Infilex™ GD
Multipurpose Data Gathering Panel
Model WY5310

General

Infilex GD (Infilex: named for “Infinity” and “Flexible”) Model WY5310 is a multipurpose terminal data transfer device designed to collect the data about various types of building equipment, to monitor the equipment status, and to control the equipment operation.

Infilex GD can be operated with Operator Panel. Besides, Infilex GD can communicate with BMS (building management system) Yamatake’s savic-net™ FX via LonTalk® protocol. By sending the operation status to the center unit (client PC) and by controlling the operation based on the commands sent from the main control unit, the integrated control of the entire building can be executed.

Infilex GD consists of a basic unit and connectable I/O modules (and a user interface module). The number and types of the modules can be flexibly changed corresponding to the control and management to fit in various applications.

Features

- Compact design:
  Small size body allows free installation in a desired place.
- Various input/output (I/O) configurations:
  Input and output types can be selected, and the number of points to be mounted can be increased or decreased corresponding to the application.
- User interface module (Operator Panel):
  Operator Panel (panel mount type/integral type) connected to Infilex GD allows you, without changing the settings from the BMS center unit, to change the Infilex GD settings.
- Autonomous distributed control:
  Even if a trouble occurs in the BMS, the backup operation is performed individually to distribute potential risks caused by malfunction of the system.
- 2 types of installation:
  Infilex GD can be mounted on a DIN rail or directly with screws.
- Easy wiring:
  Modular connector is used for the wiring of communication to facilitate wiring.
- LONMARK® certified product:
  Infilex GD is LONMARK® certified and thus interoperable integrated in the LONWORKS® system.
- CE Marking certified product:
  Infilex GD Model WY5310W (100-240 V AC power type) conforms to all the applicable standards of CE Marking.

LONMARK 3.4

CE

* *Yamatake’s Infilex series controllers: Infilex is named for “Infinity” and “Flexible.”*

Safety Instructions

Please read instructions carefully and use the product as specified in this manual. Be sure to keep this manual near by for ready reference.

Usage Restrictions

This product is targeted for general air conditioning. Do not use this product in a situation where human life may be affected. If this product is used in a clean room or a place where reliability or control accuracy is particularly required, please contact Yamatake's sales representative. Yamatake Corporation will not bear any responsibility for the results produced by the operators.

⚠ WARNING

- DANGER: To prevent the risk of severe or fatal electrical shock, always disconnect power source and product power supply before performing any wiring.
- Do not disassemble the product. Electrical shock or equipment damage may result.
- Make sure all the wires are tightly connected. Burn injury due to heat generation or equipment malfunction may result.
- Be sure to ground. Improper grounding may cause electrical shock or fire due to equipment damages.

⚠ CAUTION

- Installation must be performed by qualified personnel in accordance with all applicable safety standards.
- Installation must be carried out according to the operating conditions specified in this manual to prevent equipment damages.
- All wiring must comply with local codes of indoor wiring and electric installation rules.
- Do not plug in or out the I/O (input/output) module with the product power turned on to prevent equipment damages.
- Use crimp terminals with insulation for electric wires connected to the screw terminals.
- Connect cables to the power source with terminals or the like for permanent connection.
- Do not detach the terminal cover except when connecting or disconnecting wires. After connecting or disconnecting them, be sure to reattach the terminal cover. Make sure that the terminals and wires are not current-carrying when attaching or detaching the terminal cover.
- If more than the rated power supply voltage is applied, product replacement is required for safety.
- Do not peel off the label with ⚠ marked on.
- Install this product in a location out of reach of unauthorized people. (e.g. Inside of the control panel cabinet)
- Lightning protection based on regional characteristics and building structure is needed in order to minimize lightning damages.
- Select the rated surge absorber appropriate for the voltage, current, and capacity of the circuit to be used.
- After completing the wiring, be sure to peel off the protective sheet.
- Do not block the vent holes of the product to prevent equipment damages.
- Wiring must be installed with cable ties so as not to hide the LED, battery holder, and the indication tag.
- Before replacing the product, make sure that the product power supply is disconnected.
- After mounting the product on DIN rail, make sure that the holding parts of all the modules are properly fixed with their whole parts lifted. The product may drop from the DIN rail and be damaged due to improper mounting.
- Dispose of the lithium battery in accordance with the local regulations.
- Do not incinerate this product for waste disposal (the housing produces toxic gas when incinerated). Do not recycle all or part of this product, either.

System Configurations

Infilex GD integrated into BMS: savic-net™ FX

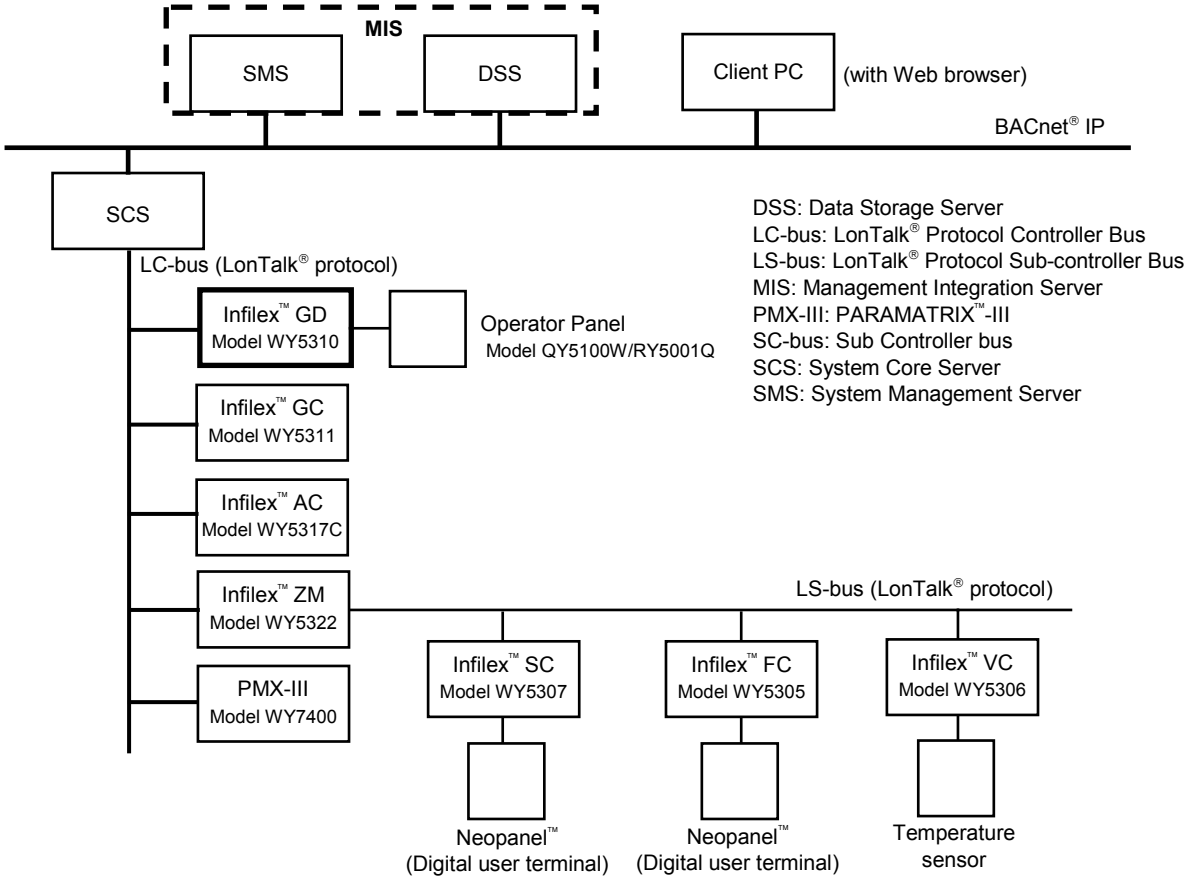


Figure 1. System configuration example of BMS-integrated Infilex GD

Notes:
- MIS may be used instead of SMS and DSS for your system. Note that MIS cannot be mixed with SMS or DSS in the same system.
- On 1 channel of LC-bus (2 lines for 1 channel), max. 50 remote units (also called 'controllers') can be connected. For Infilex ZM, however, max. 10 units can be connected on LC-bus (5 units per 1 line, 2 lines for 1 channel).
- Max. wiring length of LC-bus (2 lines for 1 channel) is 900 m.
- On LS-bus, max. 50 remote units (also called 'sub-controllers') can be connected.
- Max. wiring length of LS-bus is 900 m.

Model Numbers

Model number			Description
WY5310			Base model number
	C		24 V AC power
	W		100 V AC to 240 V AC power (CE Marking certified)
		0000	Fixed

Notes:
- For user I/O modules and user interface modules (UT module and integral type Operator Panel) to be combined with Infilex GD Model WY5310, separate order is required.
- Regarding I/O modules user interface modules to be combined with Model WY5310, refer to AB-6527 Specifications/Instructions of Model RY50XX.

Parts for Installation

For details regarding Infilex GD installation, refer to Installation manual of the Infilex series controllers

Part number	Description
83165861-001	Screw tab
83104567-001	DIN rail mounting bracket

Note:

For mounting Infilex GD, either the screw tab (for screw mounting) or the DIN rail mounting bracket (for DIN rail mounting) is required. Be sure to separately order depending on your mounting type.

Specifications

Basic specifications

Item			Specification	
Power supply		Rated voltage	24 V AC, 50 Hz/60 Hz	100 V AC to 240 V AC, 50 Hz/60 Hz
		Allowable voltage range	20.4 V AC to 27.6 V AC, 50 Hz/60 Hz	85 V AC to 264 V AC, 50 Hz/60 Hz
		Power shutdown detection	19.2 V AC or less	80 V AC or less
		Power consumption	40 VA	
Environmental conditions	Rated operating conditions	Ambient temperature	0 °C to 50 °C	
		Ambient humidity	10 %RH to 90 %RH (non-condensing)	
		Altitude	2000 m or lower	
		Vibration	Max. 3.2 m/s^2 (0.33 G) at 10 Hz to 150 Hz	
	Transport/storage conditions	Ambient temperature	-20 °C to 60 °C	
		Ambient humidity	5 %RH to 95 %RH (non-condensing)	
		Vibration for storage	Max. 3.2 m/s^2 (0.33 G) at 10 Hz to 150 Hz	
		Vibration for transportation	Max. 9.8 m/s^2 (1 G) at 10 Hz to 150 Hz	
LED indication	Operation	Power supply (POWER)	Green LED ON:	Power ON
			Green LED OFF:	Power OFF
		Major failure (ERR1)	Red LED ON:	Major failure or system restart
			Red LED OFF:	Normal operation
		Minor failure (ERR2)	Red LED ON:	Minor failure or system restart
			Red LED OFF:	Normal operation
	Communication	LC-bus	TX: Transmit, RX: Receive, SERV: Service	
Power failure backup		RAM, RTC*	Lithium battery backup	
		Data file	Non-volatile memory (flash memory) backup	
Communications	LC-bus	Transmission system	LonTalk protocol (TP/FT-10 transceiver)	
		Transmission speed	78 kbps	
		Transmission distance	900 m (for bus topology connection)	
		Remote units	Max. 50 remote units connectable	
Weight			400 g	
Material (housing), color			Modified PPE, light gray	
Terminal block		Power supply, ground	M3 (7.62 mm pitch between terminals)	
		LC-bus communication	Modular connector	

Note:

∗ Real Time Clock (RTC) is backed up by a lithium battery to ensure accurate clocking while the power is OFF.

Wiring specifications

Basic unit

Item	Wiring*1	Wiring length	Condition
Power supply*2	JIS*3 IV2.0 mm^2 or JIS CVV 2.0 mm^2 or greater	—	—
Ground*2	JIS IV 2.0 mm^2 or JIS CVV 2.0 mm^2 or greater	—	Ground resistance: 100 Ω or lower
LC-bus	EIA/TIA-568 category 5 or over (ϕ0.5 × 4 poles)	900 m	For bus network topology

Notes

∗1 Pin terminal is not applicable to wiring of Infilex GD.

∗2 M3 screw terminal block is provided for wiring of power supply and ground. Be sure to crimp the crimp terminals on the wire ends.

∗3 JIS: Japanese Industrial Standards

I/O module

Since a quick-fit screwless terminal block is provided on I/O modules, the wires can be connected only by stripping the sheath.
Sheath stripped length: 8 mm (Pin terminal cannot be used.)

Item	Wiring	Wiring length
Temperature input	JIS IV, JIS CVV, KPEV* 1.25 mm^2	100 m
Voltage/Current input	JIS IV, JIS CVV, KPEV 1.25 mm^2	100 m
Voltage/Current output	JIS IV, JIS CVV, KPEV 0.9 mm^2, 1.25mm^2	100 m
Modutrol motor output	JIS IV, JIS CVV, KPEV 1.25 mm^2	100 m
Digital input	JIS IV, JIS CVV, KPEV 0.5 mm^2, 0.75 mm^2, 0.9 mm^2, 1.25 mm^2	100 m
Relay output	JIS IV, JIS CVV, KPEV 1.25 mm^2	100 m
Remote control relay output	JIS IV, JIS CVV, KPEV 1.25 mm^2	100 m

Note:
* KPEV is a wiring standard provided by Furukawa Electric Co., Ltd.

Specifications of I/O modules, user interface modules, and Operator Panel

For the specifications of I/O modules and user interface modules, refer to Specifications/Instructions of Model RY50XX (AB-6527). For the specifications of Operator Panel (integral type / panel mount type), refer to Specifications/Instructions of Model RY5001Q/QY5100W (AB-6546).

Input/Output Terminal Arrangement

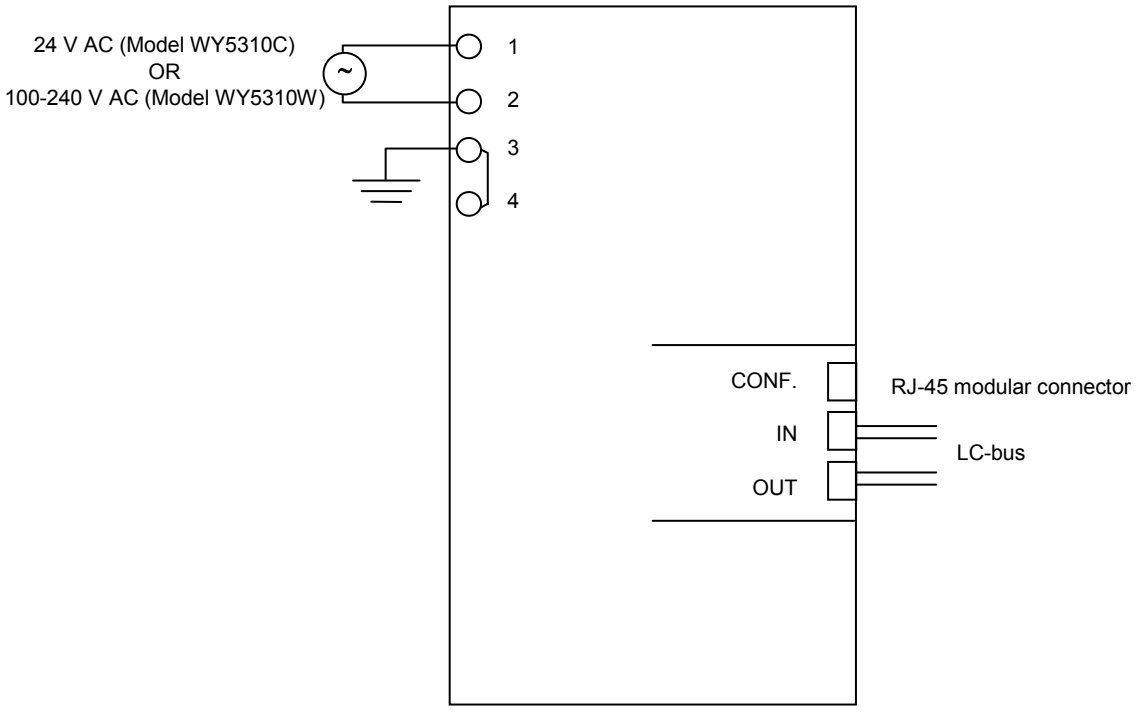


Figure 2. Input/output terminal arrangement

Dimensions

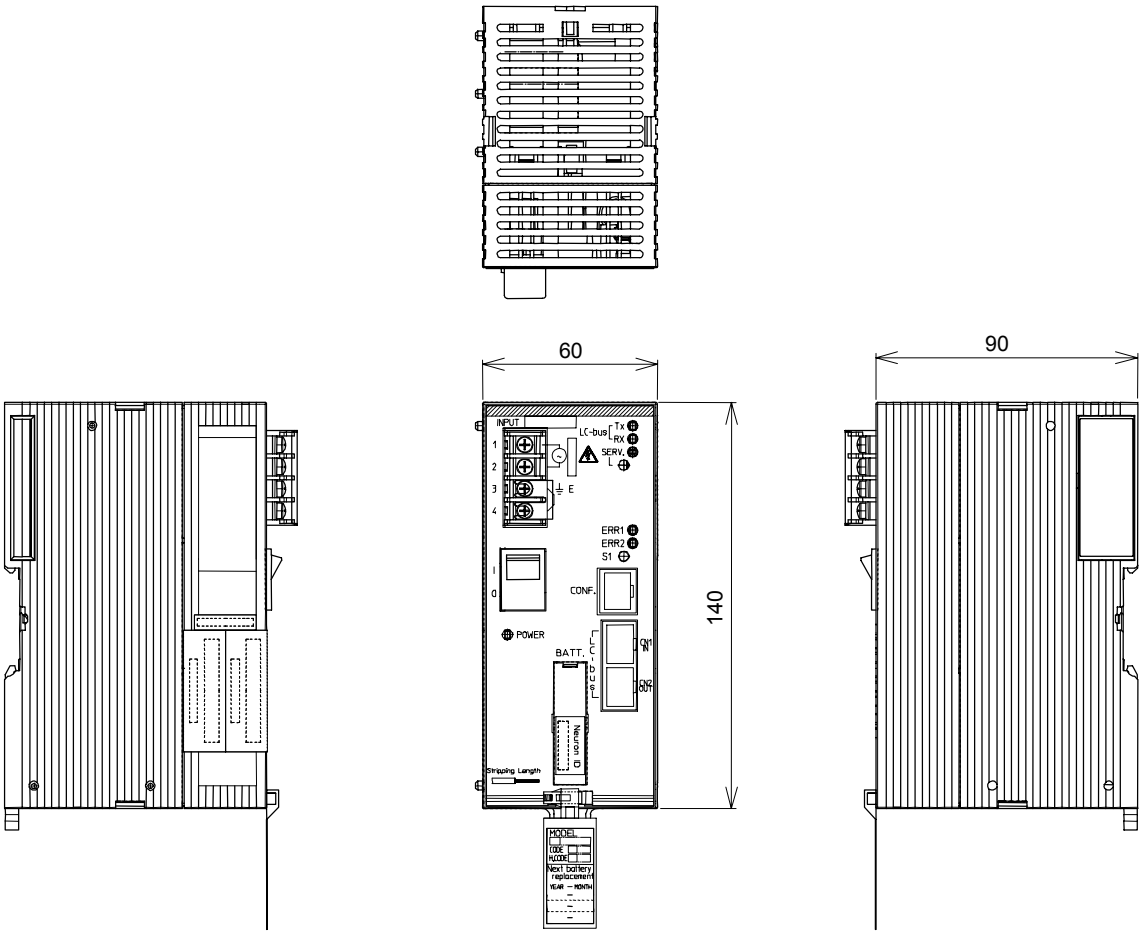


Figure 3. Dimensions (mm)

Parts Identification

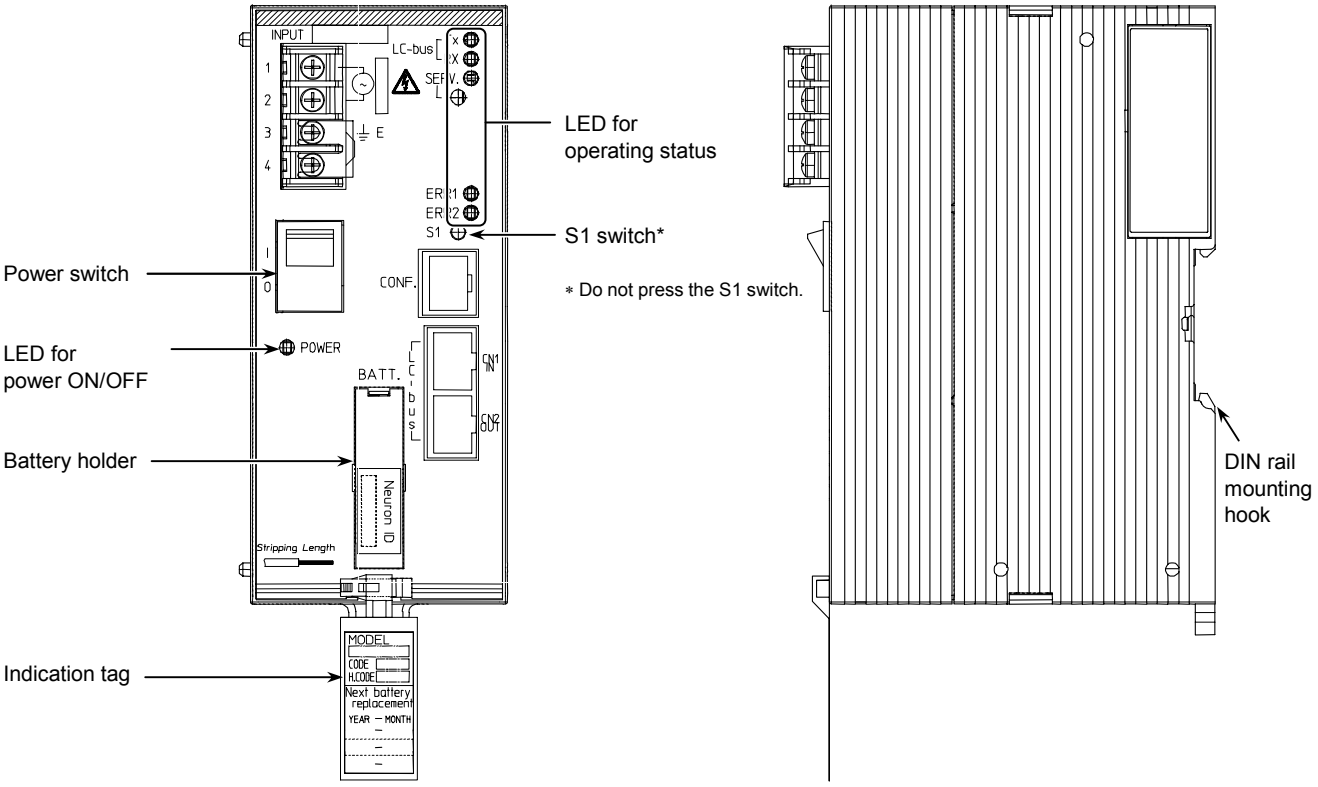


Figure 4. Parts identification

Table 1. Indication and operation of operating status LED

LED indication	LED operation
Data transmitting	LC-bus TX LED: flashing
Data receiving	LC-bus RX LED: flashing
In SERVICE mode	LC-bus SERV LED: ON
Major alarm / initializing	ERR1: ON
Minor alarm / initializing	ERR2: ON

Connection of Data Setter for LonTalk Communication

Connect the CompactFlash® memory type Data Setter (Model QY5111B) for LonTalk communication to LC-bus port or to CONF. port of Infilex GD with the Data Setter adaptor (Part No. DY5301S0000, with separate order required.).
For details of the Data Setter adaptor, refer to its Specifications manual.

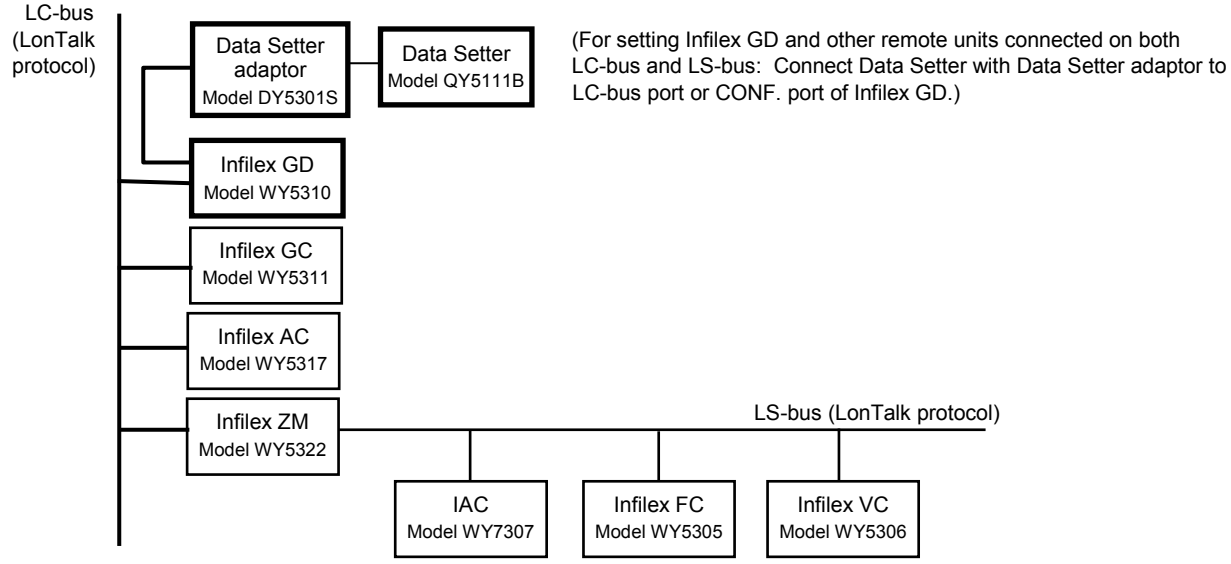


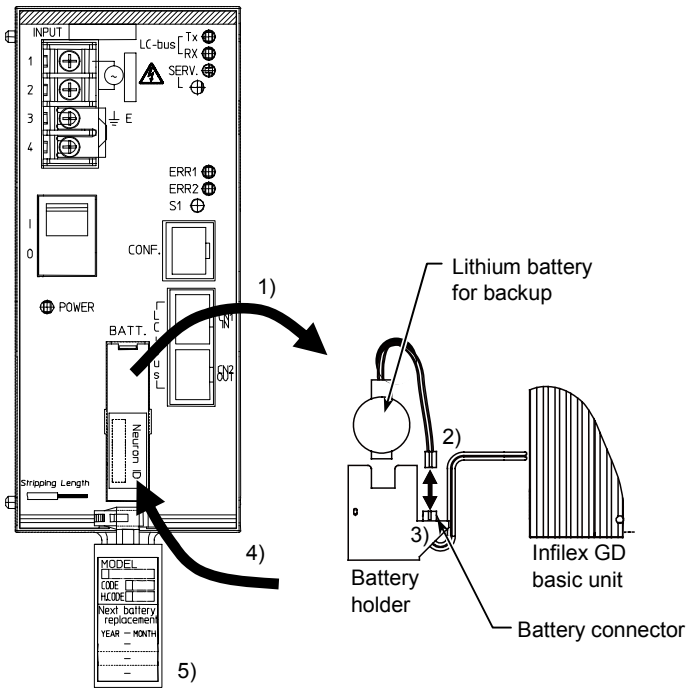
Figure 5. Connection example of Data Setter with Data setter adaptor to LC-bus port/CONF. port

Maintenance (Lithium Battery Replacement)

Replace the lithium battery for backup (Part No. 83104934-001) for every 5 years.

⚠ CAUTION
• Since the remaining battery capacity cannot be checked by measuring the terminal voltage, be sure to replace the battery every 5 years.
• Only authorized service personnel is allowed to replace the battery.
• Do not touch the power supply unit when replacing the battery.
• Replace the battery with the power ON.
• Replace the battery every 5 years if the product is always in use (in ON state).
• If the product has never or hardly been operated (in OFF state) for a year, replace the battery before the product operation.

Battery replacement



∗ Replace the lithium battery with Infilex GD in ON state.

Figure 6. Battery replacement

1) Pull out the battery holder using a slotted screwdriver.
2) Disconnect the battery connector and detach the lithium battery from the battery holder.
3) Place a new lithium battery in the battery holder and connect the battery connector to it.
4) Insert the battery holder into the main body.
5) Fill in the date for next replacement (5 years after the replacement) on the indication tag using an oil-based pen.

Precautions for Use

- Do not mount the product under the conditions of high temperature and humidity.
- Be sure not to drop the product.
- Be sure to shut down the power (disconnect the wiring between the power supply and the product power terminals) for the wire replacement.
- Before turning on the power, make sure that wires are correctly connected.
- Do not connect wires to vacant terminals.
- Several tens of seconds are required for the product normal operation after the power is turned on. During this time, the ERR1 LED (red) for major alarm lights up temporarily, but this does not indicate an error.
- Leave at least 35 mm clearance between the top/bottom surfaces of the product and other devices.
- Peel off the protective sheet on the top surface of the product before turning on the power. (See Fig. 7.)
- For LONMARK® network variables, see “AB-6824 LONMARK® Functional Profile: Open-Loop Actuator.”

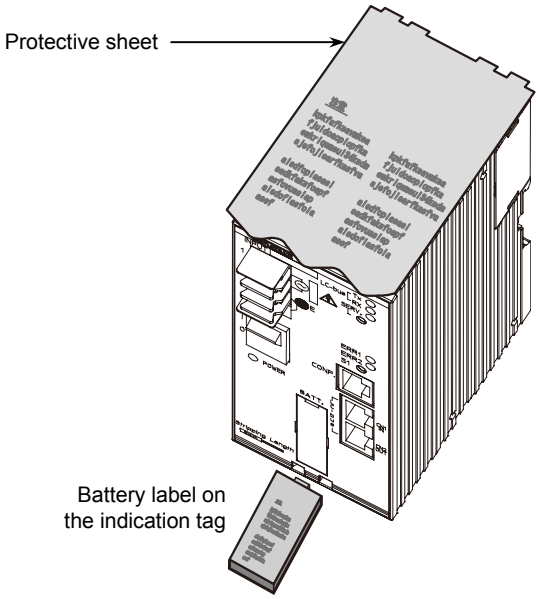


Figure 7. Battery label and protective sheet

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Specifications are subject to change without notice.

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