PC Recorder Series

PC RECORDER SOFTWARE PACKAGE

Functions & Features

• Industrial recorder on Windows based PC
• MSR128-V6: 128-point analog/discrete & totalizied counter input recording at 0.5 sec. sampling cycle
• MSR128LS, MSR128LV: 8-point analog signal recording at max. 50 msec. sampling cycle
• Recorded data is exportable to other Windows applications in CSV format
• Trigger recording function: Preset number of samples both before and after the trigger point can be recorded
• Limit alarms visually confirmed on the screen with indicators and on the alarm history view

Application Examples

• System start-up data recording in conjunction with the R1M-GH2 (T/C and mV/V inputs) module
• Remote data recording via Modbus modules

MODEL: MSRPAC-2010

ORDERING INFORMATION

• Code number: MSRPAC-2010

RELATED PRODUCTS

Modbus Communication Devices

• PC Recorder (models: R1M, R2M, RZMS, RZUS Series)
• Remote I/O (models: R3, R5, R6, R7 Series)
• Paperless Recorder (models: 73VR1100, 73VR21x, 73VR3100) *1
• Multi Power Monitor (model: 53U, 54U) *2
• Ethernet Tower Light (model: IT60RE, IT40SRE, IT50SRE, IT60SRE) *1

*1 Not usable with the MSR128LS or MSR128LV.
*2 Use 53U or 54U with Modbus interface.

PACKAGE INCLUDING...

• CD..... (1)
- 128-point PC Recorder Software
Model: MSR128-V6, MSR128LS and MSR128LV
- 128-point PC Recorder Software
Model: MSR128-V1, Chinese version
- Instruction manuals for each software program

DATA INPUT INTERFACE

Modbus RTU interface: Connects to RS-232-C (COM1 through COM5) via an RS-485/ RS-232-C converter (via USB for model: RZUS); 38.4 kbps
Modbus/TCP interface: 100-Mbps LAN interface compatible with Windows

SYSTEM REQUIREMENTS (provided by the user)

■ **MSR128-V6**

	NORMAL MODE (storing rates ≥ 500 ms)	HIGH SPEED MODE (storing rates 100 / 200 ms)
PC	IBM PC/AT or compatible	
Operating system	Windows XP SP1, SP2, Windows Vista Business 32 bits, Windows 7 Professional 32 bits or Windows 10 Note: Proper software functions may not be ensured under certain conditions.	
CPU	Pentium III 800 MHz or higher	Pentium IV 2.0 GHz or higher
Screen area	1024 by 768 pixels or better resolution	
Display color	65000 colors (16 bits)	
Video memory	2 MB minimum; 4 MB recommended	4 MB minimum
Main memory	256 MB recommended for Windows XP 1 GB recommended for Windows Vista, Windows 7, Windows 10	512 MB recommended for Windows XP 1 GB recommended for Windows Vista, Windows 7, Windows 10
Hard disk area	Use an internal hard disk.*1 Max. approx. 100 MB required per day.	Use an internal hard disk.*1 Max. approx. 500 MB required per day.
Printer	Use a printer for Windows. The programs use Standard System Fonts used in Windows. Use a printer driver for Standard System Fonts.	
CD drive	Windows supported CD drive is used to install the software program.	
Card reader drive	Used with devices which save data in a CF Card	
Communication port	RS-232-C port (COM1 through COM5) supported LAN card	LAN card by Windows

*1. External (e.g. SCSI) devices may impair appropriate performance.

■ **MSR128LS, MSR128LV**

	MSR128LS	MSR128LV
PC	IBM PC/AT or compatible	
Operating system	Windows XP SP1 or SP2. For High Speed Mode (Group 0, 50-msec. storing cycle), use Windows XP SP1, SP2. Note: Proper software functions may not be ensured under certain conditions.	
CPU	Pentium II 233 MHz or higher*2	
Screen area	800 by 600 pixels or better resolution	640 by 480 pixels or better resolution
Display color	65000 colors (16 bits)	
Main memory	256 MB for Windows XP	
Hard disk area	200 MB minimum*3 Follow the respective OS's standard for Windows XP.	
CD drive	Windows supported CD drive is used to install the software program.	
Communication port	RS-232-C port (COM1 through COM5) supported by Windows*4 or LAN communication card	

*2. Alternately, Celeron 300 MHz or higher with the secondary cache.
For High Speed Mode (Group 0, 50-msec. storing cycle), Pentium III 800 MHz or higher.

*3. External (e.g. SCSI) devices may impair appropriate performance.

*4. The RS-232-C port may be predefined for other purposes than for COM port.
Driver software change or system configuration may be required before using such a port.

Note 1: At 50-msec. storing cycle (Group 0), the MSR128LS/LV may not be able to store every bit of data depending upon the PC's performance levels. These missing data will be substituted by the last stored data. Only one (1) node is connectable in the high speed mode.

Note 2: Please refer to the hardware data sheet for response time of the module.

FUNCTIONS

■ MSR128-V6 (128-point PC Recorder Software)

Sampling rate

High speed mode: 100 msec. (with R3-NE1 only)

Normal mode: 500 msec. (Normal-mode sampling rate may not be achieved depending upon the number of connected modules. Please contact M-System for details.)

[Examples]

R1M-GH2: 500 msec. up to 6 modules (connected via COM port, without trigger setting)

RZMS-U9: 500 msec. up to 3 modules (connected via COM port, without trigger setting)

R3-NE1: 500 msec. up to 64 channels, 1 station

Storing conditions

Continuous recording: Uses Start/Stop control button on the screen.

Conditional recording: Uses one of the 128-point signals to trigger recording; stores data when the preset condition is true (e.g. an analog input exceeding Hi alarm setpoint).

Defined time recording: Stores data at a specific time for a specified time duration. One time or everyday storing selectable.

External trigger recording: Uses an external contact signal to start “Event” recording; specifies number of samples both before and after the trigger condition is true (max. 3600 samples respectively).

Storing interval: Specifies the time interval (100, 200, 500 msec., 1, 2, 5 or 10 sec., 1 or 10 min., or 1 hour) in which data are stored in the HD while the input signals are sampled and plotted on the screen at 50 msec. rate. Common to all 128 channels.

Data storing method: Specifies either storing the instantaneous values at the storing time or the average values over the storing interval

Editing stored data: Trend Retrieval view available to open and edit stored data files. Pens can be separated. Data can be thinned out.

Real time data display

Pen position indicators: Shows the current position of each pen.

Overview: Shows all 128 channels in one view. Bargraphs and ON-OFF status indicators changes colors according to predefined alarm conditions.

Retrieving stored data: Stored data files can be opened and displayed on the screen. (Data stored by MSR128LS or MSR128LV cannot be opend on the MSR128-V6.)

Window size adjustment: Window size is automatically readjusted to fill the entire screen area.

Adjustable screen area:

1024 × 768 (XGA)

1280 × 768 (800) (WXGA)

1280 ×1024 (SXGA)

■ MSR128LS, MSR128LV (128-point PC Recorder Software)

Sampling rate: 50 msec. or 500 msec. selectable

Storing conditions

Continuous recording: Uses Start/Stop control button on the screen.

Conditional recording: Uses the built-in trigger input to start/stop recording; stores data when the preset condition is true (ON or OFF).

Defined time recording: Stores data at a specific time for a specified time duration. One time or everyday storing selectable.

External trigger recording: Uses an external contact signal to start “Event” recording; specifies number of samples both before and after the trigger condition is true (max. 1200 samples respectively).

Storing interval

High speed mode (Group 0): 50 msec.

Normal mode (Group 1 thr. 10): 0.5, 1, 2, 5 or 10 sec. or 1 min. selectable per group of 12 pens.

Functions: Square root extraction or moving average (per 2 thr. 16 samples)

Real time data display: Vertical or horizontal (left to right or right to left) selectable

Comparing stored data: Two sets of stored data files can be opened and displayed on the screen.

Retrieving stored data: Stored data files can be opened and displayed on the screen.

(Data stored by MSR128 cannot be opend on the MSR128LS or MSR128LV.)

I/O MODULE SELECTIONS

■ I/O MODULES FOR MSR128-V6

• R3 Series Remote I/O

SIGNAL TYPE	MODELS
DC voltage input	R3-SV4, R3-SV4A, R3-SV4B, R3-SV4C, R3(Y)-SV8, R3-SV8A, R3-SV8B, R3-SV8C, R3(S/Y)-SV8N, R3-SV16N, R3Y-SV16
DC current input	R3-SS4, R3(Y)-SS8, R3(S/Y)-SS8N, R3(Y)-SS16N
Thermocouple input	R3-TS4, R3-TS8
RTD input	R3-RS4, R3(S)-RS4A, R3(Y)-RS8, R3-RS8A, R3-RS8B
Universal input	R3-US4
Discrete input	R3(S/Y)-DA16, R3(Y)-DA16A, R3-DA16B, R3-DA32A, R3-DA64A
Discrete output	R3(Y)-DC16, R3-DC16A, R3-DC16B, R3-DC16C, R3-DC32A, R3-DC32C, R3-DC64A, R3-DC64C
Discrete I/O	R3(S)-DAC16*, R3(S)-DAC16A*
4 – 20mA input with excitation supply	R3(Y)-DS4, R3-DS8N, R3(Y)-DS8N
Potentiometer input	R3-MS4, R3(Y)-MS8
CT input	R3-CT4
AC current input with clamp-on current sensor	R3-CT4A**, R3-CT4B**, R3-CT4C, R3-CT8A**, R3-CT8B**, R3-CT8C
PT input	R3-PT4
Zero-phase current input	R3-CZ4
AC power input	R3-WT4, R3-WT4A, R3-WT4B, R3-WTU
High speed pulse input	R3-PA4
Speed/position input	R3-PA2
Totalized pulse input	R3-PA4A, R3-PA4B, R3(Y)-PA16, R3(S)-PA8
Strain gauge input	R3-LC2
Alarm	R3-AD4, R3-AR4, R3-AS4, R3-AS8, R3-AT4, R3-AV4, R3-AV8
Gateway	R3-GC1, R3-GD1, R3-GE1, R3-GFL1, R3-GM1

* Only continuous output mode is available.
** Data range must be setup with the PC Configurator Software R3CON and the dedicated cable.

• R3 Series Interface Modules

NETWORK	MODELS
Modbus Network Module	R3-NM1
Ethernet Network Module	R3-NE1

• R5 Series Remote I/O (via R5-NE1 or R5-NM1)
Ethernet (Modbus TCP/IP) connection via the R5-NE1
Serial connection via the R5-NM1 + R2K-1

SIGNAL TYPE	MODELS
DC voltage input	R5-SV, R5T-SV
DC current input	R5-SS, R5T-SS
Thermocouple input	R5-TS, R5T-TS
RTD input	R5-RS, R5-RSA, R5T-RS
4-wire RTD input	R5H-RS
Discrete input	R5-DA4, R5T-DA4, R5-DA16
Discrete output	R5-DC4, R5T-DC4, R5-DC16
4 – 20mA input with excitation supply	R5-DS, R5T-DS
Potentiometer input	R5-MS
Totalized pulse input	R5-PA2, R5T-PA2
CT input	R5T-CT
AC current input with clamp-on current sensor *	R5T-CTA, R5T-CTB
PT input	R5T-PT

* Data range must be setup for use with the PC Recorder using the PC Configurator Software R5CON.

• R5 Series Interface Modules

NETWORK	MODELS
Modbus Network Module	R5-NM1
Ethernet Network Module	R5-NE1

• R6 Series Remote I/O

SIGNAL TYPE	MODELS
DC voltage input	R6x-SV2
DC current input	R6x-SS2
Thermocouple input	R6x-TS2*
RTD input	R6x-RS2
Discrete input	R6x-DA4
Discrete output	R6x-DC4A, R6x-DC4B

* For particular type of thermocouples, use with the PC recorder using the PC Configurator Software R6CON. See the instruction manual of R6x-TS2.

• R6 Series Remote Interface

NETWORK	MODELS
Modbus interface	R6-NM1, R6-NM2
Ethernet interface	R6-NE1, R6-NE2

• R7M Series Remote I/O*

SIGNAL TYPE	MODELS
DC voltage/current input	R7M-SV4
Thermocouple input	R7M-TS4
RTD input	R7M-RS4
Potentiometer input	R7M-MS4
CT input	R7M-CT4E
Discrete input	R7M-DA16
Discrete output	R7M-DC16A, R7M-DC16B, R7M-DC8C
Discrete input (Extension)	R7M-EA8, R7M-EA16
Discrete output (Extension)	R7M-EC8A, R7M-EC8B, R7M-EC16A, R7M-EC16B

* Must be setup with R7X Configurator Software and the dedicated cable.

• R7E Series Remote I/O

SIGNAL TYPE	MODELS
DC voltage/current input	R7E-SV4
Thermocouple input	R7E-TS4
RTD input	R7E-RS4
Potentiometer input	R7E-MS4
CT input	R7E-CT4E*
Discrete input	R7E-DA16
Discrete output	R7E-DC16A, R7E-DC16B
Discrete input (Extension)	R7E-EA8, R7E-EA16
Discrete output (Extension)	R7E-EC8A, R7E-EC8B, R7E-EC16A, R7E-EC16B

* Must be setup with R7X Configurator Software and the dedicated cable.

• Power Multimeter

SIGNAL TYPE	MODELS
AC Power/energy	53U*, 54U*

* Choose Modbus interface type.

• PC Recorder (R1, R2, RZ) Series (RS-485, RS-232-C)
Ethernet (Modbus TCP/IP) connection via the 72EM(2)-M4
Serial connection via COM1 through COM5

SIGNAL TYPE	MODELS
DC voltage input	R1M-GH2* , R1MS-GH3* , R2M-2G3, RZMS-U9* , RZUS-U9
DC current input	R1M-GH2* , R1MS-GH3*, RZMS-U9* , RZUS-U9
Thermocouple input	R1M-GH2* , R1MS-GH3* , R2M-2H3, RZMS-U9* , RZUS-U9
RTD input	R1M-J3* , RZMS-U9* , RZUS-U9
Potentiometer input	R1M-J3* , RZMS-U9* , RZUS-U9
Discrete input	R1M-A1*
Discrete output	R1M-D1 (open collector)*
Totalized pulse input	R1M-P4* , R1M-A1*
Pulse input	R1M-P4*

* Ethernet (Modbus TCP/IP) connection available by using Model 72EM(2)-M4 Ethernet Communication Adaptor.

• Paperless Recorder

TYPE	MODELS
Remote I/O module Paperless recorder	73VR1100
Built-in input module paperless recorder	73VR21x (Ver.2 or later)
Selectable input modules paperless recorder	73VR3100

• ITx0 Tower Light

SIGNAL TYPE	MODELS
Discrete output	IT60RE, IT40SRE, IT50SRE, IT60SRE

■ **I/O MODULES FOR MSR128LS, MSR128LV, V.2.01 or higher**

• PC Recorder (R1, R2, RZ) Series (RS-485, RS-232-C)

SIGNAL TYPE	MODELS
DC voltage input	R1M-GH2*1 , R1MS-GH3*1 , R2M-2G3, RZMS-U9*1, 2 , RZUS-U9*2
DC current input	R1M-GH2*1 , R1MS-GH3*1 , RZMS-U9*1, 2 , RZUS-U9*2
Thermocouple input	R1M-GH2*1 , R1MS-GH3*1 , R2M-2H3, RZMS-U9*1, 2 , RZUS-U9*2
RTD input	R1M-J3*1, 2 , RZMS-U9*1, 2 , RZUS-U9*2
Potentiometer input	R1M-J3*1, 2 , RZMS-U9*1, 2 , RZUS-U9*2
Discrete input	R1M-A1*1, 2
Discrete output	R1M-D1 (open collector)*1, 2
Totalized pulse input	R1M-P4*1 , R1M-A1*1, 2
Pulse input	R1M-P4*1, 2

*1. Ethernet (Modbus TCP/IP) connection available by using Model 72EM(2)-M4 Ethernet Communication Adaptor.
*2. Not usable for High Speed Mode.

• R3 Series Remote I/O (via R3-NE1 or R3-NM1)

SIGNAL TYPE	MODELS
DC voltage input	R3-SV4, R3-SV4A, R3-SV8, R3-SV8A, R3-SV8N, R3-SV16N
DC current input	R3-SS4, R3-SS8, R3-SS8N, R3-SS16N
Thermocouple input	R3-TS4, R3-TS8
RTD input	R3-RS4, R3-RS8
Discrete input	R3-DA16, R3-DA16A, R3-DA16B, R3-DA32A, R3-DA64A
Discrete output	R3-DC16, R3-DC16A, R3-DC16B, R3-DC32A, R3-DC64A
4 – 20mA input with excitation supply	R3-DS4, R3-DS8N
Potentiometer input	R3-MS4, R3-MS8
CT input	R3-CT4
AC current input with clamp-on current sensor *	R3-CT4A, R3-CT4B, R3-CT8A, R3-CT8B
PT input	R3-PT4
High speed pulse input	R3-PA4
Totalized pulse input	R3-PA16
High speed totalized pulse input	R3-PA4A
AC power input	R3-WT4, R3-WT4A, R3-WT4B

* Data range must be setup for use with the PC Recorder using the PC Configurator Software R3CON.
Note: The R3 Series is not usable for High Speed Mode.

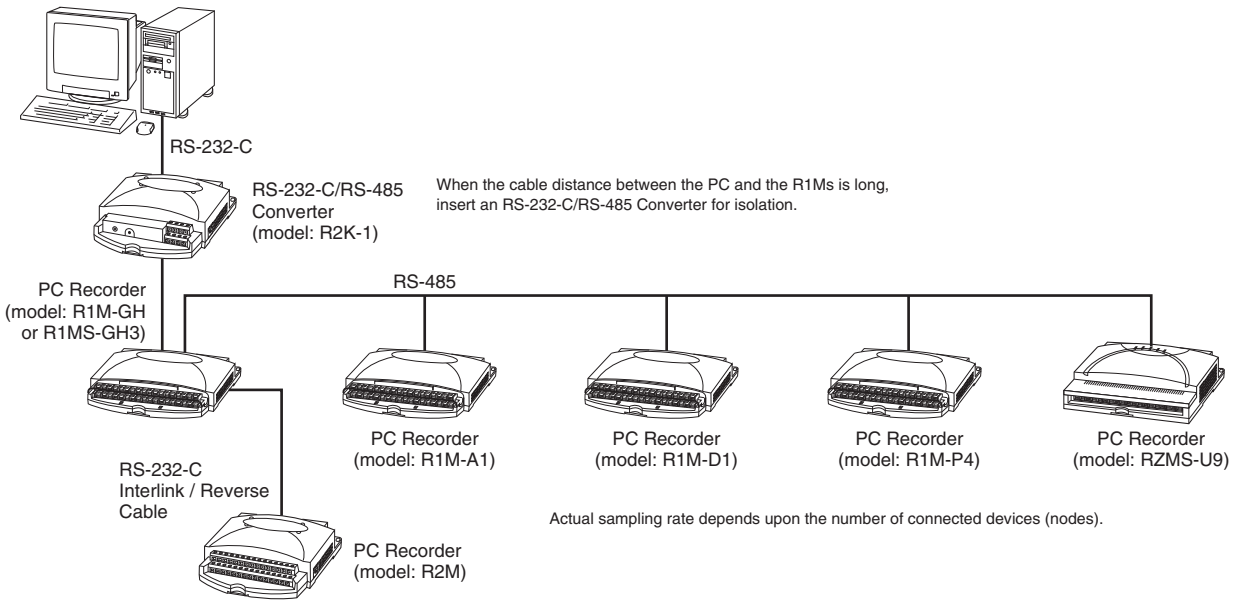
• R5 Series Remote I/O (via R5-NE1 or R5-NM1)

SIGNAL TYPE	MODELS
DC voltage input	R5-SV, R5T-SV
DC current input	R5-SS, R5T-SS
Thermocouple input	R5-TS, R5T-TS
RTD input	R5-RS, R5-RSA, R5T-RS
Discrete input	R5-DA4, R5T-DA4, R5-DA16
Discrete output	R5-DC4, R5T-DC4, R5-DC16
4 – 20mA input with excitation supply	R5-DS, R5T-DS
Potentiometer input	R5-MS
CT input	R5T-CT
AC current input with clamp-on current sensor *	R5T-CTA, R5T-CTB
PT input	R5T-PT

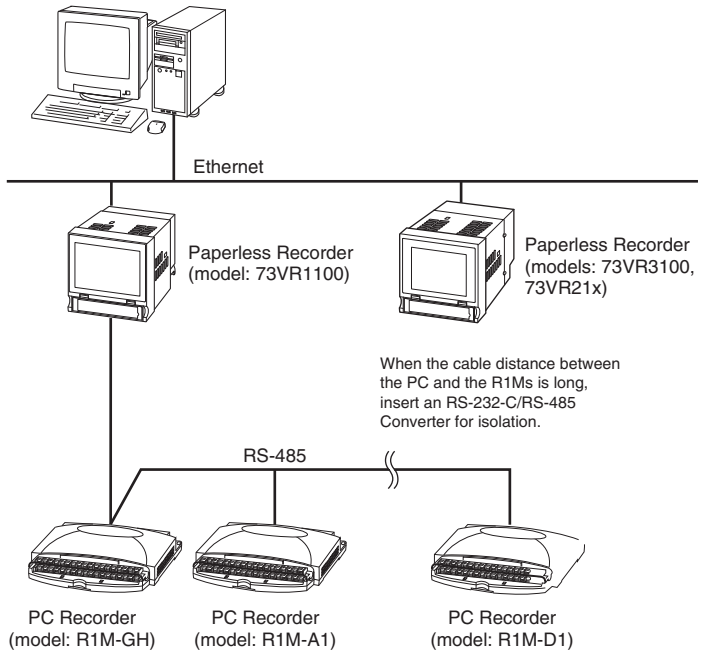
* Data range must be setup for use with the PC Recorder using the PC Configurator Software R5CON.
Note: The R5 Series is not usable for High Speed Mode.

SYSTEM CONFIGURATION EXAMPLES

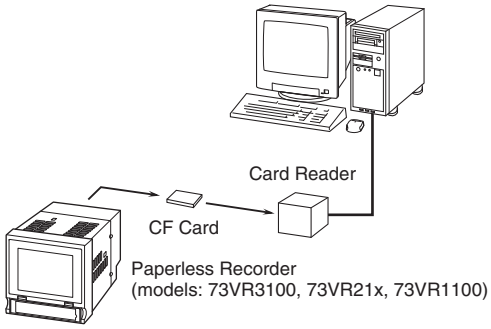
■ **R1M, R2M, RZMS + MSR128-V6**



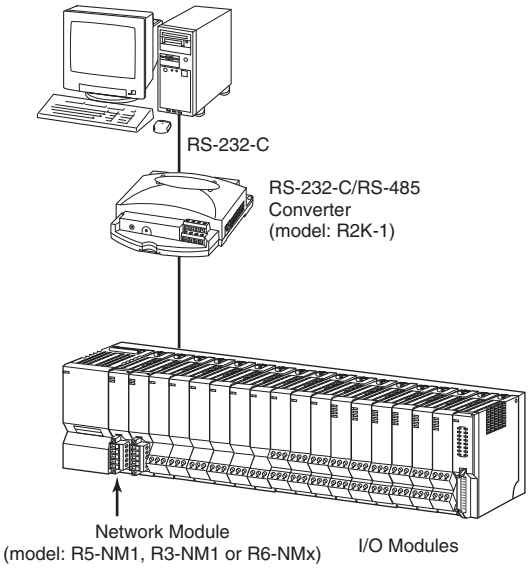
■ **73VR + MSR128-V6**



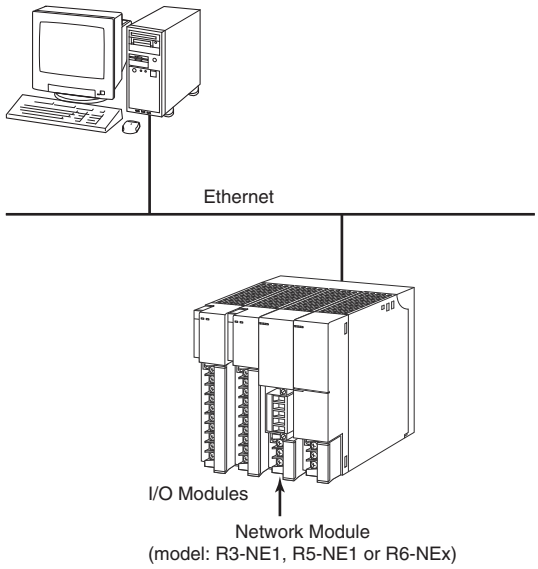
■ **73VR + MSR128-V6**



■ **R5-NM1, R3-NM1, R6-NMx + MSR128-V6**

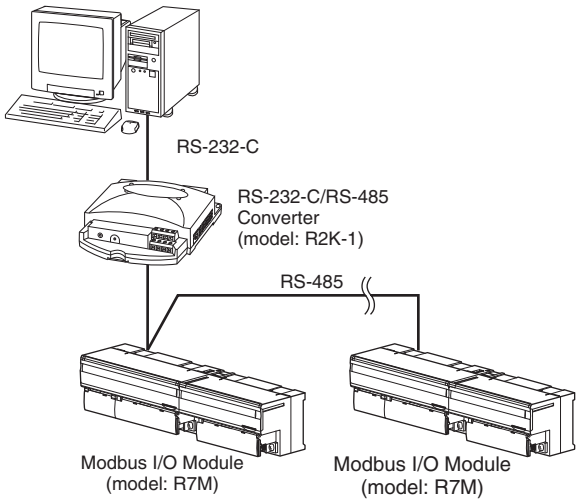


■ **R5-NE1, R3-NE1, R6-NEx + MSR128-V6**

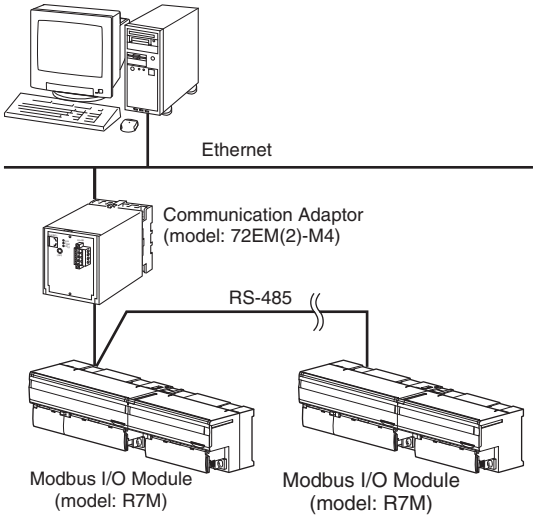


When the R3 Series is used, actual sampling rate depends upon the number of connected devices (nodes) and the number of channels.

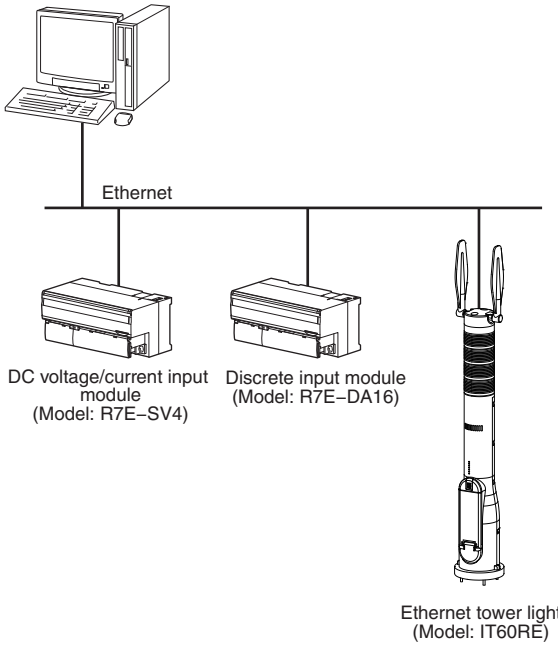
■ **R7M + MSR128-V6**



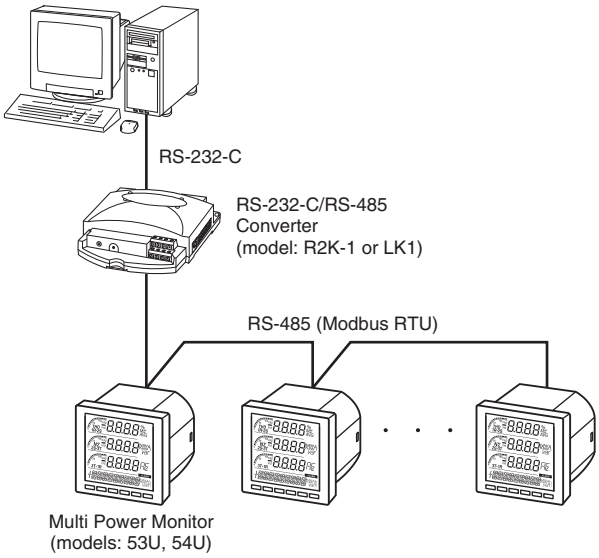
■ **R7M + MSR128-V6**



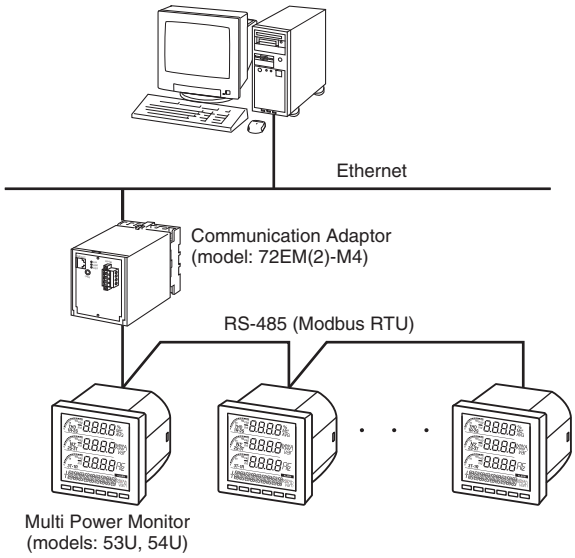
■ **R7E, ITx0 + MSR128-V6**



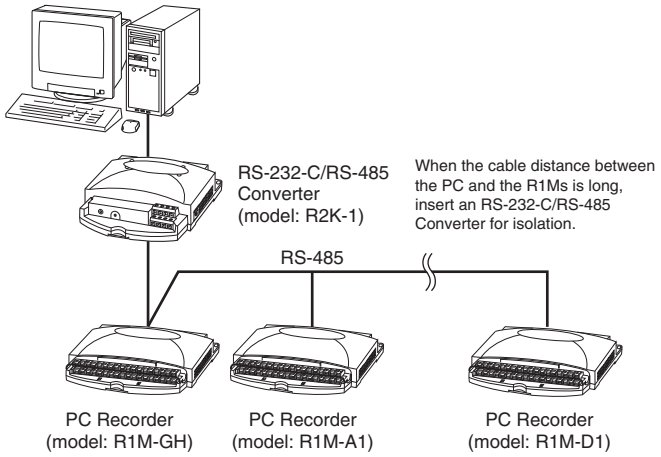
■ **53U/54U + MSR128-V6**



■ **53U/54U + MSR128-V6**

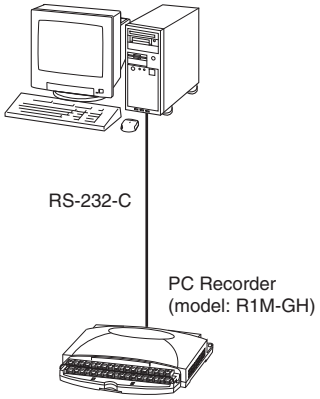


■ **R1M, R2M, RZMS + MSR128LS/LV, 500 msec. storing cycle**

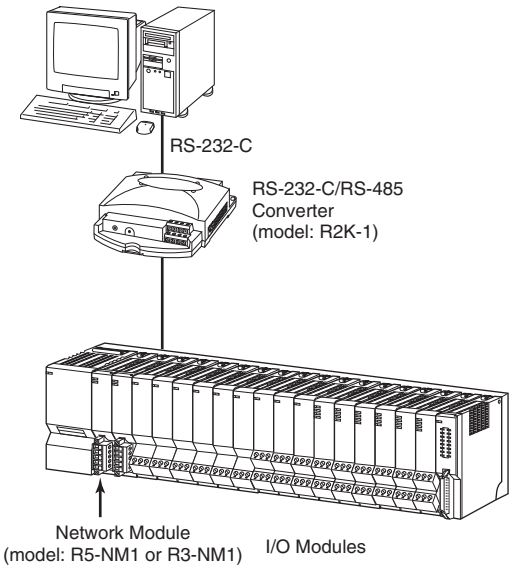


Actual sampling rate depends upon the number of connected devices (nodes).

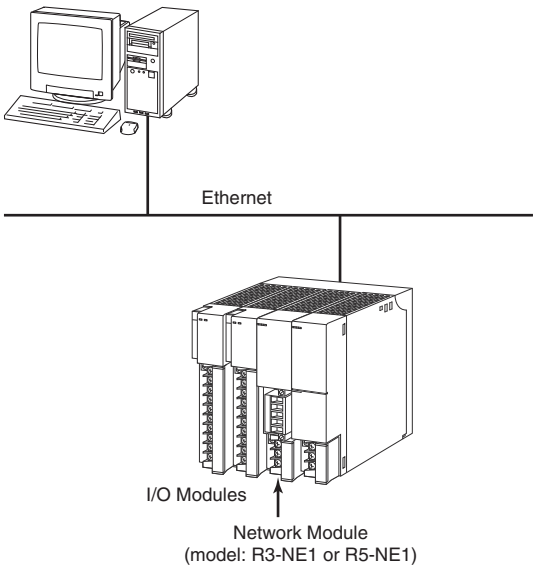
■ **R1M, R2M + MSR128LS/LV, 50 msec. storing cycle**



■ **R5-NM1, R3-NM1 + MSR128LS/LV**



■ **R5-NE1, R3-NE1 + MSR128LS/LV**



When the R3 Series is used, actual sampling rate depends upon the number of connected devices (nodes) and the number of channels.

⚠ Specifications are subject to change without notice.