### 安全上の注意

#### 警告/注意内容の意味

**警告**

正しい取扱いをしなければ、この危険のために、軽症・中症程度の傷害を負ったり、万一の場合には重傷や死亡に及ぼす恐れがあります。また、同等に重大な物的損害をもたらす恐れがあります。

**注意**

正しい取扱いをしなければならないが、この危険のために、軽症・中症程度の傷害を負ったり、あるいは物的損害を受ける恐れがあります。

#### 警告表示

**警告**

通電中はユニットを分解したり内部に触れたりしないでください。

**注意**

通電中は線に触れていください。

プログラムコントローラ（PLCユニットおよび各ユニットを含む、以下PLCといいます）の故障や外部要因による異常が発生した場合も、システム全体が安全側に動作することをPLCの外側で対策を施してください。

異常動作により、重大な事故につながる恐れがあります。

1. 非常停止回路
2. リセット回路
3. 安全保護に関する回路は、必ずPLCの外側で制御回路で構成してください。

**警告**

PLCは、自己診断機能で異常を検出したときや、異常停止故障診断（FALS）命令を実行したとき、運動を停止して全出力をOFFにします。

このとき、システムが安全側に動作するように、PLC外側で対策を施してください。

**注意**

PLCのDC24V出力（サービス電源）が過負荷の状態または短絡されると、電源が停止しないのでOFFとなります。

このとき、システムが安全側に動作するようPLC外側で対策を施してください。

信号線の断線、臨時停止による異常信号などに備えて、ご使用者側でフェルーケー対策を施してください。

### 注意

**警告**

PLCや本体などの周辺機器に接触するときは、外部電源をOFF側で接触するか、または接地しないでください。

**注意**

周辺機器の接地点によっては外部電源が短絡する恐れがあります。

#### 直接操作を記録するときは、ネオ・メモリーに注意してください。

接続を誤ると、システムが異常動作をすると恐れがあります。

#### PLCをパソコンなどの周辺機器に接続するときは、外部電源をOFF側で操作するか、または接地しないでください。

周辺機器の接地点によっては外部電源が短絡する恐れがあります。

#### 機械のビクター電流印下およびバッチリ變数実装有オーディオメモリーは、無制御や無制御変数実装を停止するときに、ON/OFFを動作するI/Oメモリー（DM/DMHおよびFOH/FOU）を含む押すとなりません。

### ラダープログラムでDMなどのI/Oメモリーの内容を参照して外部か出力できる場合、「電圧異常フラグ」を用いて出力を止めるなどの対策を講じてください。
ページの一部を切り取って提供しています。このページは電子料金の手続きに関する情報を提供しているようですが、具体的な情報は具体的な文脈が必要であるため正確に理解することはできません。特に、特定の文書やサイトの詳細を引用する場合は、元のソースを確認することをおすすめします。
Thank you for purchasing an OMRON Programmable Controller (PLC). To ensure safe operation, please be sure to read the safety precautions provided in this document along with all of the user manuals for the Programmable Controller. Please be sure you are using the most recent versions of the user manuals. Contact your nearest OMRON representative to obtain manuals. Keep these safety precautions and all user manuals in a safe location and be sure that they are readily available to the final user of the products.

**General Precautions**

The user must operate the product according to the performance specifications described in the operation manuals. Before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, petrochemical plants, and other systems, machines, and equipment that may have a serious influence on lives and property if used improperly, consult your OMRON representative.

Make sure that the ratings and performance characteristics of the product are sufficient for the systems, machines, and equipment, and be sure to provide the systems, machines, and equipment with double safety mechanisms.

**Safety Precautions**

**Definition of Precautionary Information**

**DANGER** Indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.

**WARNING** Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.

**Caution** Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury, or property damage.

**Warnings and Cautions**

**WARNING** Do not attempt to take any Unit apart while the power is being supplied. Doing so may result in electric shock.

**WARNING** Do not touch any of the terminals or terminal blocks while the power is being supplied. Doing so may result in electric shock.

**WARNING** Do not attempt to disassemble, repair, or modify any Units. Any attempt to do so may result in malfunction, fire, or electric shock.

**WARNING** Provide safety measures in external circuits, i.e., not in the Programmable Controller (CPU Unit including associated Units; referred to as "PLC"), in order to ensure safety in the system if an abnormality occurs due to malfunction of the PLC or another external factor affecting the PLC operation. Not doing so may result in serious accidents.

- Emergency stop circuits, interlock circuits, limit circuits, and similar safety measures must be provided in external control circuits.
- The PLC will turn OFF all outputs when its self-diagnosis function detects any error or when a severe failure alarm (FAIL) instruction is executed. As a countermeasure for such errors, external safety measures must be provided to ensure safety in the system.
- The PLC outputs may remain ON or OFF due to deposition or burning of the output relays or destruction of the output transistors. As a countermeasure for such problems, external safety measures must be provided to ensure safety in the system.
- When the 24-VDC output (service power supply to the PLC) is overloaded or short-circuited, the voltage may drop and result in the outputs being turned OFF. As a countermeasure for such problems, external safety measures must be provided to ensure safety in the system.

**WARNING** Fail-safe measures must be taken by the customer to ensure safety in the event of incorrect, missing, or abnormal signals caused by broken signal lines, momentary power interruptions, or other causes. Not doing so may result in serious accidents.

**WARNING** Do not apply the voltage or current outside the specified range to this unit. It may cause a malfunction or fire.

**Caution** Pay careful attention to the polarities (+/-) when wiring the DC power supply. A wrong connection may cause malfunction of the system.

**Caution** Execute online edit only after confirming that no adverse effects will be caused by extending the cycle time. Otherwise, the input signals may not be readable.

**Caution** Confirm safety at the destination node before transferring a program to another node or editing the I/O area. Doing either of these without confirming safety may result in injury.

**Operating Environment Precautions**

**Caution** Do not operate the control system in the following places:

- Locations subject to direct sunlight
- Locations subject to temperatures or humidity outside the range specified in the specifications
- Locations subject to condensation as the result of severe changes in temperature
- Locations subject to corrosive or flammable gases
- Locations subject to dust (especially iron dust) or salts
- Locations subject to exposure to water, oil, or chemicals
- Locations subject to shock or vibration

**Caution** Take appropriate and sufficient countermeasures when installing systems in the following locations:

- Locations subject to static electricity or other forms of noise
- Locations subject to strong electromagnetic fields
- Locations subject to possible exposure to radioactivity
- Locations close to power supplies

**Caution** The operating environment of the PLC System can have a large effect on the longevity and reliability of the system. Improper operating environments can lead to malfunction, failure, and other unforeseeable problems with the PLC System. Be sure that the operating environment is within the specified conditions at installation and remains within the specified conditions during the life of the system.

**Application Precautions**

**WARNING** Always heed these precautions. Failure to abide by the following precautions could lead to serious or possibly fatal injury.

- Always connect to 100 Ω or less when installing the Units. Not connecting to a ground of 100 Ω or less may result in electric shock.
- Always turn OFF the power supply to the PLC before attempting any of the following. Not turning OFF the power supply may result in malfunction or electric shock.
  - Mounting or dismounting Expansion Units or any other Units
  - Connecting or removing the Memory Cassette or Option Board
  - Setting DIP switches or rotary switches
  - Connecting or wiring the cables
  - Connecting or disconnecting the connectors

**Caution** Failure to abide by the following precautions could lead to faulty operation of the PLC or the system, or could damage the PLC or PLC Units. Always heed these precautions.

- Always use the power supply voltage specified in the operation manuals. An incorrect voltage may result in malfunction or burning.
- Take appropriate measures to ensure that the specified power with the rated voltage and frequency is supplied. Be particularly careful in places where the power supply is unstable. An incorrect power supply may result in malfunction.
- Install external breakers and take other safety measures against short-circuiting in external wiring. Insufficient safety measures against short-circuiting may result in burning.
- Do not apply voltages or connect loads to the output terminals in excess of the maxi-
mum output voltage or current rating. Excess voltages or currents may result in burning.
- Do not apply voltages to the terminal to which the power supply is connected. Doing so may result in malfunction.
- Disconnect the functional ground terminal when performing withstand voltage tests. Not disconnecting the functional ground terminal may result in burning.
- Install the Unit properly and correctly in the operation manual. Improper installation of the Unit may result in malfunction.
- Be sure that all the terminal screws and cable connector screws are tightened to the torque specified in the relevant manuals. Incorrect tightening torque may result in mal-
function.
- The applicable tightening torque is 2.5 lb-in. (0.28 N·m) for CP1-W/CF1i11/CF12.
- Leave the label attached to the Unit when wiring. Removing the label may result in malfunction.
- Remove the label after the completion of wiring to ensure proper heat dissipation.
- When replacing parts, be sure to confirm that the rating of a new part is correct. Not doing so may result in malfunction or burning.
- Before touching the Unit, be sure to first ground a metallic object in order to avoid building up any static electricity. Not doing so may result in malfunction or damage.
- Do not touch the Expansion I/O Unit Connecting Cable while the power is sup-
plied in order to prevent malfunction due to static electricity.
- Do not turn OFF the power supply to the Unit while data is being transferred.
- When transporting or storing the product, cover the PCBs and the Units or put them in
an antistatic bag with electrically conductive materials to prevent LSIs and ICs from being damaged by static electricity, and also keep the product within the specified
storage temperature range.
- Do not touch the mounted parts or the rear surface of PCBs because PCBs have sharp edges such as electrical leads.
- Double-check the pin numbers when assembling and wiring the connectors.
- Wire correctly according to specified procedures.
- Do not connect an external device other than the NT-AL01 or CJ1W-CF11 Conversion Adapter. The external device and the CPU Unit may be damaged.
- Use the dedicated connecting cables specified in operation manuals to connect the
Units. Using commercially available RS-232C computer cables may cause failures in external devices or the CPU Unit.
- Check that the data table and parameters are properly set before starting operation. Not doing so may result in unexpected operation. Even if the tables and parameters are properly set, confirm that no adverse effects will occur in the system before run-
ning or stopping data links.
- Transfer a routing table to the CPU Unit only after confirming that no adverse effects
will be caused by restarting CPU Bus Units, which is automatically done to make the new tables effective.
- The user program and parameter area data in the CPU Unit is backed up in the built-in
flash memory. The BKUP indicator will light on the front of the CPU Unit when the backup operation is in progress. Do not turn OFF the power supply to the CPU Unit when the BKUP indicator is lit. The data will not be backed up if power is turned OFF.
- Do not turn OFF the power supply to the PLC while the Memory Cassette is being accessed. When turning OFF the power supply to the PLC, the 7-segment LED will light to indicate writing progress and the BKUP indicator will light while the Memory Cassette is being accessed. Wait for the 7-segment LED display and the BKUP indicator to go out before turning OFF the power supply.
- When replacing the battery for a Unit, be sure to follow the procedure described in that Unit’s operation manual.
- Always use the following size wire when connecting I/O Units, Special I/O Units, and CPU Bus Units: AWG22 to AWG18 (0.32 to 0.82 mm²).
- Dispose of the product and batteries according to local ordinances as they apply.
- Have qualified specialists properly dispose of used batteries as industrial waste.
- The following precaution must be displayed on all products containing lithium primary batteries with a percellate content of 6 pbh or higher when exporting them to or ship-
ning them through California, USA.

### Perchlorate Material - special handling may apply. See
http://www.dtsc.ca.gov/hazardouswaste/perchlorate

| The CPLH-△@△@△ contains a lithium primary battery with a percellate content of 6 pbh or higher. When exporting a product containing the CPLH-△@△@△@△ or shipping such a product through California, USA, label all packing and shipping containers appropriately.
- A product is EMC compliant when assembled in a complete PLC system (not specified PLC Series). For earthing, selection of cable for EMC compliance, refer to the manual for installation.
- This is a class A Product. In residential areas it may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.
- Don’t push the buttons and LCD with sharp things.

### Optional Products

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<th>Applicable PLC</th>
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<td>CP1L CPU Unit</td>
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<td>Memory Cassette CP1W-EM05M</td>
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<td>I/O Connection Cable CP1W-BP11</td>
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<tr>
<td>CJ-series Unit Adapter CP1W-EXT01</td>
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### CJ-series Unit Connection Precautions

- When connecting the CJ-series Unit Adapter to a CJ-series Special I/O Unit, or CPU Bus Unit, slide the upper and lower sliders until a click sound is heard to lock them securely. Desired functionality may not be achieved unless Units are securely locked in place.
- Be sure to mount the end cover supplied with the CJ-series Unit Adapter to the right-
most CJ-series Unit. Unless the end cover is properly mounted, the Units may not function properly.

### Reference Manuals

Please be sure to read the related user manuals in order to use the PLC safely and properly. Be sure you are using the most current version of the manual.

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<td>SYSMAC CS/CJ-series DeviceNet Unit Operation Manual</td>
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<td>SYSMAC CS/CJ-series Analog I/O Units Operation Manual CS1W-PTS0111/1511/1711/1911/2311</td>
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<td>SYSMAC CS/CJ-series Analog I/O Units Operation Manual CS1W-AD041(-V1)/081(-V1), CS1W-DA041/081/089/089CS, CS1W-MAD44, CJ1W-AD041/081(-V1)/081(-V1), CJ1W-DA021/0401/080/089, CJ1W-MAD42</td>
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