VC SERIES MODELS
FOR CC-LINK

OPERATING INSTRUCTIONS
VERSION 1.4

NIKKI DENSO CO., LTD.

Manual No. TIE-13040D

INTRODUCTION

About this manual:

This manual describes about CC-Link related information of the Nikki Denso's VC Series of AC Servo Drivers and AC Servo Controllers that comply with the Open Field Network CC-LINK Version 1.10. The contents of this manual are applicable to the software of VC-D, VC-C1 and VC-C6 on and after version 1.50.

In this manual input/output is mentioned from the viewpoint of the master station, and signals of the VC Series to or from the master station are referred to as remote input/output signals. Therefore, please be noted that the directions of input and output are reversed from those described in other manuals.

This manual consists of eight chapters and one appendix:

Chapter 1: Outlines the VC Series, including the features and the network configuration for CC-Link and the VC Series system configuration.

Chapter 2: Describes about the CC-Link Interfaces of the VC Series, including connectors, LEDs and switches. Input and output data controlled by the CC-Link Interfaces are also described.

Appendix1: Provides the CC-Link specifications of the VC Series models and their setup data[MA1].

Appendix2: Provides a list of CC-Link related alarms and warnings on the VC Series.

Appendix3: Provides a list of CC-Link related parameters associated with the VC Series models.

Appendix4: Provides a list of CC-Link related self-diagnostic information of the VC Series models

Appendix5: Provides a list of input/output control signals and their availabilities in CC-Link.

Appendix6: Provides the external dimensions of the VC Series models.

Appendix7: Introduces an application of the VC Series connected with Mitsubishi MELSEC Q Series Sequencer.

Other manuals to be referenced:

For other information of the VC Series, refer to the other manuals that Include:

(2) Operating instructions for individual VC Series models: Each manual describes the specifications, installations, wirings, signals, operation modes, maintenance, self-diagnosis, forced jog, abnormal statuses, system configuration, LCD display

and operations, parameters, indirect data, and commands of an individual model of the VC Series.

(3) "Operating Instructions for VC Series Data " describes the data used in the VC Series models for networking with CC-Link.

(4) "Operating Instructions for VC Series Commands" describes the commands used for the VC Series models.

For master station to be connected with the VC Series models, refer to the manuals prepared for the master station.

As to warranty period:

The Product is warranted for one year after the shipment from our factory. No warranty, however, shall be provided for any defects and/or abnormalities due to:

(1) Any alteration of the Product that has been made by other than Nikki Denso

(2) Any use of the Product according to other than specified in this manual.

(3) Any natural disaster

(4) Connection with any product other than those that Nikki Denso clearly approved to use.

In case any defect or abnormality should happen during the warranty period, please contact your Nikki Denso sales representative.

When unpacking, please check the external appearance of the Product for no abnormality and confirm that all items of the Product including accessories are properly provided in the package. In case any abnormality on the Product or excess or deficiency of the items is observed, do not use the Product as it is and contact your Nikki Denso sales representative.

SAFETY PRECAUTIONS

Before using the Product (including installation, wiring, operation, inspection and maintenance, trouble-shooting and countermeasures), please read this manual and other related manuals carefully to familiarize yourself with the Product for safe and proper use. Keep this manual at hand to make it available anytime.

In this manual, the information to secure your safety is provided by signal words "Danger" or "Caution" and the information to prevent Product damages is given by signal words "Do Not" or "Must" together with their associated symbols as explained below. Please read and fully understand the meanings of these signals.

DANGER[MA3]: Represents that the misuse of the Product by ignoring this warning will cause serious personal injury or death.

CAUTION: Represents that the misuse of the Product by ignoring this caution can or will cause minor or moderate personal injury or property damage.

PROHIBITED: Represents that the misuse of the Product by ignoring this prohibition can or will cause the malfunction of the Product.

MANDATORY: Represents that the misuse of the Product by ignoring this instruction can or will cause the malfunction of the Product properly.

Precautions in Use

DANGER[MA5]

To prevent electrical shock:

(1) NEVER touch the inside or terminal block of the Product.

(2) Be sure to ground the Product and the motor by using the ground terminal or lead with diameter equal to or larger than the specified in this manual (grade 3 or higher grounding).

(3) Be sure to turn off the power before moving, wiring, maintenance or inspection of the Product, and ensure that no residual voltage exists among main direct current circuits (DC bus within the Product) by using tester, or allow at least three minutes after the power off.

(4) Never damage, bend, pull, twist, or put something heavy on the cables.

To prevent personal injury:

(1) NEVER touch any moving portion of the motor during operation.

CAUTION

To prevent fire hazard or machine failures:

(1) The Product and the motor must be used in any of the specified combinations.

(2) NEVER use the Product in an environment subject to splashes, or corrosive or flammable gas, or near any combustibles.

To prevent burn:

(1) DO NOT touch the motor, Product and peripheral equipment that will reach high temperature while the power is turned on.

(2) DO NOT touch the motor, radiator, and regenerative unit for a while after the power is turned off as those parts may have reached high temperature.

PROHIBITED

To prevent machine failures:

(1) NEVER perform pressure test or mega test on the Product.

Precautions in Unpacking and Inspection

CAUTION
To prevent electric shock or other personal injuries, or fire hazard or machine damages:
(1) Confirm the contents in the package are those you have ordered. If there is any excess or shortage, DO NOT use them as they are, and contact your Nikki Denso sales representative immediately.
(2) DO NOT unpack the delivered Product in case the package is damaged, and contact your Nikki Denso sales representative immediately.

Precautions in Storage

PROHIBITED
To prevent machine failures:
(1) DO NOT store the Product in an environment subject to rain, splashes, or toxic gases or liquids.

MANDATORIES
To prevent machine failures:
(1) Be sure to store the Product in an environment not disposed to direct sunlight or within the temperatures and relative humidity specified in this manual.
(2) Be sure to contact your Nikki Denso sales representative upon elapse of three years after the delivery of your Product.

Precautions in Transportation

CAUTION
To prevent personal injuries or machine failures:
(1) DO NOT hold the Product with the cable or the motor shaft during transportation.

MANDATORIES
To prevent personal injuries or machine failures:
(1) DO NOT pile the Products that may lead to collapsing of the pile. Observe the instructions.

Precautions in Installation

CAUTION
To prevent personal injuries or machine failures: (1) DO NOT sit or put something heavy on the Product. **To prevent fire hazard:** (2) DO NOT allow the inlet and outlet of the Product to be clogged or entered by any foreign matters. (3) Observe the specified directions of the installation. (4) Keep the specified clearances between the Product and the inside wall of the control panel or other equipment. (5) DO NOT give strong impacts to the Product. (6) Install the Product on an incombustible substance such as metal. **To prevent machine damages;** (1) Install the Product in an environment appropriate for the output or weight of the Product.

Precautions in Wirings

CAUTION
To prevent overdrive/burn-up of the motor, personal injuries or fire hazard: (1) Be sure the wirings are properly and precisely performed. **To prevent overdrive of the motor, personal injuries or machine damage:** (7) Use the cables with such lengths and countermeasures against electric noises (shielded or twisted cables) as specified in this manual, and separate the input/output leads for control of the Product from the other power cables and power lines. **To prevent overdrive of the motor, electric shock or other personal injuries, or machine damage:** (2) Be sure to ground the wire.

Precautions in Operations

CAUTION
To prevent personal injuries or fire hazard:
(1)   Protect the motor by installing an emergency stop circuit incorporating thermostat or any other protective feature.
To prevent personal injuries, fire hazard, machine damages:
(2)   Make sure the power supply meets the specifications.
To prevent personal injuries or machine damages:
(3)   Make sure the motor operates normally in a test run under the condition that the motor is fixed and separated from the mechanical system before installing on the machine.
(4)   DO NOT perform unnecessary adjustments that may destabilize the operation.
(5)   Be sure to reset the machine and remove cause of error upon occurrence of alarm before restarting the machine.
To prevent personal injuries:
(6)   DO NOT come closer to the machine upon momentary power failure as the power may suddenly be restored without warning. (Design your machine so that the safety is assured even when the power is restored suddenly.)

PROHIBITED
To prevent overdrive of the motor, personal injuries, or machine damages:
(1)   DO NOT turn on the power with the motor shaft being rotating or vibrating.
To prevent personal injuries or machine damages:
(2)   DO NOT use the brake of the built-in motor to control the halt position of the machine or to secure the safety of the machine. This brake has been designed to keep the machine in place.
To prevent machine failures:
(3)   DO NOT allow the machine to be overhauled by anyone other than Nikki Denso or someone specified by Nikki Denso.
MANDATORY
To prevent personal injuries or machine damages:
(1)   Provide an external emergency stop circuit so that the machine operation can be stopped and the power is turned off immediately in case of emergency.

CONTENTS

1. OUTLINE

1.1 Features

This VC Series models comply with Open Field Network CC-Link Version 1.10 and can be connected with other CC-Link compliant machines for networking where the VC Series models function as remote device stations that can be controlled remotely from the master station (such as sequence control machine).

With this networking, the master station can remotely:

(1) Control almost all input and output signals to and from the VC Series model.

For the Input/output signals that can be controlled in CC-Link, see Section 7 " Input/Output Control Signals and Their Availabilities in CC-Link."

(2) Write data to the VC Series model every time it is refreshed. () Data flow from Master Station to VC Series model)

This function is usually used to write data into indirect data that are not to be saved.

(3) Read data from the VC Series model every time it is refreshed. (Data flow from VC Series model to Master Station)

This function is usually used to read the transmission speed, current position and/or deviation.

(4) Write data only upon request for write onto the VC Series model (Data flow from Master Station to VC Series model), or can read data only upon request for read from the VC Series model (Data flow from VC Series model to Master Station).

This function is usually used to write data into indirect data that are to be saved or into parameter data, or to read a bunch of data. These read and write operations require handshaking.

1.2 Models

The VC Series models are available with several CC-Link options as listed in the table below:

VC Series Model		Code	CC-Link
100 VAC)		253-8550	
200 VAC)			
100 VAC)		253-8540	
200 VAC			
200 VAC		253-8530	
200 VAC Design C and before		253-8820	
200 VAC Design D and after		253-8821	NCR　XAB71B
200 VAC		253-8840	
200 VAC			
200/400 VAC)		253-9500	
200/400 VAC)			
200/400 VAC)			
400 AVC		253-9360	
400 AVC		253-9370	
400 AVC		253-9380	

1.3 Configurations

1.3.1Network Configuration for CC-Link

 The VS Series for CC-Link is used in the following network configuration:

Terminating Resistanc		Manufacturer Master Station Made by Other				Terminating Resistanc
VC Series Remote Device Station	VC Series Remote Device Station	Remote Device Station Made by Other Manufacturer	Remote Device Station Made by Other Manufacturer	Local Station Made by Other Manufacturer		
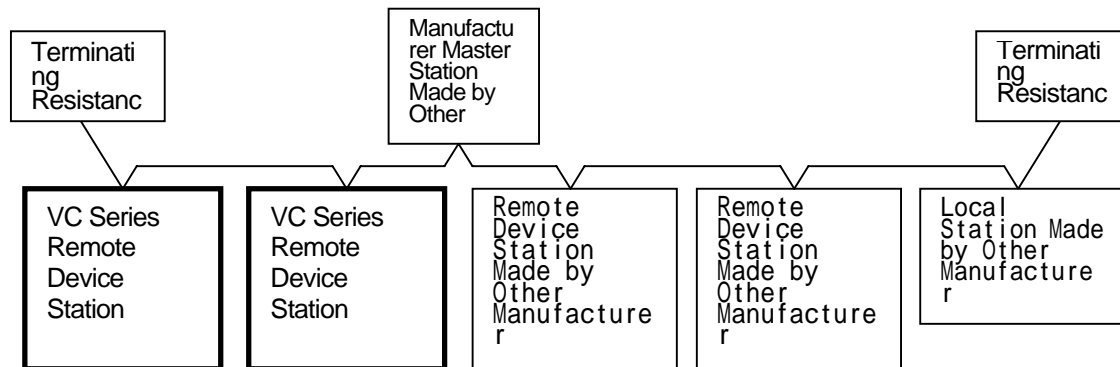
The VC Series becomes a remote device station that occupies four stations. The master station collects or distributes data from or to the remote device stations and the local station over CC-Link lines.

1.3.2 VC Series Model System Configuration

The VS Series model is used with the following peripheral equipment:

SDI Device (Optional)

VC Series Model

LCD

[▲][▼][MOD][ENT]

[▲][▼][MOD][ENT]

ServoDisplay
(Optional)

Note) 1

CN1

+12 – 24 VDC Power
Supply

Control Signal (Input)

Control Signal (Output)

Status Display
(7 Segment LEDs)

Speed Command/Speed
Limit

Torque Command (Input)

Pulse Train Command
(Input)

Host
Controller or
PC

J1

Encoder/Linear Sensor

Pulse (Output)

J1 (Either one host
controller, PC, or servo
controller may be
connected)

Encoder

Motor

Servo Control Line

CN2

Other unit available
for online servo
control

UVW Phase

J2

AC Power
Supply

Terminal
Block

Regeneration
Block

E

CC-Link Cable

Other unit available
for CC-Link

CC-Link Controller

(Note)   The LCD is equipped for the Product with electric capacity of 1.5 kW or above.

2. CC-Link Interface

2.1 CC-Link Control Interface

CC-Link　Control Interface
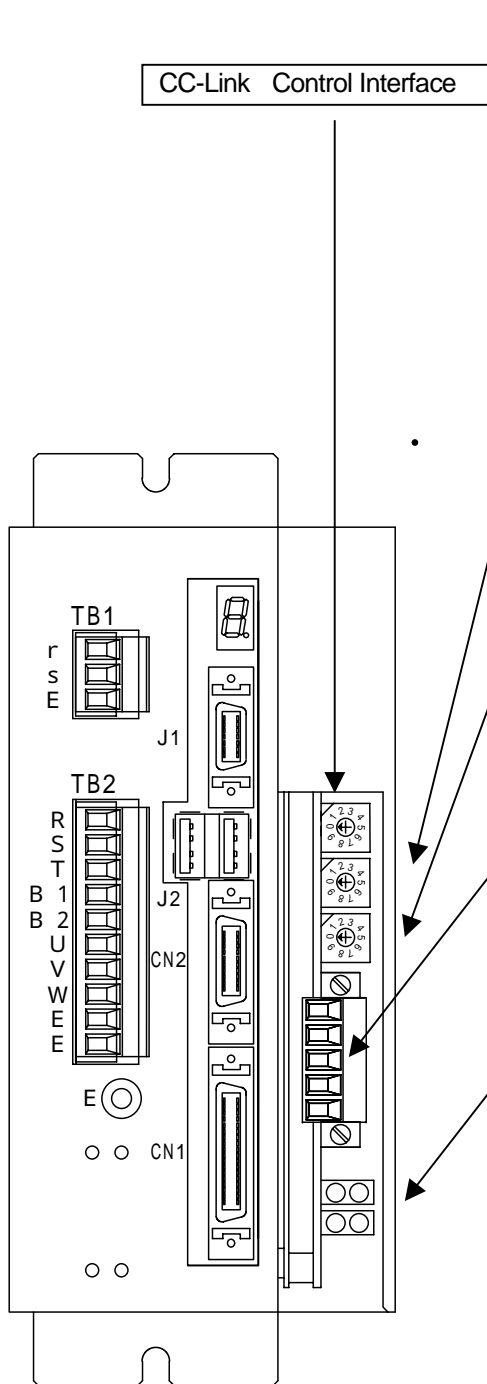
Station No. Switches
The upper switch is used for setting upper station.
The lower switch is used for setting lower station.
Station No. for the unit can be set from 1 – 61.
((Although up to 64 can be set mechanically, the maximum number must be 61 as a VC Series model is occupied by four stations

Transmission Speed (Baud Rate) Switch

No.	Speed
0	156 kbps
1	625 kbps
2	2.5 Mbps
3	5 Mbps
4	10 Mbps

Other setups are regarded as errors.

CC-Link Cabling Connectors

No.	Name
1	DA
2	DB
3	DG
4	SLD
5	SLD

The switches are numbered as 1 through 4 from the top to the bottom.

Data-Link Status Indicators (LEDs)
Red: Line Error　Green: Line Run

Green　Receive　Green　Send

LED	Status and Meaning
Line Run	Lights　Data-Link is in running.
Line Error	Lights Communication error occurred. Blinking Setting of the station number or transmission speed is changed during power on.
Send	Lights　Data is being sent.
Receive	Lights　Data is being received.

TB1

J1

TB2

J2

CN2

CN1

2.2 Wiring

Wiring for CC-Link is illustrated below:

Master Unit		Remote Unit		Local Unit
DA		DA		DA
DB		DB		DB
DG		DG		DG
SLD	Dedicated Cable for	SLD	Dedicated Cable for	SLD
FG		FG		FG
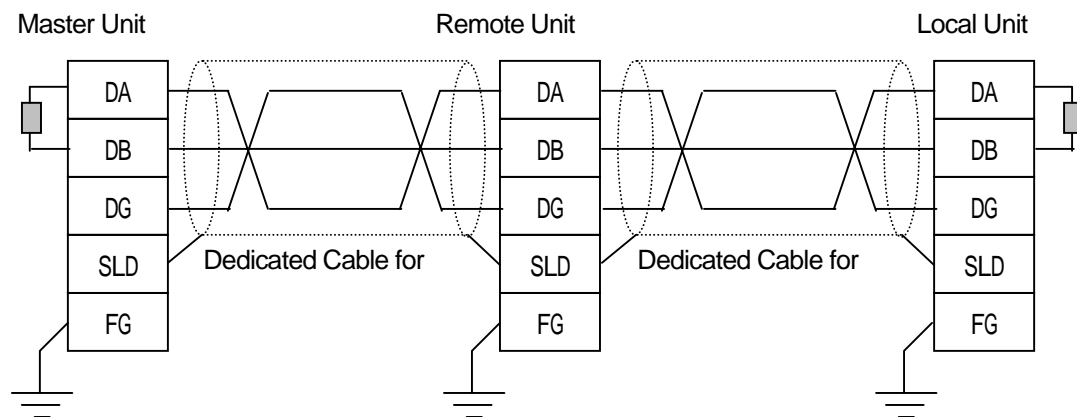
- Be sure to use dedicated cables for CC-Link.

- Terminal resistances are available in two types depending on cables to be used.:

Terminal	Dedicated Cable for CC-Link Resistance
110	Ver1.10 compliant cable
	Standard cable
130	High performance cable

- The VC Series model is provided with the following terminal resistances, one for each:

    110   1/2W   Colors: Brown, Brown, Brown

    130   1/2W   Colors: Brown, Orange, Brown

When the system ends with the VC Series model, connect the provided terminal resistance appropriate for the used cable between DA and DB.

2.3 Input/Output Data

2.3.1 Memory Mapped Profile

(1) Software: VC-D

The model can occupy up to four stations.

Remote Input (RX)   Remote Output (RY)

From Slave to Master		From Master to Slave	
Device No.	**Signal Name**	**Device No.**	**Signal Name**
RXn0	Alarm ALM	RYn0	Reset RST
RXn1	Warning WNG	RYn1	Emergency Stop EMG
RXn2	Servo Ready RDY	RYn2	Servo On SON
RXn3	Speed Zero SZ	RYn3	Drive DR
RXn4	Positioning Completed PN	RYn4	Select Speed Gain (GSEL
RXn5	Reserved	RYn5	Clear Deviation CLR
RXn6	Release Brake BRK	RYn6	Forward Over Travel FOT
RXn7	Torque Limited LIM	RYn7	Backward Over Travel ROT
RXn8	Reserved	RYn8	Select Speed/Torque 1 SS1
RXn9		RYn9	Select Speed/Torque 2 SS2
RXnA	Speed Control Mode SMOD	RYnA	Select Command Direction SSD
RXnB	Torque Control Mode TMOD	RYnB	Select Mode 1 (MD1
RXnC	Pulse Train Mode PMOD	RYnC	Select Mode 2 MD2
RXnD	Reserved	RYnD	Limit Torque (TL
RXnE		RYnE	Inhibit Command Pulse Input CIH
RXnF	Servo Locked SVLK	RYnF	Brake On BRON
RX(n+1)0	Reserved	RY(n+1)0	Proportional Control PC
RX(n+1)1		RY(n+1)1	Reserved
RX(n+1)2		RY(n+1)2	
RX(n+1)3		RY(n+1)3	
RX(n+1)4		RY(n+1)4	
RX(n+1)5		RY(n+1)5	
RX(n+1)6		RY(n+1)6	
RX(n+1)7		RY(n+1)7	
RX(n+1)8		RY(n+1)8	
RX(n+1)9		RY(n+1)9	

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RX(n+1)A		RY(n+1)A	
RX(n+1)B		RY(n+1)B	
RX(n+1)C		RY(n+1)C	
RX(n+1)D		RY(n+1)D	
RX(n+1)E		RY(n+1)E	
RX(n+1)F		RY(n+1)F	
RX(n+2)0		RY(n+2)0	
RX(n+2)1		RY(n+2)1	Reserved
RX(n+2)2		RY(n+2)2	
RX(n+2)3		RY(n+2)3	
RX(n+2)4		RY(n+2)4	
RX(n+2)5		RY(n+2)5	
RX(n+2)6		RY(n+2)6	
RX(n+2)7		RY(n+2)7	
RX(n+2)8		RY(n+2)8	Speed Override 1 OR1
RX(n+2)9	Reserved	RY(n+2)9	Speed Override 2 OR2
RX(n+2)A		RY(n+2)A	Speed Override 3 OR3
RX(n+2)B		RY(n+2)B	Speed Override 4 OR4
RX(n+2)C		RY(n+2)C	
RX(n+2)D		RY(n+2)D	
RX(n+2)E		RY(n+2)E	
RX(n+2)F		RY(n+2)F	
RX(n+3)0		RY(n+3)0	
RX(n+3)1		RY(n+3)1	
RX(n+3)2		RY(n+3)2	Reserved
RX(n+3)3		RY(n+3)3	
RX(n+3)4		RY(n+3)4	
RX(n+3)5		RY(n+3)5	
RX(n+3)6		RY(n+3)6	
RX(n+3)7		RY(n+3)7	
RX(n+3)8		RY(n+3)8	
RX(n+3)9		RY(n+3)9	

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RX(n+3)A	Reserved	RY(n+3)A	Reserved
RX(n+3)B		RY(n+3)B	
RX(n+3)C		RY(n+3)C	
RX(n+3)D		RY(n+3)D	
RX(n+3)E		RY(n+3)E	
RX(n+3)F		RY(n+3)F	
RX(n+4)0	Answer to Request for Read RANS	RY(n+4)0	Request for Read RREQ
RX(n+4)1	Answer to Request for Write WANS	RY(n+4)1	Request for Write WREQ
RX(n+4)2	Reserved	RY(n+4)2	Reserved
RX(n+4)3		RY(n+4)3	
RX(n+4)4		RY(n+4)4	
RX(n+4)5		RY(n+4)5	
RX(n+4)6		RY(n+4)6	
RX(n+4)7		RY(n+4)7	
RX(n+4)8		RY(n+4)8	
RX(n+4)9		RY(n+4)9	
RX(n+4)A		RY(n+4)A	
RX(n+4)B		RY(n+4)B	
RX(n+4)C		RY(n+4)C	
RX(n+4)D		RY(n+4)D	
RX(n+4)E		RY(n+4)E	
RX(n+4)F		RY(n+4)F	
RX(n+5)0		RY(n+5)0	
RX(n+5)1		RY(n+5)1	
RX(n+5)2		RY(n+5)2	
RX(n+5)3		RY(n+5)3	
RX(n+5)4		RY(n+5)4	
RX(n+5)5		RY(n+5)5	
RX(n+5)6		RY(n+5)6	
RX(n+5)7		RY(n+5)7	
RX(n+5)8		RY(n+5)8	
RX(n+5)9		RY(n+5)9	

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RX(n+5)A		RY(n+5)A	
RX(n+5)B		RY(n+5)B	
RX(n+5)C		RY(n+5)C	
RX(n+5)D		RY(n+5)D	
RX(n+5)E		RY(n+5)E	
RX(n+5)F		RY(n+5)F	
RX(n+6)0		RY(n+6)0	
RX(n+6)1		RY(n+6)1	
RX(n+6)2		RY(n+6)2	
RX(n+6)3		RY(n+6)3	
RX(n+6)4		RY(n+6)4	
RX(n+6)5		RY(n+6)5	
RX(n+6)6		RY(n+6)6	
RX(n+6)7		RY(n+6)7	
RX(n+6)8	Reserved	RY(n+6)8	Reserved
RX(n+6)9		RY(n+6)9	
RX(n+6)A		RY(n+6)A	
RX(n+6)B		RY(n+6)B	
RX(n+6)C		RY(n+6)C	
RX(n+6)D		RY(n+6)D	
RX(n+6)E		RY(n+6)E	
RX(n+6)F		RY(n+6)F	
RX(n+7)0		RY(n+7)0	
RX(n+7)1		RY(n+7)1	
RX(n+7)2		RY(n+7)2	
RX(n+7)3		RY(n+7)3	
RX(n+7)4		RY(n+7)4	
RX(n+7)5		RY(n+7)5	
RX(n+7)6		RY(n+7)6	
RX(n+7)7		RY(n+7)7	
RX(n+7)8	Reserved (Note 1)	RY(n+7)8	Reserved (Note 2)
RX(n+7)9	Reserved (Note 3)	RY(n+7)9	Reserved (Note 4)

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RX(n+7)A	Error Status Flag	RY(n+7)A	"Request for Reset Error" Flag (Note 5)
RX(n+7)B	Remote Station Ready (Note 6)	RY(n+7)B	Reserved
RX(n+7)C	Reserved	RY(n+7)C	
RX(n+7)D		RY(n+7)D	
RX(n+7)E	Define OS	RY(n+7)E	Define OS
RX(n+7)F		RY(n+7)F	

Note 1   RX(n+7)8 is reserved for "Request for Process Initial Data" flag.

Note 2   RY(n+7)8 is reserved for "Initial Data Process Completed" flag.

Note 3   RX(n+7)9 is reserved for "Initial Data Setting Completed" flag.

Note 4   RY(n+7)9 is reserved for "Request for Set Initial Data" flag

Note 5   This flag functions the same as Reset (RST) signal.

Note 6   This signal turns on when the machine is ready for use and turns off upon occurrence of abnormality.

(2) Software: VC-C1

The model can occupy up to four stations.

Remote Input (RX)　　Remote Output (RY)

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RXn0	Alarm (ALM	RYn0	Reset RST
RXn1	Warning WNG	RYn1	Emergency Stop EMG
RXn2	Servo Ready RDY	RYn2	Servo On SON
RXn3	Speed Zero SZ	RYn3	Reserved
RXn4	Positioning Completed PN	RYn4	Select Speed Gain GSEL
RXn5	Position to Reference PRF	RYn5	Clear Deviation CLR
RXn6	Release Brake BRK	RYn6	Forward Over Travel FOT
RXn7	Torque Limited LIM	RYn7	Backward Over Travel ROT
RXn8	End Program PEND	RYn8	Reserved
RXn9	Auto Run Ready (PRDY)	RYn9	
RXnA	Manual Mode MMOD	RYnA	Select Command Direction SSD
RXnB	Home Mode HMOD	RYnB	Select Mode 1 MD1
RXnC	Auto Mode AMOD	RYnC	Select Mode 2 MD2
RXnD	Pulse Train Mode PMOD	RYnD	Limit Torque TL
RXnE	Reserved	RYnE	Inhibit Input of Command Pulse CIH
RXnF		RYnF	Brake On BRON
RX(n+1)0	General Output 1 OUT1	RY(n+1)0	Proportional Control PC
RX(n+1)1	General Output 2 OUT2	RY(n+1)1	Reserved
RX(n+1)2	General Output 3 OUT3	RY(n+1)2	
RX(n+1)3	General Output 4 OUT4	RY(n+1)3	
RX(n+1)4	General Output 5 OUT5	RY(n+1)4	
RX(n+1)5	General Output 6 OUT6	RY(n+1)5	
RX(n+1)6	General Output 7 OUT7	RY(n+1)6	
RX(n+1)7	General Output 8 OUT8	RY(n+1)7	
RX(n+1)8	Reserved	RY(n+1)8	Addressing 1 PS1
RX(n+1)9		RY(n+1)9	Addressing 2 PS2
RX(n+1)A		RY(n+1)A	Addressing 3 PS3
RX(n+1)B		RY(n+1)B	Addressing 4 PS4
RX(n+1)C		RY(n+1)C	Addressing 5 PS5
RX(n+1)D		RY(n+1)D	Addressing 6 PS6

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RX(n+1)E	Soft Limit Switch A SLSA	RY(n+1)E	Addressing 7 PS7
RX(n+1)F	Soft Limit Switch B SLSB	RY(n+1)F	Addressing 8 PS8
RX(n+2)0	M Output 1 M01	RY(n+2)0	Auto Start PST
RX(n+2)1	M Output 2 M02	RY(n+2)1	Job Forward FJOG
RX(n+2)2	M Output 4 M04	RY(n+2)2	Job Backward RJOG
RX(n+2)3	M Output 8 M08	RY(n+2)3	Select Jog Speed JOSP
RX(n+2)4	M Output 10 M10	RY(n+2)4	M Completed (MFIN
RX(n+2)5	M Output 20 M20	RY(n+2)5	Stop Block BSTP
RX(n+2)6	M Output 40 M40	RY(n+2)6	Cancel Program PCAN
RX(n+2)7	M Output 80 M80	RY(n+2)7	Inhibit External Auto Start EPIH
RX(n+2)8	Reserved	RY(n+2)8	Speed Override 1 OR1
RX(n+2)9	M Strobe MSTB	RY(n+2)9	Speed Override 2 OR2
RX(n+2)A	Reserved	RY(n+2)A	Speed Override 3 OR3
RX(n+2)B		RY(n+2)B	Speed Override 4 OR4
RX(n+2)C		RY(n+2)C	Hold HLD
RX(n+2)D		RY(n+2)D	External Trigger (TRG) (Note 1)
RX(n+2)E		RY(n+2)E	Reserved
RX(n+2)F		RY(n+2)F	
RX(n+3)0		RY(n+3)0	
RX(n+3)1		RY(n+3)1	
RX(n+3)2		RY(n+3)2	
RX(n+3)3		RY(n+3)3	
RX(n+3)4		RY(n+3)4	
RX(n+3)5		RY(n+3)5	
RX(n+3)6		RY(n+3)6	
RX(n+3)7		RY(n+3)7	
RX(n+3)8		RY(n+3)8	
RX(n+3)9		RY(n+3)9	
RX(n+3)A		RY(n+3)A	
RX(n+3)B		RY(n+3)B	
RX(n+3)C		RY(n+3)C	
RX(n+3)D		RY(n+3)D	
RX(n+3)E		RY(n+3)E	

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RX(n+3)F	Reserved	RY(n+3)F	Reserved
RX(n+4)0	Answer to Request for Read (RANS)	RY(n+4)0	Request for Read RREQ
RX(n+4)1	Answer to Request for Write (WANS)	RY(n+4)1	Request for Write WREQ
RX(n+4)2	Reserved	RY(n+4)2	Reserved
RX(n+4)3		RY(n+4)3	
RX(n+4)4		RY(n+4)4	
RX(n+4)5		RY(n+4)5	
RX(n+4)6		RY(n+4)6	
RX(n+4)7		RY(n+4)7	
RX(n+4)8		RY(n+4)8	
RX(n+4)9		RY(n+4)9	
RX(n+4)A		RY(n+4)A	
RX(n+4)B		RY(n+4)B	
RX(n+4)C		RY(n+4)C	
RX(n+4)D		RY(n+4)D	
RX(n+4)E		RY(n+4)E	
RX(n+4)F		RY(n+4)F	
RX(n+5)0		RY(n+5)0	
RX(n+5)1		RY(n+5)1	
RX(n+5)2		RY(n+5)2	
RX(n+5)3		RY(n+5)3	
RX(n+5)4		RY(n+5)4	
RX(n+5)5		RY(n+5)5	
RX(n+5)6		RY(n+5)6	
RX(n+5)7		RY(n+5)7	
RX(n+5)8		RY(n+5)8	
RX(n+5)9		RY(n+5)9	
RX(n+5)A		RY(n+5)A	
RX(n+5)B		RY(n+5)B	
RX(n+5)C		RY(n+5)C	
RX(n+5)D		RY(n+5)D	
RX(n+5)E		RY(n+5)E	

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RX(n+5)F	Reserved	RY(n+5)F	Reserved
RX(n+6)0		RY(n+6)0	
RX(n+6)1		RY(n+6)1	
RX(n+6)2		RY(n+6)2	
RX(n+6)3		RY(n+6)3	
RX(n+6)4		RY(n+6)4	
RX(n+6)5		RY(n+6)5	
RX(n+6)6		RY(n+6)6	
RX(n+6)7		RY(n+6)7	
RX(n+6)8		RY(n+6)8	
RX(n+6)9		RY(n+6)9	
RX(n+6)A		RY(n+6)A	
RX(n+6)B		RY(n+6)B	
RX(n+6)C		RY(n+6)C	
RX(n+6)D		RY(n+6)D	
RX(n+6)E		RY(n+6)E	
RX(n+6)F		RY(n+6)F	
RX(n+7)0		RY(n+7)0	
RX(n+7)1		RY(n+7)1	
RX(n+7)2		RY(n+7)2	
RX(n+7)3		RY(n+7)3	
RX(n+7)4		RY(n+7)4	
RX(n+7)5		RY(n+7)5	
RX(n+7)6		RY(n+7)6	
RX(n+7)7		RY(n+7)7	
RX(n+7)8	Reserved (Note 2)	RY(n+7)8	Reserved (Note 3)
RX(n+7)9	Reserved (Note 4)	RY(n+7)9	Reserved (Note 5)
RX(n+7)A	Error Status Flag	RY(n+7)A	"Request for Reset Error" Flag (Note 6)
RX(n+7)B	Remote Station Ready (Note 7)	RY(n+7)B	Reserved
RX(n+7)C	Reserved	RY(n+7)C	
RX(n+7)D		RY(n+7)D	
RX(n+7)E	Define OS	RY(n+7)E	Define OS
RX(n+7)F		RY(n+7)F	

Note 1   External Trigger (TRG) signal is valid only when executing control commands continuously.

Note 2   RX(n+7)8 is reserved for "Request for Process Initial Data " flag.

Note 3   RY(n+7)8 is reserved for "Initial Data Process Completed" flag.

Note 4   RX(n+7)9 is reserved for "Initial Data Setting Completed" flag.

Note 5   RY(n+7)9 is reserved for "Request for Set Initial Data " flag.

Note 6   "Request for Reset Error" flag functions the same as Reset (RST) signal.

Note 7   This signal turns on when the machine is ready for use and turns off upon occurrence of abnormality.

(3) Software   VC-C6

The model can occupy up to four stations.

Remote Input (RX)   Remote Output (RY)

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RXn0	Alarm (ALM	RYn0	Reset RST
RXn1	Warning WNG	RYn1	Emergency Stop EMG
RXn2	Servo Ready RDY	RYn2	Servo On SON
RXn3	Speed Zero SZ	RYn3	Reserved
RXn4	Positioning Completed PN	RYn4	Select Speed Gain GSEL
RXn5	Positioning to Reference PRF	RYn5	Clear Deviation CLR
RXn6	Release Brake BRK	RYn6	Forward Over Travel FOT
RXn7	Torque Limited LIM	RYn7	Backward Over Travel ROT
RXn8	End Program PEND	RYn8	Reserved
RXn9	Auto Run Ready (PRDY)	RYn9	
RXnA	Manual Mode MMOD	RYnA	
RXnB	Home Mode HMOD	RYnB	Select Mode 1 MD1
RXnC	Auto Mode AMOD	RYnC	Select Mode 2 MD2
RXnD	Reserved	RYnD	Limit Torque TL
RXnE		RYnE	Inhibit Input of Command Pulse CIH
RXnF		RYnF	Brake On BRON
RX(n+1)0	General Output 1 OUT1	RY(n+1)0	Proportional Control PC
RX(n+1)1	General Output 2 OUT2	RY(n+1)1	Reserved
RX(n+1)2	General Output 3 OUT3	RY(n+1)2	
RX(n+1)3	General Output 4 OUT4	RY(n+1)3	
RX(n+1)4	General Output 5 OUT5	RY(n+1)4	
RX(n+1)5	General Output 6 OUT6	RY(n+1)5	
RX(n+1)6	General Output 7 OUT7	RY(n+1)6	
RX(n+1)7	General Output 8 OUT8	RY(n+1)7	
RX(n+1)8	Electronic Clutch Halted (FCRP)	RY(n+1)8	Addressing 1 PS1
RX(n+1)9	Free Curve FC	RY(n+1)9	Addressing 2 PS2
RX(n+1)A	Reserved	RY(n+1)A	Addressing 3 PS3
RX(n+1)B		RY(n+1)B	Addressing 4 PS4
RX(n+1)C		RY(n+1)C	Addressing 5 PS5
RX(n+1)D		RY(n+1)D	Addressing 6 PS6

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RX(n+1)E	Soft Limit Switch A SLSA	RY(n+1)E	Addressing 7 PS7
RX(n+1)F	Soft Limit Switch B SLSB	RY(n+1)F	Addressing 8 PS8
RX(n+2)0	M Output 1 M01	RY(n+2)0	Auto Start PST
RX(n+2)1	M Output 2 M02	RY(n+2)1	Jog Forward FJOG
RX(n+2)2	M Output 4 M04	RY(n+2)2	Job Backward RJOG
RX(n+2)3	M Output 8 M08	RY(n+2)3	Select Jog Speed JOSP
RX(n+2)4	M Output 10 M10	RY(n+2)4	M Completed (MFIN
RX(n+2)5	M Output 20 M20	RY(n+2)5	Stop Block BSTP
RX(n+2)6	M Output 40 M40	RY(n+2)6	Cancel Program PCAN
RX(n+2)7	M Output 80 M80	RY(n+2)7	Inhibit External Auto Start EPIH
RX(n+2)8	Master Axis Speed Zero (MSZ)	RY(n+2)8	Speed Override 1 OR1
RX(n+2)9	M Strobe MSTB	RY(n+2)9	Speed Override 2 OR2
RX(n+2)A		RY(n+2)A	Speed Override 3 OR3
RX(n+2)B		RY(n+2)B	Speed Override 4 OR4
RX(n+2)C		RY(n+2)C	Hold HLD
RX(n+2)D		RY(n+2)D	External Trigger (TRG) (Note 1)
RX(n+2)E		RY(n+2)E	Reserved
RX(n+2)F		RY(n+2)F	
RX(n+3)0		RY(n+3)0	Select Master Speed (MSSP
RX(n+3)1		RY(n+3)1	
RX(n+3)2	Reserved	RY(n+3)2	
RX(n+3)3		RY(n+3)3	
RX(n+3)4		RY(n+3)4	Reserved
RX(n+3)5		RY(n+3)5	
RX(n+3)6		RY(n+3)6	
RX(n+3)7		RY(n+3)7	
RX(n+3)8		RY(n+3)8	Phase Advance D11
RX(n+3)9		RY(n+3)9	Phase Delay D12
RX(n+3)A		RY(n+3)A	Electronic Clutch D14
RX(n+3)B		RY(n+3)B	Select Master Axis D18
RX(n+3)C		RY(n+3)C	Stop Cycle D21
RX(n+3)D		RY(n+3)D	Select Pattern 1 D22

From Slave to Master		From Master to Slave	
Device No.	**Signal Name**	**Device No.**	**Signal Name**
RX(n+3)E	Reserved	RY(n+3)E	Select Pattern 2 D24
RX(n+3)F		RY(n+3)F	Select Pattern 3 D28
RX(n+4)0	Answer to Request for Read RANS	RY(n+4)0	Request for Read RREQ
RX(n+4)1	Answer to Request for Write WANS	RY(n+4)1	Request for Write WREQ
RX(n+4)2	Reserved	RY(n+4)2	Reserved
RX(n+4)3		RY(n+4)3	
RX(n+4)4		RY(n+4)4	
RX(n+4)5		RY(n+4)5	
RX(n+4)6		RY(n+4)6	
RX(n+4)7		RY(n+4)7	
RX(n+4)8		RY(n+4)8	
RX(n+4)9		RY(n+4)9	
RX(n+4)A		RY(n+4)A	
RX(n+4)B		RY(n+4)B	
RX(n+4)C		RY(n+4)C	
RX(n+4)D		RY(n+4)D	
RX(n+4)E		RY(n+4)E	
RX(n+4)F		RY(n+4)F	
RX(n+5)0		RY(n+5)0	
RX(n+5)1		RY(n+5)1	
RX(n+5)2		RY(n+5)2	
RX(n+5)3		RY(n+5)3	
RX(n+5)4		RY(n+5)4	
RX(n+5)5		RY(n+5)5	
RX(n+5)6		RY(n+5)6	
RX(n+5)7		RY(n+5)7	
RX(n+5)8		RY(n+5)8	
RX(n+5)9		RY(n+5)9	
RX(n+5)A		RY(n+5)A	
RX(n+5)B		RY(n+5)B	
RX(n+5)C		RY(n+5)C	
RX(n+5)D		RY(n+5)D	
RX(n+5)E		RY(n+5)E	

From Slave to Master		From Master to Slave	
Device No.	**Signal Name**	**Device No.**	**Signal Name**
RX(n+5)F	Reserved	RY(n+5)F	Reserved
RX(n+6)0		RY(n+6)0	
RX(n+6)1		RY(n+6)1	
RX(n+6)2		RY(n+6)2	
RX(n+6)3		RY(n+6)3	
RX(n+6)4		RY(n+6)4	
RX(n+6)5		RY(n+6)5	
RX(n+6)6		RY(n+6)6	
RX(n+6)7		RY(n+6)7	
RX(n+6)8		RY(n+6)8	
RX(n+6)9		RY(n+6)9	
RX(n+6)A		RY(n+6)A	
RX(n+6)B		RY(n+6)B	
RX(n+6)C		RY(n+6)C	
RX(n+6)D		RY(n+6)D	
RX(n+6)E		RY(n+6)E	
RX(n+6)F		RY(n+6)F	
RX(n+7)0		RY(n+7)0	
RX(n+7)1		RY(n+7)1	
RX(n+7)2		RY(n+7)2	
RX(n+7)3		RY(n+7)3	
RX(n+7)4		RY(n+7)4	
RX(n+7)5		RY(n+7)5	
RX(n+7)6		RY(n+7)6	
RX(n+7)7		RY(n+7)7	
RX(n+7)8	Reserved (Note 2)	RY(n+7)8	Reserved (Note 3)
RX(n+7)9	Reserved (Note 4)	RY(n+7)9	Reserved (Note 5)
RX(n+7)A	Error Status Flag	RY(n+7)A	Request for Reset Error Flag (Note 6)
RX(n+7)B	Remote Station Ready (Note 7)	RY(n+7)B	Reserved
RX(n+7)C	Reserved	RY(n+7)C	
RX(n+7)D		RY(n+7)D	
RX(n+7)E	Define OS	RY(n+7)E	Define OS
RX(n+7)F		RY(n+7)F	

Note 1   External Trigger (TRG) signal is valid only for synchronous start adjustment function while executing a Free Curve command.

Note 2   RX(n+7)8 is reserved for Request for Process Initial Data flag.

Note 3   RY(n+7)8 is reserved for Initial Data Process Completed flag.

Note 4   RX(n+7)9 is reserved for Initial Data Set Completed flag.

Note 5   RY(n+7)9 is reserved for Request for Set Initial Data flag.

Note 6   Request for Reset Error flag functions the same as Reset (RST) signal.

Note 7   This device turns on when the machine is ready to use, and turns off upon occurrence of abnormality.

(4) Software: VC-C3

The model can occupy up to four stations.

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RXn0	Alarm　(ALM	RYn0	Reset　RST
RXn1	Warning　WNG	RYn1	Emergency Stop　EMG
RXn2	Servo Ready　RDY	RYn2	Servo On　SON
RXn3	Speed Zero　SZ	RYn3	Reserved
RXn4	Positioning Completed　PN	RYn4	Select Speed Gain　GSEL
RXn5	Positioning to Reference　PRF	RYn5	Clear Deviation　CLR
RXn6	Release Brake　BRK	RYn6	Forward Over Travel　FOT
RXn7	Torque Limited　LIM	RYn7	Backward　Over　Travel　ROT
RXn8	End Program　PEND	RYn8	Reserved
RXn9	Auto Run Ready (PRDY)	RYn9	
RxnA	Manual Mode　MMOD	RYnA	
RXnB	Home Mode　HMOD	RYnB	Select Mode 1　MD1
RXnC	Auto Mode　AMOD	RYnC	Select Mode 2　MD2
RXnD	Servo Lock Mode　PMOD	RYnD	Limit Torque　TL
RXnE	Reserved	RYnE	Inhibit Input of Command Pulse　CIH
RXnF		RYnF	Brake On　BRON
RX(n+1)0	General Output 1　OUT1	RY(n+1)0	Proportional Control　PC
RX(n+1)1	General Output 2　OUT2	RY(n+1)1	Reserved
RX(n+1)2	General Output 3　OUT3	RY(n+1)2	
RX(n+1)3	General Output 4　OUT4	RY(n+1)3	
RX(n+1)4	General Output 5　OUT5	RY(n+1)4	
RX(n+1)5	General Output 6　OUT6	RY(n+1)5	
RX(n+1)6	General Output 7　OUT7	RY(n+1)6	
RX(n+1)7	General Output 8　OUT8	RY(n+1)7	
RX(n+1)8	Reserved	RY(n+1)8	Addressing 1　PS1
RX(n+1)9		RY(n+1)9	Addressing 2　PS2
RX(n+1)A		RY(n+1)A	Addressing 3　PS3
RX(n+1)B		RY(n+1)B	Addressing 4　PS4
RX(n+1)C		RY(n+1)C	Addressing 5　PS5
RX(n+1)D		RY(n+1)D	Addressing 6　(PS6)
RX(n+1)E	Soft Limit Switch A　SLSA	RY(n+1)E	Addressing 7　PS7

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RX(n+1)F	Soft Limit Switch B SLSB	RY(n+1)F	Addressing 8 PS8
RX(n+2)0	M Output 1 M01	RY(n+2)0	Auto Start PST
RX(n+2)1	M Output 2 M02	RY(n+2)1	Jog Forward FJOG
RX(n+2)2	M Output 4 M04	RY(n+2)2	Job Backward RJOG
RX(n+2)3	M Output 8 M08	RY(n+2)3	Select Jog Speed JOSP
RX(n+2)4	M Output 10 M10	RY(n+2)4	M Completed (MFIN
RX(n+2)5	M Output 20 M20	RY(n+2)5	Stop Block BSTP
RX(n+2)6	M Output 40 M40	RY(n+2)6	Cancel Program PCAN
RX(n+2)7	M Output 80 M80	RY(n+2)7	Inhibit External Auto Start EPIH
RX(n+2)8	Master Axis Speed Zero (MSZ)	RY(n+2)8	Override 1 OR1
RX(n+2)9	M Strobe MSTB	RY(n+2)9	Override 2 OR2
RX(n+2)A		RY(n+2)A	Override 3 OR3
RX(n+2)B		RY(n+2)B	Override 4 OR4
RX(n+2)C		RY(n+2)C	Hold HLD
RX(n+2)D	Reserved	RY(n+2)D	External Trigger (TRG) (Note 1)
RX(n+2)E		RY(n+2)E	Reserved
RX(n+2)F		RY(n+2)F	
RX(n+3)0	Auto Run PRUN	RY(n+3)0	Select Internal Master Speed MSSP
RX(n+3)1	Auto Run Ready PRDY1	RY(n+3)1	Reserved
RX(n+3)2	Auto Run Ready 2 PRDY2	RY(n+3)2	
RX(n+3)3	Home Positioning Completed HCMP	RY(n+3)3	
RX(n+3)4	Disconnected Position Terminal MLS	RY(n+3)4	
RX(n+3)5		RY(n+3)5	
RX(n+3)6	Reserved	RY(n+3)6	
RX(n+3)7		RY(n+3)7	
RX(n+3)8	Run Output ROUT1	RY(n+3)8	Disconnect Control D11
RX(n+3)9	Run Output ROUT2	RY(n+3)9	Terminate Synchronization D12
RX(n+3)A	Run Output ROUT3	RY(n+3)A	Start D14
RX(n+3)B	Run Output ROUT4	RY(n+3)B	Select Master Axis D18
RX(n+3)C	Reserved	RY(n+3)C	End Cycle D21
RX(n+3)D	Output One Cycle ROUT6	RY(n+3)D	Inhibit Mark D22
RX(n+3)E	Output During Synchronization ROUT8	RY(n+3)E	Measure Disconnected Time D24
RX(n+3)F	Output Standby Position ROUT8	RY(n+3)F	Reserved

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RX(n+4)0	Answer to Request for Read RANS	RY(n+4)0	Request for Read　RREQ
RX(n+4)1	Answer to Request for Write WANS	RY(n+4)1	Request for Write　WREQ
RX(n+4)2		RY(n+4)2	
RX(n+4)3		RY(n+4)3	
RX(n+4)4		RY(n+4)4	
RX(n+4)5		RY(n+4)5	
RX(n+4)6		RY(n+4)6	
RX(n+4)7		RY(n+4)7	
RX(n+4)8		RY(n+4)8	
RX(n+4)9		RY(n+4)9	
RX(n+4)A		RY(n+4)A	
RX(n+4)B		RY(n+4)B	
RX(n+4)C		RY(n+4)C	
RX(n+4)D		RY(n+4)D	
RX(n+4)E		RY(n+4)E	
RX(n+4)F		RY(n+4)F	
RX(n+5)0		RY(n+5)0	
RX(n+5)1	Reserved	RY(n+5)1	Reserved
RX(n+5)2		RY(n+5)2	
RX(n+5)3		RY(n+5)3	
RX(n+5)4		RY(n+5)4	
RX(n+5)5		RY(n+5)5	
RX(n+5)6		RY(n+5)6	
RX(n+5)7		RY(n+5)7	
RX(n+5)8		RY(n+5)8	
RX(n+5)9		RY(n+5)9	
RX(n+5)A		RY(n+5)A	
RX(n+5)B		RY(n+5)B	
RX(n+5)C		RY(n+5)C	
RX(n+5)D		RY(n+5)D	
RX(n+5)E		RY(n+5)E	
RX(n+5)F		RY(n+5)F	
RX(n+6)0		RY(n+6)0	

From Slave to Master		From Master to Slave	
Device No.	Signal Name	Device No.	Signal Name
RX(n+6)1	Reserved	RY(n+6)1	Reserved
RX(n+6)2		RY(n+6)2	
RX(n+6)3		RY(n+6)3	
RX(n+6)4		RY(n+6)4	
RX(n+6)5		RY(n+6)5	
RX(n+6)6		RY(n+6)6	
RX(n+6)7		RY(n+6)7	
RX(n+6)8		RY(n+6)8	
RX(n+6)9		RY(n+6)9	
RX(n+6)A		RY(n+6)A	
RX(n+6)B		RY(n+6)B	
RX(n+6)C		RY(n+6)C	
RX(n+6)D		RY(n+6)D	
RX(n+6)E		RY(n+6)E	
RX(n+6)F		RY(n+6)F	
RX(n+7)0		RY(n+7)0	
RX(n+7)1		RY(n+7)1	
RX(n+7)2		RY(n+7)2	
RX(n+7)3		RY(n+7)3	
RX(n+7)4		RY(n+7)4	
RX(n+7)5		RY(n+7)5	
RX(n+7)6		RY(n+7)6	
RX(n+7)7		RY(n+7)7	
RX(n+7)8	Reserved (Note 2)	RY(n+7)8	Reserved Note (3)
RX(n+7)9	Reserved (Note 4)	RY(n+7)9	Reserved Note (5)
RX(n+7)A	Error Status flag	RY(n+7)A	Request for Reset Error flag (Note 6)
RX(n+7)B	Remote Station Ready (Note 7)	RY(n+7)B	Reserved
RX(n+7)C	Reserved	RY(n+7)C	
RX(n+7)D		RY(n+7)D	
RX(n+7)E	Define OS	RY(n+7)E	Define OS
RX(n+7)F		RY(n+7)F	

Note 1   External Trigger signal can be input from this device but does not function. To use External Trigger signal, input it via the external input terminal.

Note 2   RX(n+7)8 is reserved for Request for Process Initial Data flag.

Note 3   RY(n+7)8 is reserved for Initial Data Process Completed flag.

Note 4   RX(n+7)9 is reserved for Initial Data Set Completed flag.

Note 5   RY(n+7)9 is reserved for Request for Set Initial Data flag.

Note 6   Request for Reset Error flag functions the same as Reset (RST) signal.

Note 7   This device turns on when the machine is ready to use and turns off upon occurrence of abnormality.

(5) Software: VC-D, VC-C1, VC-C3, and VC-C6 (in Common)

Refreshed Read Data (RWr)　　Refreshed Write Data (RWw)

From Slave to Master		From Master to Slave	
Address	**Contents**	**Address**	**Contents**
RWrn	Alarm/Warning No.	RWwn	Data number of the data subject to Request for Write or Request for Read.
RWrn+1	Reserved	RWwn+1	Reserved
RWrn+2	Read data subject to Request for Read. Source is specified by RWwn (lower data).	RWwn+2	Write data subject to Request for Write. Destination is specified by RWwn (lower data)
RWrn+3	Read data subject to Request for Read. Source is specified by RWwn (upper data).	RWwn+3	Write data subject to Request for Write. Destination is specified by RWwn (upper data)
RWrn+4	Keep-refreshed read data 1 (lower data)	RWwn+4	Keep-refreshed write data 1 (lower data)
RWrn+5	Keep-refreshed read data 1 (upper data)	RWwn+5	Keep-refreshed write data 1 (upper data)
RWrn+6	Keep-refreshed read data 2 (lower data)	RWwn+6	Keep-refreshed write data 2 (lower data)
RWrn+7	Keep-refreshed read data 2 (upper data)	RWwn+7	Keep-refreshed write data 2 (upper data)
RWrn+8	Keep-refreshed read data 3 (lower data)	RWwn+8	Keep-refreshed write data 3 (lower data)
RWrn+9	Keep-refreshed read data 3 (upper data)	RWwn+9	Keep-refreshed write data 3 (upper data)
RWrn+A	Keep-refreshed read data 4 (lower data)	RWwn+A	Keep-refreshed write data 4 (lower data)
RWrn+B	Keep-refreshed read data 4(upper data)	RWwn+B	Keep-refreshed write data 4 (upper data)
RWrn+C	Keep-refreshed read data 5 (lower data)	RWwn+C	Reserved
RWrn+D	Keep-refreshed read data 5 (upper data)	RWwn+D	
RWrn+E	Keep-refreshed read data 6 (lower data)	RWwn+E	
RWrn+F	Keep-refreshed read data 6 (upper data)	RWwn+F	

Note　Sources of keep refreshed read data and destinations of keep refreshed write data are provided in Section 5 "CC-Link Related Parameters."

2.3.2Input/Output Signals

The Remote Input (RX) and Remote Output I (RY) are used.

(1) Signal specifications of RX and RY are compliant with those of standard VC Series. Input and output of these signals are described from the viewpoint of the master station. That is, the relationship between input and output in this manual is reversed from that in the other instruction manuals for the VC Series in which input and output of signals are described from the viewpoint of the V Series.

(2) Remote input/output signals are always valid and they are controlled by logical sum (OR) with external input signals within the VC Series models. External input signals can be make invalid by setting parameters P735 and P736.

2.3.3Refreshed Data Read/Write

The Refreshed Data Read Interface (RWr) and Refresh Data Write (RWw) are used.

(1) The master station can read/write data from/ to the V Series model every time it is refreshed.. Write destination data and read source data are specified by parameters P720 through P729.

(2) Parameters P720 through P729 specify the data numbers that designate R devices or D devices according to "Operating Instructions for VC Series Data." When specifying data number for D device, set the fifth digit to "0" and the device number in the fourth through first digits. When specifying data number for R device, set the fifth digit to "1" and specify the device number in the fourth through first digits.

Example 1: When specifying D9302 (absolute present position), set "09302" as the data number.

Example 2: When specifying R3716 (indirect data 58), set "13716" as the data number.

(3) When the parameters P720 through P723 are set to "21000" or "0," the write function of their associated refreshed data is made invalid and the data writing is not performed.

(4) When the parameters P724 through P729 are set to "21000," the read function of their associated refreshed data is made invalid and the data is always read as "0."

2.3.4 Data Read/Write upon Request for Read/Write

Following signals are used:

RX(n+4)0   Answer to Request for Read
RX(n+4)1   Answer to Request for Write
RY(n+4)0   Request for Read
RY(n+4)1   Request for Write
RWrn+2,3   Read data upon Request for Read
RWwn   Data number of the read/write data upon Request for Read/Write
RWwn+2,3   Write data upon Request for Write

(1) The master station can read/write data from/to the VC Series model upon Request for Read or Request for Write.

(2) The data numbers specified by read/write data number upon Request for Read/Write should be set in the same way as those for refreshed data read/write.

(3) Data writing upon Request for Write is performed based on the following handshaking:

Master Station

| Turn off WREQ and RREQ | Set data and data number subject to Request for Write | Turn on WREQ | | Turn off WREQ |

VC Series Model (Remote Device Station)

| | Turn off WANS and RANS | Specified data of the specified data number is written on the model. | Turn on WANS | Turn off WANS |

29
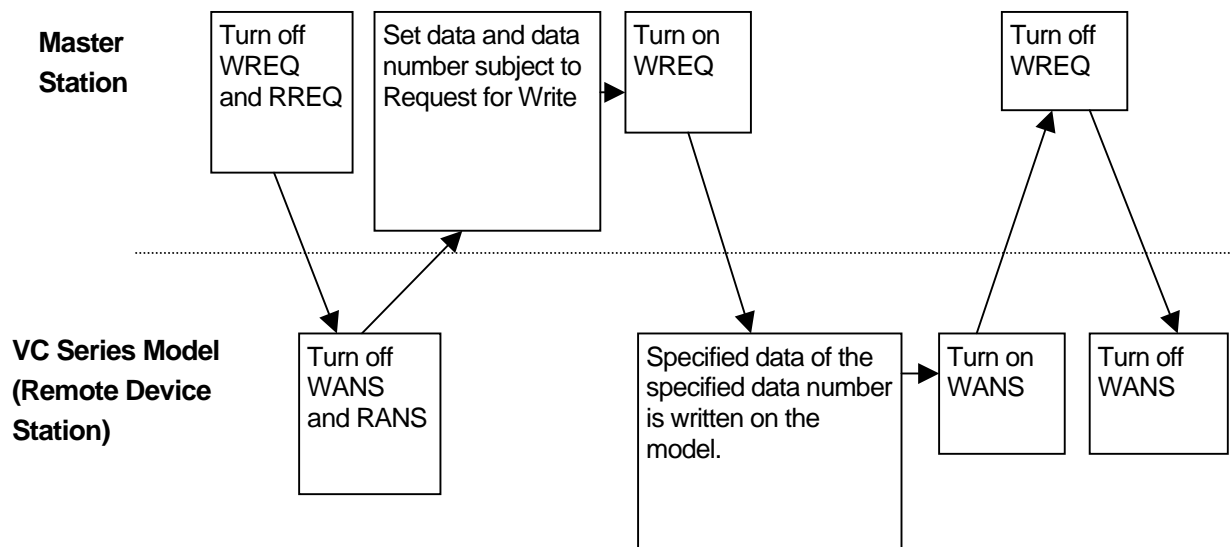
(8) Data reading upon Request for Read is performed based on the following handshaking:

Master Station

Turn off WREQ and RREQ.	Set data number of data to be	Turn on RREQ		Turn off RREQ.

VC Series Model (Remote Device Station)

Turn off WANS and RANS.		Data with specified data number is read.	Turn on RANS	Turn off RANS
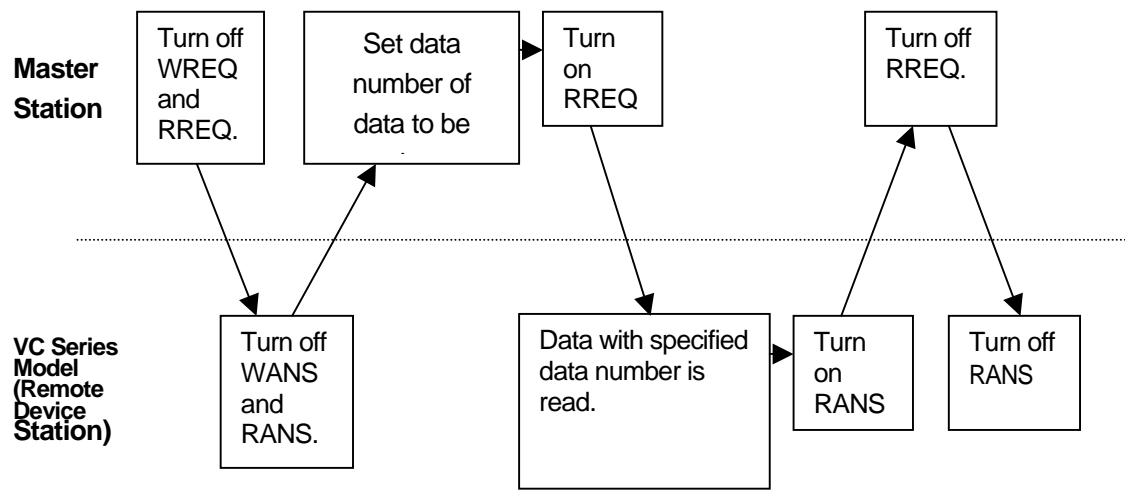
Appendix.1　CC-Link Specifications and Setup Data
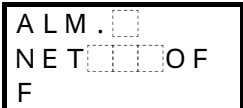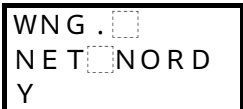
• CC-Link Specifications

Item	Specifications				
Station type	Remote device station				
CC-Link version	1.10				
Baud rate	Selectable by switch				
	10 Mbps	5 Mbps	2.5 Mbps	625 kbps	156 kbps
Communication protocol	Polling				
Synchronization	Frame synchronization				
Coding system	NRZI				
Line	Bus　EIA RS485 compliant				
Transmission format	HDLC compliant				
Error Control	CRC　X16 + X12 + X5 + 1				
Occupied stations	4 stations				
Station number	Any number of 1 to 61 can be set by switch for four occupied stations although up to 64 station numbers are available.				
Connection cable	Dedicated CC-Link cable				
Inter-station cable length	20 cm or longer				
Maximum cable length	100 m	160 m	400 m	900 m	1,200 m

• Setup Data

Item	Data to be Setup
Manufacturer's code	0310H (Nikki Denso)
Machine code	21H (Servo)
Software versions	01H (Version A),　02H (Version B),　03H (Version C)

Appendix.2   CC-Link Related Alarms/Warnings

Name	Display	Meaning	Phenomena	Output Signal	Action to Take
CC-Link SW Setup Error Alarm	7 LEDs -2 Alarm code 114	(1) Station number is set to 0 or larger than 62. (2) Baud rate switch is set to other than 0 – 4.	Motor torque freed	Alarm: On Warning: Off Servo Ready: Off Release Brake: Off	Correct switch setup and power on again.
CC-Link Transmit Error Alarm	7-seg. LEDs -3 Alarm code 111	Time-over error	Motor stops suddenly and torque freed.		Power on again and input reset signal.
Wait for CC-Link Communication Warning	7-seg. LEDs F–5 Warning code 112	(1) Master station is not performing CC-Link communication. (2) Defective connection or wiring of CC-Link cable. (3) Improper station number has been set. (4) Improper baud rate has been set.	Current operation continues without starting CC-Link communication	Alarm: Off Warning: On Servo Ready: On Release Brake: On	Release the warning issued.
Changed CC-Link SW Warning	7-seg. LEDs F–6 Warning code 112	Status of Station Number switch or Baud Rate switch has been changed from the initial status at the time of power on.			Restore the initial status pf the switch.

Appendix.3 CC-Link Related Alarms/Warnings

No.	Name	Software	Initial Value	Value Range	Function
P720	SQB Write Data 1	VC-D	21000	00000 (Note 1) to 29999 (Note 2)	Specifies the data number of the destination of the write data that has been set as Refreshed Write Data 1 for the CC-Link remote register when the data is to be written to the model. With VC-D, this function is initally invalidated. With other software, the data number is initally specified as the indirect data 50
		VC-C1 VC-C6 VC-C3	13700		
P721	SQB Write Data 2	VC-D	21000		Specifies the data number of the destination of the write data that has been set as Refreshed Write Data 2 for the CC-Link remote register when the data is to be written to the model. With VC-D, this function is initally invalidated. With other software, the data number is initally specified as the indirect data 51
		VC-C1 VC-C6 VC-C3	13702		
P722	SQB Write Data 3	VC-D	21000		Specifies the data number of the destination of the write data that has been set as Refreshed Write Data 3 for the CC-Link remote register when the data is to be written to the model. With VC-D, this function is initally invalidated. With other software, the data number is initally specified as the indirect data 52
		VC-C1 VC-C6 VC-C3	13704		
P723	SQB Write Data 4	VC-D	21000		Specifies the data number of the destination of the write data that has been set as Refreshed Write Data 4 for the CC-Link remote register when the data is to be written to the model. With VC-D, this function is initally invalidated. With VC-C1 and VC-C3, the data number is initally specified as the indirect data 53. With VC-C6, this paramater is invalid. (Note 3)
		VC-C1 VC-C3 (Note 4)	13706		

Note 1: If parameter value is set to "00000," the associated refreshed data write function is invalidated and the writing is not performed.

Note 2: If parameter value is set to "21000" or higher,

- With VC-D, VC-C1 and VC-C3, the associated refreshed data write function is invalidated and the writing is not performed, or

- With VC-C6, the refreshed data write function writes the data into the dummy area "00678."

Data numbers should be specified as follows by referring to "Operating Instructions for VC Series Data" for individual models..

- For the device D, set the fifth digit to "0" and specify the data number in the fourth through first digits.

- For the device F, set the fifth digit to "1" and specify the data number in the fourth through first digits.
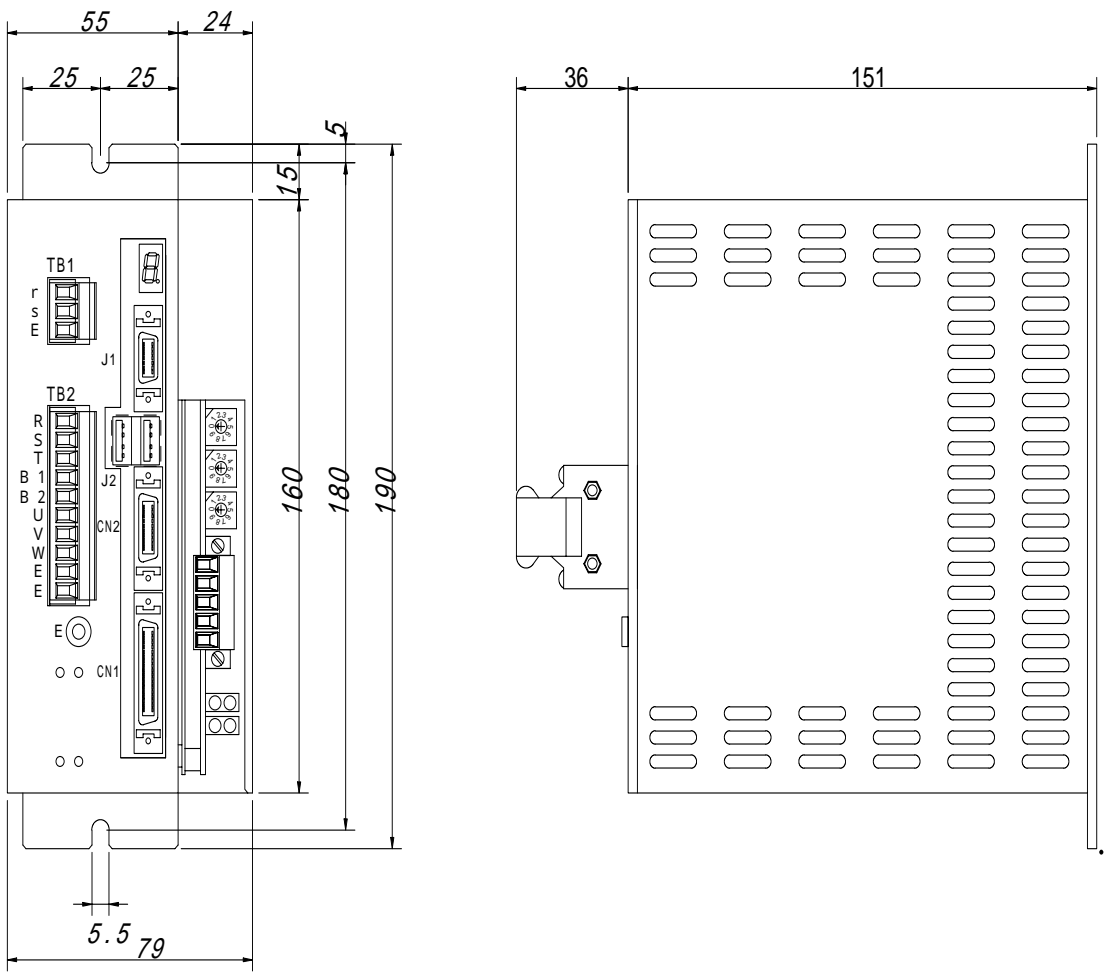
Note 3: With VC-C6, the write destination of Refreshed Write Data 4 is fixed to the indirect data 68.

No.	Name	Software	Initial Value	Value Range	Function
P724	SQB Read Data 1	VC-D	21000	00000 to 29999 (Note)	Specifies the data number of the source of the read data that has been set as Refreshed Read Data 1 for the CC-Link remote register when the data is to be read from the model. With VC-D, this function is initally invalidated. With other software, the data number is initally specified as the indirect data 54
		VC-C1 VC-C6 VC-C3	13708		
P725	SQB Read Data 2	VC-D	21000		Specifies the data number of the source of the read data that has been set as Refreshed Read Data 2 for the CC-Link remote register when the data is to be read from the model. With VC-D, this function is initally invalidated. With other software, the data number is initally specified as the indirect data 55
		VC-C1 VC-C6 VC-C3	13710		
P726	SQB Read Data 3	VC-D	21000		Specifies the data number of the source of the read data that has been set as Refreshed Read Data 3 for the CC-Link remote register when the data is to be read from the model. With VC-D, this function is initally invalidated. With other software, the data number is initally specified as the indirect data 56
		VC-C1 VC-C6 VC-C3	13712		
P727	SQB Read Data 4	VC-D	21000		Specifies the data number of the source of the read data that has been set as Refreshed Read Data 4 for the CC-Link remote register when the data is to be read from the model. With VC-D, this function is initally invalidated. With other software, the data number is initally specified as the indirect data 57.
		VC-C1 VC-C6 VC-C3	13714		
P728	SQB Read Data 5	VC-D VC-C1 VC-C6 VC-C3	09302		Specifies the data number of the source of the read data that has been set as Refreshed Read Data 5 for the CC-Link remote register when the data is to be read from the model. When the initial value is specified, the current absolute position of the model is read out.
. P729	SQB Read Data 6	VC-D VC-C1 VC-C6 VC-C3	09100		Specifies the data number of the source of the read data that has been set as Refreshed Read Data 6 for the CC-Link remote register when the data is to be read from the model. When the initial value is specified, the motor's rotational speed of the model is read out.

Note:If parameter value is set to "21000" or higher,

- With VC-D, VC-C1 and VC-C3, the associated refreshed data read function is invalidated and the read data is regarded as "0," or

- With VC-C6, the refreshed data read function reads the data from the dummy area "00678."

Data numbers should be specified as shown below by referring to "Operating Instructions for VC Series Data" for individual models..

- For the device D, set the fifth digit to "0" and specify the data number in the fourth through first digits.

- For the device R, set the fifth digit to "1" and specify the data number in the fourth through first digits.

Appendix.4 CC-Link Related Self Diagnoses

Diagnose No.	Extended Input Check	LCD Display at Run-time	Description
	[__EXT.IN1]		Displays the Station Number Setup switch for the CC-Link Control Interface in two BCD digits.
	[__EXT.IN2]	Baud rate setup switch Occupied stations	Displays the Baud Rate Setup switch in four bits and the number of occupied stations in two bits.

Bit Statuses				Setup Switch
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
:	:	:	:	:
:	:	:	:	:
1	0	0	1	9

Bit Statuses		Occupied Stations
0	0	1 Station
0	1	2 Stations
1	0	3 Stations
1	1	4 Stations

Appendix.5 External Dimensions of VC Series Models

NCR-*A*-051/101 (100 VAC) and NCR-*A*-101/201 (200 VAC)

Unit　mm

NCR-*A*-201 (100 VAC) and NCR-*A*-401 (200 VAC)

Unit   mm
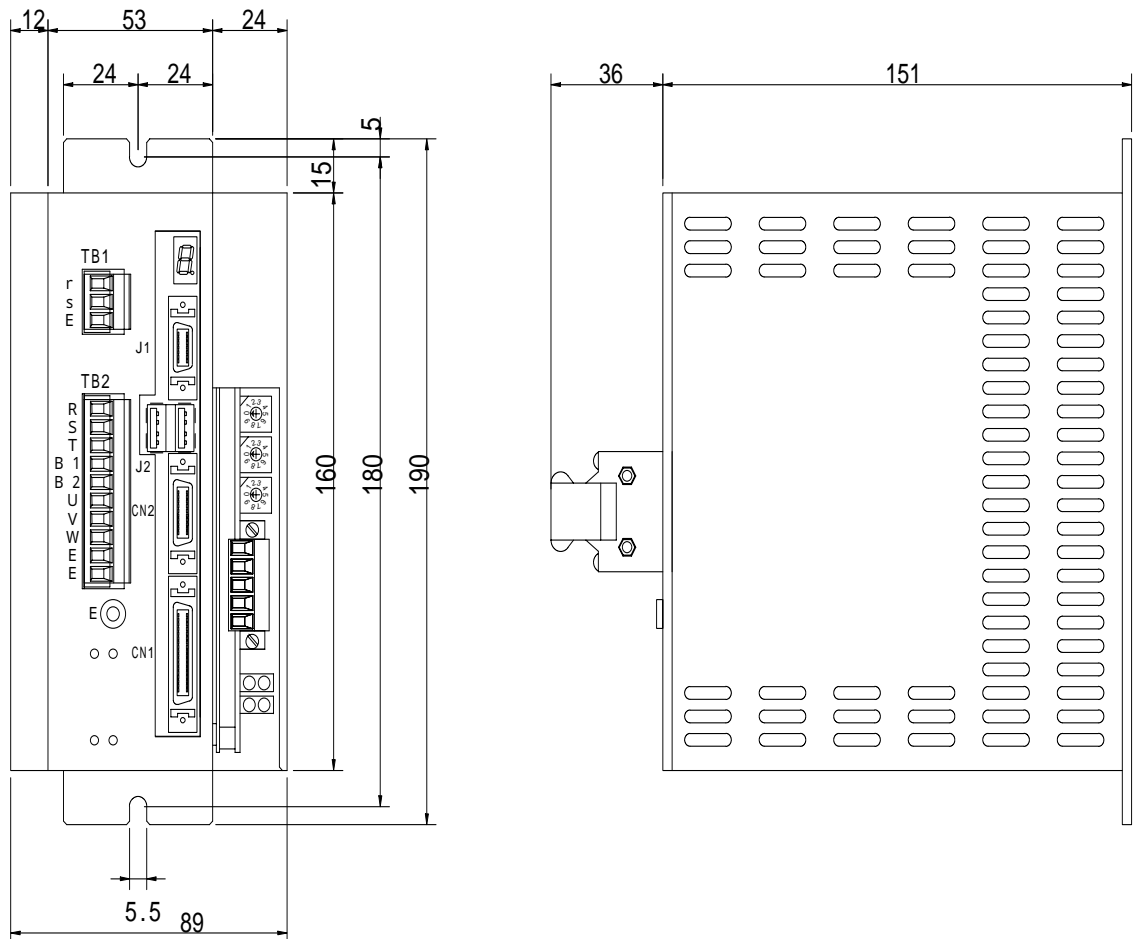
NCR-*A*-801 (200 VAC)

Unit   mm

TB1
TB2
J1
J2
CN2
CN1

40   55   24
10   31   10
5
15
160   180   190
119   5.5
36   160
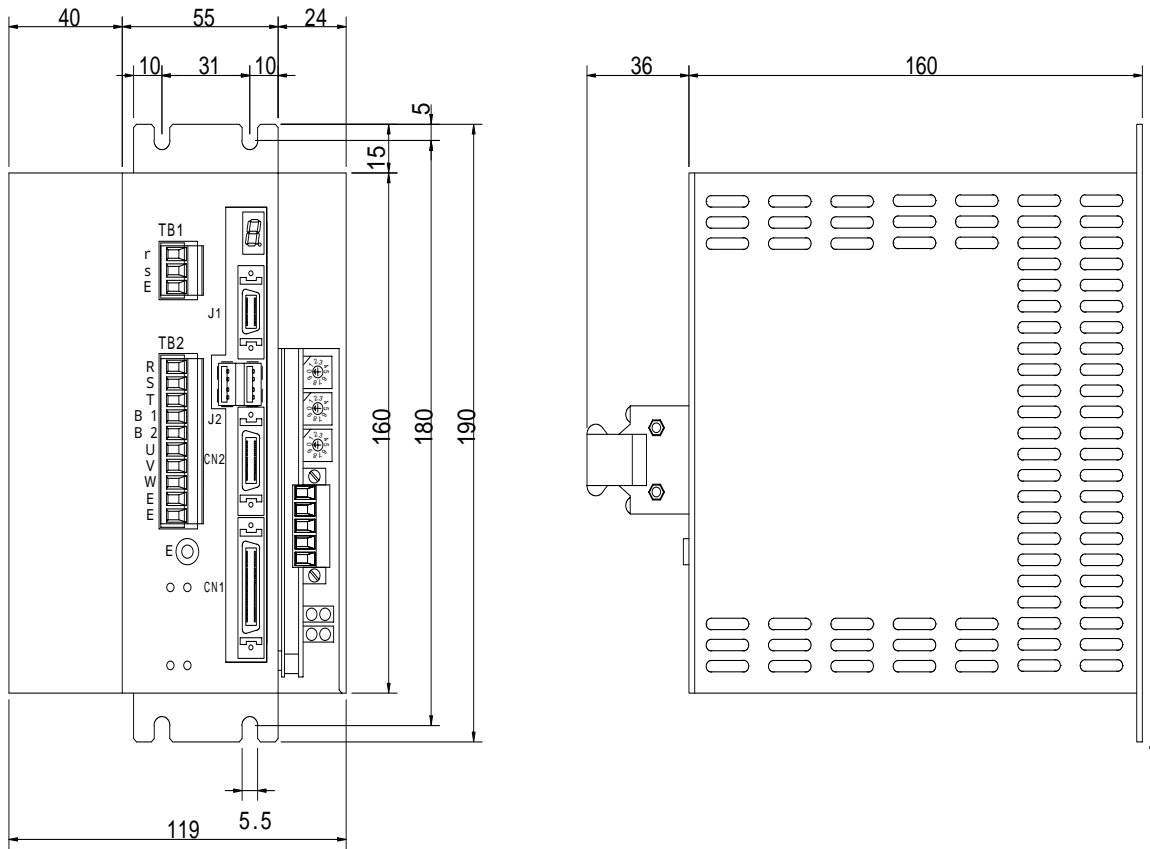
NCR-*A*-152/222 (200 VAC)

Unit   mm

NCR-*A*-152/222 (200 VAC)

Unit　mm

Fan Wind Direction
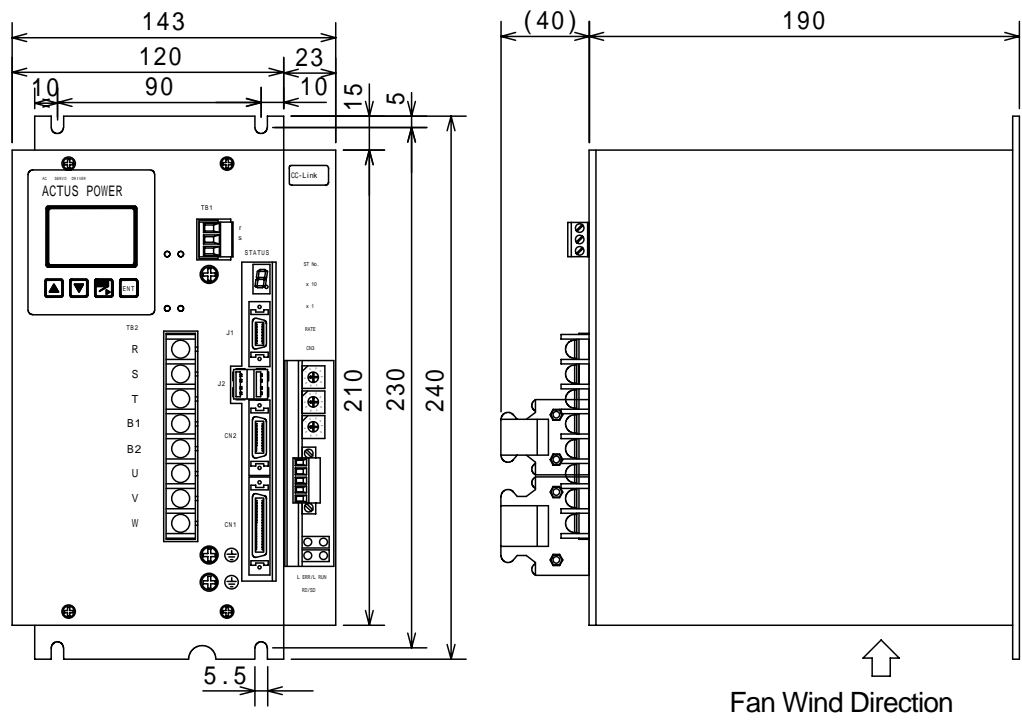
NCR-*A*-302/402 (200 VAC)

Unit   mm
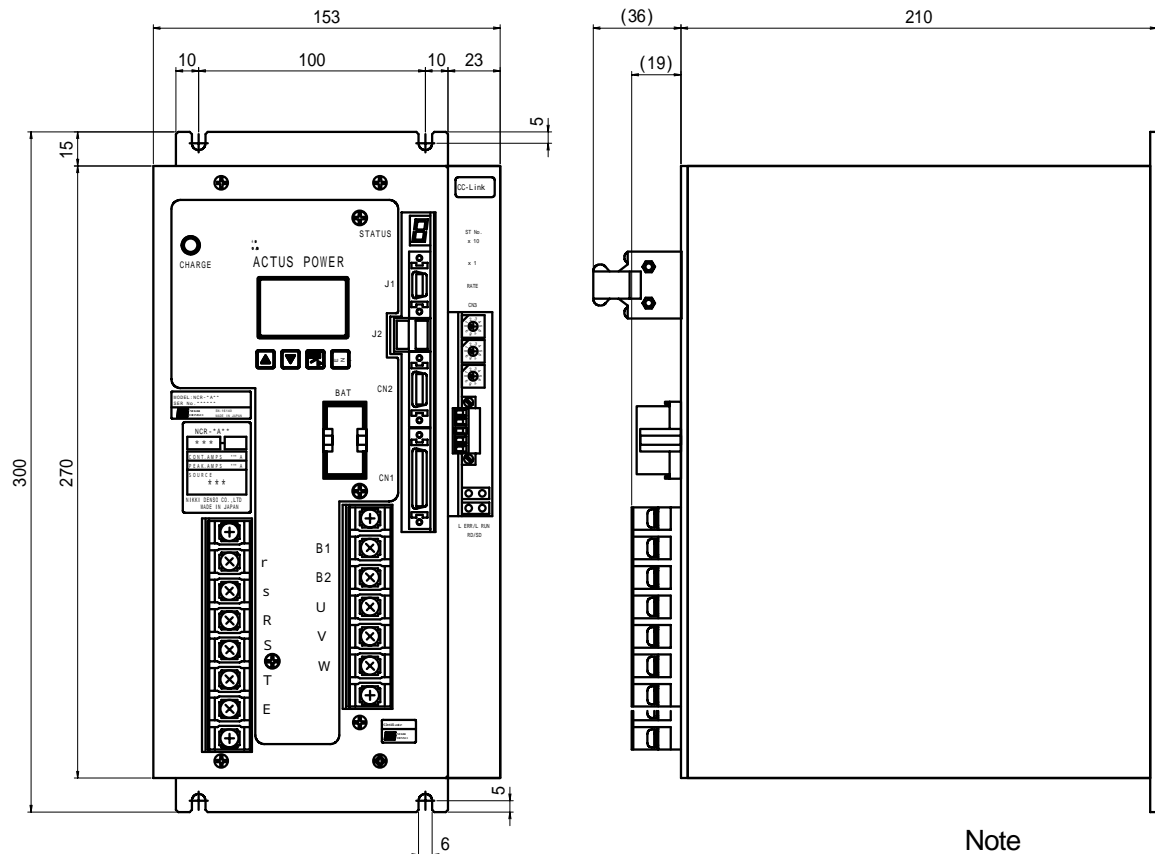
Note:
These two screws are only for 4 kW use.
The battery is provided only when
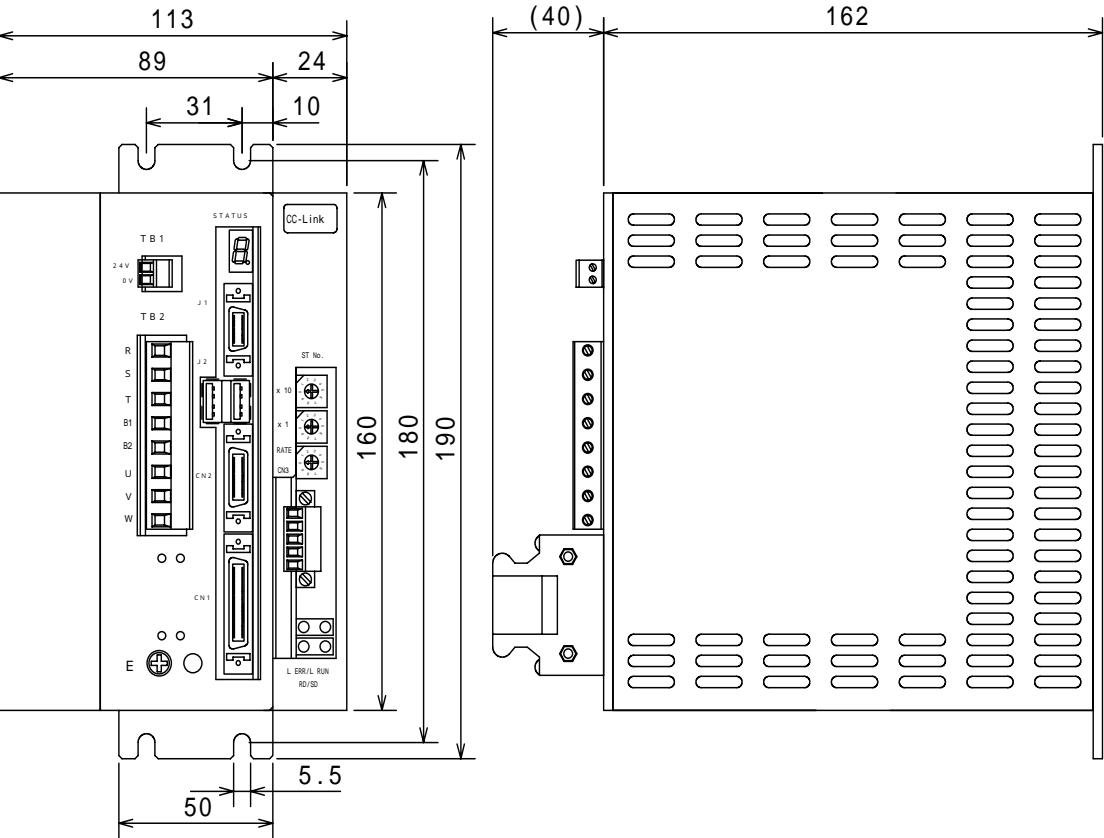absolute encoder is used.
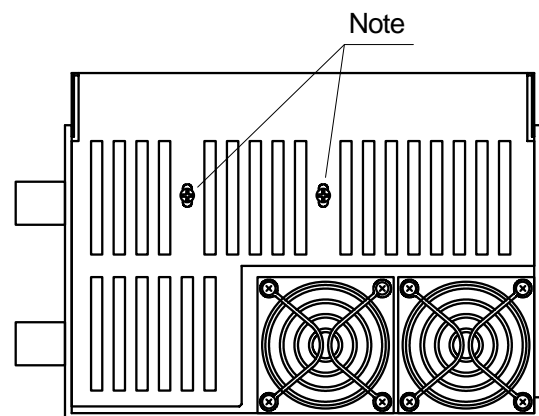
NCR-*A*-752/113/153 (200/400 VAC)

Unit   mm
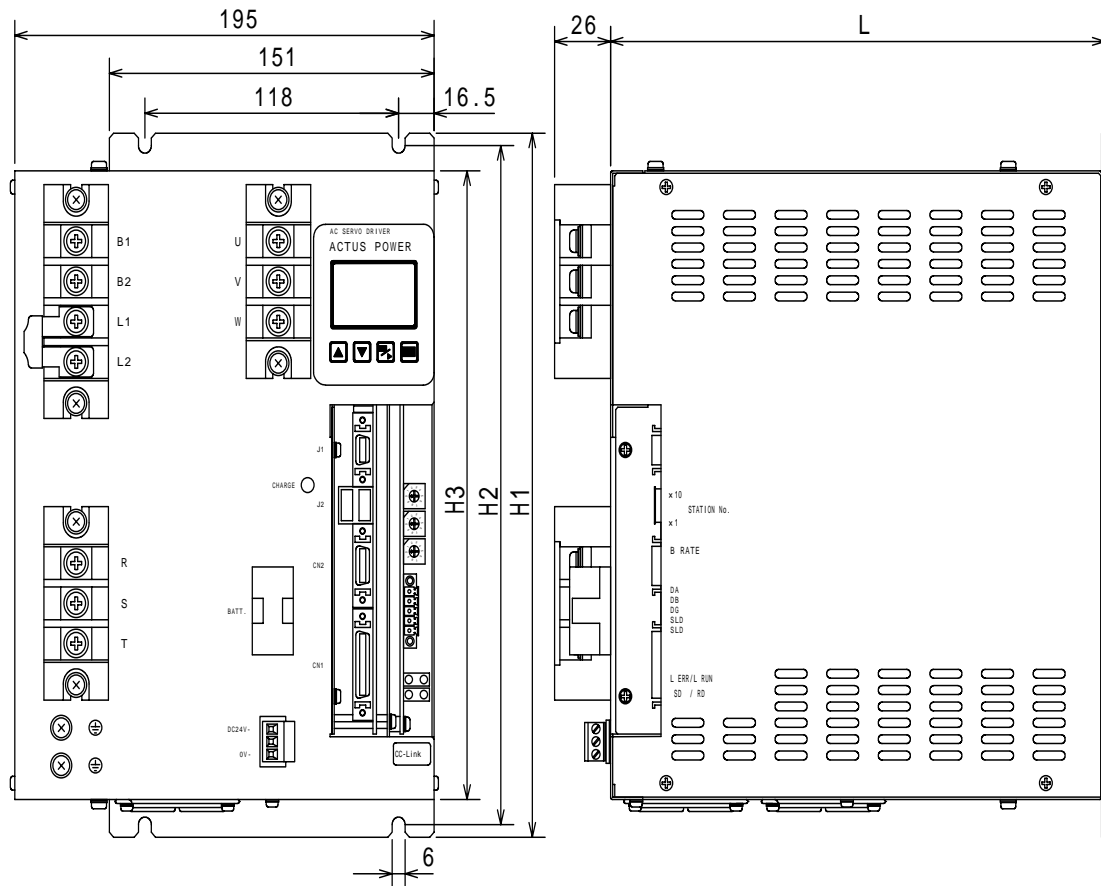
The battery is used only when absolute encoder is used.

Model				

NCR-*A*-751 (400 VAC)

Unit　mm

NCR-*A*-262 (400 VAC)

Unit mm

Fan Wind Direction
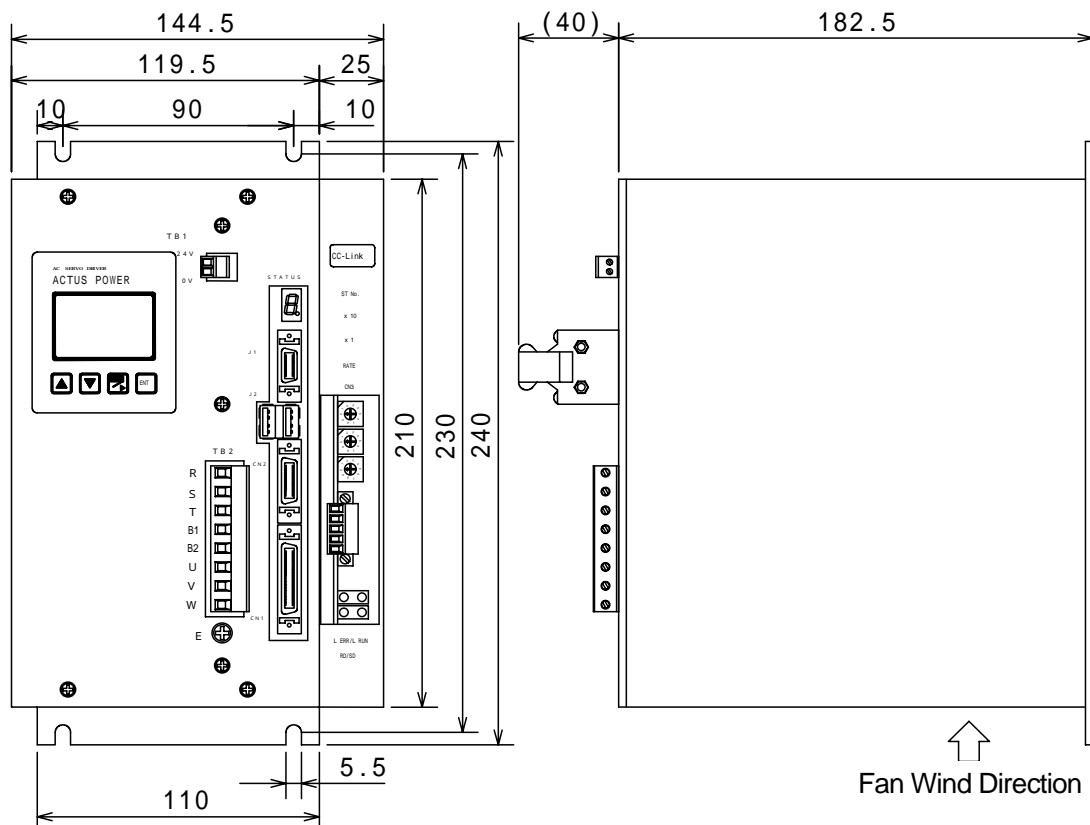
NCR-*A*-402 (400 VAC)

Unit mm

Fan Wind Direction
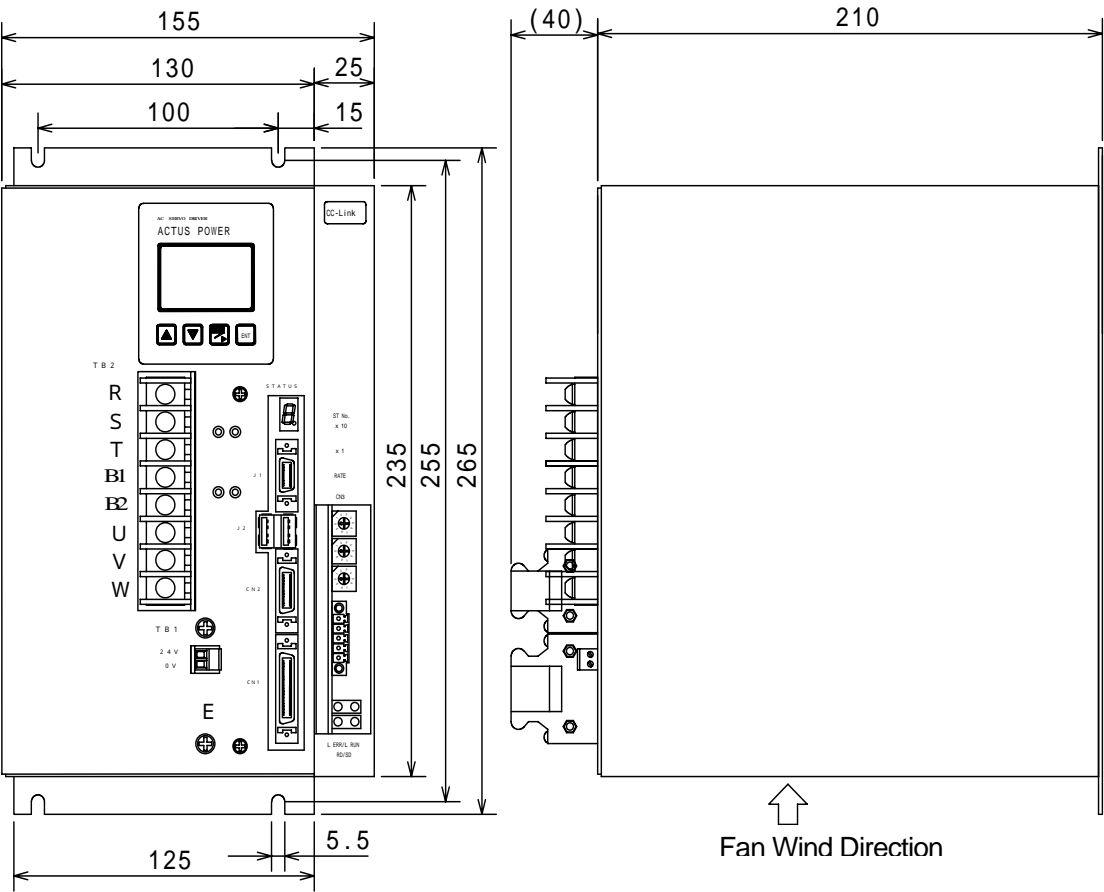
Appendix.6 Input/Output Control Signals and Their Availability in CC-Link

Input/output control signals that can be remotely input/output in CC-Link are marked "Yes" and those that cannot be remotely input/output in CC-Link are marked "No" in "Availability column.

Output Control Signals			Input Control Signals		
Name	Symbol	Availability	Name	Symbol	Availability
Reset		Yes	Alarm		Yes
Servo On			Servo Ready		
Emergency Stop			Warning		
Start Drive	DR		Speed Zero		
Select Speed Gain	GSEL		Positioning Completed		
Clear Deviation			Release Brake		
Forward Over Travel			Speed/Torque Limited		
Backward Over Travel			Speed Mode	SMOD	
Select Speed/Torque 1			Torque Mode	TMOD	
Select Speed/Torque 2			Pulse Train Mode	PMOD	
Select Command Direction			Servo Locked	S V L K	
Select Mode 1					
Select Mode 2					
Limit Torque					
Inhibit Command Pulse Input					
Brake On	BRON				
Proportional Control					
Speed Override 1					
Speed Override 2					
Speed Override 3					
Speed Override 4					
Input Pulse Train	RC,FC	No	Output Encode Pulse	EA,EB,EM	No
Torque Limit Command	TL+/-				
Speed Command					
Torque command					

2) VC-C1

Input/output control signals that can be remotely input/output in CC-Link are marked "Yes" and those that cannot be remotely input/output in CC-Link are marked "No" in "Availability column.

Output Control Signals			Input Control Signals		
Name	Symbol	Availability	Name	Symbol	Availability
Reset		Yes	Alarm		Yes
Emergency Stop			Warning		
Servo On			Servo Ready		
Select Speed Gain	GSEL		Speed Zero		
Clear Deviation			Positioning Completed		
Forward Over Travel			Positioning to Reference		
Backward Over Travel			Release Brake		
Select Mode 1			Torque Limited		
Select Mode 2			End Program	PEND	
Limit Torque			Auto Run Ready		
Inhibit Command Pulse Input			Manual Mode	MMOD	
Brake On	BRON		Home Positioning Mode	HMOD	
Proportional Control			Auto Mode	AMOD	
Addressing 1			Pulse Train Mode	PMOD	
Addressing 2			General Output 1	OUT1	
Addressing 3			General Output 2	OUT2	
Addressing 4			General Output 3	OUT3	
Addressing 5			General Output 4	OUT4	
Addressing 6			General Output 5	OUT5	
Addressing 7			General Output 6	OUT6	
Addressing 8			General Output 7	OUT7	
Auto Start			General Output 8	OUT8	
Job Forward			Soft Limit Switch A	SLSA	
Job Backward			Soft Limit Switch B	SLSB	
Select Job Speed	JOSP		Output 01		
M Completed	MFIN		Output 02		
Stop Block	BSTP		Output 04		
Cancel Program	PCAN		Output 08		
Inhibit External Auto Start	EPIH		Output 10		
Speed Override 1			Output 20		
Speed Override 2			Output 40		
Speed Override 3			Output 80		
Speed Override 4			M Strobe	MSTB	
Hold					
External Trigger (Note)					

Lower Origin Speed		No	Output Pulse	Encoder	EA,EB,EM	No
Input Pulse Train	RC,FC					
Torque Limit Command	TL+/-					
Speed Command						
Torque Command						

(Note) External Trigger (TRG) signal can be used only when control commands are continuously executed.

3) VC-C6

Input/output control signals that can be remotely input/output in CC-Link are marked "Yes" and those that cannot be remotely input/output in CC-Link are marked "No" in "Availability column.

Output Control Signals			Input Control Signals		
Name	Symbol	Availability	Name	Symbol	Availability
Reset		Yes	Alarm		Yes
Emergency Stop			Warning		
Servo On			Servo Ready		
Select Speed Gain	GSEL		Speed Zero		
Clear Deviation			Positioning Completed		
Forward Over Travel			Positioning to Reference		
Backward Over Travel			Release Brake		
Select Mode 1			Torque Limited		
Select Mode 2			End Program	PEND	
Limit Torque			Auto Run Ready		
Inhibit Command Pulse Input			Manual Mode	MMOD	
Brake On	BRON		Home Positioning Mode	HMOD	
Proportional Control			Auto Mode	AMOD	
Addressing 1			Pulse Train Mode	PMOD	
Addressing 2			General Output 1	OUT1	
Addressing 3			General Output 2	OUT2	
Addressing 4			General Output 3	OUT3	
Addressing 5			General Output 4	OUT4	
Addressing 6			General Output 5	OUT5	
Addressing 7			General Output 6	OUT6	
Addressing 8			General Output 7	OUT7	
Auto Start			General Output 8	OUT8	
Jog Forward			Electronic Clutch Stopped		

Jog Backward			Free Curve Operation		
Select Job Speed	J O S P		Soft Limit Switch A	S L S A	
Completed	M F I N		Soft Limit Switch B	S L S B	
Stop Block	B S T P		Output 01		
Cancel Program	P C A N		Output 02		
Inhibit External Auto Start	E P I H		Output 04		
Speed Override			Output 08		
Speed Override			Output 10		
Speed Override			Output 20		
Speed Override			Output 40		
Hold			Output 80		
External Trigger (Note)			M Strobe	MSTB	
Select Internal Master Speed			Master Speed Zero		
Phase Advance					
Phase Delay					
Electronic Clutch					
Select Master Axis					
Stop Cycle					
Select Pattern 1					
Select Pattern					
Select Pattern					
Lower Origin Speed		No	Output Encoder Pulse	EA,EB,EM	No
Master Axis Pulse Train Command	RC,FC				
Torque Limit Command	TL+/-				

(Note) External Trigger (TRG) signal can be used only for synchronization start adjustment function during execution of free curve operation command.

4) VC-C3

Input/output control signals that can be remotely input/output in CC-Link are marked "Yes" and those that cannot be remotely input/output in CC-Link are marked "No" in "Availability column.

Output Control Signals			Input Control Signals		
Name	Symbol	Availability	Name	Symbol	Availability
Reset		yes	Alarm		yes
Emergency Stop			Warning		
Servo On			Servo Ready		
Select Speed Gain	GSEL		Speed Zero		
Clear Deviation			Positioning Completed		
Forward Over Travel			Positioning to Reference		
Backward Over Travel			Release Brake		
Select Mode 1			Torque Limited		
Select Mode 2			End Program	PEND	
Limit Torque			Auto Run Ready		
Inhibit Command Pulse Input			Manual Mode	MMOD	
Brake On	BRON		Home Positioning Mode	HMOD	
Proportional Control			Auto Mode	AMOD	
Addressing 1			Servo Lock Mode	PMOD	
Addressing 2			General Output 1	OUT1	
Addressing 3			General Output 2	OUT2	
Addressing 4			General Output 3	OUT3	
Addressing 5			General Output 4	OUT4	
Addressing 6			General Output 5	OUT5	
Addressing 7			General Output 6	OUT6	
Addressing 8			General Output 7	OUT7	
Auto Start			General Output 8	OUT8	
Jog Forward			Soft Limit Switch A	SLSA	
Jog Backward			Soft Limit Switch B	SLSB	
Select Job Speed	JOSP		Output 01		
Completed	MFIN		Output 02		
Stop Block	BSTP		Output 04		
Cancel Program	PCAN		Output 08		
Inhibit External Auto Start	EPIH		Output 10		
Speed Override			Output 20		

Speed Override			Output 40		
Speed Override			Output 80		
Speed Override			Master Axis Speed Zero		
Hold			M Strobe	MSTB	
External Trigger (Note)			Auto Run	PRUN	
Select Internal Master Speed			Auto Run Ready 1	PRDY1	
Disconnect Control			Auto Run Ready 2	PRDY2	
End Synchronization			Home Positioning Completed	HCMP	
Start Drive			Disconnected Position Terminal	MLS	
Select Master Axis			Run General Output	ROUT1	
End Cycle			Run General Output	ROUT2	
Inhibit Mark			Run General Output	ROUT3	
Measure Disconnected Time			Run General Output	ROUT4	
			Output One Cycle	ROUT6	
			Output in Synchronization	ROUT7	
			Output Standby Position	ROUT8	
Lower Origin Speed		No	Output Encoder Pulse	EA,EB,AD	No
Master Axis Pulse Train Command	RC,FC				
Torque Limit Command	TL+/-				

Note: External Trigger (TRG) signal can be input remotely, but does not function. To use External Trigger signal, use it via external input terminal.

Appendix7 Application Example

In this appendix, an example of setup and programming for the VC Series models is introduced for an application where **two VC Series Models** are networked with a **Mitsubishi MELSEC Q Series Sequenser** as the master station and Mitsubishi **GX Developer** (Version 8.03D) is used as a tool of design and maintenance for the sequencer.

Description is made on the assumption that you are familiar with the use of MELSEQ-Q Series Sequencer and GX Developer. For details of these products, refer to their individual instruction manuals issued by Mitsubishi Electric Corporation.

(1) Setup of Network Parameters for Master Unit (Sequencer)

Network parameters required to be set up for the master station are explained below. For detailed description of these parameters, refer to the relevant instruction manuals issued by Mitsubishi Electric Corporation.

(1) Open "Master Station Network Parameter Setup" screen

Master Station Network Parameter Setup Screen (Sample)
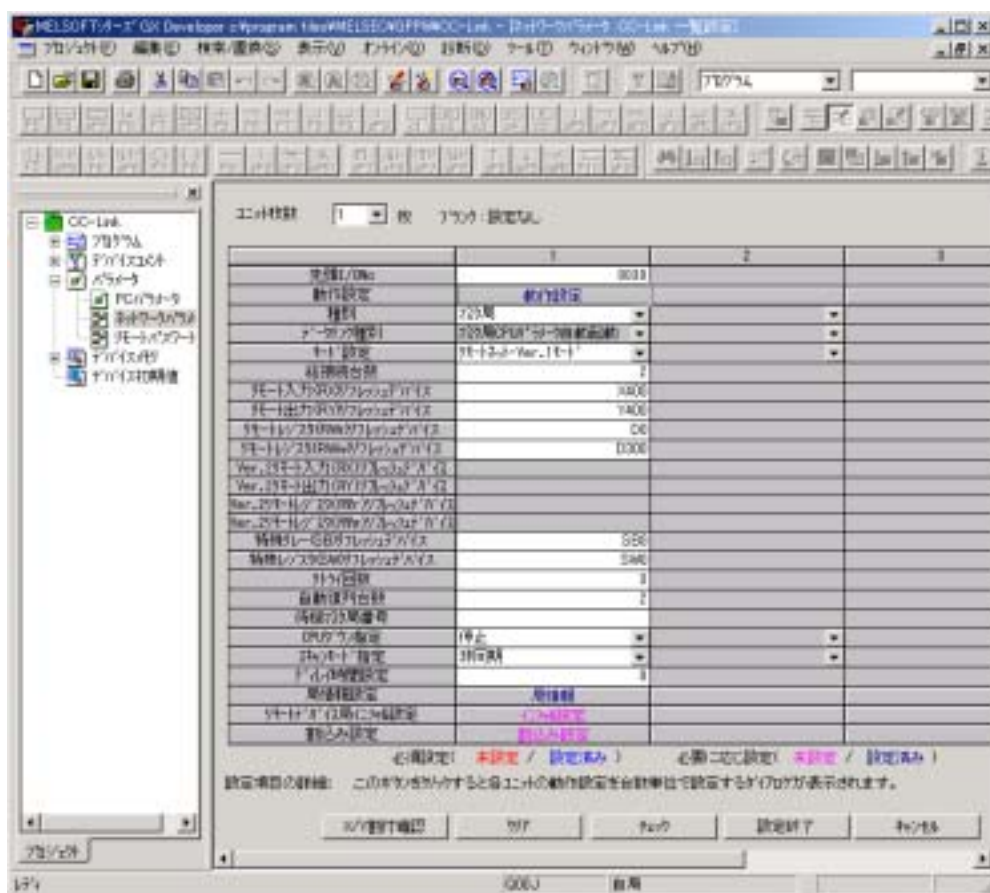
(2) In the **No. of Units** field, sepcify the number of units for which network parameters are to be set up. (In this sample, a single unit is specified.)

(3) In the **First I/O No.** field, specify the first I/O unit number of the master station. This number varies with the system configuration of the master station. (In this sample, the unit number "0030" is specified.)

(4) In the **Type** field, specify the type of the station. (In this sample, "Master" is specified.)

(5) In the **Mode** field, specify the mode of the CC-Link. (In this sample, "Remote Net Ver.1 Mode" is specified.)

(6) In the **Total No. of Connected Units** field, specify the total number of connected units over the CC-Link system, including reserved stations. (In this sample, "2" is specified as two VC Series models are connected.)

(7) In the **Remote Input (RX) Refresh Device** field, specify the refresh device to be used for remote input (RX). As a single VC Series model can oppupy four stations, "X400" through "X47F" are assigned for the RX of the first model, and "480" through "X4FF" are assigned for the RX of the second model. For details on the RX signals, refer to Section 2.3.1 "Memory Mapped Profile." (In this sample, "X400" is specified.)

(8) In the **Remote Output (RY) Refresh Device** field, specify the refresh device to be used for remote output (RY). As a single VC Series model can oppupy four stations, "Y400" through "Y47F" are assigned for RY of the first model, and "480" through "Y4FF" are assigned for RY of the second model. For details on the RY signals, refer to Section 2.3.1 "Memory Mapped Profile." (In this sample, "Y400" is specified.)

(9) In the **Remote Register (RWr) Refresh Device** field, specify the refresh device to be used for remote register (RWr). "D0" through "D15" are assigned for RWr of the first model, and "D16" through "D31" are assigned for RWr of the second model. For details on the RWr signals, refer to Section 2.3.1 "Memory Mapped Profile." (In this sample, "D0" is specified.)

(10) In the **Remote Register (RWw) Refresh Device** field, specify the refresh device to be used for remote register (RWw). "D300" through "D315" are assigned for RWr of the first model, and "D316" through "D331" are assigned for RWr of the second model. For details on the RWw signals, refer to Section 2.3.1 "Memory Mapped Profile." (In this sample, "D300" is specified.)

(11) In the **Special Relay (SB) Refresh Device** field, specify the refresh device to be used for special relay (SB). (In this sample, "SB0" is specified.)

(12) In the **Special Register (SW) Refresh Device** field, specify the refresh device to be used for special register (SW). (In this sample, "SW0" is specified.)

(13) In the **Station** field, select **Station Profile**, then the following screen will appear.

Select "Remote Device Station" in the **Station Type** field, select "4 " in the **Occupied Stations** field, and select "None" in the **Reserved/Invalid Stations** field.

As a single VC Series model occupies four stations, the station number of the first model is set to "1" and that of the second model is set to "5."

    (14) Specify all network parameters and other required data including PC parameters, and write them into the sequencer.

    (2) Setup of Switches of Master Unit (Sequencer)

Set up the switches of the master unit as shown in the example below:
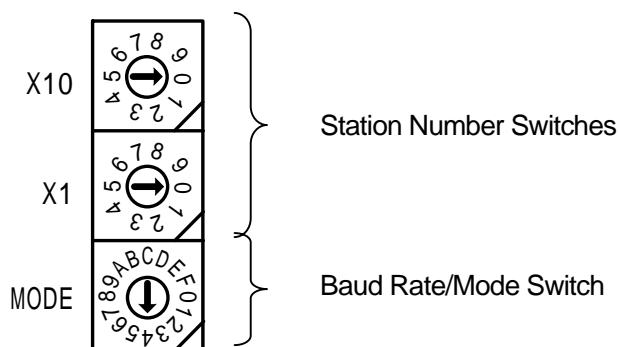
Position the Station Number switches to "00" to specify master station.

Position the Baud Rate/Mode switch to "4" to specify the baud rate of 10 Mbps and online mode.

Note : Baud rate might be specified differently from this example, depending on the cable length or communications environment.

(3) Setup of Switches of VC Series Models

Set up the switches of two VC Series models as shown in the following examples:
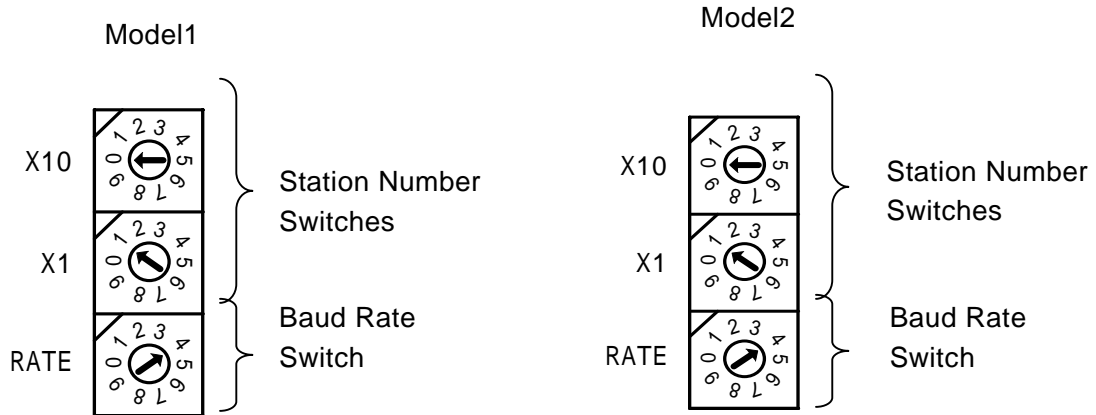
Model 1: Position the two Station Number switches to "01" to specify the station number 1. Position the Baud Rate switch to "4" to specify 10 Mbps.

Model 2: Position the two Station Number switches to "05" to specify the station number 5. Position the Braud Rate switch to "4" to specify 10 Mpbs.

Note : Baud rate might be specified differently from this example, depending on the cable length or communications environment.

(4) Connection with Master Unit

Upon completion of setups described in 1 through 3 above, connect the master unit (sequencer) and the VC Series models according to the instructions in Section 2.2 "Wiring," and power them on to start communication between them. In case "CC-Link Switch Setup Error" alarm should happen, check and correct the setup of the switches of the VC Series models.

Note : "Wait for CC-Link Communication" warning will be issued until the communications between the sequencer and the VC Series models have been established after the power on. If the setups in 1 through 4 and the wiring have been done properly, the warning will disappear after a while. If the warning would not disappear, check and correct the setups and/or wirings.

(5) Sequence Program for Reading/Writing

Refreshed data reading/writeing and data reading/writing upon Request for Read/Write are performed by the sequence program. For the data numbers used for reading/writing, refer to associated "Operating Instructions for VC Series Data"

Due to the setups described in (9) and (10) of "1. Setup of Network Parameters for Master Unit," the relationships between the remote registers (RWr/RWw) and the devices on the sequencers are as shown in the table below.

From Slave to Master			
Address	Contents	Unit 1 Sequencer Device	Unit 2 Sequencer Device
RWrn	Alarm/Warning Number	D0	D16
RWrn+1	Reserved	D1	D17
RWrn+2	Read data subject to Request for Read Source is specified by RWwn (lower data)	D2	D18
RWrn+3	Read data subject to Request for Read Source is specified by RWwn (upper data)	D3	D19
RWrn+4	Keep-refreshed read data 1 (lower data)	D4	D20
RWrn+5	Keep-refreshed read data 1 (upper data)	D5	D21
RWrn+6	Keep-refreshed read data 2 (lower data)	D6	D22
RWrn+7	Keep-refreshed read data 2 (upper data)	D7	D23
RWrn+8	Keep-refreshed read data 3 (lower data)	D8	D24
RWrn+9	Keep-refreshed read data 3 (upper data)	D9	D25
RWrn+A	Keep-refreshed read data 4 (lower data)	D10	D26
RWrn+B	Keep-refreshed read data 4 (upper data)	D11	D27
RWrn+C	Keep-refreshed read data 5 (lower data)	D12	D28
RWrn+D	Keep-refreshed read data 5 (upper data)	D13	D29
RWrn+E	Keep-refreshed read data 6 (lower data)	D14	D30
RWrn+F	Keep-refreshed read data 6 (upper data)	D15	D31
From Master to Slave			
Address	Contents	Unit 1 Sequencer Device	Unit 1 Sequencer Device
RWwn	Data number of the data subject to Request for Read or Request for Write	D300	D316
RWwn+1	Reserved	D301	D317
RWwn+2	Write data subject to Request for Write Destination is specified by RWwn (lower data)	D302	D318
RWwn+3	Write data subject to Request for Write Destination is specified by RWwn (upper data)	D303	D319
RWwn+4	Keep-refreshed write data 1 (lower data)	D304	D320
RWwn+5	Keep-refreshed write data 1 (upper data)	D305	D321
RWwn+6	Keep-refreshed write data 2 (lower data)	D306	D322
RWwn+7	Keep-refreshed write data 2 (upper data)	D307	D323
RWwn+8	Keep-refreshed write data 3 (lower data)	D308	D324
RWwn+9	Keep-refreshed write data 3 (upper data)	D309	D325
RWwn+A	Keep-refreshed write data 4 (lower data)	D310	D326
RWwn+B	Keep-refreshed write data 4 (upper data)	D311	D327
RWwn+C	Reserved	D312	D328
RWwn+D		D313	D329
RWwn+E		D314	D330
RWwn+F		D315	D331

1) Writing of keep-refreshed write data

Data to be written to the VC Series model are specified on the sequencer devices that correcond to keep-refreshed write data 1 through 4. Data number of the data to be written are specified by the parameters P720 through P723. (For details on these parameters, refer to Section 5 "CC-Link Related Parameters.")

When data "12345678" is written into the indirect data 50 by using keep-refreshed write data 1 on the unit 1, the following program is executed. (Data transfer is performed while M0 is turned on.)
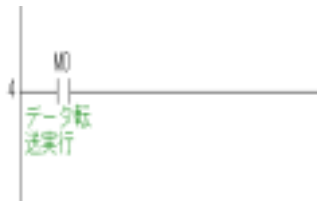
2) Reading of keep-refreshed read data

Read data are stored on the sequencer device that corres   ed read data 1 through 6. Data number of the data to be read are specified by the parameters P724 through P729. (For details on these parameters, refer to Section 5 "CC-Link Related Parameters.")

When the value in the indirect data 50 is read out to the sequencer device D1000 by using keep-refreshed read data 1 on the unit 2, the parameter P724 is set to "13700" (indirect data 50) and the following program is executed. (Data transfer is performed while M0 is turned on.)

M0
Data transfer
Read data 1 on unit 2   Read data in indirect data 50

3) Writing of write data subject to Request for Write

Data to be written on the VC Series model are specified on the sequencer devices that correspond to write data subject to Request for Write (WREQ). When WREQ is turned on, the data writing is performed. Data numbers of the data to be written are specified on the sequencer devices that corespond to the data numbers of the data subject to WREQ or Request for Read (RREQ).

When write data "12345678" is written in indirect data 50, the following program is executed. (Writing is performed once when M1 is turned on.

Writing upon WREQ — Data number for WREQ/RREQ of unit 1 — Write data for WREQ of unit 1
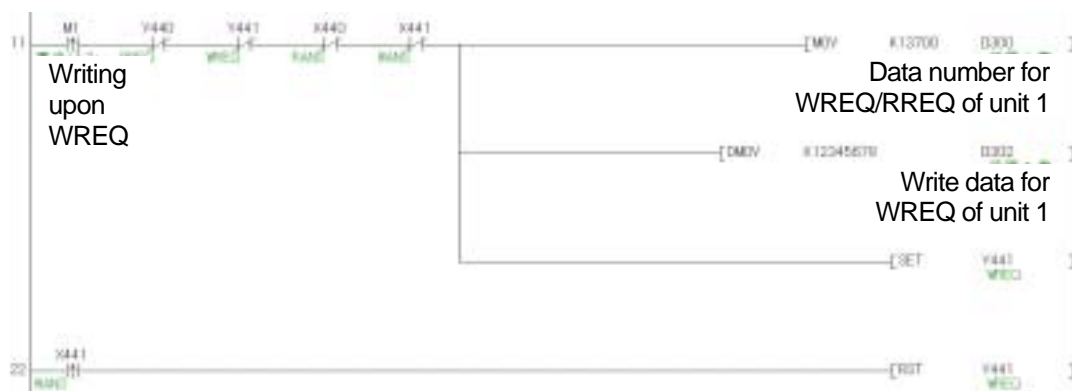
4) Reading of read data subject to Request for Read

Data number of the data to be read is specified on the sequencer device that corresponding to the data number of the data subject to Request for Write (WREQ) or Request for Read (RREQ). When RREQ is turned on, the read data having the specified data number is stored on the sequencer device that correspond to the read data subject to RREQ.

When the value in the direct data 50 of the unit 2 is read out to the sequencer device D1000, the following program is executed. (Reading is performed once when M2 is turned on.)

Reading upon RREQ — Data number for WREQ/RREQ of unit 2 — RREQ data on unit 2 — Read data in indirect data 50