BCN-P5976-I(1609)KWIX

Q24DHCCPU-V | Q24DHCCPU-VG | Q24DHCCPU-LS | Q26DHCCPU-LS

Before Using the Product

Please read this document before use. Keep the document in a safe place for future reference. Make sure that the end users read the document.

■ **Related manuals**

Before using the product, please read "Safety Guidelines" that is supplied with the base unit.
Confirm the following descriptions:
●SAFETY PRECAUTIONS
●CONDITIONS OF USE FOR THE PRODUCT
●EMC AND LOW VOLTAGE DIRECTIVES
●WARRANTY
When reading the above information, replace the following terms as indicated.
• "programmable controller" → "C Controller module"
• "programmable controller system" → "C Controller system"
• "sequence program" → "user program"
• "memory card", "CompactFlash card" → "SD memory card"
• "flash ROM or CompactFlash card" →
<Q24DHCCPU-V/-VG> "Built-in ROM"
<Q24DHCCPU-LS,Q26DHCCPU-LS> "Built-in SSD"
Details of the product are also described in the manual shown below (sold separately). Please read the manual and understand the functions and performance of the product to use it correctly.
• MELSEC-Q C Controller Module User's Manual
SH-081130ENG

■ **Manuels correspondants**

Avant d'utiliser ce produit, prière de lire les "Safety Guidelines" (directive de sécurité) fournies avec l'unité de base, en particulier dans les sections suivantes.
●*PRÉCAUTIONS DE SÉCURITÉ*
●*CONDITIONS D'UTILISATION DE PRODUIT*
●*DIRECTIVES CEM ET BASSE TENSION*
●*GARANTIE*
À la lecture des information ci-dessus, remplacer certains termes par le terme approprié.
• *"automate programmable" → "module de contrôleur C"*
• *"système d'automate programmable" → "système de contrôleur C"*
• *"programme séquentiel" → "programme utilisateur"*
• *" carete mémoire" → "carte CompactFlash" → "carte mémoire SD"*
• *"ROM flash ou carte CompactFlash" →*
<Q24DHCCPU-V/-VG> "ROM incorporée"
<Q24DHCCPU-LS,Q26DHCCPU-LS> "SSD incorporée"

■ **Packing list**

Check that the following items are included in the package.

Item	Quantity
Module	1
Battery (Q6BAT)	1
"Before Using the Product" (this document)	1

■ **SAFETY PRECAUTIONS**

The following describes precautions not shown in "Safety Guidelines" and is unique to this product. Read these precautions before using the product.

[Design Instructions]

⚠WARNING

● Configure safety circuits external to the C Controller module to ensure that the entire system operates safely even when a fault occurs in the external power supply or the C Controller module. Failure to do so may result in an accident due to an incorrect output or malfunction.
(1) Configure external safety circuits, such as an emergency stop circuit, protection circuit, and protective interlock circuit for forward/reverse operation or upper/lower limit positioning.
(2) If the following error status (a) or (b) occurs, the system will behave accordingly.
(a) When overcurrent or overvoltage protection of the power supply module is activated, the outputs (Y) from the user program and writing to the buffer memory are disabled, and all outputs are turned off.
(b) When the C Controller module detects an error such as a watchdog timer error by the selfdiagnostic function, the outputs (Y) from the user program and writing to the buffer memory are disabled. Whether to hold or turn off all outputs can be set by parameters.
All outputs may turn on when an error occurs in the part, such as I/O control part, where the C Controller module cannot detect any error. To ensure safety operation in such a case, provide a safety mechanism or a fail-safe circuit external to the C Controller module. For a fail-safe circuit example, refer to "Fail-safe circuit" in this document.

⚠CAUTION

● In the refresh parameter settings, "Y" cannot be specified for link output (LY) refresh device and remote output (RY) refresh device. Therefore, the device prior to STOP remains in the event of CPU STOP.

[STARTUP AND MAINTENANCE PRECAUTIONS]

⚠WARNING

● After the first use of the SD memory card, the number of insertions/removals is limited to 500 times. Exceeding the limit may cause malfunction.

■ ***PRÉCAUTIONS DE SÉCURITÉ***

On trouvera ci-après l'exposé de précautions à observer, non mentionnées dans les "Consignes de sécurité" fournies avec l'unité de base car elles sont spécifiques à ce produit. Lire ces précautions avant d'utiliser le produit.

[PRÉCAUTIONS LORS DE LA CONCEPTION]

⚠ATTENTION

● *Configurer les circuits de sécurité à l'extérieur du module de contrôleur C pour que l'ensemble du système reste en sécurité même après survenance d'une anomalie dans l'alimentation externe ou dans le module de contrôleur C. Faute de quoi, une instruction de sortie incorrecte ou un dysfonctionnement pourrait être à l'origine d'un accident.*
(1) Configurer des circuits de sécurité externes, comme un circuit d'arrêt d'urgence, un circuit de protection et les circuits de verrouillage de sécurité pour l'opération d'inversion de marche avant/arrière et de positionnement en limite haute/basse.
(2) À la survenance d'un des états d'erreur suivants (a) ou (b), le système se comporte comme indiqué ci-après.
(a) À l'activation d'une protection de surintensité ou de surtension du module d'alimentation, les sorties (Y) du programme utilisateur et la fonction d'écriture en mémoire-tampon deviennent inopérantes et toutes les sorties sont interrompues.
(b) Quand la fonction d'autodiagnosctic du module de contrôleur C détecte une erreur du genre erreur d'horloge de surveillance, les sorties (Y) du programme utilisateur et la fonction d'écriture en mémoire-tampon deviennent inopérantes. Le paramétrage permet de choisir entre maintien ou coupure de toutes les sorties.
Toutes les sorties pourraient rester actives après survenance d'une erreur indétectable par le module de contrôleur C, comme par exemple une erreur dans un organe de commande d'entrée/sortie. Pour garantir la sécurité dans une telle éventualité, il faut prévoir un mécanisme de sécurité ou un circuit de mise en sécurité qui soit externe au module de contrôleur C. Pour un exemple de circuit de mise en sécurité, voir "Circuit de mise en sécurité" dans ce document.

⚠AVERTISSEMENT

● *Pour le paramétrage de l'actualisation, "Y" ne peut pas être affecté au dispositif de réactualisation de sortie Link (LY) ou au dispositif de réactualisation de sortie Link (RY). Le dispositif reste donc comme avant le STOP lors d'un événement CPU STOP.*

[PRÉCAUTIONS DE MISE EN SERVICE ET DE MAINTENANCE]

⚠ATTENTION

● *Après la première utilisation d'une carte mémoire SD, le nombre maximum d'insertion/retrait est limité à 500 fois. Le dépassement de cette limite peut être à l'origine de dysfonctionnements.*

1. EMC and Low Voltage Directives

This product complies with the EMC and Low Voltage Directives.
For the equipment configured by using this product to comply with the EMC and Low Voltage Directives, refer to "Safety Guidelines" supplied with the base unit.
For the Ethernet twisted pair cables, read the information in the manual regarding the cables of "Built-in Ethernet port QCPU module" by replacing the following terms as indicated.
• "10BASE-T/100BASE-TX connector" → "user Ethernet port or system Ethernet port"
The following are the considerations which are not described in "Safety Guidelines" supplied with the base unit, and they are unique to this product.
◆ USB cable
Use a USB cable with the length of 3m or less. Install the equipment to be connected in the control panel.
◆ PCI Express® expansion connector
Install the equipment to be connected with the PCI Express expansion connector in the control panel. For details of PCI Express expansion connector, please consult your local Mitsubishi representative.

2. Fail-safe circuit

At power-on/off of the C Controller module, the control output may become inoperable temporarily due to the difference between the delay time and rising time of the C Controller module power supply and the controlled external power supply (especially for DC).
For example, if the controlled external power supply is energized in the DC output module and then the C Controller system power supply is energized, a momentary incorrect output may occur at power-on of the C Controller system by the DC output module. Therefore, It is necessary to configure a circuit that can be energized by the C Controller system power supply first.
In addition, a faulty operation may occur in the event of external power supply failure or failure of the C Controller module main.
Configure circuits outside the C Controller module for components for which machine damage and/or accidents may occur due to these faulty operations not leading to faulty operations of the entire system, or in view failsafe (emergency stop circuit, protection circuit, and interlock circuit, etc.).
The following shows a system design circuit example, considering the points explained above.
Program user program ❶, ❷ in the example so that the following operation will be performed at start-up of the C Controller module.

User program ❶

1. When a battery voltage drop is detected, Ym is turned on.
2. Yn is turned on at start of the user program.

User program ❷

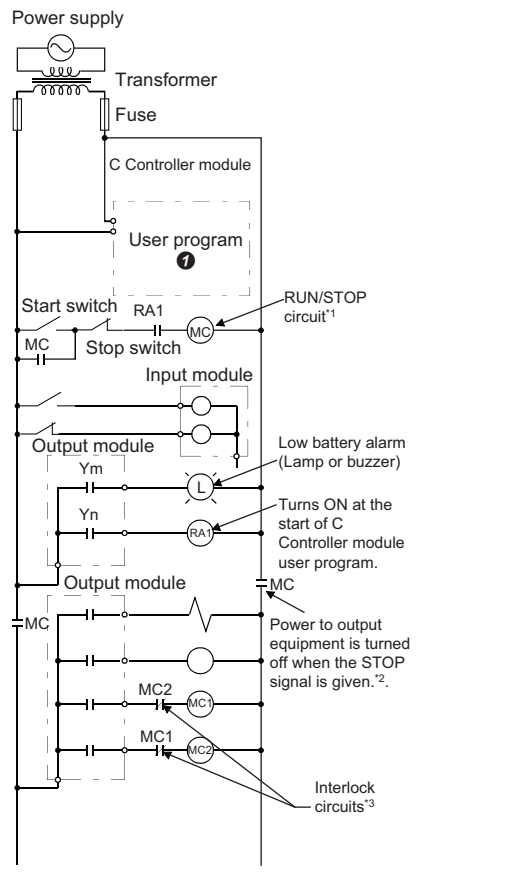
1. When a battery voltage drop is detected, Ym is turned on.
2. Yn is turned on at start of the user program.
3. XM turns ON, and the system starts processing after the DC input signal has been established (after the DC input signal establishment time).
The DC input signal establishment time is the time taken from "on" of RA2 to 100% establishment of the DC input signal. Set this time to 0.5 seconds.)
However, when a voltage relay is used for RA2, the DC input signal establishment time does not need to be set in the user program.

Restriction

• Q24DHCCPU-V/-VG: Use the CCPU_GetErrInfo function, QBF_X_In_BitEx function, and QBF_Y_Out_BitEx function.
• Q24DHCCPU-LS,Q26DHCCPU-LS: Refer to the corresponding manual or consult with the partner (operating system vendor).

2.1 When not using the ERR. contact of the power supply module

For AC

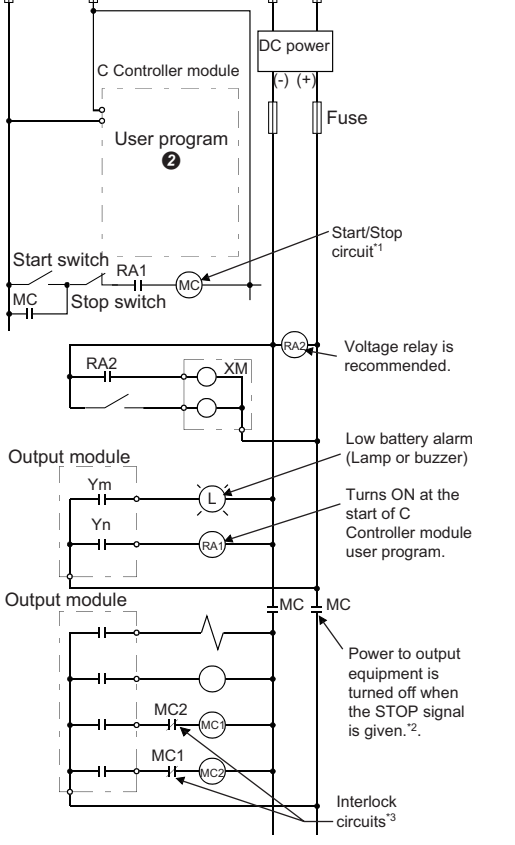


*1 The programmable controller starts when RA1 (run monitor relay) turns on.
*2 The stop switch means an emergency stop switch or a limit switch.
*3 Configure external interlock circuits for conflicting operations such as forward/reverse rotations and the parts where the incorrect output may cause damage to the machines or accidents.

The power-up procedure

1. Turn on the power.
2. Set the C Controller module to "RUN".
3. Turn on the start switch.
4. When the magnetic contact (MC) turns on, the output equipment is driven by the user program ❶.

For AC/DC



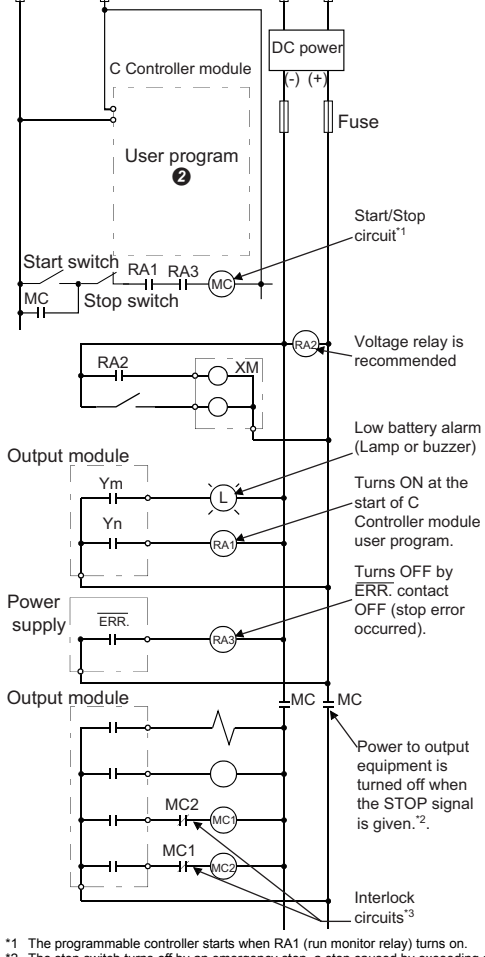
*1 The programmable controller starts when RA1 (run monitor relay) turns on.
*2 The stop switch means an emergency stop switch or a limit switch.
*3 Configure external interlock circuits for conflicting operations such as forward/reverse rotations and the parts where the incorrect output may cause damage to the machines or accidents.

The power-up procedure

1. Turn on the power.
2. Set the C Controller module to "RUN".
3. When DC power is applied, RA2 is turned on.
4. When RA2 turns on, XM is turned on. Upon 100% establishment of the DC input signal, processing is started by the user program ❷.
5. Turn on the start switch.
6. When the magnetic contact (MC) turns on, the output equipment is driven by the user program ❷.

2.2 When using the ERR. contact of the power supply module

For AC/DC



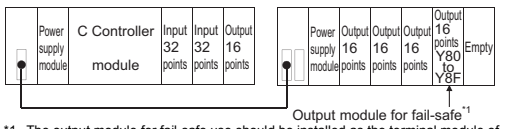
*1 The programmable controller starts when RA1 (run monitor relay) turns on.
*2 The stop switch turns off by an emergency stop, a stop caused by exceeding a limit value, or turning off the ERR. contact.
*3 Configure external interlock circuits for conflicting operations such as forward/reverse rotations and the parts where the incorrect output may cause damage to the machines or accidents.

The power-up procedure

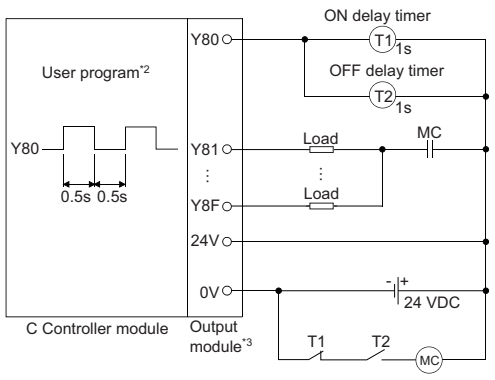
1. Turn on the power.
2. Set the C Controller module to "RUN".
3. When DC power is applied, RA2 is turned on.
4. When RA2 turns on, XM is turned on. Upon 100% establishment of the DC input signal, processing is started by the user program ❷.
5. Turn on the start switch.
6. When the magnetic contact (MC) turns on, the output equipment is driven by the user program ❷.

2.3 Fail-safe measures for C Controller system failure

The C Controller module can detect its own failure by the self-diagnostic function. However, it may not be able to detect a failure that occurred in an I/O control part. In such a case, all the I/O may turn on or off depending on the failure, and normal operation and safety of the control target may not be ensured.
Though Mitsubishi products are manufactured under strict quality control, it is recommended to configure an external fail-safe circuit so that a C Controller system failure will not result in mechanical damage or accidents.
The following shows a system example and a fail-safe circuit example.



*1 The output module for fail-safe use should be installed as the terminal module of the system. (Y80 to Y8F in the above system)



*2 Program it so that Y80 alternates between ON and OFF at intervals of 0.5 seconds.
• Q24DHCCPU-V/-VG: Use the QBF_Y_Out_BitEx function.
• Q24DHCCPU-LS,Q26DHCCPU-LS: Refer to the corresponding manual or consult with the partner (operating system vendor).
*3 Since Y80 repeatedly turns on and off at 0.5 seconds intervals, use a non-contact output module (a transistor in the case above).

■ **Installation of the unit**

Consider ease of operation, maintainability, and resistance to adverse environmental conditions when installing the product in a control panel, etc.
Securely install all units in the MELSEC-Q series on the base unit.
Also refer to the QCPU User's Manual (Hardware Design, Maintenance and Inspection) for details of installation.

■ ***Installation de l'unité***

Prendre en considération la commodité d'exploitation et de maintenance, ainsi que la bonne résistance aux facteurs environnementaux adverses lors de l'installation en tableau de commande, etc.
Installer fermement toutes les unités de la série MELSEC-Q sur l'unité de base.
Pour le détail de l'installation, voir aussi the "QCPU User's Manual (Hardware Design, Maintenance and Inspection)" (le Manuel de l'utilisateur QCPU (conception du matériel, maintenance et inspection)).

■ **Operating ambient temperature**

Use the product within the range of 0 to 55°C.

■ ***Température ambiante de fonctionnement***

Ce produit doit être utilisé entre 0 et 55°C.

■ **Information and services**

For further information and services, please consult your local Mitsubishi representative.