



**MITSUBISHI
ELECTRIC**

Digital-Analog Converter Module

User's Manual
(Hardware)

CL2DA2-B

Thank you very much for purchasing this product.

Prior to use, please read both this manual and detailed manual thoroughly and familiarize yourself with the product.

CC-Link/LT

MODEL	CL2DA-U-HW
MODEL CODE	13JP61
IB(NA)-0800290-F(1509)MEE	

● SAFETY PRECAUTIONS ●

(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly.

The precautions given in this manual are concerned with this product. Refer to the user's manual of the CPU module to use for a description of the programmable controller system safety precautions.

In this manual, the safety precautions are classified into two 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.

Under some circumstances, failure to observe the precautions given under "⚠ CAUTION" may lead to serious consequences.

Observe the precautions of both levels because they are important for personal and system safety.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

[Design Precautions]

WARNING

- When there are communication problems with the data link, the data for the master module will be held. Configure an interlocking circuit in a sequence program so that the safety of the overall system is always maintained. Otherwise, erroneous output and malfunction may result in accidents.

CAUTION

- 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.

[Design Precautions]

CAUTION

- 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 programmable controller in the environment that meets the general specifications contained in this manual.
Using the programmable controller outside the range of the general specifications may result in electric shock, fire or malfunction, or may damage or degrade the module.
- Do not directly touch any conductive part of the module.
Doing so can cause malfunction or failure of the module.
- Securely fix the module to a DIN rail or with mounting screws, and securely tighten the mounting screws within the specified torque range.
Undertightening can cause a drop or malfunction.
Overtightening can cause a drop or malfunction due to damage of the screws or module.

[Wiring Precautions]

WARNING

- Shut off the external power supply for the system in all phases before wiring.
Failure to do so may result in electric shock or damage to the product.

CAUTION

- Terminal screws which are not to be used must be tightened always.
Otherwise there will be a danger of short circuit against the bare solderless terminals.
- Wire the module correctly after confirming the rated voltage and terminal layout of the product.
Not doing so can cause a fire or failure.

[Wiring Precautions]

CAUTION

- Tighten the terminal screws within the specified torque range. Undertightening can cause a short circuit or malfunction. Overtightening can cause a short circuit or malfunction due to damage of the screws or module.
- Ensure that no foreign matter such as chips and wire-offcuts enter the module. Foreign matter can cause a fire, failure or malfunction.
- Do not install the control lines or communication cables together with the main circuit lines or power cables. Failure to do so may result in malfunction due to noise.

[Starting and Maintenance Precautions]

WARNING

- Do not touch the terminals while power is on. Doing so may cause malfunctioning.
- Be sure to shut off all phases of the external power supply used by the system before cleaning or retightening the terminal screws. Not doing so can cause the module to fail or malfunction.

CAUTION

- Never disassemble or modify the module. This may cause breakdowns, malfunctioning, injury and/or fire.
- Do not drop or apply strong shock to the module. Doing so may damage the module.
- Be sure to shut off all phases of the external power supply used by the system before mounting or dismounting the module to or from the panel. Not doing so can cause the module to fail or malfunction.
- Before handling the module, always touch grounded metal, etc. to discharge static electricity from the human body. Failure to do so can cause the module to fail or malfunction.

[Disposal Precautions]

CAUTION

- When disposing of this product, treat it as industrial waste.

● PRÉCAUTIONS DE SÉCURITÉ ●

(Lire ces précautions avant toute utilisation du produit.)

Avant d'utiliser ce produit, lire attentivement ce manuel ainsi que les manuels auxquels il renvoie, et toujours considérer la sécurité comme de la plus haute importance en manipulant le produit correctement.

Les précautions à observer figurant dans ce manuel ne concerne que ce produit. Dans le manuel de l'utilisateur du module CPU correspondant, voir l'exposé des précautions de sécurité concernant le système de l'automate programmable.

Dans ce manuel, les précautions de sécurité sont classées en deux niveaux, à savoir : "AVERTISSEMENT" et "ATTENTION"

AVERTISSEMENT

Attire l'attention sur le fait qu'une négligence peut créer une situation de danger avec risque de mort ou de blessures graves.

ATTENTION

Attire l'attention sur le fait qu'une négligence peut créer une situation de danger avec risque de blessures légères ou de gravité moyennes ou risque de dégâts matériels.

Dans certaines circonstances, le non-respect d'une précaution de sécurité introduite sous le titre "ATTENTION" peut avoir des conséquences graves.

Les précautions de ces deux niveaux doivent être observées dans leur intégralité car elles ont trait à la sécurité des personnes et aussi du système.

Veiller à ce que les utilisateurs finaux lisent ce manuel qui doit être conservé soigneusement à portée de main pour s'y référer autant que de besoin.

[Précautions lors de la conception]

AVERTISSEMENT

- En cas de problème de communication sur la liaison de données, les données du module maître sont maintenues. Prévoir dans le programme séquentiel un circuit de verrouillage permettant de garantir la sécurité de l'ensemble du système en tous temps. Faute de quoi, une sortie erronée ou un dysfonctionnement pourrait être à l'origine d'accidents.

ATTENTION

- *À la mise sous/hors tension, une tension ou un courant peut apparaître instantanément à la borne de sortie de ce module. Dans ce cas, attendre la stabilisation de la sortie analogique avant de faire démarrer la commande du dispositif externe.*

[Précautions lors de la conception]

ATTENTION

- *À la mise sous/hors tension, une tension ou un courant peut apparaître instantanément à la borne de sortie de ce module. Dans ce cas, attendre la stabilisation de la sortie analogique avant de faire démarrer la commande du dispositif externe.*

[Précautions d'installation]

ATTENTION

- *Utiliser l'automate programmable dans un environnement en conformité avec les spécifications générales que présente ce manuel.
L'utilisation de l'automate programmable hors des conditions prévues dans les spécifications générales peut être à l'origine d'un choc électrique, d'un départ de feu ou d'un dysfonctionnement, ou peut endommager ou détériorer l'appareil.*
- *Éviter tout contact direct avec les parties conductrices du module.
Une manipulation incorrecte peut être à l'origine de dysfonctionnements ou de pannes du module.*
- *Fixer fermement le module sur un rail DIN, ou avec des vis en serrant les vis de fixation dans le limites du couple prescrit.
Un serrage insuffisant peut être à l'origine d'une chute ou d'un dysfonctionnement.
Un serrage excessif peut endommager les vis ou le module et entraîner des dysfonctionnements en cas de chute.*

[Précautions de câblage]

AVERTISSEMENT

- *Couper l'alimentation externe du système sur toutes les phases avant de commencer à câbler. Faute de quoi, il y a risque d'électrocution et d'endommagement du produit.*

ATTENTION

- *Les vis des bornes qui restent inutilisées doivent toujours être serrées. Faute de quoi, il y a danger de court-circuit par contact avec les bornes-barres sans soudure.*
- *Câbler le module correctement après vérification de la tension nominale et de l'affectation des bornes de ce produit. Faute de quoi, il y a risque de départ de feu ou de panne.*

[Précautions de câblage]

ATTENTION

- *Serrer les vis de borne dans les limites du couple de serrage prescrit. Un serrage insuffisant peut être à l'origine d'un court-circuit ou d'un dysfonctionnement. Un serrage excessif peut endommager les vis ou le module et être à l'origine de court-circuits ou de dysfonctionnements.*
- *Faire en sorte que les copeaux, bouts de fil et autres corps étrangers ne pénètrent pas dans le module. Tout corps étranger peut être à l'origine d'un départ de feu, d'une panne ou d'un dysfonctionnement.*
- *Ne pas entremêler les lignes de commandes ou câbles de communication avec les lignes des circuits principaux ou les câbles d'alimentation. Faute de quoi, il y a risque de dysfonctionnement par un bruit.*

[Précautions de démarrage et de maintenance]

AVERTISSEMENT

- *Ne pas toucher aux bornes quand l'appareil est sous tension. Cela pourrait être à l'origine de dysfonctionnements.*
- *Ne pas oublier de couper toutes les phases de l'alimentation externe utilisée par le système avant le nettoyage ou le resserrage des vis de bornes. Faute de quoi, il y a risque de panne ou de dysfonctionnement du module.*

 **ATTENTION**

- *Ne jamais démonter, ni modifier le module.
Cela pourrait être à l'origine de pannes, de dysfonctionnements, de blessures ou d'un départ de feu.*
- *Ne pas faire tomber le module et ne pas le soumettre à des chocs.
Cela risquerait d'endommager le module.*
- *Ne pas oublier de couper toutes les phases de l'alimentation externe utilisée par le système avant de mettre le module en place dans le tableau ou de l'en retirer.
Faute de quoi, il y a risque de panne ou de dysfonctionnement du module.*
- *Avant de manipuler un module, se débarrasser de la charge électrostatique qu'accumule le corps humain en touchant un objet métallique raccordé à la terre.
Faute de quoi, il y risque de panne ou de dysfonctionnement du module.*

[Précaution de mise au rebut]

 **ATTENTION**

- *Lors de sa mise au rebut, ce produit doit être traité comme un déchet industriel.*

● CONDITIONS OF USE FOR THE PRODUCT ●

- (1) Mitsubishi programmable controller ("the PRODUCT") shall be used in conditions;
 - i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and
 - ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

- (2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT.

("Prohibited Application")

Prohibited Applications include, but not limited to, the use of the PRODUCT in;

 - Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
 - Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
 - Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above, restrictions Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is

limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTS are required. For details, please contact the Mitsubishi representative in your region.

REVISIONS

* The manual number is given on the bottom right of the cover.

Print Date	*Manual Number	Revision
Nov., 2004	IB(NA)-0800290-A	First edition
Nov., 2010	IB(NA)-0800290-B	<p>Correction</p> <p>"PLC" was changed to "programmable controller", SAFETY PRECAUTIONS, Compliance with the EMC and the Low Voltage Directives, Section 4.1, 6.2</p> <p>Addition</p> <p>CONDITIONS OF USE FOR THE PRODUCT</p>
Dec., 2011	IB(NA)-0800290-C	<p>Correction</p> <p>Compliance with the EMC and the Low Voltage Directives</p> <p>Addition</p> <p>SAFETY PRECAUTIONS(Chinese)</p>
Jun., 2014	IB(NA)-0800290-D	<p>Addition</p> <p>Section 2.1, 4.1, 6.2</p> <p>Addition</p> <p>SAFETY PRECAUTIONS (French)</p>
Oct., 2014	IB(NA)-0800290-E	<p>Correction</p> <p>ABOUT THE MANUALS, Section 2.1</p>
Sep., 2015	IB(NA)-0800290-F	<p>Correction</p> <p>Chapter 3</p>

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ABOUT THE MANUALS

The following manuals are also related to this product.
Order them if necessary.

Detailed Manual

Manual name	Manual No. (Model code)
Digital-Analog Converter Module User's Manual CL2DA2-B	SH-080418E (13JP31)

Related Manual

Manual name	Manual No. (Model code)
CC-Link/LT Master Module User's Manual QJ61CL12	SH-080351E (13JR62)
MELSEC-L CC-Link/LT Master Module User's Manual	SH-081012ENG (13JZ65)
CC-Link - CC-Link/LT Bridge Module type AJ65SBT-CLB User's Manual	SH-080362E (13JR63)

COMPLIANCE WITH EMC AND LOW VOLTAGE DIRECTIVES

(1) Method of ensuring compliance

To ensure that Mitsubishi programmable controllers maintain EMC and Low Voltage Directives when incorporated into other machinery or equipment, certain measures may be necessary. Please refer to one of the following manuals.

- User's manual for the CPU module or head module used
- Safety Guidelines

(This manual is included with the CPU module, base unit, or head module)

The CE mark on the side of the programmable controller indicates compliance with EMC and Low Voltage Directives.

(2) Additional measures

No additional measures are necessary for the compliance of this product with EMC and Low Voltage Directives.

1. Overview

This user's manual explains the specifications, names and setting of parts, wiring and others of the CL2DA2-B digital-analog converter module (hereafter abbreviated to the "CL2DA2-B"), which is used as a remote device station in the CC-Link/LT system.

Confirm if the following is included in the package after unpacking.

Item name	Quantity
Digital-Analog Converter Module type CL2DA2-B	1

2. Specifications

2.1 Performance Specifications

The performance specifications of the CL2DA2-B are shown below.
For general specifications, refer to the detailed manual.

Item		Specifications						
Digital input	Voltage	15-bit signed binary (-4096 to 4095)						
	Current	15-bit signed binary (-96 to 4095)						
Analog output	Voltage	-10 to 10V DC (External load resistance 1kΩ to 1MΩ)						
	Current	0 to 20mA DC (External load resistance 0 to 600Ω)						
I/O characteristics, maximum resolution, accuracy (accuracy relative to maximum analog output value)				Accuracy			Max. Resolution	
			Analog output range	Digital input	Ambient temperature 25±5°C*1	Ambient temperature 0 to 55°C		Temperature coefficient*2
		Voltage	-10 to 10V	-4000 to 4000	±0.2% (±20mV)	±0.4% (±40mV)	±80ppm/°C (±0.0080%/°C)	2.5mV
			0 to 10V					
			0 to 5V	0 to 4000	±0.2% (±10mV)	±0.4% (±20mV)		1.25mV
		1 to 5V	1.0mV					
Current	0 to 20mA	0 to 4000	±0.2% (±40μA)	±0.4% (±80μA)	±80ppm/°C (±0.0080%/°C)	5μA		
	4 to 20mA					4μA		
Conversion speed		200μs / 2 channels						
Output short-circuit protection		Available						
Absolute maximum output		Voltage: ±12 V, Current: +21mA						
Number of analog output channels		2 channels / 1 module						
CC-Link / LT station type		Remote device station						
Number of occupied stations		2 stations in 16-point mode*3						

Item	Specifications			
Isolation specifications	Specific isolated area	Isolation method	Dielectric withstand voltage	Insulation resistance
	Across communication system and analog output	Photocoupler isolation, Transformer isolation	500V AC for 1 minute	500V DC 10MΩ
	Across power supply system and analog output			
	Between communication system and power supply system			
	Between channels	Not insulation	–	–
Terminal block <i>plaque à bornes</i>	Direct type 14-point terminal block (M3 screw) <i>Bornier 14-points type direct (vis M3)</i>			
Applicable wire size <i>Taille du fil à utiliser</i>	0.3 to 1.25mm ² <i>0,3 à 1,25 mm²</i>			
Applicable crimping terminal <i>Cosse à sertir à utiliser</i>	RAV1.25-3 (in conformance with JIS C 2805), V1.25-3 (Japan Solderless Terminal Mfg. Co., Ltd.), 1.25-3, TG1.25-3 (NICHIFU TERMINAL INDUSTRIES Co., Ltd.) <i>RAV1.25-3 (selon norme JIS C 2805), V1.25-3 (Japan Solderless Terminal Mfg. Co., Ltd.), 1.25-3, TG1.25-3 (NICHIFU TERMINAL INDUSTRIES Co., Ltd.)</i>			
External interface <i>plaque à bornes</i>	Direct type 14-point terminal block (M3 screw) <i>Bornier 14-points type direct (vis M3)</i>			
Applicable DIN rail	TH35-7.5Fe, TH35-7.5Al (in conformance with IEC 60715)			
Module power supply*4	Voltage	24V DC (20.4V DC to 28.8V DC, ripple ratio: within 5%)		
	Current consumption	170mA		
	Current on startup	470mA		
Protection class	IP2X			
Weight	0.15kg			

*1: Reference accuracy.

*2: Accuracy per temperature change of 1°C.

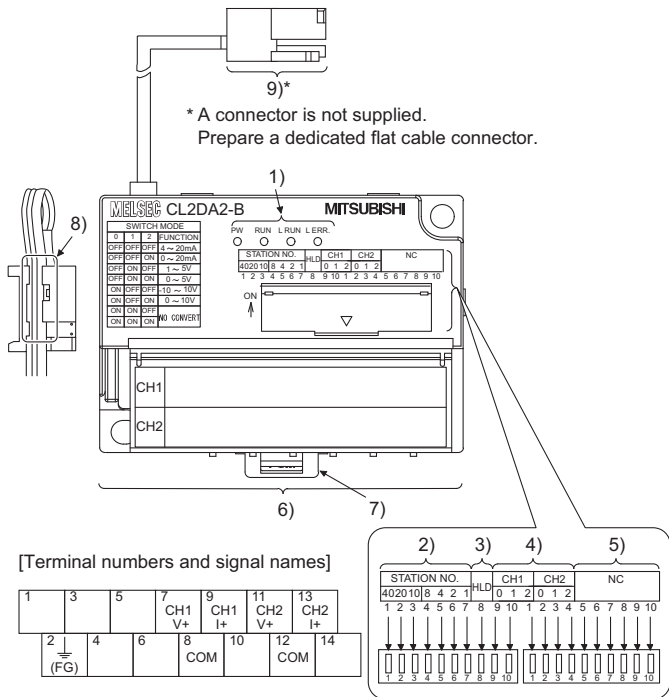
*3: No. of occupied I/O points (No. of occupied stations) differs depending on the last conversion-enabled channel.

*4: Module power is supplied via the dedicated power supply/power supply adapter.

Use the dedicated power supply (CL1PSU-2A) or power supply adapter (CL1PAD1).

3. Names and Setting of Parts

The part names and descriptions of the CL2DA2-B are provided in this section.



No.	Name	Description	
1)	Operation status display LED	PW LED	<p>ON : Power supply on OFF : The power supply is turned off The voltage drop is too large.</p>
		RUN LED	<p>ON : Normal operation Flickering : When the digital setting value is outside the range. The analog output setting switches for all channels are set to be conversion-disabled When the analog output setting switch or the HOLD/CLEAR setting switch has been changed during operation The NC switch is ON. OFF : Watchdog timer error Fault in hardware</p>
		L RUN LED	<p>ON : Normal communication OFF : Communication cutoff (timeout error)</p>
		L ERR. LED	<p>ON : When the digital setting value is outside the range The analog output setting switches for all channels are set to be conversion-disabled. When the analog output setting switch or the HOLD/CLEAR setting switch has been changed during operation Communication cutoff (timeout error) The analog output setting switches for all channels are set to be conversion-disabled. Flickering at regular intervals (0.4s): The station number setting switch was changed after power-on. Flickering at irregular intervals: The terminating resistor has not been attached yet. The module and/or connection cable are affected by noise. OFF : Normal communication</p>

No.	Name	Description																																																																																																														
2)	Station number setting switch	<p>With "10", "20" and "40", set the ten's place of the station number. With "1", "2", "4" and "8", set the one's place of the station number. Always set the station number within the range of 1 to 64. Setting a number other than 1 to 64 generates an error and "L ERR." LED turns on. Duplication of the station number is not allowed. (Factory default: All OFF)</p> <table border="1" data-bbox="363 292 954 710"> <thead> <tr> <th rowspan="2">Station number</th> <th colspan="3">Ten's place</th> <th colspan="4">One's place</th> </tr> <tr> <th>40</th> <th>20</th> <th>10</th> <th>8</th> <th>4</th> <th>2</th> <th>1</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>2</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>3</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>ON</td> </tr> <tr> <td>4</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>:</td> <td>:</td> <td>:</td> <td>:</td> <td>:</td> <td>:</td> <td>:</td> <td>:</td> </tr> <tr> <td>10</td> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>11</td> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>:</td> <td>:</td> <td>:</td> <td>:</td> <td>:</td> <td>:</td> <td>:</td> <td>:</td> </tr> <tr> <td>64</td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>OFF</td> </tr> </tbody> </table> <p>(Example) Set the switches as below when setting the station number to 32:</p> <table border="1" data-bbox="363 787 954 899"> <thead> <tr> <th rowspan="2">Station number</th> <th colspan="3">Ten's place</th> <th colspan="4">One's place</th> </tr> <tr> <th>40</th> <th>20</th> <th>10</th> <th>8</th> <th>4</th> <th>2</th> <th>1</th> </tr> </thead> <tbody> <tr> <td>32</td> <td>OFF</td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>OFF</td> </tr> </tbody> </table>	Station number	Ten's place			One's place				40	20	10	8	4	2	1	1	OFF	OFF	OFF	OFF	OFF	OFF	ON	2	OFF	OFF	OFF	OFF	OFF	ON	OFF	3	OFF	OFF	OFF	OFF	OFF	ON	ON	4	OFF	OFF	OFF	OFF	ON	OFF	OFF	:	:	:	:	:	:	:	:	10	OFF	OFF	ON	OFF	OFF	OFF	OFF	11	OFF	OFF	ON	OFF	OFF	OFF	ON	:	:	:	:	:	:	:	:	64	ON	ON	OFF	OFF	ON	OFF	OFF	Station number	Ten's place			One's place				40	20	10	8	4	2	1	32	OFF	ON	ON	OFF	OFF	ON	OFF
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32	OFF	ON	ON	OFF	OFF	ON	OFF																																																																																																									
3)	HOLD / CLEAR setting switch	<p>Sets whether the analog value is held or cleared when communications are interrupted. (One setting for all channels) OFF : CLEAR ON : HOLD (Factory default: OFF (CLEAR))</p>																																																																																																														

No.	Name	Description																																													
4)	Analog output setting switch	<p>Set the D/A conversion enable/disable selection and the output range for each channel. Set unused channels to be conversion-disabled.</p> <table border="1" data-bbox="324 195 907 578"> <thead> <tr> <th colspan="2" data-bbox="324 195 581 270">Output Range</th> <th colspan="3" data-bbox="581 195 907 231">Setting switches</th> </tr> <tr> <th colspan="2"></th> <th data-bbox="581 231 687 270">0</th> <th data-bbox="687 231 794 270">1</th> <th data-bbox="794 231 907 270">2</th> </tr> </thead> <tbody> <tr> <td data-bbox="324 270 449 310" rowspan="6">Conversion enable</td> <td data-bbox="449 270 581 310">4 to 20mA</td> <td data-bbox="581 270 687 310">OFF</td> <td data-bbox="687 270 794 310">OFF</td> <td data-bbox="794 270 907 310">OFF</td> </tr> <tr> <td data-bbox="449 310 581 349">0 to 20mA</td> <td data-bbox="581 310 687 349">OFF</td> <td data-bbox="687 310 794 349">OFF</td> <td data-bbox="794 310 907 349">ON</td> </tr> <tr> <td data-bbox="449 349 581 388">1 to 5V</td> <td data-bbox="581 349 687 388">OFF</td> <td data-bbox="687 349 794 388">ON</td> <td data-bbox="794 349 907 388">OFF</td> </tr> <tr> <td data-bbox="449 388 581 428">0 to 5V</td> <td data-bbox="581 388 687 428">OFF</td> <td data-bbox="687 388 794 428">ON</td> <td data-bbox="794 388 907 428">ON</td> </tr> <tr> <td data-bbox="449 428 581 467">-10 to 10V</td> <td data-bbox="581 428 687 467">ON</td> <td data-bbox="687 428 794 467">OFF</td> <td data-bbox="794 428 907 467">OFF</td> </tr> <tr> <td data-bbox="449 467 581 506">0 to 10V</td> <td data-bbox="581 467 687 506">ON</td> <td data-bbox="687 467 794 506">OFF</td> <td data-bbox="794 467 907 506">ON</td> </tr> <tr> <td colspan="2" data-bbox="324 506 581 578">Conversion disable</td> <td data-bbox="581 506 687 546">ON</td> <td data-bbox="687 506 794 546">ON</td> <td data-bbox="794 506 907 546">OFF</td> </tr> <tr> <td colspan="2"></td> <td data-bbox="581 546 687 578">ON</td> <td data-bbox="687 546 794 578">ON</td> <td data-bbox="794 546 907 578">ON</td> </tr> </tbody> </table> <p data-bbox="578 588 930 612">(Factory default: All OFF (4 to 20mA))</p>	Output Range		Setting switches					0	1	2	Conversion enable	4 to 20mA	OFF	OFF	OFF	0 to 20mA	OFF	OFF	ON	1 to 5V	OFF	ON	OFF	0 to 5V	OFF	ON	ON	-10 to 10V	ON	OFF	OFF	0 to 10V	ON	OFF	ON	Conversion disable		ON	ON	OFF			ON	ON	ON
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5)	NC	Use prohibited (Not available as the system uses it. Keep it to OFF. If turned ON, the RUN LED will flash.)																																													
6)	Terminal block	Terminal block for I/O signal connections																																													
7)	DIN rail hook	Used to mount the module to the DIN rail.																																													
8)	Cable guide	A guide used for turning the CC-link/LT flat cable for the CL2DA2-B downward.																																													
9)	CC-Link /LT interface connector	Connector for connection of the CC-Link/LT communication line or module power (Sold separately)																																													

4. Loading and Installation

4.1 Handling Precautions

The following is handling precautions for the module.

- (1) Tighten the screws such as module fixing screws within the following ranges.

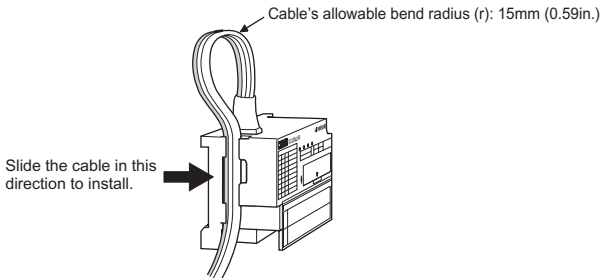
Screw location	Tightening torque range
Module mounting screw (M4 screw)	0.78 to 1.08 N•m
Terminal block terminal screw (M3 screw) <i>Vis de fixation de bornier (vis M3)</i>	0.42 to 0.58 N•m <i>0,42 à 0,58 N•m</i>

- (2) When using a DIN rail, attach the DIN rail taking the following items into consideration:
- (a) Applicable DIN rail types (conform to IEC 60715)
TH35-7.5Fe
TH35-7.5Al
 - (b) Interval between the DIN rail's installation screws
Tighten the screws using a pitch of 200mm (7.87in.) or less when attaching a DIN rail.
- (3) To attach the CL2DA2-B to the DIN rail, press the centerline area of the DIN rail hook beneath the module until a click is heard.
- (4) Maintain some distance between the module and other structures or parts, at least 10mm (0.39in.) from the top and 60mm (2.62in.) from the bottom of the module, in order to ensure ventilation and to make replacement of the module easy if the CL2DA2-B is installed to a panel.
- (5) Install the CL2DA2-B on a level surface.
If the surface is uneven, unnecessary force is applied to the printed circuit board, causing malfunctions.

5. Connection Cable Wiring

For wiring of the cable to be connected between the CL2DA2-B and the CC-Link/LT master module or the AJ65SBT-CLB, refer to the User's Manual of the CC-Link/LT master module or the AJ65SBT-CLB.

- (1) To connect the CL2DA2-B to a VCTF or high flexible cable drop line, the CC-Link/LT flat cable of the CL2DA2-B must be processed to the length of 20cm (7.87in.) or less.
- (2) The CC-Link/LT flat cable of the CL2DA2-B can be wired downward using a cable guide. The minimum allowable bend radius (r) is 15mm (0.59in.).



6. Wiring

6.1 Wiring Precautions

To obtain maximum performance from the functions of CL2DA2-B and improve the system reliability, an external wiring with high protection against noise is required.

The precautions when performing external wiring are as follows:

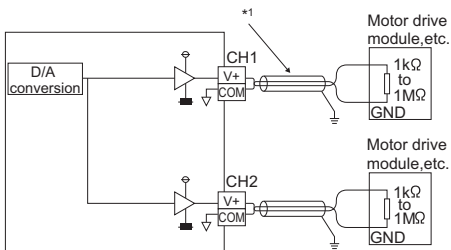
- (1) Use separate cables for the AC and CL2DA2-B external output signals, in order to prevent the AC side surge or induction.
- (2) Do not install cables together the main circuit line, high voltage cables and/or those connected to other than the programmable controller.
Noises, surges, or induction may affect the system.
- (3) Ground the shield wires or shielded cables at one end on the external device side.

6.2 Wiring of Module with External Equipment

Câblage d'un module équipé Ethernet

(1) For voltage output

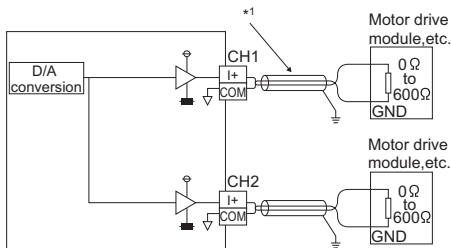
Pour sortie de tension



*1 Use a two-core twisted shield line for the power cable.

English	French
D/A conversion	<i>Coverision N/A</i>
Motor drive module, etc.	<i>Module d'entraînement par moteur, etc.</i>
Use a two-core twisted shield line for the power cable.	<i>Comme câble d'alimentation, utiliser une ligne blindée de fil torsadé à deux âmes.</i>

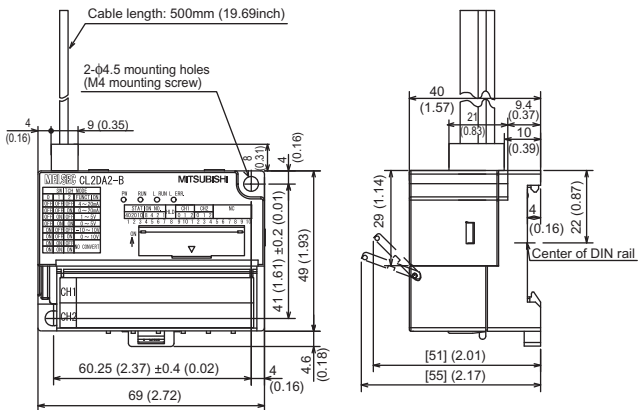
(2) For current output
Pour sortie de courant



*1 Use a two-core twisted shield line for the power cable.

English	French
D/A conversion	<i>Coverision N/A</i>
Motor drive module, etc.	<i>Module d'entraînement par moteur, etc.</i>
Use a two-core twisted shield line for the power cable.	<i>Comme câble d'alimentation, utiliser une ligne blindée de fil torsadé à deux âmes.</i>

7. External Dimensions



unit: mm (inch)

MEMO

Lined writing area consisting of 25 horizontal lines.

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Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi; machine damage or lost profits caused by faults in the Mitsubishi products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi; damages to products other than Mitsubishi products; and to other duties.

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