15 model		HDMI splitter with an aux. port needs to be connected.	
	MELIPC Series	MELIPC MI3000 (Built-in sound output interface)			

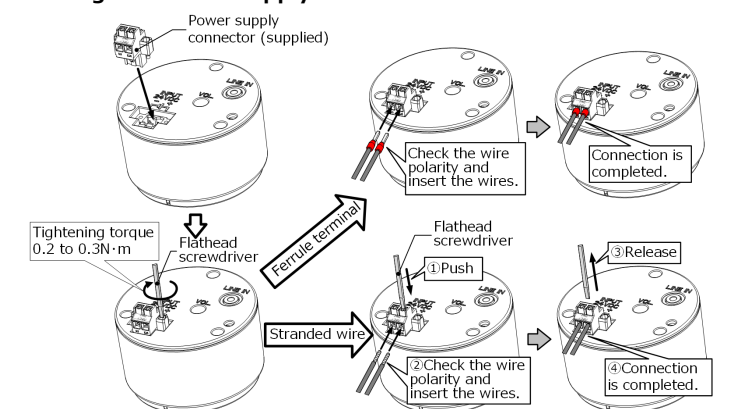
*1 For GT25 wide models: The sound pressure level varies depending on the sound source and usage environment.

Part Names and Settings

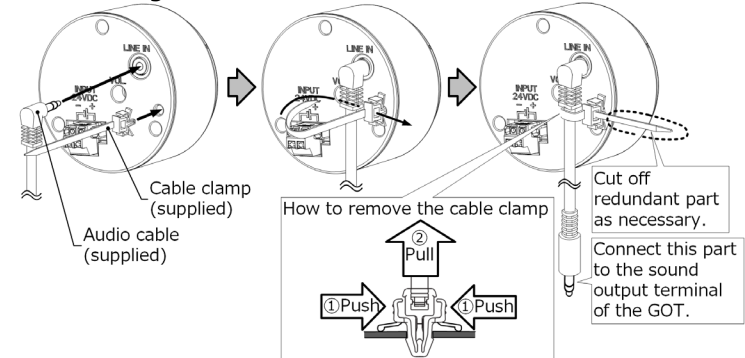


No.	Name	Description
(1)	Sound input terminal (LINE IN)	Connect the supplied audio cable to (1), and then connect the cable to the sound output terminal of the GOT.
(2)	Cable clamp mounting hole	(1)Attach the cable clamp (supplied) that is used to fix the audio cable (supplied) connected to the sound input terminal.
(3)	Volume control rotary switch (VOL.)	Set the volume at any of 10 levels. (Setting 0 does not mute the sound.) (Factory setting: 1) Switch is rotated from 0 (Min.) to 9 (Max.) counterclockwise. Pay full attention while adjusting the volume.
(4)	Power input terminal (INPUT 24VDC)	Connect the power supply connector (supplied) to which a 24 V DC power supply is wired.

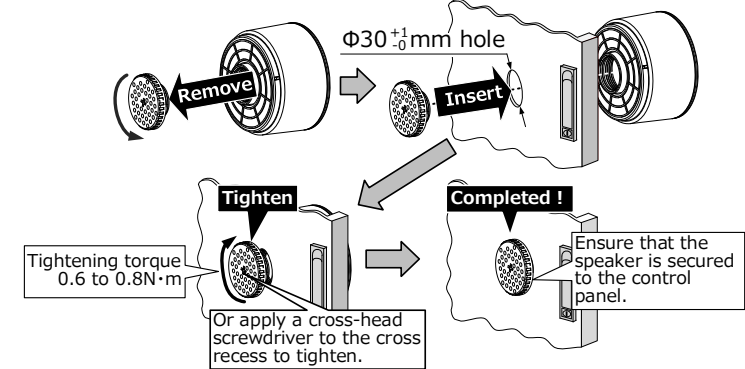
Wiring the Power Supply



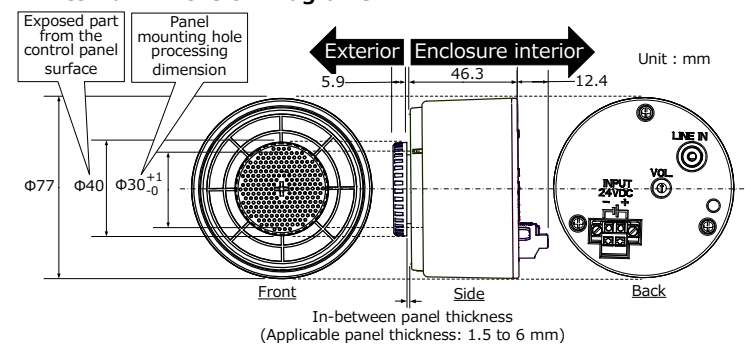
Connecting the Audio Cable



Installing the Speaker on the Control Panel



External Dimension Diagrams



GRATIS WARRANTY TERMS AND GRATIS WARRANTY RANGE

If any fault or defect (hereinafter referred to as "Failure") attributable to Mitsubishi Electric Engineering should occur within the gratis warranty period, Mitsubishi Electric Engineering shall replace the product free of charge via the distributor from whom you made your purchase.

● Gratis warranty period
The gratis warranty period of this product shall be one (1) year from the date of purchase or delivery to the designated place.

● Gratis warranty range
(1) The gratis warranty range shall be limited to normal use based on the usage conditions, methods and environment, etc., defined by the terms and precautions, etc., given in the instruction manual, user's manual, and caution labels on the product.

(2) In the following cases, a repair fee shall be applied even if within the gratis warranty period.

1) Failure resulting from inappropriate storage or handling, carelessness or negligence by the user, or Failure caused by the user's hardware or software design.

2) Failure caused by unapproved modifications, etc., to the product by the user.

3) Failure that could have been avoided if, when the Mitsubishi Electric Engineering product was assembled into the user's device, safeguards defined by legal regulations applicable to the user's device or functions or structures considered standard by the industry had been provided.

4) Failure recognized as preventable if the consumed products specified in instruction manuals, etc., were normally maintained or replaced.

5) Replacement of consumable parts (relays, etc.).

6) Failure caused by external factors beyond anyone's control such as fires or abnormal voltage, and Failure caused by Force Majeure such as earthquakes, lightning, or wind and water damage.

7) Failure caused by reasons unpredictable by scientific technology standards at the time of shipment from Mitsubishi Electric Engineering.

8) Any other failure not attributable to Mitsubishi Electric Engineering or found by the user to not be attributable to Mitsubishi Electric Engineering.

EXCLUSION FROM LIABILITY FOR OPPORTUNITY LOSS AND SECONDARY LOSS

Regardless of the gratis warranty period, Mitsubishi Electric Engineering shall not be liable for compensation for damages arising from causes not attributable to Mitsubishi Electric Engineering, opportunity losses or lost profits incurred by the user due to Failures of Mitsubishi Electric Engineering products, damages or secondary damages arising from special circumstances, whether foreseen or unforeseen by Mitsubishi Electric Engineering, compensation for accidents, compensation for damages to products other than Mitsubishi Electric Engineering products, or compensation for replacement work, readjustment of onsite machinery and equipment, startup test runs or other duties carried out by the user.

TRADEMARKS

GOT, MELIPC is a registered trademark of Mitsubishi Electric Corporation in Japan.

Specifications are subject to change without notice.

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