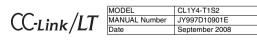


## CL1Y4-T1S2 CC-Link/LT Remote I/O Module

Please read this manual thoroughly before starting to use the product and bandle the product property

# User's Manual



## **•SAFETY PRECAUTIONS**

(Read these precautions before using)

Please read this manual carefully and pay special attention to safely in order to handle this product properly. Also pay careful attention to safely 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 "CAUTION".

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

CAUTION and cause superficial to medium injury, or physical damage only, if not carried out properly.

Depending on circumstances, procedures indicated by ACAUTION 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.

#### IDESIGN PRECAUTIONS

**DANGER** 

 Configure an interlock circuit in a sequence program so that the system operates on the safety side using the communication status information in the event the data link falls into a communication problem.
 Otherwise, erroneous output and malfunction may result in accidents.

 Remote input and output can not be switched ON or OFF when a problem occurs in the remote I/O modules. Therefore build an external monitoring circuit that will monitor any input signals that could cause a serious accident.

## 

 Do not have control cables and connection cables bundled with or placed near by the main circuit and/or power cables. Wire those cables at least 100mm(3.94 inch) away from the main circuit and/or power cables. It may cause malfunction due to noise interference.

 Use the module and the connection cable without applying any force on them.

Otherwise, such cables may be broken or fail.

## [INSTALLATION PRECAUTIONS]

## 

 Use the module in an environment that meets the general specifications contained in this manual. Using this module in an environment outside the range of the general specifications could result in electric shock, fire, erroneous operation, and damage to or deterioration of the product.

- Do not directly touch the module's conductive parts.Doing so could cause malfunction or trouble in the module.
- Tighten the module securely using DIN rail or installation screws within the specified torque range.
- If the screws are too lose, the module may drop from its installation position, short circuit, or malfunction. If the screws are too tight, the screws may be damaged, which may cause the module to drop from its installation position or short circuit.
- Install the module on a flat surface.
- If the mounting surface has concave and/or convex, an excessive force may be applied on the module, and nonconformity may be caused.

## [WIRING PRECAUTIONS]

DANGER
 Perform installation and wiring after disconnecting the power supply at all phases externally. If the power is not disconnected at all phases an electric shock or product damage may result.

## 

Perform correct wiring for the module according to the product's rated voltage and terminal arrangement. Connecting to a power supply different from rating or miss-wiring may cause fire, product failure or malfunction. Fix I/O terminal block securing screws securely within the regulated torque. Loose I/O terminal block securing screws may cause fire and/or malfunction. If the I/O terminal block securing screws are too tight, it may cause short

In the origination of the second stands of the second standstands of the second stands of the second stands of the second

 Attach a warning label (hazard symbol 417-IEC-5036) concerning the electric shock to the location.

## [STARTING AND MAINTENANCE PRECAUTIONS]

Do not touch the terminals when the power is ON. It may cause an electric shock or malfunction.

Perform cleaning the module or retightening of terminal screws after turning OFF the all external power supply for sure. Failure to do so may cause failure or malfunction of the modules

## **≜** CAUTION

Do not disassemble or modify the module. Doing so may cause failure, malfunction, injury, or fire.

 The module case is made of resin; do not drop it or subject it to strong shock. A module damage may result.

 Make sure to switch all phases of the external power supply OFF before installing or removing the module to/from the panel. Failure to do so may cause failure or malfunction of the modules.

#### [DISPOSAL PRECAUTIONS]

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

#### TRANSPORTATION AND MAINTENANCE PRECAUTIONS

## 

 During transportation avoid the impact which exceeds a regulated value as the module is a precision instrument. Doing so could cause trouble in the module.

It is necessary to check the operation of module after transportation, in case
of any impact damage

Otherwise, causes the damage of the machine and the accident.

### Note Concerning the CE Marking

This note does not guarantee that an entire mechanical module produced in accordance with the contents of the notification comply with the following standards. Compliance to EMC standards of the entire mechanical module should be checked by the user / manufacturer.

#### Standards with which this product complies

Type : Programmable Controller (Open Type Equipment) Remote I/O module Models : Products manufactured:

from February 1st, 2004 to April 30th, 2006 are compliant with EN61000-6-4 and EN61131-2:1994+A11:1996+A12:2000 after May 1st. 2006 are compliant with EN61131-2:2003

Electromagnetic Compatibility Standards (EMC)	Remark			
EN61000-6-4:2001 Electromagnetic compatibility -Generic standards - Emission standard for Industrial environment	Compliance with all relevant aspects of the standard. (Radiated Emissions and Mains Terminal Voltage Emissions)			
EN61131-2:1994/A11:1996/A12:2000 Programmable controllers -Equipment requirements and tests	Compliance with all relevant aspects of the standard. (RF Immunity, Fast transients, ESD and Damped oscillatory wave)			
EN61131-2: 2003 Programmable controllers -Equipment requirements and tests	Compliance with all relevant aspects of the standard. (Radiated Emissions, Mains Terminal Voltage Emissions, RF immunity, Fast Transients, ESD, Surge, Voltage drops and interruptions, Conducted and Power magnetic fields)			
For more details please contact the local Mitsubishi Electric sales site. - Notes For compliance to EMC regulation.				

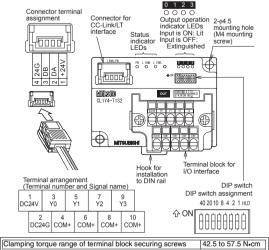
It is necessary to install the CL1 series module in a shielded metal control panel.

## 1. Outline of Product

This product is a spring clamp terminal block type output module connected to CC-Link/LT. This product has four output points (transistor output)



## 2. Name and Setting of Each Part and Terminal Arrangement



Description PW ON while the power is supplied. L RUN ON while normal operation is executed. ON:When a communication error or DIP switch setting error occurred Flickering at a constant interval: When the setting of the DIP switch was changed Status indicator while the power was supplied (even while the LED is L ERR. flickering, the operation continues. The new setting becomes valid when the power is turned OFF once then ON again ) Elickering at a intermittent interval When a terminal resistor is not attached or when the module or a connection cable is affected by noise ON while the output is ON 0 1 2 3 Output operation Extinguished while the output is OFF. 0 0 0 C indicator LEDs Output operation indicator Connector for CC-Link/LT communication line/module power Interface upply (24G/DB/DA/+24V) Terminal block Spring clamp terminal block to connect output signals and for I/O interface load power supply Set the 10's digit of the station No. using "STATION NO. 10", "STATION NO. 20" and "STATION NO. 40". Set the 1's digit of the station No. using "STATION NO. 1", "STATION NO. 2", "STATION NO. 4" and "STATION NO. 8". Factory default = All bits are OFF. Make sure to set the station No. in the range from 1 to 64. If any station No. outside the range from 1 to 64 is set, it is regarded as an error and the L ERR. LED lights. DIP switch Example: When setting the station No. to "32", set the DIP switch as follows

		Station	1	10's digit		1's digit			
		No.	40	20	10	8	4	2	1
		32	OFF	ON	ON	OFF	OFF	ON	OFF
Holds the output (when an error has occurred HLD ON: Holds the output. OFF: Clears the output.							rred).		

\* Set up using a slotted screwdriver with a tip width of 0.9 mm or less.

## 3. Installation

The CL1Y4-T1S2 can be installed to DIN rail or directly installed using mounting screws.

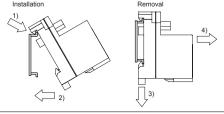
Each installation procedure is described below

## 3.1 Installation to DIN rail

When installing the module, align the upper DIN rail installation groove on the module with the DIN rail 1), and press the module on to the DIN rail 2). When removing the module, pull the hook downward for installation to DIN rail 3), then remove the module 4).

#### DIN rail mounting screw pitch

When installing the module to the DIN rail, tighten the mounting screws at the pitch of 200mm(7.87") or less.



## Applicable DIN rail |TH35-7.5Fe and TH35-7.5Al

#### 3.2 Direct installation

Screw-tighten the module by attaching M4 screws to the upper and lower mounting holes (two holes in all) provided in the module. Install the module so that the clearance of 1 to 2mm (0.04" to 0.08") is assured for each module.

Applicable screw (Tightening torque range: 78 to 108 N-cm)

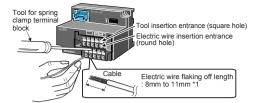
## 4. Wiring

### 4.1 Wiring operation of cable

1) Installation of cable

Insert the tool for spring clamp terminal block in the tool insertion entrance of CL1Y4-T1S2 (square hole) up to the interior surely.

Insert the electric wire in the electric wire insertion entrance (round hole) with the tool for spring clamp terminal block inserted, and pull out the tool. Confirm the light pull of the electric wire after the tool is pulled out, and clamping surely.



\*1 When the electric wire flaking off length is too long, an electric shock or short-circuited between the adjoining terminals may result. It is likely not to come in contact surely when the electric wire flaking off length is too short.

## 2) Detaching of cable

Insert the tool for spring clamp terminal block in the tool insertion entrance of the detached terminal number (square hole) up to the interior surely, and pull out the electric wire.

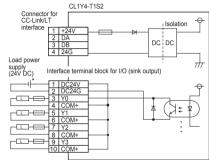
## 3) Acceptable electric wire

tem	Specification
Size of acceptable electric wire	0.3 to 1.5 mm <sup>2</sup> (AWG22 to 16)
Electric wire flaking off length	8(0.32") to 11(0.43") mm

Clamping torque range of terminal block se

### 4.2 External wiring

The output terminals of the CI 1Y4-T1S2 are fixed to the sink output



Specifications	

5.1 General specifications

Item	Specification					
Ambient working temperature	0 to 55°C (32 to 131°F)					
Ambient storage temperature	-25 to 75°C	-25 to 75°C (-13 to 167°F)				
Ambient operating humidity	5 to 95%RH: Dew condensation shall not be considered.					
Ambient storage humidity	5 to 95%RH: Dew condensation shall not be considered.					
	When interm	nittent vibratio	n is present	Number of times of sweep		
	Frequency	Acceleration	Half amplitude			
	10 to 57Hz	-	0.075mm			
Vibration resistance	57 to 150Hz	9.8m/s <sup>2</sup>	-	10 times in each of		
resistance	When contin	uous vibratio	X, Y and Z directions			
	Frequency	Acceleration	Half amplitude	(for 80 min)		
	10 to 57Hz	-	0.035mm			
	57 to 150Hz	4.9m/s <sup>2</sup>	-			
Impact resistance	147 m/s², 3	147 m/s <sup>2</sup> , 3 times in each of X, Y and Z directions				
Operating atmosphere	Corrosive ga	as shall not be	e present.			
Operating altitude	2,000m(656	1'8") or less (	*1)			
Installation place	Inside control panel (*2)					
Over-voltage category	II or less (*3)					
Degree of contamination	2 or less (*4	)				

Notes:

- \*1 The module cannot be used in an environment pressurized above the atmospheric pressure which can be generated around the altitude of 0 m. If the module is used in such an environment, it may fail.
- \*2 The module can be used in any environment even outside the control panel as far as the requirements of the ambient operating temperature, the ambient operating humidity, etc. are satisfied.
- \*3 This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises. Category II applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300V is 2500V.
- \*4 This index indicates the degree of conductive generating substances in the environment in which the module is used. The degree of contamination 2 indicates that contamination is caused by generation of only non-conductive

substances In this degree, however, temporary conduction may be caused by accidental condensation.

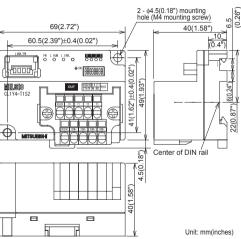
### 5.2 Output specifications

lte	əm	Specification		
Output metho	bd	Transistor output (Load power supply) (sink)		
Number of ou	Itputs	4 points		
Isolation met	hod	Isolation with photocoupler		
Rated load vo	oltage	12/24V DC		
Operating loa range	d voltage	10.2 to 28.8 VDC (Ripple ratio: Within 5%)		
Max. load cur	rent	0.1A/point, 0.4 A/1 common		
Max. inrush c	urrent	0.4A/10 ms		
Leakage current at OFF		0.1mA or less/30V DC		
Max. voltage drop at ON		0.3V or less (typical)/0.1A		
wax. voitage	urop at ON	0.6V or less (max.)/0.1A		
Response	OFF→ON	1.0ms or less		
time	ON→OFF	1.0ms or less		
Surge suppre	ssion	Zener diode		
Common wiri	ng method	4 points/1 common (4 points)		
Common wiring method		(terminal block two-wire type)		
Internal prote	ction for	Internal protection circuit none		
outputs		Please connect the fuse in the connected load		
		outside.		

## 5.3 Performance specifications

	ltem	Specification		
	Voltage	20.4 to 28.8V DC (24V DC -15% to +20%) Ripple ratio: Within 5%		
Module	Current consumption	60mA (when all points are ON)		
power supply	Initial current	70mA		
Suppry	Max. allowable momentary power failure period	PS1:1ms		
Number of stations occupied		4-, 8- or 16-point mode: 1 station		
Noise durability Withstand voltage		500Vp-p Noise width: 1µs Cycle: 25 to 60 Hz (by noise simulator)		
		500V AC for 1 min between primary area (external DC terminal) and secondary area (internal circuit)		
Isolation resistance		10 MΩ or more between primary area (external DC terminal) and secondary area (internal circuit) by 500V DC megger		
Protection	on class	IP2X		
I/O part connection method		Connection with spring clamp terminal block		
Module installation method		DIN rail installation, mounted by screws of type $M4 \times 0.7mm(0.03") \times 16mm(0.63")$ or larger Can be installed in six directions		
Mass (weight)		0.06kg (0.13lbs)		

## 6. Outside Dimensions



This manual confers no industrial property rights or any rights of any other kind, nor does it confer any patent licenses. Mitsubishi Electric Corporation cannot be held responsible for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual.

#### Warrantv

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.

## For safe use

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- · Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi. This product has been manufactured under strict quality control. However when
- installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

Country/Re	gion Sales office/Tel	Country/Regi	on Sales office/Tel
U.S.A.	Mitsubishi Electric Automation, Inc. 500 Corporate Woods Parkway, Vernon Hills, IL 60061 U.S.A. Tel: +1-847-478-2100	Hong Kong	Mitsubishi Electric Automation (Hong Kong) Ltd. 10th Floor., Manulife Tower, 169 Electric Road, North Point, HongKong
Brazil	MELCO-TEC Av. Paulista 1439, conj.74, Bela Vista CEP: 01311-200 Sao Paulo-SP-Brazil Tel + 455-11-3285-1840	China	Tel : +852-2887-8870 Mitsubishi Electric Automation (Shanghai) Ltd. 17F. ChuanoXing Financial Center.
Germany	Mitsubishi Electric Europe B.V. German Branch Gothaer Strasse 8. D-40880 Ratingen.		No. 288 West Nanjing Road, Shanghai China 200003 Tel : +86-21-2322-3030
	Germany Tel : +49-2102-486-0	Taiwan	Setsuyo Enterprise Co., Ltd. 6F No.105 Wu Kung 3rd RD, Wu-Ku
U.K.	Mitsubishi Electric Europe B.V. UK Branch	Korea	Hsiang, Taipei Hsien, 248, Taiwan Tel : +886-2-2299-2499 Mitsubishi Electric Automation Korea Co
	Travellers Lane, Hatfield, Hertfordshire., AL10 8XB, U.K. Tel : +44-1707-276100	Rolea	Ltd. 3F, 1480-6, Gayang-Dong, Gangseo-Gu
Italy	Mitsubishi Electric Europe B.V. Italian Branch	Cianana	Seoul, 157-200, Korea Tel : +82-2-3660-9552 Mitsubishi Electric Asia Pte. Ltd.
	VIALE COLLEONI 7-20041 Agrate Brianza (Milano), Italy Tel : +390-39-60531	Singapore	307 Alexandra Road #05-01/02 Mitsubishi Electric Building,
Spain	Mitsubishi Electric Europe B.V. Spanish Branch		Singapore 159943 Tel : +65-6470-2460
	Ctra. de Rub 76-80-AC. 420, E-08190 Sant Cugat del Valles (Barcelona), Spain Tel : +34-93-565-3131	Thailand	Mitsubishi Electric Automation (Thailand Co., Ltd. Bang-Chan Industrial Estate No.111,
France	Mitsubishi Electric Europe B.V. French Branch		Soi Serithai 54, T.Kannayao, A.Kannayao, Bangkok 10230 Tel : +66-2-517-1326
	25, Boulevard des Bouvets, F-92741 Nanterre Cedex, France Tel: +33-1-55685568	India	Messung Systems Pvt. Ltd. Sapphire House EL-3 J-Block MIDC Bhosari Pune 411026. India
Russia	Mitsubishi Electric Europe B.V. Moscow Representative Office	Australia	Tel : +91-20-27102000 Mitsubishi Electric Australia Ptv. Ltd.
	52, bld. 5, Kosímodamianskaya nab, RU-115054, Moscow, Russia Tel: +7-495-721-2070	Australia	348 Victoria Road, Rydalmere, N.S.W 2116, Australia Tel : +61-2-9684-7777
	0	South Africa	Tel : +61-2-9684-7777 Circuit Breaker Industries Ltd. Private Bag 2016, ZA-1600 Isando, South Africa Tel : +27-11-9282000
- 🙏 N	/ITSUBISHI ELEC <sup>-</sup>	TRIC C	ORPORATION

HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN HIMEJI WORKS : 840, CHIYODA CHO, HIMEJI, JAPAN

When exported from Japan, this manual does not require application to the Ministry of Economy Trade and Industry for service transaction permission.



CL1Y4-T1S2

## CC-Link/LT Remote I/O Module

Please read this manual thoroughly before starting to use the product and handle the product properly

User's Manual

## MODEL CL1Y4-T1S2 MANUAL Number JY997D10901E Date September 2008 CC-Link/LT September 2008

## **•SAFETY PRECAUTIONS•**

(Read these precautions before using) Please read this manual carefully and pay special attention to safely in order to handle this product properly. Also pay careful attention to safely 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 "CAUTION". Procedures which may lead to a dangerous condition and cause death or serious injury if not carried out DANGER

properly. Procedures which may lead to a dangerous condition and cause superficial to medium injury, or physical damage only, if not carried out properly. 

Depending on circumstances, procedures indicated by 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]

**DANGER** 

Configure an interlock circuit in a sequence program so that the system operates on the safety side using the communication status information in the event the data link falls into a communication problem. Otherwise, erroneous output and malfunction may result in accidents. Remote input and output can not be switched ON or OFF when a problem occurs in the remote I/O modules. Therefore build an external monitoring circuit that will monitor any input signals that could cause a serious accident.

# 

Do not have control cables and connection cables bundled with or placed near by the main circuit and/or power cables. Wire those cables at least 100mm(3.94 inch) away from the main circuit and/or power cables. It may cause malfunction due to noise interference. Use the module and the connection cable without applying any force on them

Otherwise, such cables may be broken or fail. [INSTALLATION PRECAUTIONS]

# 

Use the module in an environment that meets the general specifications contained in this manual. Using this module in an environment outside the range of the general specifications could result in electric shock, fire erroneous operation, and damage to or deterioration of the product. Do not directly touch the module's conductive parts.Doing so could cause malfunction or trouble in the module.

- Tighten the module securely using DIN rail or installation screws within
- I ignite the module securely using DIN rail or installation screws within the specified torque range. If the screws are too lose, the module may drop from its installation position, short circuit, or malfunction. If the screws are too tight, the screws may be damaged, which may cause the module to drop from its installation position or short circuit.

Install the module on a flat surface.

If the mounting surface has concave and/or convex, an excessive force may be applied on the module, and nonconformity may be caused.

## WIRING PRECAUTIONS

Perform installation and wiring after disconnecting the power supply at all phases externally. If the power is not disconnected at all phases an electric shock or product damage may result.

# 

CAU I ION
 Perform correct wiring for the module according to the product's rated voltage and terminal arrangement. Connecting to a power supply different from rating or miss-wiring may cause fire, product failure or malfunction.
 Fix I/O terminal block securing screws may cause fire and/or malfunction. If the I/O terminal block securing screws may cause fire and/or malfunction. If the I/O terminal block securing screws are too tight, it may cause short circuit or eroneous operation due to damage of the screws.
 Make sure foreign objects do not get inside the module, such as dirt and wire chips. It may cause fire, product failure or malfunction.
 Attach a warning label (hazard symbol 417-IEC-5036) concerning the electric shock to the location.

[STARTING AND MAINTENANCE PRECAUTIONS]

# DANGER

Do not touch the terminals when the power is ON. It may cause an electric shock or malfunction. Perform cleaning the module or retightening of terminal screws after turning OFF the all external power supply for sure. Failure to do so may cause failure or malfunction of the modules

# 

Do not disassemble or modify the module. Doing so may cause failure, malfunction, injury, or fire.

The module case is made of resin; do not drop it or subject it to strong shock. dule damage may result.

A module damage may result. Make sure to switch all phases of the external power supply OFF before installing or removing the module to/from the panel. Failure to do so may cause failure or malfunction of the modules.

# **[DISPOSAL PRECAUTIONS]**

♦ DANGER	
When disposing of this product, treat it as industrial waste.	
TRANSPORTATION AND MAINTENANCE PRECAUTIONS]	
▲ CAUTION	
<ul> <li>During transportation avoid the impact which exceeds a regu the module is a precision instrument. Doing so could cause to module.</li> </ul>	
<ul> <li>It is necessary to check the operation of module after transpo of any impact damage.</li> <li>Otherwise, causes the damage of the machine and the accid</li> </ul>	
Note Concerning the CE Marking	
This note does not guarantee that an entire mechanical mod accordance with the contents of the notification comply wi standards of the entire mod	ith the following

should be checked by the user / manufacturer Standards with which this product complies

Type : Programmable Controller (Open Type Equipment) Remote I/O module Models : Products manufactured: from February 1st, 2004 to April 30th, 2006 are compliant with EN61000-6-4 and EN61131-2:1994+A11:1996+A12:2000

after May 1st, 2006 are compliant with EN61131-2:2003				
Electromagnetic Compatibility Standards (EMC)	Remark			
EN61000-6-4:2001 Electromagnetic compatibility -Generic standards - Emission standard for Industrial environment	Compliance with all relevant aspects of the standard. (Radiated Emissions and Mains Terminal Voltage Emissions)			
EN61131-2:1994/A11:1996/A12:2000 Programmable controllers -Equipment requirements and tests	Compliance with all relevant aspects of the standard. (RF Immunity, Fast transients, ESD and Damped oscillatory wave)			
EN61131-2: 2003 Programmable controllers -Equipment requirements and tests	Compliance with all relevant aspects of the standard. (Radiated Emissions, Mains Terminal Voltage Emissions, RF immunity, Fast Transients, ESD, Surge, Voltage drops and interruptions, Conducted and Power magnetic fields)			
For more details please contact the local Mit - Notes For compliance to EMC regulation. It is necessary to install the CL1 series modu				

It is r

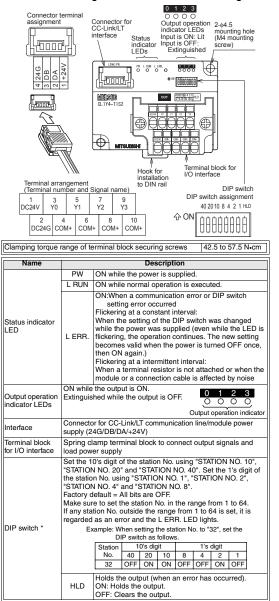
## 1. Outline of Product

# This product is a spring clamp terminal

block type output module connected to CC-Link/LT. This product has four output points (transistor output)



## 2. Name and Setting of Each Part and Terminal Arrangement



\* Set up using a slotted screwdriver with a tip width of 0.9 mm or less

## 3. Installation

The CL1Y4-T1S2 can be installed to DIN rail or directly installed using mounting screws

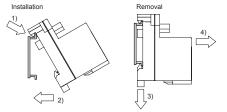
Each installation procedure is described below

## 3.1 Installation to DIN rail

When installing the module, align the upper DIN rail installation groove on the module with the DIN rail 1), and press the module on to the DIN rail 2). When removing the module, pull the hook downward for installation to DIN rail 3), then remove the module 4).

## DIN rail mounting screw pitch

When installing the module to the DIN rail, tighten the mounting screws at the pitch of 200mm(7.87") or less.



## Applicable DIN rail TH35-7.5Fe and TH35-7.5AI

## 3.2 Direct installation

Screw-tighten the module by attaching M4 screws to the upper and lower mounting holes (two holes in all) provided in the module. Install the module so that the clearance of 1 to 2mm (0.04" to 0.08") is assured for each module.

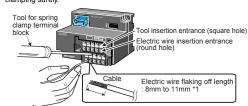
M4 × 0.7mm(0.03") × 16mm(0.63") or more Applicable screw (Tightening torque range: 78 to 108 N·cm)

## 4. Wiring

## 4.1 Wiring operation of cable

1) Installation of cable

Insert the tool for spring clamp terminal block in the tool insertion entrance of CL1Y4-TIS2 (square hole) up to the interior surely. Insert the electric wire in the electric wire insertion entrance (round hole) with the tool for spring clamp terminal block inserted, and pull out the tool. Confirm the light pull of the electric wire after the tool is pulled out, and clamping surely.



\*1 When the electric wire flaking off length is too long, an electric shock or short-circuited between the adjoining terminals may result. It is likely not to come in contact surely when the electric wire flaking off

## length is too short. 2) Detaching of cable

Insert the tool for spring clamp terminal block in the tool insertion entrance of the detached terminal number (square hole) up to the interior surely, and pull out the electric wire.

## 3) Acceptable electric wire

tem	Specification
Size of acceptable electric wire	0.3 to 1.5 mm <sup>2</sup> (AWG22 to 16)
Electric wire flaking off length	8(0.32") to 11(0.43") mm

## 4.2 External wiring

## The output terminals of the CL1Y4-T1S2 are fixed to the sink output.

CL1Y4-T1S2	
Connector for CC-Link/LT interface 1 +24V 2 DA 3 DB 4 24G DC DC	-
Load power supply (24V DC) Interface terminal block for I/O (sink output)	-
$\begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} $	-

# 5. Specifications

Notes

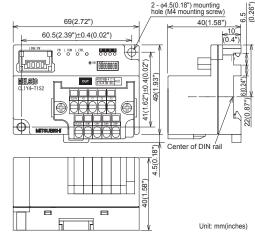
51	Conoral	enecification	•

Item	Specification				
Ambient working temperature	0 to 55°C (32 to 131°F)				
Ambient storage temperature	-25 to 75°C (-13 to 167°F)				
Ambient operating humidity	5 to 95%RH: Dew condensation shall not be considered.				
Ambient storage humidity	5 to 95%RH: Dew condensation shall not be considered.				
	When intermittent vibration is present			Number of times of sweep	
	Frequency	Acceleration	Half amplitude		
	10 to 57Hz	-	0.075mm		
Vibration	57 to 150Hz	9.8m/s <sup>2</sup>	-	10 times in each of	
resistance	When continuous vibration is present X, Y and Z directions				
	Frequency	Acceleration	Half amplitude	(for 80 min)	
	10 to 57Hz	-	0.035mm	1	
	57 to 150Hz	4.9m/s <sup>2</sup>	-		
Impact resistance	147 m/s <sup>2</sup> , 3 times in each of X, Y and Z directions				
Operating atmosphere	Corrosive gas shall not be present.				
Operating altitude	2,000m(6561'8") or less (*1)				
Installation place	Inside control panel (*2)				
Over-voltage category	II or less (*3)				
Degree of contamination	2 or less (*4)				

Item		Specification		
Output method		Transistor output (Load power supply) (sink)		
Number of outputs		4 points		
Isolation method		Isolation with photocoupler		
Rated load voltage		12/24V DC		
Operating load voltage range		10.2 to 28.8 VDC (Ripple ratio: Within 5%)		
Max. load current		0.1A/point, 0.4 A/1 common		
Max. inrush current		0.4A/10 ms		
Leakage current at OFF		0.1mA or less/30V DC		
Max. voltage drop at ON		0.3V or less (typical)/0.1A 0.6V or less (max.)/0.1A		
Response	OFF→ON	1.0ms or less		
time	ON→OFF	1.0ms or less		
Surge suppre	ession	Zener diode		
Common wiring method		4 points/1 common (4 points) (terminal block two-wire type)		
Internal protection for outputs		Internal protection circuit none Please connect the fuse in the connected loa outside.		

#### Specification Item 20.4 to 28.8V DC (24V DC -15% to +20%) Voltage Ripple ratio: Within 5% Current 60mA (when all points are ON) Module consumption Initial current 70mA upply Max. allowable PS1:1ms nomentary power failure period Number of stations 4-, 8- or 16-point mode: 1 station ccupied 500Vp-p Noise durability Noise width: 1µs Cycle: 25 to 60 Hz (by noise s

# 6. Outside Dimensions



is manual confers no industrial property rights or any rights of any other kind, no es it confer any patent licenses. Mitsubishi Electric Corporation cannot be hel ponsible for any problems involving industrial property rights which may occur a a result of using the contents noted in this manual.

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

module is used in such an environment, it may fail.

pheric pressure which can be generated around the altitude of 0 m. If the

\*2 The module can be used in any environment even outside the control panel as far as the requirements of the ambient operating temperature, the ambient operating humidity, etc. are satisfied.

\*1 The module cannot be used in an environment pressurized above the

\*3 This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises. Category II applies to equipment for which electrical power is supplied from fixed facilities.

The surge voltage withstand level for up to the rated voltage of 300V is 2500V.

\*4 This index indicates the degree of conductive generating substances in the environment in which the module is used. The degree of contamination 2 indicates that contamination is caused by generation of only non-conductive substances

In this degree, however, temporary conduction may be caused by accidental condensation.

Withstand voltage	500V AC for 1 min between primary area (external DC terminal) and secondary area (internal circuit)		
Isolation resistance	10 $M\Omega$ or more between primary area (external DC terminal) and secondary area (internal circuit) by 500V DC megger		
Protection class	IP2X		
I/O part connection method	Connection with spring clamp terminal block		
Module installation method	DIN rail installation, mounted by screws of type $M4 \times 0.7mm(0.03") \times 16mm(0.63")$ or larger Can be installed in six directions		
Mass (weight)	0.06kg (0.13lbs)		

- For safe use This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
   Before using the product for special purposes such as nuclear power, electric power aerospace, medicine or passenger movement vehicles, consult with Mitsubishi.
   This product has been manufactured under strict quality control. However when
- installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

Country U.S.A.

Brazil

U.K

Italy

France

y/Region Sales office/Tel	Country/Region Sales office/Tel					
Mitsubishi Electric Automation, Inc. 500 Corporate Woods Parkway, Vernon Hills, IL 60061 U.S.A. Tel : +1-847-478-2100 MELCO-TEC	Hong Kong	Mitsubishi Electric Automation (Hong Kong) Ltd. 10th Floor, Manulife Tower, 169 Electric Road, North Point, HongKong Tel: + 852-2887-8870				
Av. Paulista 1439, conj.74, Bela Vista CEP: 01311-200 Sao Paulo-SP-Brazil Tel : +55-11-3285-1840 Mitsubishi Electric Europe B.V. German Branch Gothare Strasse 8. D-40880 Ratingen.	China	Mitsubishi Electric Automation (Shanghai) Ltd. 17F, ChuangXing Financial Center, No. 288 West Nanjing Road, Shanghai China 200003 Tel + t86-21-2322-3030				
Germany Tel : +49-2102-486-0 Mitsubishi Electric Europe B.V. UK Branch	Taiwan	Setsuyo Enterprise Co., Ltd. 6F No.105 Wu Kung 3rd RD, Wu-Ku Hsiang, Taipei Hsien, 248, Taiwan Tel : +886-2-2299-2499				
Travellers Lane, Hatfield, Hertfordshire., AL10 8XB, U.K. Tel: +44-1707-276100 Mitsubishi Electric Europe B.V. Italian Branch	Korea	Mitsubishi Electric Automation Korea Co., Ltd. 3F, 1480-6, Gayang-Dong, Gangseo-Gu, Seoul, 157-200, Korea Tel : +82-2-3660-9552				
braikan VIALE COLLEONI 7-20041 Agrate Brianza (Milano), Italy Tei : +390-39-60531 Mitsubishi Electric Europe B.V. Spanish Branch	Singapore	Mitsubishi Electric Asia Pte, Ltd. 307 Alexandra Road #05-01/02 Mitsubishi Electric Building, Singapore 159943 Tel : +65-6470-2460				
Ctra. de Rub 76-80-AC. 420, E-08190 Sant Cugat del Valles (Barcelona), Spain Tel : +34-93-565-3131 Mitsubishi Electric Europe B.V. French Branch	Thailand	Mitsubishi Electric Automation (Thailand) Co., Ltd. Bang-Chan Industrial Estate No.111, Soi Serithai 54, T.Kannayao, A.Kannayao, Bangkok 10230 Tel : +66-2-517-1326				
25, Boulevard des Bouvets, F-92741 Nanterre Cedex, France Tei: +33-1-55685568 Mitsubishi Electric Europe B.V. Moscow	India	Messung Systems Pvt. Ltd. Sapphire House EL-3 J-Block MIDC Bhosari Pune 411026, India Tel : +91-20-27102000				
Representative Office 52, bld. 5, Kosimodamianskaya nab, RU-115054, Moscow, Russia Tel: +7-495-721-2070	Australia	Mitsubishi Electric Australia Pty. Ltd. 348 Victoria Road, Rydalmere, N.S.W 2116, Australia Tel : +61-2-9684-7777				
	South Africa	Circuit Breaker Industries Ltd. Private Bag 2016, ZA-1600 Isando, South Africa Tel : +27-11-9282000				
MITCUPICUL EL COTDIO CODDODATION						

## **MITSUBISHI ELECTRIC CORPORATION**

E : TOKYO E KS : 840 CH

When exported from Japan, this manual does not require application to the Ministry of Economy, Trade and Industry for service transaction permission.