Main specifications

Data storage function ▶ page 5

GENERAL SPECIFICATIONS

Calendar clock: Year (4 digits), month, date, day, hour, minute, second
Max. number of R30 I/O modules:
16 (Max. consumption current of I/O modules: 500 mA)
Read rate: Approx. ≤ 1 msec. (Connected max. modules)

ETHERNET COMMUNICATION

Communication Standard: IEEE 802.3u
Transmission: 10BASE-T, 100BASE-TX
Baud rate: 10/100 Mbps (Auto Negotiation function)
Protocol: TCP/IP, Modbus/TCP, HTTP, SLMP, FTP, SMTP, SNTP
Max. length of fieldbus segment: 100 meters
Ethernet indicator LED: DPX, LNK
IP address: 192.168.0.1 (factory setting)

INSTALLATION

Power consumption: 24V DC (at output current max. 500mA)
Operating temperature: 0 to 50°C (32 to 122°F)
Operating humidity: 10 to 90 %RH (non-condensing)
Mounting: Installation Base (Model: R30BS)
Weight: 300 g (0.66 lb)

PERFORMANCE

Calendar clock: (with battery backup)
Accuracy: Monthly deviation 2 minutes at 25°C
Back up period: Approx. 2 years at 25°C
Battery: Primary lithium battery (non-removable)
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 1500 V AC @ 1 minute
(Ethernet to internal bus or internal power to RUN contact output to power supply to FE)

COMMUNICATION

■ IP
Supports DHCP client. Allows manual setting of IP address, subnet mask, default gateway and DNS server.

■ Web server function
This unit works as a Web server, and allows 'Data,' 'Trend' and 'Event Log' to be viewed from a remote location.
Compatible terminals, browser
- iPad (iPadOS 17.4.1): Safari
- Android tablet (Android 14): Chrome
- Windows PC (Windows 10, 11), Edge, Firefox, Chrome

■ Modbus/TCP master
Allows I/O expansion with remote I/Os such as R3 or R7 series. Collectively handles data from measuring points in multiple locations.

■ SLMP Client
Allows I/O expansion by connecting with the SLMP compatible CPU unit of Mitsubishi programmable controller MELSEC. Collectively handles data from measuring points in multiple locations.

■ Connectable MELSEC model
- MELSEC iQ-R series
- MELSEC iQ-F series
- MELSEC Q series

■ Max. number of connectable devices
(Number of slaves)
12 nodes (selectable from among Modbus/TCP and SLMP devices)
Establishes connection for the number of slaves connected.

■ Max. I/O points
- Analog input: 64 points
- Discrete input: 64 points
- Pulse input: 32 points
- Discrete output: 64 points

■ Modbus/TCP slave
Remotely monitored with SCADA. Operations such as recording start/stop, entering comment, specifying folder/file name for SD card transfer destination and setting folder name for ftp transfer destination are possible from PLC.

EVENT REPORTING E-MAIL

Reporting e-mail function available at event or designated time.
Encrypted communication is supported. (SMTP over SSL).
The TR30 turns a designated Do ON after transmitting the report.
· Number of e-mail attention: 32
· Number of event report text: 32
· Number of regular report text: 1
· Channel status: Ai Di, Pi, Oi, Do status attachable to email
· Output at transmitting failure: 1 point

FTP SERVER

Reading and deleting files in the SD card by an FTP client is available.
Operation verified FTP client
- Explorer
- FFFTP 5.6

FTP CLIENT

It is available to upload the file saved in the SD card to FTP server.
Storing rate/transfer interval: 5ms / 3 min to 1 hour /1 week, 1 month

ALARM OUTPUT

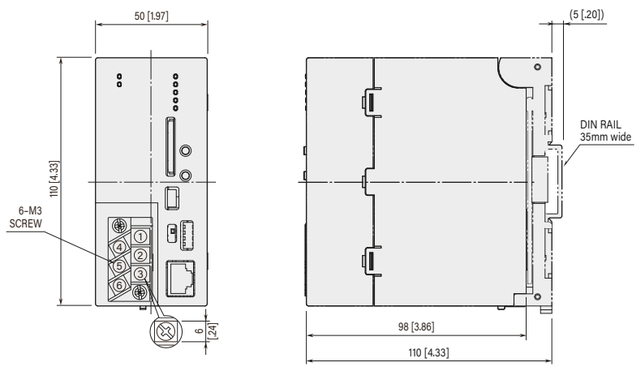
Do designated as alarm contact output can be turned ON at event occurrence.

ARITHMETIC FUNCTION

Addition and subtraction, multiplication, division, square root, moving average, delay buffer, exp, common logarithm, natural logarithm, peak hold (max/min), analog accumulation, power, F value calculation, inverse logarighm and scaling are available with function input (Oi).

EXTERNAL DIMENSIONS

unit: mm [inch]



Website

Request Info

MG CO., LTD.
Make Greener automation

Your local representative:

Specifications are subject to change without notice. When ordering, use the latest data sheets available at our web site: www.mgco.jp

Tablet Recorder TR30-G

MG CO., LTD.
Make Greener automation

2026-10
EC-8631-C
Rev. 0

Tablet Recorder TR30-G

Recorder display is now portable

CE

Tablet Recorder
Model: TR30-G

www.mgco.jp

When the recorder display is separated from the panel, you can:

Pinch in and out for easy operation

Wireless LAN

The TR30-G recorder is designed on a totally new concept.

- It provides high visibility and operability far beyond conventional paperless recorders.
- No need to install dedicated application software on your tablet computer.
- Various data in existing PLCs can be recorded without changes to hardware or ladder programs.

Conventional paperless recorders display trend screens and other monitoring screens on the front LCD panel of the recorder itself. In contrast, the Tablet Recorder is designed on a totally new concept where all information is displayed in the browser window of the tablet. The Tablet Recorder itself collects and accumulates data and is connected to the tablet used for display via wireless LAN, wired LAN, or the Internet. No special application software is required on your tablet computer as long as it has the default Web browser. The tablet's useful functions and general application software are available for a wide variety of use. SLMP communication seamlessly connects CC-Link IE and Ethernet devices as a common protocol and lets various data in existing SLMP-compatible PLCs be recorded without changes to hardware or ladder programs.

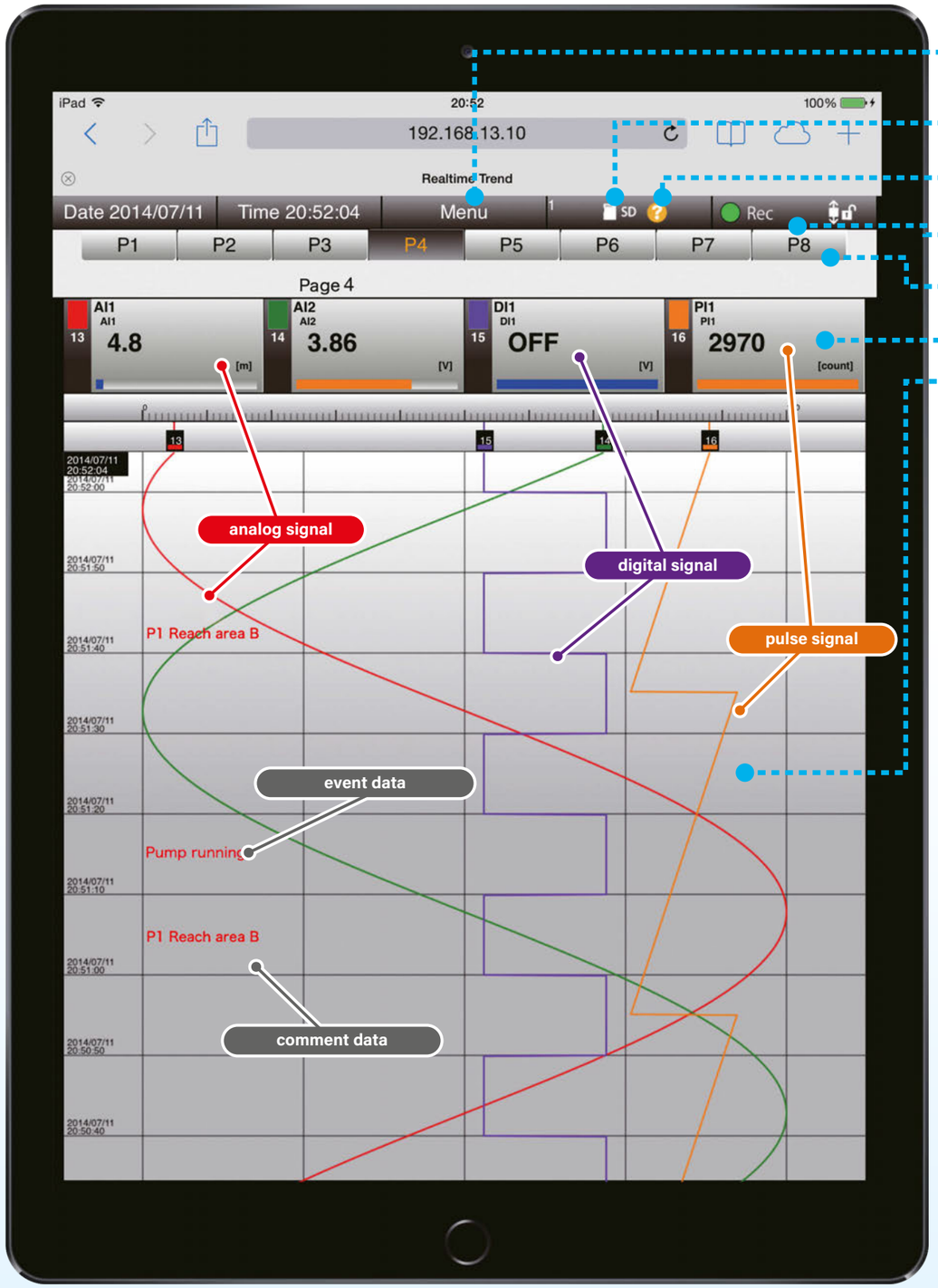
Tablet Recorder TR30-G

TR30-G Tablet Recorder Demo Site

You can see the demonstration screen of the Tablet Recorder.

URL https://www.mgco.jp/english/products/recorder/pa_tr30_demo.html

Trend screen



· The screen is an image only.
· Specifications are subject to change without notice.
· Mobile terminals (smartphones, tablets) or mobile network operator services are not our products.

Operation panel section

Menu button
Menu display of functions such as event summary and recorded data loading

SD card indicator
Lights up when SD card is enabled

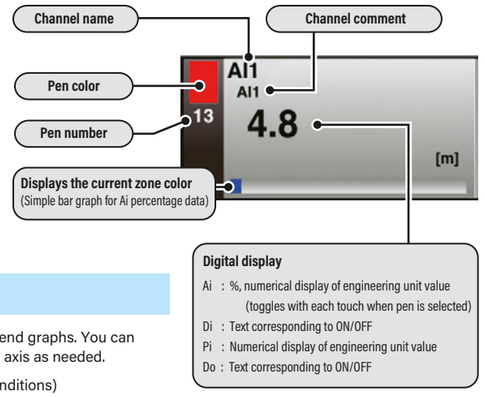
Unacknowledged event indicator
Lights up when there is an unacknowledged event

Start recording button
Starting / stopping recording by channel

Page toggle button
8 pages with 4 pens per page

Digital display

Name and status of each measurement signal are displayed in numerical value and text. Analog signals can be displayed as engineering unit value or percentage.



Trend graph section

Displays the recorded data. Simply flick to seamlessly navigate to historical trend graphs. You can also pinch in and out to compress and expand the trend graph along the time axis as needed.

Screen refresh rate: 100 ms to 999.9 seconds (depends on communication conditions)

Data storage function

Trend, event, and comment data are stored in the internal memory block at the specified storing rate and transferred to the SD card at the timing corresponding to the storing rate.

Trend data

Channel: Max. 120 points (Choose among followings: analog input (AI), discrete input (DI), pulse input (PI), function input (OI), discrete output (DO)

Number of records: Save maximum 50000 samples per one block

Storing rate: 5, 10, 50, 100, 500 ms, 1, 2, 5, 10 seconds, 1, 2, 5, 10, 15, 30 minutes, 1 hour

Sampling cycle: 5 ms (storing rate of 50 ms or below),
100 ms (storing rate of 100 ms to 1 second)
1 second (storing rate of 2 seconds or more)

Event data

- **Event**: Transition of analog input zone, transition of pulse input zone, status change of discrete input
- **Event detection interval**: Same as trend data sampling cycle
- **Stored contents**: Date/time, event
- **Number of event**: 3000 (per one memory block)

Comment data

You can enter comments in trend graphs. A list of entered comments is available on the Comment summary screen. Comments can also be edited and deleted.

- **Number of characters for comment:** 32
- **Stored contents:** Date/time, comment.
- **Number of comment:** 1000 (per one memory block)

SD card

- **Recording contents:** Trend data, event data, comment data, settings information
- **Data format:** Trend data, event data and comment data are saved with dedicated format (binary, extension "TRD") or CSV format. Setting information is saved into text format (xml format, extension "xml").
- **Auto file delete:** When auto file delete is disabled, data are recorded until there is no remaining space in the SD card. When auto file delete is enabled and the remaining space in the SD card reaches 100MB or less, the data is deleted from the oldest.

Storage time

(Approximate time when a 4 GB SD card is used when only trend recording is enabled)

● Binary format

Storing rate	16 pens	32 pens
5 ms	3 days	--
100 ms	50 days	30 days
500 ms	8 months	4 months
1 sec.	1 year	9 months
5 sec.	7 years	4 years
1 minute to 1 hour	10 years (Max.)	

● CSV format

Storing rate	16 pens	32 pens
5 ms	34 hours	--
100 ms	28 days	15 days
500 ms	4 months	78 days
1 sec.	9 months	5 months
5 sec.	3.5 years	2 years
1 minute to 1 hour	10 years (Max.)	

· Numerical values are calculated as 8 half-width characters.

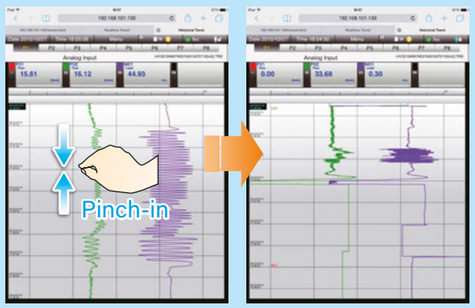
TR30-G features

Intuitively operate the recorder with a tablet.

Move to the historical trend

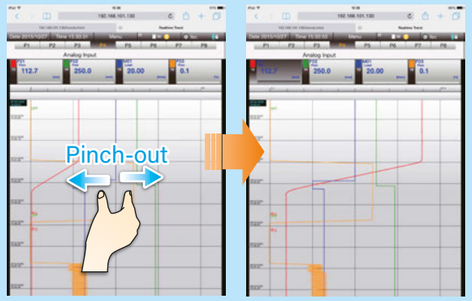
Transition to the historical trend is seamless with a downward flick.

Zoom out on graphs



The time span over the graph area can be widened while staying in the recording state by pinching in the screen along the time axis.

Zoom in on graphs

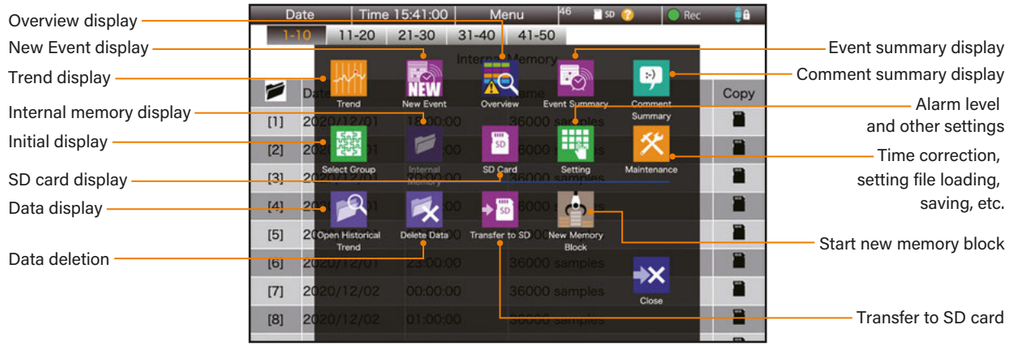


Fine changes in the graph can be enlarged by pinching out the screen along the graph amplitude axis.

Move graphs

A specific channel graph can be selected and moved to separate overlapping graphs for clear view.

Menu window



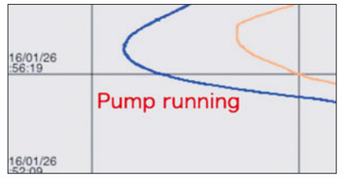
[Menu window displayed on screen]

● Screen image is for reference only. It is subject to change without notice. ● MG does not provide telecommunications service for smartphones and tablets.

Operations using tablet functions *1

Comments can be entered by voice

For iOS*2, you can bring up the comment entry screen by tapping [Enter comment] on the menu screen. While you can tap the comment entry field to bring up a keyboard to enter your comment, you can also tap the microphone button next to the space bar to enter comments verbally. This saves you from tedious keyboard operations when entering comments.



Attach screen captures to your email

With tablets that can send emails, the trend display can be attached to and sent via email.
Sending current trend graphs is a quick way to simultaneously notify multiple relevant people of the situation.

Wirelessly print out screen captures

Simply capture only the part that needs to be recorded and print it out from a wireless LAN printer.

*1 The functions introduced in "Operations using tablet functions" rely on your tablet device's functions and telecommunications subscriptions.
See the instruction manual for your tablet device for more information.

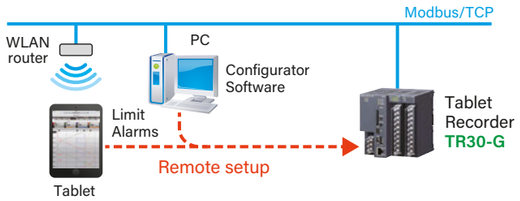
*2 This function may not be available depending on the model or version of your tablet device. For non-iOS tablet devices, see the instruction manuals for your tablet device and applications.

TR30-G feature

Equipped with useful functions

Remotely manage configurations via wired or wireless LAN

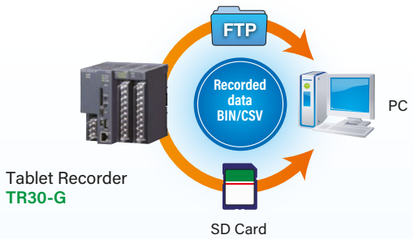
A PC Configurator Software (Model: TRGCFG) is available to set up the recorder from a PC over a wired or wireless LAN. Alarms can be set up from the tablet as well.



· PC Configurator Software (Model: TRCFG or TRGCFG) can be downloaded free of charge from our website.

Portable recorded data and viewer software

Recorded data can be brought back to office from the site on an SD card. The TR30 is equipped with an FTP server function, which allows you to retrieve data files on the SD card from an FTP client without actually going to the site.



Event summary and filtering

When key conditions that should not be overlooked occur, it is considered an event. Recording data of events is an important function of a recorder. The TR30-G has an event summary screen as well as a filter function that allows you to pick out specific events from the event summary.

Built-in alarm output function

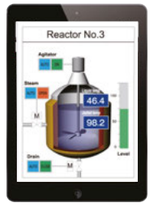
- Analog signals can be divided into up to five zones, with an alarm for each zone.
- For digital signals, alarms can be output with ON/OFF events.
- Alarms can be output from either a remote I/O or the contact output module of the Tablet Recorder.
- The alarm level of analog signals can also be directly changed from the Web screen.

Mail Reporting

Email notification is available.
There are two types of email notifications: event reports that are sent when an event occurs, and regular reports that are sent at set times.

User graphics

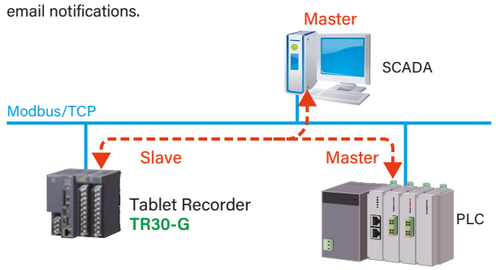
The TR30-G has a function that outputs measurement data columns as JavaScript arrays. Customers who have HTML and CSS skills for coding in JavaScript and building Web pages can freely create their own trend graphs and bar graphs. Output file types include analog input, analog output, digital input, digital output, trend data, event data, and many more to help customers create screen designs of their preference.



Tablet

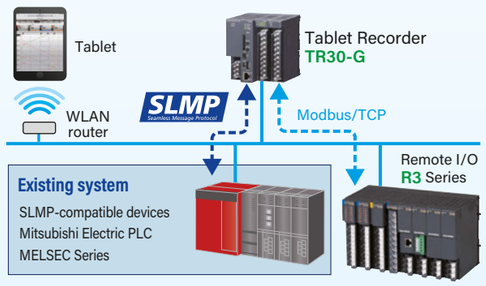
Modbus slave to communicate with the PLC and SCADA

Using the Modbus/TCP slave function, the recorder can transmit and receive Ai, Di, and Do signals to and from Modbus/TCP master devices such as the PLC and SCADA.
Use this function to start or stop recording from the PLC or send email notifications.



Various data in existing PLCs can be recorded without making any changes to the hardware or ladder program

The TR30-G uses SLMP communication, a common protocol that seamlessly connects together CC-Link IE and Ethernet devices, to communicate with the PLC. Various data in existing PLCs, including configuration parameters and data stored on internal memory (registers), in addition to real-time signals the PLC receives via an I/O module or communication, can be recorded without making any changes to the hardware or ladder program.
The TR30-G can simultaneously connect to compatible devices as a Modbus/TCP master and an SLMP client, and transmit and receive Ai, Di, Pi, and Do signals to and from remote I/O and SLMP-compatible devices. Assigning signals collected from the PLC and remote I/O allows you to use them to start or stop recording by TR30-G or for email notification.



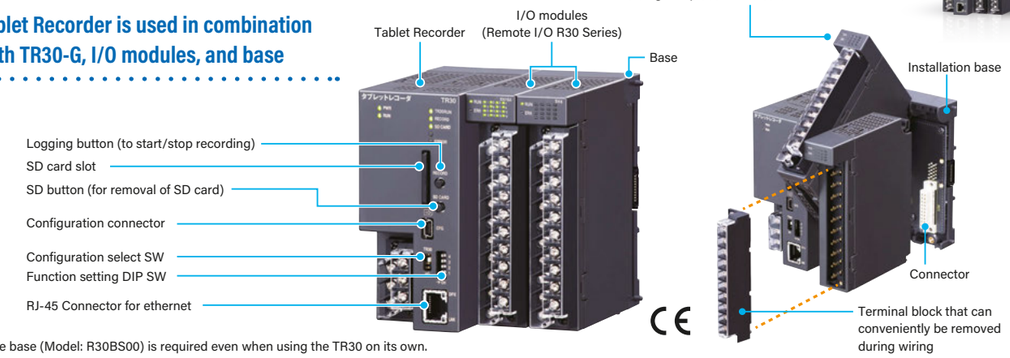
Daylight saving time

You can set the clock to one hour ahead of standard time during a specific period.

Tablet Recorder TR30-G

Hardware and Construction

Tablet Recorder is used in combination with TR30-G, I/O modules, and base



· The base (Model: R30BS00) is required even when using the TR30 on its own.

Types of I/O modules and bases

Discrete I/O Module

Product name	Model	CE
DISCRETE INPUT MODULE (Di 16 points; with external excitation supply)	R30XN16A	✓
DISCRETE OUTPUT MODULE (NPN transistor output, 16 points)	R30YN16A	✓
DISCRETE OUTPUT MODULE (PNP transistor output, 16 points)	R30YN16C	✓

Analog Input Module

Product name	Model	CE
DC VOLTAGE/CURRENT INPUT MODULE (2 points, isolated)	R30SV2	✓
DC VOLTAGE/CURRENT INPUT MODULE (4 points, isolated)	R30SV4	✓
HIGH-SPEED DC VOLTAGE/CURRENT INPUT MODULE (4 points, isolated)	R30SVF4	✓
THERMOCOUPLE INPUT MODULE (4 points, isolated)	R30TS4	✓
RTD INPUT MODULE (4 points, isolated)	R30RS4	✓
POTENTIOMETER INPUT MODULE (4 points, isolated)	R30MS4	✓
UNIVERSAL INPUT MODULE (2 points, isolated)	R30US2	✓
UNIVERSAL INPUT MODULE (4 points, isolated)	R30US4	✓

Power I/O Module

Product name	Model	CE
AC CURRENT INPUT MODULE (4 points, isolated, clamp-on current sensor type CLSE use)	R30CT4E	✓

Pulse I/O Module

Product name	Model	CE
TOTALIZED PULSE INPUT MODULE (Pi 2 points, 32 Bits)	R30PA2	✓

Installation Base

Product name	Model	CE
INSTALLATION BASE (0 slot (Model: TR30 single use))	R30BS00	✓
INSTALLATION BASE (2 slots)	R30BS02	
INSTALLATION BASE (4 slots)	R30BS04	
INSTALLATION BASE (8 slots)	R30BS08	
INSTALLATION BASE (12 slots)	R30BS12	
INSTALLATION BASE (16 slots)	R30BS16	

Accessory

Product name	Model	CE
BLANK FILLER MODULE	R30DM	--
CLAMP-ON CURRENT SENSOR	CLSE-R5	✓
	CLSE-05	
	CLSE-10	
	CLSE-20	
	CLSE-40	
	CLSE-60	

An SD card is required to save data. Use specified SD cards.
SD cards are also available for purchase from MG. Please contact us for purchase.

PC Configurator Software

PC Configurator Software for TR30-G (Model: TRGCFG) and for R30 (Model: R30CFG) can be downloaded from our website. Use generic USB 2.0 cables (connector: mini-B type, 5.0 m or shorter) to connect a device to the PC.

SECURITY GATEWAY SG6

The security gateway ensures the security of Modbus/TCP, SLMP, and HTTP protocols based on mutual authentication and encryption via TLS while using standard Internet connections.

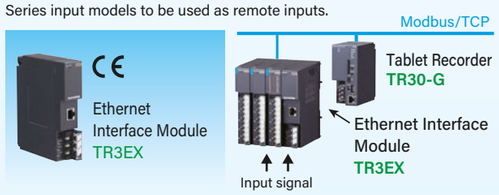
Transport Layer Security (TLS): Cryptographic protocol for preventing eavesdropping, tampering, and impersonation of data transmitted over the Internet.

Related equipment

Product name	Model	CE
SECURITY GATEWAY	SG6	--

A wide range of R3 Series models can be used as remote inputs

Using the dedicated communication module (Model: TR3EX) for the TR30-G as the network module for an R3 Series remote I/O and connecting it with the Tablet Recorder via a switching hub allows a wide range of R3 Series input models to be used as remote inputs.



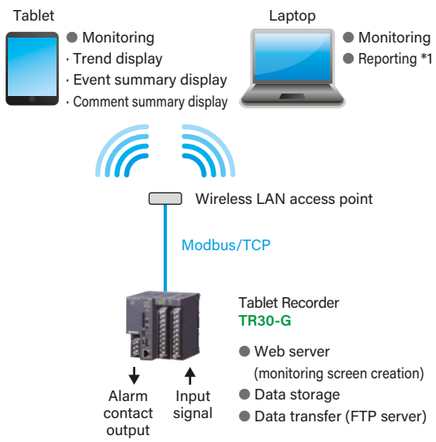
Communication module for Tablet Recorder

Product name	Model	CE
ETHERNET INTERFACE MODULE (Modbus/TCP, use with TR30)	TR3EX	✓

System Configuration Examples

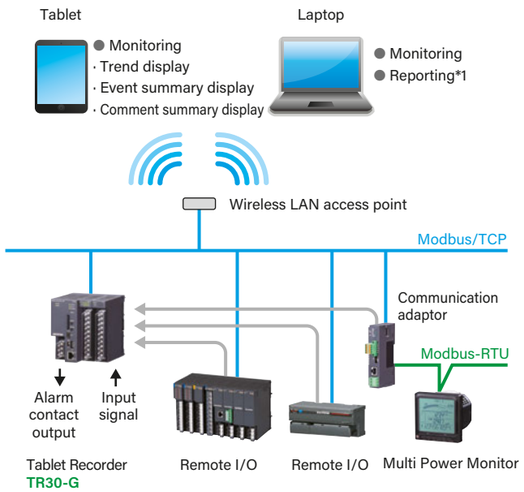
Wireless LAN

Using an I/O module



This is the basic configuration, consisting of only a Tablet Recorder and a wireless LAN access point. With a PC, you can create daily and monthly reports based on data collected via FTP.

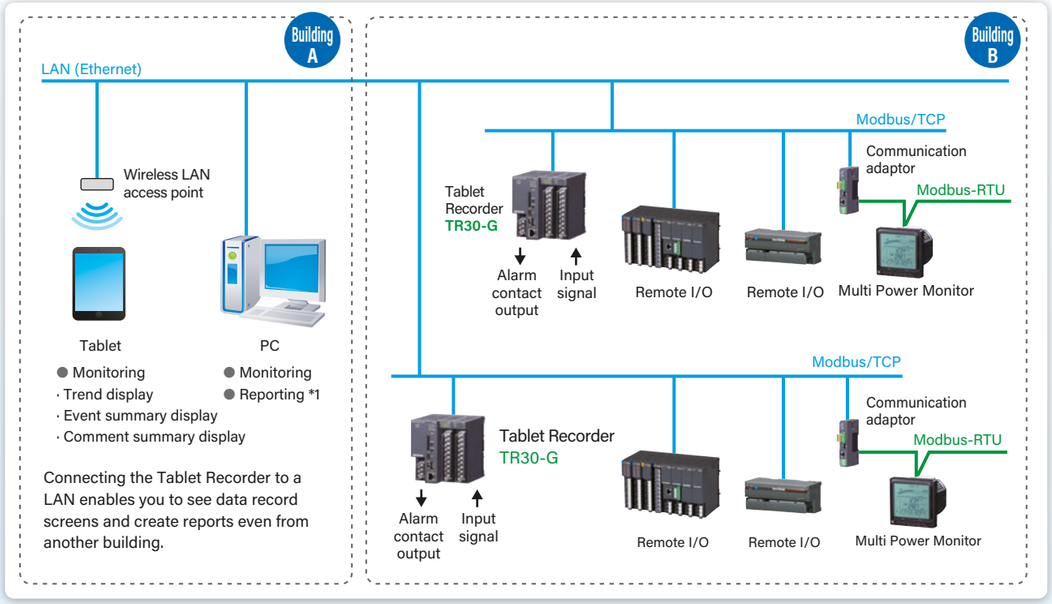
Using Remote I/O



A Tablet Recorder can record signals of Modbus/TCP devices that are connected to the same line as the Tablet Recorder.

*1. Create through user programs based on the trend data file retrieved from the SD card or via FTP.

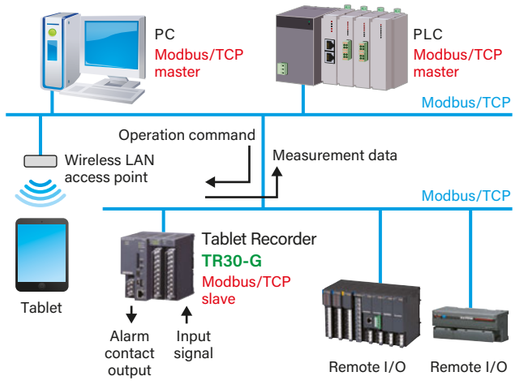
LAN



*1. Create through user programs based on the trend data file retrieved from the SD card or via FTP.

Modbus/TCP slave function

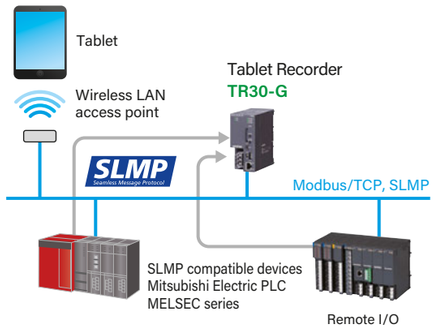
You can start and stop recording and write comments from a PLC or PC via Modbus/TCP communication.



For information on the Modbus/TCP slave function, see "Modbus slave to communicate with the PLC and SCADA" on page 8.

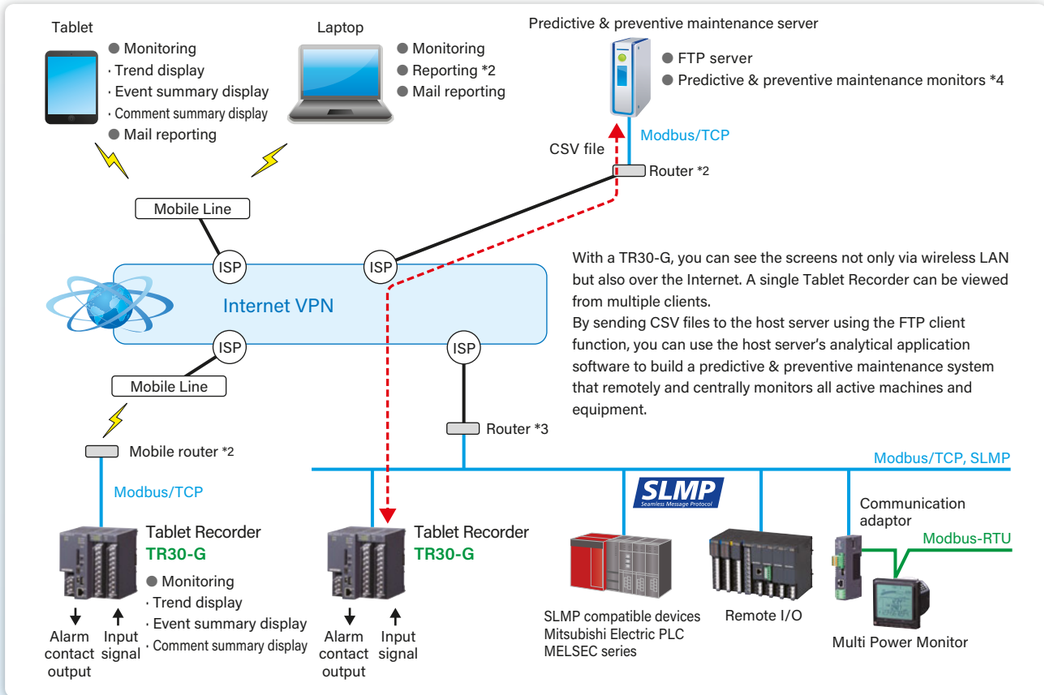
Modbus/TCP master and SLMP client

The TR30-G can simultaneously collect data from 12 different units: from remote I/O devices as a Modbus/TCP master and from PLCs as an SLMP client.



For information on Modbus/TCP master and SLMP client, see "Various data in existing PLCs can be recorded without making any changes to the hardware or ladder program" on page 8.

Predictive & preventive maintenance system via internet



With a TR30-G, you can see the screens not only via wireless LAN but also over the Internet. A single Tablet Recorder can be viewed from multiple clients.
By sending CSV files to the host server using the FTP client function, you can use the host server's analytical application software to build a predictive & preventive maintenance system that remotely and centrally monitors all active machines and equipment.

*2. Reports can be created with a user program based on trend data files retrieved via FTP or from an SD card.
*3. Static IP or dynamic DNS is required.
*4. This function can be created with a user program based on trend data files retrieved via FTP.