CONTEC

Jan, 2008

F&eIT®

[Factory and enterprise IT]

CONTEC brings three decades of experience in data acquisition and industrial automation to the field of web-based monitor and control

Distributed Monitoring & Control Network

Ideal for all applications - Remote I/O for process, monitor and control

Wire-saving

Reliable

Space-saving

Micro Controller

Easy handling

Expandable

I/O Controller

Easy 'stacking' connection allows application specific and flexible configurations

CONTEC

www.contec.com

~ Distributed Monitoring & Control Network ~

F&eIT® Solution

Micro Controller

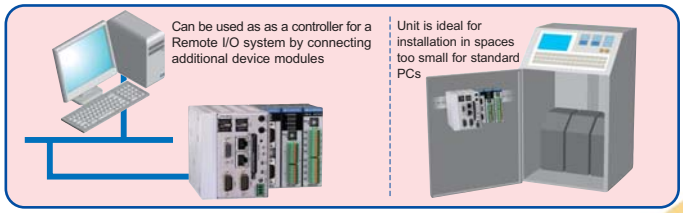
◎Highly Reliable and Easily Maintained

◎Ultra Compact Design provides easy on-site installation

[Micro Controller] P.04/05

Able to run on various operating systems, such as Windows® and Linux, this micro computer is ideal for use in a number of applications. It's compact size makes it perfect for use as an embedded controller in areas where there is limited space.

- Low voltage, fanless CPU
- No HDD - Uses Compact Flash
- Supported OS - Windows® 2000/XP/XP embedded, PC DOS 2000, Linux
- Interfaces include USB2.0, RS-232C, Gigabit LAN
- Easy application development through the use of included software



I/O Controller

◎Ethernet-based Remote I/O

◎Can be installed using existing ethernet cables

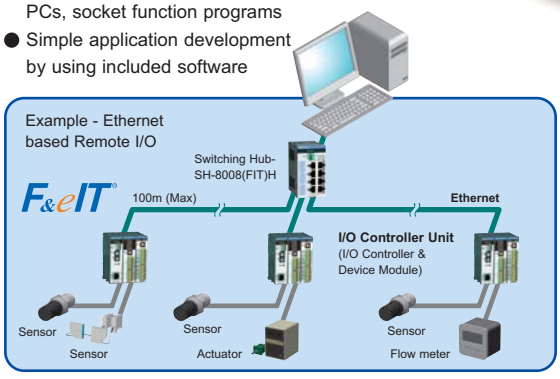
[I/O Controllers] P.06/07

This I/O controllers are ideal when configuring an ethernet-based Remote I/O system. When used remotely, they provide effective monitoring and control from throughout the installation. Expand functions on an as-needed basis using Contec's varied selection of device modules.

※Up to 8 device modules (max) can be connected to the I/O controller

※USB-based Remote I/O Systems also available

- Fan-less, compact design
- Remote I/O control from Windows PCs, socket function programs
- Simple application development by using included software



CONTEC offers a variety of server modules to fit a wide range of applications

These servers enable remote monitoring via both wired and wireless networks. Using standard Ethernet protocols they are easily integrated into existing systems.

I/O Assist Server

◎For integrated management & remote monitoring of I/O Controller Unit

P.16

Security Server

◎Micro Portable Embedded Firewall / Router

P.18

Monitoring & Control Server

◎Program-less, Remote Monitoring & Control

P.17

PLC Link Server

◎Remote PLC management via Intranet/Internet

RS-232C RS-422A

P.19

Space-saving Controllers & Device Modules
A Flexible and Reliable Solution

Micro-computers and space-saving remote I/O offer ideal solutions for monitoring, measurement and control applications.
CONTEC's F&eIT remote I/O systems are flexible and reliable. They offer a space-saving alternative that is easily maintained and easily expandible.

Software

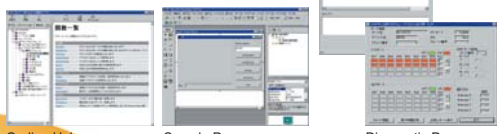
◎Device modules can be user programmed

[Software] P.13~15

Driver software supplies the commands for device modules.
Programs can be developed by using a general-purpose programming language.

For use with CPU-SB series:
• Windows Driver Library — **API-SBP(W32)**

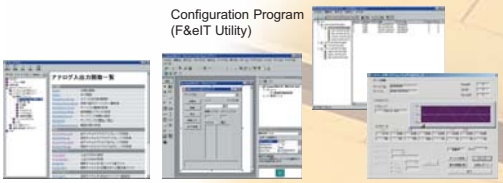
Configuration Program (API-TOOL)



On-line Help | Sample Programs | Diagnostic Program

For use with CPU-CA series:
• Windows Driver Library — **API-CAP(W32)**
• Linux Driver Library — **API-CAP(LNX)**

Configuration Program (F&eIT Utility)



On-line Help | Sample Programs | Diagnostic Program

Device Modules

◎Total Support for Monitoring & Control Systems

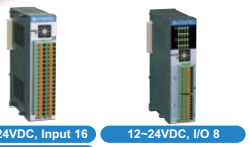
[Device Modules] P.08~11

All necessary functions (such as digital I/O,analog I/O or counters) are provided by various modules. Controller Module functions can be expanded through the stacking connectors.

Device Module Lineup
- 12 Digital [input - output - I/O]
- 4 Analog [input - output]
- 1 Temperature Sensor [Input]
- 3 Counter
- 1 Reed Relay output
- Communication [RS-232C - RS-422/485]
- 1 Communication [GPIB]

New products can be found in most categories

Opto-isolated Analog I/O



12~24VDC, Input 16
12~48VDC, Output16
12~24VDC, I/O 8

Reed Relay Output

125VAC/VDC, 2A
4 Reed Relay output

Communication

RS-232C, 2ch
GPIB, 1ch

Non-isolated Digital I/O

TTL(5VDC), I/O 16

Opto-isolated Analog Input

Opto-isolated Analog Input, 12-bit 8ch

Opto-isolated Analog Output

Opto-isolated Analog Output, 12-bit 4ch

Pt100 Temperature Sensor Input

4 Pt100 Temperature Sensor Input

Opto-isolated Counter

24-bit UP/DOWN
5~12VDC, 2ch

Power Supplies

- AC-DC power supplies
- DC-DC power supplies

P.11

Options

- Compact Flash
- FAN for F&eIT Series

P.11

Switching HUB

- Embedded 10/100M
- Auto-recognition Switching Hub

P.07

Media Converters

Media Converter RS-232C/RS-422A
◎Converts RS-232C/RS-422A serial communication to Wired or Wireless LAN

IEEE802.11a/b/g

Media Converter GPIB
◎Converts GPIB communication to Ethernet

Wireless LAN Access Point / Station
◎Converts Wired to Wireless LAN

IEEE802.11a/b/g

P.20~23

Micro Controller CPU-SB30 Series

◎ Ultra-compact, general-purpose PC. Supports Windows®, PC DOS 2000 and Linux.

Actual Size
74.7(w)×120(d)×94(h)mm
(Exclusive of protrusions)

*1CPU-SB303-FIT-36

The CPU-SB30 can serve as either a general-purpose PC or a device controller for the CONTEC F&eIT series. It can run under various operating systems including Windows® XP. Built over a 852GM chipset its features include a Celeron M CPU, 512MB memory, USB2.0 and1000BASE-T ethernet. For expanded functionality F&eIT device modules can be connected via the stacked connector. The CPU-SB30 utilizes a heat sink for naturally air-cooled operation.
The CPU-SB30 features more advanced functions and is about 6 times faster than the previous microcontroller (CPU-SB20).

*1 The end-user can install Windows XP® or Windows 2000® SP3/SP4 on the CPU-SB303 by using a third-party USB CD -ROM or FD drive. Other operating systems can be installed if the USB drive is supported with the OS startup disk.

Micro Controller - CPU-SB30 Series

Pre-installed - Windows XP® Embedded Intel® Celeron M 800MHz CPU 2GB CF, 512MB Memory	CPU-SB303-FIT-3F
Compatible - Windows*1 / PC-DOS / Linux Intel® Celeron M 800MHz CPU 512MB Memory	CPU-SB303-FIT

Compact Flash (Optional)

FixDisk 1GB *2	CF-1GB
FixDisk 512MB *2	CF-512MB

* 2: No operating system installed

CD/DVD-ROM Drive (Optional)

CD-ROM/DVD-ROM Drive *3	IPC-CDD-03
Cable (400cm)	IPC-CDC-03

* 3: Connection cable [IPC-CDC-03] is required

Windows® XP Embedded Pre-installed [CPU-SB303-FIT-3F]

Windows® XP Embedded specifications are based on having Windows® XPe pre-installed on the CPU-SB303-FIT. With this, Windows® based applications can be easily configured.

Enhanced Write Filter function installed. Secure design allows 'Power Off' at any time

Writing control via the Enhanced Write Filter ("EWF") and Page File support eliminates the need for shutdown processing when turning the power OFF. The result is a stable system that eliminates the concern of damaged file systems.

Win32 API and Windows® XP applications fully supported

Like Windows® XP Professional Windows® XP Embedded is a binary configured OS and fully supports Win32 API. Windows® XP-supported application resources can be fully accessed by using programs such as VisualStudio for development.

Windows® XP Embedded Custom configuration (For individual application customization, contact your local CONTEC office.)

Storage device	:2 GB Compact Flash
C drive(OS area: FAT32)	: OS use: 683 MB, free space: 1.22 GB, EWF setting OFF (ON during unit operation)
EWF area	:6 MB

● For details,please visit our website.

Power supply optional [Power Supplies] P.11

Software

Windows device module access library API-SBP(W32) — Included on CD-ROM

The API-SBP(W32) drivers provide commands for stacked Device Modules in Windows-standard Win32API(DLL) format. Programs can be developed in various programming languages that support Win32API (e.g. Visual Basic and Visual C++) .

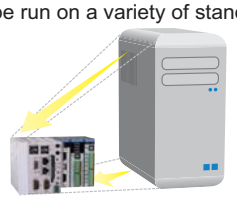
- Supported - all device modules
- Compatible with driver library API-PAC(W32) developed for CONTEC interface modules

Latest driver versions can be downloaded free from CONTEC's Web site.

[Software] P.13~15

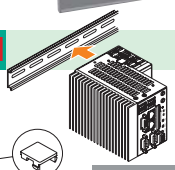
Compact Space-saving Design

The functionality and expandability of a standard PC are all contained in a compact 94 mm (h) x 64.7 mm (d) module. This micro cocomputer can be run on a variety of standard operating systems.



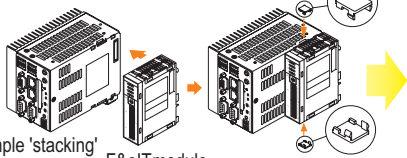
Installation on DIN rail

One-touch operation for easy installation and removal



Side view

Interconnection of Device Modules



Simple 'stacking' system

F&eITmodule

Bus connector Safety lock

Easily Maintained / Industrially Sound

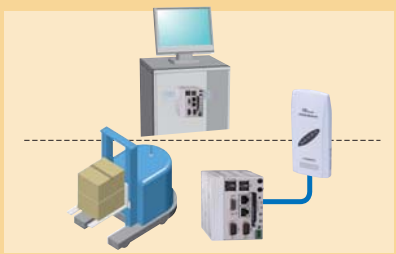
This disk-free, fanless micro computer can be mounted on a 35mm DIN rail. It features a watchdog timer - essential for monitoring the health of industrial systems. All connections (excluding F&eIT bus) are located on the front side of the unit for ease of use.

Outstanding Functions

- The compact flash (or micro drive) is bootable and recognized as the C drive allowing standard computer operating systems and programming languages to be supported.
- I/O interfaces are expanded by connecting one of a wide range of device modules. Its unique interconnection mechanism allows device modules to be 'stacked' side-by-side so that additional interface components, such as backplanes, are not needed.
- 2 USB ports can be used for external CD-ROM, FDD, HDD, keyboard or other USB supported device.

Application Example 1

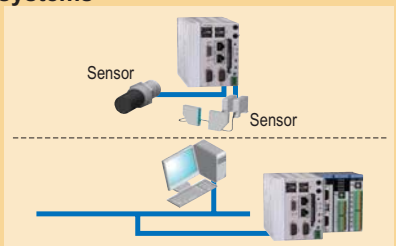
In confined areas with limited power



The unit can fit into spaces too small for standard PCs. In addition, using CONTEC's wireless LAN Micro Access Point allows you to embed this unit in mobile hardware or areas where wiring would be difficult. It is ideal for areas with limited power.

Application Example 2

As a compact controller for I/O control systems

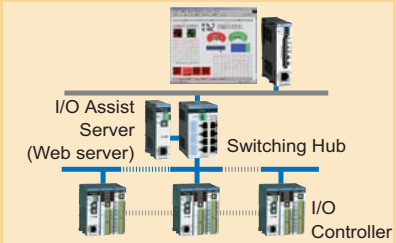


Through the use of the Device Module, these can be used as compact controllers supporting a variety of I/O or as a programmable ethernet-based remote I/O system.

[Device Modules] P.08~11

Application Example 3

Web monitoring system terminal



The micro-controller can serve as a compact web monitoring terminal (client PC) for Servers using a web server function.

[I/O Controller Modules] P.16
[Monitoring & Control Server] P.17

Item	Specificaion	CPU-SB303-FIT	CPU-SB303-FIT-3F
CPU		Ultra Low Voltage Intel® Celeron® M Processor 800MHz (FSB400MHz)	
Chip Set		Intel® 852GM + ICH4	
Memory	L2 Cache	-	
	Main Memory	512MB, 200-pin SO-DIMM socket×1, PC2100 (DDR266) DDR SDRAM	
	BIOS ROM	4MB	
Video	Controller	Built in Intel® 852GM	
	Video RAM	System memory shared (64MB max)	
	Video BIOS	48KB (C0000H - CBFFFF)	
	CRT I/F	Analog RGB I/F×1 (15-pin HD-sub connector×1)	
System resolution		640×480, 800×600, 1024×768, 1152×864, 1280×1024, 1400×1050, 1600×900, 1600×1200, 1856×1392, 1920×1080, 1920×1200(16,770,000 colors), 1920×1400(16,770,000 colors)	
Audio		OUTPUT: Line OUT x 1 (Stereo output level 8Ω 200mW Signal to Noise ratio 90dB) INPUT: MIC x 1 (Monaural), Plug type : φ3.5 pin JACK	
CF Card slot		CF CARD TYPE I/II × 1 (Primary IDE Master)	
		-	CF installed (2GB, 1 partition)
Secondary IDE		Dedicated 40-pin, half-pitch connector (for a CD-ROM/DVD-ROM drive) (Side in the bottom)	
Serial		RS-232C (general-purpose): 2ch (SERIAL PORT1,2) 9-pin D-SUB connector, Baud rate: 50 - 115,200bps	
LAN1	I/F	Ethernet 100BASE-TX/10BASE-T RJ-45 connector	
	Controller	Built in Intel ICH4	
LAN2	I/F	Ethernet 1000BASE-T RJ-45 connector	
	Controller	Intel 82541 PI	
USB		4ch (USB 2.0 specification [High/Full/Low Speed])	
Keyboard/Mouse		Keyboard/Mouse via USB *1	
F&eIT		8 F&eIT device modules can be connected (max) *2*3 (Power consumption of external units should be less than 3.0A)	
Watchdog timer		1sec to 255sec, 255 level; RESET when time-up occurs	
Hardware Monitoring		CPU and board temperature, power supply voltage, and fan speed	
RTC/CMOS		Lithium backup battery life: 10 years or more (at 25°C at ON/OFF); Real time clock precision error: < ±3 minutes per month	
LED display		Power, CompactFlash activity, 2 x User programmable LED	
Manual switch input		1 x Reset switch, 1 x User programmable switch	
Power Supply *4	Input Voltage	12 - 24VDC ±5%	
	Power Consumption (max)	12V input: 2.4A / 24V input: 1.3A	
	External power supply capacity	·Secondary IDE connector +5V: 500mA ·CF card slot +3.3V: 500mA ·USB I/F +5V: 2A(500mA×4)	
Dimensions (mm)		74.7(w) × 120.0(d) × 94.0(h) [2.95" x 4.7" x 3.7"] (excluding protrusions)	
Weight		800g [1.75lbs] (900g [2lbs] when equipped with DIN-rail metal fittings)	

Condition			Specification
Environmental specs.	Operating Temperature		0~50°C *5
	Storage Temperature		-10~60°C
	Humidity		10~90%RH (no condensation)
	Floating Dust Particles		Normal
	Corrosive Gases		None
	Noise resistance	Line-noise	AC line/2kV, Signal line/1kV (IEC1000-4-4Level 3, EN61000-4-4Level 3)
		Atmospheric discharge	Contact discharge / 4kV (IEC1000-4-2Level2, EN61000-4-2Level2), Atmospheric Discharge / 8kV (IEC1000-4-2Level3, EN61000-4-2Level3)
	Vibration Resistance	Sweep Resistance	10 - 57Hz/semi-amplitude 0.15mm, 57 - 150Hz/2.0G, 40min 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)

*1: Keyboard/Mouse/FDD via USB.
*2: The total maximum power consumption of connected modules can not exceed the rated output current of the power supply.
*3: The stack connector supplies power to the device modules.
*4: CONTEC recommends using a 70W(min) power supply with a 10% margin.
*5: Even if unit temperature is within suggested range, when used in a high-temperature environment the use of optional fan is suggested.
*6: When AC-DC power supply -PBA75F-24 (Corsel company) - is used For latest information, please visit CONTEC's Web site. →http://www.contec.com/fit/

I/O Controllers

◎ Integrated CPU and firmware. Remote I/O easily controlled from your PC

Actual Size
25.2w×64.7d×94h [mm]
(Exclusive of protrusions)

*CPU-CA20(FIT)GY

Installation on DIN rail

These ethernet-based remote I/O system is configured by interconnecting I/O device modules onto an ultra-compact Controller Module. This system can be used in a wide-range of applications and controlled using a PC or in coordination with an F&eIT Server.

I/O Controller Unit CPU-CA Series

CPU-CA20(FIT)GY CE

CPU-CA10(FIT)GY CE

CPU-CA20(FIT)GY High-speed / advanced-functions

■ **3 times faster than model CPU-CA10(FIT)GY**
The CPU-CA20(FIT)GY uses an SH4 240 MHz CPU and supports 100 Mbps (100 BASE-TX) ethernet, ensuring faster I/O and communication processing. Achieves higher speed communication with a response time that is roughly 1/3 (1.5 msec to 0.5 msec)* that of the previous model.

■ **Increased number of units can interconnect in same network**
In the standalone startup mode (w/out I/O Assist Server Unit), up to 128 units can be installed on the same network.

[Device Modules] P.08~11

Power supply optional [Power Supplies] P.11

■ Software (CD-ROM)

Windows device module access library API-CAP(W32)[CD-ROM]
[CPU-CA20(FIT)GY, CPU-CA10(FIT)GY, SVR-IOA(FIT)GY, SVR-IOA2(FIT)GY included]

The API-SBP(W32) drivers provide commands for stacked Device Modules in Windows-standard Win32API(DLL) format. Programs can be developed in various programming languages that support Win32API (e.g. Visual Basic and Visual C++) .

・Digital & analog I/O, counters, and GPIB communication device modules are supported.

Latest driver versions can be downloaded free from CONTEC's Web site.
* Linux driver library API-CAP(LNX) can be downloaded free from CONTEC's Web site.

・Windows Device Module Access Library
API-CAP(W32)[CD-ROM]
・DDE, SuiteLink Server FIT-SVR(W32)
Supported OS: Windows® XP/2000/NT4.0 (SP5 or later)/Me/98
・Utility software
Setting up nodes, updating firmware and monitoring diagnosis
Supported OS: Windows® XP/2000/NT4.0 (SP3 or later)/Me/98

[Software] P.13~15

Item		Specifications	
		CPU-CA20(FIT)GY	CPU-CA10(FIT)GY
CPU		SH4 240MHz	SH3 60MHz
Memory		Flash ROM: 4MB(32Mbit) SDRAM: 32MB)256Mbit)	Flash ROM:512KB(4Mbit) EDO DRAM:2MB(16Mbit)
Interface (to host)		100BASE-TX / 10BASE-T	10BASE-T(IEEE802.3)
Simultaneous usable devices *1	Stand-alone mode	128 (max)	8 (max)
	SVR-IOAx(FIT)GY	8 (max)	8 (max)
Connectable Device Modules		8 devices (max)	
Response speed *4	1 device module	approx 600µsec	approx 1.5msec
	8 device modules	approx 1msec	approx 2.5msec
Power Voltage		5VDC 5% - 2-piece power input connector (removable) on the front Use of F&eIT Series dedicated power supply or third-party stabilizing power supply is recommended	
Power Consumption		0.7A (max)	0.5A (max)
Grounding Terminal		Grounding terminal is included (located) in power plug	
Operating Temperature/Humidity		0 to 50°C, 10 to 90% RH ((no condensation)	
Dimensions (mm)		25.2(W) × 64.7(D) × 94.0(H) (1"×2.54"×3.7")	
Weight		100g (3.52oz)	

*1: The number of the devices that can be used simultaneously in the same network.
*2: The total maximum power consumption by each module can not exceed the rated output current of the power supply unit.
*3: The stack connector supplies the power to each device module. Supplied power can not exceed the permissable current of a stack connector (max 3.0A)
*4: It is the speed when using digital I/O modules. The speed of other modules is different.

Fan-less, Compact Design

Utilizing a low-heat generating CPU, these fanless I/O Controllers run on minimal power. Their compact design (94 mm × 64.7 mm) requires little installation space.

DDE Communication with Excel and SCADA (HMI) Software

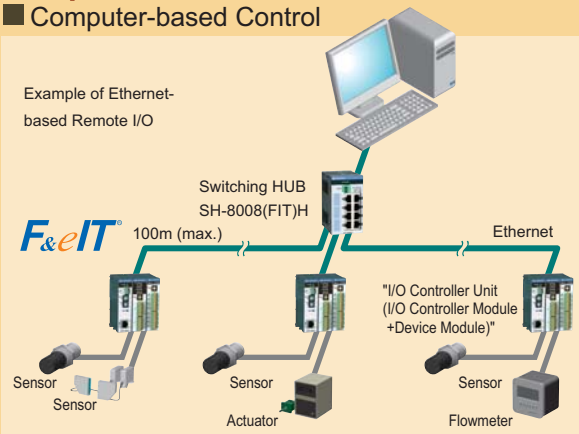
DDE and SuiteLink server FIT-SVR(W32) (included with controllers) enable communication to be controlled by software that supports DDE client functions such as Microsoft® Excel or Wonderware InTouch®.

Computer-based Remote Control

The Windows® drivers that are provided enable remote control of the I/O on a networked machine running in a Windows® environment. The I/O can be controlled in a non-Windows environment through the use of the socket functions.

Application Example 1

■ Computer-based Control



To ensure consistent data flow when using multiple I/O Controllers CONTEC recommends using the I/O Assist Server SVR-IOAx(FIT)GY.

[I/O Controller Modules] P.16

Application Example 2

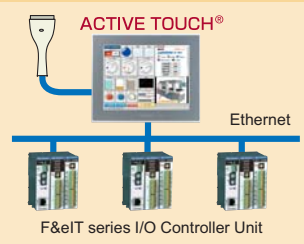
■ Remote monitor and control - No program required

When using the Monitor & Control Server [SVR-MMF2(FIT)] no program in needed to implement remote monitoring and control systems.

[Monitoring & Control Server] P.17

Application Example 3

■ Remote I/O Control via ACTIVE TOUCH®



You can use CONTEC's ACTIVE TOUCH®, HMI Programmable Display, as a control terminal for Ethernetbased remote I/O systems. Additional user interface functions can be easily added even after the system has been installed.

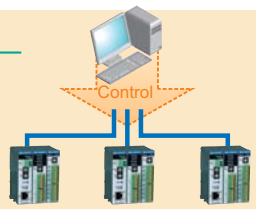
USB-based Controllers also available

USB-based I/O Controller Module
CPU-CA10(USB)GY CE

With this module, you can establish USB direct connected distribution I/O system. The same expansion modules can be used with this and F&eIT I/O controller.

■ Software (CD-ROM)

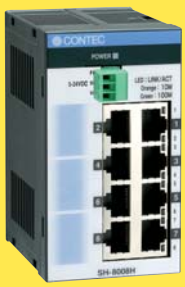
Windows Driver Library
API-USBP(WDM)
Windows-standard Win32 API(DLL) format software drivers are included. These are compatible with CONTEC PCI bus I/O boards and PC cards at the API level.



Switching HUB

Network Expansion

Embedded 10M/100M Auto-Switching Hub



Installation on DIN rail

This ultra-compact and lightweight general-purpose switching hub is ideal for embedded use.
Although designed for use with F&eIT systems it can also be used in ordinally networks.

- Equipped with eight 10M/100 M auto-switching ports (one can serve as an uplink port)
- Equipped with 35 mm DIN rail mounting mechanism
- FG terminal is included in power input connector

SH-8008(FIT)H CE

Power supply optional [Power Supplies] P.11

Item	Specification
Ethernet	IEEE802.3/IEEE802.3u
Communication method	All ports are Full/Half Duplex (auto switching)
Flow control	Full Duplex: IEEE802.3x-compliant Flow Control; Half Duplex: Back Pressure
Available ports	8
Switching mode	Store & Forward
Address table	1,024 entry
Rated volatage input	5V-24VDC ±5% (Use of F&eIT Series dedicated power supply or third-party stabilizing power supply is recommended)
Power Consumption (max.)	5V input: 0.54A, 12V input: 0.22A, 24V input: 0.15A
Operating Temperature/ Humidity	0 to 50°C, 10 to 90% RH (no condensation)
Dimensions (mm)	52.4(W) × 64.7(D) × 94.0(H) (Exclusive of protrusions)
Weight	160g

Device Modules

◎Easy stacking connection. Extensive line-up designed to meet your specific device requirements

These modules provide additional I/O communication for Micro Controllers, I/O Controllers and Monitoring & Control Servers.

Isolated Digital I/O Modules

Model			 12 to 24 VDC 16 Inputs 12 to 48 VDC 16 Outputs	 12 to 24 VDC 8 Inputs 12 to 48 VDC 8 Outputs	 36 to 48 VDC 8 Inputs/Outputs	 12 to 24 VDC 4 Inputs 12 to 48 VDC 4 Outputs
Specifications			DIO-16/16(F T)GY	DIO-8/8(FIT)GY	DIO-8/8H(FIT)GY	DIO-4/4(FIT)GY
Input	Number of input signals		16 (16 points share one common)	8 (8 points share one common)		4 (4 points share one common)
	Input Type		Photocoupler isolated input (supports both current sink and current source)			
	Input Resistance		3kΩ	3kΩ	12kΩ	3kΩ
	Input ON Current		3.4 mA or more	3.4 mA or more	3.4mA or more	3.4 mA or more
	Input OFF Current		0.16 mA or less	0.16 mA or less	0.16 mA or less	0.16 mA or less
	Response Time		1 msec (max)	1 msec (max)	1 msec (max)	1 msec (max)
	External Circuit Power Supply		12 to 24 VDC (15%) (4 mA/12 V to 8 mA/24 V per point)	12 to 24 VDC (15%) (4 mA/12 V to 8 mA/24 V per point)	36 to 48 VDC (15%) (3mA/36V to 4mA/48V per point)	12 to 24 VDC (15%) (4 mA/12 V to 8 mA/24 V per point)
	Interrupt Request		All inputs can generate interrupts (One level out of IRQ 5/7/9)			
Output	Number of Output Points		16 (16 points share one common)	8 (8 points share one common)		4 (4 points share one common)
	Output Form		Photocoupler isolated open collector output (current sink type)			
	Rating	Output Voltage	12 to 48 VDC (15%)	12 to 24 VDC (15%)	36 to 48 VDC (15%)	12 to 48 VDC (15%)
		Output Current	12 to 24V - 150mA per point (max)	150mA per point (max)	50mA per point (max)	12 to 24 V - 150mA per point (max)
			36 to 48V - 50mA per point (max)			36 to 48 V - 50mA per point (max)
	Response Time		1 msec (max)			
	External Circuit Power Supply		12 to 48 VDC (15%)	12 to 24 VDC (15%)	36 to 48 VDC (15%)	12 to 48 VDC (15%)
Internal Current Consumption			5 VDC (5%) 150 mA (max) *1			
Cabling Distance (max)			Approx. 50 m (depending on wiring environment)			
Dimensions (mm)			25.2 (W) x 64.7 (D) x 94.0 (H) (excluding protrusions)			
Weight (main unit)			100 g			
Applicable Wire Dia.			AWG 24 to 16	AWG 28 to 20		AWG 28 to 16
Applicable plug (provided)			FMC 1, 5/18-ST-3, 5 (made by PHOENIX CONTACT)	FK-MC 0, 5/9-ST-2, 5 (made by PHOENIX CONTACT)		FRONT-MC 1, 5/12-ST-3, 81 (made by PHOENIX CONTACT)

Isolated Digital Input Modules

Model		 12 to 24 VDC 32 Inputs	 12 to 24 VDC 16 Inputs	 36 to 48 VDC 16 Inputs	 12 to 24 VDC 8 Inputs
Specifications		DI-32(FIT)GY	DI-16(FIT)GY	DI-16H(FIT)GY	DI-8(FIT)GY
Number of input signals		32 (16 points share one common)	16 (8 points share one common)		8 (8 points / common)
Input Type		Photocoupler isolated input (supports both current sink and current source)			
Input Resistance		3kΩ	3kΩ	12kΩ 3kΩ	3kΩ
Input ON Current		3.4 mA or more	3.4 mA or more	3.4 mA or more 3.4 mA or more	3.4mA or more
Input OFF Current		0.16 mA or less	0.16 mA or less	0.16 mA or less 0.16 mA or less	0.16mA or less
Response Time		1 msec (max)	1 msec (max)	1 msec (max) 1 msec (max)	1 msec (max)
External Circuit Power Supply		12 to 24 VDC (15%) (4 mA/12 V to 8 mA/24 V per point)	12 to 24 VDC (15%) (4 mA/12 V to 8 mA/24 V per point)	36 to 48 VDC (15%) (3mA/36V to 4mA/48V per point)	12 to 24 VDC (15%) (4mA/12 V to 8mA/24 V per point)
Interrupt Request		All inputs can generate interrupts (One level out of IRQ 5/7/9)			
Internal Current Consumption		5 VDC (5%) 150 mA (max) *1			
Cabling Distance (max)		Approx. 50 m (depending on wiring environment)			
Dimensions (mm)		25.2 (W) x 64.7 (D) x 94.0 (H) (excluding protrusions)			
Weight (main unit)		100 g			
Applicable Wire Dia		AWG 24 to 16	AWG 28 to 20		AWG 28 to 16
Applicable plug (provided)		FMC 1, 5/18-ST-3, 5 (made by PHOENIX CONTACT)	FK-MC 0, 5/9-ST-2, 5 (made by PHOENIX CONTACT)		FRONT-MC 1, 5/12-ST-3, 81 (made by PHOENIX CONTACT)

Non-isolated Digital I/O Module

TTL (5 VDC) 8 Inputs/Outputs

Model			DIO-8D(FIT)GY
Input/Output	Number of input signals		8 (8 points share one common)
	Input/Output Form		Non-isolated TTL level I/O (negative logic)
	Input pull-up resistance		100 kΩ (1 common)
	Response Time		200 nsec (max)
	Rating	Input Voltage	-0.5 to +5.5 VDC
		Output Current	I_{OL}=6mA,I_{OH}=2mA (per point)
Internal Current Consumption			5 VDC (5%) 150 mA (max) *1
Cabling Distance (max)			Approx. 1.5 m (depending on wiring environment)
Dimensions (mm)			25.2 (W) x 64.7 (D) x 94.0 (H) (excluding protrusions)
Weight (main unit)			100 g
Applicable Wire Dia.			AWG 28 to 16
Applicable plug (provided)			FRONT-MC 1, 5/12-ST-3, 81 (made by PHOENIX CONTACT)

Isolated Digital Output Modules

12 to 48 VDC 32 Outputs

12 to 48 VDC 16 Outputs

12 to 48 VDC 8 Outputs

Model			DO-32(FIT)GY	DO-16(FIT)GY	DO-8(FIT)GY
Output	Number of Output Points		32 (16 points share one common)	16 (8 points share one common)	8 (8 points share one common)
	Output Form		Photocoupler isolated open collector output (current sink type)		
	Rating	Output Voltage	12 to 48 VDC (15%)		
		Output Current	12 to 24V - 150mA per point (max) 36 to 48V - 50mA per point (max)		
	Response Time		1 msec (max)		
External Circuit Power Supply			12 to 48 VDC (15%)		
Internal Current Consumption			5 VDC (5%) 150 mA (max) *1		
Cabling Distance (max)			Approx. 50 m (depending on wiring environment)		
Dimensions (mm)			25.2 (W) x 64.7 (D) x 94.0 (H) (excluding protrusions)		
Weight (main unit)			100 g		
Applicable Wire Dia.			AWG 28 to 16	AWG 20	AWG 28 to 16
Applicable plug (provided)			FMC 1, 5/18-ST-3, 5 (made by PHOENIX CONTACT)	FK-MC 0, 5/9-ST-2, 5 (made by PHOENIX CONTACT)	FRONT-MC 1, 5/12-ST-3, 81 (made by PHOENIX CONTACT)

Isolated Analog Input Modules

Isolated analog input, 12 bits, 8 channels

Isolated analog input, 16 bits, 4 channels

Model	ADI12-8(FIT)GY	ADI16-4(FIT)GY
Number of Channels	8 differential inputs	4 differential inputs
Input Type	Bus isolated voltage input	Bus isolated voltage/current input
Input Range	Bipolar ±10V, ±5V Unipolar 0 to 10 V, 0 to 5 V	[Voltage] Bipolar ±10V [Current] 0 to 20 mA
Max. Input Rating	± 20 V	[Voltage] ±20 V [Current] 30 mA
Resolution	12 bits	16 bits
Non-linearity error*2	±3 LSB	[Voltage]±8 LSB (±0.012% of FSR) [Current] ±20 LSB (±0.030% of FSR)
Conversion Speed	Number of channels x 10 µ sec + 20 µ sec	[Voltage] Number of channels x 10 µsec +20 µsec [Current] Number of channels x 40 µsec +20 µsec
Data Buffer	8 words	64 words
Sampling Timer *3	10 µsec to 1,073,741,824 µsec	
Interrupt Request *3	Select two or more from sampling clock input and 4 other events (One level out of IRQ 5/7/9)	Select two or more from sampling clock input and 5 other events (One level out of IRQ 5/7/9)
Internal Current Consumption	5 VDC (±5%) 350 mA (max) *1	5 VDC (±5%) 350 mA (max) *1
Cabling Distance (max)	1.5m	
Dimensions (mm)	25.2 (W) x 64.7 (D) x 94.0 (H) (excluding protrusions)	
Weight (main unit)	100 g	
Applicable Wire Dia.	AWG 28 to 20	AWG 28 to 16
Applicable plug (provided)	FK-MC 0, 5/12-ST-2, 5 (made by PHOENIX CONTACT)	FRONT-MC 1, 5/12-ST-3, 81 (made by PHOENIX CONTACT)

*2 An error of about 0.1% of the maximum range sometimes occurs as a non-linearity error at an ambient temperature of 0ºC and 50ºC.This error can be reduced by calibrating at the operating environment temperature.
*3 Can be used only when connected to the CPU-SBxx(FIT)GY.

ADI12-8(FIT)GY dedicated low-pass filter

ADI12-8(FIT)GY dedicated low-pass filter

Model	ATLF-8(FIT)GY
Input Range	-10 V to +10 V
Max. Input Voltage	±20V
Input Impedance	1MΩ
Input Channel	8 differential input channels
Accuracy	±0.2%
Filter Shutoff Frequency	10 Hz (typ.)
Dimensions (mm)	50.4 (W) x 64.7 (D) x 94.0 (H) (excluding protrusions)
Weight (main unit)	105 g
Applicable Wire Dia.	AWG 28 to 20
Applicable plug	FK-MC 0, 5/12-ST-2, 5 (made by PHOENIX CONTACT)

*1 Stack Connection

■ 8 Modules / 3A (max)
A maximum of 8 device modules can be connected to each controller.
Total current consumption of all connected modules must not exceed 3A.

Device Modules

Isolated Analog Output Modules

Isolated Analog Output 12bit 4ch

Isolated Analog Output 16bit 4ch

Model	DAI12-4(FIT)GY	DAI16-4(FIT)GY
Number of Channels	4 channels	
Output Type	Bus isolated voltage/current output	
Output Range	[Voltage] Bipolar ±10 V, ±5 V Unipolar 0 to 10 V, 0 to 5 V (output current ±5 mA) [Current] 0 to 20 mA	[Voltage] Bipolar ±10 V (output current ±5 mA) [Current] 0 to 20 mA
Output Impedance	Voltage output range: 10 Ω (max)	Voltage output range: 10 Ω (max)
Resolution	12 bits	16 bits
Conversion Accuracy*1	[Voltage] ±3 LSB [Current] ±5 LSB	[Voltage] ±18 LSB (±0.027% of FSR) [Current] ±18 LSB (±0.027% of FSR)
Settling Time	[Voltage] 10 μ sec/ch [Current] 20 μ sec/ch	[Voltage] 10 μ sec/ch [Current] 20 μ sec/ch
Data Buffer	-	64 words
Internal Sampling Timer *2	10 μ sec to 1,073,741,824 μ sec	
Interrupt Request*2	Select two or more from timer clock input and 3 other events (one of IRQ5/7/9 set to 1 level)	Select two or more from timer clock input and 3 other events (one of IRQ5/7/9 set to 1 level)
Internal Current Consumption	5 VDC (±5%) 400 mA (max.)	5 VDC (±5%) 500 mA (max.)
Cabling Distance (max)	1.5m	
Dimensions (mm)	25.2 (W) × 64.7 (D) × 94.0 (H) (excluding protrusions)	
Weight (main unit)	100g	
Applicable Wire Dia.	AWG 28 to 20	AWG 28 to 16
Applicable plug (provided)	FK-MC 0,5/12-ST-2,5 (made by PHOENIX CONTACT)	FRONT-MC 1,5/12-ST-3,81 (made by PHOENIX CONTACT)

*1: An error of about 0.1% of the maximum range can occur in the conversion accuracy at an ambient temperature of 0°C and 50°C
*2: Can be used only when connected to the CPU-SBxx(FIT)GY.

Pt100 Temperature Sensor Input Module

Pt100 Temperature Sensor Input Module

Model	PTI-4(FIT)GY
Number of Channels	4 channels
Compatible Platinum RTD	Pt100 (JIS C1604-1997, IEC 751 1983), JPt100 (JIS C1604-1989)
Wiring Method	3-lead type, 4-lead type
Temperature Measurement Range	Pt100: –200 to 850ºC JPt100: -200 to 510°
Accuracy: Ambient Temperature 0 to 50ºC	±0.3ºC*1
Accuracy: Ambient Temperature 15 to 35ºC	±0.15ºC*1
Resolution	0.01ºC
Conversion Speed	Selectable from 150 ms/40 ms/5 ms per channel
Output Current for Temperature Detection	1mA
Isolation Method	Across platinum RTD and power supply: Photocoupler isolation Across platinum RTD input channel: No isolation
Times of update Flash ROM (RTD Data)	100,000 times (max)
Internal Current Consumption	5 VDC (±5%) 500 mA (max)
Dimensions (mm)	25.2 (W) × 64.7 (D) × 94.0 (H) (excluding protrusions)
Weight (main unit)	100g
Applicable Wire Dia.	AWG 28 to 20
Applicable plug (provided)	FK-MC 0,5/9-ST-2,5 (made by PHOENIX CONTACT)

*1 When conversion speed is set to 150 ms

Isolated Counter Modules

24bit UP/DOWN
5 to 12 VDC, 2 channels

16bit UP
12 to 24 VDC, 8 channels

16bit UP
5 VDC, 8 channels

Model	CNT24-2(FIT)GY	CNT16-8(FIT)GY	CNT16-8L(FIT)GY
Number of Channels	2 channels	8 channels	
Counting Method	24-bit up/down count 1-phase, 1-phase w/gate control, 2-phase	16-bit up count	
Input Type	Photocoupler isolated input (for current sink output)	Photocoupler isolated input (Supports both current sink and current source)	
Input Resistance	220 Ω or more	3 kΩ	
External Circuit Power Supply	5 to 12 VDC (±10%) 400 mA (min)	12 to 24 VDC (±15%)(4 mA/ 12V to 8 mA/24 V per point)	5 VDC (±10%) (4 mA per point)
Response Frequency	500 kHz (max) Duty 50% (max)	5 kHz (max) Duty 50% (max)	10 kHz (max) Duty 50% (max)
Digital Filter *1	0.1 μsec to 1056.1 μsec	0.25 μsec to 131.072 msec	
Programmable Timer *1	1 msec to 200 sec	n/a	
Interrupt Request	Two more selectable from timer time-up and setting counter value match(one of IRQ5 / 7 / 9 set to 1 level)	Counter Carryover (one of IRQ5 / 7 / 9 set to 1 level)	
Match Signal Output*2: Number of Outputs	1 point × 2 channels	n/a	
Match Signal Output*2: Output Form	Photocoupler isolated open collector output (current sink type) (negative logic)		
Match Signal Output*2: Output Rating	35 VDC 50 mA (max)		
Match Signal Output*2: Pulse Width	0 to 104.45 msec		
Match Signal Output*2: External Power Supply	5 to 12 VDC (±10%)		
Internal Current Consumption	5 VDC (±5%) 150 mA (max)		
Cabling Distance (max)	Approx. 30m	50 m (depending on wiring environment)	
Dimensions (mm)	25.2 (W) × 64.7 (D) × 94.0 (H) (excluding protrusions)		
Weight (main unit)	100g		
Applicable Wire Dia.	AWG 28 to 20	AWG 28 to 16	
Applicable plug (provided)	FK-MC 0,5/9-ST-2,5 (made by PHOENIX CONTACT)	FRONT-MC 1,5/12-ST-3,81 (made by PHOENIX CONTACT)	

*1: Can be used only when connected to the CPU-SBxx(FIT)GY.
*2: Not supported when connected to the CPU-CA10(USB)GY.

Reed Relay Output Module

125VAC/30VDC 2A
Reed Relay Output 4 points

Model	RRY-4(FIT)GY
Number of Outputs	4 points
Output Form	Reed relay contact (1 make output)
Relay Contact Specifications: Max. Allowable Voltage	125 VAC, 30 VDC (max)
Relay Contact Specifications: Max. Switching Current	2A (max)
Relay Contact Specifications: Contact Resistance	30 mΩ or less
Relay Contact Specifications: Response Time	Within 7 msec
Relay Contact Specifications: Mechanical Life	20 million operations or more (switching frequency:180 operations /minute)
Relay Contact Specifications: Electrical Life	10 million operations or more (switching frequency: 20 operations /minute)
Relay Used	PA1a-5V
Internal Current Consumption	5 VDC (±5%) 150 mA (max.)*1
Cabling Distance (max)	Approx. 50 m (depending on wiring environment)
Dimensions (mm)	25.2 (W) × 64.7 (D) × 94.0 (H) (excluding protrusions)
Weight (main unit)	100g
Applicable Wire Dia.	AWG 28 to 16
Applicable plug (provided)	FRONT-MC 1,5/12-ST-3,81 (made by PHOENIX CONTACT)

Stack Connection

■ 8 Modules / 3A (max)
A maximum of 8 device modules can be connected to each controller.
Total current consumption of all connected modules must not exceed 3A.

Serial Communication Modules

Model	 RS-232C 2-channel	 RS-422/485 1-channel
Specifications	COM-2(FIT)GY	COM-1PD(FIT)GY
Number of Channels	2 channels	1 channel
I/O Specifications	RS-232C	RS-422A/RS-485
Transmission Method	Asynchronous serial transmission (full-duplex)	Asynchronous serial transmission (full-duplex/half-duplex)
Baud Rate	2 to 921,600 bps*1	
Data Length	5, 6, 7, or 8 bits, 1, 1.5 or 2 stop bits	
Parity Check	Even, odd, no parity	
UART	162850 or equivalent (FIFO buffer send: 128 byte, receive: 128 byte)	
Internal Current Consumption	5VDC (±5%) 100mA (max)	5VDC (±5%) 300mA (max)
Connector	9-pin D-sub (male) × 2	9-pin D-sub (female) × 1
Dimensions (mm)	25.2 (W) × 64.7 (D) × 94.0 (H) (excluding protrusions)	
Weight (main unit)	100g	

*1: 15~921,600bps when using API-SBP(W32) driver (included)

GPIB Communication Module

Model	 GPIB 1-channel
Specifications	GP-IB(FIT)GY
Number of Channels	1 channel
I/O Specifications	GPIB (IEEE-488.1, IEEE-488.2) standard-compliant
Transmission Method	8bit parallel / 3-line handshake
Transmission Speed	30 KB/sec (max)
Internal Current Consumption	5VDC (±5%) 230mA (max)
Dimensions (mm)	25.2 (W) × 64.7 (D) × 94.0 (H) (excluding protrusions)
Weight (main unit)	100g

Power Supplies

AC-DC Power Supply Unit

POW-AD13GY

POW-AD22GY CE

* POW-AD13GY

DC-DC Power Supply Unit

POW-DD10GY CE

POW-DD43GY

* POW-DD10GY

Item	Specification			
	POW-AD13GY	POW-AD22GY	POW-DD10GY	POW-DD43GY
Input	85~132VAC	85~264VAC	10~30VDC	30~50VDC
Output	5.0VDC±5%			
	3.0A (max)	2.0A (max)	3.0A (max)	
Operating Temperature / Humidity	0 to 50ºC, 10 to 90% RH (no condensation)		0 to 40ºC, 10 to 90% RH (no condensation)	
Dimensions (mm)	52.4(W) × 64.7(D) × 94.0(H) (Exclusive of protrusions)		25.2(W) × 64.7(D) × 94.0(H) (Exclusive of protrusions)	
Weight (main unit)	150g	110g	150g	

AC Adapter Power Supplies

POA201-10 12VDC 1A output(for RP-COM(FIT)H)

POA200-20 5VDC 2A output(for RP-COM(FIT)H-AF)

PoE Power Supplies for RP-COM(FIT)H-AF

POW-CB30 (af) Power-over-Ethernet Power Supply Unit (100-240VAC)

POW-CBM4 (af) 4-port PoE Power Supply Switching HUB (100-115VAC)

Accessories

Compact Flash

FixDisk Compact Flash - Can be partitioned (like a HDD) before Installing OS.

FixDisk 1GB **CF-1GB**

FixDisk 512MB **CF-512MB**

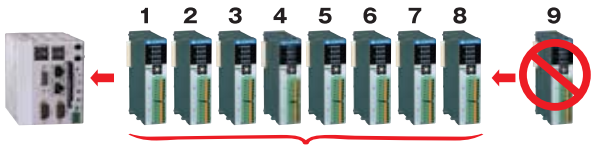
F&eIT Series Fans

No fan is needed when F&eIT Modules are used in temperatures of 0 to 50˚C.

Up to 10˚C above specified operating temperature is allowed when using optional fan [FAN-FIT].

Item	Specification
Rated Voltage	DC5V±10%
Rated Current	0.18A
Max. Airflow	0.1m³/min
Max. Static Pressure	2.3mmH_2O
Noise	30dB
Operating Temperature	5 to 60ºC
Rotating Speed	5200rpm
Life	50,000 h (temperature: 20ºC, humidity: 65%), 30,000 h (temperature: 60ºC)
Dimensions (mm)	42.6(W) × 47.2(D) × 11.2(H) (Exclusive of protrusions)
Weight (main unit)	40g

Device Modules Compatibility Table



Max 8 modules
(Total power consumption 3 A or less)

A maximum of eight modules can be stacked on one unit.
However, the power consumption of the configuration of connected device modules cannot exceed a total of 3 Amps.

Function	Model	Power Consumption	Micro Controllers	I/O Controllers		Monitoring & Control Servers	I/O Assist Servers
			CPU-SB303-FIT-36 CPU-SB303-FIT	CPU-CA20(FIT)GY CPU-CA10(FIT)GY	CPU-CA10(USB)GY	SVR-MMF2(FIT)	SVR-IOA2(FIT)GY SVR-IOA(FIT)GY
Opto-isolated Digital I/O							
12 to 24 VDC 16 Inputs/12 to 48 VDC 16 Outputs	DIO-16/16(FIT)GY	0.15A	○	○	○	–	Device modules cannot be stacked.
12 to 24 VDC 8 Inputs/Outputs	DIO-8/8(FIT)GY	0.15A	○	○	○	○	
36 to 48 VDC 8 Inputs/Outputs	DIO-8/8H(FIT)GY	0.15A	○	○	–	○	
12 to 24 VDC 4 Inputs/12 to 48 VDC 4 Outputs	DIO-4/4(FIT)GY	0.15A	○	○	–	○	
Non-isolated Digital I/O							
TTL (5 VDC) 8 Inputs/Outputs	DIO-8D(FIT)GY	0.15A	○	○	–	○	
Opto-isolated Digital Input							
12 to 24 VDC 32 Inputs	DI-32(FIT)GY	0.15A	○	○	○	–	
12 to 24 VDC 16 Inputs	DI-16(FIT)GY	0.15A	○	○	○	○	
36 to 48 VDC 16 Inputs	DI-16H(FIT)GY	0.15A	○	○	–	○	
12 to 24 VDC 8 Inputs	DI-8(FIT)GY	0.15A	○	○	–	○	
Opto-Isolated Digital Output							
12 to 48 VDC 32 Outputs	DO-32(FIT)GY	0.15A	○	○	○	–	
12 to 48 VDC 16 Outputs	DO-16(FIT)GY	0.15A	○	○	○	○	
12 to 48 VDC 8 Outputs	DO-8(FIT)GY	0.15A	○	○	–	○	
Isolated Analog Input							
Isolated analog input, 12 bits, 8 channels	ADI12-8(FIT)GY *4	0.35A	○	○	○	○	
Isolated analog input, 16 bits, 4 channels	ADI16-4(FIT)GY	0.30A	○	○	○	○	
Isolated Analog Output							
Isolated analog output, 12 bits, 4 channels	DAI12-4(FIT)GY	0.40A	○	○	○	○	
Isolated analog output, 16 bits, 4 channels	DAI16-4(FIT)GY	0.50A	○	○	○	○	
Pt100 Temperature Sensor Input							
Pt1000 temperature input, 4 channels	PTI-4(FIT)GY	0.50A	○	○	○	–	
Isolated Counter							
24-bit up/down, 5 to 12 VDC, 2 channels	CNT24-2(FIT)GY	0.15A	○	○	○	○	
16-bit up, 12 to 24 VDC, 8 channels	CNT16-8(FIT)GY	0.15A	○	○	–	○	
16-bit up, 5 VDC, 8 channels	CNT16-8L(FIT)GY	0.15A	○	○	–	○	
Reed Relay Contact Output							
125 VAC/30 VDC 2 A, 4 lead relay contact outputs	RRY-4(FIT)GY	0.15A	○	○	–	–	
Serial Communication							
RS-232C 2-channel	COM-2(FIT)GY	0.10A	○※1	–	–	○※2	
RS-422/485 1-channel	COM-1PD(FIT)GY	0.30A	○※5	–	–	○※2	
GPIB Communication							
GPIB (IEEE-488) 1-channel	GP-IB(FIT)GY	0.23A	○※3	–	–	–	

*1: One module can be connected in the Compatible mode, and up to three modules can be connected in the Enhanced mode. *2: Up to four modules can be connected.
*3: Up to three modules can be connected. *4: The low path filter for analog input module [ATLF-8(FIT)GY] can be provided as an option.
*5: Up to 2 modules can be used in Compatible Mode or 3 modules in Enhanced Mode on one unit.

Power Supplies

AC-DC

Model	Output	Input Voltage
POW-AD13GY	5VDC 3.0A	85~132VAC
POW-AD22GY	5VDC 2.0A	85~264VAC

DC-DC

Model	Output	Input Voltage
POW-DD10GY	5VDC 3.0A	10~30VDC
POW-DD43GY	5VDC 3.0A	30~50VDC

AC Adapters

Model	Output	Input Voltage
POA201-10	12VDC 1.0A	90~264VAC
POA200-20	5VDC 2.0A	90~264VAC

PoE Power Supplies for RP-COM(FIT)H-AF

Model	Output	Input Voltage
POW-CB30(af)	48VDC 0.5A	100~240VAC
POW-CBM4(af)	48VDC 1.8A	100~115VAC

* Please use commercially available power supplies when you use CPU-SB303-FIT. CONTEC recommends 50W(min) power supply when you use it by stand-alone.

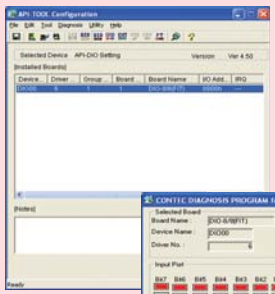
Software

Windows® driver library for CPU-SBxx(FIT)GY API-SBP(W32)

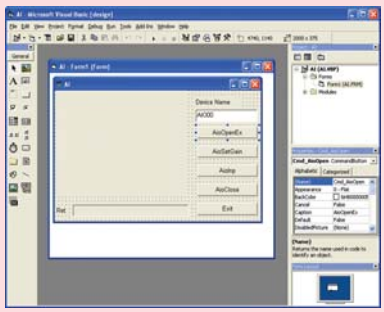
The API-SBP(W32) driver software provides commands in Windows-standard Win32API(DLL) format to Device Modules stacked on the CPU-SB10(FIT)GY, CPU-SB20(FIT)GY and CPU-SB303-FIT.
A diagnostics monitor allows you to confirm operation without the aid of a program.
Programs can be developed in a variety of programming languages that support Win32API (e.g. Visual Basic and Visual C++).

- Digital I/O, analog I/O, counters and GPIB communication device modules are supported
- Compatible with API-PAC(W32) - driver library for CONTEC interface boards / cards
- Windows® XP/XP Embedded/2000/NT4.0/Me/98/98 Second Edition/95 OSR2/95 supported
- Includes Visual Basic and Visual C++ sample programs

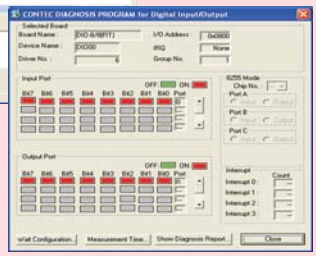
Setup program
(API-TOOL configuration)



Online help



Sample program



Diagnostics monitor

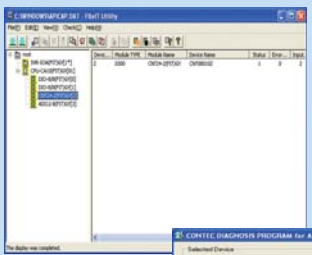
Latest versions can be downloaded free from CONTEC's web site.
* To develop applications in Linux, use the Linux general-purpose I/O driver IO-LIB(LNX) [also available for free download from CONTEC's web site]. Not required when using Serial Communication Modules COM-2(FIT)GY or COM-1PD(FIT)GY. They are recognized as standard COM parts when using Linux.

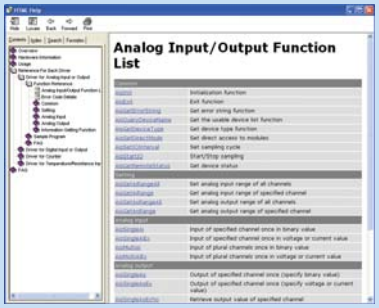
Windows® driver library for CPU-CAxx(FIT)GY API-CAP(W32)

The API-SBP(W32) driver software provides commands in Windows-standard Win32API(DLL) format to Device Modules stacked and networked with the CPU-CA10(FIT)GY and CPU-CA20(FIT)GY.
A diagnostics monitor allows you to confirm operation without the aid of a program.
Programs can be developed in a variety of programming languages that support Win32API (e.g. Visual Basic and Visual C++).

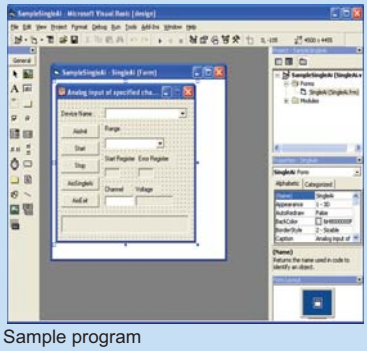
- F&eIT setup utility automatically detects networked devices.
- Digital I/O, analog I/O, counters and GPIB modules are supported.
- Windows® XP/2000/Me/98/98 Second Edition are supported.
- Includes Visual Basic, Visual C++, Visual Studio.NET, Borland C++Builder and Borland Delphi sample programs.
- Supports I/O Assist Servers SVR-IOA(FIT)GY and SVR-IOA2(FIT)GY.

Setup program
(F&eIT setup utility)

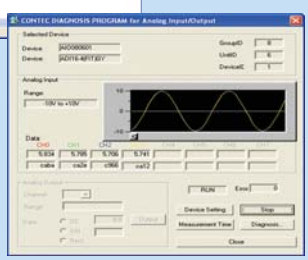




Online help



Sample program



Diagnostics monitor

Latest versions can be downloaded free from CONTEC's web site.
* To develop applications in Linux, socket communication must be performed using F&eIT protocol.

Please open Page 13.

Features

Common
- Can control a maximum of 8 device modules (GPIB, COM excluded).
- Drivers are the same as those for CONTEC's PCI Bus Boards which have the best compatibility with API-PAC(W32) drivers. [e.g. API-xxx(98/PC)W95/NT].

Digital I/O Driver
- Digital input/output can be performed from the specified ports or bits.
- Digital input changes can generate alarms via interrupts [not all modules support interrupts].
- Signal input noise can be prevented by using digital filter [digital filter not available on all modules].

Analog I/O Driver
- Analog input / output range can be set by user.
- Analog input / output can be performed from specified channels.
- Input binary value can be converted to either voltage or current.

Counter Input Driver
- The mode can be chosen according to the input signal form [Single-phase / Two-phase / Single-phase with Gate Control].
- Counter value can be input from specified channels.
- Counter value can be preset from specified channels.
- Interrupts can be alarmed when a counter match occurs.

GPIB Communication Driver
- Can control up to 3 device modules (max).
- IEEE-488 compliant.
- IEEE-488.2 compliant commands.
- Data Sending/Receiving, Command Sending, SRQ Receiving.

Temperature Input Driver
- Temperature or resistance value can be input from specified channels.
- Input value can be averaged according to the setting.

Serial Communication Driver
- Can control up to 3 device modules (max).
- Needs Windows® standard Win32 API for serial communication.

Specifications

Supported OS

■ CPU-SB303-FIT-36, CPU-SB22/256(FIT), CPU-SB21/256(FIT)
Windows XP Embedded

■ CPU-SB303-FIT
Windows XP Professional, Windows XP Embedded, Windows 2000 Professional

■ CPU-SB20/256(FIT)GY, CPU-SB20/128(FIT)GY
Windows 2000 Professional, Windows Me, Windows 98 Second Edition

■ CPU-SB10/128(FIT)GY
Windows 98 Second Edition, Windows 98, Windows 95 OSR2, Windows NT Workstation Ver4.0

Supported Programming Languages

Visual C++ Ver2.0, 4.x, Ver5.0, Ver6.0
Visual Basic Ver4.0, Ver5.0, Ver6.0

Supported Device Modules

■ Analog I/O
ADI12-8(FIT)GY, ADI16-4(FIT)GY, DAI12-4(FIT)GY, DAI16-4(FIT)GY

■ Digital I/O
DI-8(FIT)GY, DI-16(FIT)GY, DI-16H(FIT)GY, DI-32(FIT)GY, DO-8(FIT)GY, DO-16(FIT)GY, DO-32(FIT)GY, DIO-4/4(FIT)GY, DIO-8/8(FIT)GY, DIO-8/8H(FIT)GY, DIO-16/16(FIT)GY, DIO-8D(FIT)GY, RRY-4(FIT)GY

■ Counter
CNT24-2(FIT)GY, CNT16-8(FIT)GY, CNT16-8L(FIT)GY

■ GPIB Communication
GP-IB(FIT)GY Up to 3 devices (max)

■ Temperature Input
PTI-4(FIT)GY

■ Serial Communication
COM-2(FIT)GY, COM-1PD(FIT)GY

Interrupts: Invalid or 1 point per device module (3 points total)

Features

Common
- Initialization, setup and input/output is performed according to the set of device modules.
- Utility available to set up all device modules.
- Setup value can be obtained by calling the function.

Digital I/O Driver
- Digital input/output can be performed from the specified ports or bits.
- Signal input noise can be prevented by using digital filter [digital filter not available on all modules].

Analog I/O Driver
- Analog input / output range can be set by user.
- Analog input / output can be performed from specified channels [voltage or current].

Counter Input Driver
- The mode can be chosen according to the input signal form (Single-phase / Two-phase / Single-phase with Gate Control).
- Counter value can be input from specified channels.
- Counter value can be preset from specified channels.

Temperature Input Driver
- Temperature or resistance value can be input from specified channels.
- Input value can be averaged according to the setting.

Specifications

Supported OS

Windows XP
Windows 2000 Professional
Windows Me
Windows 98 Second Edition
Windows 98

Supported Programming Languages

Visual C++ Ver5.0, Ver6.0
Visual Basic Ver5.0, Ver6.0
VisualStudio.NET (VB, VC, C#)
Borland C++ Builder 5.0, 6.0
Borland Delphi 5.0, 6.0

Supported Device Modules

■ Analog I/O
ADI12-8(FIT)GY, ADI16-4(FIT)GY, DAI12-4(FIT)GY, DAI16-4(FIT)GY

■ Digital I/O
DI-8(FIT)GY, DI-16(FIT)GY, DI-16H(FIT)GY, DI-32(FIT)GY, DO-8(FIT)GY, DO-16(FIT)GY, DO-32(FIT)GY, DIO-4/4(FIT)GY, DIO-8/8(FIT)GY, DIO-8/8H(FIT)GY, DIO-16/16(FIT)GY, DIO-8D(FIT)GY, RRY-4(FIT)GY

■ Counter
CNT24-2(FIT)GY, CNT16-8(FIT)GY, CNT16-8L(FIT)GY

■ Temperature Input
PTI-4(FIT)GY
(* COM, GPIB are used by Media Converter series)

Interrupts: Not supported

Development Flow

● CPU-SB303-FIT-36 + API-SBP(W32)

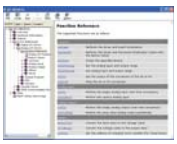
Application development flow for CPU-SB303-FIT-36 + API-SBP(W32).

① A - Connect a device module to the CPU-SB303-FIT-36 via the stack connector.
B - Install API-SBP(W32) runtime [Execution Environment]
C - Use API-TOOL configuration [CONFIG.EXE] to set up the device module.
NOTE: Requires CD-ROM drive with USB interface or network CD-ROM / shared folder.

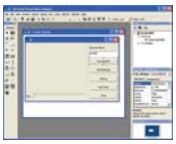
② When connected to an external device the status of such things as signal wires can be monitored with the Diagnosis Program.

Diagnosis Program

③ To develop program, install the API-SBP(W32) development environment on a PC. Online help and sample programs are available for reference.



Online Help



Sample Program

④ Install developed program on CPU-SB303-FIT-36 using networked or USB floppy / cd-rom. Test and debug.

Program Development

● API-SBP(W32)

Procedure for using API-SBP(W32) library (DLL) follows.

○ **Visual Basic Example**

① Add a standard module [APIxxx.BAS (xxx refers to DIO, AIO etc)] to the project.

② Describe the function calls according to steps below.

○ **Visual C++ Example**

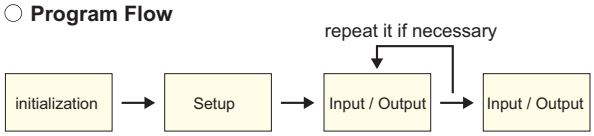
① Install the header file [APIxxx.H (xxx refers to DIO, AIO, etc) to the source file.

② Add library file [APIxxx.LIB [xxx refers to DIO, AIO, etc)] to the projects.

③ Describe the function calls according to steps below.

* The following flow is used as a base pattern.

○ **Program Flow**



Software

Development Flow

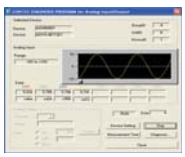
●CPU-Caxx(FIT)GY + API-CAP(W32)

Application development flow for CPU-CAxx(FIT)GY + API-CAP(W32).

① Connect a device module to the CPU-CAxx(FIT)GY via the stack connector, plug in power supply.

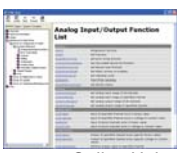
② Install API-CAP(W32) development environment on a PC. Set up network settings [e.g. IP address, Sub network mask] using F&eIT setup utility [FITVIEW.EXE].

③ When connected to an external device the status of such things as signal wires can be monitored with the Diagnosis Program.

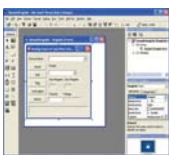


Diagnosis Monitor

④ Online help and sample programs are available for reference.



Online Help



Sample Program

⑤ Test and debug can be done on PC.

Program Development

●API-CAP(W32)

Procedure for using API-CAP(W32) library (DLL) follows.

○ **Visual Basic Example**

① Add a standard module [CCAPxxx.BAS (xxx refers to DIO, AIO, etc)] to the projects.

② Describe the function calls according to steps below.

○ **Visual C++ Example**

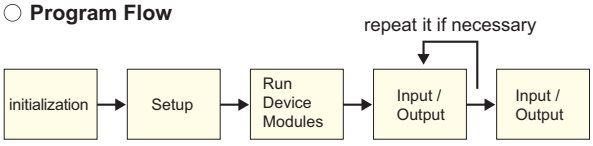
① Install the header file [CCAPxxx.H (xxx refers to DIO, AIO, etc) to the source file.

② Add library file [CCAPxxx.H (xxx refers to DIO, AIO, etc)] to the projects.

③ Describe the function calls according to steps below.

* The following flow is used as a base pattern.

○ **Program Flow**



I/O Assist Server

◎ Integrated management & Web monitoring of I/O Controller Unit

*SVR-IOA2(FIT)GY

Installation on DIN rail

This Server Unit remotely monitors and updates I/O information on a Web browser. It also collects I/O information by cyclically accessing Web servers and I/O Controller Units. Due to its simple design, development and implementation can be easily performed entirely on a Web browser.

I/O Assist Server

SVR-IOA2(FIT)GY CE
High-speed / advanced-functions

SVR-IOA(FIT)GY CE

High-speed / advanced-functions: SVR-IOA2(FIT)GY

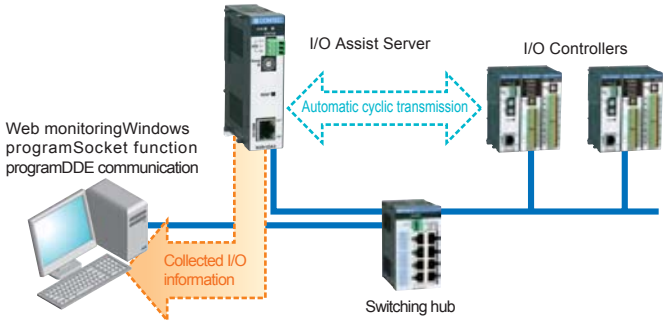
■ 2 times faster than the previous model [SVR-IOA(FIT)GY]
I/O and communication speed has been increased with the use of the SH4 240 MHz CPU. The communication speed is roughly doubled* when used with the I/O Controller Module [CPU-CA20(FIT)GY].
* Varies according to operating environment.

■ High-speed / advanced-functions: SVR-IOA2(FIT)GY
Web monitoring pages have been enhanced. Frames are now used for easier handling and viewing.

Power Supply is optional. [Power Supplies] P.11

Management of I/O Controller

This server automatically and cyclically accesses up to eight I/O Controllers collecting I/O information. It then supplies the information to the host in a single communication,reducing line load.



DDE Communication with Excel and SCADA (HMI) Software

DDE and SuiteLink server FIT-SVR(W32) (included with controllers) enable communication to be controlled by software that supports DDE client functions such as Microsoft® Excel or Wonderware InTouch®.

Bundled software (CD-ROM)

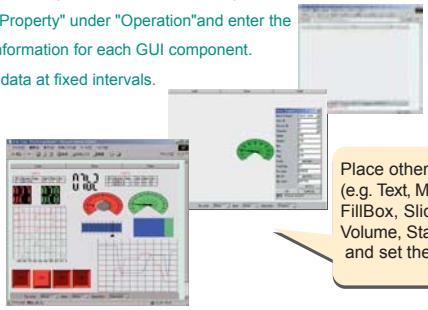
- Windows® device module access library API - CAP(W32)[CD - ROM]
[Software] P.13~15
- DDE, SuiteLink Server FIT-SVR(W32)
Supported OS: Windows® XP/2000/NT40 (SP5 or upper)/Me/98
- Utility software
For setting up nodes and updating firmware
Supported OS: Windows® XP/2000/NT40 (SP5 or upper)/Me/98

Item	Specification	
	SVR-IOA2(FIT)GY	SVR-IOA(FIT)GY
CPU	SH4 240MHz SH3 100MHz	
Memory	Flash ROM:4Mbyte(32Mbit) SDRAM:32Mbyte(256Mbit) EDO	Flash ROM:1Mbyte(8Mbit) DRAM:2Mbyte(16Mbit)
Interface (to host)	100BASE-TX / 10BASE-T I/F	100BASE-TX / 10BASE-T I/F
Reponse Speed	Approx 1msec	Approx 2msec
Power Voltage	5VDC ±5% 2-piece power input connector (removable) located on the front Use of F&eIT Series dedicated power supplies or third-party stabilizing power supply recommended	
Power Consumption	0.7A(max)	0.5A(max)
FG Terminal	FG terminal equipped for the power input connector	
Operating Temperature/Humidity	0 to 50ºC, 10 to 90% RH (no condensation)	
Dimensions (mm)	25.2(W) × 64.7(D) × 94.0(H) (Exclusive of protrusions)	
Weight	100g	

Programless Web Monitoring

Provided with a Web server (Java applet) function, this unit assists with monitoring and updating I/O information from remote sites using a web browser. GUI components such as graphs, sliders and buttons (standard features) are user configurable on the viewing screen. All aspects of set-up can be completed via web browser - from design to implementation, from screen configuration to the linking of I/O information.

① Select GUI components from "Item" and place them in the screen.
② Select "Property" under "Operation"and enter the target information for each GUI component.
③ Update data at fixed intervals.

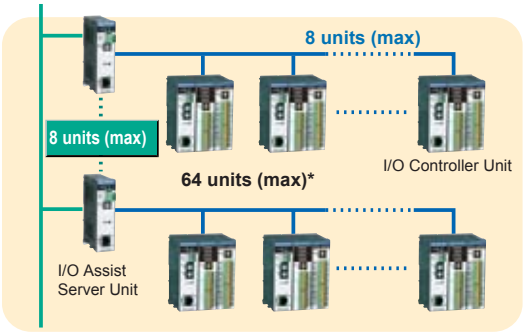


Place other GUI components (e.g. Text, Meter, Graph, Tchart, FillBox, Slider, Switch, Seg7, Volume, Status) as necessary and set the parameters.

Monitoring & Control Server SVR-MMF2(FIT), with advanced functions is also available. In addition to Web monitoring, this model can achieve complete remote monitoring and control with arithmetic operations on input data, data output according to conditional branches, alarm notification by e-mail, logging and other features.
[Monitoring & Control Server] P.17

Number of Units that can be installed

The SVR-IOAx(FIT)GY can coordinate and manage up to eight CPU-CAx(FIT)GYs. Up to eight SVR-IOAx(FIT)GYs can be installed within the same IP segment allowing a total of 64 CPU-CAx(FIT)GYs in the same installation.



* Number of installed CPU-CAx(FIT)GYs when eight SVR-IOAx(FIT)GYs are installed.

Monitoring & Control Server

◎ Remote monitoring and control of *F&eIT* and PLCs - No programming needed

Manual and Sample Program Included

- Manual and sample program can be found on the included CD.
- Monitoring samples / Task programming samples can be uploaded to SVR-MMF2(FIT) for use.

Installation on DIN rail

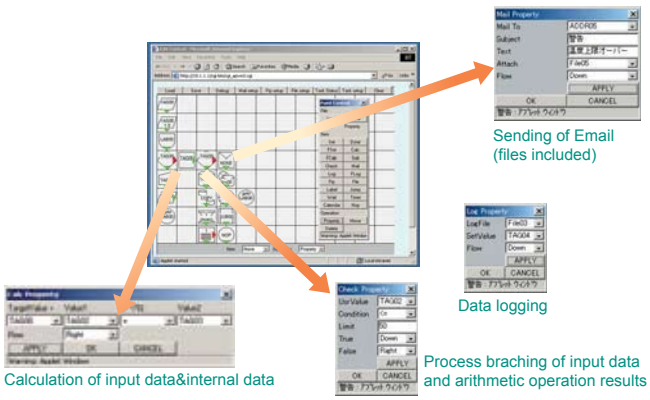
This programmable Server Unit is provided with multiple functions including a Web server that can remotely monitor and update I/O information as well as task scripting, logging and e-mail transmission. Designed for easy operation and development through web browser.

Web Monitoring

Preloaded with a Web server (Java applet) function, the SVR-MMF (FIT)GY enables monitoring and updating of I/O information from remote sites using a web browser. GUI components(such as graphs, sliders and buttons) and imported image data can be user formatted on the display. All aspects of setup, from screen configuration to linking with the I/O information can be completed using a web browser.

Web Task Script

By combining such tasks as arithmetic operation, conditional branches, data output, e-mail transmission and data logging, execution processes and tasks can be set up much like a flowchart. All steps can be completed using a Web browser.



Sending of Email (files included)

Data logging

Calculation of input data&internal data

Process braching of input data and arithmetic operation results

Wide Range of Supported Devices

- Up to eight device modules can be stacked.
- I/O Controllers and I/O Assist Servers can be linked over the network.
- The unit can be linked to PLCs on the network or connected by the RS-232C serial interface.

Message Communication Function

- Up to four serial communication devices [COM-2(FIT)GY or COM-1PD(FIT)GY] can be stacked. (RS-232C supports 8 ports, RS-422A supports 4 ports)
- Up to 10 links can be connected when using serial communication and Ethernet (TCP/UDP) devices.
- Communication is set up using Web task script.

Monitoring & Control Server Unit

SVR-MMF2(FIT) CE

Power Supply Optional. [Power Supplies] P.11

Item		Specification
CPU		SH-4 240MHz
Memory		Flash ROM: 8Mbyte (64Mbit) SDRAM: 64Mbyte (512Mbit)
LAN	I/F	Ethernet 100BASE-TX/10BASE-T RJ-45 connector
	Controller	[National Semiconductor] 10/100BASE-TX controller DP83815 Sending: 2Kbyte, Receiving: 2Kbye, built in Buffer Full-Duplex compliant
F&eIT I/F		F&eIT stacking interface
Connectable devices		8 units (max) *1
Module connection method		Direct connection from side and fixed with equipped locking system. Includes all connecting parts
RTC		Lithium backup battery life: 10 years or more at 25°C Real time clock precision error: within ±1 minutes per month
Rated input voltage		5VDC ±5%; 2-piece power input connector (removable) located on the front; Use of F&eIT Series dedicated power supplies or third-party stabilizing power supply recommended
Power Consumption		0.5A (max) *2 (Exclusive of the current comsumption to device units)
FG terminal		FG terminal equipped for the power input connector
Dimensions (mm)		25.2(W) × 64.7(D) × 94.0(H) (Exclusive of protrusions)
Weight		100g

*1: The total maximum power consumption by each module can not exceed the rated output current of the power supply unit.
*2: The stack connector supplies the power to each device module. Supplied power can not exceed the permissible current of a stack connector (max 3.0A).

Supported PLCs

Mitsubishi Co., Ltd.
- MELSEC-Q series
- MELSEC-A series
- MELSEC-QnA series

Omron Co., Ltd.
- SYSMAC-CS/CJ series

Yokogawa Co., Ltd.
- FA-M3 series

Siemens Co., Ltd.
- SIMATIC S7-300 series
- SIMATIC S7-400 series

Rockwell Automation (Japan) Co., Ltd.
- Compact Logix series

e-mail Transmission

The e-mail transmission function allows alarm information or stored files to be sent to the administrator.

e-mail Reception

Tasks can be confirmed via e-mail.

PPP Server Dial-up Connection

Operation and data transfer can be done over PSTN network from an external host by utilizing the PPP server function. Dial-up function allows this unit to access the internet.

SNMP Agent

SNMP agent function provides integrated management by using network management software.

Security Server Unit

◎Ultra-compact, Easy-handling Firewall Router for Embedded Use

Installation on DIN rail

This ultra-compact and easy-handling firewall router, designed for embedded use, prevents illegal offsite access. This router is suited for use not only with the F&eIT Series but also to provide virtual segmentation of PLCs and other industrial equipment or to provide Internet access to your network.

Security Server Unit

SVR-SEC(FIT)GY CE

Power Supply Unit is optional. [Power Supply] P.11

Firewall Function

Security Server prevents unauthorized outside access.

Port Forward Function

By dividing up the host that performs data transmission according to individual applications, concentrated communication loads can be distributed as needed.

NAT (Address Translation) Function

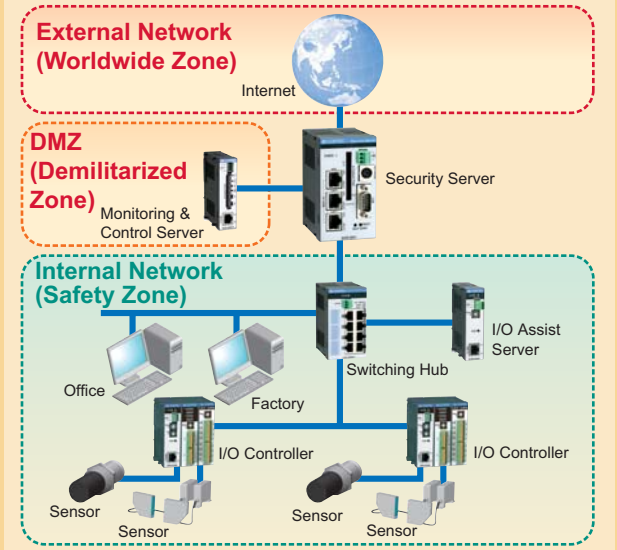
The Security Server is provided with a port address translation function from private addresses to a single public address to ensure protection from illegal accessing.

Simple Setting

Various security settings can be set up easily on a Web browser.

Configuration Example

■ Unauthorized outside access is prevented by setting communication permissions on each port.



Item		Specification
Interface	Ethernet Port (WAN,LAN1,LAN2)	100BASE-TX/10BASE-T RJ-45 connector ×3
	Serial Port (PPP)	RS-232C 9-pin D-sub connector × 1
Internet Connection Function		Ethernet port (DHCP or fixed IP), dial-up (serial port)
NAT Filter Function		Designated phase, IP address/mask, protocol, port number and interface
Port Forward Function		Designate IP address, protocol, and port number
Administrative Functions		DHCP client (WAN side), DHCP server (LAN side), Administrative Functions PPP server (serial port), SNMP agent, backup/restore of configuration information
Routing Function		Internal network, external network, routing of DMZ
Prevention of Unauthorized Operation		Management by user name and password
Monitoring Function		Refer to logs on Web browser
VPN Function		None
Number of Accessible Local PCs		Unlimited
Max.Number of Simultaneous Sessions		Max. 9000
Supported Protocol		TCP-IP/UDP-IP (protocol can be registered)
Dimensions (mm)		52.4(W) × 64.7(D) × 94.0(H) (Exclusive of protrusions)
Power Consumption		5VDC±5% 1.5A
Weight		200g

Condition			Requirement
Environment Specifications	Operating Temperature		0º to 50ºC
	Storage Temperature		-10º to 60ºC
	Operating humidity		10 to 90% RH (no condensation)
	Airborne Dust Particles		Normal
	Corrosive Gas		Not allowed
	Noise Resistance	Line Noise	AC line/2 kV, signal line/1 kV (IEC1000-4-4Level 3,EN61000-4-4Level 3)
	Grouding		D type (former Class 3)

PLC Link Server

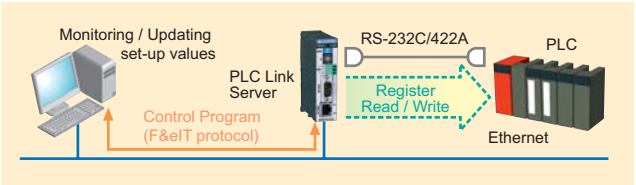
◎ For monitoring & updating remote PLCs via Intranet / Internet

The SVR-PLCLx(FIT)GY can monitor and update the internal register information of PLCs from any computer on the network. It can also monitor the status of remote PLCs and update their setup via intranet or internet.

PLC Link Server Unit

RS-232C **SVR-PLCLC(FIT)GY** CE

RS-422A **SVR-PLCLD(FIT)GY** CE



Supported PLCs

PLC for Mitsubishi [MELSEC-Q series]

Link unit	QJ71C24 (Supported protocol: 4C Frae, form 4) QJ71C24-R2 (Supported protocol: 4C Frae, form 4)
CPU unit	Q00, Q00J, Q01, Q02, Q02H, Q06H, Q12H, Q25H

Media Converters

◎Easily extend communication distance and configure wireless networks

- RS-232 / RS-422 serial communication protocol is converted to wired or wireless LAN.
- Choice of three operation modes to suit your specific needs.

Serial⇔Ethernet

* RP-COM(FIT)H

communication distance is more than 15m

Installation on DIN rail

RS-232C Media Converter (Wired LAN)

RP-COM(FIT)H CE
10-30VDC Type

RP-COM(FIT)H-AF CE
5VDC / Power-over-Ethernet Type

Windows Driver | AC Adapter

- [RP-COM(FIT)H]
  Voltage range: 10~30VDC standard power supplies.
- [RP-COM(FIT)H-AF].
  IEEE802.3AF-compliant device. Power can be supplied via LAN cable.
- COM-2(FIT)GY and COM-1PD(FIT)GY can be interconnected via stack connectors up to 3 devices (max).
- DHCP Client function.

RS-422A Media Converter (Wired LAN)

RP-422(FIT)GY CE

Windows Driver | AC Adapter

Serial⇔ Wireless LAN

* FX-DS540-COM2

Easy wireless network

RS-232A Media Converter (Wireless LAN)

FX-DS540-COM2 (Currently this model can be used in Japan only.)

Windows Driver | AC Adapter

RS-422A Media Converter (Wireless LAN)

FX-DS540-422 (Currently this model can be used in Japan only.)

Windows Driver | AC Adapter

[Device Modules] P.08~11
[Power Supplies] P.11
[Software] P.23

GPIB Communication Media Converter

GPIB ⇔ Ethernet

Windows Driver | AC Adapter

- GPIB communication protocol is converted to Ethernet.
- GPIB communication devices can be remote -controlled on a Windows®PC over Ethernet.
- Unconstrained by GPIB standards, communication can be extended up to the maximum length allowed on Ethernet.

RP-GPIB(FIT)GY CE

* The AC adapter provided is for 100 VAC only. To use in a DC power environment, use the DC-DC Power Supply Unit (sold separately).

[Power Supplies] P.11
[Software] P.23

Wireless Access Point / Station

Wired ⇔ Wireless LAN

AC Adapter

- You can install Wireless LAN just by connecting cables.

IEEE802.11b/g **FX-DS540-APDL2**
IEEE802.11a
J52 W52 W53

IEEE802.11b/g **FX-DS540-STDL2**
IEEE802.11a
J52 W52 W53

- Devices with a wired Ethernet communication port can be converted to wireless - independent of OS or protocol.
- The unit can be used as an access point for small-scale wireless LAN systems.
- A UTP cable power supply (sold separately) is available.

Please see the next page for the Media Converters' specifications and software.

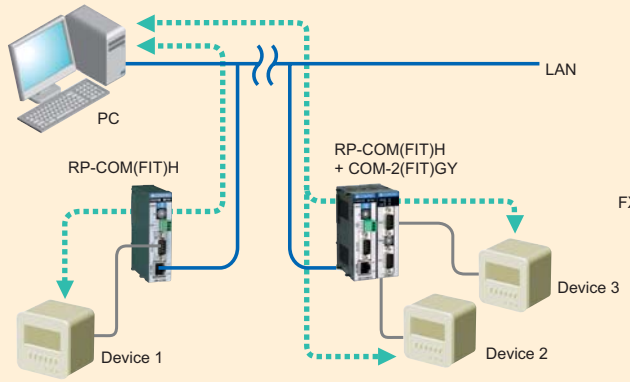
Three operating modes

Add a COM port by LAN to your PC
Virtual COM Mode

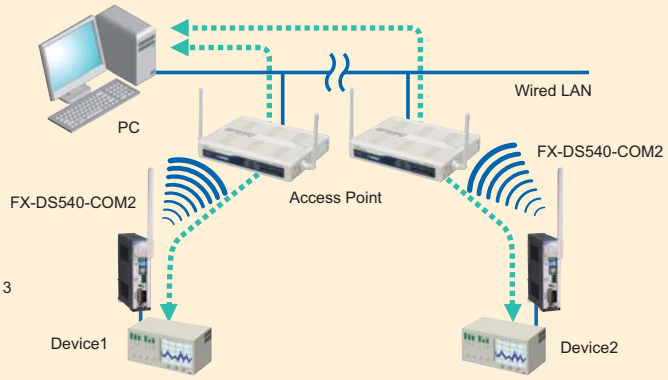
Windows Vista
Windows XP
Windows 2000
Windows Me/98

In a Windows® environment Virtual COM Mode allows the device to function as a standard COM port. When connected via Ethernet, remote devices can be operated as if they were directly connected to PC. Also supports access via socket communication.

You can add or expand PC COM ports by connecting wired / wireless LAN.



● Serial communication modules [COM-2(FIT)GY, COM-1PD(FIT)GY] can be connected up to 3 devices (max).

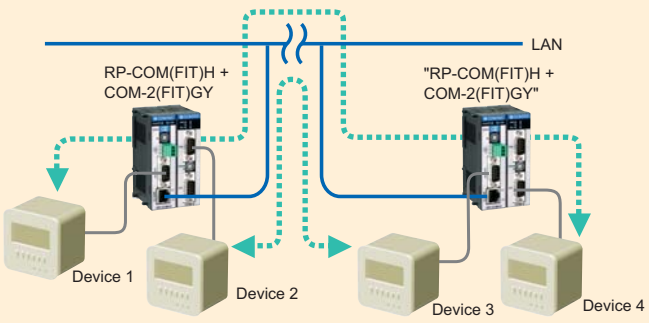


● Devices also support the ad-hoc mode that utilize access points.

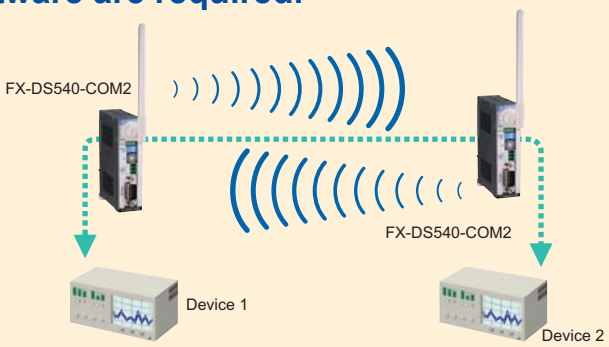
Convert your Serial connection
Transparent Mode

In Transparent Mode data from connected devices is transferred as it is. Serial cables can be replaced with ethernet cables without changing communication software settings. Up to 254 (max) devices can be installed in the same system.

No re-configuration of hardware or software are required.



● Up to 3 (max) serial communication modules [COM2(FIT)GY, COM-1PD(FIT)GY] can be connected via stack connectors.
● Devices connected via a stack connector can not communicate with each other. [For example, in the above diagram, Device 1 can ONLY communicate with Device 3 or Device 4 NOT Device 2. As drawn, Device 1 is communicating with Device 4 and Device 2 is communicating with Device 3.]



● Devices also support the infrastructure mode without the need for access points.

N-to-N packet communication using dedicated commands
Modem Mode

This mode is used for creating communication programs and conducting packet communications using dedicated commands. You can conduct communications to multiple units (N-to-N) by appending packets with the device ID. 254 units can be installed on the same line.

● Producing programs for control, communicating with several devices of the same type.
● Serial communication modules [COM-2(FIT)GY, COM-1PD(FIT)GY] can be connected 3 devices (max) with stack connectors.

Media Converter Options [RP-COM(FIT)H, RP-COM(FIT)H-AF]

Serial Communication Modules

RS-232C 2ch	COM-2(FIT)GY
RS422A/485 1ch	COM-1PD(FIT)GY

POA201-10
(Visually the same as POA200-20)

POW-CB30(af)

POW-CBM4(af)

AC Adapter Power Supplies

12VDC, 1A output [for RP-COM(FIT)H]	POA201-10
5VDC, 2A output [for RP-COM(FIT)H-AF]	POA200-20

PoE Power Supplies [RP-COM(FIT)H-AF]

Power Supply with UTP Cable	POW-CB30(af)
Multi-port (4) Power Supply HUB	POW-CBM4(af)

Media Converters

Serial ⇔ Ethernet Media Converter

Model		RP-COM(FIT)H	RP-COM(FIT)H-AF	RP-COM(FIT)GY
Serial	Standard	RS-232C		
	Data Speed	300~921,600bps		
	Connector	9-pin D-sub M (male type)		
Wire LAN	Standard	IEEE802.3 (10BASE-T) / IEEE802.3u (100BASE-TX)	IEEE802.3 (10BASE-T) / IEEE802.3u (100BASE-TX) / IEEE802.3af (PoE)	IEEE802.3 (10BASE-T) / IEEE802.3u (100BASE-TX)
	Data Speed	10/100Mbps		
	Access Mode	CSMA/CD		
	Transmission Format	Half Duplex / Full Duplex		
	Available Ports	1 (10BASE-T / 100BASE-TX)		
Power Supply		10 to 30 VDC ±5% (AC Adapter purchased separately)	5VDC ±5% (AC Adapter purchased separately)	5VDC ±5% (AC Adapter included)
Power Consumption		12VDC 0.2A, 24VDC 0.1A	0.4A (max)	0.5A (max)
Expansion Module		RS-232C 2ch add-on: COM-2(FIT)GY RS-422A/485 1ch add-on: COM-1PD(FIT)GY Up to 3 (max) COM-2(FIT)GY or COM-1PD(FIT)GY can be interconnected		-
Dimensions (mm)		25.2(W) × 64.7(D) × 94.0(H) (Exclusive of protrusions)		
Weight		100g		

Serial ⇔ Wireless LAN Media Converter

Model		FX-DS540-COM2	FX-DS540-422
Serial	Standard	RS-232C	RS-422A
	Data Speed	300~921,600bps	
	Connector	9-pin D-sub M (male type)	
Wireless LAN IEEE802.11a	Standard	IEEE802.11a-compliant OFDM (Orthogonal Frequency Division Multiplexing) method	
	Channels	12ch (34,38,42,46ch[J53]; 36,40,44,48ch[W52]; 52,56,60,64ch[W53])	4ch (32, 38, 42, 46)
	Data Speed *1	54, 48, 36, 24, 18, 12, 9, 6Mbps (Auto/Fixed)	
	Access Mode	CSMA/CA + ACK (RTS/CTS)	
	Wireless LAN category	Low-power Data Transmission System (5.150~5.350GHz)	
	Aerial Power	10Mw/MHz or less	
	Security	WEP, WPA(AES,TKIP), WPA-PSK(AES,TKIP), WSL[can be used simultaneously]; IEEE802.1X	WEP (64/128/152Bit) or AES (128Bit)/WSL (Original Code) [can be used simultaneously]
Wireless LAN IEEE802.11b	Standard	IEEE802.11b-compliant DSSS (Direct Sequence Spread Spectrum) method	
	Channels	14ch (1~14)	
	Data Speed *1	11, 5.5, 2, 1Mbps (Auto/Fixed)	
	Access Mode	CSMA/CA + ACK (RTS/CTS)	
	Wireless LAN category	Low-power Data Transmission System (2.4~2.497GHz)	
	Aerial Power	10Mw/MHz or less	
	Security	WEP, WPA(AES,TKIP), WPA-PSK(AES,TKIP), WSL[can be used simultaneously]; IEEE802.1X	WEP (64/128/152Bit) or AES (128Bit)/WSL (Original Code) [can be used simultaneously]
Wireless LAN IEEE802.11g	Standard	IEEE802.11a-compliant OFDM (Orthogonal Frequency Division Multiplexing) method	
	Channels	13ch (1~13)	
	Data Speed *1	54, 48, 36, 24, 18, 12, 9, 6Mbps (Auto/Fixed)	
	Access Mode	CSMA/CA + ACK (RTS/CTS)	
	Wireless LAN category	Low-power Data Transmission System (2.4~2.835GHz)	
	Aerial Power	10Mw/MHz or less	
	Security	WEP, WPA(AES,TKIP), WPA-PSK(AES,TKIP), WSL[can be used simultaneously]; IEEE802.1X	WEP (64/128/152Bit) or AES (128Bit)/WSL (Original Code) [can be used simultaneously]
Expansion Module		RS-232C 2ch add-on: COM-2(FIT)GY RS-422A/485 1ch add-on: COM-1PD(FIT)GY Up to 3 (max) COM-2(FIT)GY or COM-1PD(FIT)GY can be interconnected	-
Dimensions (mm)		25.2(W) × 64.7(D) × 94.0(H)(Exclusive of protrusions)	81(W) × 26.5(D) × 175(H)
Weight		110g	200g

*1: Represents Wireless LAN specifications, not actual data speed.

GPIB ⇔ Ethernet Media Converter

Model		RP-GPIB(FIT)GY
GPIB	Standard	IEEE-488.1, IEEE-488.2
	Mode	Master Mode only
	Number of channels	1ch
	Data Speed	Sending: 18Kbyte/sec, Receiving: 10Kbyte/sec
	Data type	8 parallel lines, 3 handshake lines
	Signal Logic	Negative Logic: <L level> 0.8V or less, <H level> 2.0V or more
Wire LAN	Standard	IEEE-802.3 (10BASE-T)
	Data Speed	10Mbps
	Access Mode	CSMA/CD
	Transmission Format	Half Duplex / Full Duplex
	Available Ports	1 (10BASE-T / 100BASE-TX)
Power Supply		5VDC ±5% (AC Adapter included)
Power Consumption		0.6A (Max.)
Dimensions (mm)		50.4(W) × 64.7(D) × 94.0(H) (Exclusive of protrusions)
Weight		190g

Wired ⇔ Wireless LAN Media Converter

Model		FX-DS540-COM2	FX-DS540-422
Wired LAN	Standard	IEEE802.3 (10BASE-T) / IEEE802.3u (100BASE-TX)	
	Data Speed	10/100Mbps	
	Access Mode	CSMA/CD	
	Transmission Format	Half Duplex / Full Duplex	
	Available Ports	1 (10BASE-T / 100BASE-TX)	
Wireless LAN IEEE802.11a	Standard	IEEE802.11a-compliant OFDM (Orthogonal Frequency Division Multiplexing) method	
	Channels	8ch (36,40,44,48ch[W52]; 52,56,60,64ch[W53])	12ch (34,38,42,46ch[J53]; 36,40,44,48ch[W52]; 52,56,60,64ch[W53])
	Data Speed *1	54, 48, 36, 24, 18, 12, 9, 6Mbps (Auto/Fixed)	
	Wireless LAN category	Low-power Data Transmission System (5.150~5.350GHz)	
Wireless LAN IEEE802.11b	Standard	IEEE802.11b-compliant DSSS (Direct Sequence Spread Spectrum) method	
	Channels	14ch (1~14)	
	Data Speed *1	11, 5.5, 2, 1Mbps (Auto/Fixed)	
	Wireless LAN category	Low-power Data Transmission System (2.4~2.497GHz)	
Wireless LAN IEEE802.11g	Standard	IEEE802.11a-compliant OFDM (Orthogonal Frequency Division Multiplexing) method	
	Channels	13ch (1~13)	
	Data Speed *1	54, 48, 36, 24, 18, 12, 9, 6Mbps (Auto/Fixed)	
	Wireless LAN category	Low-power Data Transmission System (2.4~2.4835GHz)	
Common to all Wireless LAN	Access Mode	CSMA/CA + ACK (RTS/CTS)	
	Aerial Power	10Mw/MHz or less	
	Security	WEP(64/128/512Bit), WPA(AES)(128Bit), WPA(TKIP)(256Bit), AES-OCB(128Bit) / WSL(Original Code) [can be used simultaneously], MAC Address filter link *2, IEEE802.1X supplicant *3	
Dimensions (mm)		81(W) × 26.5(D) × 175(H)	
Weight		200g	

*1: Represents Wireless LAN specifications, not actual data speed. *2: FX-DS540-APDL2 only. *3: FX-DS540-STDL2 only.

Media Converter Software

Software for Serial Communication Media Converter — Included on CD-ROM

Utility programs on disk include device setup and virtual COM port drivers for Windows®.
To address specific application needs the Serial Communication Media Converters can operate in 3 different modes.

[Virtual COM Mode]

- When operating in a Windows® environment, the included COM port drivers allow CONTEC's Serial Communication Media Converters to be used as standard COM ports.
- 32 ports (max) can be added via Serial Communication Media Converters.
- Device supports Windows® standard Win32 API Communication Functions such as CreatFile(), WriteFile(), ReadFile(), SetCommState(), etc.

[Modem Mode]

- Mode has a CONTEC designed protocol that uses modem command.
- Can send or receive data from all Serial Communication Media Converter devices that are installed in the system through the host PCs onboard COM [RS-232C] port.
- Communication can be conducted to multiple units (N-to-N) by appending packets with the device ID.

[Transparent Mode]

- By connecting two Serial Communication Media Converter modules, the length of the RS-232C LAN -> RS-232C cables can be extended.
- When an RP422(FIT)GY and FX-DS540-422 are assembled as a set they can be used as an RS-232C-422 level converter.

Latest version can be downloaded from CONTEC's website.

Features

- Allows user to extend cable length, add standard serial port and save on serial communication wiring.
- COM port number can be changed via communication application when used as a standard COM port [Virtual COM Mode].
- Offers both Hardware Overflow Control (such as RTS / CTS) and Software Flow Control (XON / XOFF).
- Systems can be configured using the wireless COM device.
- Monitoring of device setup status and board operation status supports SNMP agent and MIB.

Specifications

Supported OS

Virtual COM Mode	Modem Mode	Transparent Mode
· Windows Vista · WindowsXP · Windows 2000 · Windows me · Windows 98	· All OS	· All OS

- When operating in a Windows® environment Virtual Mode setup uses UDP protocol and COM drivers available for download from CONTEC's website. This software can also be used with any environment that utilizes API communication.

Supported Hardware

Wired Devices
RP-COM(FIT)H, RP-COM(FIT)H-AF, RP-422(FIT)GY

Wireless Devices
FX-DS540-COM2, FX-DS540-422

Software for RP-GPIB(FIT)GY [API-RPGIB(W32) — Included on CD-ROM

The driver software is used for the control of CONTEC GPIB Communication Media Converter Series when used in a Windows® environment.
This software can be used with programming languages the support Win32 API functions (such as Visual Basic, Visual C++) giving the end-user sufficient options to create a program for their unique application.

Latest version can be downloaded from CONTEC's website.

Features

- GPIB controller is IEEE-488 and IEEE-488.2 compliant.
- Setup is done via software.
- 3-line handshake ensures reliable data transfer between devices with different rates.
- IConversion of GPIB signal to LAN eliminates the cabling length restrictions.
- Up to 4 devices (max) can be used in the same system.

*1: Slave Mode is not supported.

Specifications

Supported OS

· Windows Vista · Windows XP
· Windows Me · Windows 2000
· Windows 98
* The software also supports a english version.

Supported Languages

· Visual Basic 6.0 · Visual C++ 6.0

Supported Hardware

RP-GPIB(FIT)GY

From Factory Floor to Corporate Offices, CONTEC Provides Integrated Solutions with Expanding Potential.

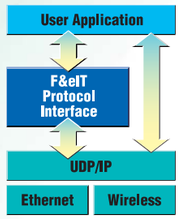
F&eIT®

The broadly spread of the Internet has resulted in networks springing up in a wide range of fields. This, in turn, has resulted in the appearance of many information devices that make use of this infrastructure. Yet, it is a fact that interconnectivity - the greatest advantage of networks - is not being used to its fullest. CONTEC sees networks as a prime part of the system bus concept and has developed distributed monitor & control networks that organically integrate various applications from corporate offices through to field applications.

Technology

Ideal Network Protocol - "F&eIT Protocol"

"F&eIT Protocol" is an original communication protocol used with Contec's UDP/IP-based F&eIT Series."UDP/IP" is often used in combination with TCP/IP, and requires simpler communication procedures. This high-speed protocol is ideally suited for use in networks that require realtime operation. However, with connectionless protocols, there is a problem of reliability since arrival of incoming data is not confirmed. CONTEC has resolved this problem by adding a response confirmation process to the upper layer of UDP/IP. The result is the "F&eIT Protocol" featuring speed, real-time operation and reliability; proving to be an ideal protocol for industrial device networks.

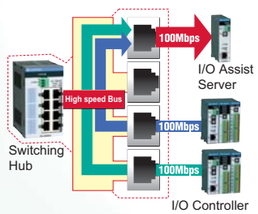


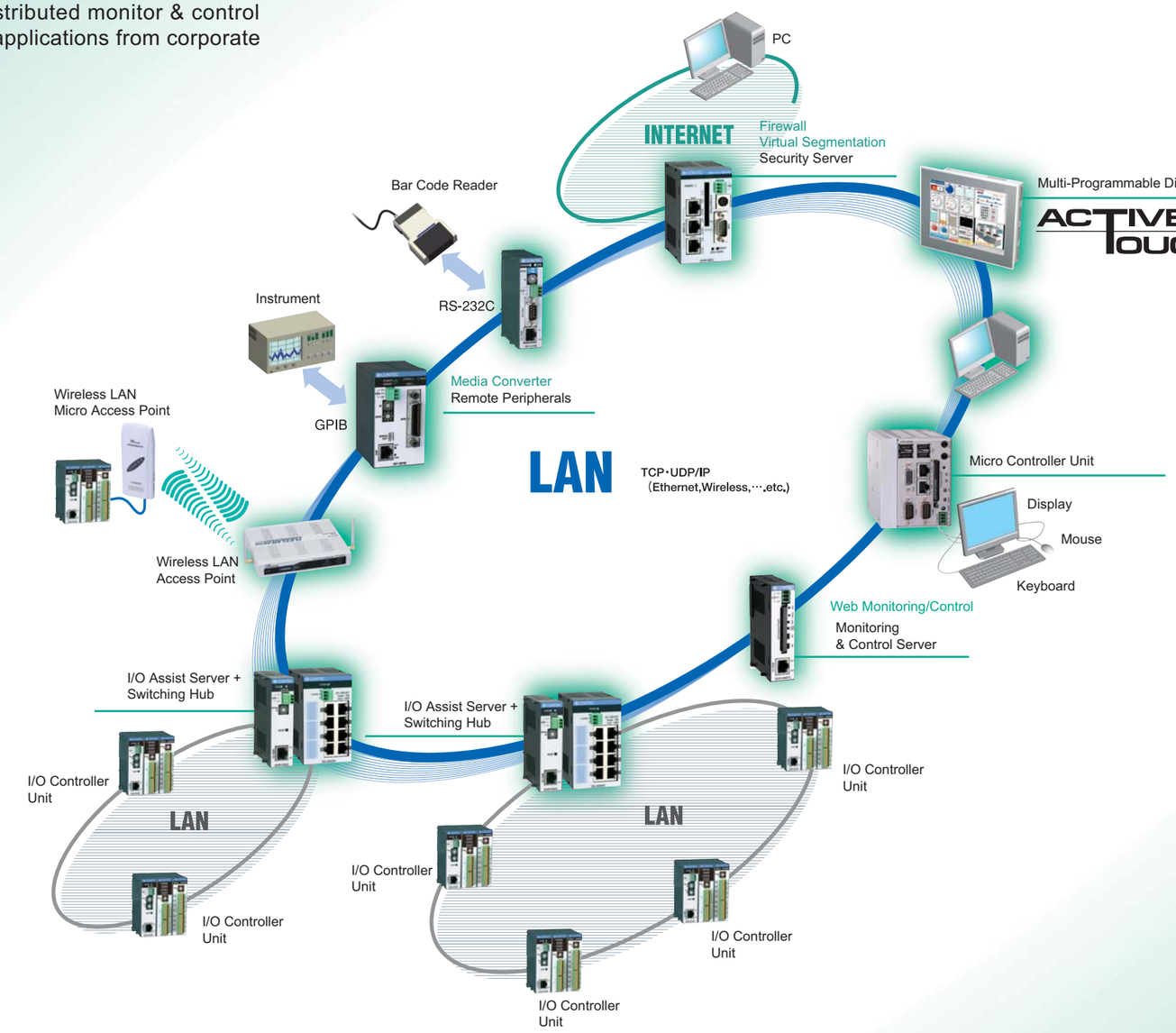
Open Architecture

As an open architecture, F&eIT protocol enables compatible units to be controlled not only by dedicated Win32API functions but also general-purpose socket functions on other operating systems. F&eIT Bus, the system bus that establishes the connection between device modules is also based on an open architecture. It allows users to develop their own original device modules.

Stable Cyclic Time

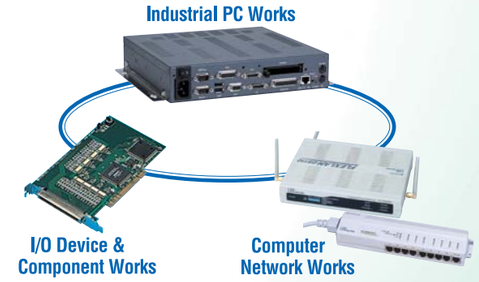
Data collisions and delays in Ethernet communication are a bottleneck for the real-time operation that is required in industrial networks. CONTEC's high-speed switching technology solves this problem.For example, packets sent from multiple I/O Controller Units will be routed at high speed by the internal bus on the switching hub before they are transferred to an I/O AssistServer or other target node. The result is a short and stable cyclic time with no data collisions.





Compilation of CONTEC

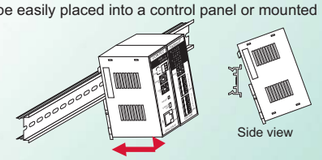
Over the years, CONTEC has developed products in the fields of industrial computers, instrumentation/control components and computer networks.
The F&eIT Series fully incorporates CONTEC's expertise, achieving the essential features of speed, reliability, maintenance and energy savings in industrial systems.



Easy & Flexible

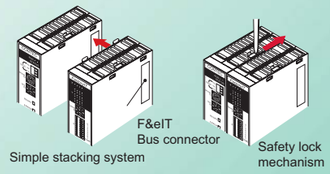
Equipped with 35 mm DIN Rail Mounting Mechanism

F&eIT Series components are equipped with a mechanism for mounting onto general-purpose 35 mm DIN rail.
As a result, they can be easily placed into a control panel or mounted on a case. They can also be mounted on and removed from a DIN rail using only a flathead screwdriver.



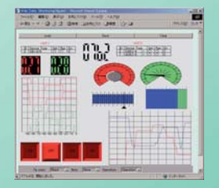
F&eIT Bus - Simple Stacking Method Eliminates the Need for a Backplane

This simple stacking mechanism requires no backplane and allows for easy expansion of I/O interfaces for I/O Controller Modules or Micro Controller Units.F&eIT Bus also uses a secure design with a safety lock to prevent accidental disconnection.



Programless Web Remote Monitoring and Control

The I/O Assist Server and Monitoring & Control Server are provided with a Web server function that can be configured using standard GUI parts. This allows you to configure a remote monitoring/control system that uses a Web browser without the aid of a program.



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