

USB SERIES



D-02 Digital I/O Modules

D-03 Analog I/O Modules

D-04 Counter Modules

D-05 RS-232C Serial Interfaces

USB

Seven companies of USB (Universal Serial Bus), such as U.S. Intel, U.S. Microsoft, and NEC, are the standard of the serial interface for personal computers upon which took the lead and it decided. In USB, since a maximum of 127 apparatus is connectable with host computers, such as a personal computer, through a hub, extension of the apparatus which is not restricted to the number of expansion bus slots is possible. There are 12Mbps (full speed mode) and 1.5Mbps (low speed mode) in data transmission speed, and it corresponds also to 480Mbps (high speed mode) in "USB2.0."



Features

USB is equipped with the hot plug function which can perform extraction and insertion of a connector, with the Plug & Play function, the personal computer, and apparatus turned on which can be immediately used only by connecting. Moreover, since utility * which enables use by development environmental [in an exclusive driver or Windows] (with sample program) * and programless is appended, the USB correspondence product of our company can be introduced, and it can be used immediately. * Remove COM-4 (USB).

Exclusive driver software appended

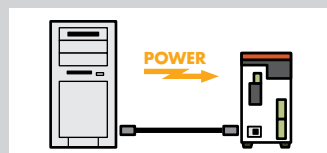
Standard appending of the exclusive driver software "API-USBP (WDM)" is carried out at digital I/O, analog I/O, and counter products. The substantial sample program, help, diagnostic program, and the application development that offered various utilities and used the USB correspondence product are powerfully supported as well as a driver.

Bus power / Self power Power supplying

There are 2 types of power supply supported which one is from PC and from the unit itself. There is self power which performs supply in the power supply form of USB from the bus power line which performs power supply from a personal computer, and apparatus itself. The USB correspondence product of our company corresponds to bus power and self power.

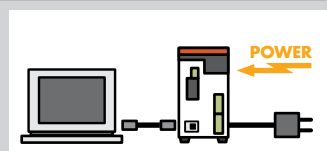
Bus power

It can be used only by connecting a bus power USB cable.



Self power

It is effective to stop the power consumption of the computer of battery drives, such as a self power notebook PC.



Digital I/O Module for USB

Opto-Isolated Digital Input Module (USB Cable attached)

DI-16(USB)GY

NEW



Input 16 Isolated

API function library attachment [API-USBP(WDM)]

*1:When using an extension module, since current consumption may exceed 500mA.

- FEATURES**
- Trigger monitoring function on board
 - The system incorporates a screwless connector plug that allows you to easily attach and detach wires without using any special tools
 - Extension of the input channels by the extension module is possible (maximum: three sets)
 - 35mm DIN rail attachment is adopted
 - The sample software which supports development, and convenient utility software to debug are appended to the product

Hardware Specification

Inputs channels	16
Input type	Opto-Isolated Input (for high sink current output / for current sourcing output)
Input resistance	3kΩ
Response time (Max.)	1msec
Connector	FK-MC 0.5/9-ST-2.5 [PHOENIX CONTACT]

Maximum distance	50m
USB Speed	12Mbps (Full speed), 480Mbps (High speed)
Power consumption (Max.)	+5VDC 450mA*1
Dimensions (mm)	50.4(W) x 64.7(D) x 94.0(H)
Weight	100g
Cable comes with product	USB cable 1.8m

Option

ACX-PAC(W32)BP	ActiveX Component Base Package (Ver.3.1 upper)
ACX-PAC(W32)AP	ActiveX Component Advanced Package (Ver.3.1 upper)
DI-16(FIT)GY	Opto-Isolated Digital Input Module for Extension Inputs channels: 16, Power consumption: +5VDC 150mA(Max.)
POA-AD22	AC adapter (AC in : 90-246V, DC out : 5V 2.0A)
POW-AD13GY	AC-DC Power Unit (AC in : 85-132V , DC out : 5V 3.0A)
POW-AD22GY	AC-DC Power Unit (AC in : 85-264V , DC out : 5V 2.0A)
POW-DD10GY	DC-DC Power Unit (DC in :10-30V , DC out : 5V 3.0A)

Opto-Isolated Digital Output Module (USB Cable attached)

DO-16(USB)GY

NEW



Output 16 Isolated

API function library attachment [API-USBP(WDM)]

*1:When using an extension module, since current consumption may exceed 500mA.

- FEATURES**
- The nominal output is designed to accommodate large capacities, with a maximum of DC 24V and 150 mA per point
 - The system incorporates a screwless connector plug that allows you to easily attach and detach wires without using any special tools
 - Extension of the output channels by the extension module is possible (maximum: three sets).
 - 35mm DIN rail attachment is adopted
 - The sample software which supports development, and convenient utility software to debug are appended to the product

Hardware Specification

Output channels	16
Output type	Opto-Isolated Open Collector Output (current sinking type)
Output rating	+12 - 24VDC 150mA
Response time (Max.)	1msec
Connector	FK-MC 0.5/9-ST-2.5 [PHOENIX CONTACT]

Maximum distance	50m
USB Speed	12Mbps (Full speed), 480Mbps (High speed)
Power consumption (Max.)	+5VDC 450mA*1
Dimensions (mm)	50.4(W) x 64.7(D) x 94.0(H)
Weight	100g
Cable comes with product	USB cable 1.8m

Option

ACX-PAC(W32)BP	ActiveX Component Base Package (Ver.3.1 upper)
ACX-PAC(W32)AP	ActiveX Component Advanced Package (Ver.3.1 upper)
DO-16(FIT)GY	Opto-Isolated Digital output Module for Extension Output channels:16, Power consumption (Max.):+5VDC 150mA(Max.)
POA-AD22	AC adapter (AC in : 90-246V, DC out : 5V 2.0A)
POW-AD13GY	AC-DC Power Unit (AC in : 85-132V , DC out : 5V 3.0A)
POW-AD22GY	AC-DC Power Unit (AC in : 85-264V , DC out : 5V 2.0A)
POW-DD10GY	DC-DC Power Unit (DC in :10-30V , DC out : 5V 3.0A)

Opto-Isolated Digital I/O Module (USB Cable attached)

DIO-8/8(USB)GY

NEW



Input 8 Output 8 Isolated

API function library attachment [API-USBP(WDM)]

*1:When using an extension module, since current consumption may exceed 500mA.

- FEATURES**
- Trigger monitoring function on board (Digital Input)
 - The nominal output is designed to accommodate large capacities, with a maximum of DC 24V and 150 mA per point
 - The system incorporates a screwless connector plug that allows you to easily attach and detach wires without using any special tools
 - Extension of the input/output channels by the extension module is possible (maximum: three sets)
 - 35mm DIN rail attachment is adopted
 - The sample software which supports development, and convenient utility software to debug are appended to the product

Hardware Specification

Inputs channels	8
Output channels	8
Input specification	
Input type	Opto-Isolated Input (for high sink current output / for current sourcing output)
Input resistance	3kΩ
Output specification	
Output type	Opto-Isolated Open Collector Output (current sinking type)
Output rating	+12 - 24VDC 150mA

Response time (Max.)	1msec
Connector	FK-MC 0.5/9-ST-2.5 [PHOENIX CONTACT]
Maximum distance	50m
USB Speed	12Mbps (Full speed), 480Mbps (High speed)
Power consumption (Max.)	+5VDC 450mA*1
Outside Dimensions (mm)	50.4(W) x 64.7(D) x 94.0(H)
Weight	100g
Cable comes with product	USB cable 1.8m

Option

ACX-PAC(W32)BP	ActiveX Component Base Package (Ver.3.1 upper)
ACX-PAC(W32)AP	ActiveX Component Advanced Package (Ver.3.1 upper)
DIO-8/8(FIT)GY	Opto-Isolated I/O Module for Extension Inputs channels:8, Output channels:8, Power consumption:+5VDC 150mA(Max.)
POA-AD22	AC adapter (AC in : 90-246V, DC out : 5V 2.0A)
POW-AD13GY	AC-DC Power Unit (AC in : 85-132V , DC out : 5V 3.0A)
POW-AD22GY	AC-DC Power Unit (AC in : 85-264V , DC out : 5V 2.0A)
POW-DD10GY	DC-DC Power Unit (DC in :10-30V , DC out : 5V 3.0A)

D-02

USB SERIES

Digital I/O Module for USB

Analog I/O Module for USB

Counter Module for USB

RS-232C serial interface for USB

Analog I/O Module for USB

Isolated Analog Input Module (USB cable and AC adapter Attached)

ADI12-8(USB)GY

NEW



Hardware Specification

Inputs channels	8 differential input
Resolution	12bit
Input type	Voltage input (bus signal isolated)
Input Range	±10V, ±5V, 0 - 10V, 0 - 5V
Conversion Speed(Max.)	Channels x 10 μsec + 20 μsec
Buffer memory	256K words
Sampling timer	10 μsec-1,073,741,824 μsec
Connector	FK-MC 0.5/12-ST-2.5 [PHOENIX CONTACT]

USB Speed	12Mbps(Full speed), 480Mbps(High speed)
Power consumption (Max.)	+5VDC 650mA**
Dimensions (mm)	50.4(W)x64.7(D)x94.0(H)
Weight	100g
Attached AC adapter (POA-AD22)	AC90-264V DC5.0V ±5% 2.0A(Max.)
Cable comes with product	USB cable 1.8m

FEATURES

- Built-in buffer memory capable of storing 256K words of conversion data
- By carrying CPU, the periodical sampling is available without load of USB communications process
- The system incorporates a screwless connector plug that allows you to easily attach and detach wires without using any special tools
- Extension of the input channels by the extension module is possible (maximum: three sets)
- 35mm DIN rail attachment is adopted
- The sample software which supports development, and convenient utility software to debug are appended to the product

Option

ACX-PAC(W32)BP	ActiveX Component Base Package (Ver.3.1 upper)
ACX-PAC(W32)AP	ActiveX Component Advanced Package (Ver.3.1 upper)
ADI12-8(FIT)GY	Isolated Analog input Module for Extension Input Channels: 8ch, Resolution: 12bit, Power consumption: +5VDC 350mA(Max.)
POA-AD22	AC adapter (AC in : 90-246V, DC out : 5V 2.0A)
POW-AD13GY	AC-DC Power Unit (AC in : 85-132V , DC out : 5V 3.0A)
POW-AD22GY	AC-DC Power Unit (AC in : 85-264V , DC out : 5V 2.0A)
POW-DD10GY	DC-DC Power Unit (DC in :10-30V , DC out : 5V 3.0A)

Isolated

API function library attachment [API-USBP(WDM)]

*1: Since current consumption is over 500mA, please use AC adapter (Attached) or a power supply unit (Optional).

Isolated Analog Output Module (USB cable and AC adapter Attached)

DAI12-4(USB)GY

NEW



Hardware Specification

Outputs channels	4ch
Resolution	12bit
Output type	Voltage output/Current output (bus signal isolated)
Output Range	±10V, ±5V, 0 - 10V, 0 - 5V (5mA of output current)
Current output	0-20mA
Non-linearity error	Voltage output: ±3LSB, Current output: ±5LSB
Update rate	Voltage output: 10 μsec/ch, Current output: 20 μsec
Buffer memory	256K words
Sampling timer	10 μsec-1,073,741,824 μsec

Connector	FK-MC 0.5/12-ST-2.5 [PHOENIX CONTACT]
USB Speed	12Mbps(Full speed), 480Mbps(High speed)
Power consumption (Max.)	+5VDC 700mA**
Dimensions (mm)	50.4(W)x64.7(D)x94.0(H)
Weight	100g
Attached AC adapter (POA-AD22)	AC90-264V DC5.0V ±5% 2.0A(Max.)
Cable comes with product	USB cable 1.8m

FEATURES

- Cyclically outputs of arbitrary waveform are possible with a 256K-word memory
- The system incorporates a screwless connector plug that allows you to easily attach and detach wires without using any special tools
- Extension of the output channels by the extension module is possible (maximum: three sets)
- 35mm DIN rail attachment is adopted
- The sample software which supports development, and convenient utility software to debug are appended to the product

Option

ACX-PAC(W32)BP	ActiveX Component Base Package (Ver.3.1 upper)
ACX-PAC(W32)AP	ActiveX Component Advanced Package (Ver.3.1 upper)
DAI12-4(FIT)GY	Isolated Analog output Module for Extension Outputs channels:4ch, Resolution:12bit, Power consumption:+5VDC 400mA(Max.)
POA-AD22	AC adapter (AC in : 90-246V, DC out : 5V 2.0A)
POW-AD13GY	AC-DC Power Unit (AC in : 85-132V , DC out : 5V 3.0A)
POW-AD22GY	AC-DC Power Unit (AC in : 85-264V , DC out : 5V 2.0A)
POW-DD10GY	DC-DC Power Unit (DC in :10-30V , DC out : 5V 3.0A)

Isolated

API function library attachment [API-USBP(WDM)]

*1: Since current consumption is over 500mA, please use AC adapter (Attached) or a power supply unit (Optional).

Counter Module for USB

Isolated Counter Module (USB cable and AC adapter Attached)

CNT24-2(USB)GY
NEW

Isolated
API function library attachment [API-USB(WDM)]

*1:When using an extension module, since current consumption may exceed 500mA, please use AC adapter (Attached) or a power supply unit (Optional).

- FEATURES**
- A variety and various counter modes are supported.
 - Count coincidence pulse output
 - Digital filter function on board (0.1-1056.1 μ s)
 - The system incorporates a screwless connector plug that allows you to easily attach and detach wires without using any special tools
 - Extension of the input channels by the extension module is possible (maximum: three sets)
 - 35mm DIN rail attachment is adopted
 - The sample software which supports development, and convenient utility software to debug are appended to the product

Hardware Specification

Channels	2ch
Counting system	24-bit up/down counter (Two-phase/Single-phase/Single-phase with Gate control)
Input type	Opto-Isolated Input (for high sink current output) (Negative logic)
Input signal type	Phase A/UP One x 2ch,
	Phase B/DOWN One x 2ch,
	Phase Z/CLR One x 2ch, General-purpose input One x 2ch
Response frequency	500 MHz (Max.), 50% duty
Connector	FK-MC 0.5/9-ST-2.5 [PHOENIX CONTACT]

USB Speed	12Mbps(Full speed), 480Mbps(High speed)
Expansion function	Low-pass filter, Count coincidence pulse output
Power consumption (Max.)	+5VDC 450mA*
Dimensions (mm)	50.4(W)x64.7(D)x94.0(H)
Weight	100g
Attached AC adapter (POA-AD22)	AC90-264V DC5.0V \pm 5% 2.0A(Max.)
Cable comes with product	USB cable 1.8m

Option

ACX-PAC(W32)BP	ActiveX Component Base Package (Ver.3.1 upper)
ACX-PAC(W32)AP	ActiveX Component Advanced Package (Ver.3.1 upper)
CNT24-2(FIT)GY	Isolated Counter Module for Extension 2ch 24-Bit, Power consumption:5VDC 150mA(Max.)
POA-AD22	AC adapter (AC in : 90-246V, DC out : 5V 2.0A)
POW-AD13GY	AC-DC Power Unit (AC in : 85-132V , DC out : 5V 3.0A)
POW-AD22GY	AC-DC Power Unit (AC in : 85-264V , DC out : 5V 2.0A)
POW-DD10GY	DC-DC Power Unit (DC in :10-30V , DC out : 5V 3.0A)

Extension Module and Power Unit

Opto-Isolated Digital Input Module for Extension DI-16(FIT)GY

- Inputs channels:16
- Power consumption:+5VDC 150mA(Max.)



Opto-Isolated Digital output Module for Extension DO-16(FIT)GY

- Output channels:16
- Power consumption:+5VDC 150mA(Max.)



Opto-Isolated Digital I/O Module for Extension DIO-8/8(FIT)GY

- Inputs channels:8 channels
- Output channels:8 channels
- Power consumption:+5VDC 150mA(Max.)



Isolated Analog input Module for Extension ADI12-8(FIT)GY

- Input Channels:8 differential input
- Resolution:12bit
- Power consumption:+5VDC 350mA(Max.)



Isolated Analog output Module for Extension DAI12-4(FIT)GY

- Outputs channels:4ch
- Resolution:12bit
- Power consumption:+5VDC 400mA(Max.)



Isolated Counter Module for Extension CNT24-2(FIT)GY

- Channels:2ch
- Power consumption:+5VDC 150mA(Max.)



AC adapter POA-AD22

- Input:AC90-264V
- Output:+5VDC 2.0A
- Cable:1.4m

**NOW
PRINTING**

AC-DC Power Unit POW-AD13GY

- Input:AC85-132V
- Output:+5VDC 3.0A



AC-DC Power Unit POW-AD22GY

- Input:AC85-264V
- Output:+5VDC 2.0A



DC-DC Power Unit POW-DD10GY

- Input:DC10-30V
- Output:+5VDC 3.0A


D-04
USB SERIES

 Digital I/O
Module for
USB

 Analog I/O
Module for USB

**Counter
Module for USB**

 RS-232C serial
interface for
USB

RS-232C Serial Interface for USB

4 channels RS-232C Serial Interface COM-4(USB)

FEATURES

- With USB interface, Extension of COM port is possible easily for a notebook PC and etc.
- A maximum of 16 terminals can be used at the same time
- Transmission rate can be set from 50 to 115,200bps by software



RS-232C

Standard COM Driver for Windows XP/2000/NT/Me/98/95 included

■ SPECIFICATIONS

Interface Type	RS-232C (Async.)
Channels	4
Speed	50-115,200bps
Data type	5-8 bits / 1, 1.5, 2 stop bit
Parity check	even, odd, non-parity
Controller	16C654 or equivalent
Interrupt	-
Maximum distance	15m
I/O address	-
Power consumption (Max.)	+5VDC 210mA

Connector	9-pin male D-type DELC-J9PAF-20L9[JAE] or equivalent
Outside Dimensions (mm)	140.0x232.0x33.5
Option	
Software	-
Cables/ Connector	RSS-9M/F, RSC-9F, RSS-25M/9F, RSC-25F/9F, CN5-D9F
Accessories	-

D-05

USB SERIES

Digital I/O
Module for
USB

Analog I/O
Module for USB

Counter
Module for
USB

RS-232C serial
interface for
USB