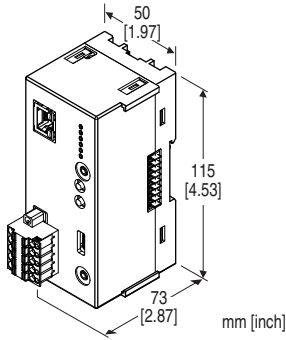## Remote I/O JC Series

I/O CONNECTION MODULE

Functions and features
• I/O mapping function connects the I/O from devices on the network.
• Supporting Modbus/TCP client and SLMP client
• Transmitting the data between deferent protocol
• Monitoring input value and configuring output value via web browser

50 [1.97]
115 [4.53]
73 [2.87]
mm [inch]

CE

MODEL: JC-IO–N-R[1]

ORDERING INFORMATION
• Code number: JC-IO-N-R[1]
Specify a code from below for [1].
  (e.g. JC-IO-N-R/Q)
• Specify the specification for option code /Q
  (e.g. /C01)

MODULE TYPE
N: Standard

POWER INPUT
DC power
R: 24 V DC
(Operational voltage range: ±10 %; ripple 10 %p-p max.)

[1] OPTIONS
blank: none
/Q: Options other than the above (specify the specification)

SPECIFICATIONS OF OPTION: Q
COATING (For the detail, refer to our web site.)
/C01: Silicone coating
/C02: Polyurethane coating

RELATED PRODUCTS
• PC Configurator cable (model: MCN-CON or COP-US)
• PC configurator software (model: JCIOCFG)

PACKAGE INCLUDES...
• Protective cover
• Ferrite core

GENERAL SPECIFICATIONS
Connection
•Power supply, RUN contact output:
 Tension clamp terminal (Front Twin connection)
 Unit side connector: MSTB2,5/5-GF-5,08AU
 Cable side connector: TFKC2,5/5-STF-5,08AU
(Applicable wire size: 0.2 - 2.5 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)
 AI1-10RD 1.0 mm^2 (Phoenix Contact)
 AI1,5-10BK 1.5 mm^2 (Phoenix Contact)
 AI2,5-10BU 2.5 mm^2 (Phoenix Contact)
•Ethernet: RJ-45 connector
Housing material: Flame-resistant resin (gray)
Isolation: Ethernet to power supply to RUN contact output to FE
Calendar clock: Year (4 digits), month, date, day, hour, minute, second
Status indicator LED: POWER, RUN, COM, ERROR
RUN contact output: Photo MOSFET relay (no polarity);
(OFF in error detected)
•Peak load voltage: 50 V max.
•Continuous load current: 50 mA max.
•Peak load current: 300 mA max. (≤0.1 sec.)
•Operation
 Power down: OFF
 Firmware operating: ON
 Error in Ethernet LNK: OFF

ETHERNET COMMUNICATION
Communication Standard: IEEE 802.3u
Transmission: 10BASE-T, 100BASE-TX
Baud rate: 10/100 Mbps (Auto Negotiation function)
Protocol: TCP/IP, Modbus/TCP, SLMP, HTTP, SNTP
Transmission media: 10BASE-T (STP, Category 5)
100BASE-TX (STP, Category 5e)
Max. length of fieldbus segment: 100 meters

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INSTALLATION

Power consumption
• **DC**: Approx. 2 W 24 V DC
Operating temperature: -10 to +55°C (14 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Atmosphere: No corrosive gas or heavy dust
Mounting: DIN rail
Weight: 190 g (0.42 lb)

PERFORMANCE

Battery: Vanadium-lithium secondary battery (undetachable)
Calendar clock accuracy: Monthly deviation 2 minutes at 25°C
Battery backup: Approx. 2 months
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 1500 V AC @ 1 minute (Power to Ethernet to RUN contact output to FE)
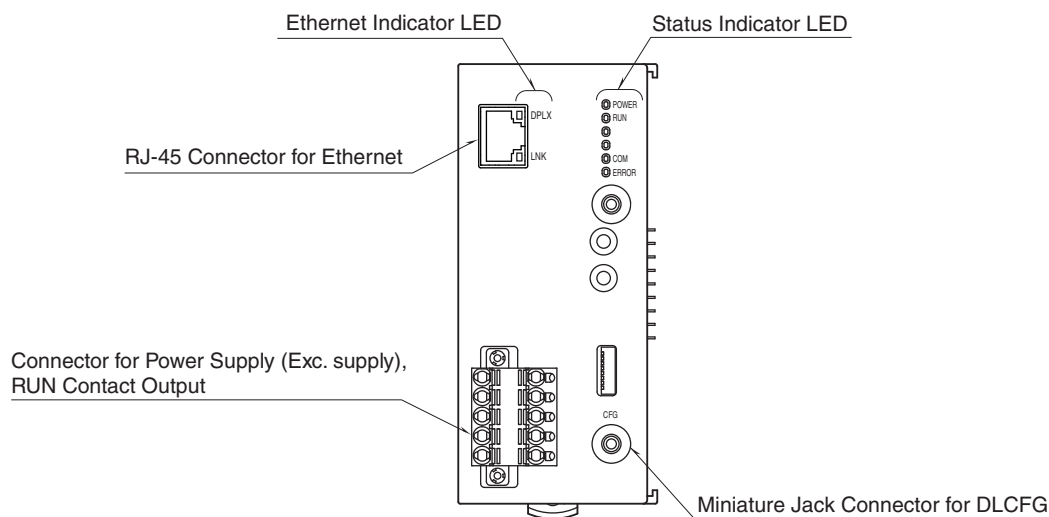
STANDARDS & APPROVALS

EU conformity:
EMC Directive
  EMI EN 61000-6-4
  EMS EN 61000-6-2
RoHS Directive

EXTERNAL VIEW

Ethernet Indicator LED

Status Indicator LED

RJ-45 Connector for Ethernet

Connector for Power Supply (Exc. supply), RUN Contact Output

Miniature Jack Connector for DLCFG

■ STATUS INDICATOR LED

LED	Color	Function
POWER	Green	ON at device operating normally
		Blinking at Ethernet LINK error
		Blinking before obtaining DHCP address
SD CARD	Green	ON at normal operation
		Blinking at remote I/O communication error
COM	Green	Blinking at communication (except Modbus/TCP & SLMP)
ERROR	Red	ON at CPU error

■ Ethernet INDICATOR LED

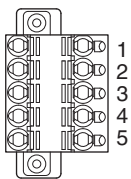| LED	Color	Function
DPLX	Yellow	ON with full-duplex communication
LNK	Green	ON at LINK is established

CONNECTION DIAGRAMS

■ POWER SUPPLY AND RUN DISCRETE OUTPUT CONNECTOR TERMINAL ASSIGNMENT

Printed-circuit board connector (Phoenix Contact)

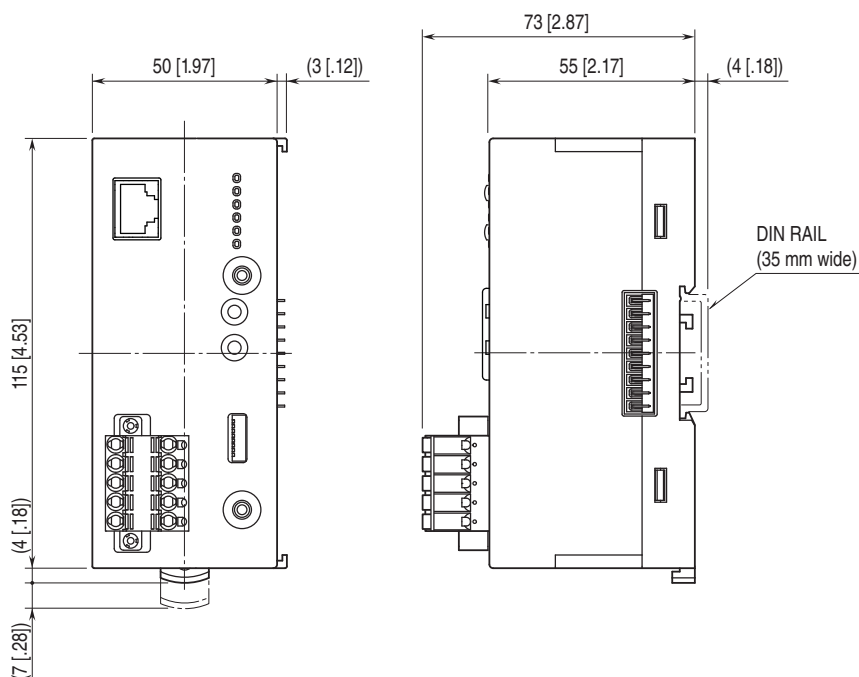   Unit side connector: MSTBV2,5/5-GF-5,08AU

     Cable side connector: TFKC2,5/5-STF-5,08AU

No.	ID	FUNCTION
1	24V	Power supply (exc. supply) 24 V DC
2	0V	Power supply (exc. supply) 0 V DC
3	RUN	RUN discrete output
4	RUN	RUN discrete output
5	FE	Power supply earth

EXTERNAL DIMENSIONS   unit: mm [inch]

■UNIT

50 [1.97]   (3 [.12])   73 [2.87]   55 [2.17]   (4 [.18])

DIN RAIL
(35 mm wide)

115 [4.53]

(4 [.18])

(7 [.28])

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■PROTECTIVE COVER

5 [.20]   50 [1.97]

115 [4.53]
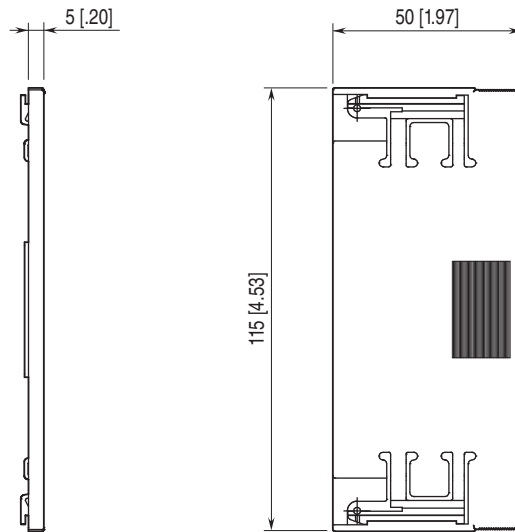
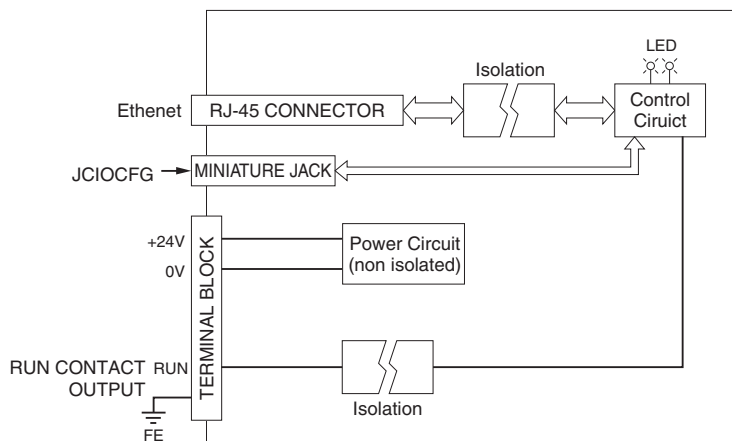## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

Note: In order to improve EMC performance, bond the FE terminal to ground.
Caution: FE terminal is NOT a protective conductor terminal.

```
                                              LED
                                              ☼ ☼
Ethenet   RJ-45 CONNECTOR    Isolation      Control
                                            Ciruict

JCIOCFG → MINIATURE JACK

+24V                Power Circuit
0V                  (non isolated)

RUN CONTACT  RUN
OUTPUT                      Isolation

FE
```

COMMUNICATION

IP:

DHCP client is supported. Manual setting of IP address, subnet mask, default gateway and DNS server available too.

Modbus/TCP master:

I/O expansion with remote I/O, e.g. R3 or R7 series, is available. Measuring points in multiple locations can be handled collectively.

Connectable Devices (Modbus/TCP)

· TR30-G
· DL8
· DL30
· R30NE1

· R3-NE1
· R3-GE1
· R7E
· R9EWTU
· R6-NE1
· R6-NE2
· R5-NE1
· D3-NE1
· D3-NE2
· D3-GE2
· D5-NE1
· IB10W2
· IB10W4

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· IB10WS2

· WL40EW2

· WL40EWS2

· 72EM2-M4

· GR8-EM

· IT series

· SG6

SLMP Client:

JC-IO allows I/O expansion by connecting with the SLMPcompatible
CPU unit of Mitsubishi programmable-controller
MELSEC; and collectively handles data from measuring
points in multiple locations.

Connecting Device (SLMP sever)

· MELSEC iQ-R series

· MELSEC iQ-F series

· MELSEC Q series

Web server function (Direct):

This unit can be a web server, and manually operate to
monitoring input status and setting output values via
browser.

Compatible Terminals & Browsers

• iPadOS 14.7.1:

Safari

• Android 10:

Chrome 93.0

• Windows 10:

Firefox 91.0

Chrome 93.0

Edge 93.0

Max. number of I/O modules: 4

I/O MAPPING

Registration of Input-to-Internal register-to-Output mapping
information allows multiplex data transmission for remote
I/Os via internal register and allows JC-IO to work as an IP
telemeter.

· Internal register

L: A register to save 32-bits data. Possible to allocate max.
256 points.

S: A register to save 16-bits data. Possible to allocate max.
256 points.

Allocating upper/lower 16-bit of L as 16 -it data is possible.

B: A register to save 1-bit data. Possible to allocate max.
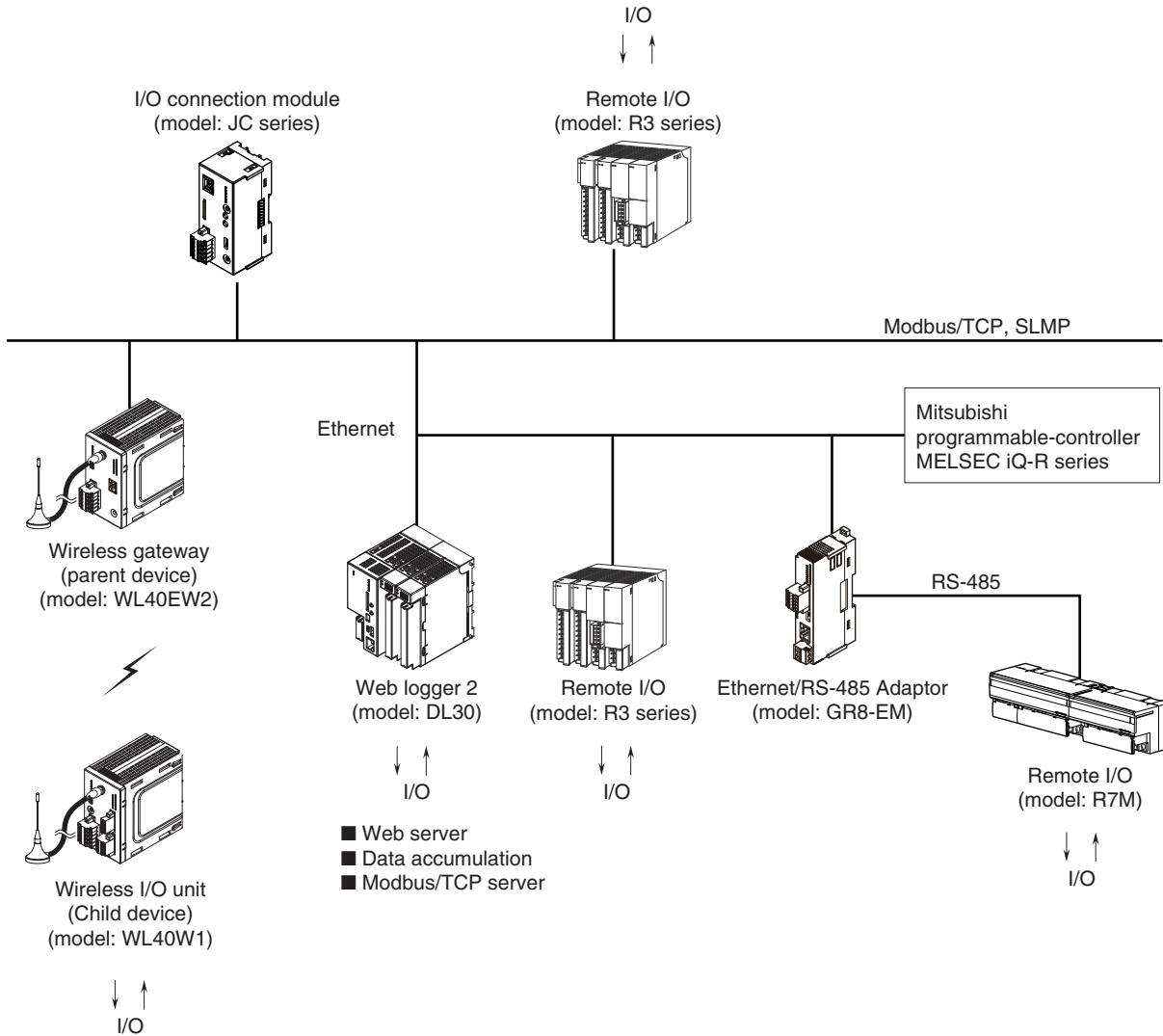512 points. Allocating a spesific bit of L or S as 1-bit data is
possible.

P: A register to save 32-bit data and to output differential
value of previous sampling as 16 bit data. Possible to
allocate max. 256 points.

OTHER FUNCTIONS

Configuration: Configurable with the dedicated software
model: JCIOCFG

Time zone: Selectable between –12:00 and +13:00

SYSTEM CONFIGURATION EXAMPLES

Devices other than the JC-IO in the configuration below shall be provided by the user.

Connect the I/O signal from remote I/O, wireless gateway, and Mitsubishi programable-controller via I/O connection module (model: JC-IO) freely.

I/O mapping function allows to connect I/O like multiplex transmission.

I/O

I/O connection module
(model: JC series)

Remote I/O
(model: R3 series)

Modbus/TCP, SLMP

Ethernet

Mitsubishi
programmable-controller
MELSEC iQ-R series

Wireless gateway
(parent device)
(model: WL40EW2)

Web logger 2
(model: DL30)

Remote I/O
(model: R3 series)

Ethernet/RS-485 Adaptor
(model: GR8-EM)

RS-485

I/O

I/O

Remote I/O
(model: R7M)

■ Web server
■ Data accumulation
■ Modbus/TCP server

I/O

Wireless I/O unit
(Child device)
(model: WL40W1)

I/O

⚠ Specifications are subject to change without notice.

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