

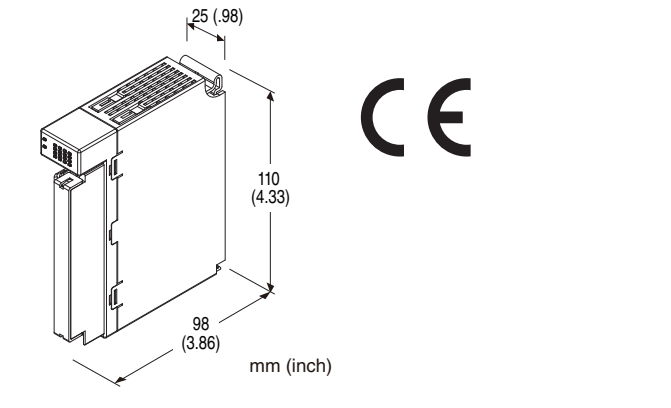
## Remote I/O R30 Series

### 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 supply:** 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<sup>2</sup>

**Screw terminal:** Nickel-plated steel

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

**Status indicator LEDs:** RUN, ERR

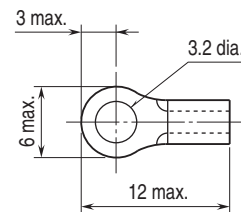
**Input status indicator LEDs:** Green LED; turns on with input ON

(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  $\pm 10\%$ ; ripple 5 %p-p max.

**ON voltage/current:**  $\geq 16$  V DC (input to common) /  $\geq 3.7$  mA

**OFF voltage/current:**  $\leq 5$  V DC (input to common) /  $\leq 1$  mA

• **Voltage Pulse Input**

**ON voltage/current:**  $\geq 16$  V DC (input to common) /  $\geq 3.7$  mA

**OFF voltage/current:**  $\leq 5$  V DC (input to common) /  $\leq 1$  mA

**Input current:**  $\leq 5.5$  mA per point at 24 V DC

**Input resistance:** Approx. 4.4 k $\Omega$

**ON delay:**  $\leq 2.0$  msec.

**OFF delay:**  $\leq 2.0$  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)

**STANDARDS & APPROVALS**

**EU conformity:**

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

EN 50581

**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:**  $\geq 100$  M $\Omega$  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)

## CONFIGURATOR SOFTWARE SETTING

With configurator software, settings shown below are available.  
Refer to the software manual of R30CFG for detailed operation.

### ■ CHANNEL INDIVIDUAL SETTING

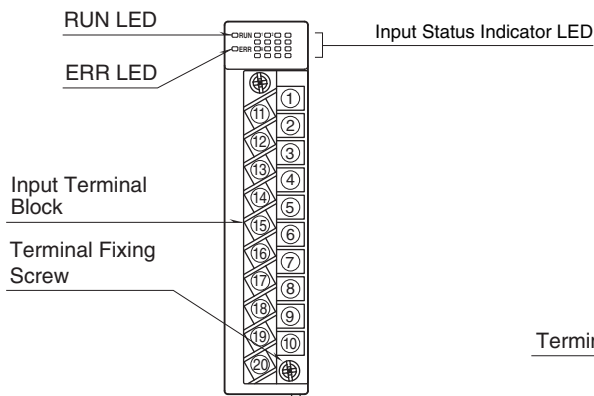
ITEM	USABLE RANGE	DEFAULT SETTING
Max no. of totalized pulse	1 – 4,294,967,295	4,294,967,295
Count at overflow (value to which the count returns)	0 1	0
Preset value	0 – Max no. of totalized pulse	0

### ■ CHANNEL BATCH SETTING

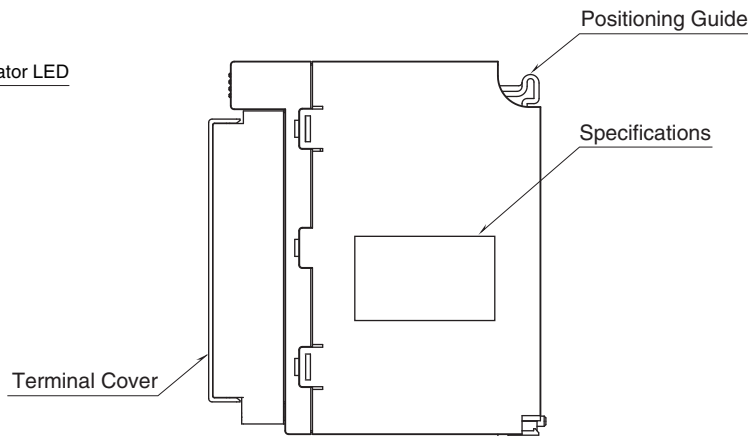
ITEM	USABLE RANGE	DEFAULT SETTING
Count pulse edge	Falling edge (DI-ON)/ Rising edge (DI-OFF)	Falling edge (DI-ON)
External reset pulse edge to detect	Falling edge (DI-ON)/ Rising edge (DI-OFF)	Falling edge (DI-ON)
External reset detection	Enable/Disable	Disable
Reset/preset from host PC/PLC	Enable/Disable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

## EXTERNAL VIEW

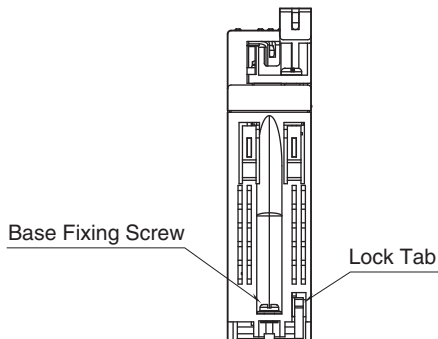
### ■ FRONT VIEW



### ■ SIDE VIEW



### ■ BOTTOM VIEW



**TERMINAL ASSIGNMENTS**

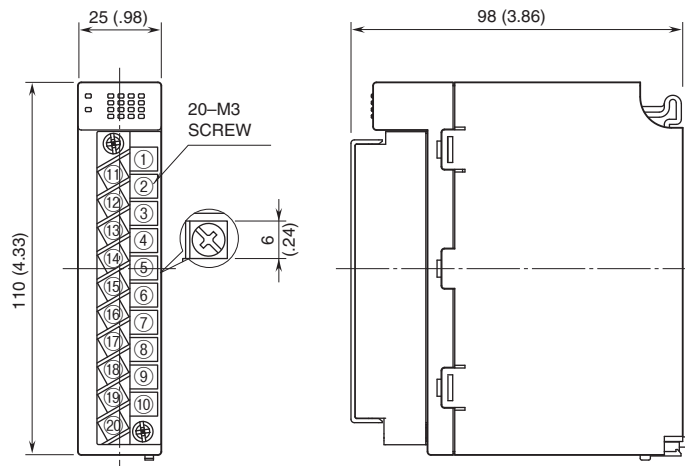
11	C1	1	PI1
12	C2	2	PI2
13	NC	3	
14	NC	4	
15	NC	5	
16	NC	6	
17	NC	7	
18	NC	8	
19	RST-	9	RST+
20	V-	10	V+

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 (-)

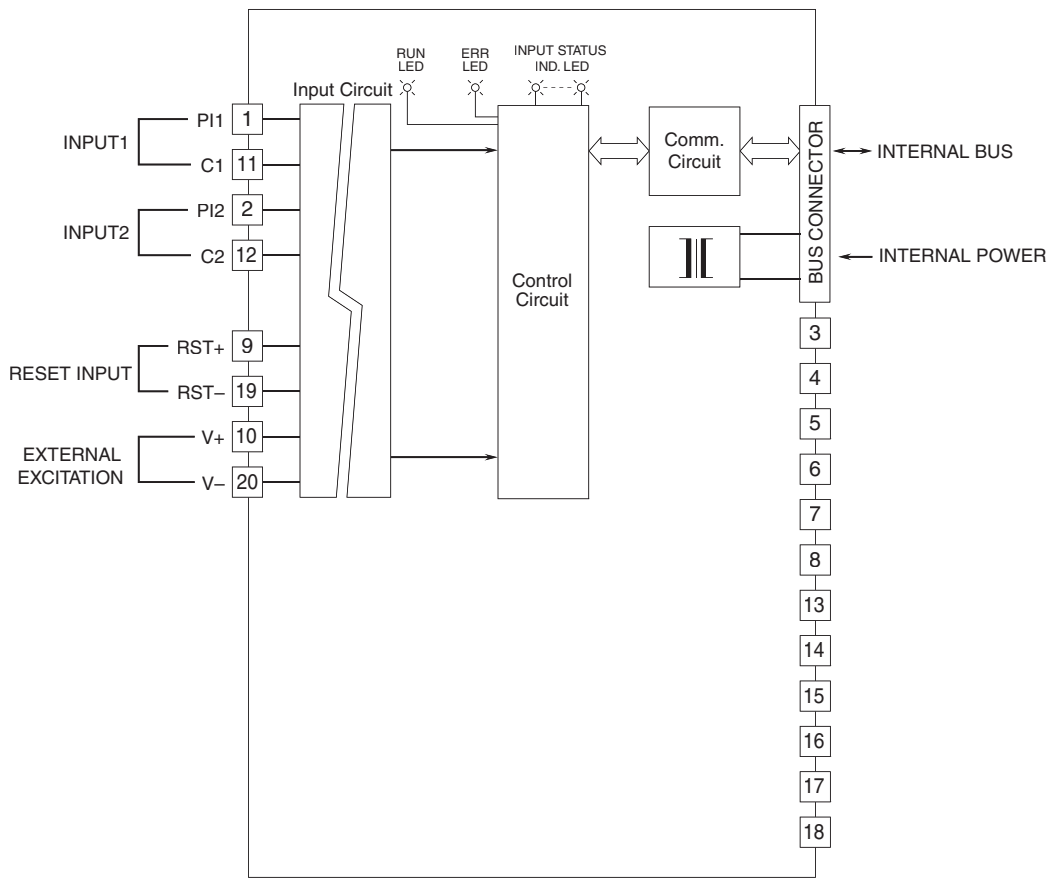
**DATA ALLOCATION**

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)

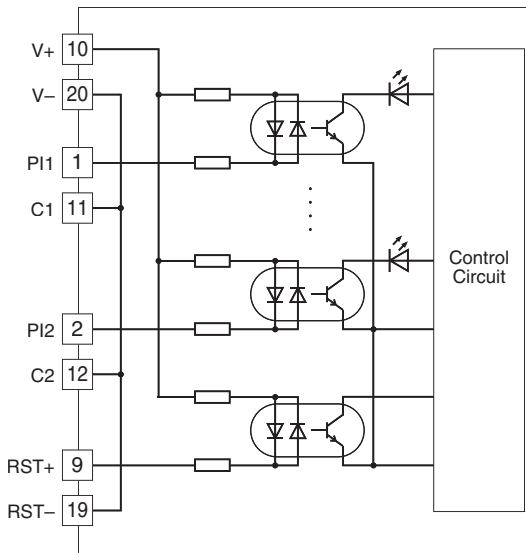
**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)**



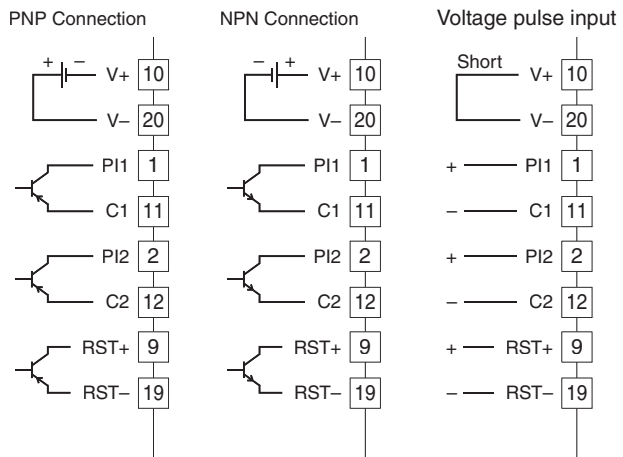
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



### Input Circuit



### Input Connection Examples



Specifications are subject to change without notice.