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Multi panel meter

MT-XGT(RS485)

Technical Support Manual

C E

MT4 Series

Preface

Thank you very much for selecting Autonics products.

Please familiarize yourself with the information contained in the **Safety Precautions** section before using this product.

This user manual contains information about the product and its proper use, and should be kept in a place where it will be easy to access.

Technical Support Manual Guide

- Please familiarize yourself with the information in this manual before using the product.

- This manual provides detailed information on the product's features. It does not offer any guarantee concerning matters beyond the scope of this manual.

- This manual may not be edited or reproduced in either part or whole without permission.

- This manual is not provided as part of the product package. Please visit our home-page (www.autonics.com) to download a copy.

- The manual's content may vary depending on changes to the product's software and other unforeseen developments within Autonics, and is subject to change without prior notice. Upgrade notice is provided through our homepage.

- We contrived to describe this manual more easily and correctly. However, if there are any corrections or questions, please notify us these on our homepage.

Technical Support Manual Symbols

Symbol	Description
Note	Supplementary information for a particular feature.
Warning	Failure to follow instructions can result in serious injury or death.
Caution	Failure to follow instructions can lead to a minor injury or product damage.
Ex.	An example of the concerned feature's use.
※1	Annotation mark.

Safety Precautions

■ Following these safety precautions will ensure the safe and proper use of the product and help prevent accidents, as well as minimizing possible hazards.

■ Safety precautions are categorized as Warnings and Cautions, as defined below:

⚠ Warning	Warning	Failure to follow the instructions may lead to a serious injury or accident.

⚠ Caution	Caution	Failure to follow the instructions may lead to a minor injury or accident.

⚠ Warning

■ Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
Failure to follow this instruction may result in personal injury, fire, or economic loss.

■ The unit must be installed on a device panel before use.
Failure to follow this instruction may result in electric shock.

■ Do not connect, repair, or inspect the unit while connected to a power source.
Failure to follow this instruction may result in electric shock.

■ Do not disassemble or modify the unit. Please contact us if necessary.
Failure to follow this instruction may result in electric shock or fire.

■ Check the terminal numbers before connecting the power source and measurement input.
Failure to follow this instruction may result in fire.

⚠ Caution

■ Do not use the unit outdoors.
Failure to follow this instruction may result in electric shock or shorten the life cycle of the unit.

■ When connecting the power input and relay output cables, use AWG20 ($0.05mm^2$) cables and make sure to tighten the terminal screw bolt above 0.74N·m to 0.90N·m.
Failure to follow this instruction may result in fire due to contact failure.

■ Use the unit within the rated specifications.
Failure to follow this instruction may result in electric shock or shorten the life cycle of the unit.

■ Do not use loads beyond the rated switching capacity of the relay contact.
Failure to follow this instruction may result in insulation failure, contact failure, contact bonding, relay damage, or fire.

■ Do not use water or oil-based detergent when cleaning the unit. Use dry cloth to clean the unit.
Failure to follow these instructions may result in electric shock or fire.

- Do not use the unit where flammable or explosive gas, humidity, direct sunlight, radiant heat, vibration, and impact may be present.
  Failure to follow this instruction may result in fire or explosion.

- Keep dust and wire residue from flowing into the unit.
  Failure may result in fire or product malfunction.

- Check the polarity of the measurement input contact before wiring the unit.
  Failure to follow this instruction may result in fire or explosion.

Table of Contents

1   System

1.1   Version

Software	Version	Note
Operations	Windows 7	—
XG 5000	V4.07	Release : 2016.03.29

1.2   Connections

RS-485

XGK-CPUE   **MT4W**   **MT4W**   **MT4W**   **MT4W**

(XGI-CH2A)
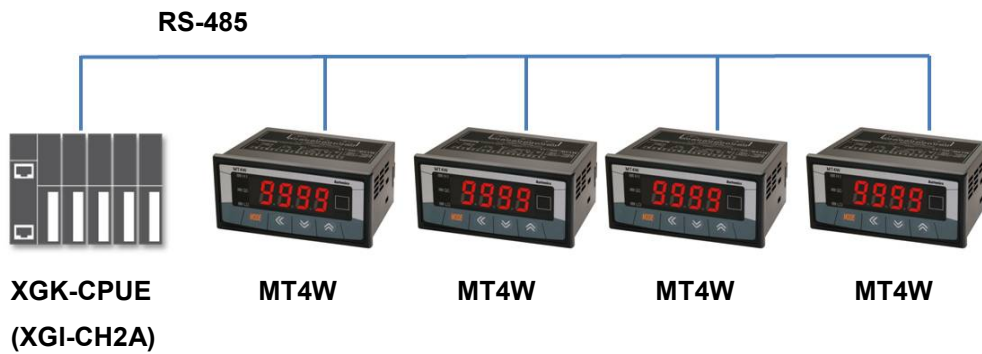
1.3   Communication cable connection

MT4W	Cable connection	PLC (XGT – XGL-CH2A)
RS – 485 (-)		RX -
		RX +
RS – 485 (+)		TX -
		TX +

2   Communication Setting

2.1   MT4W Setting

1st Supply power to the MT4W unit. Hold the MODE key for 5 sec to enter parameter setting group.

2nd Enter *PA2* and set the communication settings as below.

Parameter	Display	Setting	Note
Communication address	*Adr5*	*01*	User setting
Communication speed	*bPS*	*96*	User setting
Communication parity bit	*Prty*	*nonE*	Fixed
Communication stop bit	*StP*	*2*	Fixed
Communication response waiting time	*rSyt*	*20*	User setting

* Press the MODE key in RUN mode, it enters to *PA0*.
* Hold the MODE key for 3 sec in RUN mode, it enters to *PA1*.
* Hold the MODE key for 5 sec in RUN mode, it enters to *PA2* before *PA1*.
* It is advanced to current display parameter releasing the MODE key at *PA1* or *PA2*.
* Hold the MODE key for over 3 sec in any parameter group, it returns to RUN mode.
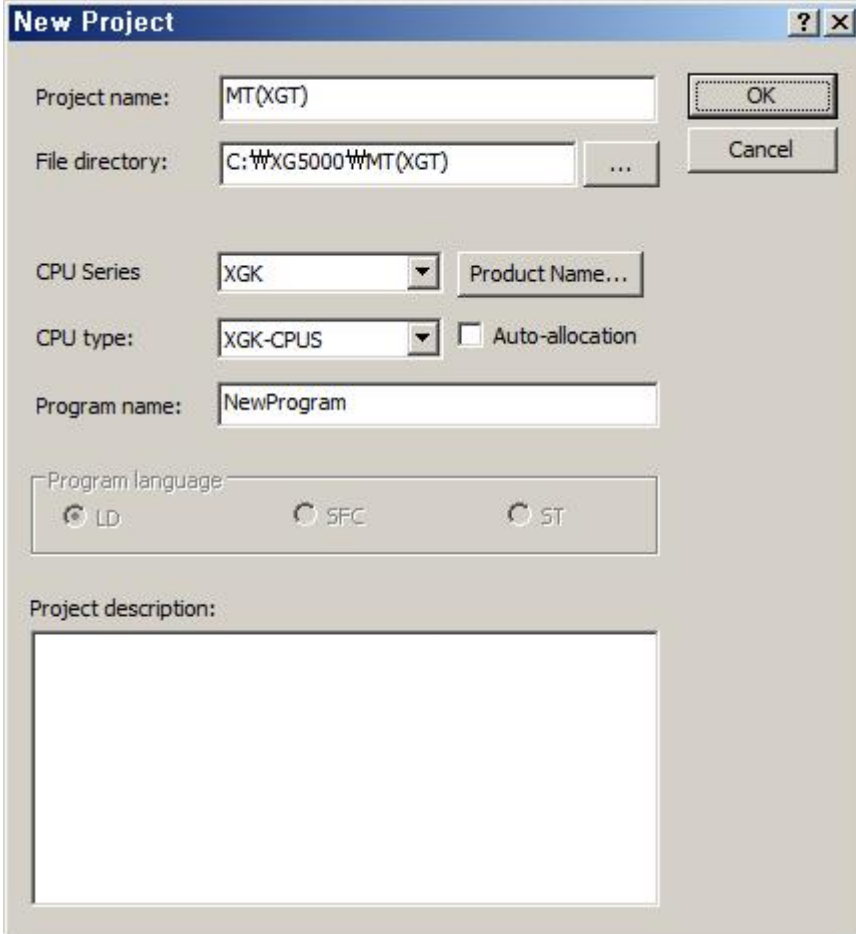* If any key is not entered for 60 sec in each parameter, it returns to RUN mode.
* Only for RS485 communication output model is available.

2.2 XGB Setting

1st Run XG5000, and select [Project] – [New Project] on menu.

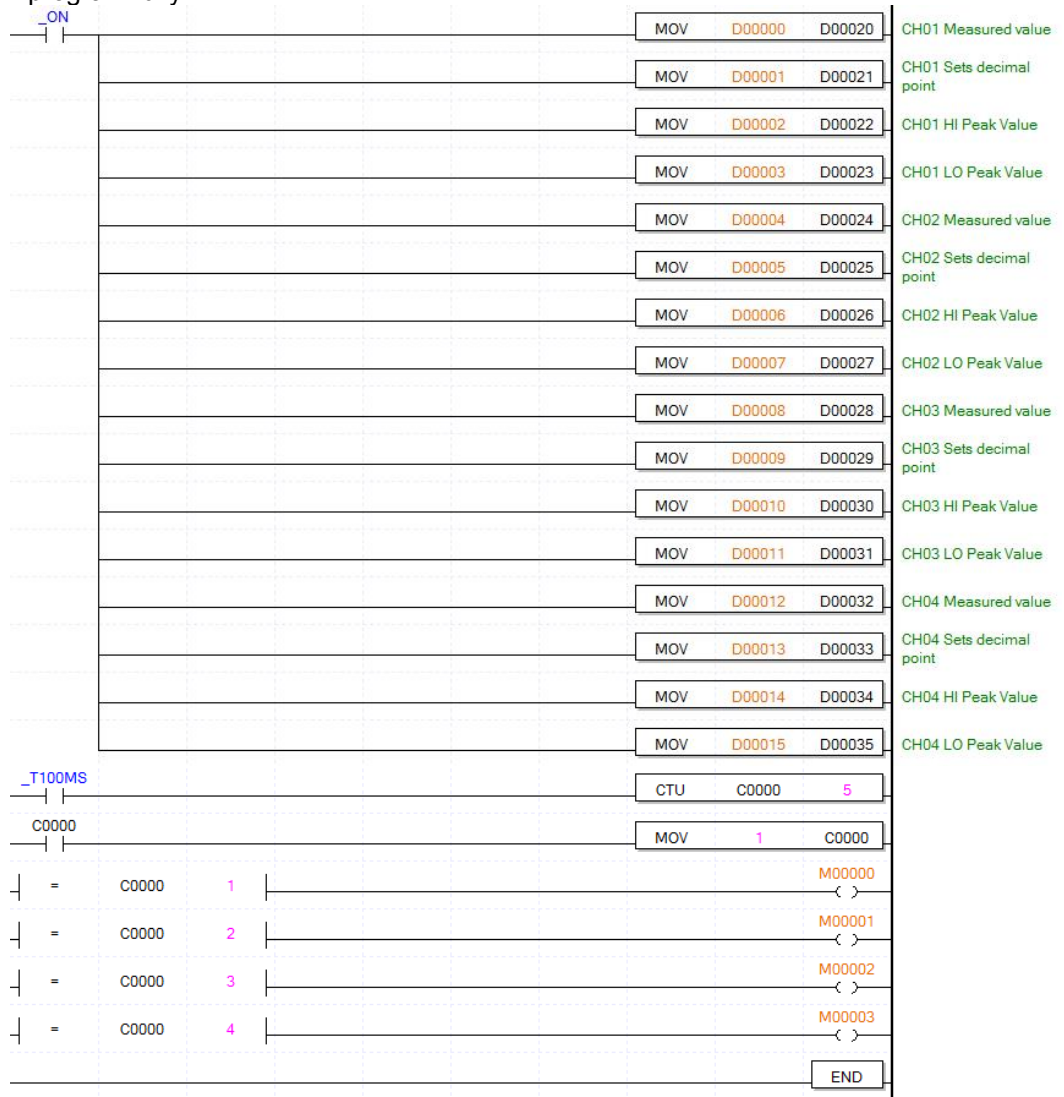Enter project name and select CPU Series and type.

2nd After executing, enter the below contents at XG5000.

* This communication program is only for test. Before using it at field, review and test the program fully.

_ON	MOV	D00000	D00020	CH01 Measured value
	MOV	D00001	D00021	CH01 Sets decimal point
	MOV	D00002	D00022	CH01 HI Peak Value
	MOV	D00003	D00023	CH01 LO Peak Value
	MOV	D00004	D00024	CH02 Measured value
	MOV	D00005	D00025	CH02 Sets decimal point
	MOV	D00006	D00026	CH02 HI Peak Value
	MOV	D00007	D00027	CH02 LO Peak Value
	MOV	D00008	D00028	CH03 Measured value
	MOV	D00009	D00029	CH03 Sets decimal point
	MOV	D00010	D00030	CH03 HI Peak Value
	MOV	D00011	D00031	CH03 LO Peak Value
	MOV	D00012	D00032	CH04 Measured value
	MOV	D00013	D00033	CH04 Sets decimal point
	MOV	D00014	D00034	CH04 HI Peak Value
	MOV	D00015	D00035	CH04 LO Peak Value

```
_T100MS ─┤ ├─                          CTU    C0000      5

C0000 ─┤ ├─                            MOV     1       C0000

─┤ = C0000   1 ├─                                      M00000 ─( )─

─┤ = C0000   2 ├─                                      M00001 ─( )─

─┤ = C0000   3 ├─                                      M00002 ─( )─

─┤ = C0000   4 ├─                                      M00003 ─( )─

                                       END
```
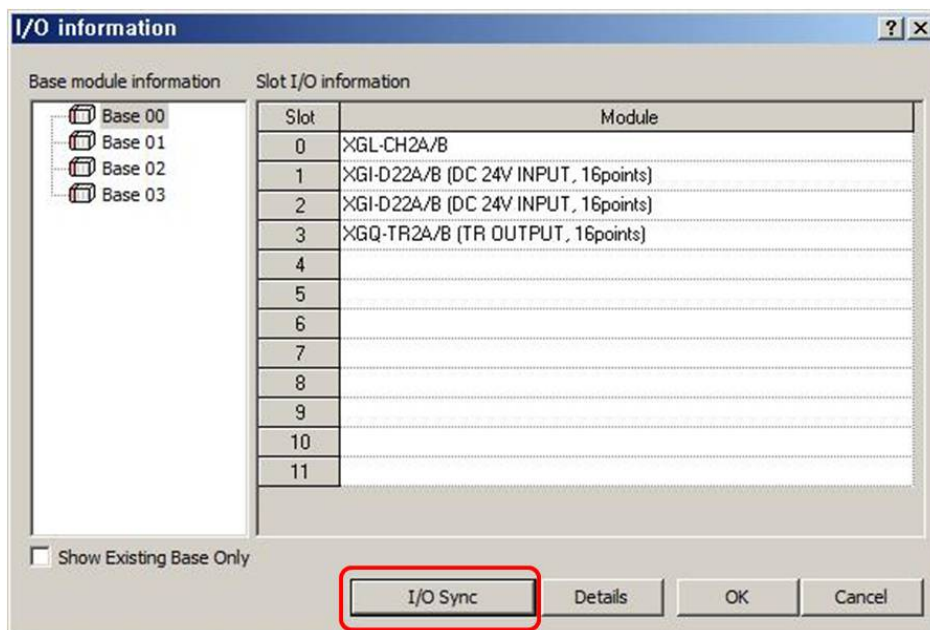
3rd Select the desired connection method at [Online] – [Connection Settings]. This test is connected via USB. After connecting completed, select [Online] – [Change Mode] – [Stop].

Connection settings	Type
Type	USB
Depth	Local
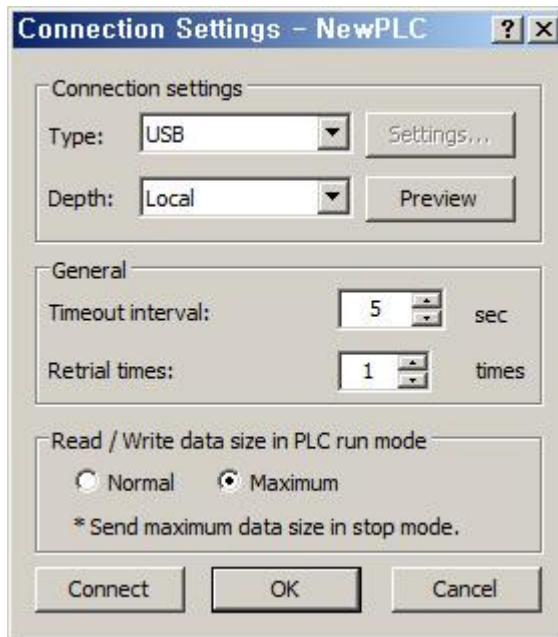
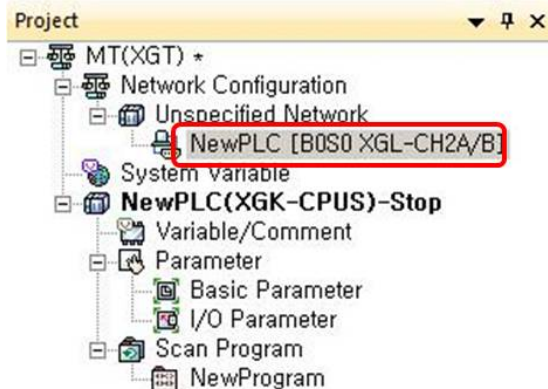
4th At [Online] – [I/O Information], click 'I/O Sync'. When I/O syncronizing is completed, it is set same as the used module.

5th When I/Osyncronizing is completed, the used communication module is added at the below standard network. Double-click the right communication module.

6th [Standard Settings-Cnet] dialog box appears. At standard settings, set as below.

Item		Setting	Note
Standard Settings Channel 2	Communication type	RS-485	Fixed
	Communication speed	9600	User setting
	Terminating resisters	Disable	User setting
	Station No.	0	User setting
Operation mode	Channel 2	Use P2P	
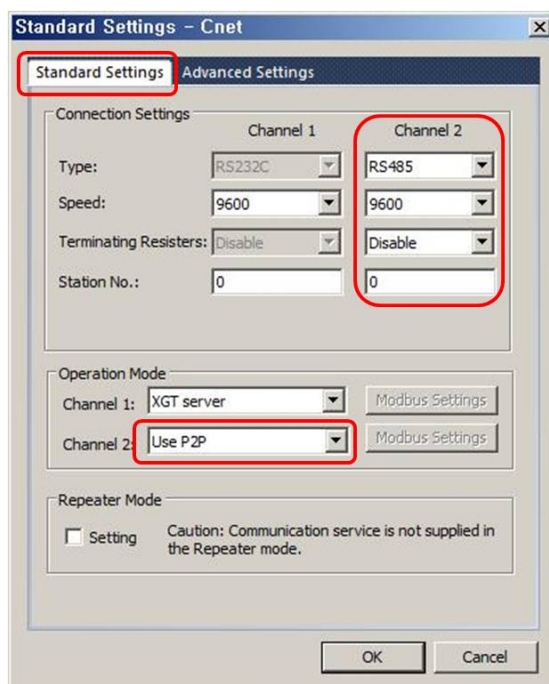
7th At advanced settings, set as below.

Item		Channel 2
Advanced settings	Data bit	8
	Stop bit	2
	Parity bit	NONE
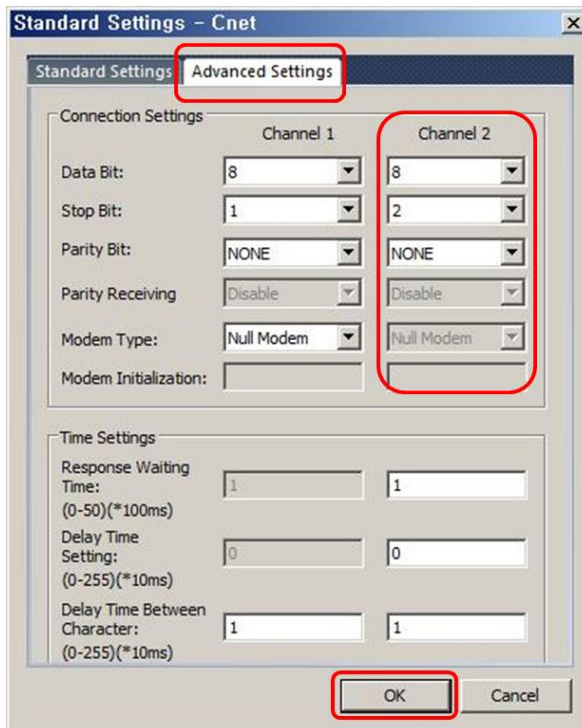
8th Double-click 'P2P Channel' and select 'Modbus RTU client' of 'Use P2P'. Click 'OK'.
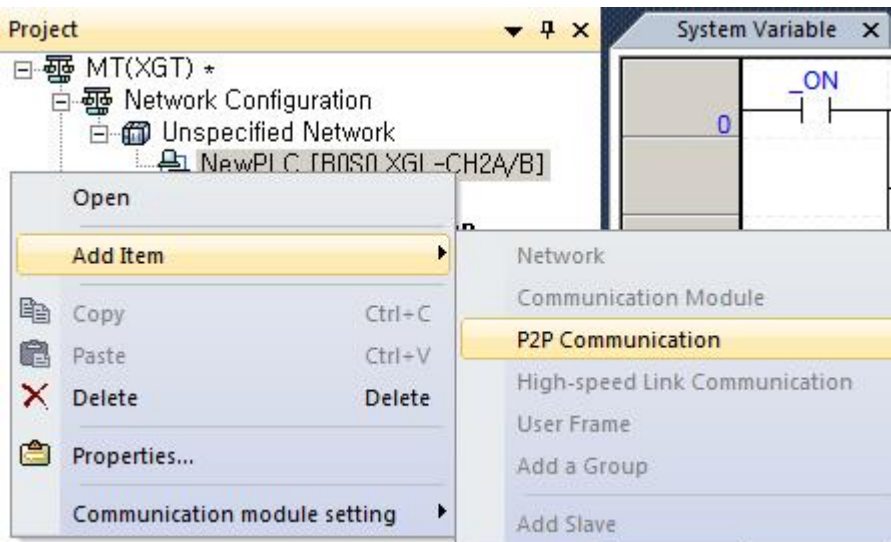
9th Double-click 'P2P Channel' to select Modbus RTU client at Use P2P and click 'OK'.

10th   Below P2P channel, double-click 'P2P block' and set as below.

Index	Ch	Driver Setting	P2P function	Conditional flag	Command type	Data type	No. of variables	Data size	Destination station	Destination station number	Frame	Setting	Variable setting contents
0	2	Modbus RTU client	READ	M00000	Continuous	WORD	1	4	☑	1		Setting	Number:1 READ1:0x30000,SAVE1:D00000
1	2	Modbus RTU client	READ	M00001	Continuous	WORD	1	4	☑	2	PV	Setting	Number:1 READ1:0x30000,SAVE1:D00004
2	2	Modbus RTU client	READ	M00002	Continuous	WORD	1	4	☑	3		Setting	Number:1 READ1:0x30000,SAVE1:D00008
3	2	Modbus RTU client	READ	M00003	Continuous	WORD	1	4	☑	4		Setting	Number:1 READ1:0x30000,SAVE1:D00012

CH	P2P function	Conditional flag	Command type	Data type	Destination station number
2	READ(PV)	M00000 to M00003	2. Continuous	WORD (size: 4)	Enter destination station (1 to 4)

* Variable setting contents are set as belows.
  Click 'Setting' to set variable.

* Modbus Mapping Table

Address	Command	Transmission data	Note
30001(0000)	04	Present measurement value · Standard - Transmits 5% to 110% · Scale - Transmits display range -1999 to 9999	Data transmission for measurement error · Standard Transmits 9999 when HHHH is displayed. Transmits -1999 when LLLL is displayed. · Scale Transmits the setting values of H-SC and L-SC. Transmits 9999 for d-HH. Transmits -1999 for d-LL.
30002(0001)	04	Dot setting	Transmits dot position setting value of PA1 dot mode. · Standard 0.000→0003H, 0.00→0002H 0.0→0001H, 0→ 0000H · Scale 0.000→0103H, 0.00→0102H 0.0→ 0101H, 0→0100H
30003(0002)	04	High peak value	Transmits max. display value among the measurement display values.
30004(0004)	04	Low peak value	Transmits min. display value among the measurement display values.

* PV setting

Address	Reading area (setting)	Saving area (setting)	Address (fixed)
Address 1	0x30000	D00000	N00021
Address 2	0x30000	D00004	N00062
Address 3	0x30000	D00008	N00103
Address 4	0x30000	D00012	N00144
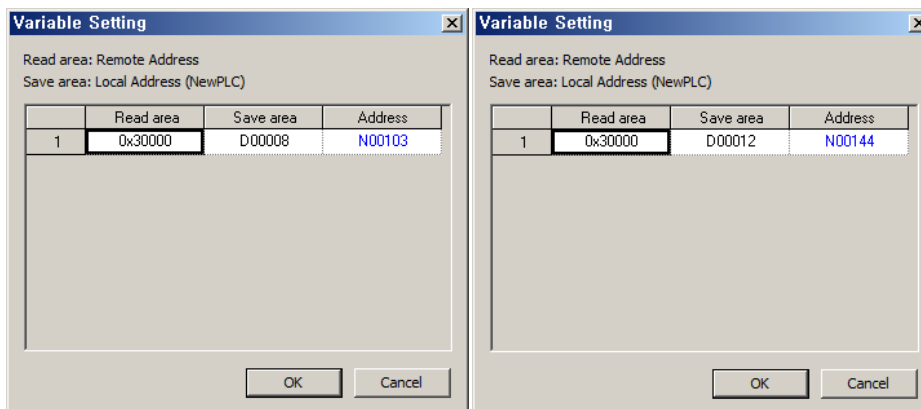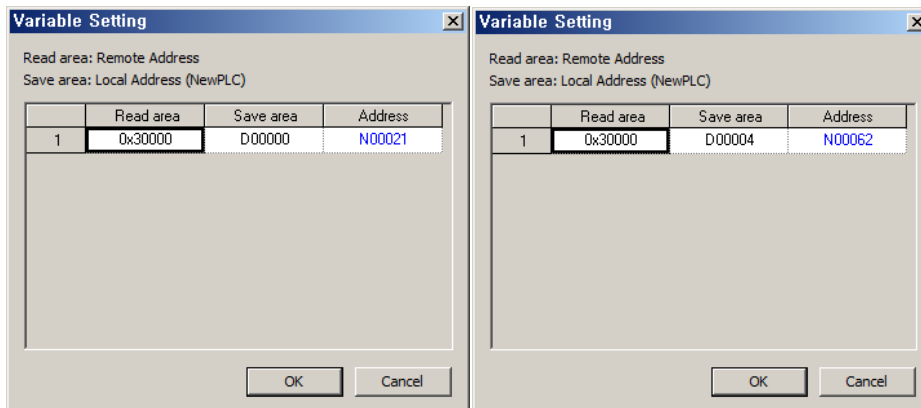
11thAt [Online] – [Connection Settings], select connection type.

Select [Online] – [Write] to execute download.

3 Operation Check

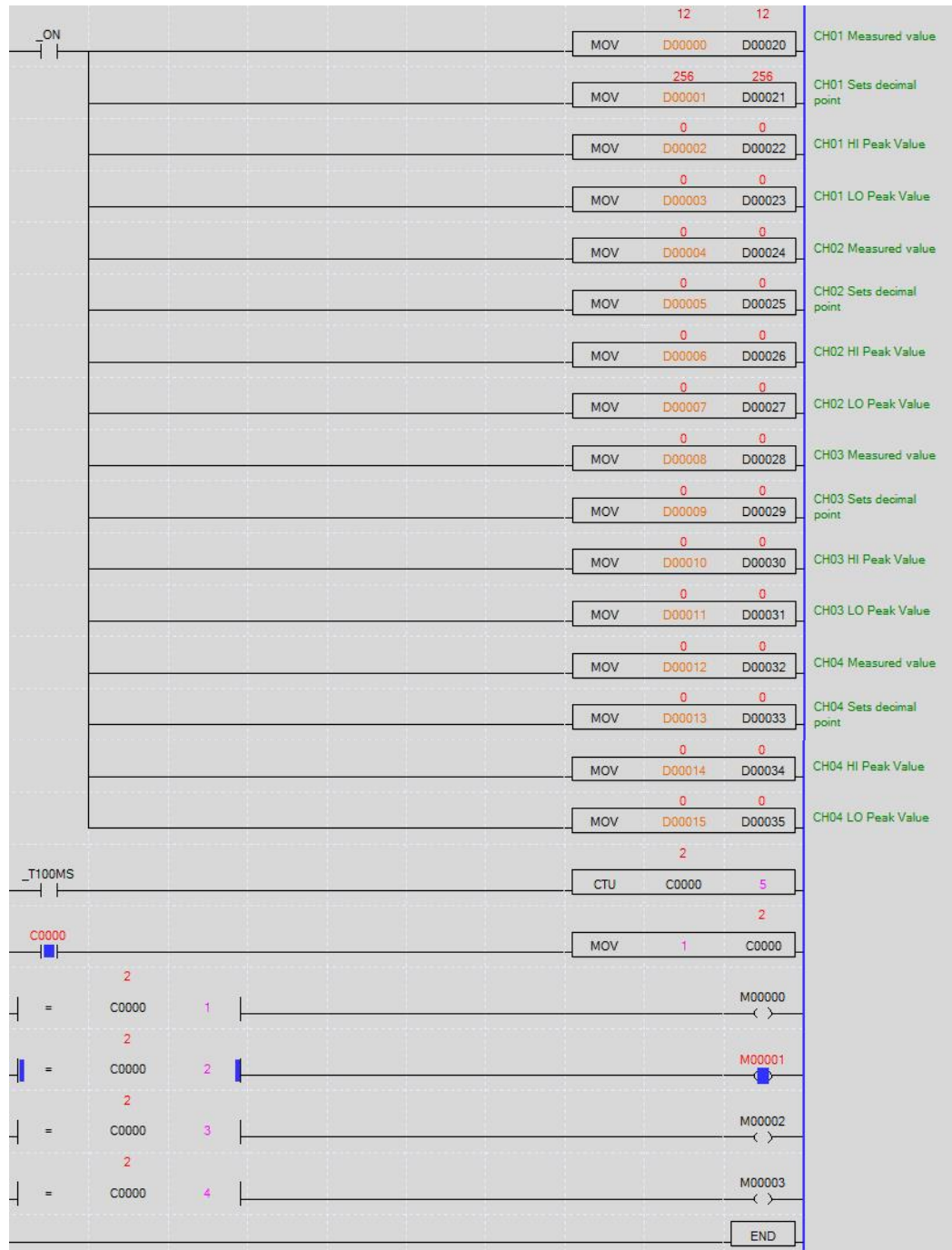|			
		12	12
_ON	MOV	D00000	D00020	CH01 Measured value
		256	256
	MOV	D00001	D00021	CH01 Sets decimal point
		0	0
	MOV	D00002	D00022	CH01 HI Peak Value
		0	0
	MOV	D00003	D00023	CH01 LO Peak Value
		0	0
	MOV	D00004	D00024	CH02 Measured value
		0	0
	MOV	D00005	D00025	CH02 Sets decimal point
		0	0
	MOV	D00006	D00026	CH02 HI Peak Value
		0	0
	MOV	D00007	D00027	CH02 LO Peak Value
		0	0
	MOV	D00008	D00028	CH03 Measured value
		0	0
	MOV	D00009	D00029	CH03 Sets decimal point
		0	0
	MOV	D00010	D00030	CH03 HI Peak Value
		0	0
	MOV	D00011	D00031	CH03 LO Peak Value
		0	0
	MOV	D00012	D00032	CH04 Measured value
		0	0
	MOV	D00013	D00033	CH04 Sets decimal point
		0	0
	MOV	D00014	D00034	CH04 HI Peak Value
		0	0
	MOV	D00015	D00035	CH04 LO Peak Value

```
              2
_T100MS      CTU   C0000    5

              2
C0000        MOV   1      C0000

      2
─┤ = C0000  1 ├─                      M00000 ─( )─

      2
─┤ = C0000  2 ├─                      M00001 ─( )─

      2
─┤ = C0000  3 ├─                      M00002 ─( )─

      2
─┤ = C0000  4 ├─                      M00003 ─( )─

                                      END
```
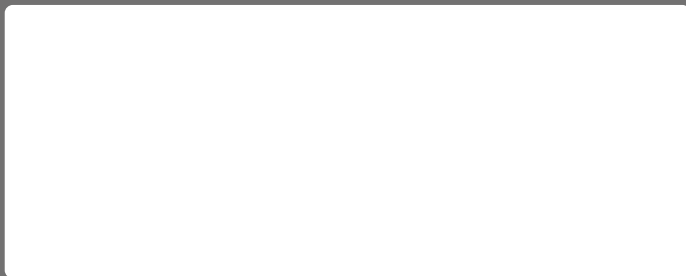
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