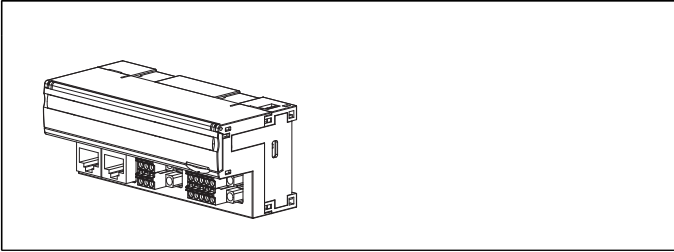# MODEL: R7G

Remote I/O R7 Series

GATEWAY MODULE

MODEL: R7G-SC-S[1]-R[2]

ORDERING INFORMATION

• Code number: R7G-SC-S[1]-R[2]
Specify a code from below for each [1] and [2].
   (e.g. R7G-SC-SHL-R/Q)
• Specify the specification for option code /Q
   (e.g. /C01)

Module type of network 1
S: Slave

Type of network 1
C: CC-Link

Module type of network 2
S: Slave

[1] Type of network 2
HL: HLS (Hi-speedLink System) Full-duplex
HL1: HLS (Hi-speedLink System) Half-duplex

POWER INPUT
DC Power
R: 24 V DC

[2] OPTIONS
blank: none
/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q
COATING (For the detail, refer to M-System's web site.)
/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating

FUNCTIONS & FEATURES
The Gateway Module for CC-Link and HLS (Hi-speedLink System) connects discrete I/O between the networks each other. The module hands over 32 point inputs of CC-Link to 32 point outputs of HLS or 32 point inputs of HLS to 32 point outputs of CC-Link.

CAUTION
In this module, the transmission between CC-Link and HLS is not synchronized. Therefore, if one of the networks read the transmitted data before completion of its update by the other network, the data may be uncertain as 16-bit data. If the correct 16-bit data is necessary, arrange the host application program.
Refer to the instruction manual.

GENERAL SPECIFICATIONS
Connection
• **Power supply, CC-Link**: Screwless spring terminal
  Applicable wire size: 0.2 - 1.25 mm^2
  Stripped length: 10 mm
  Recommended solderless terminal
  AI0,25-10YE 0.25 mm^2 (Phoenix Contact)
  AI0,34-10TQ 0.34 mm^2 (Phoenix Contact)
  AI0,5-10WH 0.5 mm^2 (Phoenix Contact)
  AI0,75-10GY 0.75 mm^2 (Phoenix Contact)
  A1-10 1.0 mm^2 (Phoenix Contact)
  A1,5-10 1.5 mm^2 (Phoenix Contact)
• **HLS**: RJ-45 Connectors
  Recommended cable connector:
  TM21P-88P (Hirose Electric)
  (not included in the package)
Isolation: CC-Link or FG to HLS to power
Station address setting: Rotary switch
(For the detail refer to the instruction manual.)
Transfer rate
• **CC-Link** Rotary switch
• **HLS** DIP switch
(For the detail refer to the instruction manual.)
Power LED: Green LED turns on when the power is supplied.
Status indicator LED
• **CC-Link**: Red LEDs indicate communication status.
• **HLS**: Green LEDs indicate communication status.

COMMUNICATION
■ HLS COMMUNICATION
Network: Full-duplex or half-duplex
Transmission distance:
• **12 Mbps**: 100 meters (328 ft)
• **6 Mbps**: 200 meters (656 ft)

Network cable:
• **Full-duplex communication**: ZHY262PS, ZHT262PS
• **Half-duplex communication**: ZHY221PS
(Shinko Seisen Industry Co., Ltd.)
Data allocation: 2
Terminating resistor: Built-in (Selected with the DIP SW; factory setting: disabled)
■ **CC-LINK COMMUNICATION**
CC-Link Ver.1.10
Network cable: CC-Link cable designated by Mitsubishi Electric
Station Type: Remote I/O
Data allocation: 2 (1 station x 2)
Terminating resistor: Built-in (Selected with the DIP SW; factory setting: disabled)

INSTALLATION

Power input
•**DC**:
Operational voltage range 24 V DC ±10 %;
ripple 10 %p-p max., approx. 1.8 W
Operating temperature: -10 to +55°C (14 to 131°F)
Storage temperature: -20 to +65°C (-4 to +149°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Atmosphere: No corrosive gas or heavy dust
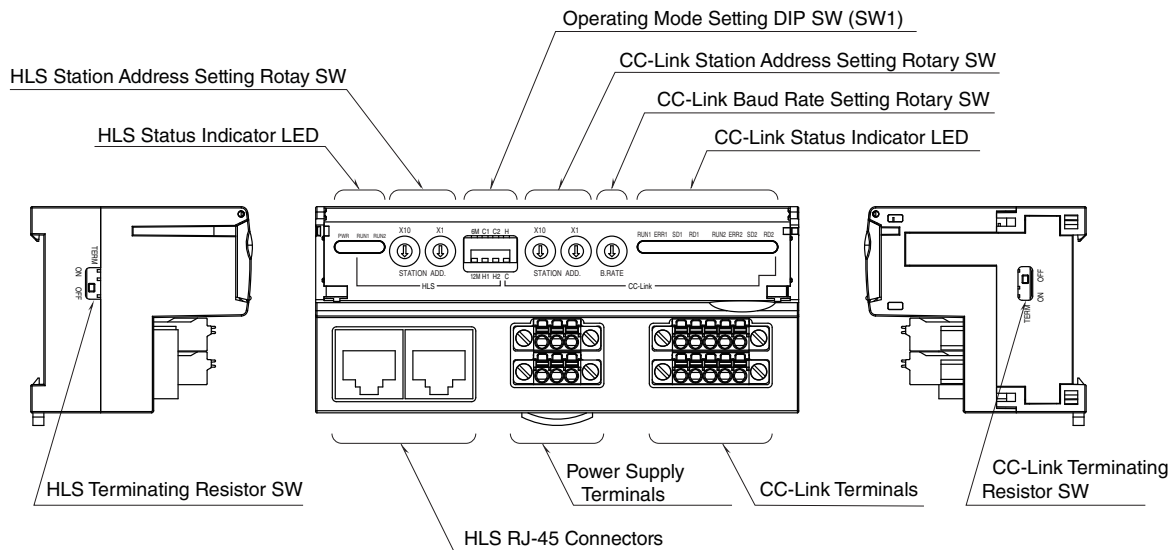**Mounting**: DIN rail
Weight: 150 g (0.33 lb)

PERFORMANCE

Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 1500 V AC @1 minute
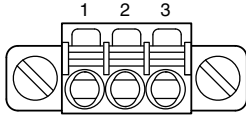(CC-Link or FG to HLS to power)

EXTERNAL VIEW

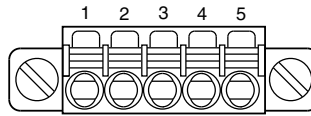# MODEL: R7G

CONNECTION DIAGRAMS

■ **POWER SUPPLY AND TRANSMISSION WIRING**

• **Power supply**

1. +24V   Power Supply (24V DC)
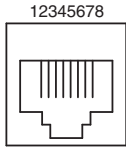2. 0V   Power Supply (0V)
3. FG   FG

• **CC-Link**

1. DA   blue
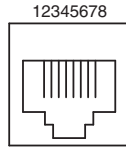2. DB   white
3. DG   yellow
4. SLD   Shield
5. FG   FG

• **HLS**

Full-duplex communication

12345678

1. NC   No connection
2. NC   No connection
3. TXD+   Network (Slave, transmission +)
4. TXD−   Network (Slave, transmission −)
5. RXD+   Network (Master, transmission+)
6. RXD−   Network (Master, transmission−)
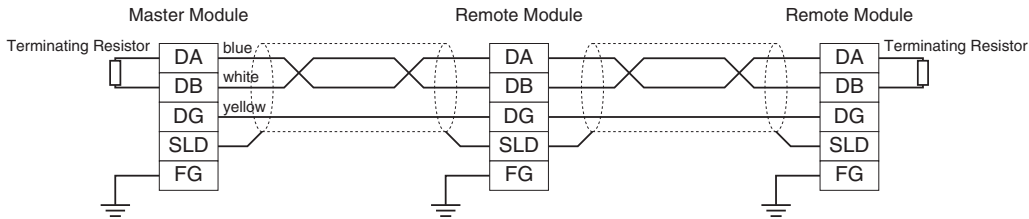7. NC   No connection
8. SLD1   Shield

Half-duplex communication

12345678

1. NC   No connection
2. NC   No connection
3. TR+   Network (+)
4. TR−   Network (−)
5. NC   No connection
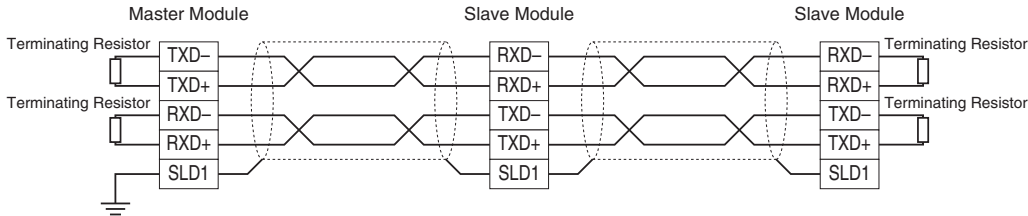6. NC   No connection
7. NC   No connection
8. SLD1   Shield

■ **Master Module wirng**
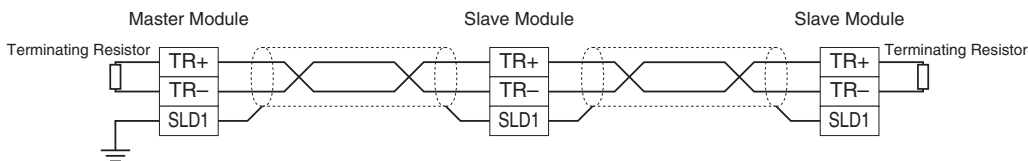
• **CC-Link**

• **HLS**

Full-duplex communication

Half-duplex communication

INDICATOR LED

■ CC-Link STATUS INDICATOR LED

RUNx	ERRx	SDx[1]	RDx	STATUS[2]
ON	BL	BL	ON	Communicates normally with occasional CRC errors due to noise interference.
ON	BL	BL	ON	Communicates normally but the Baud Rate and/or Station Address switches failed. ERRx LED blinks approximately in 0.5 seconds intervals.
ON	BL	BL	OFF	----
ON	BL	OFF	ON	CRC error found in the received data. Unable to respond.
ON	BL	OFF	OFF	----
ON	OFF	BL	ON	Normal communication
ON	OFF	BL	OFF	----
ON	OFF	OFF	ON	Unable to receive data addressed to the station.
ON	OFF	OFF	OFF	----
OFF	BL	BL	ON	Performs the interval-timed responses but CRC error found in receiving the refresh data.
OFF	BL	BL	OFF	----
OFF	BL	OFF	ON	CRC error found in the data addressed to the station.
OFF	BL	OFF	OFF	----
OFF	OFF	BL	ON	Link is not started.
OFF	OFF	BL	OFF	----
OFF	OFF	OFF	ON	No data addressed to the station. Or unable to receive data addressed to the station due to noise interference. (Missing parts of the data sent from the master)
OFF	OFF	OFF	OFF	Unable to receive data due to wire breakdown
OFF	ON	OFF	OFF/ON	Faulty Baud Rate and/or Station Address setting
OFF	OFF	OFF	OFF	Power input removed. Or power supply failure.

OFF = OFF, ON = ON, BL = Blinking
*1. SDx LEDs may look not blinking but ON with high baud rate and fewer connected modules.
*2. LEDs indicated with "----" in STATUS rarely occurs in normal operation. (LED failure or the like as possible cause).
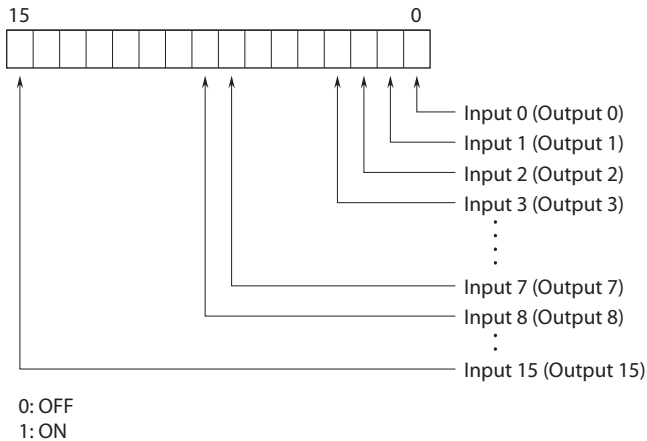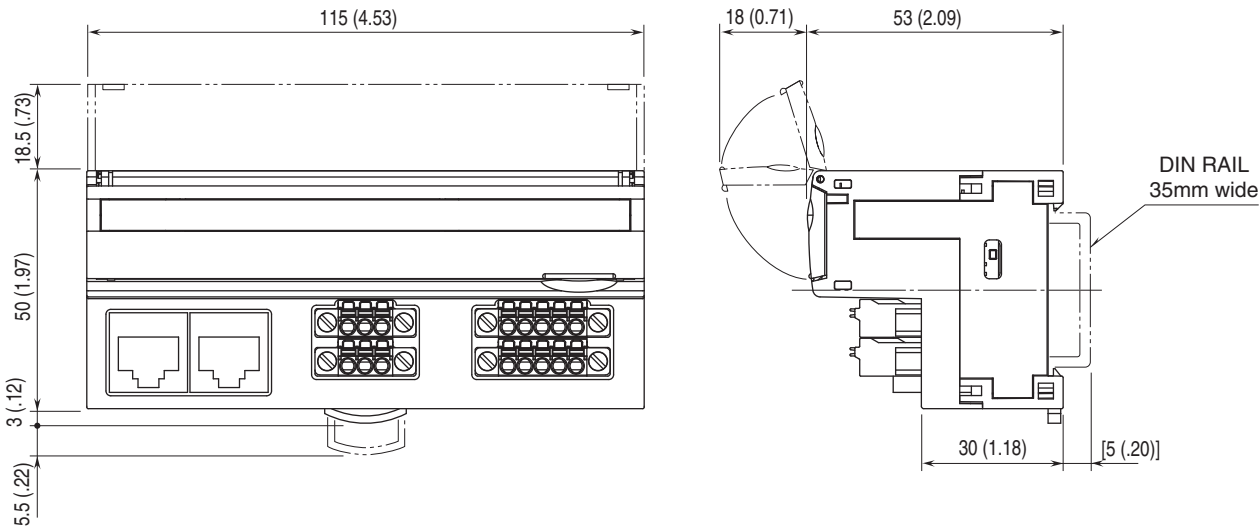
DATA ALLOCATION
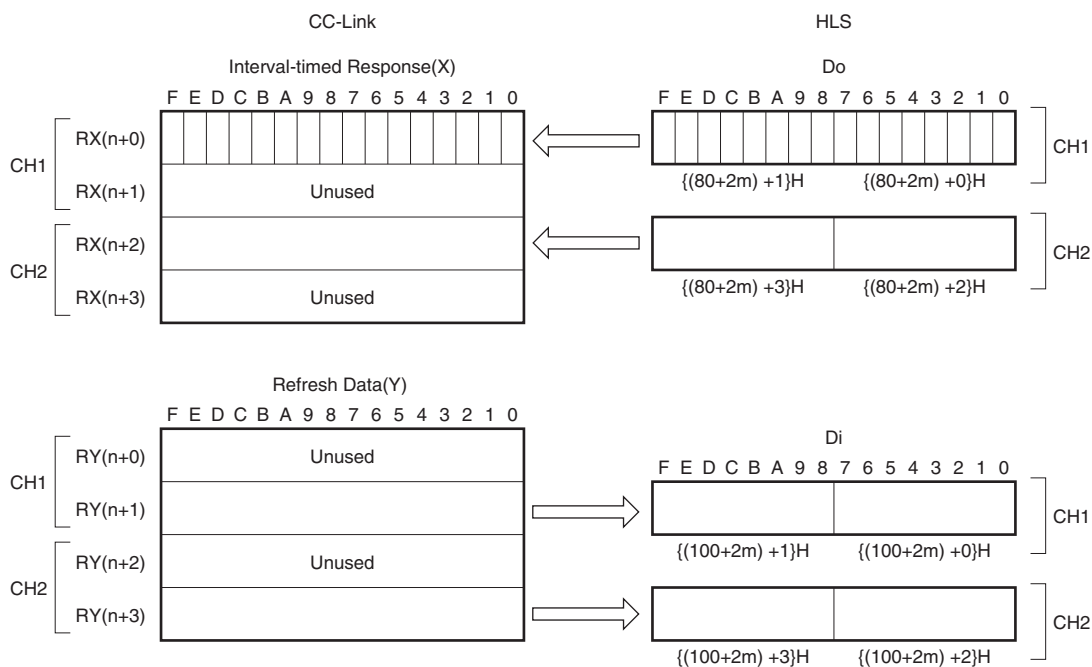
n: CC-Link station address selected with rotary SW.
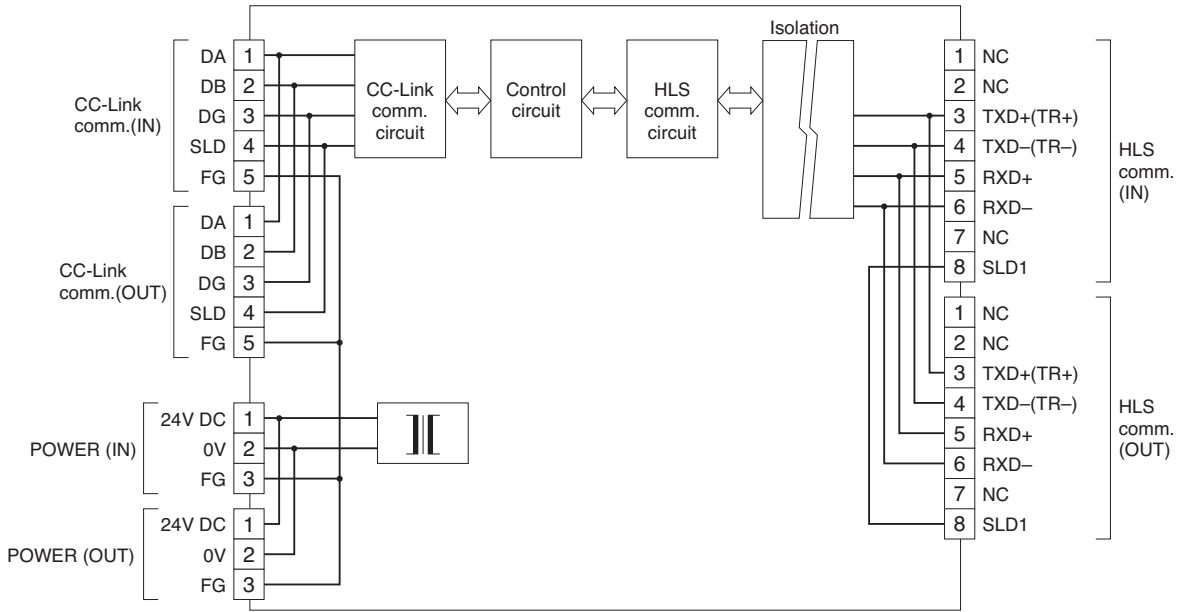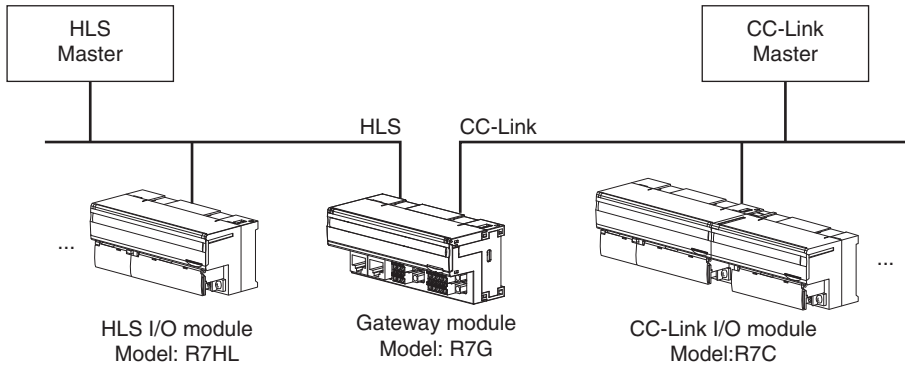m: HLS module address selected with rotary SW.

I/O DATA DESCRIPTIONS

```
15                              0
┌─┬─┬─┬─┬─┬─┬─┬─┬─┬─┬─┬─┬─┬─┬─┬─┐
└─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
```

Input 0 (Output 0)
Input 1 (Output 1)
Input 2 (Output 2)
Input 3 (Output 3)
⋮
Input 7 (Output 7)
Input 8 (Output 8)
⋮
Input 15 (Output 15)

0: OFF
1: ON

DIMENSIONS unit: mm (inch)

115 (4.53)

18.5 (.73)

50 (1.97)

3 (.12)

5.5 (.22)

18 (0.71) 53 (2.09)

DIN RAIL
35mm wide

30 (1.18) [5 (.20)]

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

SYSTEM CONFIGURATION EXAMPLES

HLS I/O module
Model: R7HL

Gateway module
Model: R7G

CC-Link I/O module
Model:R7C

⚠ Specifications are subject to change without notice.