

SIEMENS AG.

SIMETIC S7-200 Series

Ethernet Driver

Supported version TOP Design Studio V1.4.9.52 or higher



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We want to thank our customers who use the Touch Operation Panel.

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Refer to this section to check the data addresses which can communicate with an external device.

1. System configuration

The system configuration of TOP and "SIEMENS AG. – S7-200 Series Ethernet" is as follows:

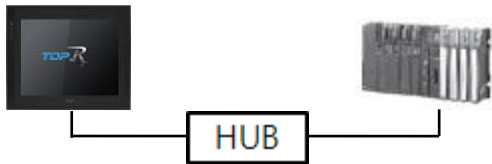
Series	Module	Link I/F	Communication method	System setting	Cable
SIMATIC S7-200	CPU 2□□	PROFINET Interface on CPU	TCP	3. TOP communication setting 4. External device setting	Twisted pair cable *Note 1)
	CPU SR□□				
	CPU ST□□				
	CPU CR□□				

***Note 1)** Twisted pair cable

- Refer to STP (Shielded Twisted Pair Cable) or UTP (Unshielded Twisted Pair Cable) Category 3, 4, 5.
- Depending on the network configuration, you can connect to components such as the hub and transceiver, and in this case, use a direct cable.

■ Connectable configuration

- 1:1 connection

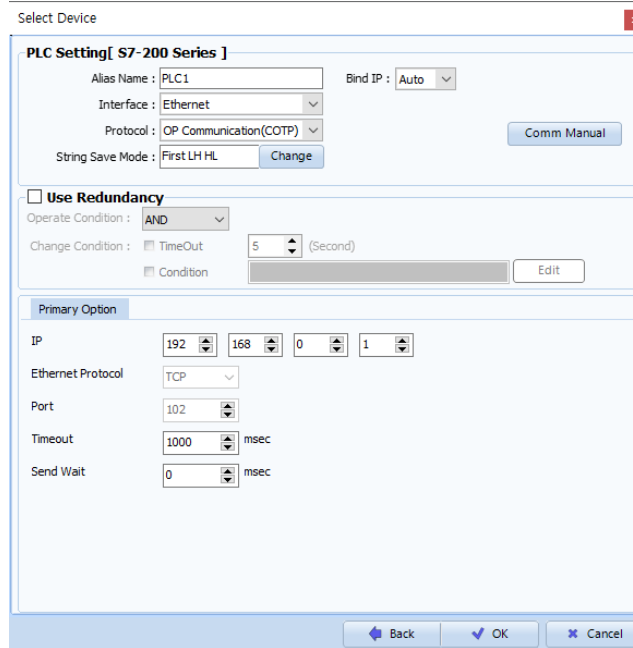
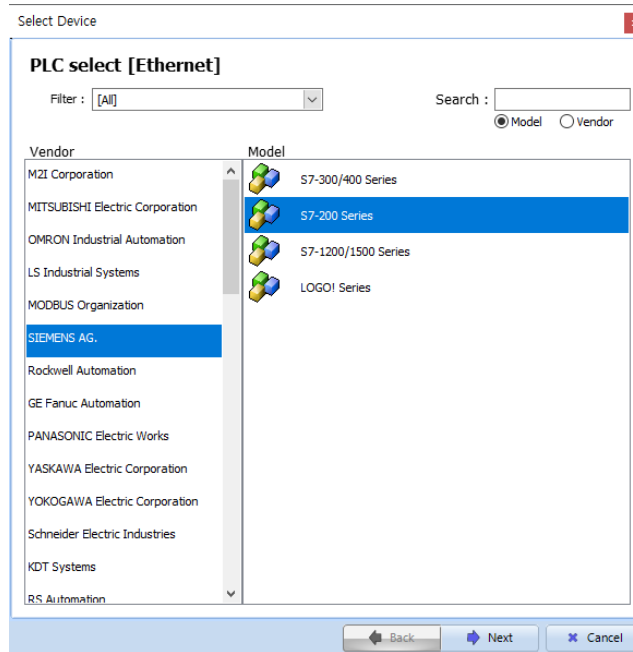


- 1:N connection



2. External device selection

- Select a TOP model and a port, and then select an external device.



Settings		Contents					
TOP	Model	Select the TOP model.					
External device	Vendor	Select the vendor of the external device. Select "SIEMENS AG."					
	PLC	Select the external device to be connected to the TOP. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: black; color: white;">Model</th> <th style="background-color: black; color: white;">Interface</th> <th style="background-color: black; color: white;">Protocol</th> </tr> </thead> <tbody> <tr> <td>S7-200 Series</td> <td>Ethernet</td> <td>OP Communication(COTP)</td> </tr> </tbody> </table> <p>Please check the system configuration in Chapter 1 to see if the external device you want to connect is a model whose system can be configured.</p>	Model	Interface	Protocol	S7-200 Series	Ethernet
Model	Interface	Protocol					
S7-200 Series	Ethernet	OP Communication(COTP)					

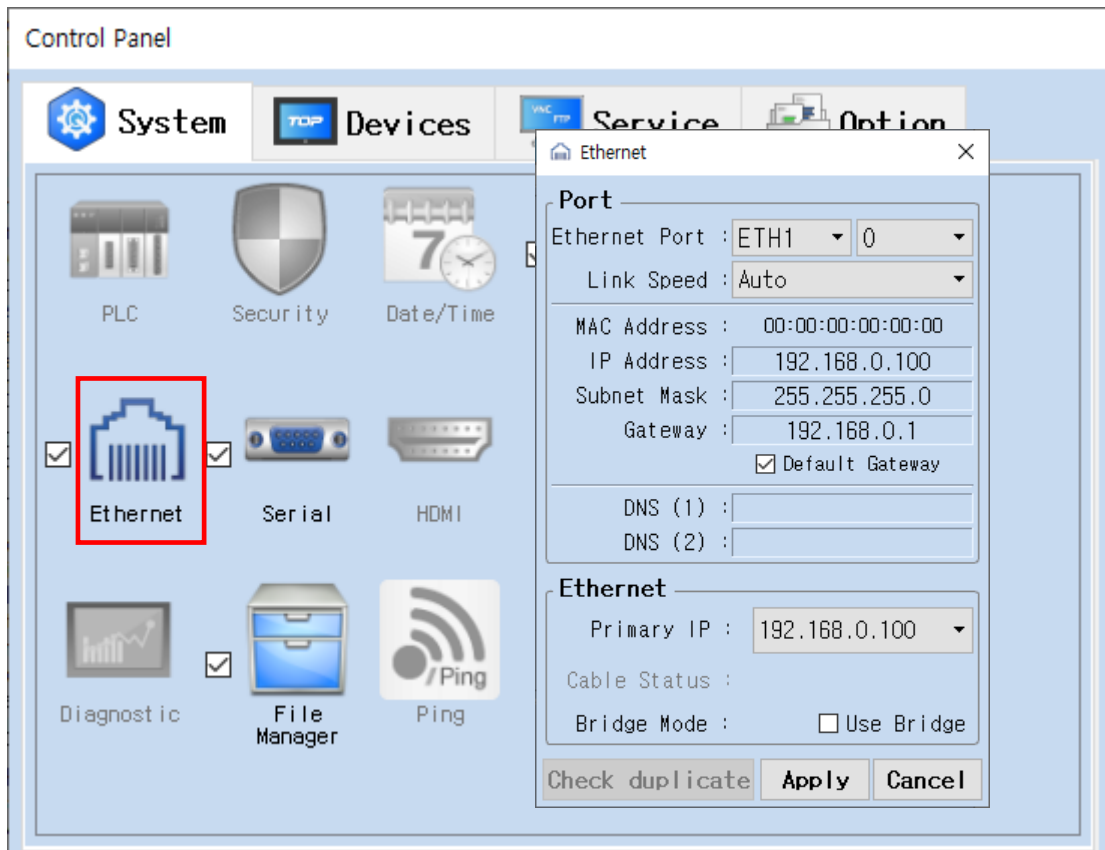
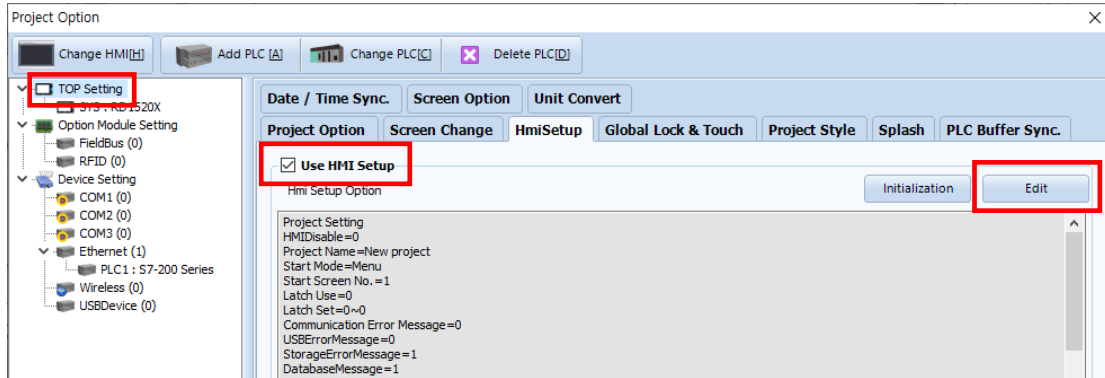
3. TOP communication setting

The communication can be set in TOP Design Studio or TOP-R main menu. The communication should be set in the same way as that of the external device.

3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

- [Project] → [Property] → [TOP Setting] → [HMI Setup] → [Use HMI Setup Check] → [Edit] → [Ethernet]
- Set the TOP communication interface in TOP Design Studio.



Items	TOP	External device	Remarks
IP Address	192.168.0.100	192.168.0.50	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

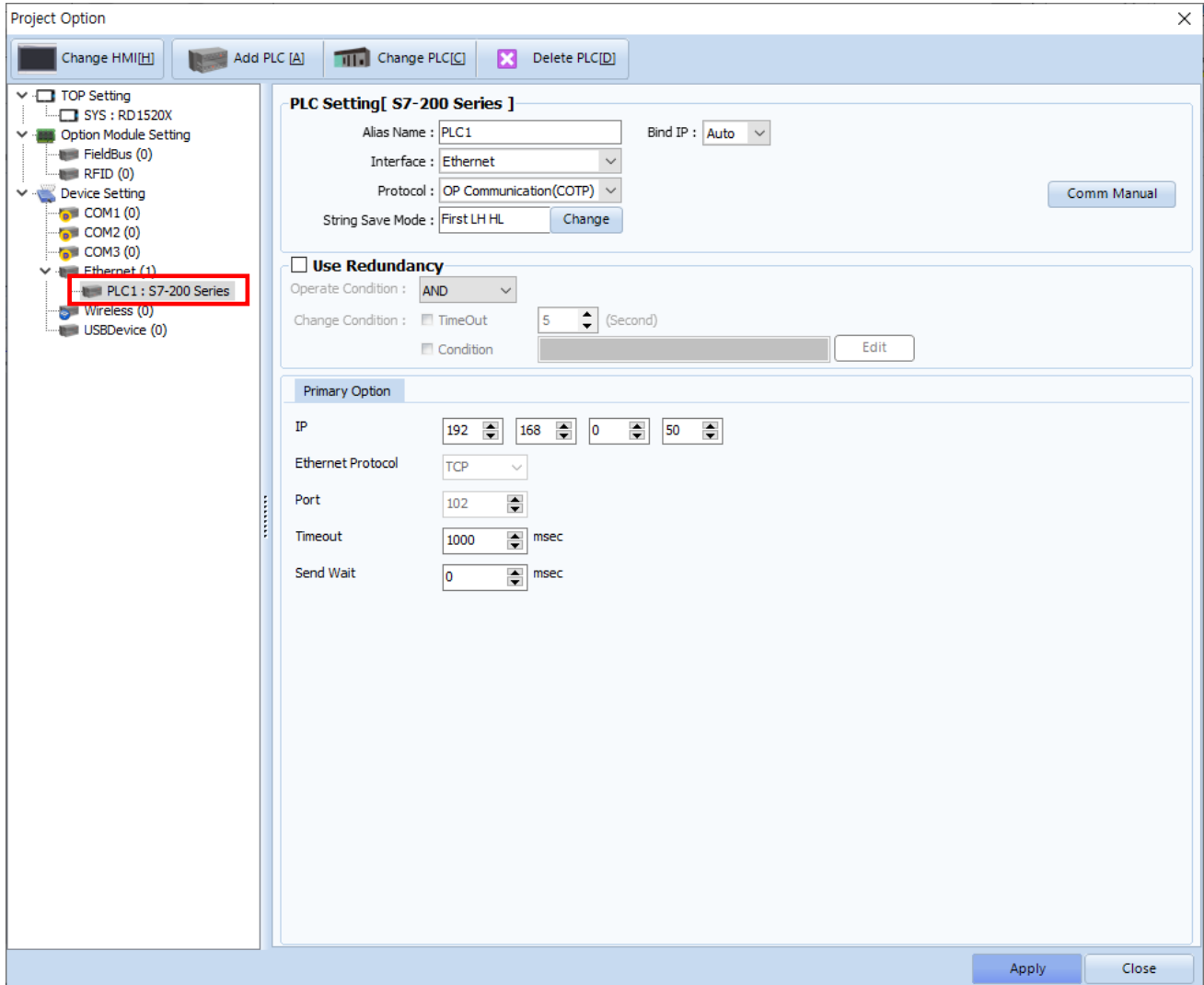
* The above settings are examples recommended by the company.

Items	Description
IP Address	Set the IP address of the TOP.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.

(2) Communication option setting

■ [Project] → [Project Property] → [Device Setting > Ethernet > PLC1 : S7-200 Series]

– Set the options of the S7-200 Series Ethernet communication driver in TOP Design Studio.



* The above settings are examples recommended by the company.

Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External device selection" .
Protocol	Select the communication protocol between the TOP and an external device.	
IP	Enter the IP address of the external device.	
Ethernet Protocol	Select the Ethernet protocol between the TOP and an external device.	TCP Fixed
Port	Enter the Ethernet communication port number of the external device.	102 Fixed
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	

3.2. Communication setting in TOP

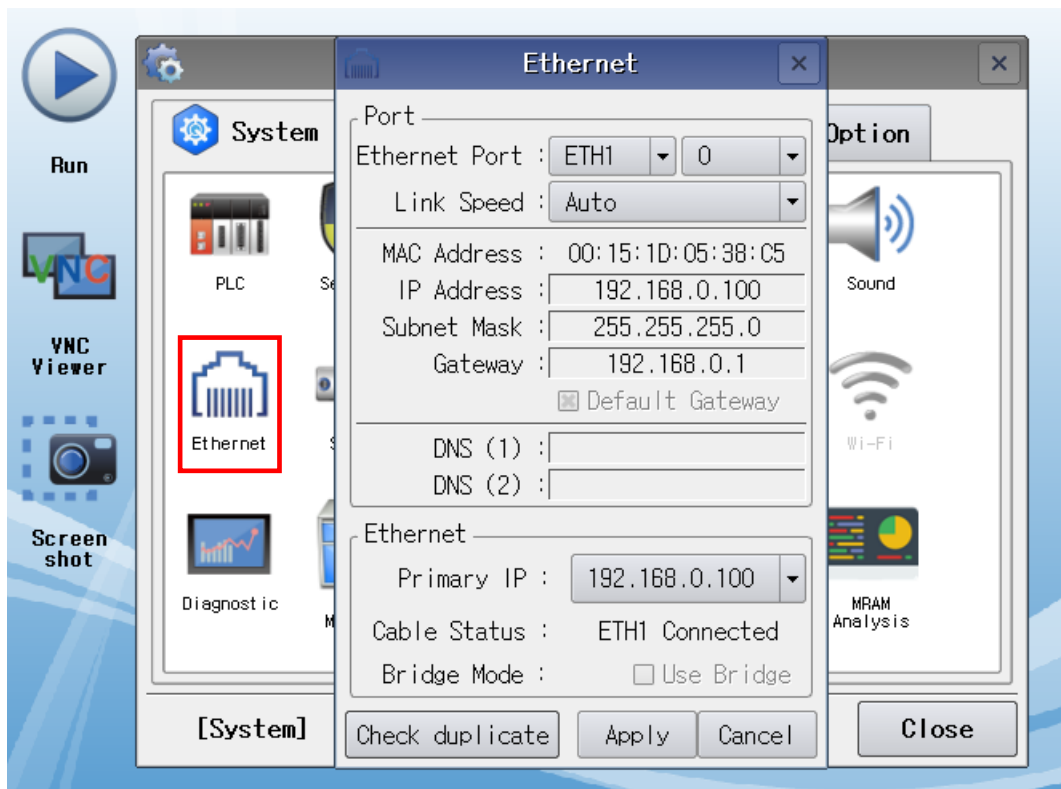
* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

- Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.



(1) Communication interface setting

- [Control Panel] → [Ethernet]



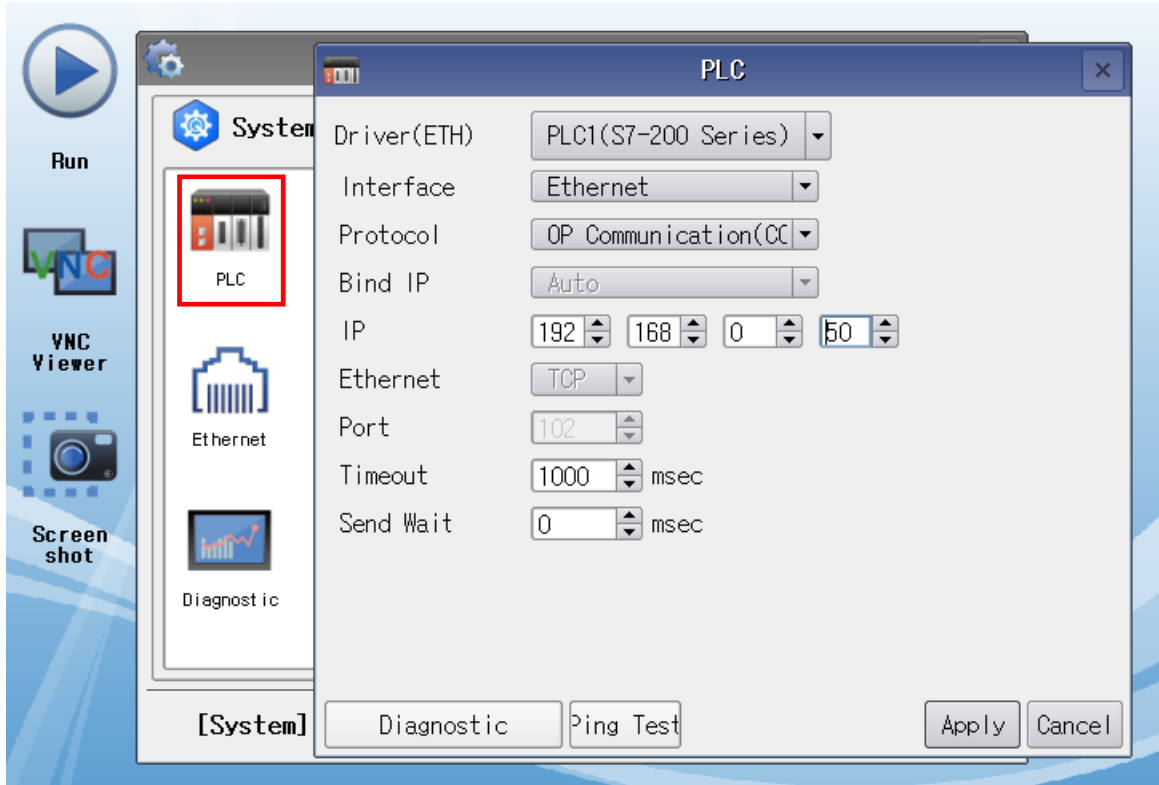
Items	TOP	External device	Remarks
IP Address	192.168.0.100	192.168.0.50	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

* The above settings are examples recommended by the company.

Items	Description
IP Address	Set the IP address of the TOP.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.

(2) Communication option setting

■ [Control Panel] → [PLC]



* The above settings are examples recommended by the company.

Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External device selection" .
Protocol	Select the communication protocol between the TOP and an external device.	
IP	Enter the IP address of the external device.	
Ethernet Protocol	Select the Ethernet protocol between the TOP and an external device.	TCP Fixed
Port	Enter the Ethernet communication port number of the external device.	102 Fixed
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	

3.3 Communication diagnostics

- Check the interface setting status between the TOP and an external device.
 - Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.
 - Check that the settings of the connected ports in [Control Panel] → [Ethernet] are the same as the settings of the external device.

- Diagnosis of whether the port communication is normal or not
 - Touch "Communication Diagnostics" in [Control Panel] → [PLC].
 - Check whether communication is connected or not.

Communication diagnostics succeeded	Communication setting normal
Error message	Communication setting abnormal
	- Check the cable, TOP, and external device settings. (Refer to Communication diagnostics sheet.)

■ Communication diagnostics sheet

- If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

Items	Contents	Check		Remarks	
System configuration	How to connect the system	OK	NG	1. System configuration	
	Connection cable name	OK	NG		
TOP	Version information	OK	NG	2. External device selection 3. Communication setting	
	Port in use	OK	NG		
	Driver name	OK	NG		
	Other detailed settings	OK	NG		
	Relative prefix	Project setting	OK		NG
		Communication diagnostics	OK		NG
	Ethernet port setting	IP Address	OK		NG
Subnet Mask		OK	NG		
Gateway		OK	NG		
External device	CPU name	OK	NG	4. External device setting	
	Communication port name (module name)	OK	NG		
	Protocol (mode)	OK	NG		
	Setup Prefix	OK	NG		
	Other detailed settings	OK	NG		
	Ethernet port setting	IP Address	OK		NG
		Subnet Mask	OK		NG
Gateway		OK	NG		
Check address range		OK	NG	5. Supported addresses (For details, please refer to the PLC vendor's manual.)	

4. External device setting

Configure the IP address of the external device by referring to the vendor's user manual.

5. Supported addresses

The devices available in TOP are as follows:

The device range (address) may differ depending on the CPU module series/type. The TOP series supports the maximum address range used by the external device series. Please refer to each CPU module user manual and be take caution to not deviate from the address range supported by the device you want to use.

Memory	Bit	Word	Double word	Remarks
Input	I00000.0 – I00015.7	IW00000 – IW00014	ID00000 – ID00012	
Output	Q00000.0 – Q00015.7	QW00000 – QW00014	QD00000 – QD00012	
Marker	M00000.0 – M00031.7	MW00000 – MW00030	MD00000 – MD00028	
Variable	V00000.0 – V20479.7	VW00000 – VW20478	VD00000 – VD20476	
Timer	-	T000 – T255	-	
Counter	-	C000 – C255	-	
Analog Input	AIW00000.00 – AIW00110.15	AIW00000 – AIW00110	AIW00000 – AIW00109	
Analog Output	AQW00000.00 – AQW00110.15	AQW00000 – AQW00110	AQW00000 – AQW00109	
Special	SM00000.0 – SM001699.7	SMW00000 – SMW01698	SMD00000 – SMD1696	