

[For Facilities Managing Various Devices]

Directly connect devices with Modbus protocol support to the V9 series. Monitoring and configuration of target devices, data sharing with PLCs, and data transfer to upstream devices are all possible on the V9 series!

What is Modbus?

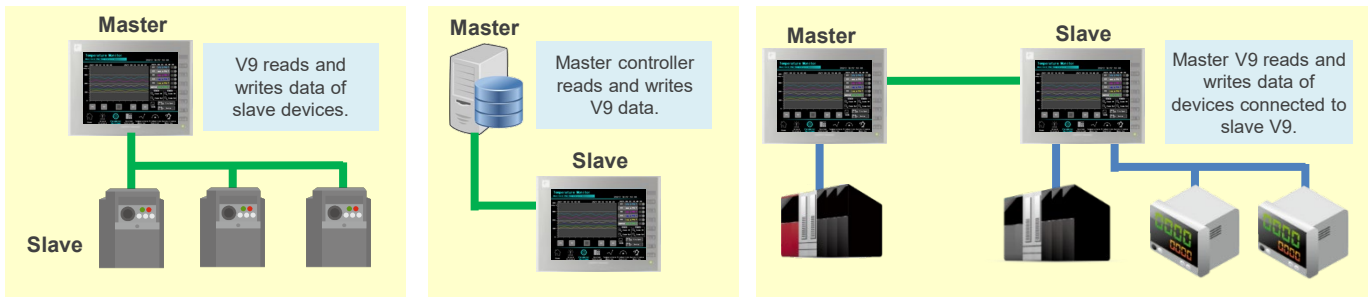
- Modbus is a communication protocol developed by Modicon. Modbus has been adopted as the all-purpose solution in the FA industry owing to open and free communication specifications and straightforward implementation.
- Communications use the master/slave model. There are three transmission modes, and the V9 series **supports all of them.**

Communication Protocol	Communication Method	Corresponding V9 Function Codes *
RTU mode	Serial communication, binary code	Read coil: 01H, Write coil: 05H, 0FH Read input relay: 02H Read holding register: 03H, Write holding register: 06H, 10H Read input register: 04H
ASCII mode	Serial communication, ASCII code	
TCP mode	Ethernet (TCP/IP) communication	

* Communication is possible with devices that support the above function codes. Please check the specifications of the device for connection.

- **The V9 series can operate as either a master or slave in communication.**

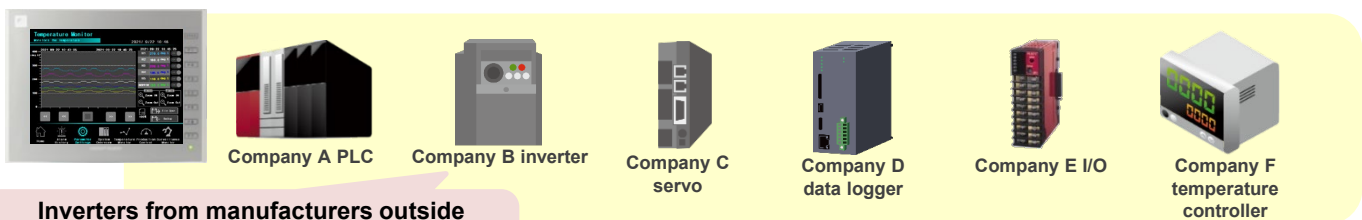
<Connection examples>



V9 Series Features (Master Communication)

Devices of manufacturers and models not listed as connectable* to the V9 series **can be connected if they support Modbus.**

* Refer to <https://monitouch.fujielectric.com/site/support-e/plc-01.html> for details.

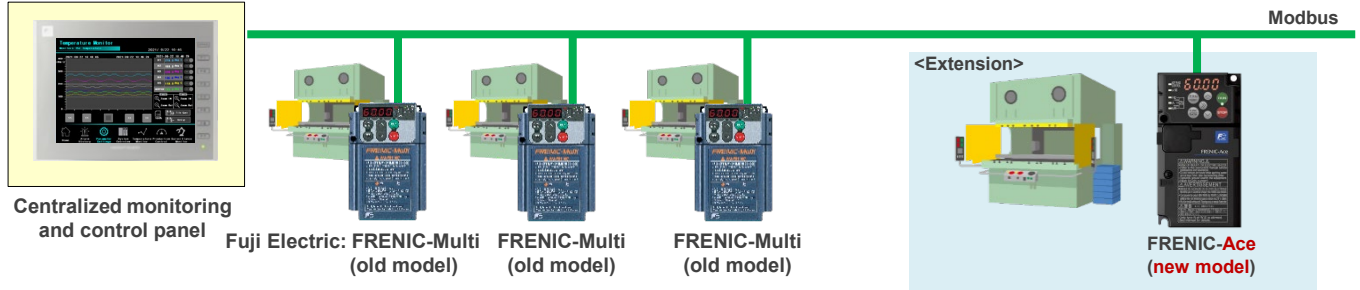


Inverters from manufacturers outside Japan are also connectable! (Schneider, Bosch Rexroth etc.)

V9 Connection Ports		Number of Ports	Number of Connectable Devices
Serial	CN1/MJ1/MJ2	One of each port	Up to 31 devices per port (RS-422/485 connection)
Ethernet	LAN/LAN2	Eight ports (one physical port of each port)	Up to 64 devices per port

Example Use Case

Ex. 1) Adding a new inverter model to existing facility equipment for line extension



Changing the device connected to the V9 series in V-SFT from “FRENIC-Multi” to “MODBUS RTU EXT Format” enables communication with mixed devices.

PLC Connection Device Selection

Connected Device: PLC

Maker: Others

Model: MODBUS RTU EXT Format

Target Port No.: 0412

Recent Devices >

Finish Cancel

Format Detail Display

Port Name: FRENIC-Multi Target Port No.: 1 @ HEX: ○ DEC

Connected Device: Fuji Electric: FRENIC-Multi(MODBUS RTU) Setting

Device	Address	Read Command	Maximum Read	Write Command	Maximum Write
Coil	0000H ~ FFFFH 01	0801H	0F	1010H	1
Input Relay	0000H ~ FFFFH 02	2000H	1		
Holding Register	0000H ~ FFFFH 03	5000H	10	5000H	5000word
Input Register	0000H ~ FFFFH 04	1050H	10		

Order of the data: Little Endian

Number of the registered format: 004

OK Cancel

Format Detail Display

Port Name: FRENIC-Ace Target Port No.: 4 @ HEX: ○ DEC

Connected Device: Fuji Electric: FRENIC-Ace(MODBUS RTU) Setting

Device	Address	Read Command	Maximum Read	Write Command	Maximum Write
Coil	0000H ~ FFFFH 01	0801H	0F	1010H	1
Input Relay	0000H ~ FFFFH 02	2000H	1		
Holding Register	0000H ~ FFFFH 03	5000H	10	5000H	5000word
Input Register	0000H ~ FFFFH 04	1050H	10		

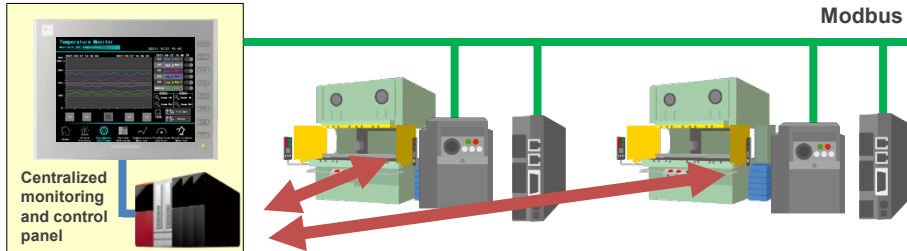
Order of the data: Little Endian

OK Cancel

Modbus Extended Format Settings

The address range and maximum amount of communication data can be set for each connected device. Mixed communication is possible with models of differing manufacturers by setting the address range and amount of communication data for each device. Device address lists can be referenced for devices that are officially supported by V-SFT.

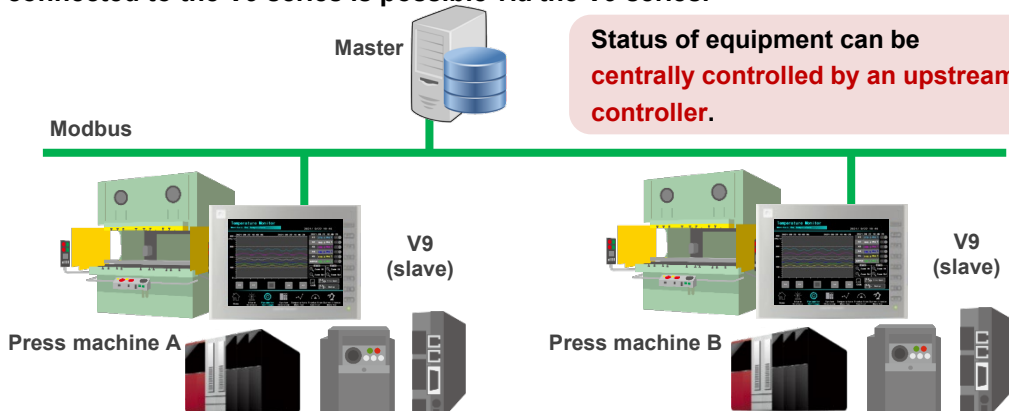
Ex. 2) Sending the status of inverters and servos on each line to a centralized monitoring panel PLC and sending commands to each line



By using the V9 device memory map, data transfer without any programming is possible with PLCs connected to the V9 series. Settings can be added or changed easily even when equipment is added.

Connection to Upstream Controller (Slave communication)

The V9 series can also be configured as a slave in Modbus communication. If upstream devices have Modbus master support, reading and writing of information to and from devices connected to the V9 series is possible via the V9 series.



Status of equipment can be centrally controlled by an upstream controller.

Modbus expands the range of devices that can be selected! Contact your local sales representative regarding any particular device you would like to connect.

