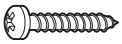
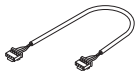
3-8. Modbus converter for indoor unit (UTY-VMSX)

The convertor for connecting indoor unit to the BMS system built by Modbus open network, for manage small to medium sized BMS and indoor unit.

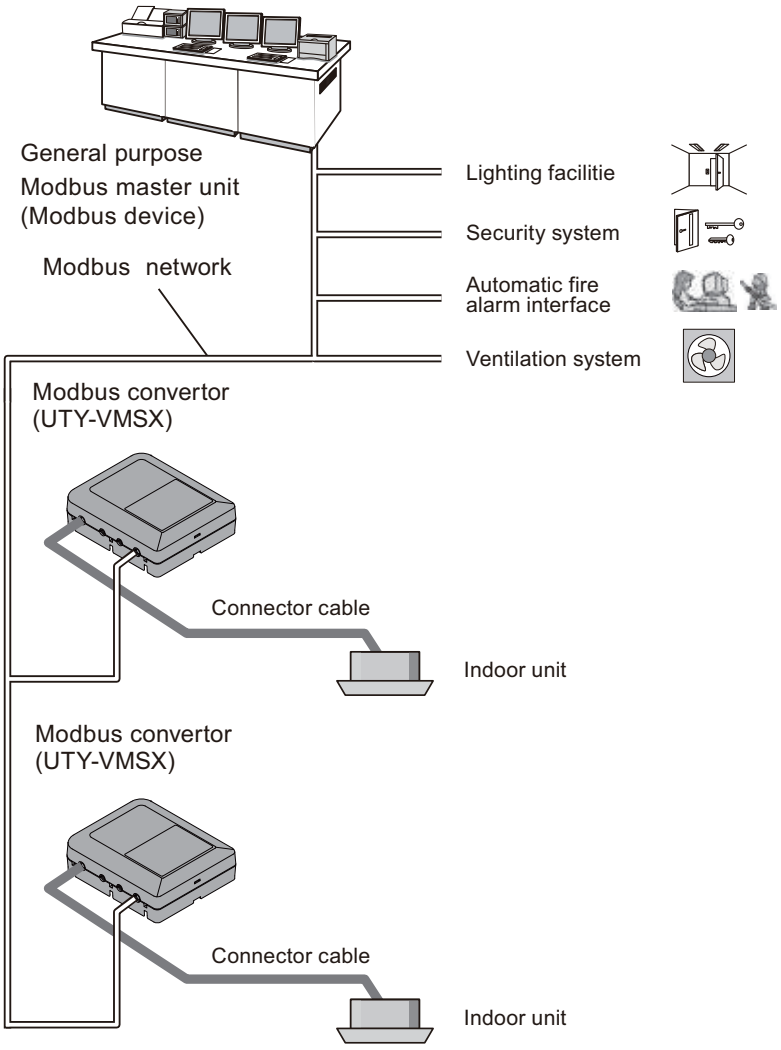
■ Accessory

Name and shape	Q'ty	Application
Cable tie	4	For mounting transmission cable
 Screw (M4 × 16 mm)	3	For mounting the Modbus converter
Modbus connector	1	For connecting the cable and attaching the board connector
 Connector cable	1	For connecting to indoor unit (1.5 m)
Installation manual	1	

CONTROL SYSTEM

■ System diagram

- **Proper system diagram**



- **Connected unit**

Maximum controllable indoor units number per 1 Modbus converter		1
Maximum number of connected Modbus converter units to one Modbus master unit	Without repeater	31
	With repeater	247

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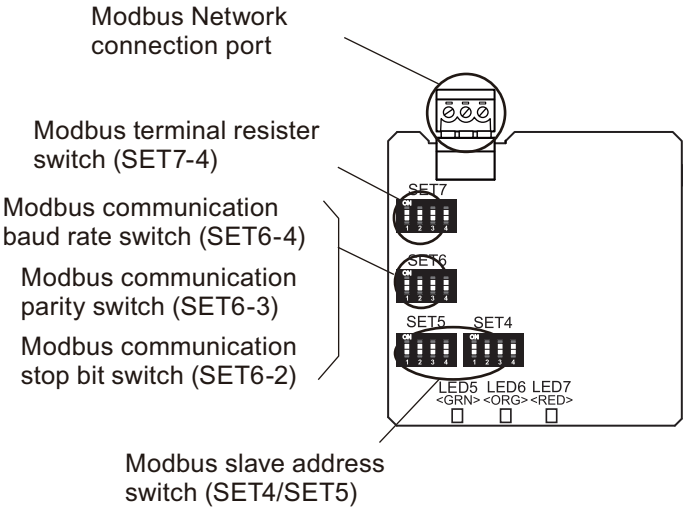
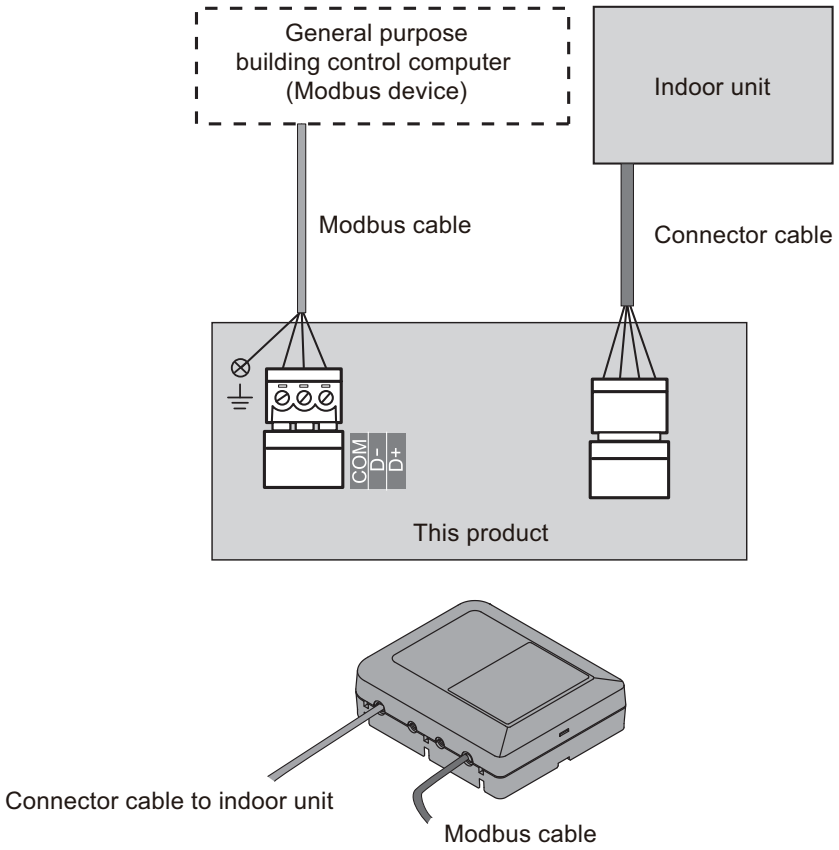
■ Component location of PCB



■ Electrical wiring



CONTROL SYSTEM

■ Functions

- **Indoor unit control**
  Commands from Modbus network are sent to the respective indoor units.
  (Modbus network → indoor units)

- **Indoor unit status monitoring**
  Indoor unit status is communicated to the Modbus network in the form of indoor unit variables.
  (Modbus network ← indoor units)

● Control and monitoring items

Item	Function	Description
Indoor unit control	On/Off Command*	Start/Stop operation
	Operation mode setting	Cooling/Heating/Auto/Fan/Dry
	Temperature setting	Set room temperature
	Airflow mode setting	Set airflow
	Thermostat off setting*	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
	Filter sign reset	Set filter sign reset command
	Anti-freeze setting	Set anti-freeze command
	Energy save mode setting	Set energy save command
	Vertical/Horizontal airflow direction louver	Set Vertical/Horizontal airflow direction louver
	Human detection auto save	Set human detection auto save
	Human detection auto off	Set human detection auto off

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Item	Function	Description
Indoor unit monitoring	On/Off Status*	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*	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 setting 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.
	Vertical/Horizontal airflow direction louver status	Vertical/Horizontal airflow direction louver status
	Indoor unit status	Defrost/oil recovery/pump down can be monitored.
	Human detection auto save	Set human detection auto save status
	Human detection auto off	Set human detection auto off status
	Demand status	Demand control status
Convertor unit monitoring	Error code Status	Error code status
	Modbus communication setting information	Baud rate/slave address can be monitored.
	Model name	Convertor model name can be confirmed.
	Software version	Convertor software version can be confirmed.

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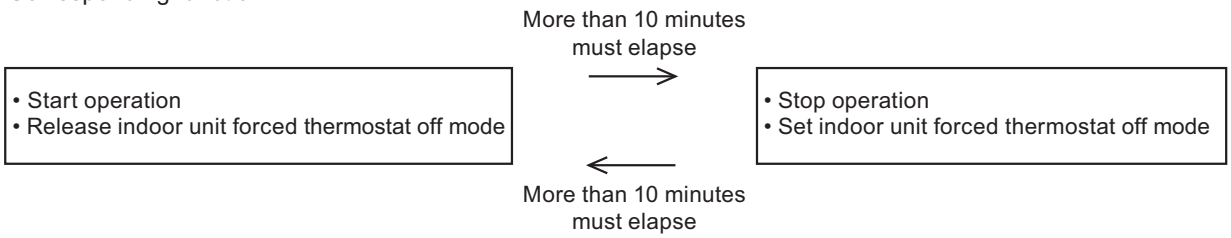
NOTES:

- For detailed information, refer to the interface specification posted on “Service & Supports” page of the web site.
  https://www.fujitsu-general.com/global/support/
- *: 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

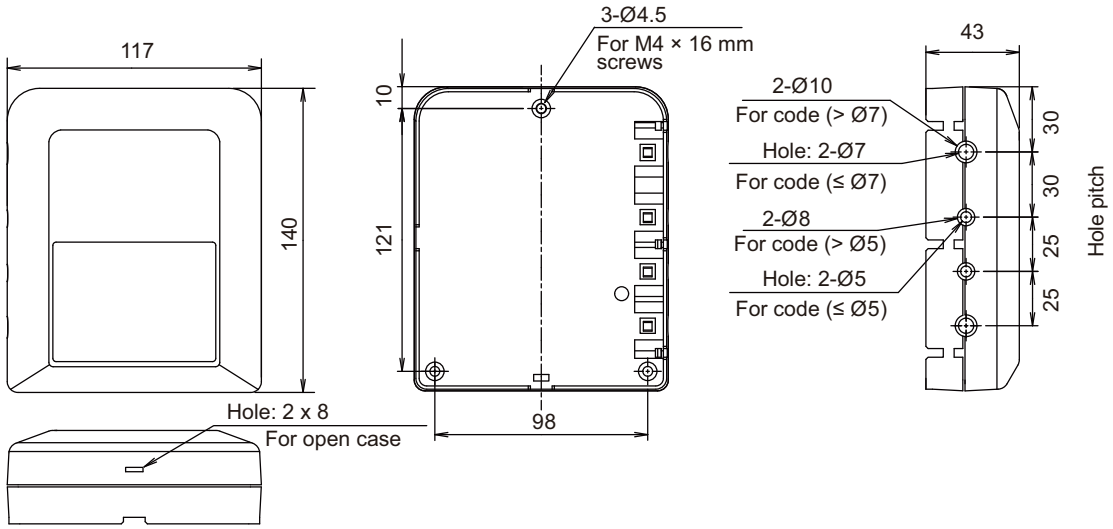
When performing periodical settings like schedule settings for the following functions, perform the setting to all indoor units in the same refrigerant system simultaneously, conforming to the timing restriction described below.

<Corresponding function>



■ Dimensions

Unit: mm



■ Specifications

Input power		W	1.2
Temperature	Operating	°C	0 to 46
	Packaged	°C	-10 to 60
Humidity	Packaged	%	0 to 95 (RH) No condensation
Dimensions (H × W × D)		mm	43 × 117 × 140
Weight		g	200

● Wiring specifications

Use	Cable size	Wire type	Remarks
Modbus cable	0.128 to 1.25 mm^2 (26 to 16 AWG)	AWG16—26 Polar 3 core + Sheathed PVC cable	

● Transmission specifications

Transfer mode		RTU mode
Communication method		Half-duplex operation, Master/Slave method
Communication speed	bps	9,600/19,200
Synchronous system		Asynchronous communication method
Data bit	bit	8
Parity		even/odd/none
Stop bit	bit	2 (no parity)/1
Network		3 wire RS485
Maximum cable length	m	1,000

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