

Multi panel meter

# MT-XGB(RS485)

## Technical Support Manual

CE



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](http://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
 <b>Note</b>	Supplementary information for a particular feature.
 <b>Warning</b>	Failure to follow instructions can result in serious injury or death.
 <b>Caution</b>	Failure to follow instructions can lead to a minor injury or product damage.
 <b>Ex.</b>	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:

 <b>Warning</b>	<b>Warning</b>	Failure to follow the instructions may lead to a serious injury or accident.
--	----------------	--

 <b>Caution</b>	<b>Caution</b>	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<sup>2</sup>) 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

	Preface .....	3
	Technical Support Manual Guide .....	4
	Technical Support Manual Symbols .....	5
	Safety Precautions .....	6
	Table of Contents .....	9
<b>1</b>	<b>System .....</b>	<b>11</b>
	1.1 Version .....	11
	1.2 Connections .....	11
	1.3 Communication cable connection .....	11
<b>2</b>	<b>Communication Setting .....</b>	<b>13</b>
	2.1 MT4W Setting .....	13
	2.2 XGB Setting .....	14
<b>3</b>	<b>Operation Check .....</b>	<b>23</b>



# 1 System

## 1.1 Version

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

## 1.2 Connections



## 1.3 Communication cable connection

MT4W	Cable connection	PLC (XBC – DN32H)
RS – 485 (-)	—————	RS – 485 (-)
RS – 485 (+)	—————	RS – 485 (+)



## 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 *PR2* and set the communication settings as below.

Parameter	Display	Setting	Note
Communication address	<i>Adr5</i>	<i>01</i>	User setting
Communication speed	<i>bP5</i>	<i>96</i>	User setting
Communication parity bit	<i>Prty</i>	<i>nonE</i>	Fixed
Communication stop bit	<i>StP</i>	<i>1</i>	Fixed
Communication response waiting time	<i>r54t</i>	<i>20</i>	User setting

\* Press the MODE key in RUN mode, it enters to *PR0*.

\* Hold the MODE key for 3 sec in RUN mode, it enters to *PR1*.

\* Hold the MODE key for 5 sec in RUN mode, it enters to *PR2* before *PR1*.

\* It is advanced to current display parameter releasing the MODE key at *PR1* or *PR2*.

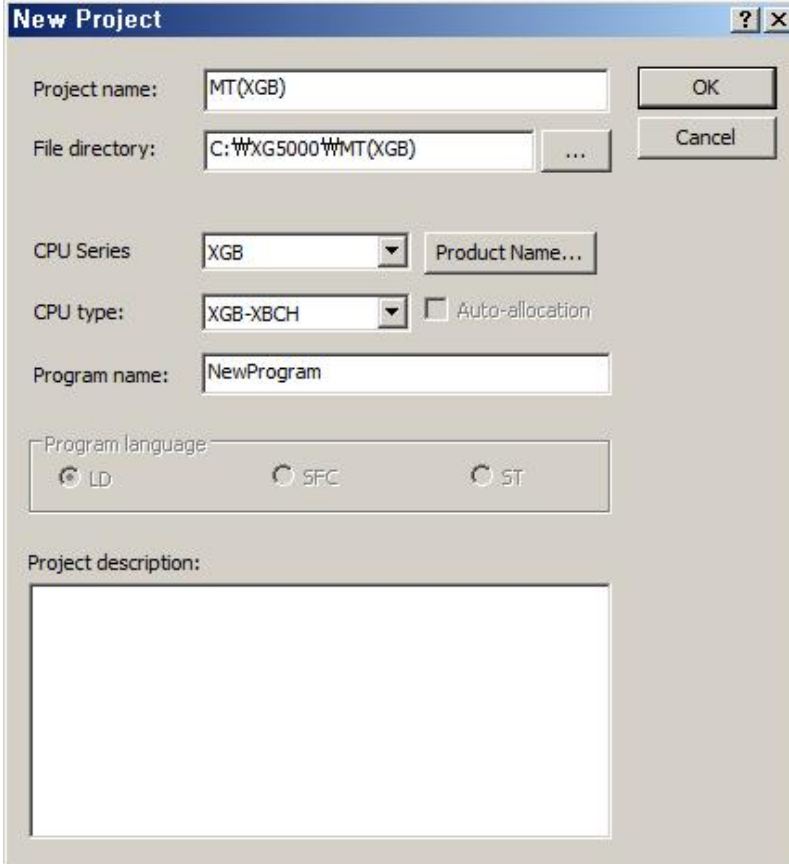
\* Hold the MODE key for over 3 sec in any parameter group, it returns to RUN mode.

\* 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.



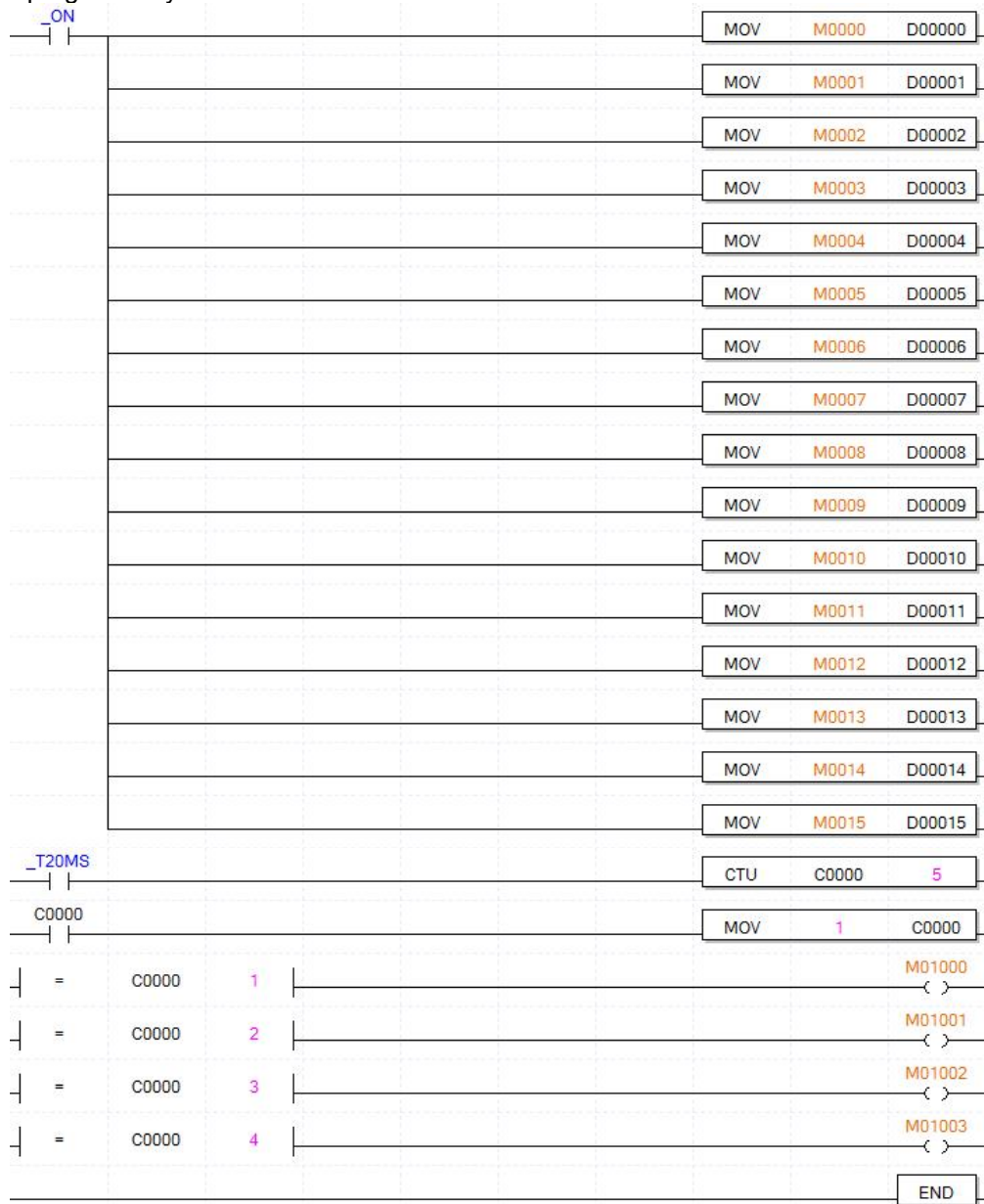
The screenshot shows the 'New Project' dialog box with the following fields and options:

- Project name:** MT(XGB)
- File directory:** C:\XG5000\MT(XGB) (with a browse button '...')
- CPU Series:** XGB (dropdown menu) and Product Name... button
- CPU type:** XGB-XBCH (dropdown menu) and  Auto-allocation checkbox
- Program name:** NewProgram
- Program language:** Radio buttons for LD (selected), SFC, and ST
- Project description:** A large empty text area for notes.

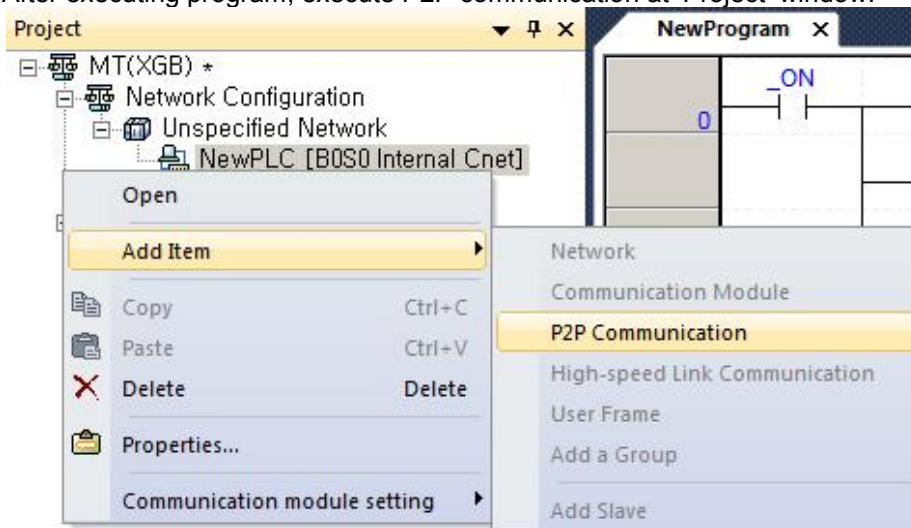
Buttons for 'OK' and 'Cancel' are located on the right side of the dialog.

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

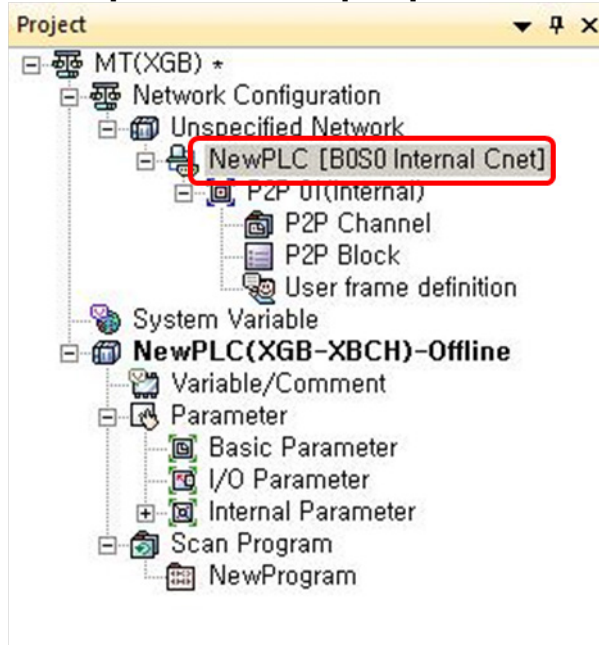
\* This communication program is only for test. Before using it at field, review and test the program fully.



3rd After executing program, execute P2P communication at 'Project' window.



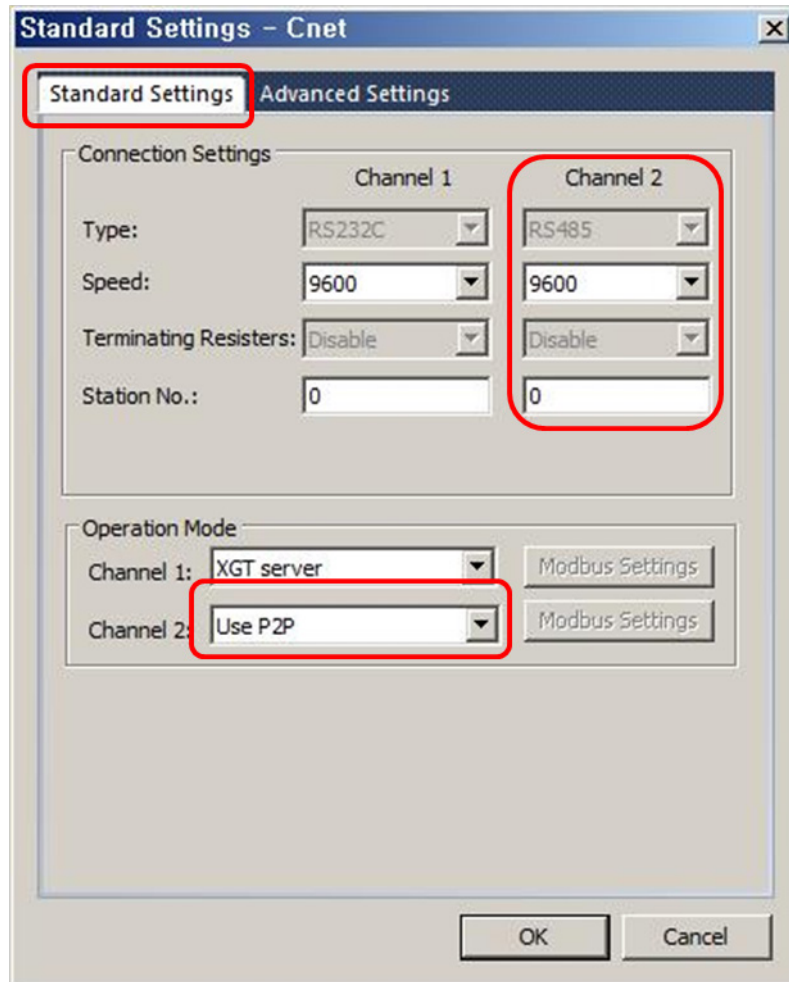
4th You can check the added P2P setting window below standard network. Double-click NewPLC[B0S0 Internal Cnet] and [Standard Settings-Cnet] dialog box is available.





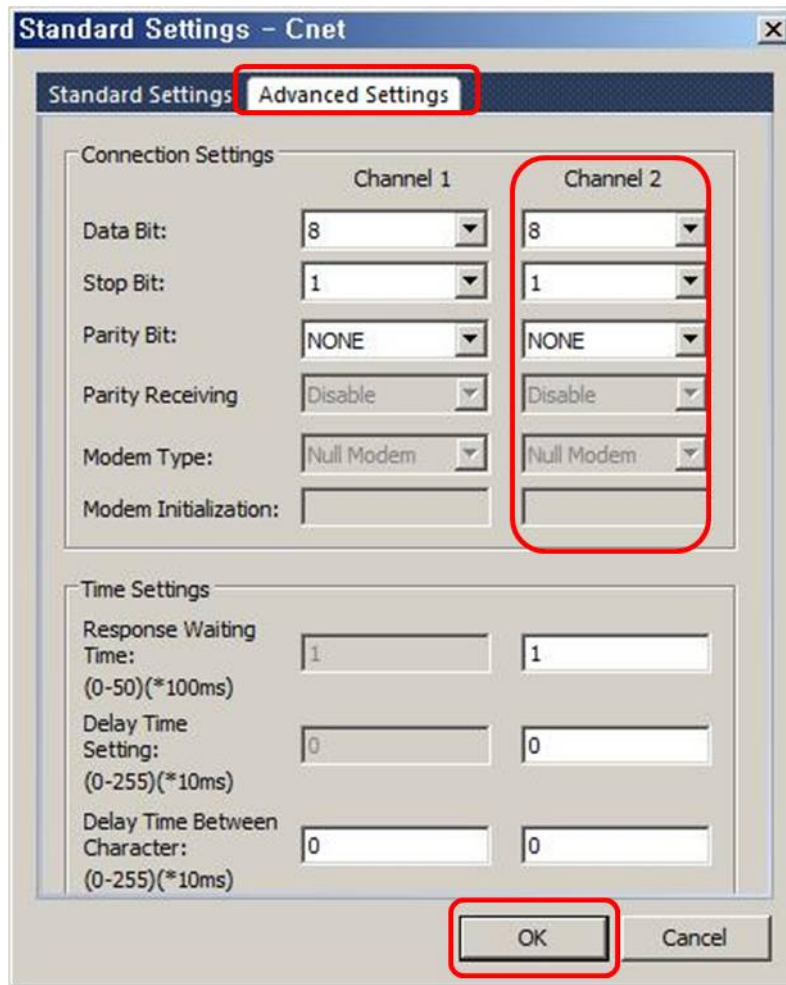
5th [Standard Settings-Cnet] dialog box appears. At standard settings, set as below.

Item	Setting	Note	
Standard Settings Channel 2	Communication type	RS-485	Fixed
	Communication speed	9600	User setting
	Terminating resisters	Disable	Fixed
	Station No.	0	User setting
Operation mode	Channel 2	Use P2P	

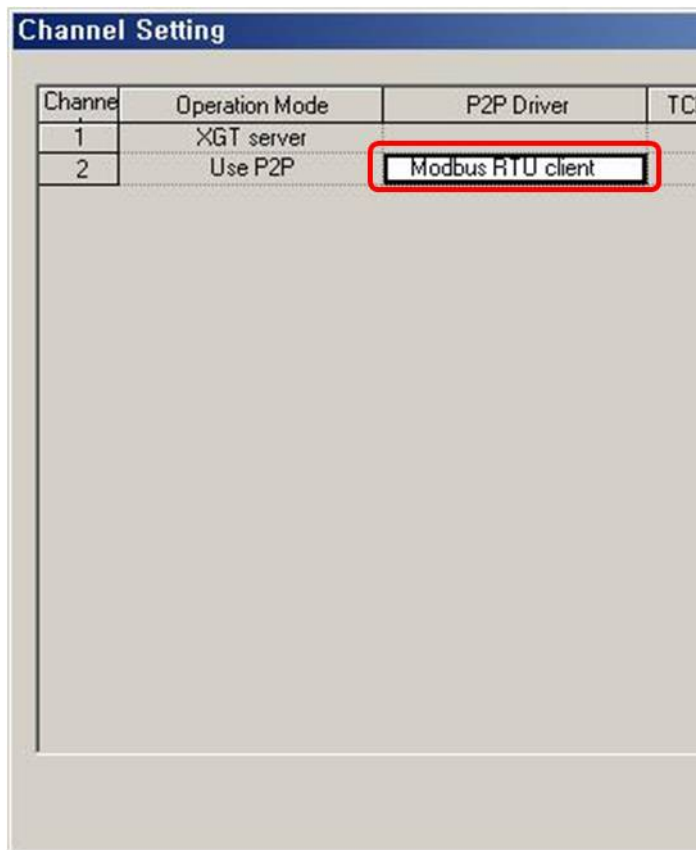
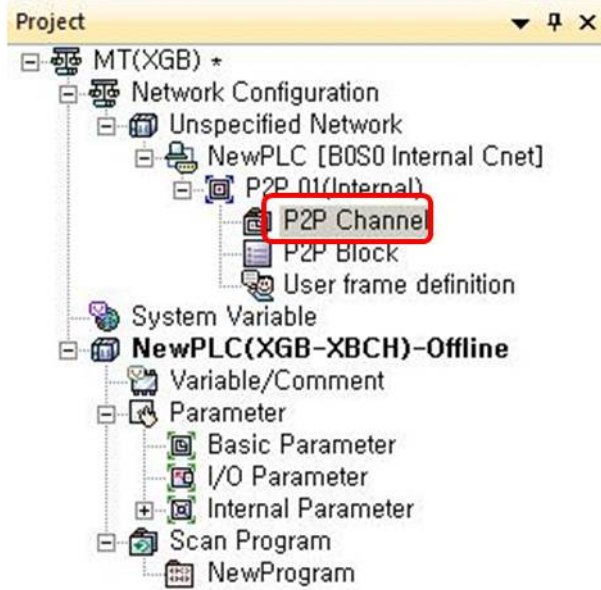


6th At advanced settings, set as below.

Item	Channel 2	
Advanced settings	Data bit	8
	Stop bit	1
	Parity bit	NONE



7th Double-click 'P2P Channel' and select 'Modbus RTU client' of 'Use P2P'. Click 'OK'.



8th 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	M01000	Continuous	WORD	1	4	<input checked="" type="checkbox"/>	1	PV	Setting	Number1 READ1:0x30000.SAVE1:M0000
1	2	Modbus RTU client	READ	M01001	Continuous	WORD	1	4	<input checked="" type="checkbox"/>	2		Setting	Number1 READ1:0x30000.SAVE1:M0004
2	2	Modbus RTU client	READ	M01002	Continuous	WORD	1	4	<input checked="" type="checkbox"/>	3		Setting	Number1 READ1:0x30000.SAVE1:M0008
3	2	Modbus RTU client	READ	M01003	Continuous	WORD	1	4	<input checked="" type="checkbox"/>	4		Setting	Number1 READ1:0x30000.SAVE1:M0012

CH	P2P function	Conditional flag	Command type	Data type	Destination station number
2	READ(PV)	M1000 to M1003	2. Continuous	WORD (size: 4)	Enter destination station (1 to 4)

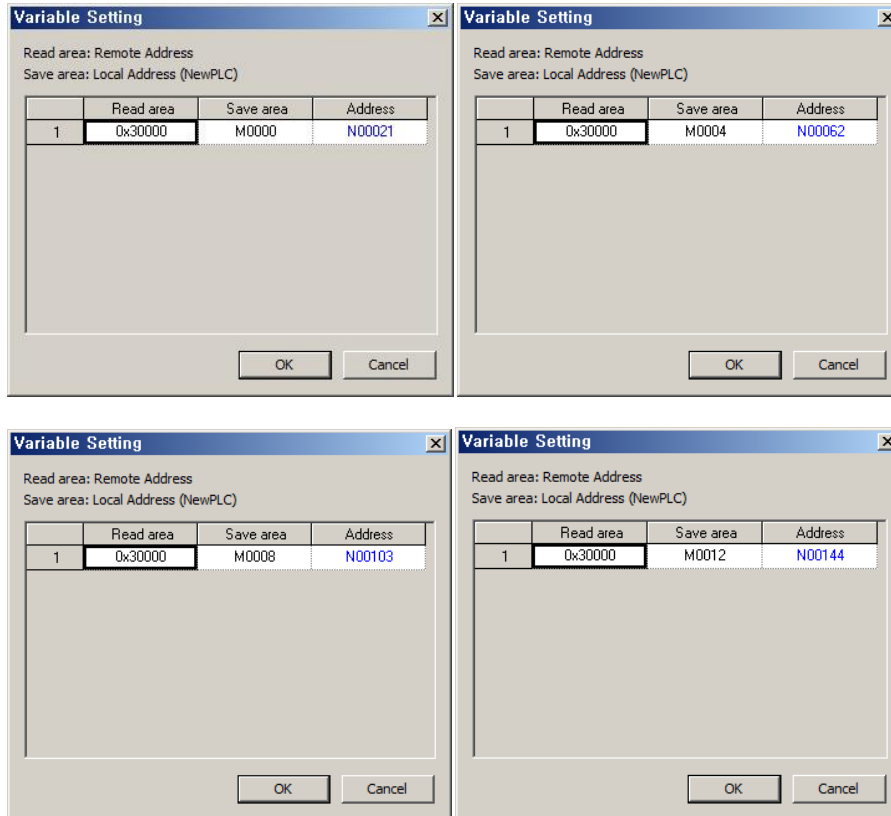
\* Variable setting contents are set as belows.  
Click 'Setting' to set variable.

\* Modbus Mapping Table

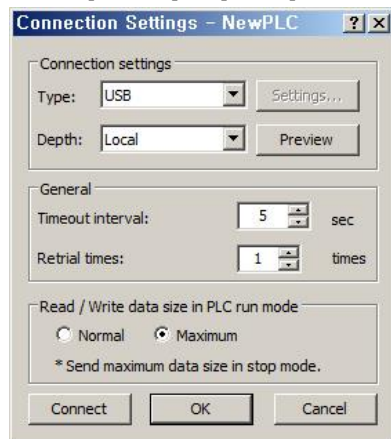
Address	Command	Transmission data	Note
30001(0000)	04	Present measurement value <ul style="list-style-type: none"> <li>Standard</li> <li>- Transmits 5% to 110%</li> <li>Scale</li> <li>- Transmits display range -1999 to 9999</li> </ul>	Data transmission for measurement error <ul style="list-style-type: none"> <li>Standard</li> <li>Transmits 9999 when HHHH is displayed.</li> <li>Transmits -1999 when LLLL is displayed.</li> <li>Scale</li> <li>Transmits the setting values of H-SC and L-SC.</li> <li>Transmits 9999 for d-HH.</li> <li>Transmits -1999 for d-LL.</li> </ul>
30002(0001)	04	Dot setting	Transmits dot position setting value of PA1 dot mode. <ul style="list-style-type: none"> <li>Standard</li> <li>0.000→0003H, 0.00→0002H</li> <li>0.0→0001H, 0→0000H</li> <li>Scale</li> <li>0.000→0103H, 0.00→0102H</li> <li>0.0→0101H, 0→0100H</li> </ul>
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	M000	N00021
Address 2	0x30000	M004	N00062
Address 3	0x30000	M008	N00103
Address 4	0x30000	M012	N00144

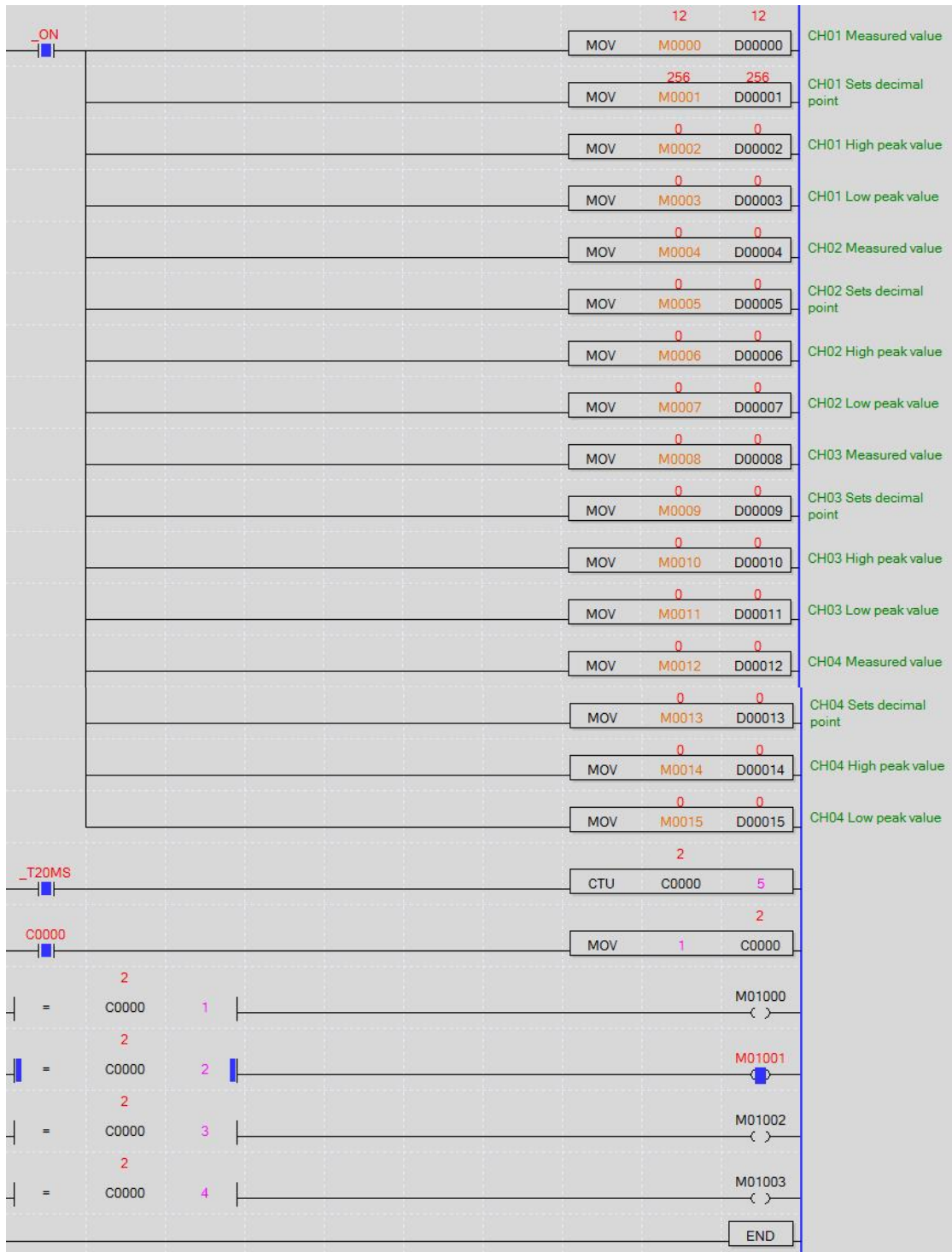


9th At [Online] – [Connection Settings], select connection type.  
 Select [Online] – [Write] to execute download.





### 3 Operation Check

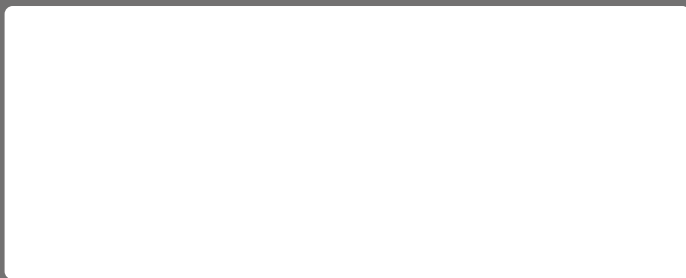


# Autonics

Sensors & Controllers

www.autonics.com

## Distributor



### Major Products

·Photoelectric Sensors·Fiber Optic Sensors·Door Sensors·Door Side Sensors·Area Sensors  
·Proximity Sensors·Pressure Sensors·Connectors·Sockets·Rotary Encoders·Panel Meters  
·Counters·Timers·Temperature Controllers·SSRs·Power Controllers·Sensor Controllers  
·Graphic/Logic Panels·Temperature/Humidity Transducers·Switching Mode Power Supplies  
·Stepper Motors·Drivers·Motion Controllers·I/O Terminal Blocks & Cables·Display Units  
·Control Switches/Lamps/Buzzers·Field Network Devices·Tachometer/Pulse(Rate) Meters  
·Laser Marking System(Fiber, CO<sub>2</sub>, Nd:YAG)·Laser Welding/Cutting System

■ Any proposal for a product improvement and development: [Product@autonics.com](mailto:Product@autonics.com)

### Corporate Headquarters

18 Bansong-ro, 513 Beon-gil, Haeundae-gu, Busan, South Korea 48002

### Overseas Business Headquarters

#402-303, Bucheon Techno Park, 655, Pyeongcheon-ro, Wonmi-gu, Bucheon, Gyeonggi-do, South Korea 14502

Tel: 82-32-610-2730 / Fax: 82-32-329-0728 / E-mail: [sales@autonics.com](mailto:sales@autonics.com)

### Brazil - Autonics do Brasil Comercial Importadora Exportadora Ltda

Tel: 55-11-2307-8480 / Fax: 55-11-2309-7784 / E-mail: [comercial@autonics.com.br](mailto:comercial@autonics.com.br)

### China - Autonics electronic(Jiaxing) Corporation

Tel: 86-21-5422-5969 / Fax: 86-21-5422-5961 / E-mail: [china@autonics.com](mailto:china@autonics.com)

### India - Autonics Automation India Private Limited

Tel: 91-22-2781-4305 / Fax: 91-22-2781-4518 / E-mail: [india@autonics.com](mailto:india@autonics.com)

### Indonesia - PT. Autonics Indonesia

Tel: 62-21-8088-8814/5 / Fax: 62-21-8088-4442(4440) / E-mail: [indonesia@autonics.com](mailto:indonesia@autonics.com)

### Japan - Autonics Japan Corporation

Tel: 81-3-3950-3111 / Fax: 81-3-3950-3191 / E-mail: [ja@autonics.com](mailto:ja@autonics.com)

### Malaysia - Mal-Autonics Sensor Sdn. Bhd.

Tel: 60-3-7805-7190 / Fax: 60-3-7805-7193 / E-mail: [malaysia@autonics.com](mailto:malaysia@autonics.com)

### Mexico - Autonics Mexico S.A. DE C.V.

Tel: 52-55-5207-0019 / Fax: 52-55-1663-0712 / E-mail: [ventas@autonics.com](mailto:ventas@autonics.com)

### Russia - Autonics Corp. Russia Representative Office

Tel/Fax: 7-495-860-10-88 / E-mail: [russia@autonics.com](mailto:russia@autonics.com)

### Turkey - Autonics Otomasyon Ticaret Ltd. Sti.

Tel: 90-216-365-9117/3/4 / Fax: 90-216-365-9112 / E-mail: [infotr@autonics.com](mailto:infotr@autonics.com)

### USA - Autonics USA, Inc.

Tel: 1-847-680-8160 / Fax: 1-847-680-8155 / E-mail: [sales@autonicsusa.net](mailto:sales@autonicsusa.net)

### Vietnam - Cong Ty Tnhh Autonics Vina

Tel: 84-8-3771-2662 / Fax: 84-8-3771-2663 / E-mail: [vietnam@autonics.com](mailto:vietnam@autonics.com)