

Modbus Slave communication between V Series Panels

Monitouch HMI Technical Note TN-MH-0003b

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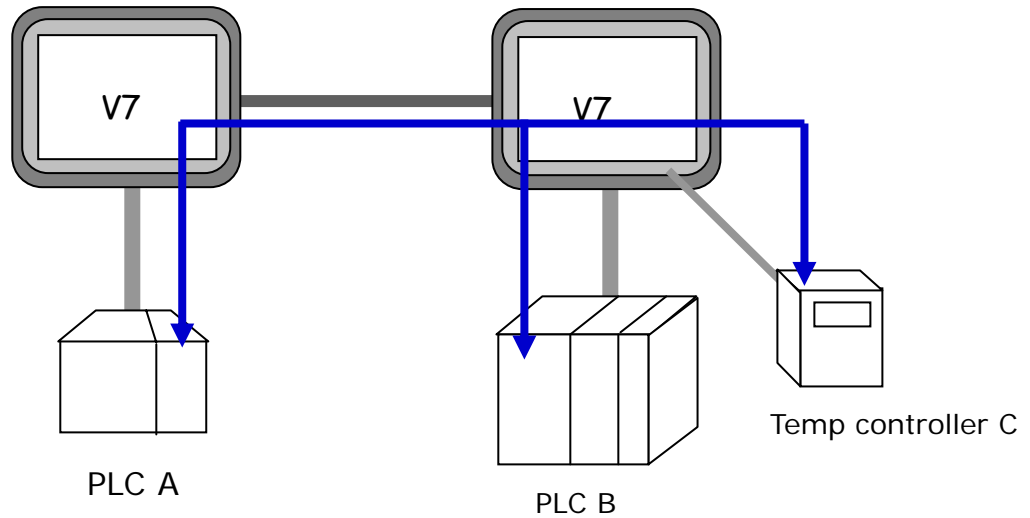
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1. Introduction

This document describes how to connect two Monitouch panels using Modbus Slave communications. Each unit can connect to a PLC (of any supported type) and/or a temperature controller (of any supported type). You can then use Modbus Master/Slave communications between the panels to pass data from one PLC to the other.



2. Connection

To connect 2 V-series units each other using the Modbus Slave communication, one of the units must be configured as a "Modbus Master" station and the other, a "Modbus Slave". The following shows an example of configuration.

Modbus Master V7: Set up using Temp. CTRL/PLC2Way.

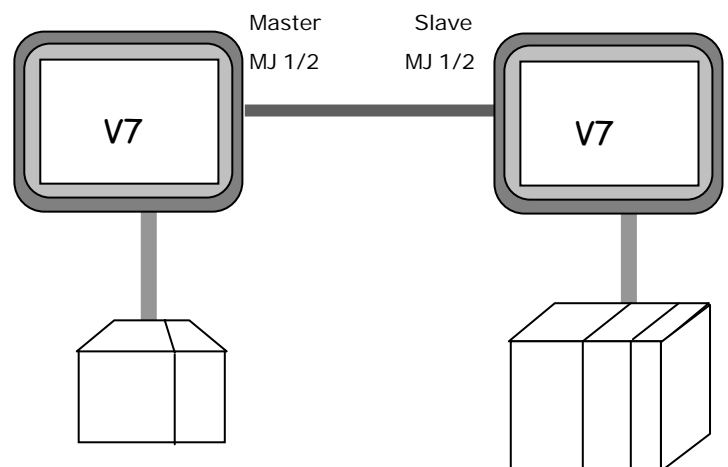
Model "Modbus Free"

Connected to: MJ2 or MJ1

Modbus Slave V7: Set up using Modbus Slave communication.

Connected to: MJ2 or MJ1

RS 232 Pinout		
Master	Pin	Slave
5	SG	5
7	RD/SD	8
8	SD/RD	7
RS 422 Pinout		
1	+RD	1
2	+SD	2
5	SG	5



3. Settings

To establish the Modbus Slave communication between V-series units, a Modbus Master and a Modbus Slave are configured differently.

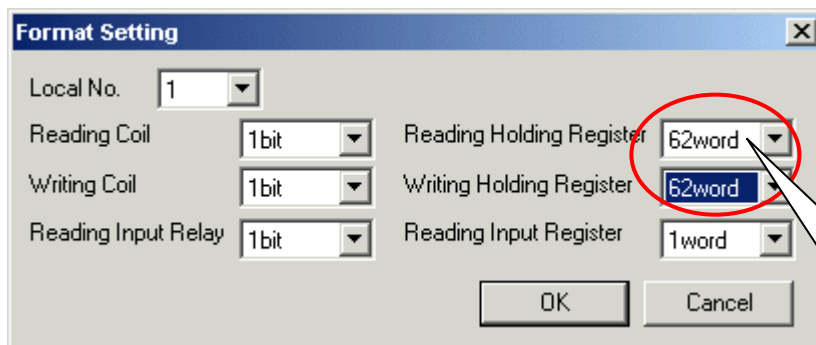
(a) Modbus Master

- You will need to select "Modbus Free" for the "Temperature controller/PLC2Way setting" for the Master. For details, refer to the Temperature Control Network manual.

***Note: If the Master V-series unit has already been connected to a temperature controller or an inverter other than "Modbus Free", it is impossible to connect the Master unit to another V-series unit via Modbus Slave communication.**

- You can use the following 2 function codes to read/write the memory of a Modbus Slave:
 - Memory Read -> Function code 03H (Reading Holding Register)
 - Memory Write -> Function code 10H (Writing multiple Holding Registers)

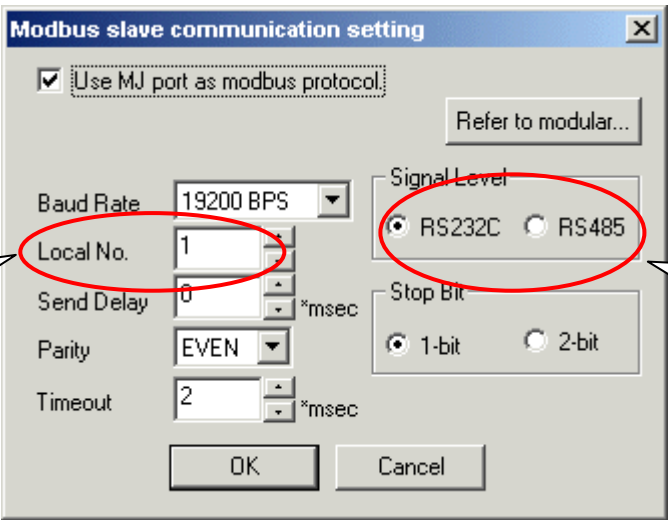
Thus, configure the "Reading Holding Register" and "Writing Holding Register" as follows in the [Format Setting] dialog under the [Temp. CTRL/PLC2Way Setting] dialog.



We recommend each of those items be set to a value a little larger than considered proper.

(b) Modbus Slave

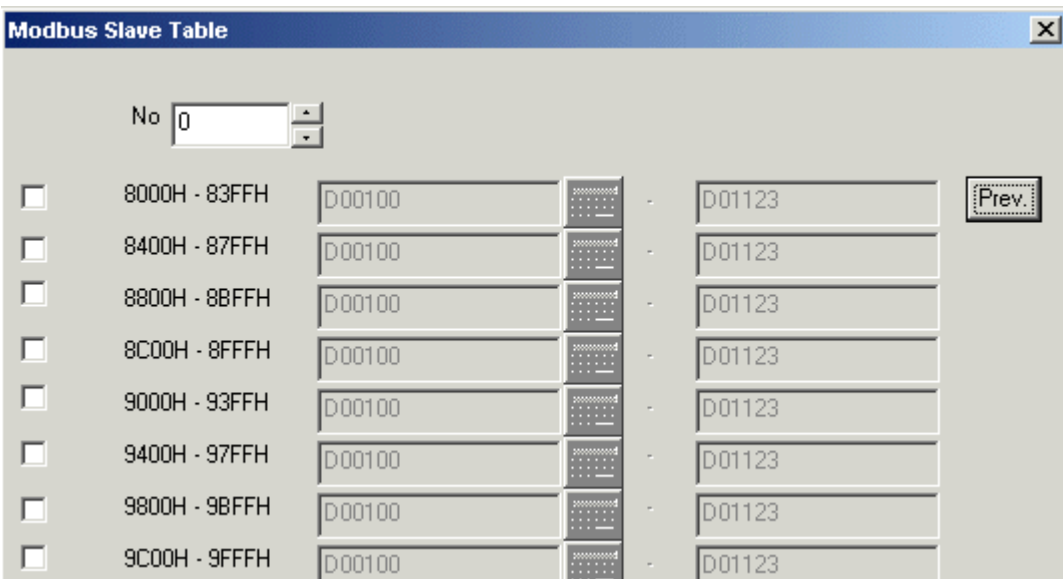
- Select System Setting | Modbus Slave | Communication Setting and check box for "Use MJ port as modbus protocol".



This setting must be unique for each Slave (up to 31 Slaves in the network).

For multi-node networks this must be RS485.

- Configure all of the settings to match the Master unit settings.
***Note: V606, V606i, V609E do not support 115K baud rate**
- Click System Setting | Modbus Slave | Memory Table



No	Address Range	Data Register	Status	Address Range	Prev.
0	8000H - 83FFH	D00100		D01123	
	8400H - 87FFH	D00100		D01123	
	8800H - 8BFFH	D00100		D01123	
	8C00H - 8FFFH	D00100		D01123	
	9000H - 93FFH	D00100		D01123	
	9400H - 97FFH	D00100		D01123	
	9800H - 9BFFH	D00100		D01123	
	9C00H - 9FFFH	D00100		D01123	

Now you need to configure a memory map that is used when the Modbus Master station reads/writes the memory of the Modbus Slave station. Map the memory according to this chart:

At Modbus Master	Memory table (at Slave)	At Modbus Slave
Holding register 40001-416384	-	Internal memory \$u0-16383
Holding register 416385-420480	-	Internal memory \$s0-4095
Holding register 432769-433792	8000H-83FFH	Free area 0 (PLC, Temperature controller, Memory card, \$L, etc.)
Holding register 433793-434816	8400H-87FF	Free area 1 (PLC, Temperature controller, Memory card, \$L, etc.)
Holding register 434817-435840	8800H-8BFFH	Free area 2 (PLC, Temperature controller, Memory card, \$L, etc.)
.	.	.
.	.	.
.	.	.
Holding register 463489-46451	F800H-FBFFH	Free area 30 (PLC, Temperature controller, Memory card, \$L, etc.)



Up to 32 memory tables (No. 0 to 31) can be registered at the Slave.

You can instruct the Master which of the tables to access by defining the table No. in "\$s800" of the V-series unit at the Slave.

This setting defaults to 65535. You will need to change it by setting 417185 at the Master to the appropriate table number for each Slave.

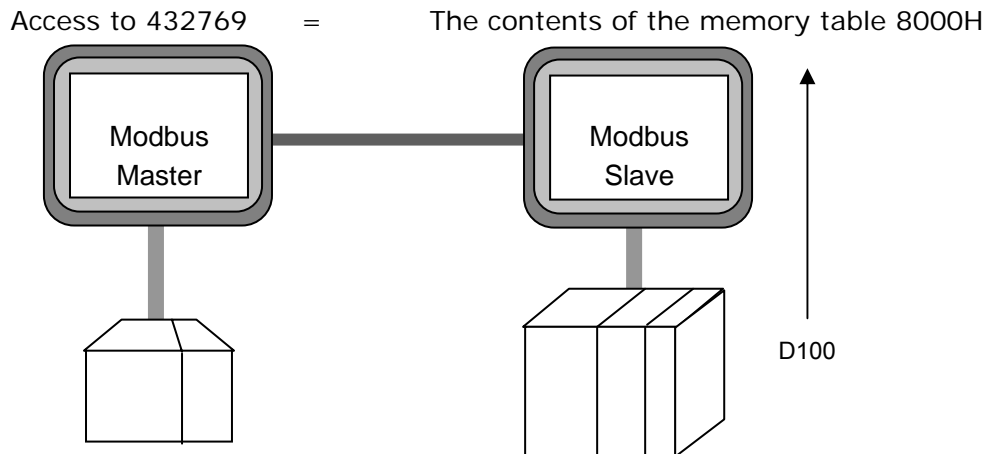
4. Example

V7 at Modbus Slave

Table No. 0

Assume the following assignment: 8000H-... = D100-...

When the Modbus Master reads "Holding Register 432769", the Slave can monitor the data contained in D100.



5. For More Information

1. Information on Modbus

- Website <http://www.modbus.org>