RS-232C-Ethernet Media Converter,
RS-232C-Ethernet Media Converter PoE Conform

RP-COM(FIT)H, RP-COM(FIT)H-AF

* Specifications, color and design of the products are subject to change without notice.

These products are the converter that converts serial communication (RS-232C) to Ethernet communication. It allows the cable distance to be extended from the limit of the serial communication cable length (15m) to the Ethernet cable length as well as wiring to be reduced. Moreover, These products have three different operating modes: the Penetration Mode and Modem Mode in addition to the Virtual COM Mode, used as the standard COM operating mode.

These products are upwardly compatible with the current RP-COM(FIT)GY. Stacking an add-on device module *1 with these products enables more channels to be available (RS-232C) and also more functions to be extended (RS-422A/485).

It supports wide input power supply (10 - 30VDC), allowing two types of power supplies (5VDC and PoE *2) to be selected depending on the usage and environment.

*1   RS-232C 2ch communication module : COM-2(FIT)GY
     Isolated RS-422A/RS-485 1ch communication module : COM-1PD(FIT)GY
*2   IEEE 802.3af-defined technology that supplies power from a LAN cable.   PoE enables flexible layout, regardless where the power supply is.

* Visit the CONTEC website to check the latest details in the document.

* The information in the data sheets is as of April 2024.

Features

Two types of power supplies available

RP-COM(FIT)H   : Corresponding to the wide input power supply (10 - 30VDC)

RP-COM(FIT)H-AF : 5VDC and PoE supporting the use of IEEE802.3af-compatible devices,enabling power to be supplied from UTP cables *1

Three operating modes selectable, depending on the usage

Virtual COM Mode : Can be used like the standard COM ports of a PC (max. 32 ports)

Through Mode   : Can extend the distance between devices without changing settings or applications of each device (max. 254 pairs)

Modem Mode   : Creates communication programs capable of communications between multiple terminals (N:N, max. 254 terminals)

Up to 7 channels available for RS-232C (when three COM-2(FIT)GY's are added)

Add-on device modules [COM-2(FIT)GY] (for RS-232C 2ch) and [COM-1PD(FIT)GY] *2
(for RS-422A/RS-485 1ch) can be freely combined to allow up to three units to be added for extension

DHCP client function

Setup utility provided for easier device setup

RS-232C supports up to 921.600bps (Serial communication section)*3

The wired LAN can be 10BASE-T or 100BASE-TX (Ethernet section)

Provided a 35mm DIN rail attachment

*1   For supplying power from UTP cables, it is recommended to connect to our POW-CB30(af) or POW-CBM4(af).
*2   The multi-drop function is not supported in COM-1PD(FIT)GY.
*3   The speed may be affected by the party on the other side of the connection and the cable length.

Specification

Function Specifications

	Specification	RP-COM(FIT)H	RP-COM(FIT)H-AF
Serial unit	Serial standard	RS-232C	
	Data transmission speed	300 - 921,600bps	
	Number of channels	1	
	Connector	9 pin D-SUB, M (Male) type	
Wired LAN unit	Ethernet standard	IEEE802.3u, IEEE802.3	IEEE802.3u, IEEE802.3, IEEE802.3af
	Data transmission speed	10/100Mbps	
	Access method	CSMA/CD	
	Communication system	Half Duplex / Full Duplex	
	Number of ports	1 (10BASE-T/100BASE-TX)	
Power over Ethernet function (IEEE802.3af)		Not supported	Supported
Supply voltage		10.0 - 30.0VDC ±5%	5.0VDC ±5% (In case of supply from the power connector)
Current consumption		When supplying 12.0VDC 0.2A (Max.) (Only RP-COM(FIT)H) When supplying 24.0VDC 0.1A (Max.) (Only RP-COM(FIT)H)	When supplying 5.0VDC 0.4A (Max.) (Only RP-COM(FIT)H-AF : In case of supply from the power connector) When supplying 48VDC 0.068A (Max.) (Only RP-COM(FIT)H-AF : In case of supply from the POE function)
External Dimensions (mm)		25.2(W) x 64.7(D) x 94.0(H) (No protrusions)	
Weight		100g	
Add-on module		For RS-232C 2ch add-on : COM-2(FIT)GY For RS-422A/485 1ch add-on : COM-1PD(FIT)GY Combine COM-2(FIT)GY or COM-1PD(FIT)GY up to three freely Current consumption for one : COM-2(FIT)GY 5VDC 0.1mA (Max.) COM-1PD(FIT)GY 5VDC 0.3mA (Max.)	

Installation Environment Conditions

Parameter		Requirement description
Operating temperature		0 - 50°C
Storage temperature		-10 - 60°C
Humidity		10 - 90%RH (No condensation)
Floating dust particles		Not extreme
Corrosive gases		None
Line-Noise resistance	Line-noise *1	AC line/±2kV, Signal line/±1kV (IEC1000-4-4Level 3, EN61000-4-4Level 3)
	Static electricity resistance	Contact discharge/±4kV (IEC1000-4-2Level 2, EN61000-4-2Level 2) Atmospheric discharge/±8kV (IEC1000-4-2Level 3, EN61000-4-2Level 3)
Vibration resistance	Sweep resistance	10 - 57Hz/semi-amplitude 0.15mm, 57 - 150Hz/2.0G 40minutes each in X, Y, and Z directions (JIS C0040-compliant, IEC68-2-6-compliant)
Impact resistance		15G, half-sine shock for 11ms in X, Y, and Z directions (JIS C0041-compliant, IEC68-2-27-compliant)
Grounding		Class D grounding (previous class 3 grounding)
Standard		VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA

*1 When using POA201-10-2 for RP-COM(FIT)H, when using POA200-20-2 for RP-COM(FIT)H-AF

Software Specifications

Item	Specification
Protocols	IP (RFC 791), ICMP (RFC 792), UDP (RFC 768), ARP (RFC 826), SNMP (RFC 1157), MIB II (RFC 1213)

Support Software

Serial communication Media Converter Software

Includes a utility program for device setup and a virtual COM driver for Windows. Refer to the device driver help for details.

Setup utility :

　Automatically detects these products on the network upon startup.

　Can set the device for the operating mode (Virtual COM Mode, Penetration Mode, Modem Mode), Device ID, IP address, subnet mask, etc.

Virtual COM Driver :

　Software allowing devices in our serial communication media converter series to be used like the COM ports of a PC (standard COM) in the Windows environment.

　For the Windows OS standard, the driver supports communication functions such as CreateFile( ),WriteFile( ), ReadFile( ) and SetCommState( ). It also supports the communication control of Visual Basic (MS Comm).

* For more details on the supported OS, applicable language and how to download the updated version, please visit the CONTEC's Web site.

Accessories

< Add-on device modules >
RS-232C 2ch Communication Module　　: COM-2(FIT)GY
Isolated RS-422A/485 1ch Communication Module
　　　　　　　　　　　　　　　　　　: COM-1PD(FIT)GY

< Accessory for the RP-COM(FIT)H >
AC adapter (input : 90 - 264VAC, output : 12V 1A)
　　　　　　　　　　　　　　　　　　: POA201-10-2

< Accessory for the RP-COM(FIT)H-AF >
AC adapter
(input : 90 - 264VAC, output : 5VDC 2.0A): POA200-20-2

AC-DC Power Supply Unit
(input : 85 - 264VAC, output : 5VDC 2.0A): POW-AD22GY

DC-DC Power Supply Unit
(input : 10 - 30VDC, output : 5VDC 3.0A) : POW-DD10GY

Packing List

Module[RP-COM(FIT)H or RP-COM(FIT)H-AF] ...1
Please read the following …1
Rubber feet ...4
Piece of Velcro ...2 set
Power connector ...1

Physical Dimensions

[mm]
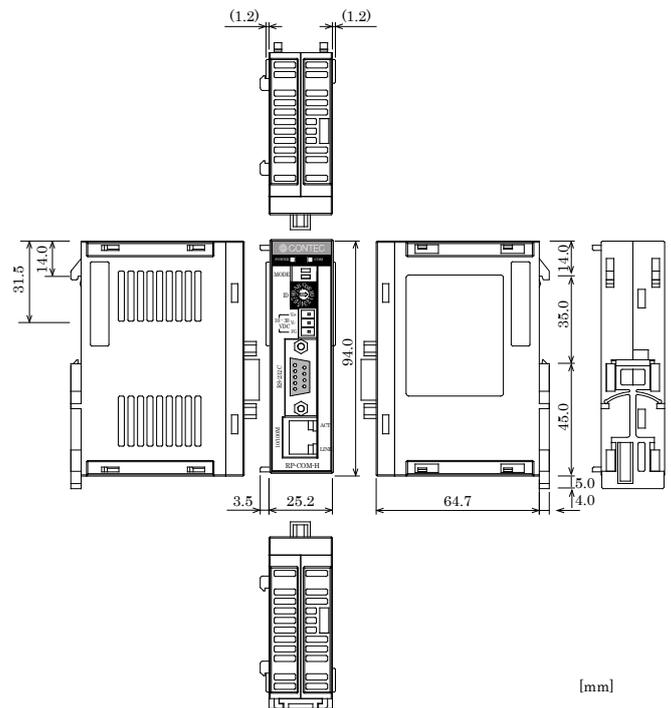
This is figure of RP-COM(FIT)H. It is the same size as with RP-COM(FIT)H-AF.

MODE Switch

This sets or initializes the operating mode for these products.
The factory default setting is that the MODE switch setting is used and all switches are set to OFF.
You can use the MODE switch to change the operating mode from the factory default setting to your desired mode.
For detailed settings, use the utility software.

* Note that it has the meaning only in case of the ID switch value described later being 0 - E.

< Setting the MODE switch before power-on and then turning on the power >

Item	Description		
Operating mode	Set the operating mode		
	SW1	SW2	Operating mode
	OFF	OFF	Selected in "Through Mode".
	OFF	ON	Selected in "Modem Mode".
	ON	OFF	Selected in "Virtual COM Mode".
	ON	ON	Not used

< Setting the MODE switch after power-on >

Item	Description
Initialization	Restore the RP-COM(FIT)H, RP-COM(FIT)H-AF to its factory default settings. When SW1 is turned on during normal operation after power-on, the POWER light and the LED of COM start flashing.　Turning the switch OFF while the LEDs are still blinking (approx. 3 seconds) restores all settings to their factory default values when the module is next restarted. * Wait until the POWER and COM LEDs have gone back to their normal states before rebooting or turning off the power.

ID Switch

This sets the device ID for the these products.
The setting range is 0 - E (0 - 14), but the ID can be set in the range 0 - 254 by software.
Note that device ID F (15) means "Terminal Mode".
The factory default setting is that the ID switch setting is used and the device ID is set to "0".

ID   Factory setting
        (ID = 0)
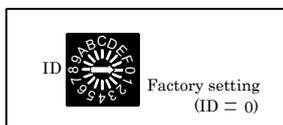
0 - E : Device Number

F   : Changes to system restoration mode.
          Selected when carrying out maintenance on these products connected to Ethernet from the setup utility

## Explanation in Mode of Operation

Virtual COM Mode

This mode allows the serial ports of these products to be controlled via Ethernet from the virtual COM driver for Windows.
Up to 32 channels can be used between these products and the stacked add-on device module *1.
Applications already in operation and using RS-232C (or RS-422A/485 when adding COM-1PD(FIT)GY) can be used without any changes.

Use of the setup utility enables to set these products and add-on device module.　For information about how to use the software, refer to the Help section.

*1   RS-232C 2ch communication module : COM-2(FIT)GY
      Isolated RS-422A/RS-485 1ch communication module : COM-1PD(FIT)GY
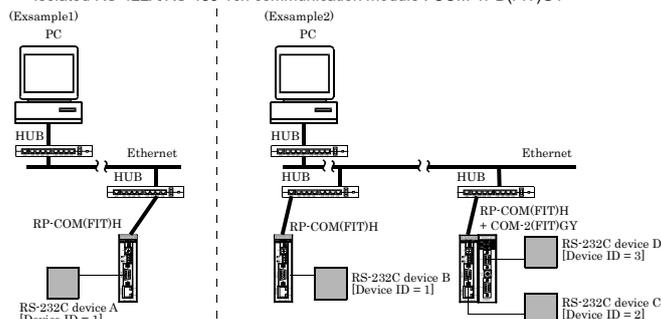
(Example1) RP-COM(FIT)H can be used like "COM3 of the PC via Ethernet.
        * It is same when RP-COM(FIT)H-AF is replaced to RP-COM(FIT)H.
(Example2) COM-2(FITGY) can be used like "COM3", "COM4" and "COM5"
        of the PC when stacked with more than one RP-COM(FIT)H via Ethernet.
        * It is same when RP-COM(FIT)H-AF is replaced to RP-COM(FIT)H
        and when COM-1PD(FIT)GY is replaced to COM2(FIT)GY, too.

⚠ CAUTION
   When using the virtual COM driver on Windows 98/Me, COM ports cannot be extended by using an add-on device module that is stacked with these products.

   To avoid any adverse effects on other LAN devices, set the IP address, subnet mask, and other network parameters to appropriate values.

   When COM-1PD(FIT)GY is stacked with these products, half-duplex communication is disabled.

Through Mode

In this mode, data is transferred without any change from a connected device.
A serial cable used for one-to-one connection of devices can be converted to Ethernet connection without any changes.　In this way, two units must be installed as a pair for these products and stacked add-on device module*1.　Up to 254 pairs can be installed on a single circuit.　However, communication is not possible between devices connected to these products and its stacked add-on device module.
Existing applications that operate using RS-232C (or RS-422A/485 : when expanding COM-1PD(FIT)GY) can continue to be used without any changes.
The Device ID is set by the rotary switch on the main unit or the setup utility.　For the rotary switch, the same value is set to the Device ID.　For the setup utility, the device ID of the party on the other side of the connection (other party's Device ID) can be set.
It is also necessary to match the serial parameters of the serial devices to be connected to these products and its stacked add-on device module by using the setup utility.
For information about how to use the setup utility, refer to the Help section.

*1   RS-232C 2ch communication module : COM-2(FIT)GY
      Isolated RS-422A/RS-485 1ch communication module : COM-1PD(FIT)GY

⚠ CAUTION

If using broadcasting, ensure that all RP-COM(FIT)H (or RP-COM(FIT)H-AF) units have different device IDs.

Device ID 255 is reserved for broadcast use.

To avoid any adverse effects on other LAN devices, set the IP address, subnet mask, and other network parameters to appropriate values.

Although, existing application can generally continue to be used unchanged, note that they may not operate correctly if particular RS-232C control procedures are used (see below).

(Example) Baud rate changed during operation

Hardware signals used for proprietary purposes other than flow control

RI signal used

When COM-1PD(FIT)GY is stacked with these products, half duplex communication is disabled.
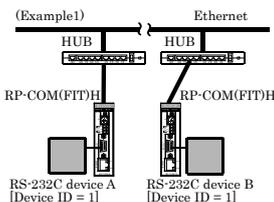
(Example1) An Ethernet cable is used to extend the connection of RS-232C device A and RS-232C device B.
RS-232C (device A, device ID = 1) ← Connection to Ethernet (wired LAN) → RS-232C (device B, device ID = 1)
* It is same when RP-COM(FIT)H-AF is replaced to RP-COM(FIT)H.

(Exsample2) An Ethernet cable is used to extend the connection of RS-232C device C and RS-232C device E.
An Ethernet cable is used to extend the connection of RS-232C device D and RS-232C device F.
(Communication is disabled between directly stacked devices.)
RS-232C (device C, device ID = 1) ← Connection to Ethernet (wired LAN) → RS-232C (device E, device ID = 1)
RS-232C (device D, device ID = 2) ← Connection to Ethernet (wired LAN) → RS-232C (device F, device ID = 2)
* It is same when RP-COM(FIT)H-AF is replaced to RP-COM(FIT)H and when COM-1PD(FIT)GY is replaced to COM2(FIT)GY, too.

Modem Mode

This mode creates a control program and uses a dedicated command to enable communication in packets.
As packet data is transmitted with the corresponding Device ID, communication is possible between multiple units of these products and stacked add-on module.
Up to 254 units can be installed on one circuit. However, communication is not possible between devices connected to these products and stacked add-on device module *1.
Due to a command-based control used, dedicated applications are required on the devices to be connected to the serial ports of these products and add-on module.   Also, the type of data being sent or received can be identified as either text data, binary data, Ethernet data, or UDP/IP data.   In particular, UDP/IP data can be used to communicate directly with a Socket interface on a host PC.
The following three types of communication are supported.

(1) Communication with a specified device ID
Communication can be performed between RS-232C (or RS-422A/RS-485) devices connected to these products and add-on device module.

(2) Communications with UDP/IP Socket
This can be used to communicate with Windows PCs or workstations on the Ethernet.

(3) Build and transmit or receive Ethernet frames
This can be used to communicate with Ethernet devices that use a protocol other than UDP/IP.

The Device ID is set by the rotary switch on the main unit or the setup utility.   Ensure that the specified device IDs are unique It is also necessary to match the serial parameters of the serial devices to be connected to these products and its stacked add-on device module by using the setup utility.

Refer to Help for the use of setup utility.

*1   RS-232C 2ch communication module : COM-2(FIT)GY
   Isolated RS-422A/RS-485 1ch communication module : COM-1PD(FIT)GY

⚠ CAUTION

Ensure that the specified device IDs are unique

Device ID 255 is reserved for broadcasting.

To avoid any adverse effects on other LAN devices, set the IP address, subnet mask, and other network parameters to appropriate values.

When COM-1PD(FIT)GY is stacked with these products, half duplex communication is disabled.
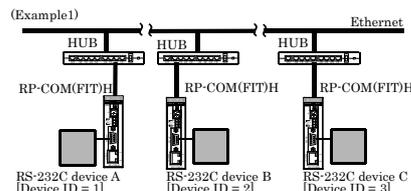
(Example1) It is possible to communicate with two or more equipment.
RS-232C (device A, device ID = 1) ← Connection to Ethernet (wired LAN) → RS-232C (device B, device ID = 2)
RS-232C (device A, device ID = 1) ← Connection to Ethernet (wired LAN) → RS-232C (device C, device ID = 3)
* It is same when RP-COM(FIT)H-AF is replaced to RP-COM(FIT)H.
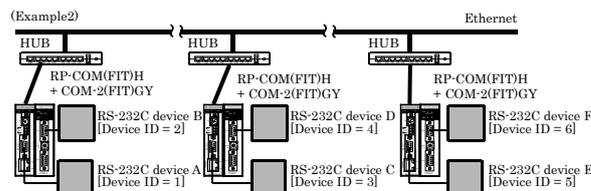
(Example2) It is possible to communicate with two or more equipment.
RS-232C (device A, device ID = 1) ← Connection to Ethernet (wired LAN) → RS-232C (device C, device ID = 3)
RS-232C (device A, device ID = 1) ← Connection to Ethernet (wired LAN) → RS-232C (device D, device ID = 4)
RS-232C (device A, device ID = 1) ← Connection to Ethernet (wired LAN) → RS-232C (device E, device ID = 5)
RS-232C (device A, device ID = 1) ← Connection to Ethernet (wired LAN) → RS-232C (device F, device ID = 6)
RS-232C (device B, device ID = 2) ← Connection to Ethernet (wired LAN) → RS-232C (device C, device ID = 3)
RS-232C (device B, device ID = 2) ← Connection to Ethernet (wired LAN) → RS-232C (device D, device ID = 4)
RS-232C (device B, device ID = 2) ← Connection to Ethernet (wired LAN) → RS-232C (device E, device ID = 5)
RS-232C (device B, device ID = 2) ← Connection to Ethernet (wired LAN) → RS-232C (device F, device ID = 6)
RS-232C (device C, device ID = 3) ← Connection to Ethernet (wired LAN) → RS-232C (device E, device ID = 5)
RS-232C (device C, device ID = 3) ← Connection to Ethernet (wired LAN) → RS-232C (device F, device ID = 6)
RS-232C (device D, device ID = 4) ← Connection to Ethernet (wired LAN) → RS-232C (device E, device ID = 5)
RS-232C (device D, device ID = 4) ← Connection to Ethernet (wired LAN) → RS-232C (device F, device ID = 6)
* It is same when RP-COM(FIT)H-AF is replaced to RP-COM(FIT)H and when COM-1PD(FIT)GY is replaced to COM2(FIT)GY, too.

Connection of a Power Supply

⚠ CAUTION
Because the power supply unit generates heat, a minimum spacing of 2 cm should be provided between the RP-COM(FIT)H, RP-COM(FIT)H-AF and any adjoining units, and care should be taken so that the ventilation holes are not covered.
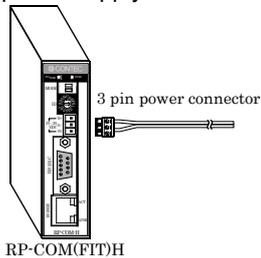
RP-COM(FIT)H

< Supplying power from the power supply input connector >

To supply power from the power supply input connector, connect a supported cable from the detachable connector at the front.
(Supported cable : AWG28 - 16)
If 10 - 30VDC power supply is available in the installation environment, power can be supplied directly. Alternatively, the optional AC adapter (POA201-10-2) can also be connected to the product.

Connection of a Power Supply
(using 10 - 30VDC power supply in installation environment)

3 pin power connector

RP-COM(FIT)H

Connection of a Power Supply
(using an optional AC adapter)

AC adapter : POA201-10-2
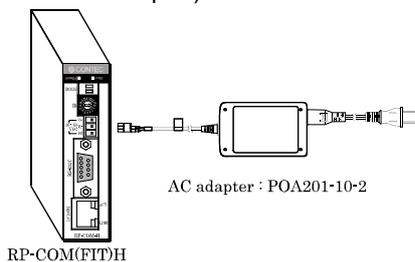
RP-COM(FIT)H
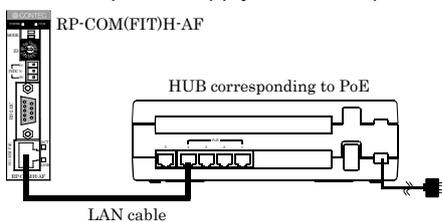
RP-COM(FIT)H-AF

< Using the UTP cable power supply unit corresponding to PoE >

Connecting to a PoE-compatible HUB allows power to be supplied from the Ethernet cable.

Connection of a Power Supply
(Using the UTP cable power supply unit corresponding to PoE)

RP-COM(FIT)H-AF

HUB corresponding to PoE

LAN cable

< Supplying power from the power supply input connector >

To supply power from the power supply input connector, connect a supported cable from the detachable connector at the front. (Supported cable : AWG28 - 16)
You can also connect an optional AC adapter (POA200-20-2) or power supply unit (POW-DD10GY, POW-AD13GY).

Connection of a Power Supply
(Using an optional AC adapter)

AC adapter : POA200-20-2
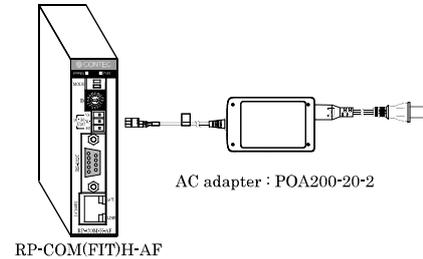
RP-COM(FIT)H-AF

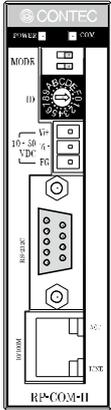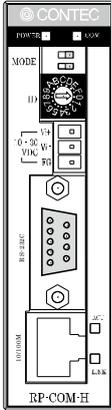## Differences between the RP-COM(FIT)GY, RP-COM(FIT)H and RP-COM(FIT)H-AF

These products partially enhanced version of the conventional products of RP-COM(FIT)GY and it is upper compatible with RP-COM(FIT)GY. Basically, you can use these new products as same way as the RP-COM(FIT)GY.
There are some differences in specifications as shown below.

	RP-COM(FIT)GY	RP-COM(FIT)H-AF	RP-COM(FIT)H
Number of serial	RS-232C 1ch (Not extendable)	RS-232C 1ch Combine COM-2(FIT)GY or COM-1PD(FIT)GY up to three freely * COM-2(FIT)GY x 3: RS-232C 1ch + 2ch x 3 = 7ch (total) COM-1PD(FIT)GY x 3: RS-232C 1ch + RS-422A/485 3ch = 4ch (total)	Same as the left
Power voltage	5.0VDC±5% 0.4A(Max.)	5.0VDC±5% When supplying 5.0VDC 0.4A (Max.) (Only RP-COM(FIT)H-AF : In case of supply from the power connector) When supplying 48VDC 0.068A (Max.) (Only RP-COM(FIT)H-AF : In case of supply from the POE function) * For the current consumption of the add-on device module, refer to page 1 "Function Specifications".	10.0 - 30.0VDC±5% When supplying 12.0VDC 0.2A(Max.) (No extension) When supplying 24.0VDC 0.1A(Max.) (No extension) * For the current consumption of the add-on device module, refer to page 1 "Function Specifications".
Power over Ethernet function (IEEE802.3af)	Not supported	Supported	Not supported
AC adapter	Bundled	None (Option : POA200-20-2)	None (Option : POA201-10-2)

A change of specifications of RP-COM(FIT)H

The specifications of RP-COM(FIT)H is changed. There are some differences in specifications as shown below.

	Before	After
Appearance		
Label	M/A:xxxxxxxxxxxx	MAC:xxxxxxxxxxxx IP:xxx.xxx.xxx.xxx
	Label	