MITSUBISHI

Q62DA-FG

Channel Isolated Digital-Analog Converter Module

| Thank you for buying the M controller MELSEC Q Serie | | ourpose programmable logic |
|---|-------|-----------------------------|
| Prior to use, please read bo and familiarize yourself with | | etailed manual thoroughly |
| | | User's Manual (Hardware) |
| MELDEG-Q | MODEL | Q-D/A-FG-U-HW |

| Mitsubishi Programmable | MODEL Number | 13JT91 | |
|---------------------------------------|-----------------|-------------------------|--|
| Logic Controller | | IB-0800277-C (0706) MEE | |
| ©2002 MITSUBISHI ELECTRIC CORPORATION | | | |

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 user's manual of the CPU module to use for a description of the PLC system safety precautions. These ● SAFETY PRECAUTIONS ● classify the safety precautions into two categories:

| "DANGER" and "C | AUTION". |
|-----------------|--|
| | Procedures which may lead to a dangerous condition and cause death or serious injury if not carried out properly. |
| | Procedures which may lead to a dangerous condition and cause superficial to medium injury, or physical damage only, if not carried out properly. |

not carried out properly.
Depending on circumstances, procedures indicated by <u>A</u>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]

nication cables with the main circuit or power wires Do not bunch the con

- Do not build the control wires or communication cables with the main circuit or power wires, or install them close to each other. They should be installed 100 mm (3.94 inch) or more from each other. Not doing so could result in noise that may cause malfunction. At power ON/OFF, voltage or current may instantaneously be output from the output terminal of this module. In such case, wait until the analog output becomes stable to start controlling the external device.

[INSTALLATION PRECAUTIONS]

- CAUTION
 Use the PLC in an environment that meets the general specifications given in the User's Manual
 of the CPU module being used.
 Using this PLC in an environment outside the range of the general specifications may cause
 electric shock, fire, malfunction, and damage to or deterioration of the product.
 While pressing the installation lever located at the bottom of module, insert the module fixing tab into
 the fixing hole in the base unit until it stops.
 Improper installation malfunction, is beakdown or the module coming loose and
 dropping. Securely fix the module with screws if it is subject to vibration during use.
 If the screws are tophened too much, it may cause the module to fallout, short circuits, or malfunction.
 If the screws are topose, it may cause the module to fallout, short circuits, or the module,
 resulting in fallout, short circuits or malfunction.
 Be sure to shut off all phases of the external power supply used by the system before mounting or
 removing the module.

- removing the module. Not doing so may cause damage to the module. Do not directly touch the conductive area or electronic components of the module. Doing so may cause malfunction or failure in the module. WIRING PRECAUTIONS]

- CAUTION ways ground the FG terminal for the PLC. There is a risk of electric shock or malfunction When turning on the power and operating the module after wiring is completed, always attach the terminal cover that comes with the product.
- There is a risk of electric shock if the terminal cover is not attached Use a pplicable solderless terminals and tighten them with the specified torque. If any solderless spade terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.

- tature. Tighten the terminal screws within the range of specified torque. If the terminal screws are loose, it may result in short circuits or malfunction. If the terminal screws are tightened too much, it may cause damage to the screw and/or the module, resulting in short circuits or malfunction. Be careful not to let foreign matters such as sawdust or wire chips get inside the module. The two under of the module is or malfunction.
- I hese may cause hres, failure or malfunction. The top surface of the module is covered with protective film to prevent foreign objects such as cable offcuts from entering the module when wiring. Do not remove this film until the wiring is complete. Before operating the system, be sure to remove the film to provide adequate heat ventilation.
- About This Manual The following manuals are also related to this product. Order them if necessary.

Related Manual

| Manual Name | Manual No. (Model code) |
|--|-------------------------|
| Channel Isolated Digital-Analog Converter Module User's Manual | SH-080281E(13JR52) |
| Conformance to the FMC Directive/Levy/Altere Directive | |

- Conformance to the EMC Directive/Low Voltage Directive When incorporating the Mitsubishi PLC into other machinery or equipment and keeping compliance with the EMC and low voltage directives, refer to Chapter 3, "EMC Directives and Low Voltage Directives" of the User's Manual (Hardware) included with the CPU module or base
- Low voltage Directives of the own of the name of the number of the PLC that conforms to the EMC directive and low voltage instruction. By making this product conform to the EMC directive and low voltage instruction, it is not necessary to make those steps individually.

1. Overview

This manual explains specifications and the names of the components for the type Q62DA-FG channel isolated digital-analog converter module (hereafter Q62DA-FG) which are used in combination with the MELSEC-Q Series CPU module

2. Specifications

The specifications for the Q62DA-FG are shown in the following table. For general specifications, refer to the operation manual for the CPU module being heau

| usea. | Туре | | | | | | | |
|---|--|--|---|----------------|-----------------|---------------------|-------------------|--------------------|
| Item | | Q62DA-FG | | | | | | |
| Number of analog outputs | | 2 points (2 channels) | | | | | | |
| Digital input | | 16-bit signed binary (-12288 to 12287, -16384 to 16383) | | | | | | |
| | Voltage | | -12 to 12VDC (| | | | | |
| Analog output | Current | 0 to 20mADC (External load resistance: 0 to 600 Ω) 0 to 22mADC (Please refer to Note 3) | | | |) | | |
| | | Ana | log output range | | Digital inp | ut value | Maximum | resolution |
| | | | 0 to 5V | | | | 0.41 | |
| | | | 1 to 5V | | 0 to 12000 | | 0.33 | 3mV |
| | | Voltage | -10 to 10V | | -16000 to | 16000 | 0.62 | 5mV |
| I/ O characteristics maximum resolution | | | User range setti | ng 2 | -12000 to | 12000 | 0.36 | 6mV |
| maximum resoluti | | | User range setti | ng 3 | - 12000 to | 12000 | 0.18 | 3mV |
| | | | 0 to 20mA | | 0 to 12 | 000 | 1.66 | βμΑ |
| | | Current | 4 to 20mA | | 0 to 12 | :000 | 1.33 | βµA |
| | | | User range setti | ng 1 | -12000 to | 12000 | 0.67 | 1 μA |
| Accuracy Reference (Accuracy relative accuracy ^{*1} | | | Within ± 0.1% | (Volta | age: ± 10m | V, Curre | nt: ± 20 μA) | |
| to maximum analog output value) | Temperature coefficient ⁺² | ± 80ppm/ °C (0.008%/ °C) | | | | | | |
| Conversion speed | 1 | 10ms/2 channels | | | | | | |
| Absolute | Voltage | | | | ± 13V | | | |
| maximum output | | | | | 23mA | | | |
| | Resolution | 12bit | | | | | | |
| Output monitor | Reference accuracy ^{*1} | ±0.2% | | | | | | |
| | Temperature coefficient ^{*2} | ± 160ppm/ °C (0.016%/ °C) | | | | | | |
| Maximum number E ² PROM | of writes for | | | | 100,000 | | | |
| Output short-circuit protection | | Available | | | | | | |
| Isolation specifications | | Specific | isolated area | Isola meth | | Dielecti withsta | ric nd voltage | Insulation |
| | | and PLC | the I/O terminal power supply analog output | Phot isolat | tion tion | 1780V/ | AC rms/3 | 500VDC 10M Ω or |
| | | | external supply and analog output | Tran isolat | sformer tion | (elevati | on 2000m) | more |

Number Name Description plays the operating status of the Q62DA-FG. RUNTED Normal operation Flashing : During offset/gain setting mode 5V power supply interrupted, watch dog timer error, 5V power switched off, watchdog timer error occurred, or online module change enabled. 2) ERR, LED Displays the error status of the Q62DA-FG Flashing : Error in switch settings Switch No. 5 of the intelligent function module has been set to a value other than zero "0". Normal operation Indicates the warning status of the Q62DA-FG. ALM LED 3) n : During warning output occurrence ashing : During disconnection detection Normal operation 4) External power supply terminal This is the terr ninal for connecting the 24 V DC external power supply

4. Handling Precautions

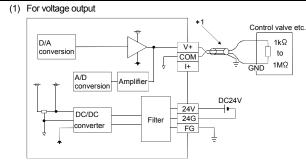
- (1) Do not drop the module or cause it to receive strong impact.
- (2) Tighten the terminal screws for the module to the specified torque shown below. Insufficient tightening torque could result in shorts, failures or malfunction.

| Tightening torque (M3 screw) | |
|------------------------------|--|
| 0.36 to 0.48 N · m | |
| 0.42 to 0.58 N · m | |
| 0.66 to 0.89 N · m | |
| | |

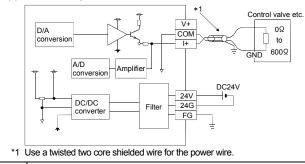
5. Wiring

5.1 Wiring precautions

- (1) Use separate cables for the AC control circuit and the external input signals of the Q62DA-FG to avoid the influence of the AC side surges and inductions.
- (2) Ground one point of the shield for shielded wires or shielded cables.



(2) For current output



efore, power on 30 minutes prior to offset/gain setting or after online module replace

5.3 Switch setting for intelligent functional module

The settings for the intelligent function module are performed using the I/O allocation settings for the GX Developer. It can be easy to set by inputting using hexadecimal-4 digits.

3. Part Names

4)-

This se

| A-FG | Terminal number | Signal | name | |
|-----------------|-----------------|--------|------|--|
| 0 0alm ← 3) | 1 | | V+ | |
| 2 | 2 | CH1 | COM1 | |
| | 3 | | + | |
| ال <u>ا</u> ليا | 4 | Vaca | ant | |
| | 5 | Vaca | ant | |
| | 6 | Vaca | ant | |
| | 7 | Vaca | ant | |
| 10 0 | 8 | Vacant | | |
| | 9 | | V+ | |
| | 10 | CH2 | COM2 | |
| 10 | 11 | | + | |
| 11 | 12 | Vacant | | |
| 13 | 13 | Vacant | | |
| B 14 | 14 | Vacant | | |
| 10 | 15 | Vacant | | |
| V5 18 | 16 | 24 V | | |
| | 17 | 24 G | | |
| <u> </u> | 18 | FG | | |

| Connected terminal | 18 points terminal block | | |
|---|--|--|--|
| Applicable wire size | 0.3 to 0.75mm ² | | |
| Applicable solderless terminals | R 1.25-3 (Solderless terminals with sleeves are not applicable) | | |
| | 24VDC, +20%, -15% | | |
| External supply power | Ripple, spike within 500 mV p-p | | |
| External supply power | Inrush current: 5.2A, within 300 µs | | |
| | 0.3A | | |
| Internal current consumption (5 VDC) | 0.37A | | |
| Weight | 0.20kg | | |
| *1: Accuracy of offset/gain settin Q62DA-FG needs to be powered (accuracy). | g at ambient temperature on 30 minutes prior to operation for compliance to the specification | | |

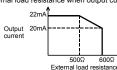
Q62DA-FG

16 points

*2: Accuracy per temperature change of 1 °C

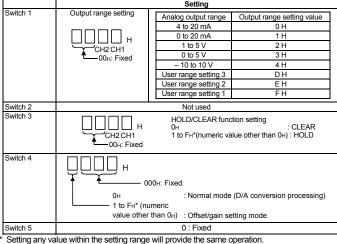
Number of I/O occupied points

Accuracy per temperature changes from 10 °C
 Example: Accuracy when temperature changes from 25 to 30 °C
 0.1% (Reference accuracy) + 0.008% °C (temperature coefficient)
 × 5 °C (temperature change difference) = 0.14%
 *3: The following indicates the external load resistance when output current is 20mA or more.



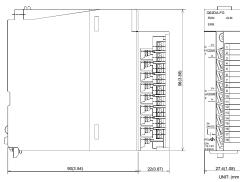
amon of the companyon for the OG2DA EC

5.2 External wiring



When the setting range is 1 to FH, set 1 for example.

6. External Dimensions



UNIT:(mm(in.))

Warranty

Misubishi Electric shall not be liable for any loss caused by reasons for which Mitsubishi is not held accountable, bst business opportunities or unrealized gain on the customer's side resulting from failure of the product, or any other damage, secondary disaster, accident, damage to equipment other than the product or disruption of other business operations arising out of special circumstances which may or may not have been predicted at Mitsubishi.

Nor safe use of the product

- This product is manufactured as a general-purpose product intended for general industrial use only. It is not designed nor manufactured for use in an equipment or system affecting human lives.
 If you are considering to use this product in equipment or systems for nuclear power generation, power generation, aerospace, medical or passenger transport applications, consult our sales representatives.
 This product is manufactured under our strict quality control system. However, if the product is used in the intended facility in such a way that a failure of the product may lead to serious accident or loss, incorporate backup or fail-safe functions into the system design.

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