Minebea

CC-Link

DIGITAL INDICATOR
CC−Link interface
CSD−815B−73

Instruction Manual

Minebea Co., Ltd.
Measuring Components Business Unit

EN294-1435-C

Forwards

Thank you very much for your purchasing Minebea's Digital Indicator with CC−Link interface CSD−815B−73. This manual explains installation procedures and connecting method and also operating method for the Digital Indicator with CC−Link interface CSD−815B−73. When you will use this instrument as the specification with CC−Link interface, make use of it properly after reading through the manual carefully.

Be sure to deliver the manual to the end user. Moreover, the end user should keep the manual at hand after reading it over.

This manual is intended for the technical experts to read. When you read this instruction manual, the program basic knowledge of a Mitsubishi general−purpose PLC and the basic knowledge of CC−Link interface are needed.

●CC−Link is an abbreviation of "Control & Communication Link"

●This products supports CSP+ (CC−Link Family System Profile Plus).
Please download CSP+ file from the following URL if required.
http://www.minebea-mcd.com/en/product/i-amp/csd815.html
In addition, please refer to HP of the MITSUBISHI ELECTRIC for the details of the CSP+.

●The contents of the manual may subject to change for improvement without notice.

Marks and arrangements used in this manual

The following marks are attached to the explanation on the matters that indicate “Don’t do this.”, “Take care.” and “For reference”.
Be sure to read these items where these marks are attached.

⚠ Warning	● Warning may cause injury or accident that may harm to the operator. Do not do these things described here.
	● Caution during operation and working. Be sure to read the item to prevent malfunction.

About the view of this book

In this instruction manual, the connection method and use of the CC−Link interface specification of the option for CSD−815B are explained. Please see the CSD−815B instruction manual about other main body functions and a basic method of handling and notes.

- CSD−815B instruction manual(DRW NO.EN294−1435*)

Moreover, please refer to the instruction manual on PLC and PLC side CC−Link interface for the PLC program and CC−Link.

History of revision

Date	Instruction Manual No.	Details of revised point
Nov. 2010	DRW. NO. EN294−1435	First version CSD−815B main body Ver.1.200 or later CC−Link interface CARD Ver.04 or later
May 2012	DRW.NO.EN294−1435−A	Due to ECN No.FN10−02140−D − Change − MInebea logo is changed.
Nov 2013	DRW.NO.EN294−1435−B	Due to ECN No.FN13−02138A Delete the statement clause from Minebea logo in the coverpage. Change from [sequencer] to [PLC]. Change from [CC−LINK] to [CC−Link]. 5−2−2. (1) change from [Remote input] to [Remote output]. (2) change from [Remote output] to [Remote input]. ⑪change from [Error reset request flag] to [Error condition flag]. 6−3. change from [set initial responce] to [set initial completion]. Add 6−5. Error condition/ reset request flag.
Sep 2014	DRW.NO.EN294−1435−C	Due to ECN No.FN14−02124 − Change − About the view of this book Add [This product supports CSP+].

CONTENTS

1. General

This unit is a remote device station of CC−Link Ver.1.10.
This unit can be connected with the mastering station of CC−Link Ver.1.10.

1−1. Features

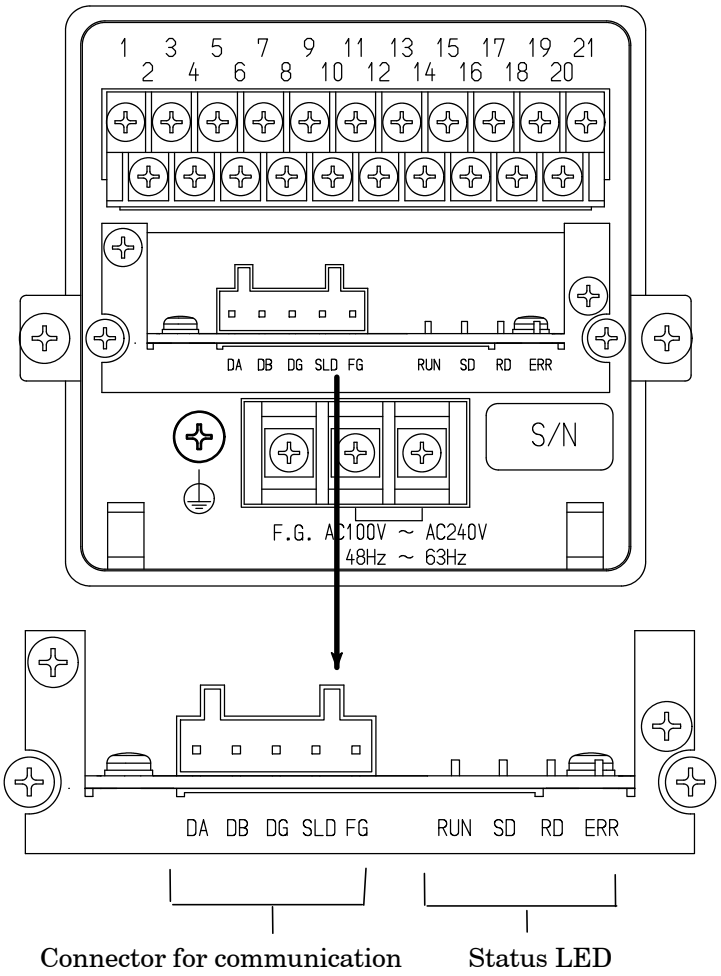
Main features for CSD−815B−73 are as follows :

(1) Because this unit can be controlled by using remote I/O and a remote register of the PLC, the program volume of the PLC can be reduced.

(2) Wiring with the PLC can be reduced.

2. Name and function of each point

2−1. Rear panel CC−Link I/F point



(1) Connector for communication terminal block

Connector type terminal block for CC−Link interface.

Connector type terminal block pin configuration is as follows.

DA	Signal cable DA side
DB	Signal cable DB side
DG	Signal cable ground
SLD	Shield
FG	Frame ground

Suitable plug：721−105/037−000 (WAGO) ※to be attached.

“SLD” and “FG” are connected in the instrument.

The internal circuit and photo coupler are insulated.

(2) Status LED

The communication status is expressed with four LED.

LED Name	Light on	Light off	Light on/off
RUN	・Normal	・In the reset ・unavailable to communication	—
SD	・Sending	—	—
RD	・Receiving	—	—
ERR	・Abnormal setting ・CRC error occurs. ・Trouble	・Normal	・When setting changes

3. Connecting method

3−1. Connector pin configuration for communication

Refer to “2−1. Rear panel(1) Connector for communication terminal block”.

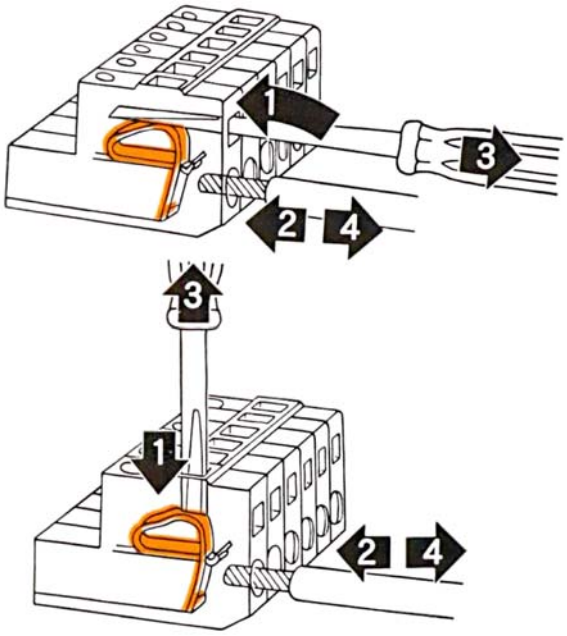
3−2. Cable length

Relation of baud rate and total extension length as follows.

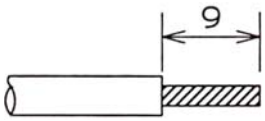
Baud rate	Cable length
156 kbps	1 200 m or less
625 kbps	600 m or less
2.5 Mbps	200 m or less
5 Mbps	150 m or less
10 Mbps	100 m or less

3−3. Connection

Please follow the instruction of connecting wires on the sequencer instruction manual about connecting wires.



Striped electrical cable length



1) Put in the driver minus type.

2) Insert the electrical cable.

3) Pull out the driver minus type.

4) Confrim wire connection by a few tension.

3−4. Notes of Connection

- When the wiring, be sure to the instrument power supply is OFF.
- Do not supply the AC power until complete the installation. This instrument does not have power switch (ON/OFF).
- Do not fell or make a strong impact on this instrument rear pannel terminal block because it is made of resin.
- Striped electrical cable tip length is 9 mm.
- Cables which connecting this instrument isolate from noise sources, for example, power supply line and I/O for control's as much as possible.
- Be sure to connect the ground wire must be D single ground. Do not common the ground with a kind of power supply.
- For CC−Link cable connection, use twist pear cable wire with shield(Cable for CC−Link) and connect the shield in terminal block's SLD terminal or F.G.terminal.

●Connect the termination to the CC−Link connector to electrical termination which is far from PLC as possible.

●Use the connecting cable for CC−Link.

4. Setting of CC−Link connecting

Please set the following in the function mode when you use CC−Link interface.
Please refer to clause 8−1 of the CSD−815B instruction manual for ”Method of setting the function”.

4−1. Detail of CC−Link setting

Setting of the station(Function F−84)
The station of CC−Link is set.
The range which can be set is “0” ～ “2”.
Default is set as [2].

F−84	Occupied stations No.
0	1 station
1	2 stations
2	4 stations

●Setting changes for occupied stations No is corresponding to this software after ROM Ver. 1200 and after CC−Link I/F CARD software ROM Ver. 04.
Before ROM Ver. 1.100 and Ver. 03 is fixed 4 station occupied station No.

4−2. Setting of the station(Function F−85)

Excute the setting of the station.
When it is 1 occupied station: selectable from station No 01 to 64.
When it is 2 occupied station: selectable from station No 01 to 63.
When it is 4 occupied station: selectable from station No 01 to 61.
The occupied station of this instrument is 1., 2, 4 stations.
For example, when the station number is assumed to 1 station and station No is set as 01, 01 ～ 04 stations are occupied. Therefore, the station number must not overlap.
Default is set as [01].

4−3. Setting of baud rate(F−86)

Excute the setting baud rate (unit: bps).
The range which can be set is from [0] to [4].
Default is set as [0]. Each setting value for baud rate is as fallow.

F−86 setting value	Baud rate
0	156 kbps
1	625 kbps
2	2.5 Mbps
3	5 Mbps
4	10 Mbps

4−4. 32 bits data expression method(F−87)

Excute the setting of 32 bits data expression method.

The range which can be set is [0] or [1].

Default is set as [0]. Each setting value for 32 bits data expression method is as fallow.

F−87 setting value	32 bits data expression method
0	Expression of standard binary
1	Highest bit sign

Load value	F−87	Lower 16 bit	Upper 16 bit
−1	0	FFFFH	FFFFH
	1	8000H	0001H
−10	0	FFFFH	FFF6H
	1	8000H	000AH
−99999	0	FFFEH	7961H
	1	8001H	869FH

Setting value is valid when the power rebooting. In case of changing the setting, excute the power rebooting.

5. PLC memory explanation

5−1. Address

A remote I/O(RX/RY：Bit handling register) and a remote register(RWw/RWr：Word handling register) secures the zone in the master station depends on the occupied station number. As shown in the table below in case of this unit.

Type		Occupied station number			Remarks
		Occupies 4 stations	Occupies 2 stations	Occupies 1 station	
Remote input		128 points	64 points	32 points	I/O for each 16 points is occupied as a system area.
Remote output		128 points	64 points	32 points	
Remote register	Master→ Remote	16 points	8 points	4 points	
	Remote→ Master	16 points	8 points	4 points	

The address number of the remote station allocated to the mastering station is as shown in the table below.

Station No.	Remote input	Remote output	Remote register		Remarks
			Master→Remote	Remote→Master	
0	—	—	—	—	Specify the master station
1	RX0000	RY0000	RWw0000	RWr0000	
	00E0	0160	01E0	02E0	
2	RX0020	RY0020	RWw0004	RWr0004	
	00E2	0162	01E4	02E4	
3	RX0040	RY0040	RWw0008	RWr0008	
	00E4	0164	01E8	02E8	
～					
10	RX0120	RY0120	RWw0024	RWr0024	
	00F2	0172	0204	0304	
～					
64	RX07E0	RY07E0	RWw00FC	RWr00FC	
	015E	01DE	02DC	03DC	

5−2. Address map

In this paragraph, the address of “Remote input”, “Remote output”, and “Remote register” when the station Number of [1] is set. Please note that the address is different when you set the station number except No.[1].

5−2−1.Data detail

(1) Remote register(Master→This instrument)

Occupies 4 stations				
Station	Buffer Address	Register Master→CSD−815B	Contents	Remarks
1	01E0	RWw0000	①S0 set value 32 bit	Special data area
	01E1	RWw0001		
	01E2	RWw0002	①S1 set value 32 bit	
	01E3	RWw0003		
2	01E4	RWw0004	①S2 set value 32 bit	
	01E5	RWw0005		
	01E6	RWw0006	Undefined 32 bit	
	01E7	RWw0007		
3	01E8	RWw0008	Undefined 32 bit	
	01E9	RWw0009		
	01EA	RWw000A	Undefined 32 bit	
	01EB	RWw000B		
4	01EC	RWw000C	②General data area 32 bit	
	01ED	RWw000D		
	01EE	RWw000E	③Command No.(Return) 8 bit	
	01EF	RWw000F	④Operating mode(Return) 8 bit	

Occupies 2 stations				
Station	Buffer Address	Register Master→CSD−815B	Contents	Remarks
1	01E0	RWw0000	①S0 set value 32 bit	Special data area
	01E1	RWw0001		
	01E2	RWw0002	①S1 set value 32 bit	
	01E3	RWw0003		
2	01E4	RWw0004	②General data area 32 bit	
	01E5	RWw0005		
	01E6	RWw0006	③Command No.(Return) 8 bit	
	01E7	RWw0007	④Operating mode(Return) 8 bit	

Occupies 1 station				
Station	Buffer Address	Register Master→CSD−815B	Contents	Remarks
1	01E0	RWw0000	Unused 64 bit	Special data area
	01E1	RWw0001		
	01E2	RWw0002		
	01E3	RWw0003		

Remote register(Master station→This instrument)

①Special data area(4 stations ,2 stations)

When the set value is registered by using the set value writing request (request 1), the set value is set in each area.

Details of each set value are shown as follow,

set value from S0 to S2

Execute the setting of the comparative data.

Data type : 32 bits binary with + or −

Setting range : −99 999～99 999

②General data area(4 stations ,2 stations)

When the command order is executed by using the general command request (request 2), the set value or the operating order code is set in this area.

Data type : 32 bits binary with + or −

Range of setting value : −99 999～99 999

③Command No.(4 stations ,2 stations)

When the command order is executed by using the general command request (request 2), the command No. is set in this area.

The content of the general data area is set depending on the command set in this command No.

Data type : 8 bits binary

Range of setting value : 0～255

④Operation mode(4 stations ,2 stations)

When the operation mode is a changeover and is gotten by using the operation mode changeover request (request 3), the mode number is set in this area. Mode only [0] corresponds in the current state, and write [0] only.

Data type : 8 bits binary

Range of setting value : 0～255 (However, [0] only corresponds in the current status.)

⑤Commands list(4 stations ,2 stations)

When the command order is executed by using the general command request (request 2), the value set in command No. and the general data area is indicated as follows;

Writing the set value and operation request (Writing/Reading out selection=Writing [OFF])

Setting value or command request	Command No. (RWw000E)	General data area (RWw000C～RWw000D)
S0	10	−99 999～99 999
S1	11	−99 999～99 999
S2	12	−99 999～99 999
Tare weight cancellation ON(A/Z ON)	0	14
Tare weight cancellation OFF(A/Z OFF)		15
Zero set ON(ZERO)		16
Reset of sequence error		36

Reading out the setting value(Selection of writing/Reading out＝Reading out[ON])

Setting value or Command request	Command No. (RWw000E)	General data area (RWw000C～RWw000D)
S0	10	−99 999～99 999
S1	11	−99 999～99 999
S2	12	−99 999～99 999

Numeric representation of a remote register is as shown in the table below as a rule. However, the negative numeric expression is different according to setting F−87. Please refer to the paragraph 4−1.

Decimal number	16 bits data	32 bits data	
		Upper position	Lower position
0	0000H	0000H	0000H
1	0001H	0000H	0001H
10	000AH	0000H	000AH

(2) Remote register(Instrument→Master)

Occupies 4 stations				
Station	Buffer Address	Register Master→Instrument	Contents	Remarks
1	02E0	RWr0000	①Net weight value	OL display : Set 99999 −OL display : Set −99999
	02E1	RWr0001		
	02E2	RWr0002	②Gross weight value	
	02E3	RWr0003		
2	02E4	RWr0004	Undefined	
	02E5	RWr0005		
	02E6	RWr0006	③Error code	
	02E7	RWr0007	④Error assistance code	
3	02E8	RWr0008	Undefined	
	02E9	RWr0009		
	02EA	RWr000A		
	02EB	RWr000B		
4	02EC	RWr000C	⑤General data area	
	02ED	RWr000D		
	02EE	RWr000E	⑥Command No.(Response)	
	02EF	RWr000F	⑦Operation mode(Response)	

Occupies 2 stations				
Station	Buffer Address	Register Master→Instrument	Contents	Remarks
1	02E0	RWr0000	⑧Indicate value(NET weight value/ GROSS weight value)	
	02E1	RWr0001		
	02E2	RWr0002	③Error code	
	02E3	RWr0003	④Error assistance code	
2	02E4	RWr0004	⑤General data area	
	02E5	RWr0005		
	02E6	RWr0006	⑥Command No.(Response)	
	02E7	RWr0007	⑦Operation mode(Response)	

Occupies 1 station				
Station	Buffer Address	Register Master→Instrument	Contents	Remarks
1	02E0	RWr0000	⑧Indicate value(NET weight value/ GROSS weight value)	
	02E1	RWr0001		
	02E2	RWr0002	③Error code	
	02E3	RWr0003	④Error assistance code	

①Net weight value(4 stations ,2 stations)

Area for displaying the net weight value

Data type : 32 bits binary with + or −

Range of setting value : −99 999～99 999

②Gross weight value(4 stations)

Area for displaying the gross weight value

Data type : 32 bits binary with s+ or −

Range of setting value : −99 999～99 999

③Error code(4 stations ,2 stations ,1 station)

Refer to below table of ④ error assistance code too.

Area for displaying the error No. generating in the main body of the indicator.

Data type : 16 bits binary

Range of setting value : 0～255

④Error assistance code(4 stations ,2 stations ,1 station)

Data type : 16 bits binary

Range of setting value : 0～255

Error code	Error support code	Error contents
0	0	No error
99	0	In case of setting the unspecified data in command No.
1	1	In case of the instrument is “Calibration mode”, “Check mode” and “Monitor mode”.
1	2	In case of setting the ZERO or A/Z at the prohibition condition,
1	13	In case of the data setting other than specification in general data area,
1	14	In case of connecting error of internal

⑤General data area(4 stations ,2 stations)

When the setting value reading out command is ordered by using the general command request (Request 2), this area displays the setting value.

Data type : 32 bits binary with + or −.

Range of setting value : −99 999～99 999

⑥Command No.(Response)(4 stations ,2 stations)

When the command order is executed by the general command request (Request 2), this area displays that command No.

Data type : 8 bits binary

⑦Operation mode (Response)(4 stations ,2 stations)

When the changeover of the operation by the operation mode changeover request (Request 3), this area displays the mode.

Data type : 8 bits binary

⑧Indicate value(NET weight/ GROSS weight) (2 stations ,1 station)

It is area which showing the GROSS weight value or NET weight value.

Data type : 32 bits binary with + or −

Range of setting value : −99 999～99 999

5−2−2.Relay zone

(1) Remote output (Master→This instrument)

Occupies 4 stations			
Device NO.	Buffer address	Contents	Classification
RY0000	0160	①Setting value writing request (Request 1)	Communication
RY0001			
RY0002		②General command request (Request 2)	
RY0003		③Selection of writing/Reading out. (R/W)	
RY0004		④Operation mode changeover request (Request 3)	
RY0005			
RY0006			
RY0007			
RY0008			
RY0009			
RY000A			
RY000B			
RY000C			
RY000D			
RY000E			
RY000F			
RY0010	0161	⑤ZERO	Control signal
RY0011			
RY0012		⑥A/Z ON	
RY0013		⑦A/Z OFF	
RY0014			
RY0015			
RY0016			
RY0017			
RY0018			
RY0019			
RY001A			
RY001B			
RY001C			
RY001D			
RY001E			
RY001F			
・	0162～0166		
RY006F			
RY0070	0167	System reservation zone	
RY0071			
RY0072			
RY0073			
RY0074			
RY0075			
RY0076			
RY0077			
RY0078		⑧Initial data proseccing complete flag	
RY0079		⑨Initialed data set request flag	
RY007A		⑩Error reset request flag	
RY007B			
RY007C			
RY007D			
RY007E			
RY007F			

Occupies 2 stations			
Device NO.	Buffer address	Contents	Classification
RY0000	0160	①Setting value writing request (Request 1)	Communication
RY0001			
RY0002		②General command request (Request 2)	
RY0003		③Selection of writing/Reading out. (R/W)	
RY0004		④Operation mode changeover request (Request 3)	
RY0005			
RY0006			
RY0007			
RY0008			
RY0009			
RY000A			
RY000B			
RY000C			
RY000D			
RY000E			
RY000F			
RY0010	0161	⑤ZERO	Control signal
RY0011			
RY0012		⑥A/Z ON	
RY0013		⑦A/Z OFF	
RY0014			
RY0015			
RY0016			
RY0017			
RY0018			
RY0019			
RY001A			
RY001B			
RY001C			
RY001D			
RY001E			
RY001F		⑪Select NET weight value/GROSS weight value	
・	0162		
RY002F			
RY0030	0163	System data zone	
RY0031			
RY0032			
RY0033			
RY0034			
RY0035			
RY0036			
RY0037			
RY0038		⑧Initial data proseccing complete flag	
RY0039		⑨Initialed data set request flag	
RY003A		⑩Error reset request flag	
RY003B			
RY003C			
RY003D			
RY003E			
RY003F			

Occupies 1 station			
Device NO.	Buffer address	Contents	Classification
RY0000	0160	⑤ZERO	Control signal
RY0001			
RY0002		⑥A/Z ON	
RY0003		⑦A/Z OFF	
RY0004			
RY0005			
RY0006			
RY0007		⑪Select NET weight value/GROSS weight value	
RY0008			
RY0009			
RY000A			
RY000B			
RY000C			
RY000D			
RY000E			
RY000F			
RY0010	0161	System data zone	
RY0011			
RY0012			
RY0013			
RY0014			
RY0015			
RY0016			
RY0017			
RY0018		⑧Initial data prosecing complete flag	
RY0019		⑨Initialed data set request flag	
RY001A		⑩Error reset request flag	
RY001B			
RY001C			
RY001D			
RY001E			
RY001F			

①Setting value writing request (Request 1)

Requests writing of the data set in special data area. (RWw0000−RWw000B).

ON : In the request of writing

OFF : After confirming “Setting value writing response (Response 1)” of remote input.

②General command request (Request 2)

Writing/Reading out by the command order is requested.

Please use together with writing/reading out selection (R/W).

ON : In the request of writing/reading out

OFF : After confirming “Setting value writing response (Response 2)” of remote input.

③Selection of writing or reading out(R/W)

Select writing or reading out by the command order.

Writing the data set in general−purpose data area (RWw000C−RWw000D) by command NO. (RWw000E) is ordered for writing.

Reading out the data set in general−purpose data area (RWw000C−RWw000D) by command NO. (RWw000E) is ordered for reading out.

ON : Reading out

OFF : Writing

④Operation mode changeover request (Request 3)

Requests the writing of the data set in operation mode (RWw000F).

ON : In the request of writing request.

OFF : After confirming “Operation mode changeover response (Response 3)” of remote input.

⑤ZERO

Execute the zero set.

ON : In requesting the execution of zero set.

OFF : Normal

⑥A/Z ON

Start an automatic zero.

ON : In the request of starting the automatic zero.

OFF : Normal

⑦A/Z OFF

Clear the automatic zero.

ON : In the request of A/Z clear.

OFF : Normal

⑧Initial prosecing complete flag

Send the initial prosecing complete flag when it will recive [RX078] command,

ON : Data clear request

OFF : Normal

⑨Initial data setting request flag

Request the initialization of the instrument.

ON : In the request of default setting.

OFF : Normal

⑩Error reset request flag

When the error generation is notified with error condition command [RX007A], request the release of the error.

ON : In the request of clear

OFF : Normal

⑪Indicate value NET weight value/GROSS weight value comunand(2 stations, 1station)

Select the indication valiue [NET] or [GROSS] in remote resistor area when the station occupies 1 or 2,

ON : NET weight value (Same value of remote resistor at the occupies 4 stations)

OFF : GROSS weight value (Same value of remote resistor at the occupies 4 stations)

(2) Remote input(Master→Instrument)

Occupies 4 station			
Device NO.	Buffer address	Contents	Classification
RX0000	00E0	①Setting value writing request (Response 1)	Communication
RX0001			
RX0002		②General command response (Response 2)	
RX0003		③Writing/reading out selection response (R/W response)	
RX0004		④Operation mode changeover response(Response 3)	
RX0005			
RX0006		⑤CPU normal operation	
RX0007			
RX0008		⑥Decimal point position 1	
RX0009		⑥Decimal point position 2	
RX000A		⑥Decimal point position 4	
RX000B			
RX000C			
RX000D			
RX000E			
RX000F			
RX0010	00E1	⑦S0	Control signal
RX0011		⑦S1	
RX0012		⑦S2	
RX0013			
RX0014			
RX0015			
RX0016			
RX0017			
RX0018			
RX0019			
RX001A		⑧In the holding	
RX001B			
RX001C			
RX001D			
RX001E			
RX001F		⑨Abnormal load value	
RX0020	00E2		
・	～00E6		
RX006F			
RX0070	00E7	System reservation zone	
RX0071			
RX0072			
RX0073			
RX0074			
RX0075			
RX0076			
RX0077			
RX0078			
RX0079		⑩Initial data setting request flag	
RX007A		⑪Error condition flag	
RX007B		⑫Remote ready	
RX007C			
RX007D			
RX007E			
RX007F			

Occupies 2 station			
Device NO.	Buffer address	Contents	Classification
RX0000	00E0	①Setting value writing request (Response 1)	Communication
RX0001			
RX0002		②General command response (Response 2)	
RX0003		③Writing/reading out selection response (R/W response)	
RX0004		④Operation mode changeover response(Response 3)	
RX0005			
RX0006		⑤CPU normal operation	
RX0007			
RX0008		⑥Decimal point position 1	
RX0009		⑥Decimal point position 2	
RX000A		⑥Decimal point position 4	
RX000B			
RX000C			
RX000D			
RX000E			
RX000F			
RX0010	00E1	⑦S0	Control signal
RX0011		⑦S1	
RX0012		⑦S2	
RX0013			
RX0014			
RX0015			
RX0016			
RX0017			
RX0018			
RX0019			
RX001A		⑧In the holding	
RX001B			
RX001C			
RX001D			
RX001E			
RX001F		⑨Abnormal load value	
RX0020	00E2		
・ ・			
RX002F			
RX0030	00E3	System reservation zone	
RX0031			
RX0032			
RX0033			
RX0034			
RX0035			
RX0036			
RX0037			
RX0038		⑩Initial data setting request flag	
RX0039		⑪Error condition flag	
RX003A		⑫Remote ready	
RX003B			
RX003C			
RX003D			
RX003E			
RX003F			

Occupies 1 station			
Device NO.	Buffer address	Contents	Classification
RX0000	00E0	⑦S0	Control output
RX0001		⑦S1	
RX0002		⑦S2	
RX0003			
RX0004			
RX0005			
RX0006			
RX0007			
RX0008			
RX0009			
RX000A		⑧In the holding	
RX000B			
RX000C			
RX000D			
RX000E			
RX000F		⑨Abnormal load value	
RX0010	00E1	System resaration zone	
RX0011			
RX0012			
RX0013			
RX0014			
RX0015			
RX0016			
RX0017			
RX0018			
RX0019		⑩Initial data setting request flag	
RX001A		⑪Error condition flag	
RX001B		⑫Remote ready	
RX001C			
RX001D			
RX001E			
RX001F			

①Setting value writing response (Response 1)

The end of writing by the set value writing request (request 1) is notified.

ON : In completion of writing

OFF : After confirming OFF of "Setting value writing request(Request 1)"

②General command response (Response 2)

The end of the command instruction by the general command request (request 2) is notified.

ON : In the completion of command instruction

OFF : After confirming OFF of the general command request (Request 2)

③Writing/Reading out selecting response (R/W response)

Notify the status of write/reading out by the command instruction when notifying by the general command response (response 2).

④Operating mode changeover response(Response 3)

Notify that the end of the operation mode changeover by the operation mode changeover request (request 3(RY0004)).

ON : In the completion of the changeover

OFF : After confirming the OFF of the operation mode changeover request(Request 3)

⑤CPU normal operation

Notify that CC−LINK interface is operating normally. Reverse the status of ON/OFF in 0.5 seconds.

⑥Decimal point position 1, 2, 3 or 4

Notify the decimal point position of the load value by the binary value of three points. This output is updated by turning on the power supply, and initialed data set request flag (RY0079).

0 : No decimal point

1 : 10^0 digit

2 : 10^2 digit

3 : 10^3 digit

4 : 10^4 digit

⑦S0～S2

Notify the condition of S0～S2. The same condition with S0～S2 of the indicator

⑧Holding

Notified whether the load value is holding.

ON : Holding

OFF : Free running

⑨Abnormal load value

Notifies when the load value is “OL” or “−OL”.

ON : When abnormality occurs

OFF : Normal

⑩Initialed data set completion flag

Notify the end of initialization when there is a request with initialed data set request flag (RY0079).

ON : In the completion of set

OFF : Normal

⑪Error condition flag

Notify when the error occurs in the indicator. After the error is released, it is reset with error reset request flag (RY007A).

ON : In the occurrence of error

OFF : Normal

⑫Remote ready

Notified to be able to complete initialization and to communicate.

ON : Possible to communicate

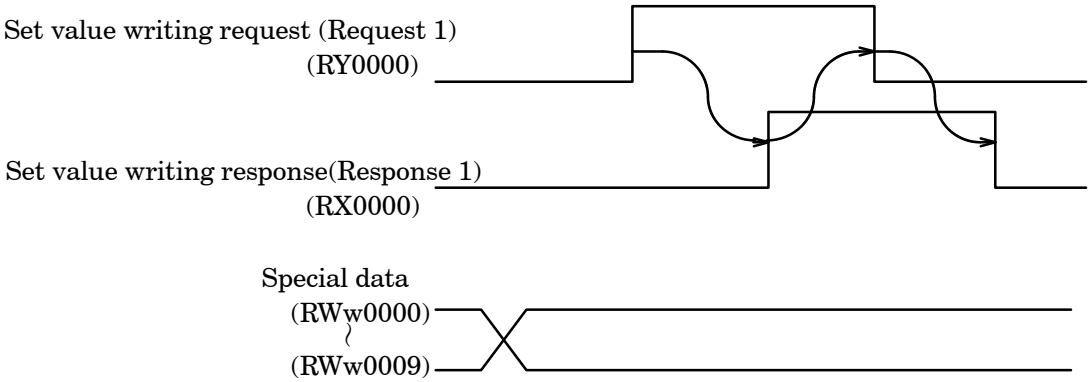
OFF : In the initialization

6. Operation method

6−1. Writing the set value (Special data area)

The set value is set in the special data area.
The instrument recognizes that “Set writing request (request 1) RY0000” was turned on, and it writes the data set in “Special data area (RW0000−RW0009)” into the indicator.
It responds to the master station by “Set value writing response RX0000 (response 1)” after writing is completed.

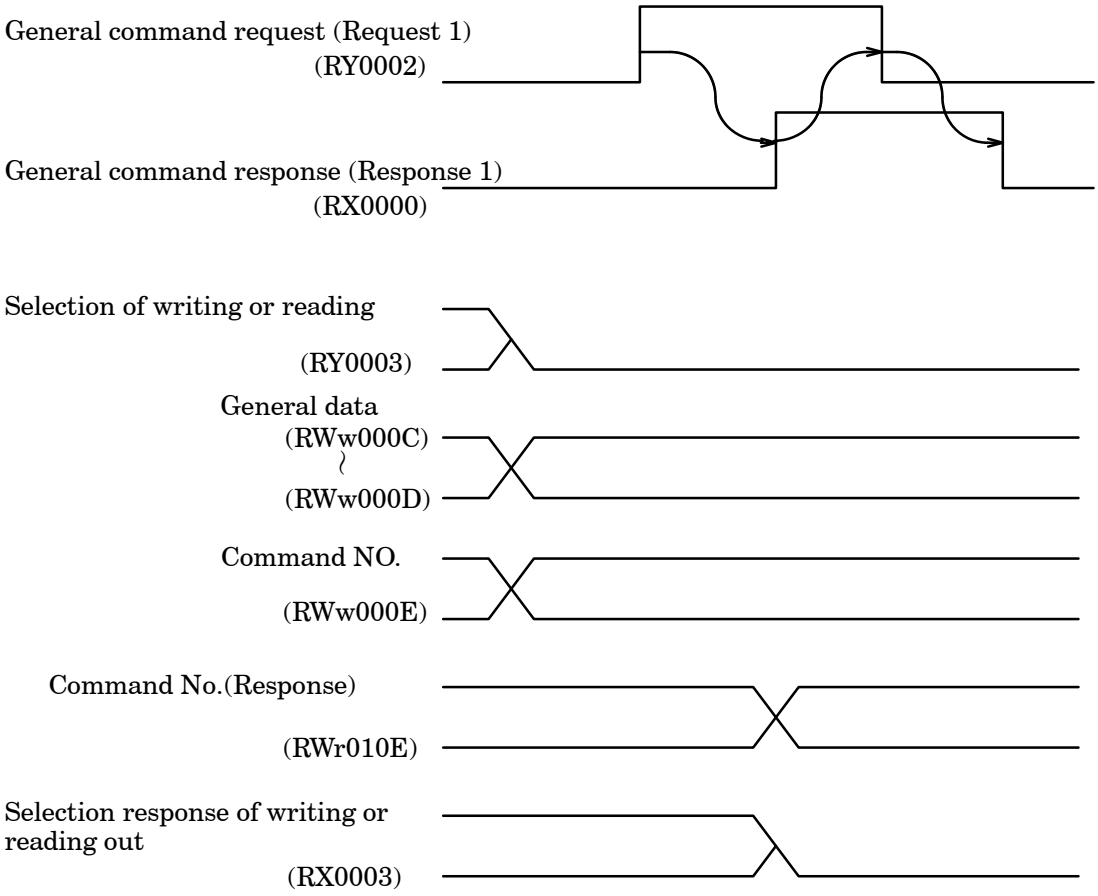
Time chart



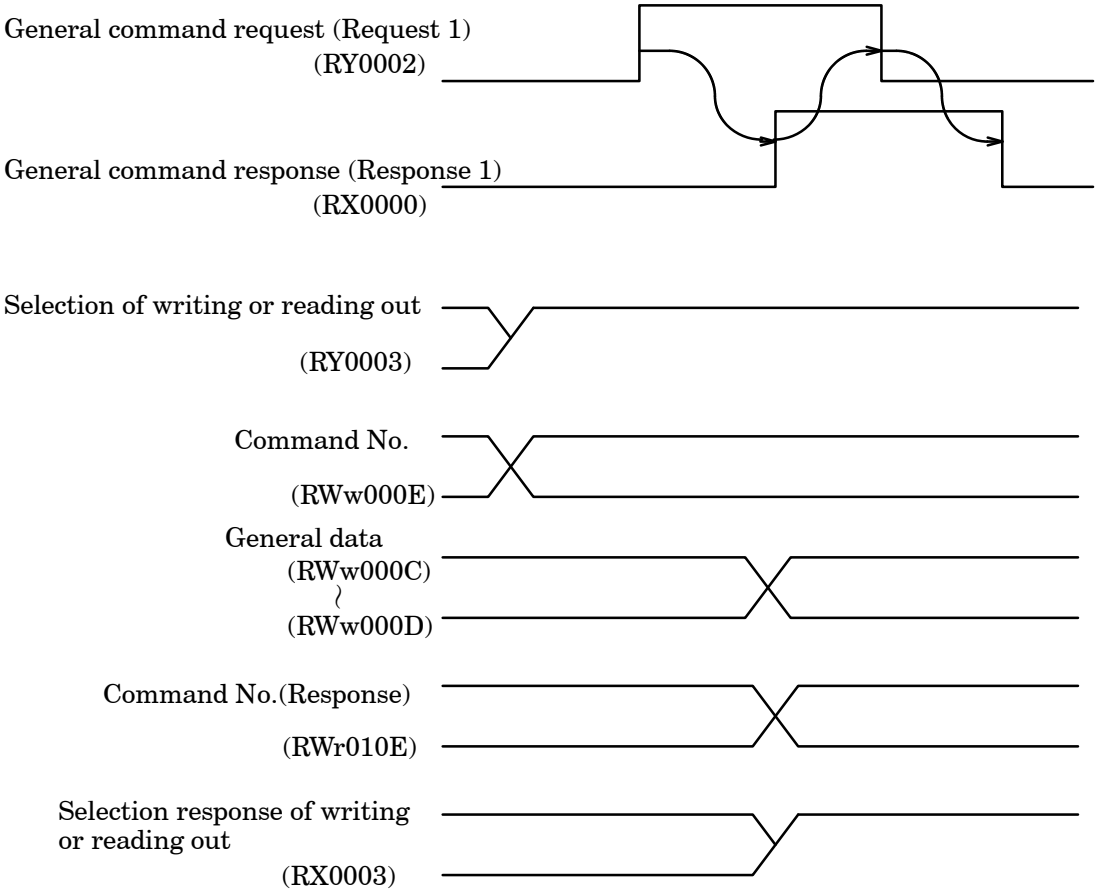
6−2. Writing/Reading by general command

Data is set in the general data area and command No. is set in the command No. area.
The instrument recognize that “General command request RY0002 (Request 2)”, and it execute to write the data set in “General data area (RWr000C～000D)” by “Selection of writing/reading out (RY0003)” or “Command No.(RWw000E)”, or to reading the data into “General data area (RWw000C～000E)” to the instrument.
It responds to the master station by ”General command response RX0000 (response 2)” after writing is completed.

①Writing request

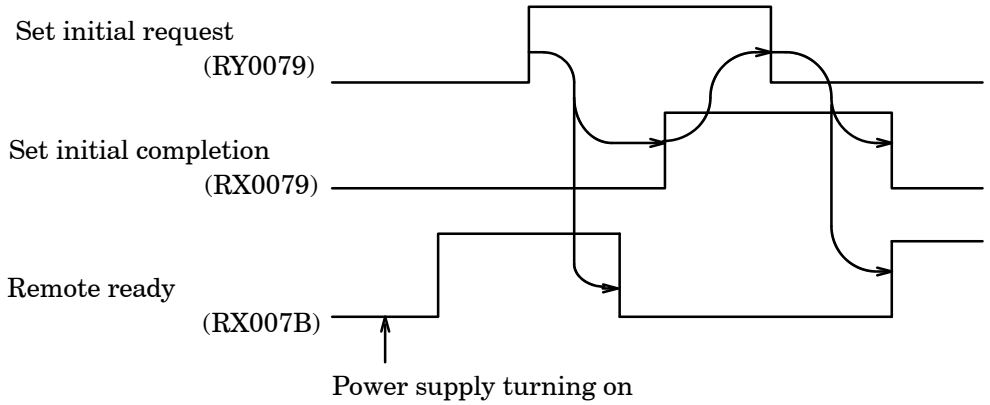


②Reading out request



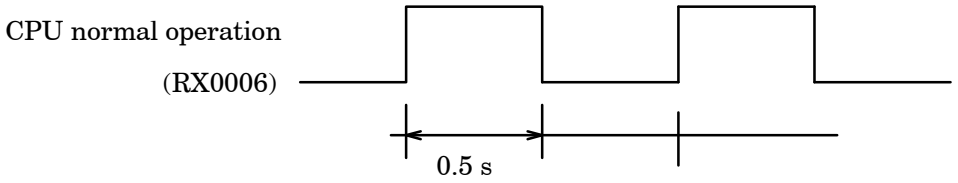
6−3. Shift to status where it is possible to communicate

"Remote READY (RX007B)" is turned on along with the power supply turning on after initialization (set initialing) completion is done and it is assumed the status where it is possible to communicate.
Moreover, remote READY is turned off when "Set initial request (RY0079)" transmitted by the master station is turned on, and initialization is executed. It responds to the master station after initialization is completed by turning on "Set initial completion (RX0079)".
That the master station recognizes turning on "Set initial completion (RX0079)", and "Set initial completion (RX0079)" is turned off makes that "Set initial request (RY0079)" is turned off, and remote ready is turned on.



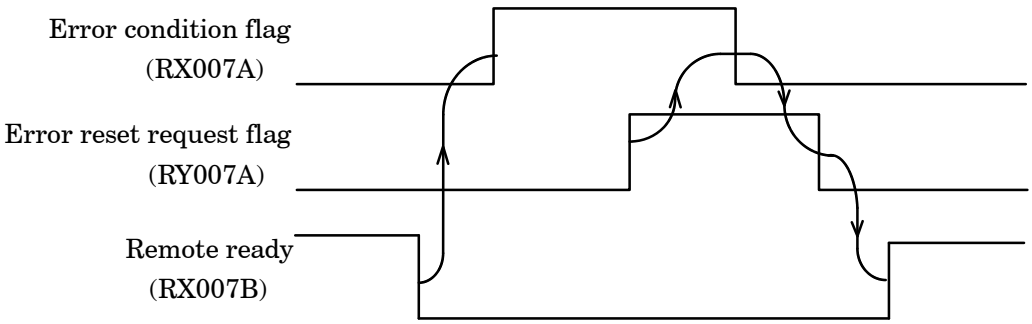
6−4. CPU normal operation signal

When the instrument operates normally, the condition of "CPU normal operating signal (RX0006)" is reversed at 0.5 seconds interval.



6−5. Error condition/Reset request flag

The state sequence which an error is detected and the reset sequence is shown.
When an error is detected,the remote ready (RX007B) is turned off and the error condition flag (RX007A) is turn on.
The error condition flag (RX007A) is turn off when the error reset request(ing) flag (RY007A) transmitted by the master station is turned on.
Afterwards,the remote ready (RX007B) is turn on when the error reset request(ing) flag (RY007A) transmitted by the master station is turned off.
When an error is detected, reset the error as the following sequence.



7. Specifications of interface

7−1. CC−Link interface spec

Specifications	Contents
Version of CC−Link	Ver.1.10
Occupied stations No.	Selectable from 1,2 or 4 stations.
Communication method	Polling method
Synchronous method	Bit synchronization method
Baud rate	Selectable from 156 kbps, 625 kbps, 2.5 Mbps, 5 Mbps or 10 Mbps
Transmission path form	RS−485 bus
Transmission format	HDLC conforming
Remote station number	In the case of 1 station occupied,No ' s. 01 to 64 can be selectable. In the case of 2 stations occupied,No ' s. 01 to 63 can be selectable. In the case of 4 stations occupied,No ' s. 01 to 61 can be selectable.
Cable length	Baud rate(bps) Total extensiondistance(m) 156 kbps 1 200m or less 625 kbps 600m or less 2.5 Mbps 200m or less 5 Mbps 150m or less 10 Mbps 100m or less
Numbers of connection	In the case of 1 station occupied, 64 units at maximum. In the case of 2 stations occupied, 32 units at maximum. In the case of 4 stations occupied, 16 units at maximum.
Termination	Resistance externally attached
Status LED	The status of communication is expressed with four LED.RUN, SD, RD or ERR

7−2. Accessory

Instruction manual or CC−Link	1 piece
Connector pin configuration for CC−Link	1 piece attached(721−105/037−000 WAGO)

- The contents of this manual may subject to change without notice.

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