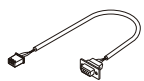


3-4. Network converter for LonWorks (UTY-VLGX)



- The convertor for connecting VRF network system to the BMS system built by LonWorks open network, for manage small to medium sized BMS and VRF network system.
- Maximum of 128 indoor units can be connected to one Network converter for LonWorks.
- VRF system can be centrally controlled or monitored from BMS via UTY-VLGX.
- Maximum 4 Network converter for LonWorks can be connected to 1 BMS.

■ Accessory

Name and shape	Q'ty	Application
 Cable tie	3	For mounting the power supply cable and transmission cable
 Screw (M4 × 20 mm)	4	For mounting the Network converter
 Dust proof bushing	1	For connecting the power supply cable
 CD-ROM	1	Includes the software and manuals of tools for Network converter
 Connector cable	1	For initial setting tool
 Installation manual	1	

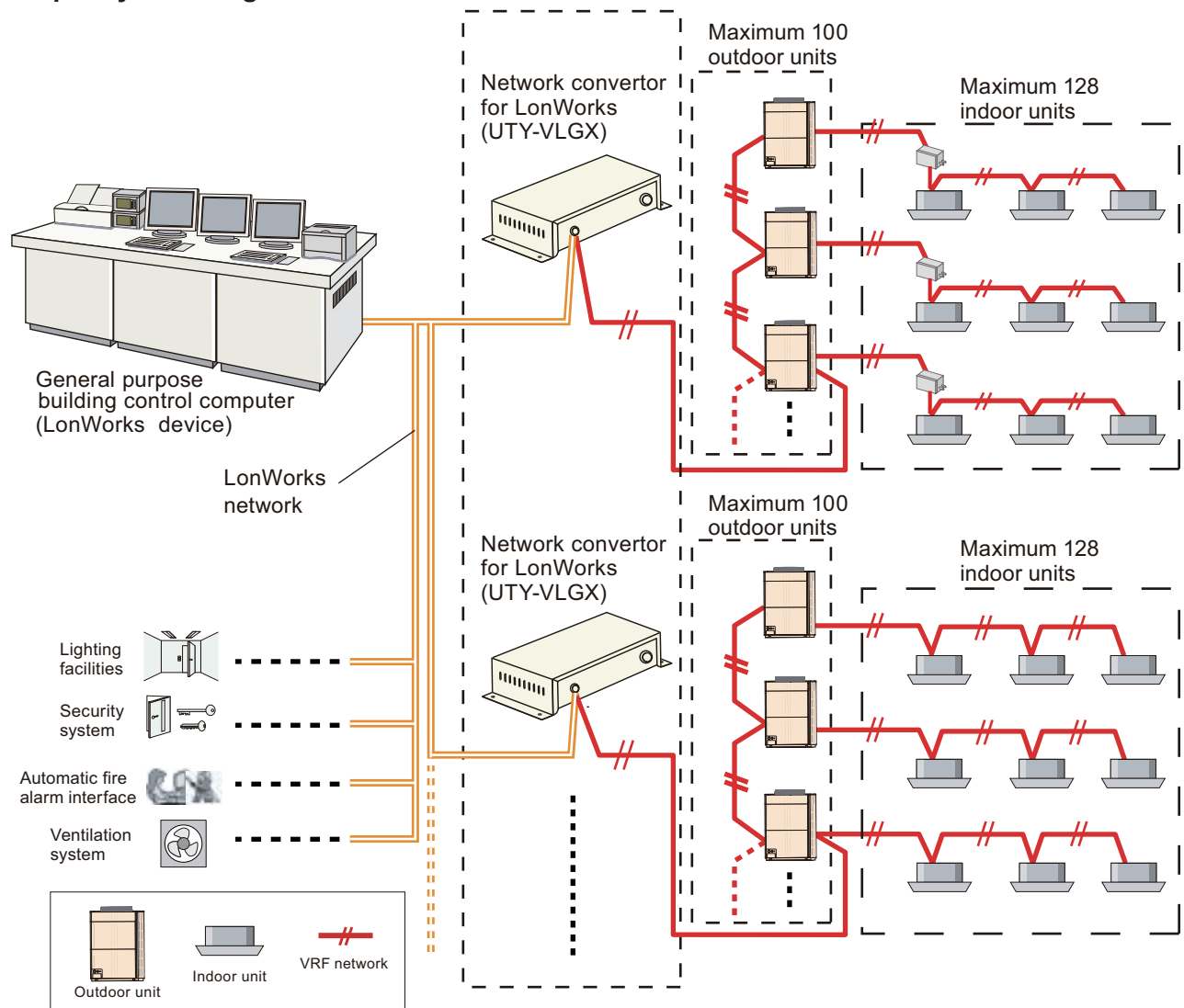
■ Other required devices (Locally purchased)

- To install tool for convertor, personal computer that satisfies the following system requirements is necessary.

Personal computer system requirement	
Operating system	• Microsoft Windows 7 Professional (32-bit) SP1 • Microsoft Windows 8.1 Pro (32-bit) • Microsoft Windows 10 Home (32-bit or 64-bit) • Microsoft Windows 10 Pro (32-bit or 64-bit) Supported Language: English and Chinese
Memory	1 GB or more
Display	1,024 × 768 or higher resolution, 16-bit or higher color
Interface	RS232C serial port × 1 (Use "COM1" port)
Software	Adobe Reader 9.0 or later
Optical drive	CD-ROM drive

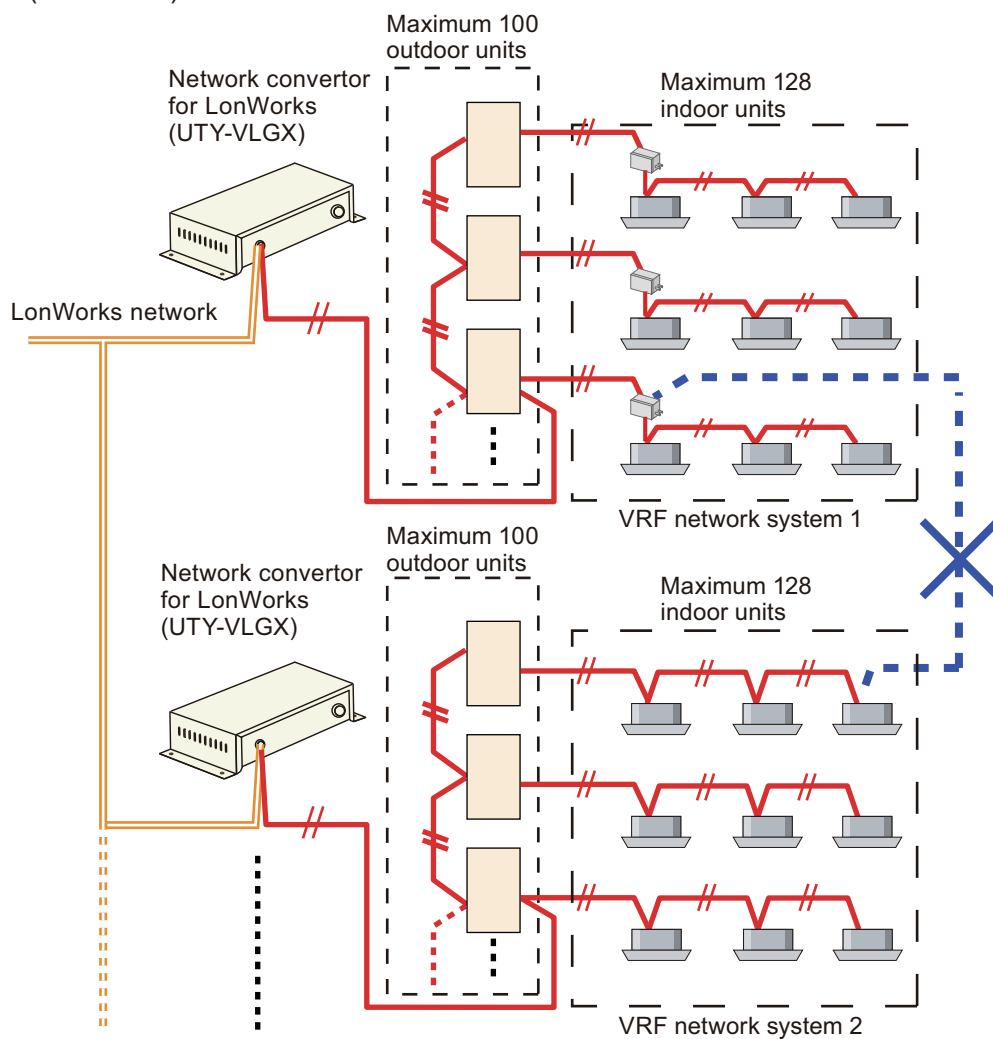
■ System diagram

- Proper system diagram

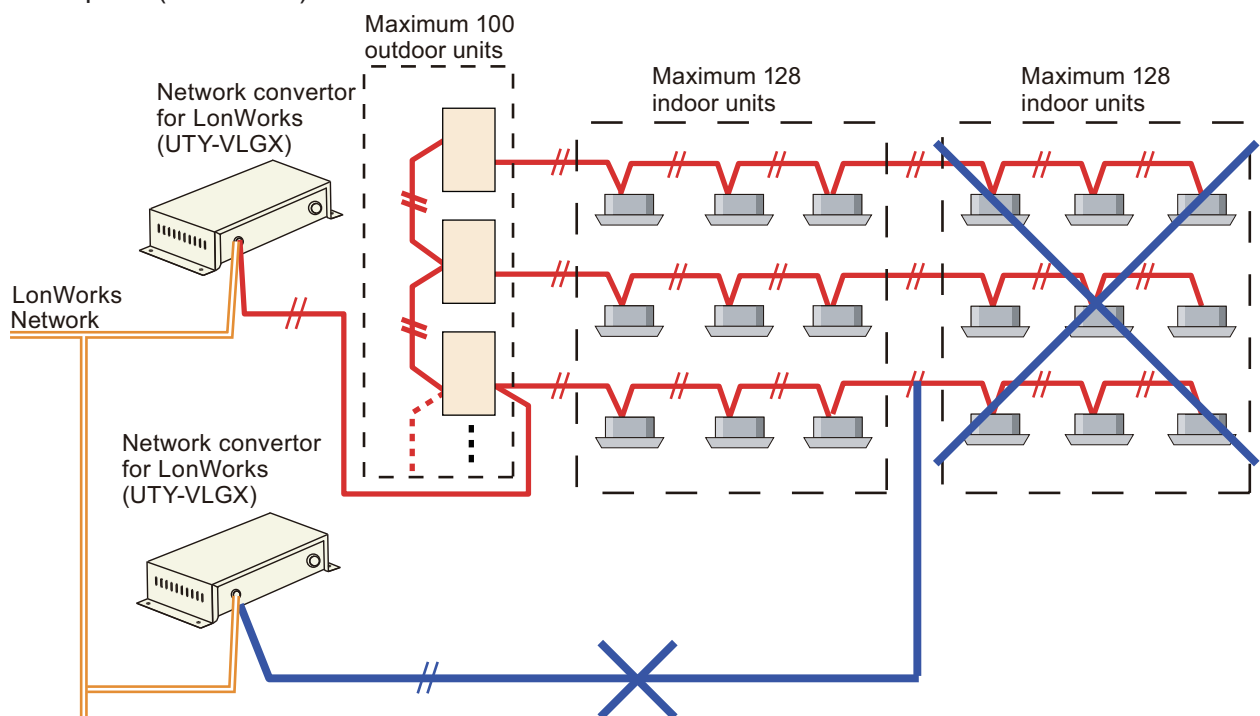


- **Improper system diagram**

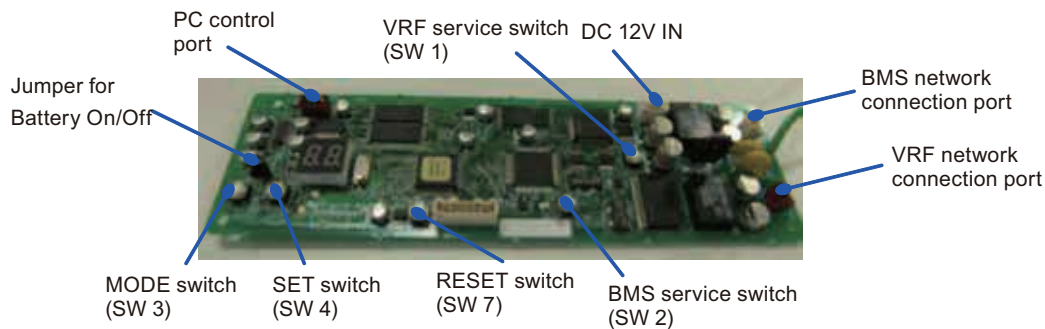
- Example 1 (Prohibited)



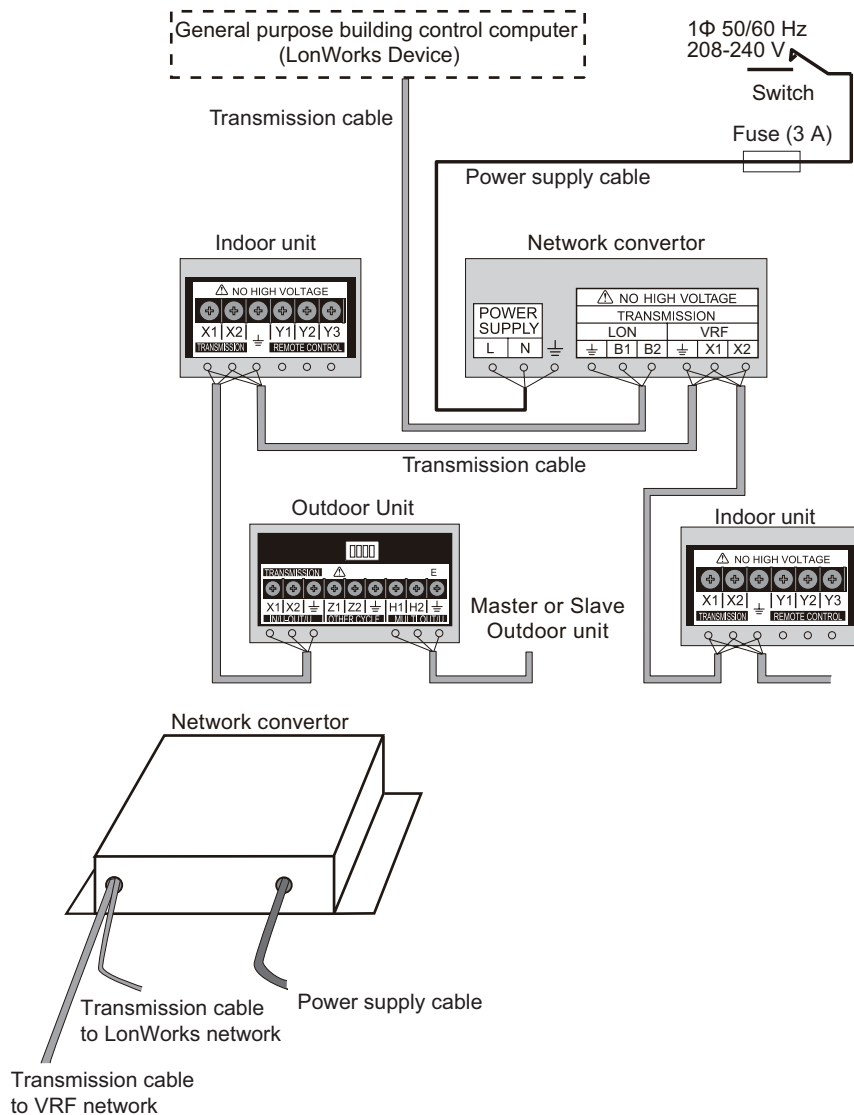
- Example 2 (Prohibited)



■ Component location of PCB



■ Electrical wiring



NOTES:

- Do not bind the power cable and transmission cable to avoid an erroneous operation.
- Use shielded cable for transmission cable. The shield metal should be grounded.
- Do not forget to ground the Network converter.

■ Functions

• Indoor unit control

– Individual control

Commands from LonWorks network are sent to the respective indoor units.

(LonWorks network → respective indoor units of VRF network)

– Batch control

Commands from LonWorks network are sent to all indoor units connected to VRF network.

(LonWorks network → All indoor units of VRF network)

• Indoor unit status monitoring

Indoor unit status is communicated to the LonWorks network in the form of Lon network variables.

(LonWorks network ← All indoor units of VRF network)

● Control and monitoring items

Item	Function	Description
Indoor unit control (Individual/Batch)	On/Off Command* ¹	Start/Stop operation
	Operation mode setting	Cooling/Heating/Auto/Fan/Dry
	Temperature setting	Set room temperature
	Airflow mode setting	Set airflow
	Set point temperature limit Setting	Set room temperature lower limit & room temperature upper limit
	Thermostat off setting* ^{1*2}	Thermostat off (Only one controller in VRF network system can do this.)
	Centrally control (Filter reset)	Prohibition of filter sign reset of remote controller
	Centrally control (All mode)	Prohibition of all mode of remote controller
	Centrally control (Timer mode)	Prohibition of timer mode of remote controller
	Centrally control (Set temperature mode)	Prohibition of set temperature mode of remote controller
	Centrally control (On/Off mode)	Prohibition of On/Off mode of remote controller
	Centrally control (On mode)	Prohibition of On mode of remote controller
	Centrally control (Operation mode)	Prohibition of operation mode of remote control
Indoor unit control (Individual)	Filter sign reset	Set filter sign reset command
	Anti-freeze setting	Set anti-freeze command
	Energy save mode setting	Set energy save command
Indoor unit control (Batch)	Time setting	Set time setting command (The controllers those are connected in VRF network system are an object.)
	Emergency stop setting	Set emergency stop command
Outdoor unit control (Individual)	Outdoor unit low noise	Outdoor unit low noise level setting
	Outdoor unit capacity save	Outdoor unit capacity save setting

Item	Function	Description
Indoor unit monitoring (Individual)	On/Off Status* ¹	The indoor unit which is now operating can be monitored in all indoor units
	Operation mode setting status	Cooling/Heating/Auto/Fan/Dry mode status
	Temperature setting status	Room set temperature status
	Airflow mode setting status	Airflow mode status
	Set point temperature limit status	Room set temperature limit status
	Thermostat off setting status* ^{1*2}	Thermostat off set value status
	Centrally control (Filter reset) status	Remote controller filter reset prohibition status
	Centrally control (All mode) status	Remote controller all mode prohibition status
	Centrally control (Timer mode) status	Remote controller timer mode prohibition status
	Centrally control (Set temperature) status	Remote controller set temp. prohibition status
	Centrally control (On/Off) status	Remote controller On/Off prohibition status
	Centrally control (On) status	Remote controller On prohibition status
	Centrally control (Operation) status	Remote controller operation prohibition status
	Anti-freeze setting status	Anti-freeze set status
	Energy save mode setting status	Energy save mode set status
	Filter sign reset status	Filter sign reset status
	Room temperature status	Room temperature status
	Error code status	Error code status can be monitored.
	Operation mode restriction status	Restriction item* ³ can be monitored.
Indoor unit monitoring (Batch)	Maintenance mode status	Maintenance status
	Emergency stop setting status	Emergency stop setting status
Outdoor unit monitoring (Individual)	Error code Status	Error code status
Convertor unit monitoring (Individual)	Error code Status	Error code status

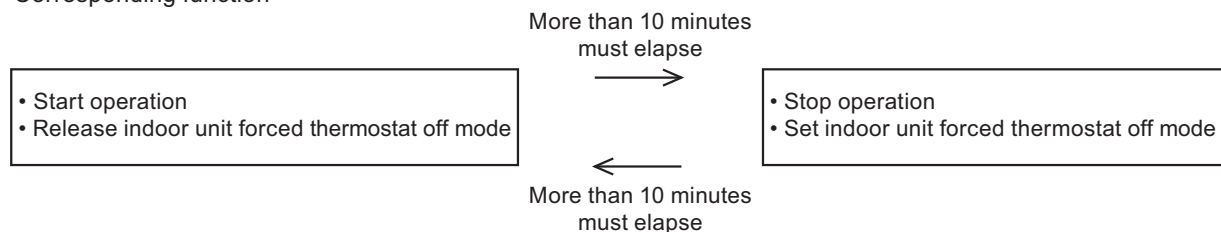
NOTES:

- For detailed information, refer to the interface specification posted on “Service & Supports” page of the web site.
<https://www.fujitsu-general.com/global/support/>
- *1: To protect the compressor of the outdoor unit, carefully read and understand the following caution that may affect the operation of compressor before executing the setting.

⚠ CAUTION

When performing periodical settings like schedule settings for the following functions, perform the setting to all indoor units in the same refrigerant system simultaneously, conforming to the timing restriction described below.

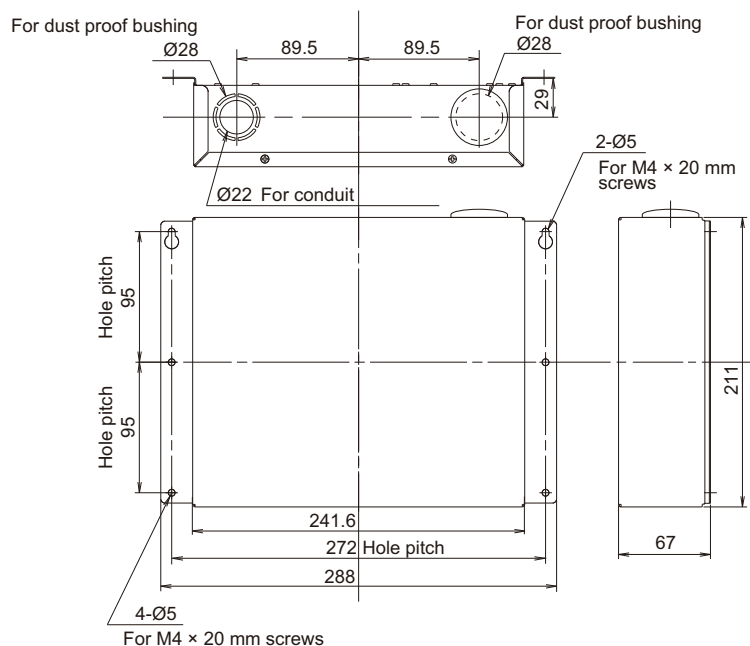
<Corresponding function>



- *2: Forced thermostat off instruction
 - Only one equipment can send these instructions for each refrigerant system.
 - When these instructions are sent by multiple equipment, the system may not respond as instructed or may cause malfunction.
- *3: All operation setting, Timer setting, Room temperature setting, Operation mode setting, On/Off Operation, Filter reset operation, On operation setting

■ Dimensions

Unit: mm



■ Specifications

Power supply	V	1 $\varnothing$ AC 208—240
Power source frequency	Hz	50/60
Input power	W	4.5
Temperature	Operating	$^{\circ}\text{C}$ 0 to 46
	Packaged	$^{\circ}\text{C}$ -10 to 60
Humidity	Packaged	% 0 to 95 (RH) No condensation
Dimensions (H $\times$ W $\times$ D)	mm	67 $\times$ 288 $\times$ 211
Weight	g	1,500
Fuse capacity	A	3

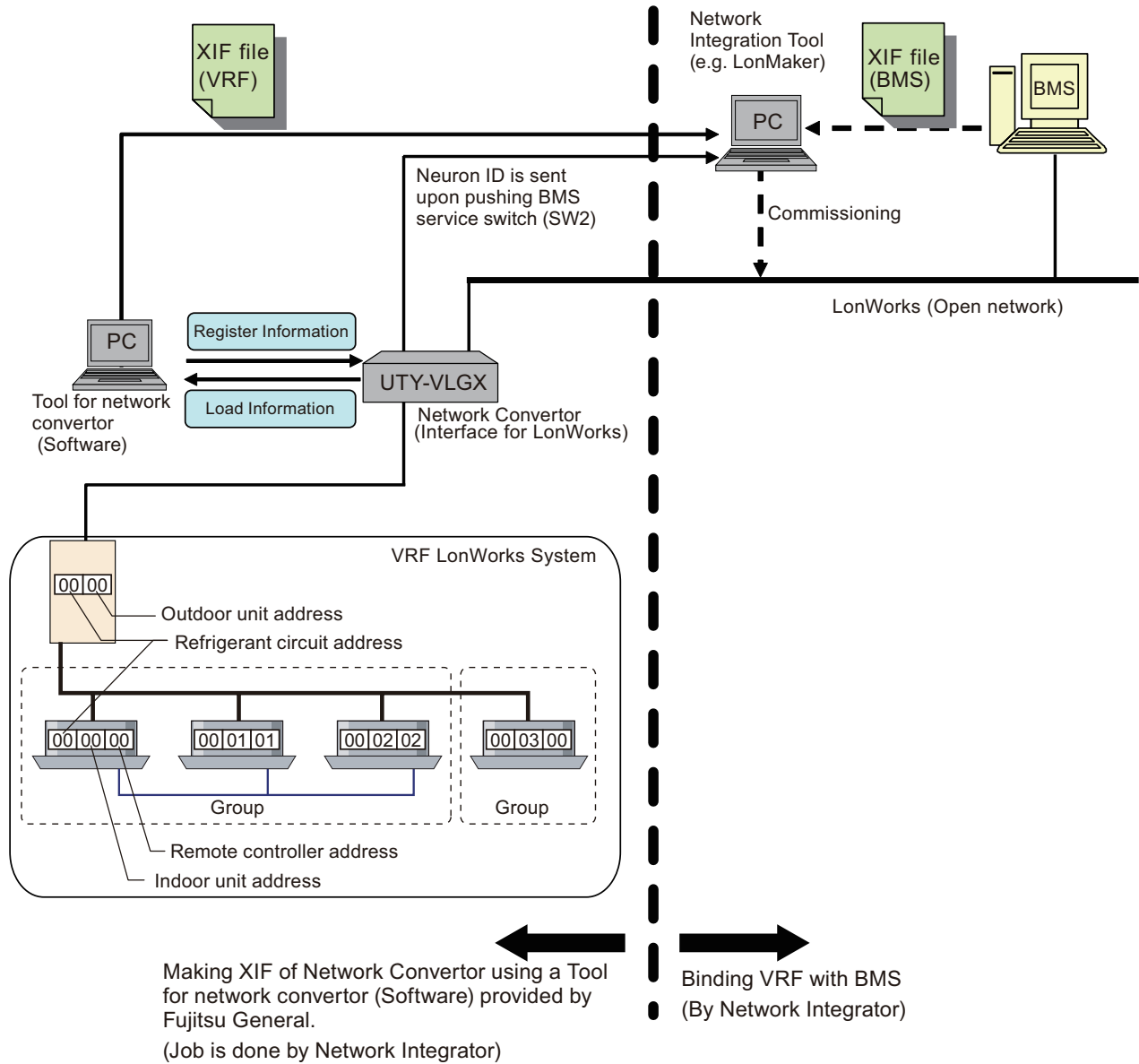
● Wiring specifications

Use	Cable size	Wire type	Remarks
Power supply cable	0.5 to 1.25 mm ² (20 to 16 AWG)	60245 IEC 57 or equivalent	1 $\varnothing$ AC 208—240 V 50/60 Hz, 2 wire + ground (Always ground the unit)
Transmission cable	0.33 mm ² (22 AWG)	LEVEL 4 (NEMA) Non-polar 2 core, twisted pair solid core shielded	LonWorks compatible cable

● Transmission specifications

LonWorks network		
Transmission speed	kbps	78
Transceiver	FT-X1 (Echelon corporation)	
Transmission way form	Free topology	
Cable	Twisted pair cable (Shield)	
	22 AWG Equivalent	
Network connector	One terminal	
Terminal register	None attachment (It attaches at the terminal of a network)	

■ Total system configuration layout



■ Simple procedure for create XIF and register data to Network converter for LonWorks

! Important

Network converter will not operate if,

- VRF network system address (Outdoor and Indoor units address) allocation information are not registered to Network converter.
- XIF data information and VRF network system address allocation information must not be the same.
- Binding and commissioning are not executed. (During binding, read out the Network converter Neuron ID by pushing BMS service switch [SW2] on the main PCB of Network converter.)
- If the ID number registered to the Network converter is not same as the ID number which is included in the XIF of Network converter.

NOTE: For detailed information, refer to the application manual which is included inside packaged CD-ROM.

The following is the on-line procedure. It is also possible to create XIF and register data off-line.

1. Connect the PC and this product.
Connection will be done by the connector cable provided as an accessory item of this product.
2. Install tool for convertor (software) in PC.
Tool for convertor is the accessory item of this product.
3. Set this product to installation mode.
4. Setting ID number of this product on PC screen of tool for convertor.
(ID number is required to identify this product from BMS. A maximum number of four Network converters can be connected to one BMS, and ID number allocation is like 00, 01, and so on.)
5. Initial setting of indoor unit and outdoor unit address by using the tool for convertor.
6. Register the initial setting data to this product. Click "Register" dialog.
7. Set configuration properties.
To set the communication properties of this product, select the following communication properties and types; otherwise, the default value will be used.
 - Select communication items
 - Event driven communication or Cyclic communication (Default: Cyclic 3 minutes)
 - Communication interval time during turning on all together (Default: 3 minutes)
 - Select communication type (to communicate data with BMS)
 - Communicate only when changing network variable or communicate all network variable. (Default: Only when changing network variable)
 - Communicate only when changing room temperature value (Default: Room temperature changed value 1 °C)
8. Register the configuration properties data to this product. Click the "Register" dialog.
9. Creating/Modifying XIF, and transfer XIF data by USB memory or floppy disk for binding.
10. Press "Reset SW7" to reset this product.
11. Turn off the power. After that, remove the connection of PC and this product respectively. In this stage, Network converter is ready for binding and commissioning.