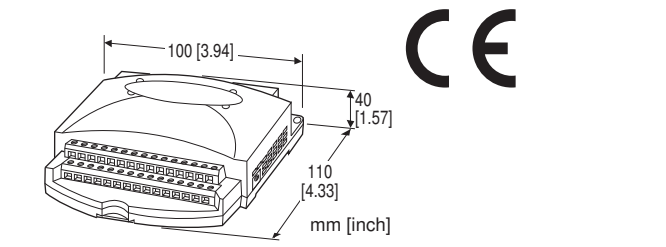## PC Recorders Series

PC RECORDER
(DC input, 8 points; RS-232-C)

Functions & Features
• Industrial recorder on PC
• 8-point input
• One trigger input and one alarm output
• Recorded data exportable to spreadsheet applications

100 [3.94]
40 [1.57]
110 [4.33]
mm [inch]

CE

MODEL: R2M-2G3-R/MSR

ORDERING INFORMATION
• Code number: R2M-2G3-R/MSR
Consult Factory for AC power input.

POWER INPUT
DC Power
R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

OPTIONS
PC Recorder Software Package (must be specified)
/MSR: With

PACKAGE INCLUDES...
• PC Recorder Software CD
• 9-pin D-sub connector, straight type (1 m or 3.3 ft)

GENERAL SPECIFICATIONS
Connection
  Power, input, alarm output: Euro-type terminal block
  (Applicable wire size: 0.14 – 1.5 mm^2, stripped
  length 6 mm)
  RS-232-C: 9-pin D-sub connector (male)
  (Lock screw No. 4-40 UNC)
  Configurator: Miniature jack (rear); RS-232-C level
Housing material: Flame-resistant resin (black)
Isolation: Input or configurator jack to alarm output to RS-232-C or 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.

INPUT SPECIFICATIONS
Input: DC input within ±10 V, 8 points; single ended (not differential but measuring potential to the single common to all channels)
Input resistance: 300 kΩ min.
Sampling rate: 50 msec./8 points
• Trigger input: Dry contact; ON detected at ≤ 1.5 V
Sensing: Approx. 5 V DC @ 1 mA

OUTPUT SPECIFICATIONS
■ Alarm Output: Photo MOSFET relay (no polarity);
≤ 50 Ω at ON, ≥ 1 MΩ at OFF; OFF when not powered
Peak load voltage: 50 V max.
Continuous load current: 50 mA max.
Peak load current: 300 mA max. (≤ 0.1 sec.)

INSTALLATION
Power consumption
• DC: Approx. 0.9 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: 300 g (0.66 lb)

PERFORMANCE (% of measuring range)
Accuracy: ±0.1 % (±20 mV)
Temp. coefficient: ±0.01 %/°C (±0.006 %/°F)
Response time: Approx. 0.6 second (0 – 90 %)
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 500 V AC @ 1minute
(ground terminal to input or configurator jack to RS-232-C or power)
2000 V AC @ 1 minute (input or configurator jack or power or ground terminal to alarm output)

STANDARDS & APPROVALS

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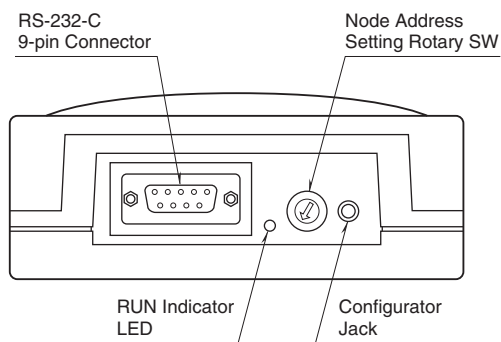 EMS EN 61000-6-2
RoHS Directive

PC RECORDER SOFTWARE

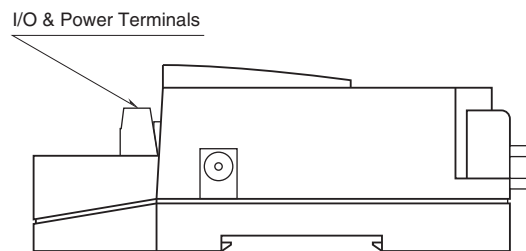PC Recorder Software Package (model: MSRPAC-2010) is included with purchases of this model.
Refer to the MSRPAC-2010 data sheet for the contents of the package and the requirements for the PC to be prepared by the user.

EXTERNAL VIEW

■ **REAR VIEW**

RS-232-C
9-pin Connector

Node Address
Setting Rotary SW

RUN Indicator
LED

Configurator
Jack

■ **SIDE VIEW**

I/O & Power Terminals

■ **RS-232-C CABLE**
• When connecting a R2M directly to a PC, use a 'straight' cable.
  A short 'straight' cable is included in the product package.
• When connecting a R2M to a R1M or R2K-1, use a RS-232-C
  Interlink/Reverse cable.
  This cable should meet the following conditions:
    - Must include wires indicated in solid lines in the figure
      below.
    - Must not connect between Pins No. 8 of the both
      connectors. (May cause failure)

• **Pin Assignments**

R1M or R2K-1   R2M
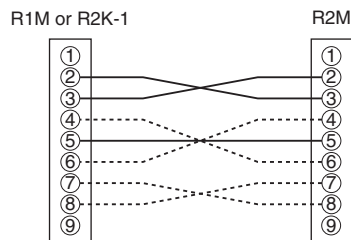
The above example with solid and broken lines shows an 'interlink'
type cable.

■ **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
	6	cause malfunctions.
	9	

CONNECTION DIAGRAM

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

Caution: FG terminal is NOT a protective conductor terminal.

INPUT 1 + 1	PC Interface
INPUT 1 − 2	D-SUB CONNECTOR RS-232-C
INPUT 2 + 3	
INPUT 2 − 4	
INPUT 3 + 5	
INPUT 3 − 6	
INPUT 5 + 7	REAR JACK ← Configurator Cable
INPUT 5 − 8	
INPUT 7 + 9	Input Circuit
INPUT 7 − 10	
TRIGGER INPUT − 11	
TRIGGER INPUT + 12	
NC 13	
ALARM OUTPUT 14	
ALARM OUTPUT 15	
16	
17	
18	
19	Input COM
INPUT 4 + 20	
INPUT 4 − 21	
INPUT 6 + 22	
INPUT 6 − 23	
INPUT 8 + 24	
INPUT 8 − 25	
NC 26	
FG 27	Power Circuit
NC 28	
POWER + 29	
POWER − 30	
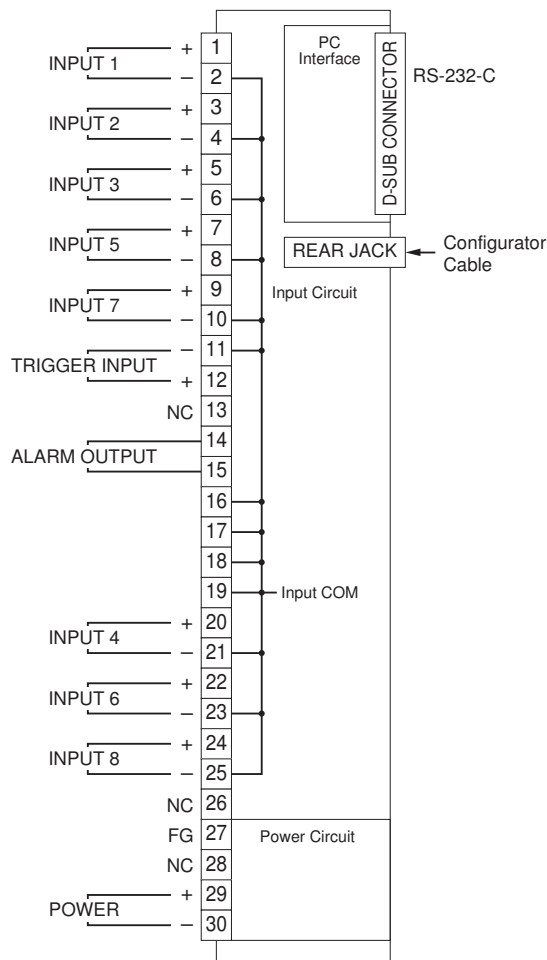
Note 1: Terminals 2, 4, 6, 8, 10, 11, 16, 17, 18, 19, 21, 23 and 25 are common negative. No. 11 is used only for a trigger input.
Be aware the interconnected terminals when wiring as a large current, if it flows across these terminals, may destroy the module.

Note 2: Use shielded twisted cables for the input or take other necessary measures so that there is no noise interference.

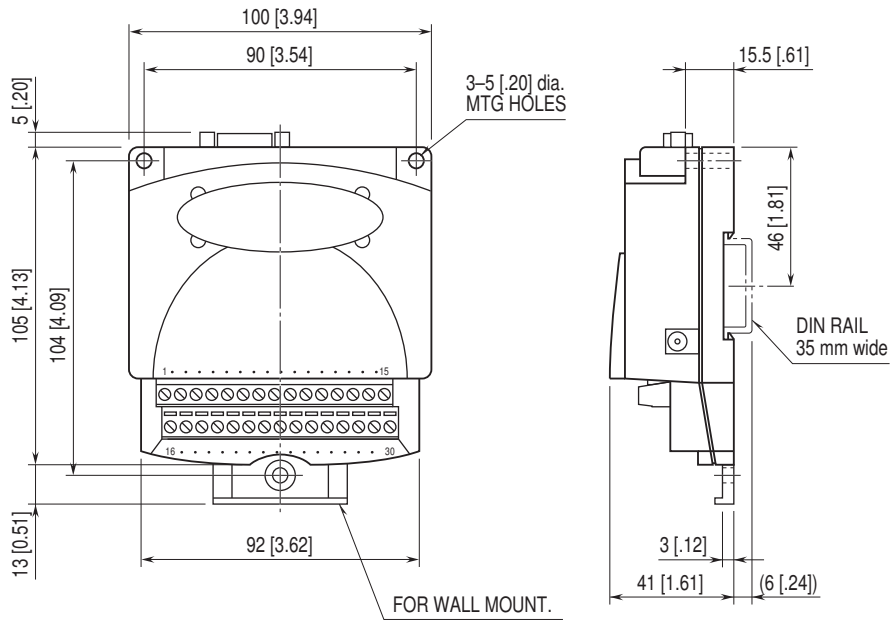Note 3: Ground the terminal 27 (FG) for safety.

Note 4: The terminal 30 (Power −) and the signal ground (SG) of the D-sub connector are internally connected.
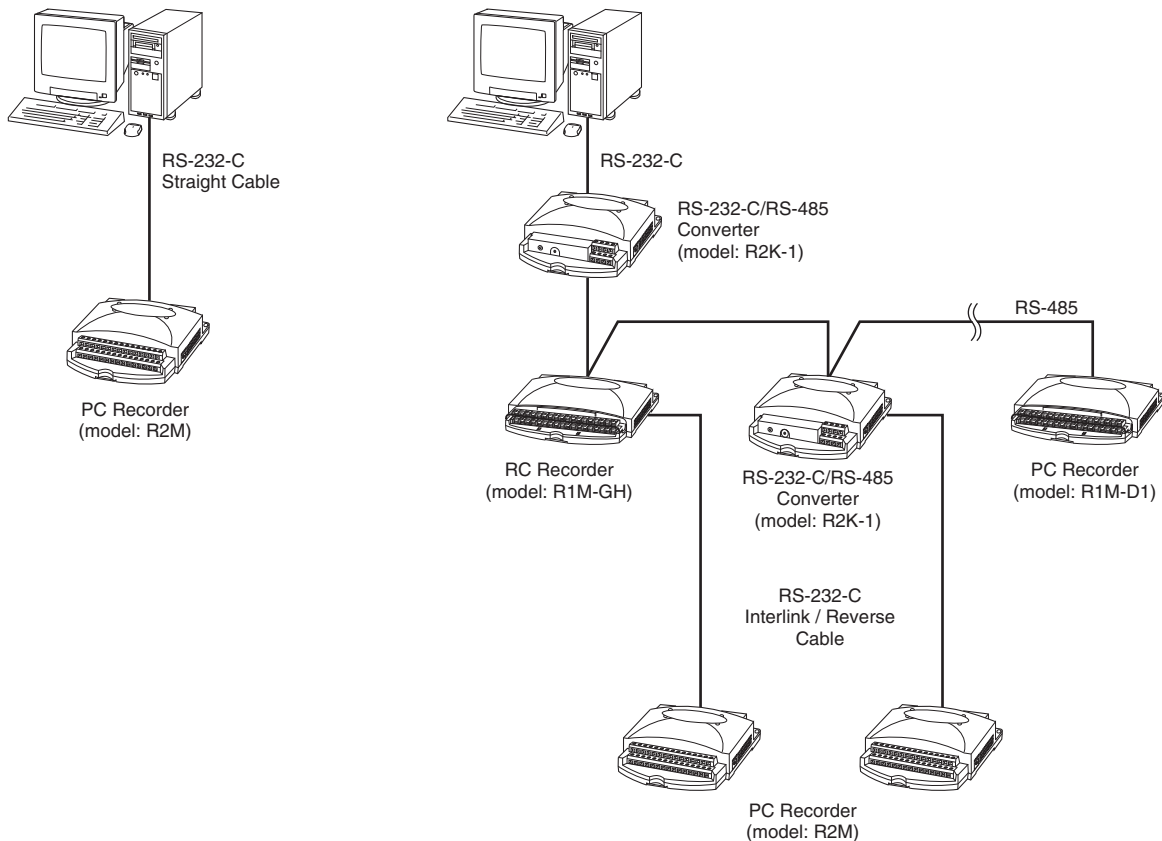The terminal 27 (FG) is used to lead noise from R2M's I/O terminals to the ground.
For protecting your PC and the R2M, we recommend both termimals, 27 and 30, to be connected to the PC's ground before connecting an RS-232-C cable between the PC and the R2M.

Note 5: DO NOT connect the terminals 13, 26 and 28 (NC: No Connection). Wrong connection may cause failures of the module.

MG CO., LTD.
www.mgco.jp

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS   unit: mm [inch]

100 [3.94]
90 [3.54]
5 [.20]
3–5 [.20] dia. MTG HOLES
105 [4.13]
104 [4.09]
1 ... 15
16 ... 30
13 [0.51]
92 [3.62]
FOR WALL MOUNT.

15.5 [.61]
46 [1.81]
DIN RAIL 35 mm wide
3 [.12]
41 [1.61]
(6 [.24])

SYSTEM CONFIGURATION EXAMPLES

RS-232-C Straight Cable

PC Recorder (model: R2M)

RS-232-C

RS-232-C/RS-485 Converter (model: R2K-1)

RS-485

RC Recorder (model: R1M-GH)

RS-232-C/RS-485 Converter (model: R2K-1)

PC Recorder (model: R1M-D1)

RS-232-C Interlink / Reverse Cable

PC Recorder (model: R2M)

⚠ Specifications are subject to change without notice.