

## Instruction Manual

### Precautions for Compliance with UL Standards and CSA Standards

#### Notice to Users of the CS1W-AD041-V1/-AD081-V1/-DA041/-DA08V/-DA08C/-MAD44 in the USA and Canada

Please use the following installation information instead of the general information in the instruction manuals in order to use the product under certified conditions of UL and CSA when the product is installed in the USA or Canada. These conditions are required by NFPA 70, National Electrical Code in the USA and the Canadian Electrical Code, Part I in Canada and may vary from information given in the product manuals or safety precautions.

- **Wiring for the Field Wiring Terminals**
  - Do not use crimp terminals for field wiring.
  - Do not insert more than one wire in one terminal.
  - Tightening torque of the terminals : 7 Lb·In. (0.8 N·m)
  - Wire range : AWG 24 to 14
- **Environment**
  - Surrounding air temperature: 55°C

### Terminal Arrangement

#### • Analog Input Unit CS1W-AD041-V1

Input 2 (+)	B1	A1	Input 1 (+)
Input 2 (-)	B2	A2	Input 1 (-)
AG	B3	A3	AG
Input 4 (+)	B4	A4	Input 3 (+)
Input 4 (-)	B5	A5	Input 3 (-)
N.C.	B6	A6	N.C.
N.C.	B7	A7	N.C.
N.C.	B8	A8	N.C.
N.C.	B9	A9	N.C.
N.C.	B10	A10	N.C.
		A11	N.C.

#### • Analog Input Unit CS1W-AD081-V1

Input 2 (+)	B1	A1	Input 1 (+)
Input 2 (-)	B2	A2	Input 1 (-)
AG	B3	A3	AG
Input 4 (+)	B4	A4	Input 3 (+)
Input 4 (-)	B5	A5	Input 3 (-)
Input 6 (+)	B6	A6	Input 5 (+)
Input 6 (-)	B7	A7	Input 5 (-)
AG	B8	A8	AG
Input 8 (+)	B9	A9	Input 7 (+)
Input 8 (-)	B10	A10	Input 7 (-)
		A11	N.C.

#### • Analog Output Unit CS1W-DA041

N.C.	B1	A1	N.C.
Output voltage 2 (+)	B2	A2	Output voltage 1 (+)
Output 2 (-)	B3	A3	Output 1 (-)
Output current 2 (+)	B4	A4	Output current 1 (+)
N.C.	B5	A5	N.C.
N.C.	B6	A6	N.C.
Output voltage 4 (-)	B7	A7	Output voltage 3 (+)
Output 4 (-)	B8	A8	Output 3 (-)
Output current 4 (+)	B9	A9	Output current 3 (+)
N.C.	B10	A10	N.C.
		A11	N.C.

#### • Analog Output Unit CS1W-DA08V/-DA08C

N.C.	B1	A1	N.C.
Output 2 (+)	B2	A2	Output 1 (+)
Output 2 (-)	B3	A3	Output 1 (-)
Output 4 (+)	B4	A4	Output 3 (+)
Output 4 (-)	B5	A5	Output 3 (-)
Output 6 (+)	B6	A6	Output 5 (+)
Output 6 (-)	B7	A7	Output 5 (-)
Output 8 (+)	B8	A8	Output 7 (+)
Output 8 (-)	B9	A9	Output 7 (-)
N.C.	B10	A10	N.C.
		A11	N.C.

#### • Analog I/O Unit CS1W-MAD44

Output 2 (+)	B1	A1	Output 1 (+)
Output 2 (-)	B2	A2	Output 1 (-)
Output 4 (+)	B3	A3	Output 3 (+)
Output 4 (-)	B4	A4	Output 3 (-)
N.C.	B5	A5	N.C.
Input 2 (+)	B6	A6	Input 1 (+)
Input 2 (-)	B7	A7	Input 1 (-)
AG	B8	A8	AG
Input 4 (+)	B9	A9	Input 3 (+)
Input 4 (-)	B10	A10	Input 3 (-)
		A11	N.C.

Note: 1. The AG terminals are connected to the 0 V analog circuit in the unit. Connecting shielded input lines can improve noise resistance.  
 2. Do not make any connections to the N.C. terminals.

Always refer to the *SYSMAC CS/CJ series Analog I/O Units Operation Manual (Cat. No. W345)* for safety precautions and detailed operating information before attempting to use the Analog I/O Units.

## ● Compliance with Class I Division 2 Hazardous Location:

1. This equipment is suitable for use in Class I, Div.2, Group A, B, C, D or Non-Hazardous Locations Only.
2. WARNING: Explosion Hazard-Substitution of Components may Impair Suitability for Class I, Div.2.
3. WARNING: Explosion Hazard. Do not Disconnect Equipment Unless Power Has Been Switched off or the Area Is Known to Be Non-Hazardous.
4. This device is open-type and is required to be installed in an enclosure suitable for the environment and can only be accessed with the use of a tool or key.

1. Cet équipement convient à l'utilisation dans des emplacements de Classe I, Division 2, Groupes A, B, C, D, ou ne convient qu'à l'utilisation dans des endroits non dangereux.
2. AVERTISSEMENT - Risque d'explosion - La substitution de composants peut rendre ce matériel inacceptable pour les emplacements de Classe I, Division 2
3. AVERTISSEMENT - Risque d'explosion - Avant de débrancher l'équipement, couper le courant ou s'assurer que l'emplacement est désigné non dangereux.
4. Ce dispositif est de type ouvert et doit être installé dans un coffret adapté à l'environnement et auquel on ne pourra accéder uniquement au moyen d'un outil ou d'une clé.

### Conformance to EC Directives

Connect shielded input lines to the AG terminals in order to use the CS1W-AD041-V1/-AD081-V1/-MAD44 under EMC compliance.



#### Caution

**Be sure to install a surge suppressor for any inductive load (such as electro-magnetic contactor, relay, or solenoid) in the system. Separate the unit from devices generating surges. Not doing so may cause result in unexpected operation in the system.**

- This product is EMC-compliant when assembled in complete PLC system of the PLC series which type-name shows. To ensure the EC directive conformance of customer's machinery or equipment in which the product is incorporated, be sure to observe the following precautions.
  1. This product is defined as an in-panel device and must be installed within a control panel.
  2. Reinforced insulation or double insulation must be used for the DC power supply connected to the DC power supply unit, communications unit, and I/O unit.
  3. This product complies with the common emission standard (EN61131-2) with regard to EMI. For the radiated emission requirement (10 m regulations), in particular, please note that the actual emission varies depending on the configuration of the control panel to be used connecting device and wiring. Therefore, the customer must confirm the EC Directive conformance of the overall machinery or equipment by themselves, even if this EC conforming product is used.
- 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.
- Be sure to ground the GR terminal of the power supply unit using the wire of 2 mm<sup>2</sup> or more. (ground resistance of 100 Ω or less)
- In a place where a large noise occurs, be sure to ground the LR and GR terminals of the power supply unit. (ground resistance of 100 Ω or less)
- The length of the grounding wire must be 20 m or less. When using the expansion rack, be sure to ground it along with the CPU rack at one point.
- If the relay output is opened or closed 5 times or more per minute, the EN61131-2 standard requirements may not be satisfied. Countermeasures for this depend on the load machine, wiring and the configuration of machines being used. To meet the requirements, take measures to reduce noise by using a capacitor, resistor, diode or others externally.

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### For KC standard

- This is a class A product (for industrial environment). In residential areas it may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.

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