F&eIT Series Isolated RS-422A/485 1ch
Communication Module
COM-1PD(FIT)GY

The COM-1PD(FIT)GY performs serial communication with an external device in compliance with RS-422A/485, capable of serving as COM3 or COM4 of an F&eIT series microcontroller unit.

The module can also serve as an expansion COM port for a media converter [RP-COM(FIT)H, RP-COM(FIT)H-AF, or FX-DS540-COM2].

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

Features

RS-422A/485 serial communication ports

The communication lines are electrically isolated from the module.

High-speed communication is supported at up to 921,600bps (115,200bps in compatible mode).

A baud rate can be set by software.

The module has 128-byte FIFO buffers for transmit and receive.

Driver software is supplied to allow the serial ports to be used as standard Windows or Linux COM ports. *1

The data transfer mode (full duplex or half duplex) can be set by a switch.

The board includes a 100Ω terminating resistor required for multi-drop (party line) connections.   The resistor can be inserted into the signal line by a switch.

Surge protection is provided for each RS-422A/485 signal line.

Up to three units can be added (at the time of enhanced mode) as expansion ports for micro controller unit. *2

Up to three units can be added as expansion ports for media converters [RP-COM(FIT)H, RP-COM(FIT)H-AF, FX-DS540-COM2].

Similar to other F&eIT series products, the system, in the module itself, incorporates a 35-mm DIN rail mounting mechanism as a standard item.   A connection to a controller module can be effected on a lateral, stack basis in a unique configuration, which permits a simple, smart system configuration without the need for a backplane board.

*1   When using it as the expansion port for micro controller unit
*2   Two units can be added at the time of compatible mode

Packing List

Product [COM-1PD(FIT)GY] ...1
First step guide ... 1
Disk [F&eIT Series Setup Disk] *1 ...1

*1   The CD-ROM contains various software and User's Manual

Specifications

Specifications

Item	Specification
Number of channels	1ch
Interface type	RS-422A/RS-485
Isolation	Bus Isolation
Isolation voltage	1000VDC
Transfer method	Asynchronous serial transfer (Full/Half duplex)
Baud rate*5	2 - 921,600bps *1 *2*5
Data length*5	5, 6, 7, 8 bits 1, 1.5, 2 stop bits *1
Parity check	Even, Odd, Non-parity *1
Controller chip	162850 or equivalent (The module has 128-byte receive and 128-byte transmit FIFO buffers.)
Interrupt requests	1 level use
Power consumption	5VDC 300mA (Max.)
Connecting distance	Within 1200m *3*4
Dimension (mm)	25.2(W) x 64.7(D) x 94.0(H) (No protrusions)
Weight(module itself)	100g
Module connection method	Stack connection by the connector that is provided with the side of module
Module installation method	One-touch connection to 35mm DIN rails. (standard connection mechanism provided in the system)

*1   These items can be set by software.
*2   Data transmission at high speed may not be performed normally depending on the environment including the type of status of connected material of cable and environment.
*3   The table below lists an example of the relationship between baud rate and communication distance.

Communication distance	Baud rate
300m	115,200bps
600m	57,600bps
900m	19,200bps
1200m	9,600bps

Communication cable: 28AWG, double shielded cable, twisted pairs used for each +/- signal line.
*4   The table below lists the maximum communication distances of the terminator resistor value and individual cable diameters.
The terminators on the product (100Ω) and the terminators generally used with RS-422A/485(120Ω) are listed.

Maximum communication distances of the terminator resistor value (100Ω) and cable diameter

Terminator Resistor(Ω)	Cable Diameter	Maximum Communication Distance(m)
100	AWG28	400
	AWG26	700
	AWG24	1100
	AWG22	1200

Maximum communication distances of the terminator resistor value (120Ω) and cable diameter

Terminator Resistor(Ω)	Cable Diameter	Maximum Communication Distance (m)
120	AWG28	500
	AWG26	800
	AWG24	1200
	AWG22	1200

*5   For the "Driver Library API-PAC(W32)" on the supplied CD-ROM, the range is 15 - 921,600 bps.
*6   When stacked in a media converter, the setting(s) depend on the media converter. For detailed specifications, refer to the media converter's instruction manual.
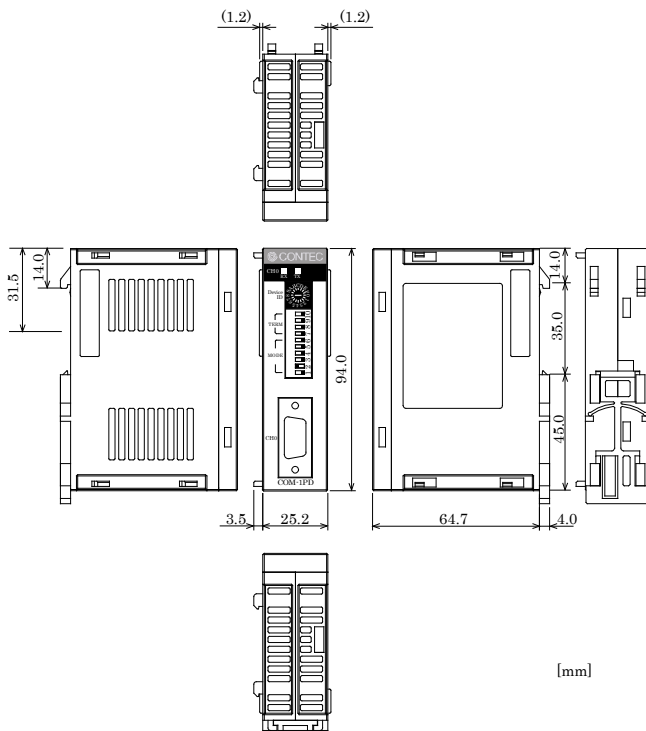
⚠ CAUTION

When connecting the module to a controller module, the internal power consumption should be taken into account.   If the total current exceeds the capacity of the power supply unit, the integrity of the operation cannot be guaranteed.   For further details, please see the Controller Module manual.

Installation Environment Requirements

Parameter	Requirement description
Operating temperature	0 - 50ºC
Storage temperature	-10 - 60ºC
Humidity	10 - 90% (No condensation)
Floating dust particles	Not to be excessive
Corrosive gases	None
Standard	VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive) , UKCA

Physical Dimensions

[mm]

Connector Pin Assignment

Transmit Data-	TxD-	1			
Transmit Data+	TxD+	2	6	RxD-	Receive Data-
Request to Send-	RTS-	3	7	RxD+	Receive Data+
Request to Send+	RTS+	4	8	CTS+	Clear to Send+
Signal Ground	SG	5	9	CTS-	Clear to Send-

CH0
(9 pin D-SUB(Female))