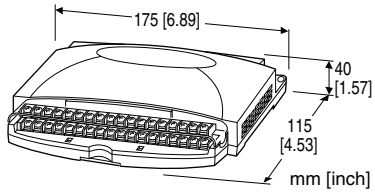
PC Recorders R1M Series

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 M-System's 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 mm^2 (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: ≥ 100 MΩ with 500 V DC
Dielectric strength: 2000 V AC @ 1 minute (RS-232-C or RS-485 to output to power to FG)

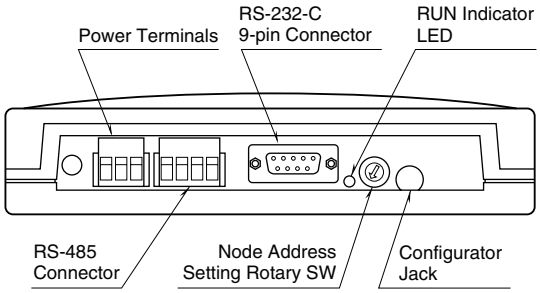
STANDARDS & APPROVALS

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.

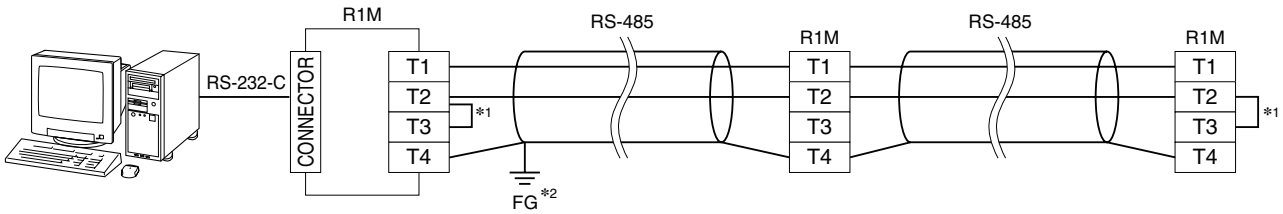
EXTERNAL VIEW



■ 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 4 6 9	Not Used. DO NOT connect. Connecting may cause malfunctions.

MODBUS WIRING CONNECTION



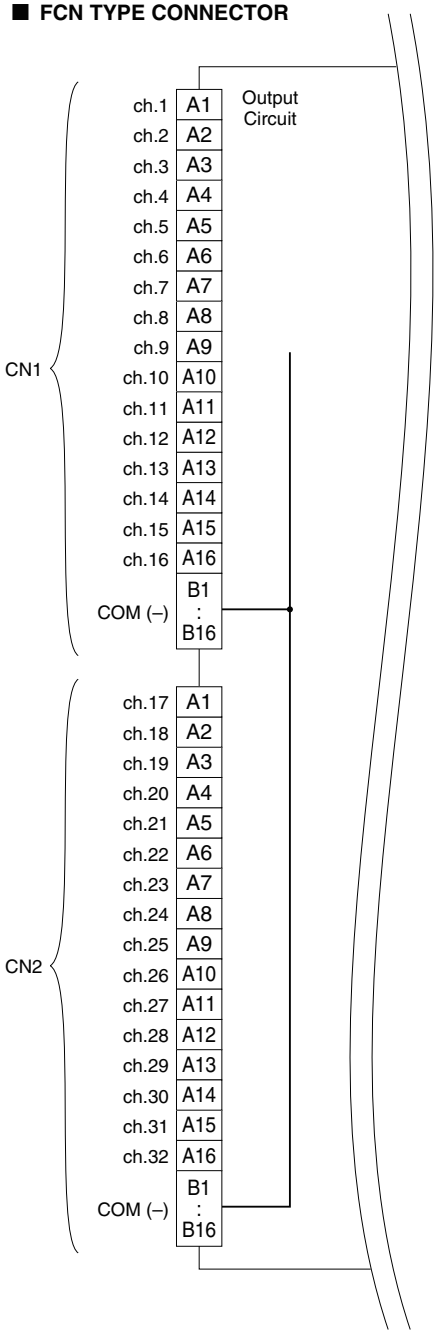
*1. Internal terminating resistor is used when the device is at the end of a transmission line.
*2. Install shielded cables to all sections and ground them at single point.

CONNECTION DIAGRAM

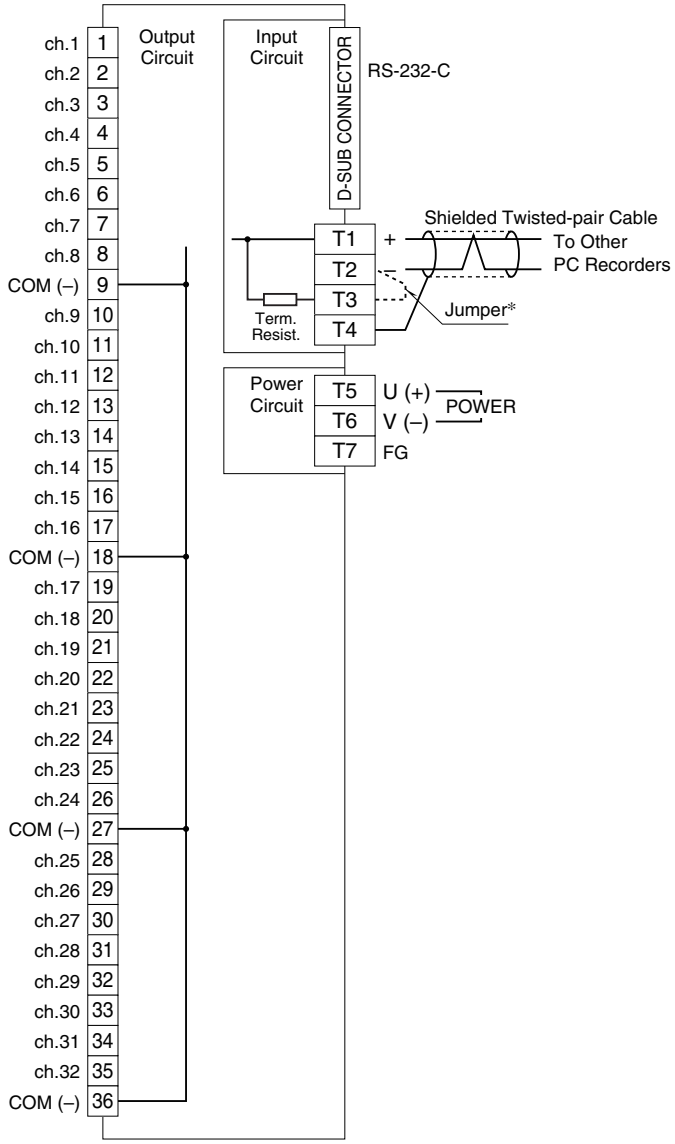
Note: In order to improve EMC performance, bond the FG terminal to ground.

Caution: FG terminal is NOT a protective conductor terminal.

■ **FCN TYPE CONNECTOR**



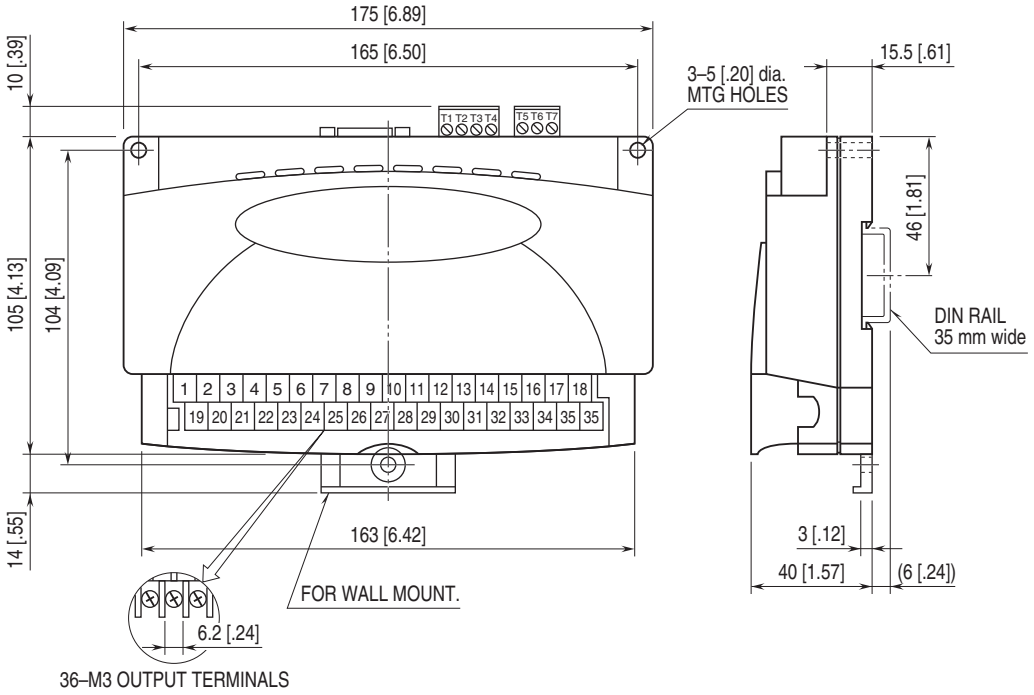
■ **M3 SCREW TERMINALS**



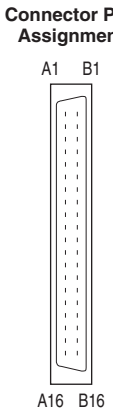
* When the device is located at the end of a transmission line via twisted-pair cable, (when there is no cross-wiring), close across the terminal T2 – T3 with the attached jumper pin (or with a leadwire).
When the device is not at the end, remove the jumper pin.

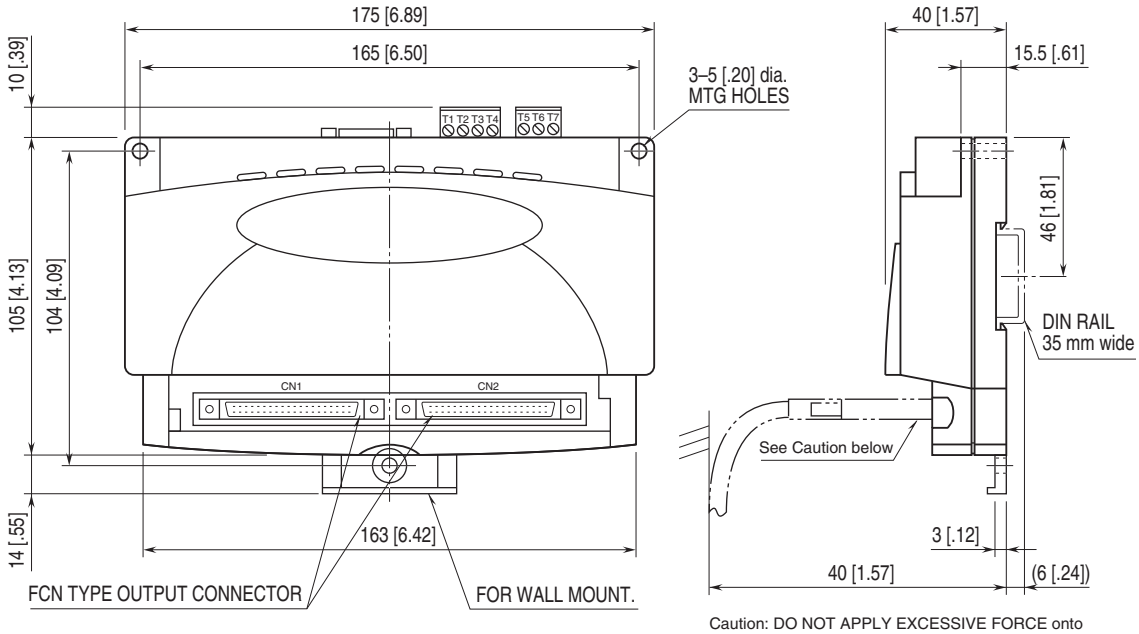
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]

■ M3 SCREW TERMINALS



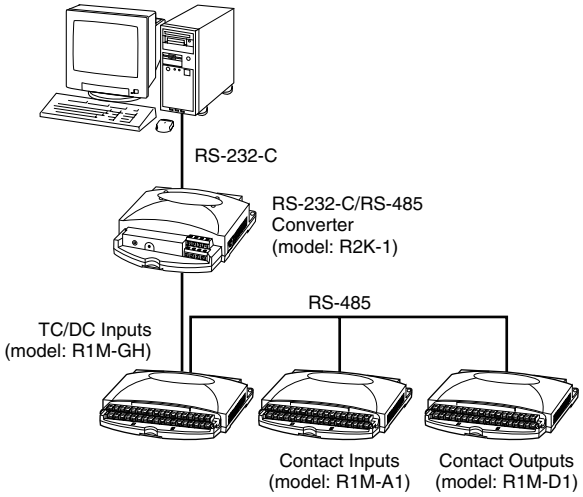
■ FCN TYPE CONNECTOR





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.