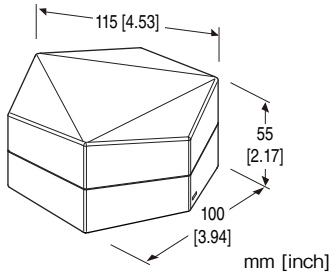
SG Series

SECURITY GATEWAY

Functions & Features
• Secure communication by encrypted communication and cross certification
• Encryptes the Modbus/TCP communication
• Certification without login/password
• HTTP server can be operated as HTTPS server
• Authorization certificate can be generated by using Local Certification Authority Creator (Model: LCA-SG)



MODEL: SG6-N[1]-[2][3]

ORDERING INFORMATION

• Code number: SG6-N[1]-[2][3]
Specify a code from below for each of [1] through [3].
(e.g. SG6-NJ-BR2/Q)
• Specify the specification for option code /Q
(e.g. /C01)

TYPE

N: Standard

[1] WIRELESS LAN TYPE

A: Without wireless LAN (CE marking)
J: With Wireless LAN (Japan only) (without CE)
(Select 'BR2' for 'Power input' code.)

[2] POWER INPUT

AC Power
MR2: 100 - 240 V AC (with AC adaptor)
(Operational voltage range 85 - 264 V AC, 47 - 66 Hz)
BR2: 100 V AC (with AC adaptor)
(Operational voltage range 100 V AC ±10%)
(Rated output 24 V DC 1A)
Note: MR2 is for EU countries. Check the shape of the plug with the external dimensions.

[3] OPTIONS

blank: none
/Q: With options (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

Local certification authority creator (model: LCA-SG)
Software downloadable at our web site.

GENERAL SPECIFICATIONS

Connection
• Ethernet: RJ-45 modular jack
• Power supply: AC adapter jack
Housing material: Flame-resistant resin (black)
Isolation: Power to Ethernet
Indicator LEDs: GREEN, RED, YELLOW
(Refer to the instruction manual)
Switch: Reset to factory default setting
(For details, refer to the users manual)

COMMUNICATION

■ Common
Protocol: TCP/IP, TLS, HTTP, DNS, SNTP
DHCP protocol: DHCP server
IP address (factory default setting): 192.168.0.10
Configurable via web browser
● Operation confirmed terminals and web browsers
· Windows PC (Windows 10):
Microsoft Edge 84
Firefox 79
Chrome 84
· Andoroid tablet (Andoroid 10.0): Chrome 84
· iPad, iPhone (iOS 13.6.1): Safari
■ Ethernet
Communication standard: IEEE 802.3u
Transmission: 10BASE-T / 100BASE-TX
Baud rate: 10, 100Mbps (Auto Negotiation function)
Transmission media: 100BASE-TX (STP, Category 5e)
Max. length of fieldbus segment: 100 meters
■ Wireless LAN (Type J: wireless LAN option (Japan only))
Communication Standard: IEEE 802.11a/b/g/n
Channel:
a: 19ch
(36, 40, 44, 48ch [W52],
52, 56, 60, 64ch [W53],

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100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140ch [W56])
b: 13ch (1-13)
g: 13ch (1-13)
n: 5GHz band: 19ch
(36, 40, 44, 48ch [W52],
52, 56, 60, 64ch [W53],
100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140ch [W56])
n: 2.4GHz band: 13ch (1 - 13)

Security:
a/b/g:
WEP 64bit/128bit,
WPA-PSK (AES,TKIP),
WPA2-PSK (AES,TKIP)
n:
WPA-PSK(AES),
WPA2-PSK(AES)

Number of client: Max. 8

Max. transmision distance: Approx. 25 m

INSTALLATION

Current consumption:
Approx. 17 VA (Type J: with wireless LAN (Japan only))
Approx. 13 VA @ 100 V AC (Type A: without wireless LAN)
Approx. 26 VA @ 200 V AC (Type A: without wireless LAN)
Approx. 31 VA @ 240 V AC (Type A: without wireless LAN)

Operating temperature:
0 to 40°C (32 to 104°F) (Type J: with wireless LAN (Japan only))
-10 to +55°C (14 to 131°F) (Type A: without wireless LAN)

Operating humidity: 10 to 90 %RH (non-condensing)

Atmosphere: No corrosive gas or heavy dust

Mounting: Direct mounting

Mounting direction: Vertical

Weight:
480 g (1.02 lb) (including AC adaptor) (Type J: wireless LAN option (Japan only))
450 g (0.99 lb) (including AC adaptor) (BR2, Type A: without wireless LAN)
470 g (1.04 lb) (including AC adaptor) (MR2, Type A: without wireless LAN)

PERFORMANCE

Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength: 1500 V AC @ 1 minute

STANDARDS & APPROVALS

- Built-in module certified under Japanese Radio Law (Type J: with wireless LAN (Japan only))
- EU conformity:

EMC Directive (Type A: without wireless LAN)
EMI EN 61000-6-4
EMS EN 61000-6-2
RoHS Directive

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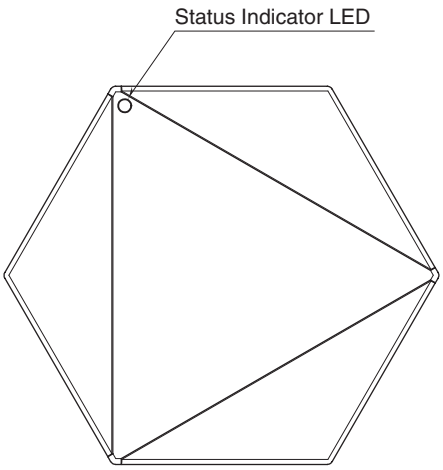
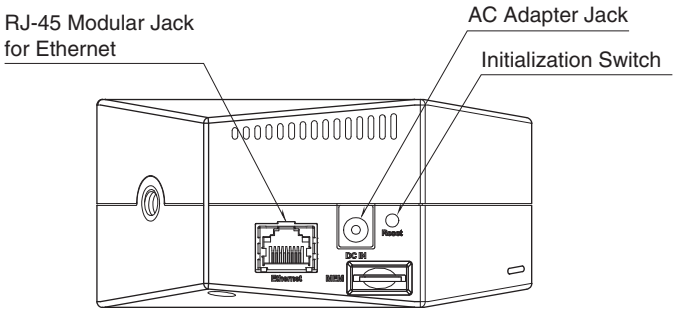
EXTERNAL VIEW

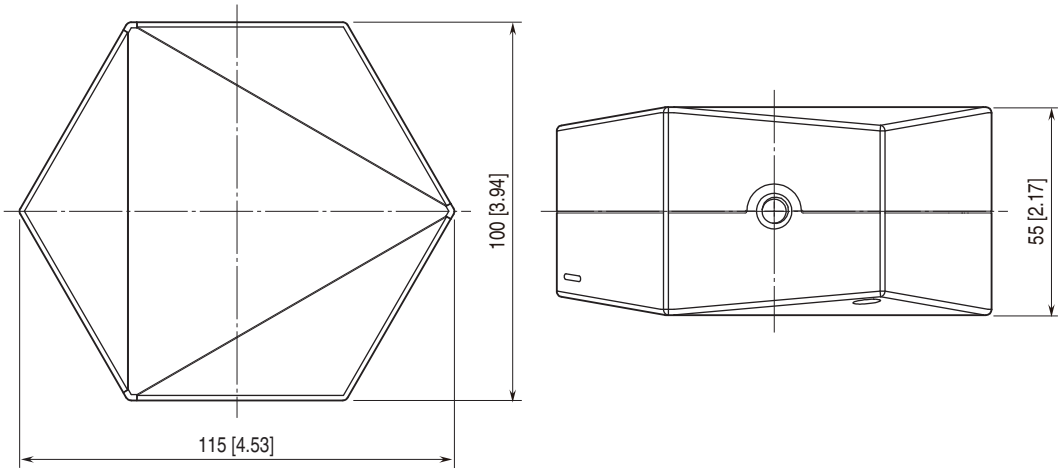
■ **FRONT VIEW**



■ **SIDE VIEW**



EXTERNAL DIMENSIONS unit: mm [inch]



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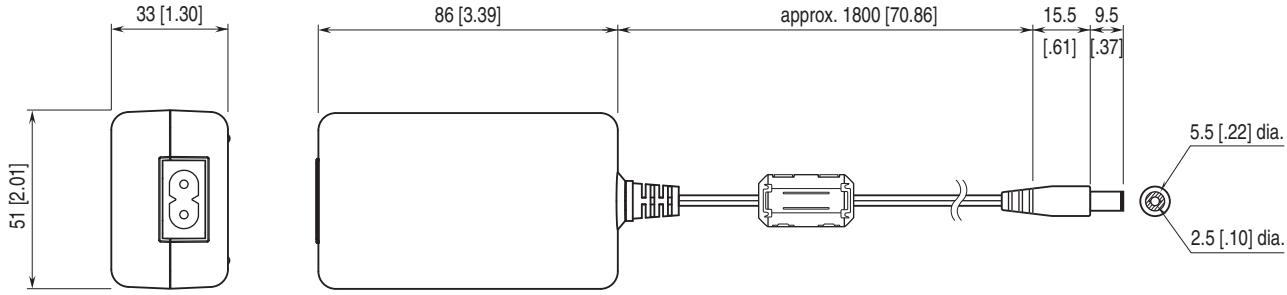
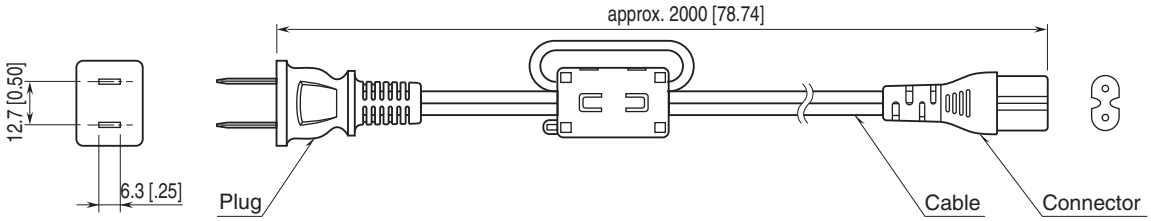
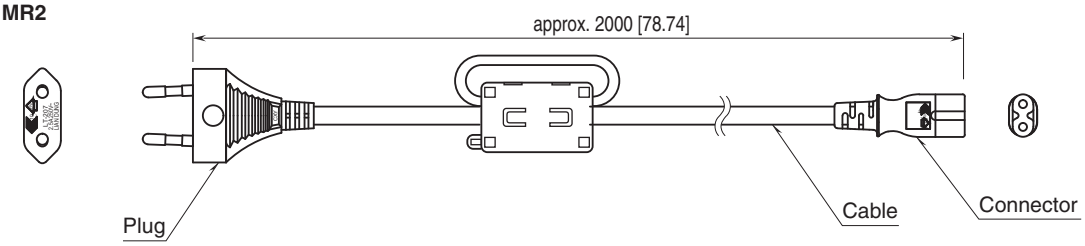
● **BODY**



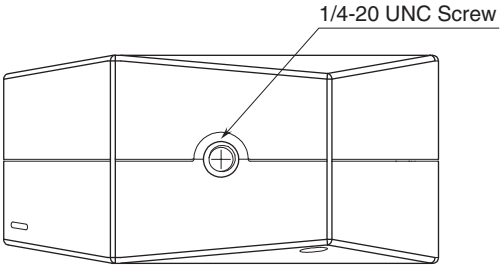
● **CABLE FOR BR2**



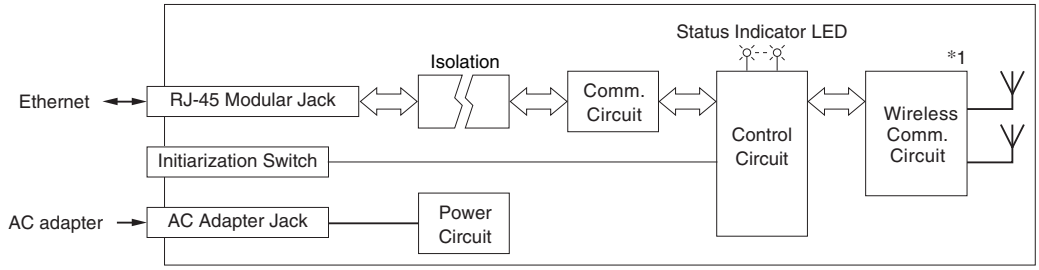
● **CABLE FOR MR2**



MOUNTING



SCHEMATIC CIRCUITRY



*1. Provided only for wireless LAN option.

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NETWORK ENCRYPTION FUNCTION

Encrypted communication: TLSv1.2
Certificate: X.509v3
Certification: Client certification, server certification
Connection method can be selected between normal mode and reverse mode.

■ Normal mode

Secure communication by connecting from client to server.
Use of dynamic DNS service or fixed IP addresses according to the number of servers is required for WAN connection.
Mode: client/server
No. of listening port: 1/2/4/8
Max. number of connection: 8 - 64 per a lietening port
Connection monitor: keep alive 60 sec.
Operation checked protocol: Modbus/TCP, SLMP, HTTP, HTTPS, oroginal protocol

■ Reverse mode

Secure communication by connecting from server to client.
Use of dynamic DNS service or fixed IP addresses according to the number of servers is required for WAN connection.
Mode: client/server
No. of listening port: 8
Connection monitor: Keep-Alive 60 sec.
Max. No. of connection: 8 per a listening port
Operation confirmed protocol: Modbus/TCP, SLMP

● Operation confirmed devices (Modbus/TCP)
R3-NE1
R5-NE1
R6-NE1
R6-NE2
R7E series
R9EWTU
D3-NE1 (Japan only)
D3-NE2 (Japan only)
72EM2-M4
GR8-EM
DL8
TR30-G
DL30
IB10W2 (Japan only)
IT series
WL40EW2 (Japan only)
SCADALINXpro

●Operation checked devices (SLMP)
MELSEC iQ-R series
MELSEC iQ-F series
MELSEC Q series

●Operation checked devices (HTTP, HTTPS)
DL8
TR30
DL30
RGP30
RGP6 (Japan only)
EDMC (Japan only)
BA9EDMC (Japan only)

●Operation checked devices (our original protocol
DL8, DLCFG
DL30, DL30CFGDL30GCFG
TR30, TRCFGTRGCFG
RGP30, RGP-Designer
RGP6, RGP-Designer (Japan only)

WEB BROWSER SETTING

The SG6 can serve as a web server, used for configuring the SG6 setting or for downloading certificates transferred by the Local Certification Authority Creator via web browser.
(For details, refer to the users manual.)

●No. of connection: 1
●Communication protocol: HTTP

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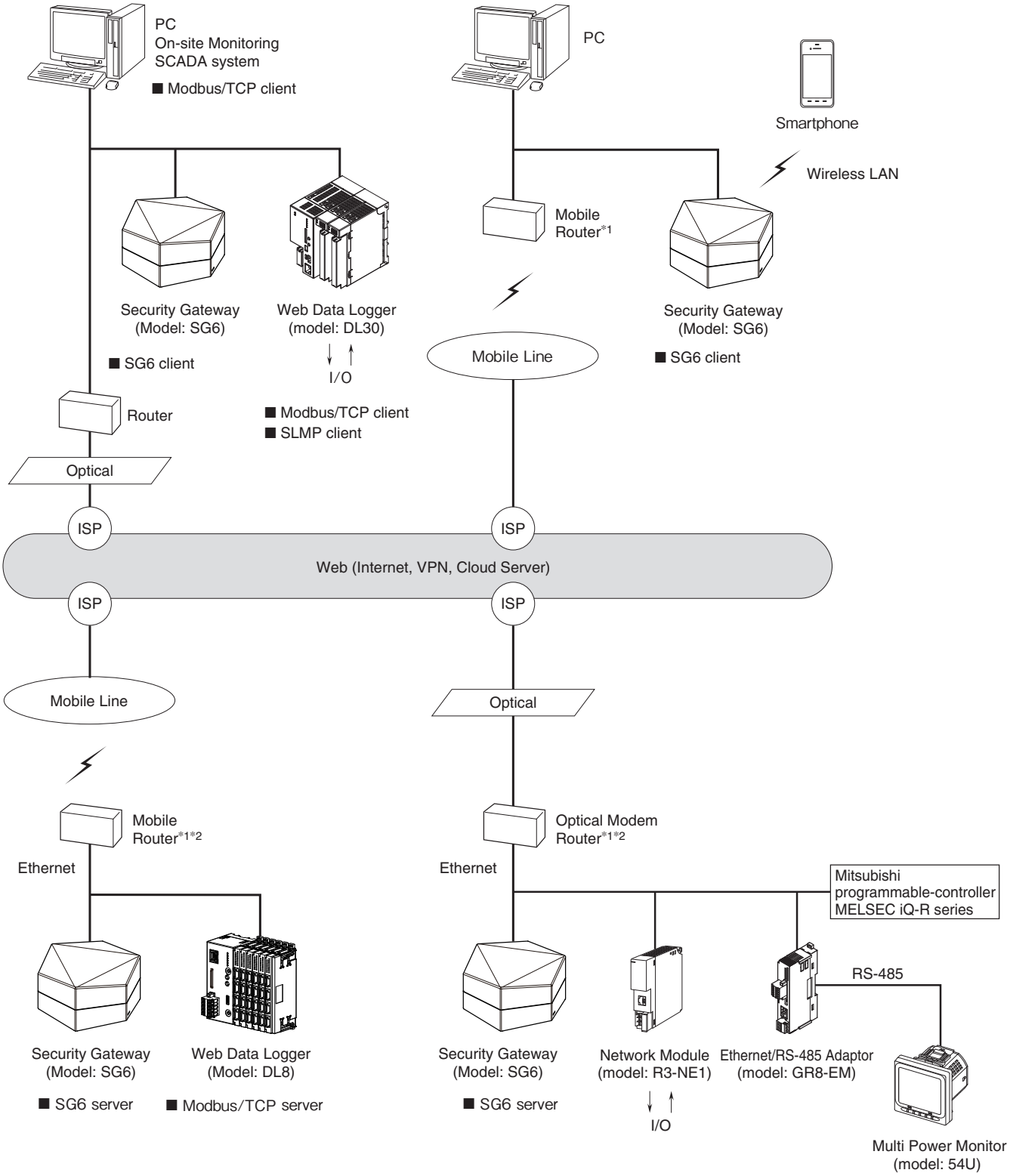
SYSTEM CONFIGURATION EXAMPLES

■ **NORMAL MODE**

● Example of using both of the SG6 client and the SG6 server



ISP: Internet Service Provider

*1. User of dynamic DNS or a fixed IP address is required.
*2. Configuration change of the router may be required.

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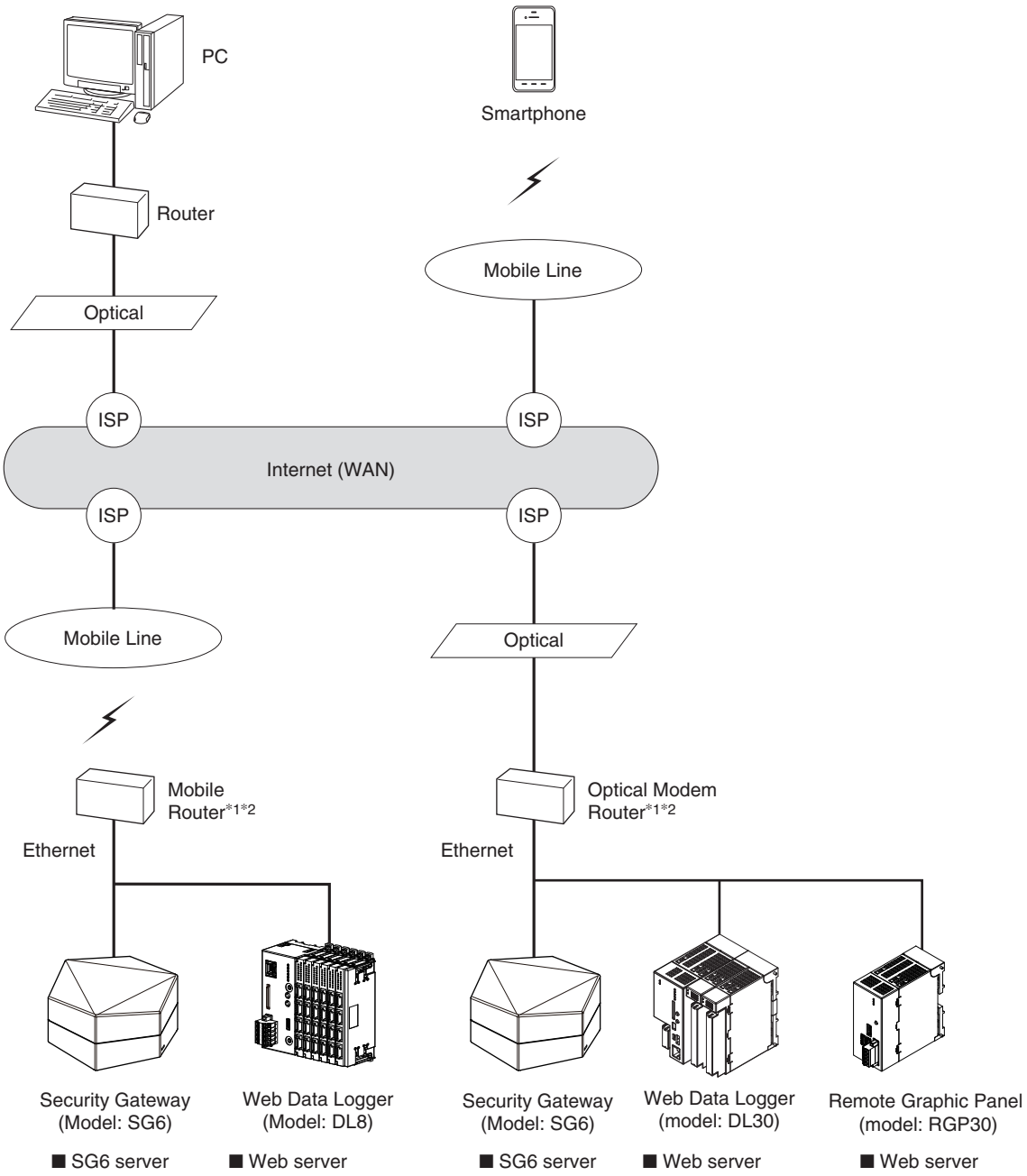
● Example of useing only the SG6 server



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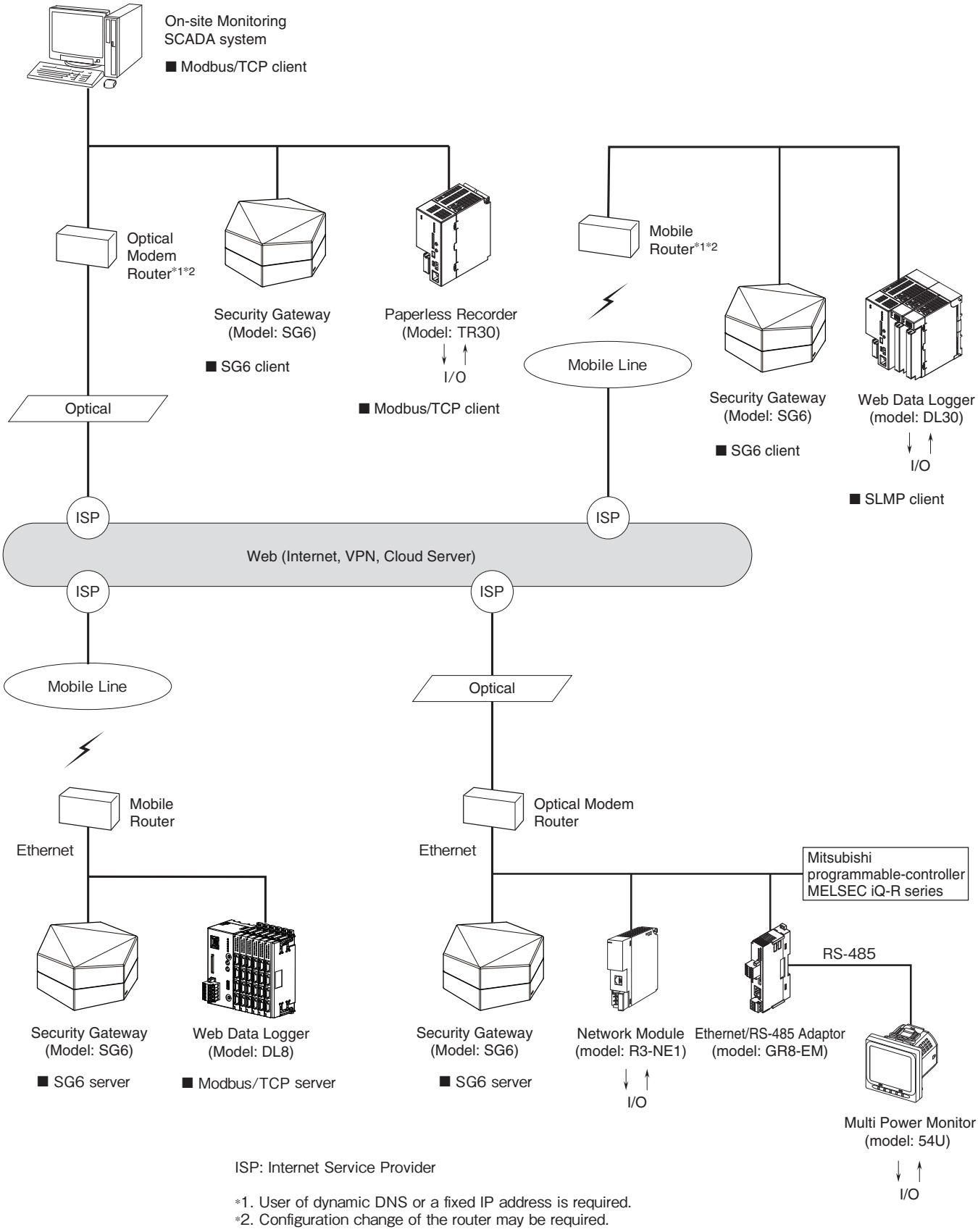
■ **REVERSE MODE**

● Example of connecting from the SG6 server to the SG6 client



ISP: Internet Service Provider

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⚠ Specifications are subject to change without notice.

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