Remote I/O R30 Series

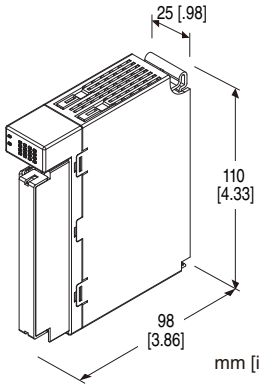
TOTALIZED PULSE INPUT MODULE

(Pi 2 points, 32 Bits)

Functions & Features

• Space-saving remote I/O module of 2 points input pulse counter

• 32-bit binary data



MODEL: R30PA2S[1]

ORDERING INFORMATION

• Code number: R30PA2S[1]

Specify a code from below for [1].
(e.g. R30PA2S/Q)

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

NO. OF CHANNELS

2: 2

COMMUNICATION MODE

S: Single

[1] OPTIONS

Other Options

blank: none

/Q: Option other than the above (specify the specification)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to M-System's web site.)

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

EX-FACTORY SETTING

/SET: Preset according to the Ordering Information Sheet (No. ESU-9022)

RELATED PRODUCTS

• Interface module
Model: R30NECT1 (firmware version V1.04.10 or higher)
Model: R30NCIE1 (firmware version V1.01.13 or higher)

• Paperless recorder
Model: TR30 (firmware version V1.05 or higher)

• PC configurator software (model: R30CFG)
Downloadable at M-System's web site.
For connecting to PC, use commercially available Mini-B type USB cable. (provided by user)

GENERAL SPECIFICATIONS

Connection

Internal bus: Via the Installation Base (model: R30BS)

Input: M3 separable screw terminal (torque 0.5 N·m)

Internal power: Via the Installation Base (model: R30BS)

Solderless terminal: Refer to the drawing at the end of the section.

Recommended manufacturer: Japan Solderless Terminal MFG. Co., Ltd., Nichifu Co., Ltd.
(Solderless terminals with insulation sleeve do not fit.)

Applicable wire size: 0.25 to 0.75 mm^2

Screw terminal: Nickel-plated steel

Isolation: Input or reset input or external power to internal bus or internal power

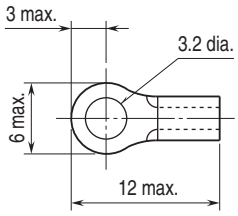
Status indicator LEDs: RUN, ERR

Input status indicator LEDs: Green LED; turns on with input ON
(Refer to the instruction manual.)

Count reset: by inputting one pulse to the reset input terminal, or from host PC/PLC

Count preset: settable from host PC/PLC, or with PC configurator software

■Recommended solderless terminal size - M3 (unit: mm)



INPUT SPECIFICATIONS

Module type: Pulse input, 2 points
Common: Positive or negative common (NPN/PNP), common per 2 points

■ Contact Input / Reset Input

•Open collector input (NPN, PNP)

Rated input voltage: 24 V DC ±10 %; ripple 5 %p-p max.
ON voltage/current: ≥ 16 V DC (input to common) / ≥ 3.7 mA
OFF voltage/current: ≤ 5 V DC (input to common) / ≤ 1 mA

•Voltage Pulse Input

ON voltage/current: ≥ 16 V DC (input to common) / ≥ 3.7 mA
OFF voltage/current: ≤ 5 V DC (input to common) / ≤ 1 mA

Input current: ≤ 5.5 mA per point at 24 V DC
Input resistance: Approx. 4.4 kΩ
ON delay: ≤ 2.0 msec.
OFF delay: ≤ 2.0 msec.
Max input frequency: 100 Hz
Minimum pulse width time requirement: 5 msec. (for both ON and OFF)
Totalized pulse range: 0 to 4,294,967,295 (0 only when the counter is reset)
Max pulse range: 1 to 4,294,967,295
(factory setting: 4,294,967,295)
Count at overflow: 0 or 1 (factory setting: 0)

INSTALLATION

Current consumption: 30 mA max.
Operating temperature: -10 to +55°C (14 to 131°F)
Storage temperature: -20 to +65°C (-4 to +149°F)
Operating humidity: 10 to 90 %RH (non-condensing)
Atmosphere: No corrosive gas or heavy dust
Mounting: Installation Base (model: R30BS)
Weight: 150 g (0.33 lb)

PERFORMANCE

Data allocation: 4
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 1500 V AC @ 1 minute
(input or reset input or external power to internal bus or internal power)
1500 V AC @ 1 minute (power to FG; isolated on the power supply module)

STANDARDS & APPROVALS

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

CONFIGURATOR SOFTWARE SETTING

The following parameters can be set with using PC Configurator Software (model: R30CFG)
Refer to the users manual for the R30CFG for detailed operation of the software program.

■ CHANNEL INDIVIDUAL SETTING

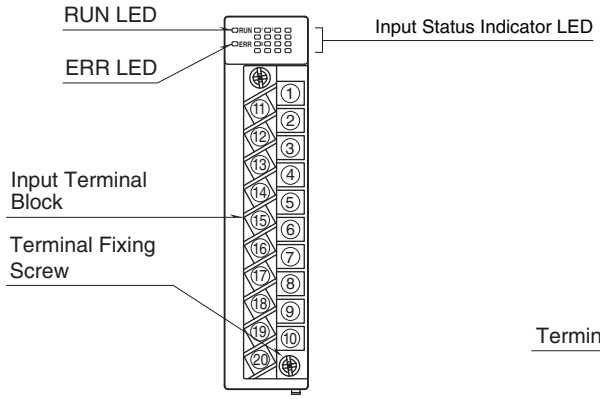
PARAMETER	SETTING RANGE	DEFAULT SETTING
Max no. of totalized pulse	1 – 4,294,967,295	4,294,967,295
Count at overflow (value to which the count returns)	0 1	0
Preset value	0 – Max no. of totalized pulse	0

■ CHANNEL BATCH SETTING

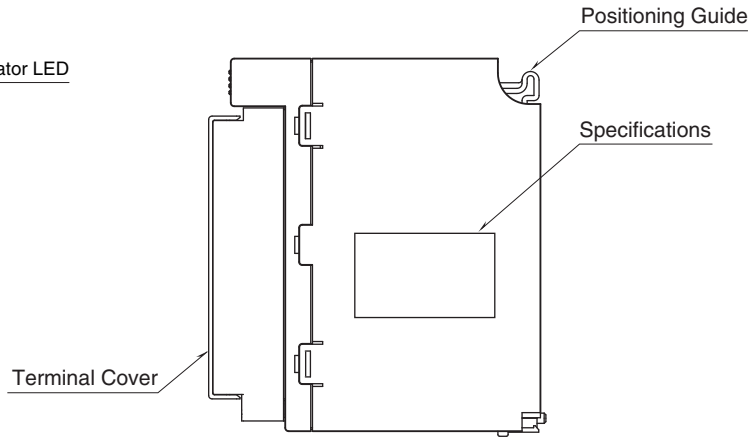
PARAMETER	SETTING RANGE	DEFAULT SETTING
Count pulse edge	Falling edge (DI-ON)/ Rising edge (DI-OFF)	Falling edge (DI-ON)
External reset pulse edge to detect	Falling edge (DI-ON)/ Rising edge (DI-OFF)	Falling edge (DI-ON)
External reset detection	Enable/Disable	Disable
Reset/preset from host PC/PLC	Enable/Disable	Disable
Simulate input	Normal input/Simulate input	Normal input

EXTERNAL VIEW

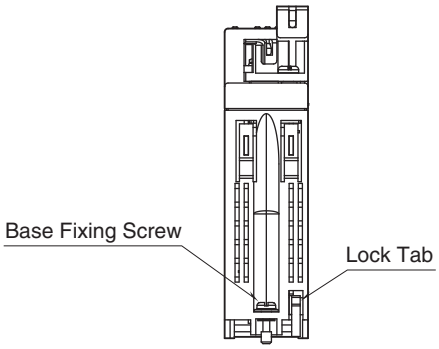
■ FRONT VIEW



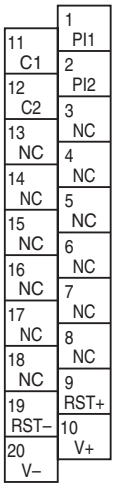
■ SIDE VIEW



■ BOTTOM VIEW



TERMINAL ASSIGNMENTS

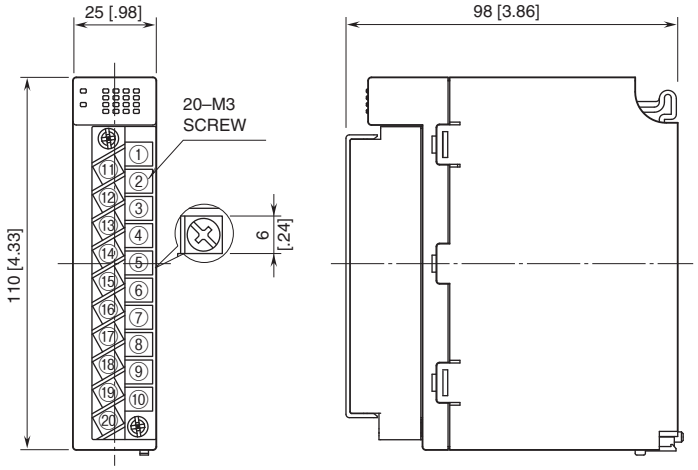


No.	ID	Function	No.	ID	Function
1	PI1	Input 1	11	C1	Common
2	PI2	Input 2	12	C2	Common
3	NC	No connection	13	NC	No connection
4	NC	No connection	14	NC	No connection
5	NC	No connection	15	NC	No connection
6	NC	No connection	16	NC	No connection
7	NC	No connection	17	NC	No connection
8	NC	No connection	18	NC	No connection
9	RST+	Reset input (+)	19	RST–	Reset input (–)
10	V+	External Excitation (+)	20	V–	External Excitation (–)

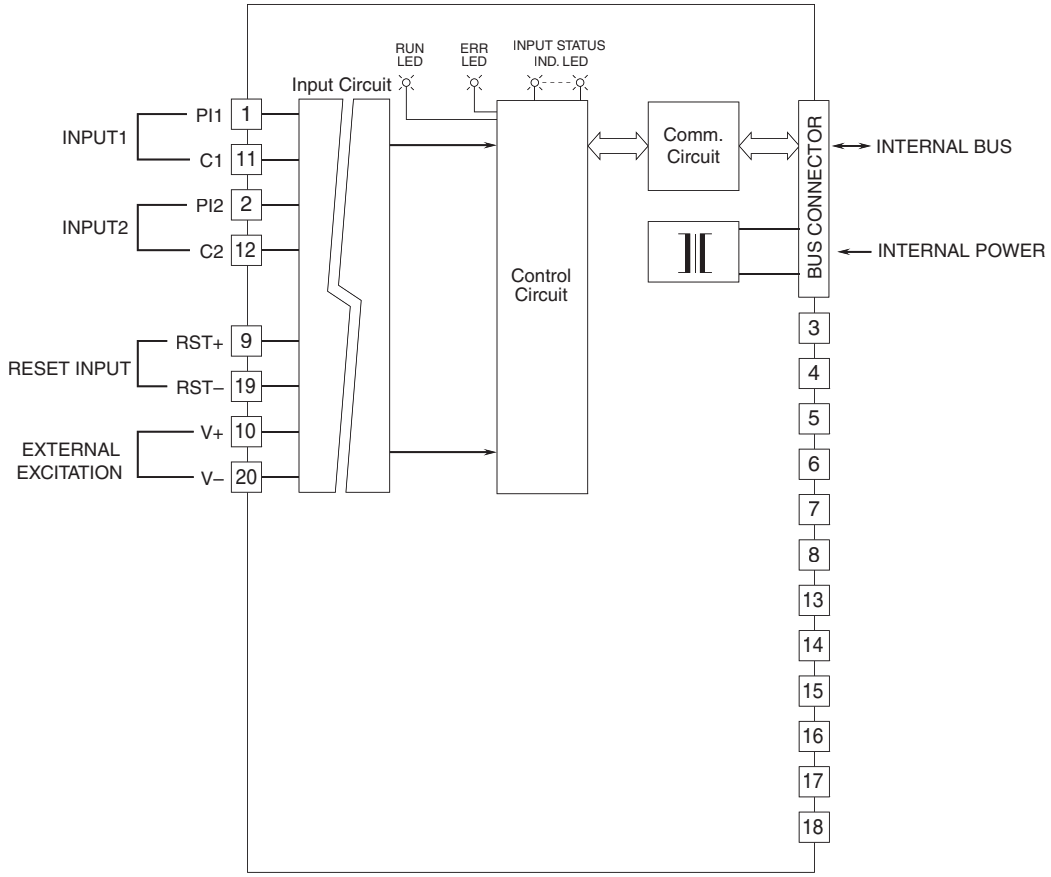
DATA ALLOCATION

ADDRESS	CONTENTS
+0	Input 1 totalized value (lower 16 bits)
+1	Input 1 totalized value (upper 16 bits)
+2	Input 2 totalized value (lower 16 bits)
+3	Input 2 totalized value (upper 16 bits)

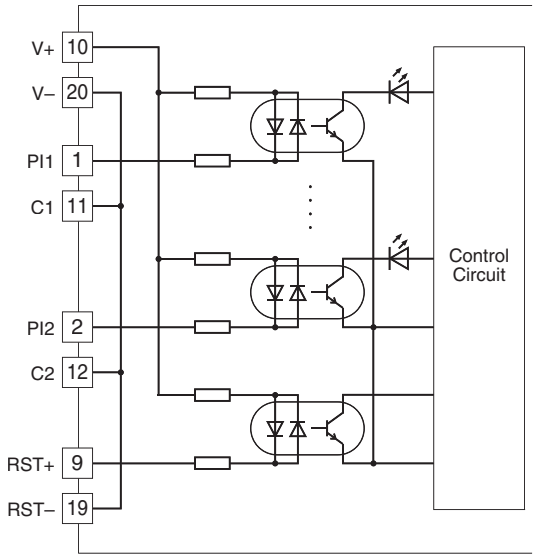
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



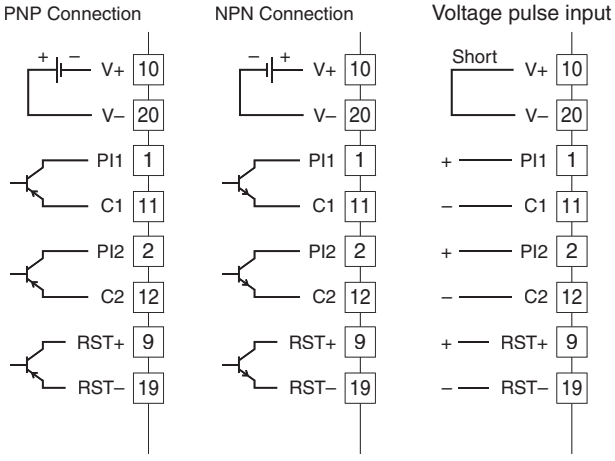
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



■ **Input Circuit**



■ **Input Connection Examples**



⚠ Specifications are subject to change without notice.