Remote I/O R8 Series

MULTI POWER INPUT MODULE

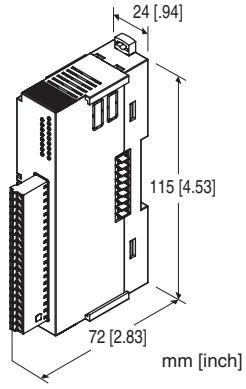
(clamp-on current sensor type CLSE use)

Functions & Features

• 5 to 600 A clamp CT use for current sensor

• Single-phase/2-wire, single-phase/3-wire, 3-phase/3-wire and 3-phase/4-wire are available

• Single phase can measure up to four circuits, single-phase/3-wire and three-phase/3-wire can measure up to two circuits



MODEL: R8-WTU22[1]

ORDERING INFORMATION

• Code number: R8-WTU22[1]

Specify a code from below for [1].
(e.g. R8-WTU22/Q)

• Specify the specification for option code /Q
(e.g. /C01)

CONFIGURATION

2: Single phase / 2-wire and 3-wire,
3-phase / 3-wire and 4-wire

INPUT

2: 480 V AC / CLSE

Clamp-on current sensor is selectable from below.
CLSE (5A, 50A, 100A, 200A, 400A, 600A)
5A is available as CT's secondary.

[1] OPTIONS

blank: none

/Q: With options (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: R8CFG)
Downloadable at our web site.

• Clamp-on current sensor (model: CLSE)

Note: When using with Power/Network module (model: R8-NECT1), firmware version Ver2.01 or later is supported.

GENERAL SPECIFICATIONS

Connection

• **Input**: Tension clamp
Applicable wire size: 0.2 - 1.5 mm^2
Stripped length: 10 mm

• **Excitation supply, internal bus**:
Connected to internal bus connector

• **Internal power**: Via internal bus connector

Isolation: Voltage input or current input to internal bus or internal power

Measured variables

Voltage: 1-N, 2-N, 3-N, 1-2, 2-3, 3-1
Current: 1, 2, 3, N
Active power
Reactive power
Apparent power
Power factor
Frequency
Active energy: Incoming / outgoing
Reactive energy: Incoming / outgoing / lag (inductive) /lead (capacitive)
Harmonic distortion:
Overall distortion ratio, content rate (2nd to 31st)
Max. and min. values
CO_2 emissions (energy conversion value)
Simplified measurement mode: Calculates power from current values with fixed voltage values and power factor.

Measured variables data

Each measured variable can be set with 1 or 2 words using the configurator. (16 words can be used in total.)

Module address: With DIP switch

Terminating resistor: Built-in (DIP Switch, default: disable)

Status indicator: Bi-color (red/green) LED; Refer to the instruction manual.

Input status indicator: Red LED; Refer to the instruction manual.

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INPUT SPECIFICATIONS

Frequency: 50 / 60 Hz (45 – 66 Hz)

• **Voltage Input**

Rated voltage for each wiring:

• Single-phase/2-wire rated voltage 240 V AC

• Single-phase/3-wire phase voltage 240 V AC / line voltage 480 V AC

• Three-phase/3-wire line voltage 240 V AC
(480 V AC when voltage to ground for each line is ≤ 277 V)

• Three-phase/4-wire phase voltage 277 V / line voltage 480 V AC

Input range: 1-N, 2-N, 3-N 50 to 277 V AC
1-2, 2-3, 3-1 50 to 480 V AC

Consumption VA: Voltage circuit ≤ ULN^2 / 250 kΩ / ph

Selectable primary voltage range: 50 – 400 000 V

• **Current Input**

Current sensor (default: CLSE-R5)

CLSE-R5: 0 – 5 A AC

CLSE-05: 0 – 50 A AC

CLSE-10: 0 – 100 A AC

CLSE-20: 0 – 200 A AC

CLSE-40: 0 – 400 A AC

CLSE-60: 0 – 600 A AC

Input range: 0 - 120 % of the rating

Low-end cutout (current): 0 - 99.9 % (default setting: 1 %)

Selectable primary current range: 1 – 20 000 A (only with CLSE-R5, refer to the configurator settings)

INSTALLATION

Max. current consumption: 100 mA

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: 110 g (0.24 lb)

PERFORMANCE

Input Accuracy[*1]

Voltage: ±0.5 %[*2]

Current: ±0.5 %[*2]

Power: ±0.5 %[*2]

Power factor: ±1.5 %

Frequency: ±0.1 Hz

Energy: ±2 % (power factor ≥ 0.5, input ≥ 10%)

*1. Sensor error margin not included. Add sensor error margin when using with the combination of the sensor.

*2. An accuracy for rated input. The described accuracy levels are ensured at the input 1% or more for neutral current in a single-phase/3-wire circuit, phase-2 current in a 3-phase/3-wire circuit and phase-N current in a 3-phase/4-wire circuit.

Data allocation: 2

Module addresses in use: 8

Temp. coefficient: ±0.0075 %/°C (0.004 %/°F)

Sampling time: ≤ 500 msec.

Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength:

1500 V AC @ 1 minute (voltage input or current input to internal bus or internal power to ground)

STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

Low Voltage Directive

EN 61010-1, EN 61010-2-201

Measurement Category II (input)

Pollution Degree 2

Voltage input to current input or internal bus or internal power:

Reinforced insulation (300 V)

RoHS Directive

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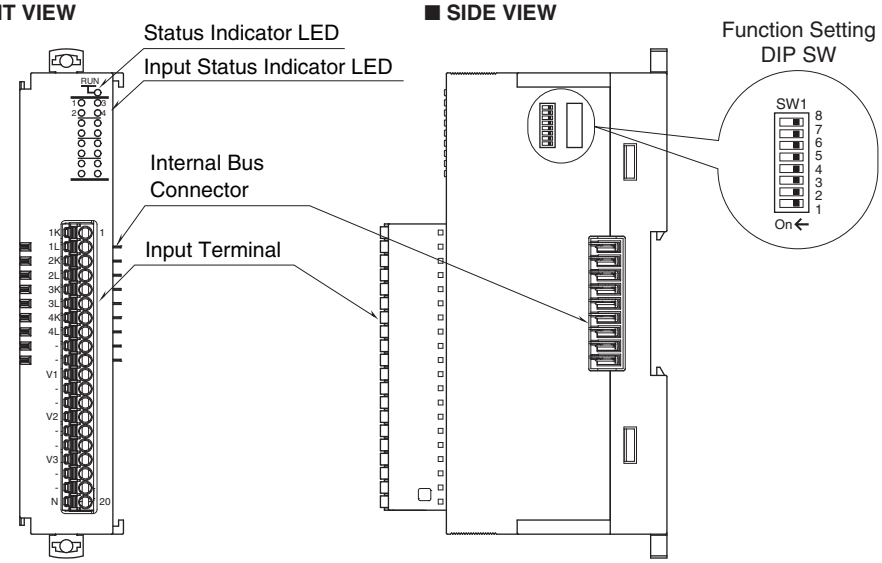
EXTERNAL VIEW

■ **FRONT VIEW**

■ **SIDE VIEW**



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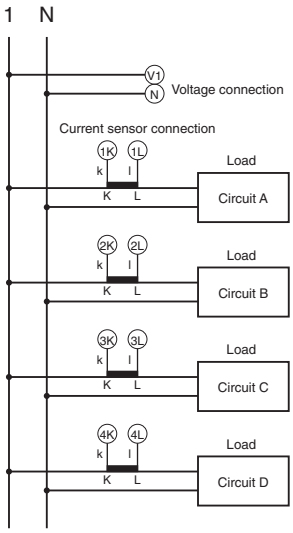
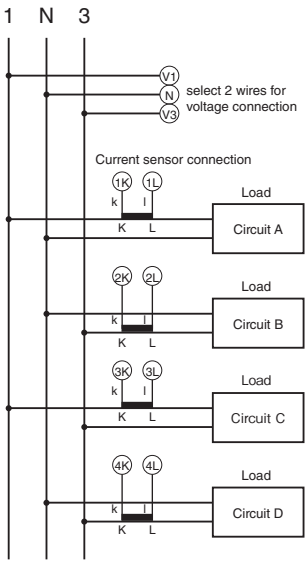
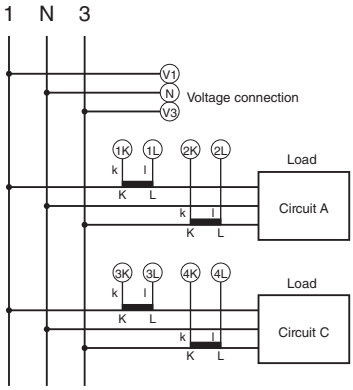
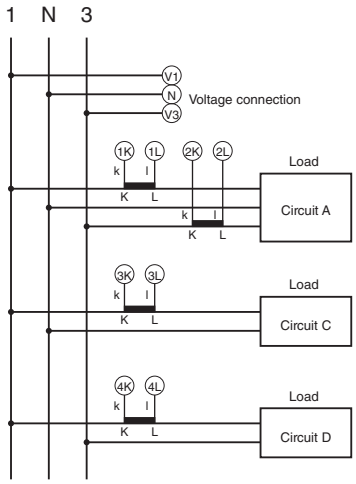
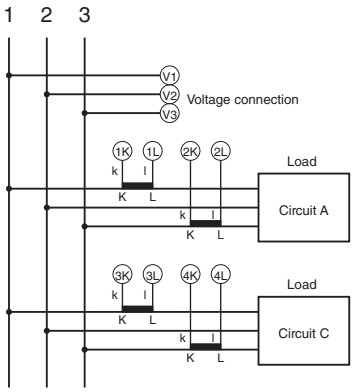
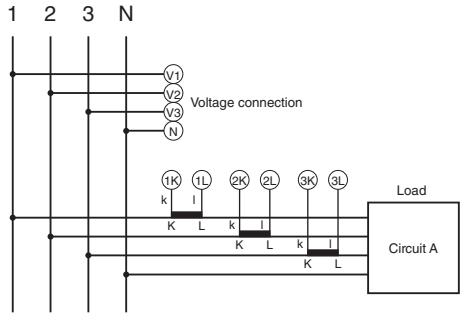
TERMINAL CONNECTIONS

System/ Application	Terminal	System/ Application	Terminal
Single-phase/ 2-wire 4-circuit		Single-phase/ two-wire branched from single-phase three-wire 4-circuit (Voltage can be selected from any line)	
Single-phase/ 3-wire 2-circuit		Single-phase/ 3-wire + Single-phase/ 2-wire 2-circuit (Voltage for single-phase/ 2-wire can be selected from any line)	
Three-phase/ 3-wire 2-circuit		Three-phase/ 4-wire	

Note: VT can be used for voltage input, but is omitted in this connecting diagram.
Apply power voltage to V1-N for detecting frequency at simplified measurement (voltage and power factor are fixed).
Select same current sensor for circuit A and B, and circuit C and D.

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OPERATING MODE SETTING

(*) Factory setting

Note: Be sure to set unused SW1-7 to OFF.

• MODULE ADDRESS

The SW1-1 and SW1-2 determine the tenth place digit, while the SW1-3, SW1-4, SW1-5 and SW1-6 does the ones place digit of the address.

Address is selected between 0 to 24.

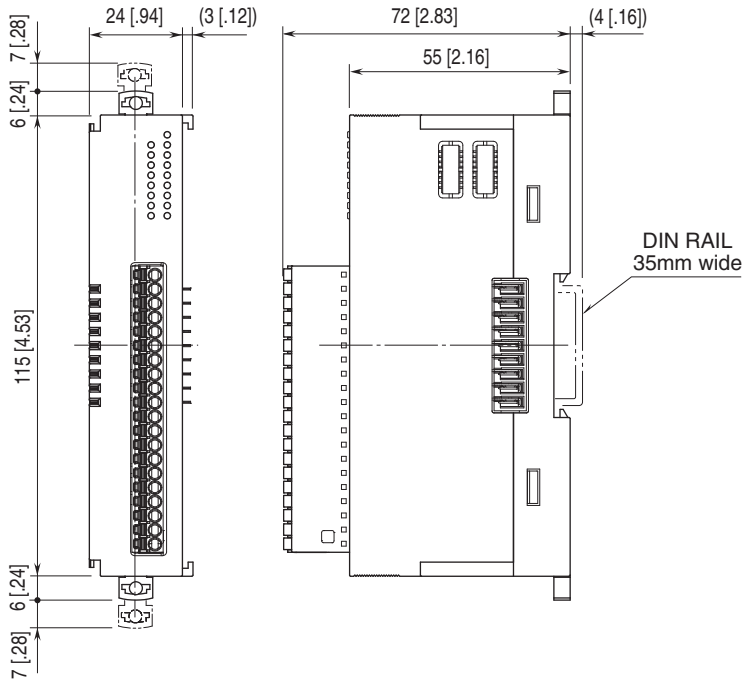
(Factory setting: 0)

MODULE ADDRESS	SW1				
	×10			1	2
	×1	3	4	5	6
0		OFF	OFF	OFF	OFF
1		OFF	OFF	OFF	ON
2		OFF	OFF	ON	OFF
3		OFF	OFF	ON	ON
4		OFF	ON	OFF	OFF
5		OFF	ON	OFF	ON
6		OFF	ON	ON	OFF
7		OFF	ON	ON	ON
8		ON	OFF	OFF	OFF
9		ON	OFF	OFF	ON

• TERMINATOR DIP SW

TERMINATOR SW	SW1-8
Without (*)	OFF
With	ON

EXTERNAL DIMENSIONS unit: mm [inch]



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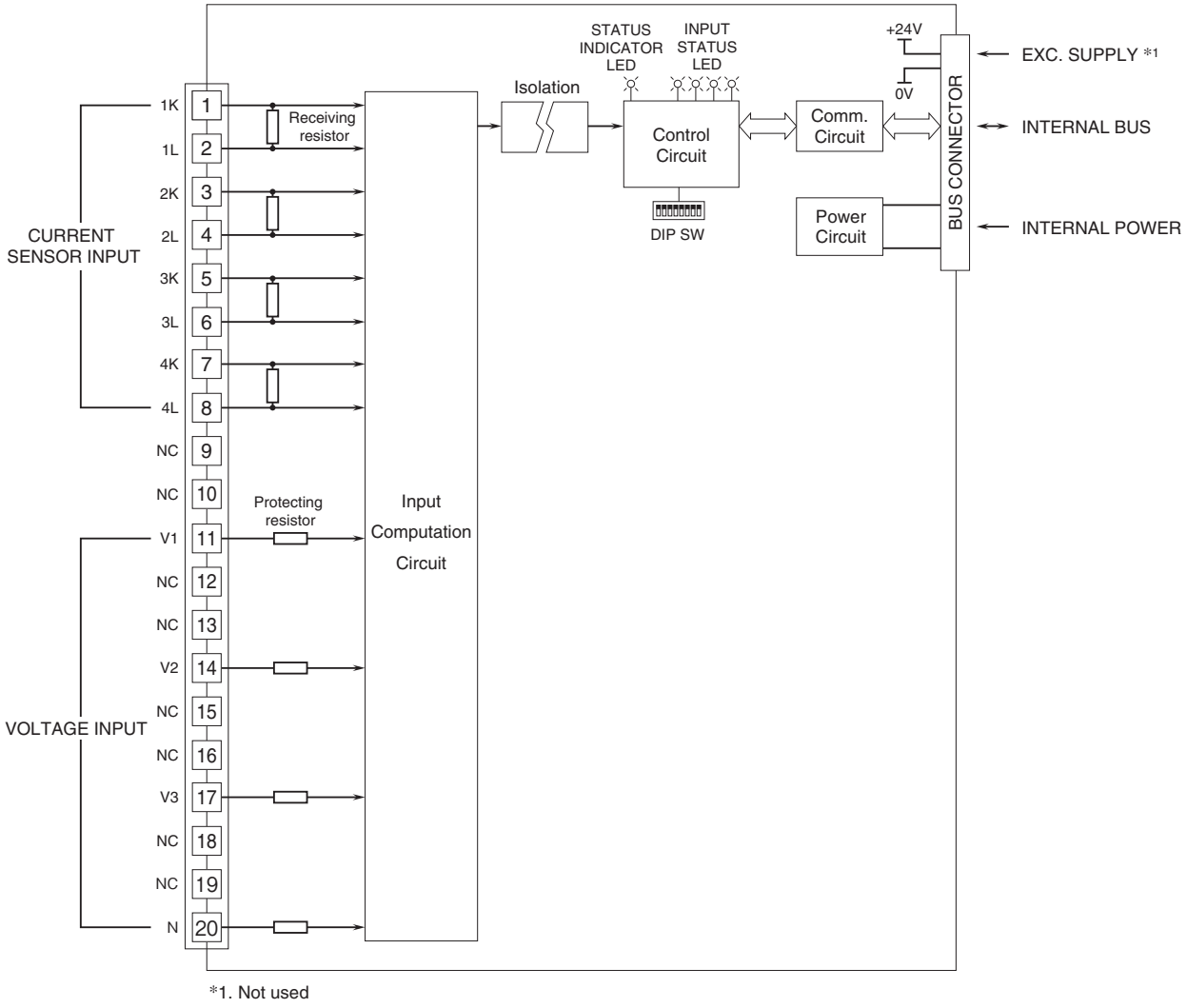
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*1. Not used

⚠ Specifications are subject to change without notice.

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