

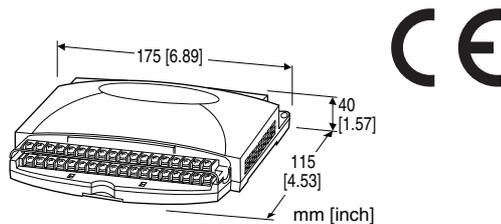
PC Recorders R1M Series

PC RECORDER

(contact output, 32 points)

Functions & Features

- Industrial recorder on PC
- 32-point open collector outputs
- Easy system expansion via Modbus RTU
- Recorded data exportable to spreadsheet applications



MODEL: R1M-D1[1]-[2][3]

ORDERING INFORMATION

- Code number: R1M-D1[1]-[2][3]
- Specify a code from below for each of [1] through [3].
(e.g. R1M-D1T-M2/MSR/Q)
- Specify the specification for option code /Q
(e.g. /C01)

[1] FIELD TERMINAL TYPE

T: M3 screw terminals
C1: FCN type connector (No CE conformance)

[2] POWER INPUT

AC Power
M2: 100 – 240 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)
DC Power
R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

[3] OPTIONS (multiple selections)

PC Recorder Software Package (must be specified)
/MSR: With
Other Options
blank: none
/Q: Option 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
/C03: Rubber coating

RELATED PRODUCTS

- Connector terminal block (model: CNT)
- Special cable (model: FCN32)

PACKAGE INCLUDES...

- PC Recorder Software CD

GENERAL SPECIFICATIONS

Connection

Power input, transmission: Euro type connector terminal
(Applicable wire size: 0.2 – 2.5 mm² (AWG24 – 12), stripped length 7 mm)

RS-232-C: 9-pin D-sub connector (male)
(Lock screw No. 4-40 UNC)

Input: M3 screw terminals (torque: 0.6N·m)
or FCN type connector (OTAX N364P032AU
(Fujitsu FCN-364P032-AU...discontinued))

Screw terminal: Nickel-plated steel

Housing material: Flame-resistant resin (gray)

Isolation: RS-232-C or RS-485 to output to power

Node address setting: Rotary switch; 1 – F (15 nodes)

RUN indicator LED: Green light blinks in normal conditions.

COMMUNICATION

Baud rate: 38.4 kbps

Communication: Half-duplex, asynchronous, no procedure

Protocol: Modbus RTU

■ **RS-232-C**

Standard: Conforms to RS-232-C, EIA

Transmission distance: 10 meters max.

■ **RS-485**

Standard: Conforms to TIA/EIA-485-A

Transmission distance: 500 meters max.

Transmission media: Shielded twisted-pair cable (CPEV-S 0.9 dia.)

OUTPUT SPECIFICATIONS

Output: Open collector, 32 points

Commons: All negatives

Sampling rate: 50 msec.

Rating: 24 V DC @ 50 mA (resistive load)

Saturation voltage: 1.6 V DC

For use with inductive loads, external protection of contact and noise quenching is recommended.

INSTALLATION

Power consumption

- AC: Approx. 10 VA
- DC: Approx. 7 W

Operating temperature: -5 to +60°C (23 to 140°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Mounting: Surface or DIN rail

Weight: 400 g (0.88 lb)

PERFORMANCE

Multi-transmission time: 5 msec.

Insulation resistance: $\geq 100 \text{ M}\Omega$ with 500 V DC

Dielectric strength: 2000 V AC @ 1 minute (RS-232-C or RS-485 to output to power to FG)

STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

Low Voltage Directive

EN 61010-1

Installation Category II

Pollution Degree 2

RS-232-C/RS-485 or output to power:

Reinforced insulation (300 V)

RS-232-C/RS-485 to output: Basic insulation (300 V)

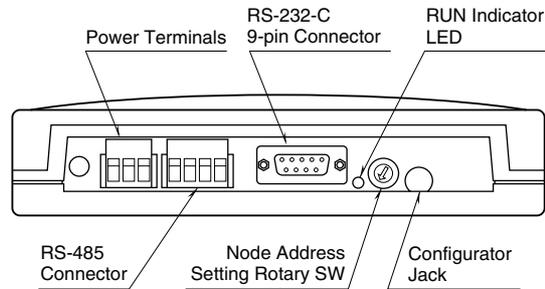
RoHS Directive

PC RECORDER SOFTWARE

PC Recorder Software Package (model: MSRPAC-2010) is included with purchases of this model.

Refer to the MSRPAC-2010 data sheet for the contents of the package and the requirements for the PC to be prepared by the user.

EXTERNAL VIEW

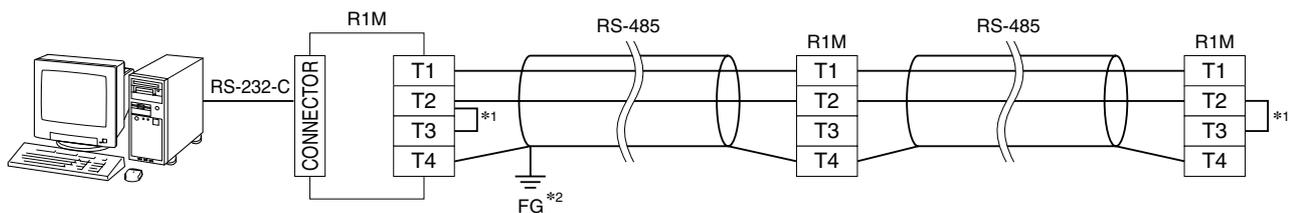


■ RS-232-C INTERFACE



ABBR.	PIN NO.	EXPLANATION OF FUNCTION
BA (SD)	2	Transmitted Data
BB (RD)	3	Received Data
AB (SG)	5	Signal Common
CB (CS)	7	Clear to Send
CA (RS)	8	Request to Send
	1	Not Used.
	4	DO NOT connect. Connecting may cause malfunctions.
	6	
	9	

MODBUS WIRING CONNECTION



*1. Internal terminating resistor is used when the device is at the end of a transmission line.

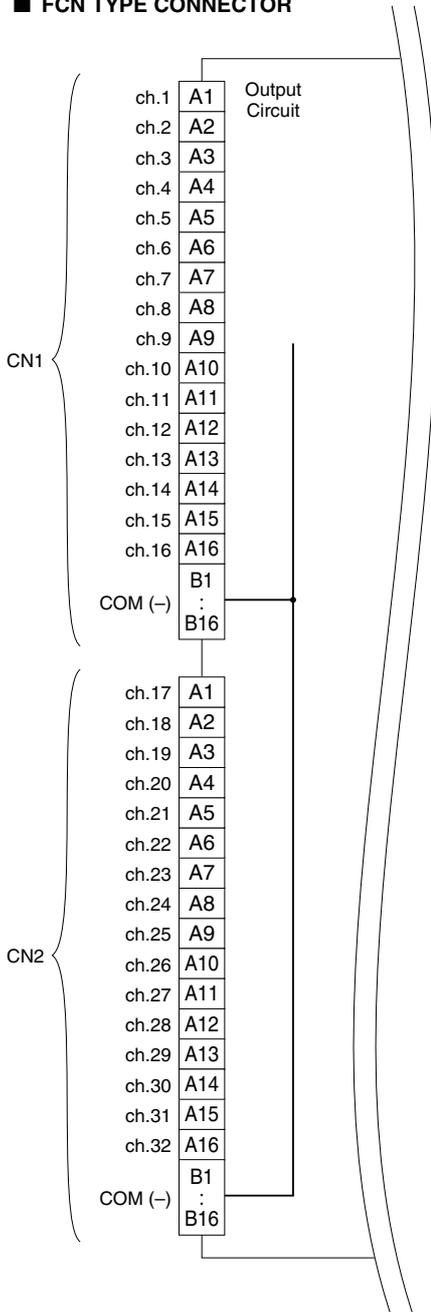
*2. Install shielded cables to all sections and ground them at single point.

CONNECTION DIAGRAM

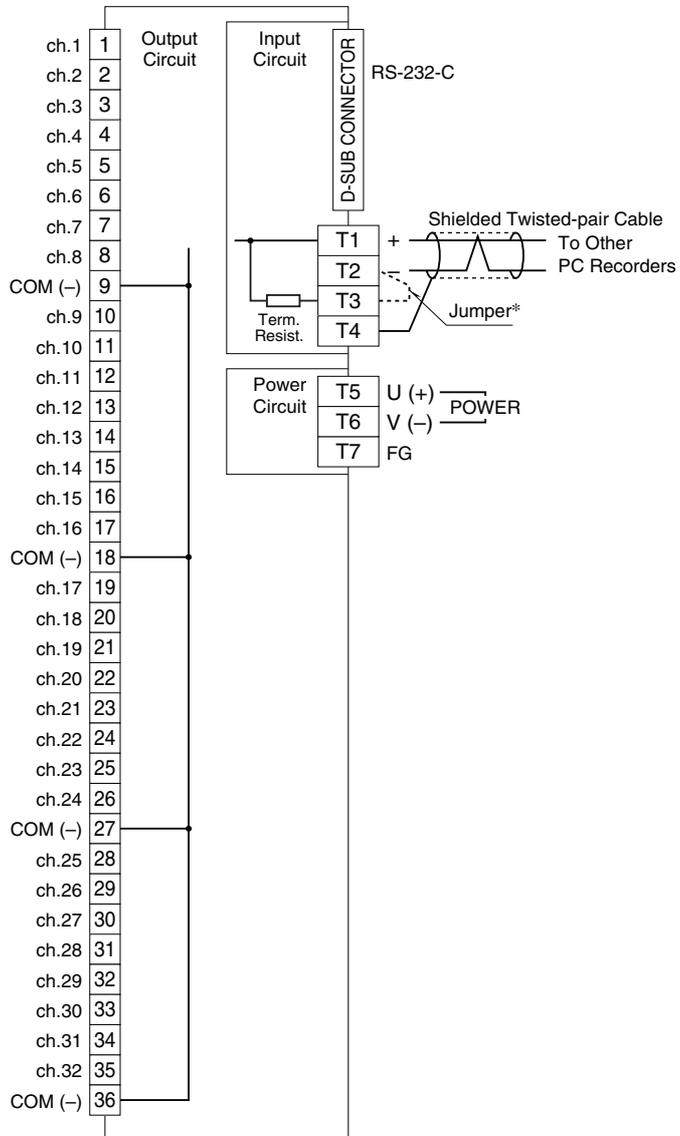
Note: In order to improve EMC performance, bond the FG terminal to ground.

Caution: FG terminal is NOT a protective conductor terminal.

■ FCN TYPE CONNECTOR



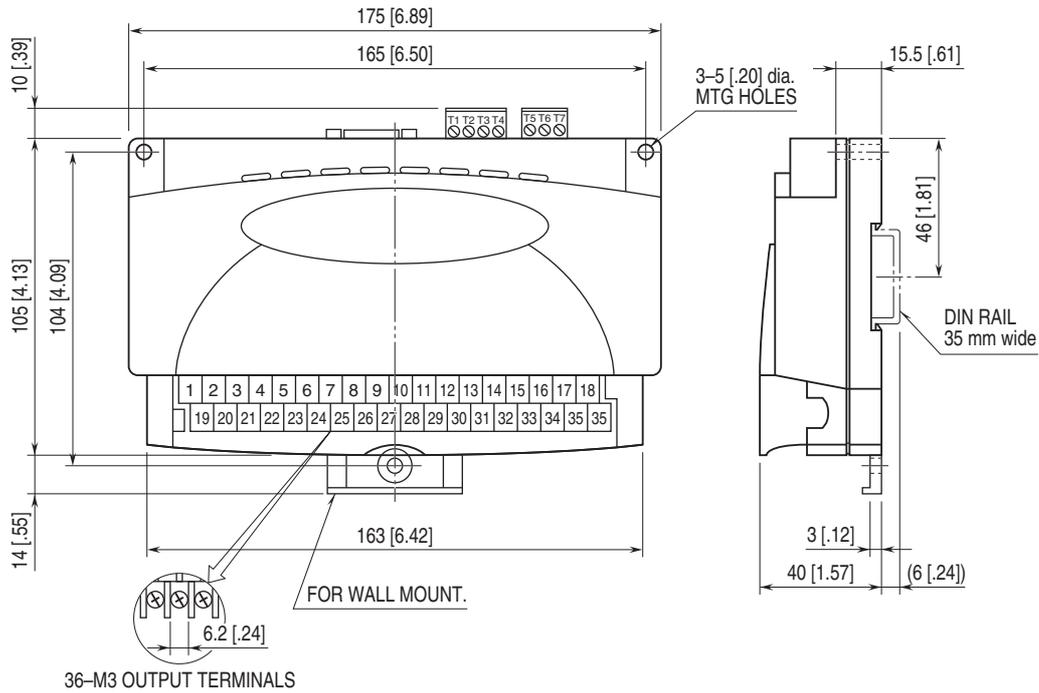
■ M3 SCREW TERMINALS



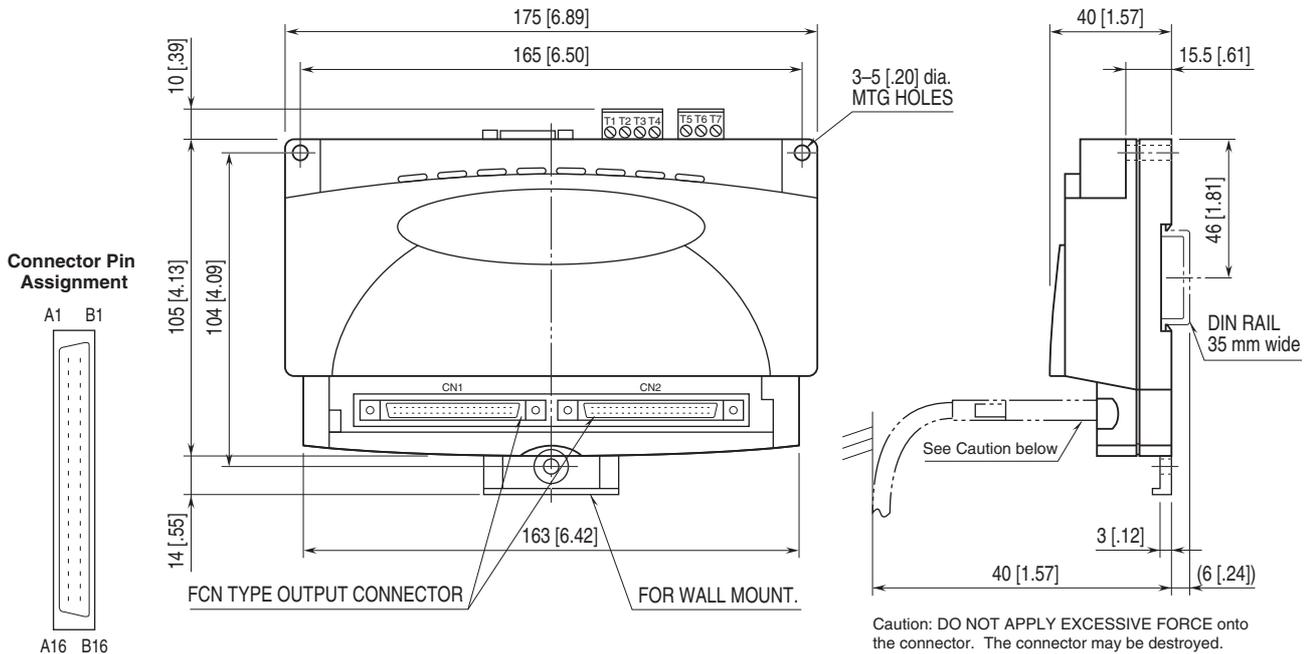
* When the device is located at the end of a transmission line via twisted-pair cable, (when there is no cross-wiring), close across the terminal T2 – T3 with the attached jumper pin (or with a leadwire).
When the device is not at the end, remove the jumper pin.

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]

■ M3 SCREW TERMINALS

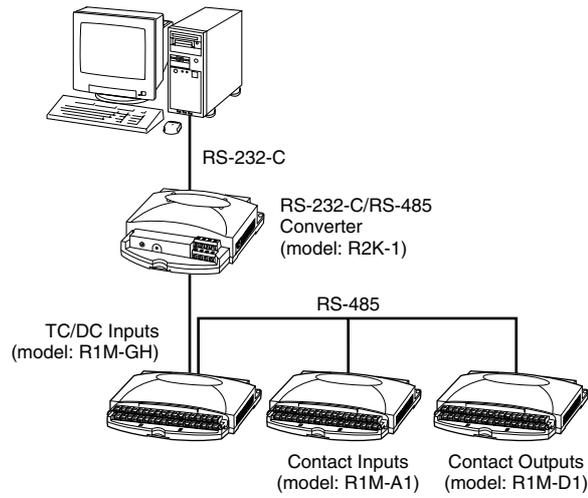


■ FCN TYPE CONNECTOR



Caution: DO NOT APPLY EXCESSIVE FORCE onto the connector. The connector may be destroyed.

SYSTEM CONFIGURATION EXAMPLES



When the cable distance between the PC and the R1Ms is long, insert an RS-232-C/RS-485 Converter for isolation.



Specifications are subject to change without notice.