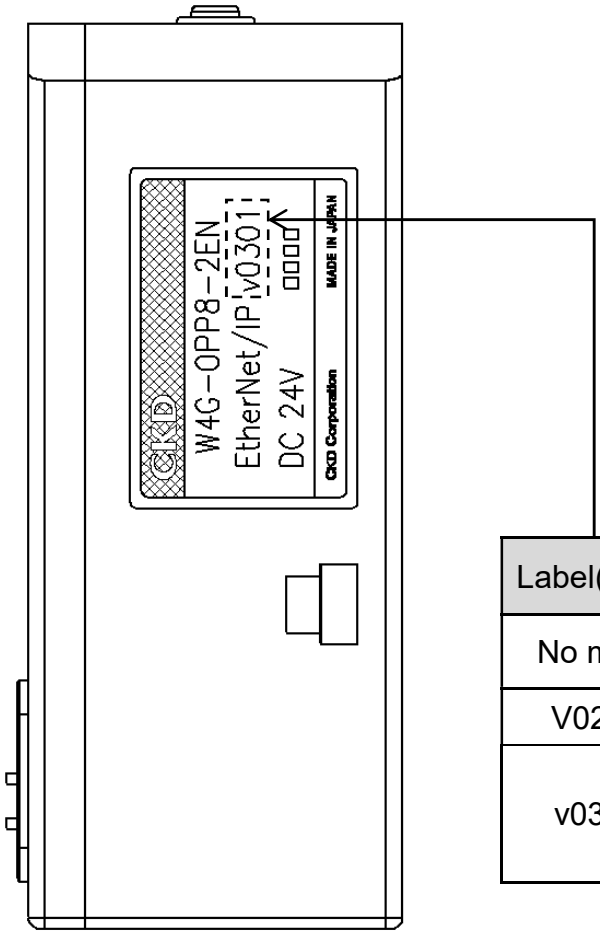
How to check the Instruction Manual to be read

Check the product label on the device and read the Instruction Manual corresponding to the device version.



Label(print)	Instruction Manual to be read
No mark	SM-P00122-A
V0202	
v0301	SM-A68697-A

CKD

Instruction Manual

Block Manifold
MW4G Series

Serial Transmission Type
NW4G*-T7EN***
(W4G-OPP8-*EN-**)

【EtherNet/IP Compatible】

Device Rev 2.2

- Please read this instruction manual thoroughly before using the product.
- In particular, carefully read the contents related to safety.
- Retain this instruction manual with the product for further consultation whenever necessary.

4th Edition

CKD Corporation

Safety precautions

When designing and manufacturing devices using CKD products, the manufacturer is obligated to ensure that the safety of the mechanism, pneumatic control circuit and/or fluid control circuit and the system that runs the electrical controls are secured.

It is important to select, use, handle and maintain CKD products appropriately to ensure their safe usage.

Observe warnings and precautions to ensure device safety. Check that device safety is ensured, and manufacture a safe device.

⚠ Warning

1. This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience.

2. Use this product in accordance with specifications.
   This product must be used within its stated specifications. In addition, never modify or additionally machine this product. This product is intended for use in general industrial machinery, equipment or parts. It is not intended for use outdoors (except for products with outdoor specifications) or for use under the following conditions or environments. (Note that this product can be used when CKD is consulted prior to its usage and the customer consents to CKD product specifications. The customer should provide safety measures to avoid dangers in the event of problems.)

   Not intended for following applications:
   (1) Use for applications requiring safety, including nuclear energy, railways, aircraft, marine vessels, vehicles, medical devices, devices or applications in contact with beverages or foodstuffs, amusement devices, emergency cutoff circuits, press machines, brake circuits, or safety devices or applications.
   (2) Use for applications where life or assets could be significantly affected, and special safety measures are required.

3. Observe organization standards and regulations, etc., related to the safety of the device design and control, etc.
   ISO4414, JIS B 8370 (General rules for pneumatic systems)
   JFPS2008 (Principles for pneumatic cylinder selection and use)
   Including the High Pressure Gas Safety Act, Industrial Safety and Health Act, other safety rules, organization standards and regulations, etc.

4. Do not handle, pipe, or remove devices before confirming safety.
   (1) Inspect and service the machine and devices after confirming safety of the entire system related to this product.
   (2) Note that there may be hot or charged sections even after operation is stopped.
   (3) When inspecting or servicing the device, turn OFF the energy source (air supply or fluid supply), and turn OFF power to the facility. Discharge any compressed air from the system, and pay enough attention to possible water leakage and leakage of electricity.
   (4) When starting or restarting a machine or device that incorporates pneumatic components, make sure to secure system safety, such as pop-out prevention measures.

5. Observe the warnings and cautions on the following pages to prevent accidents.

■Precautions are ranked as “DANGER”, “WARNING”, and “CAUTION” in this section.

DANGER:	In the case where the product operation is mishandled and/or when the urgency of a dangerous situation is high, it may lead to fatalities or serious injuries.
WARNING:	A dangerous situation may occur if handling is mistaken, leading to fatal or serious injuries.
CAUTION:	A dangerous situation may occur if handling is mistaken, leading to minor injuries or property damage.

Note that some items indicated with “CAUTION” may lead to serious results depending on the conditions.
All items contain important information and must be observed.

Limited warranty and disclaimer

● Warranty period

This warranty is valid for one (1) year after delivery to the customer’s designated site.

● Scope of warranty

In case any defect clearly attributable to CKD is found during the warranty period, CKD shall, at its own discretion, repair the defect or replace the relevant product in whole or in part and at no cost, according to its own judgment.

Note that the following failures are excluded from the warranty scope:

(1) Failures due to use outside the conditions and environments set forth in the catalog or these specifications.
(2) Failures resulting from factors other than this product
(3) Failures caused by improper use of the product.
(4) Failures resulting from modifications or repairs made without CKD consent.
(5) Failures caused by matters that could not be predicted with the technologies in practice when the product was delivered.
(6) Failures resulting from natural disasters or accidents for which CKD is not liable.

The warranty covers the actual delivered product, as a single unit, and does not cover any damages resulting from losses induced by malfunctions in the delivered product.

● Compatibility check

The customer is responsible for confirming the compatibility of CKD products with the customer’s systems, machines and equipment.

⚠ WARNING:

- If the product must be used under conditions that are different from the specified conditions or if the product is to be used for a special application, consult CKD before utilizing the product.
- Before performing maintenance, turn off the power, cut off the compressed air supply, and make sure there is no residual pressure.
- Before increasing or decreasing the number of stations (valves) on the manifold, turn off the power and release pressure.
- Before disassembling or assembling the manifold, read this instruction manual carefully with full understanding of its content.
- Before performing electrical wiring, read this instruction manual carefully with full understanding of its content.

⚠ CAUTION:

- Regularly perform daily and periodic inspections to correctly maintain product performance.
- Confirm the working voltage and polarity before wiring and turning the power ON.
- Do not touch the electrical wiring connections (exposed live parts); as there is a risk of electric shock. During wiring, keep the power OFF. Also, do not touch these live parts with wet hands.
- Before using the serial transmission adapter unit, read the manual for the applicable communication system carefully with full understanding of its content.
- System components such as valves and cylinders could malfunction if the serial transmission adapter unit address setting is incorrect. Always check the address setting before starting use.
- This product does not meet the surge immunity requirements specified in EN61000-4-5 for CE marking. Please provide appropriate protective measures on the device side.
- The valve status light may flicker momentarily when the valve power of the adapter unit turns ON (i.e., when the power voltage starts to rise). This will not cause the valve itself to turn ON or OFF.

TABLE OF CONTENTS

NW4G*-T7EN***

Serial Transmission Type

Instruction Manual No. SM-P00122-A/4

Drafted on; 2017.03.28
Revised on; 2019.09.16

1. Product

1.1 General outline of the system

1) NW4G*-T7EN***

The NW4G*-T7EN*** is an adapter unit for W4G which can establish connection to the EtherNet/IP open field network system managed by Open DeviceNet Vendor Association, Inc. (or ODVA).

The NW4G*-T7EN*** adapter unit has the following features:

(1) It is connected to the PLC with only an Ethernet cable (Category 5 or higher recommended), allowing a significant reduction of man-hours in wiring.

(2) It has separate power supplies for the unit and the valve, ensuring easy maintenance work.

(3) When a communication error occurs, the adapter unit output state can be set (either hold or clear) with a switch.

(4) It is available in +COM or -COM output types and 16 or 32 output points, allowing for use in a wide variety of applications.

(5) The adapter unit can connect to both W4G2 and W4G4 valves.

2) EtherNet/IP

The EtherNet/IP is an open and global industrial Ethernet that implements Common Industrial Protocol (or CIP), a control communication protocol, over standard Ethernet at the application layer. While general communication specifications are the same as standard Ethernet, CIP enables seamless communication across different networks (e.g., DeviceNet and CompoNet). It also enables multi-vendor interoperability.

The EtherNet/IP has the following features:

(1) It allows high-speed and large capacity data communication with cyclic (implicit) communication.

(2) It allows cyclic (implicit) communication at cycles specified for each application.

Note: Before using this adapter unit, thoroughly read all relevant users' manuals.
This instruction manual mainly describes NW4G*-T7EN***.
For information on the scanner (master) and adapters (other slaves) to be connected to the system, read the manuals provided by their manufacturers.
For information on the manifold solenoid valves, read this instruction manual as well as the manuals provided with the solenoid valves to fully understand their functions and performance for their proper operation.

If you have any questions concerning the EtherNet/IP system, refer to the following website run by ODVA: http://www.odva.org.

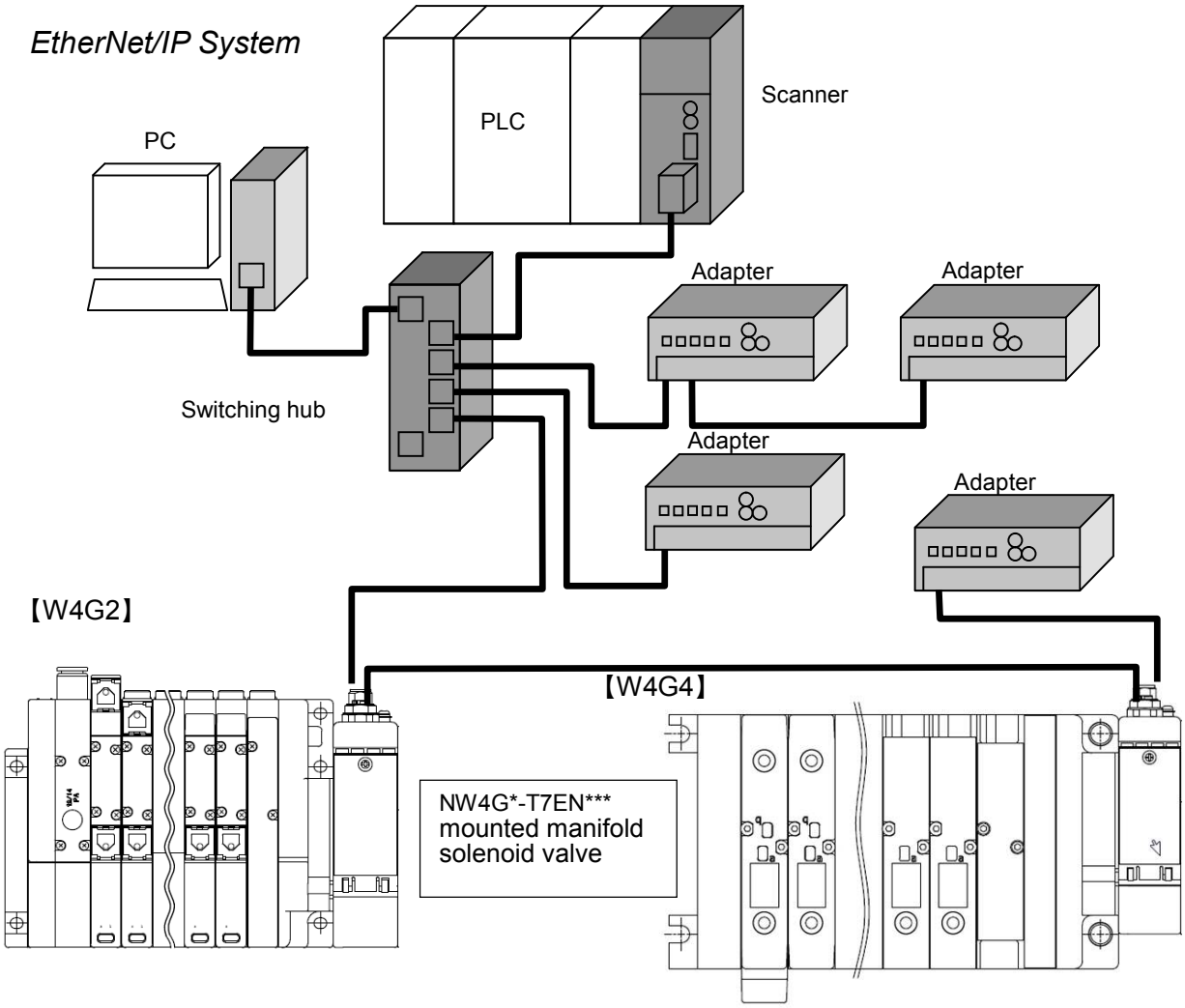
1.2 Network structure

EtherNet/IP system chiefly consists of PLC, scanner (master), NW4G*-T7EN*** mounted manifold solenoid valve, and peripheral equipment.

1) PLC and scanner combination examples

PLC Manufacturer	Compatible PLC	Scanner model
OMRON Corporation	NJ Series	NJ301 / NJ501
	CS1 Series	CS1W-EIP21
	CJ1 Series	CJ1W-EIP21
Rockwell Automation, Inc.	1756-L75	1756-EN2TR
	1768-L43	1768-ENBT
	1769-L18ERM-BB1B	
Other EtherNet/IP compatible scanners		

2) Fundamental structure of the system



Scanner (master) ……This device requests communication connection and controls adapters (slaves)
Adapter (slave)…….....This device receives communication connection requests and handles I/O data.
Switching hub……..This device relays data for the network.

1.3 Specifications

1) Transmission specifications

Item	Specifications
Communication protocol	EtherNet/IP compliant
Link parameters	Auto negotiation (100M /10Mbps, full/half duplex)
Transmission media (Network cable)	Ethernet cable (CAT.5 or higher) Shielded twisted-pair cable (recommended cable for EtherNet/IP)

Note: This adapter unit does not support DLR (Device Level Ring) and Quick Connect.

⚠CAUTION:

- Link parameters (baud rate and duplex mode) must correspond to the connecting EtherNet/IP unit. If they do not correspond, communication will become unstable and a link may not be established or may cycle ON and OFF
- Upon selecting the network cable, consider the ambient conditions such as noise and temperature. Also, note that the maximum length of the cable between devices varies depending on the cable used.

2) NW4G*-T7EN*** specifications

Always operate this adapter unit within its product specifications.

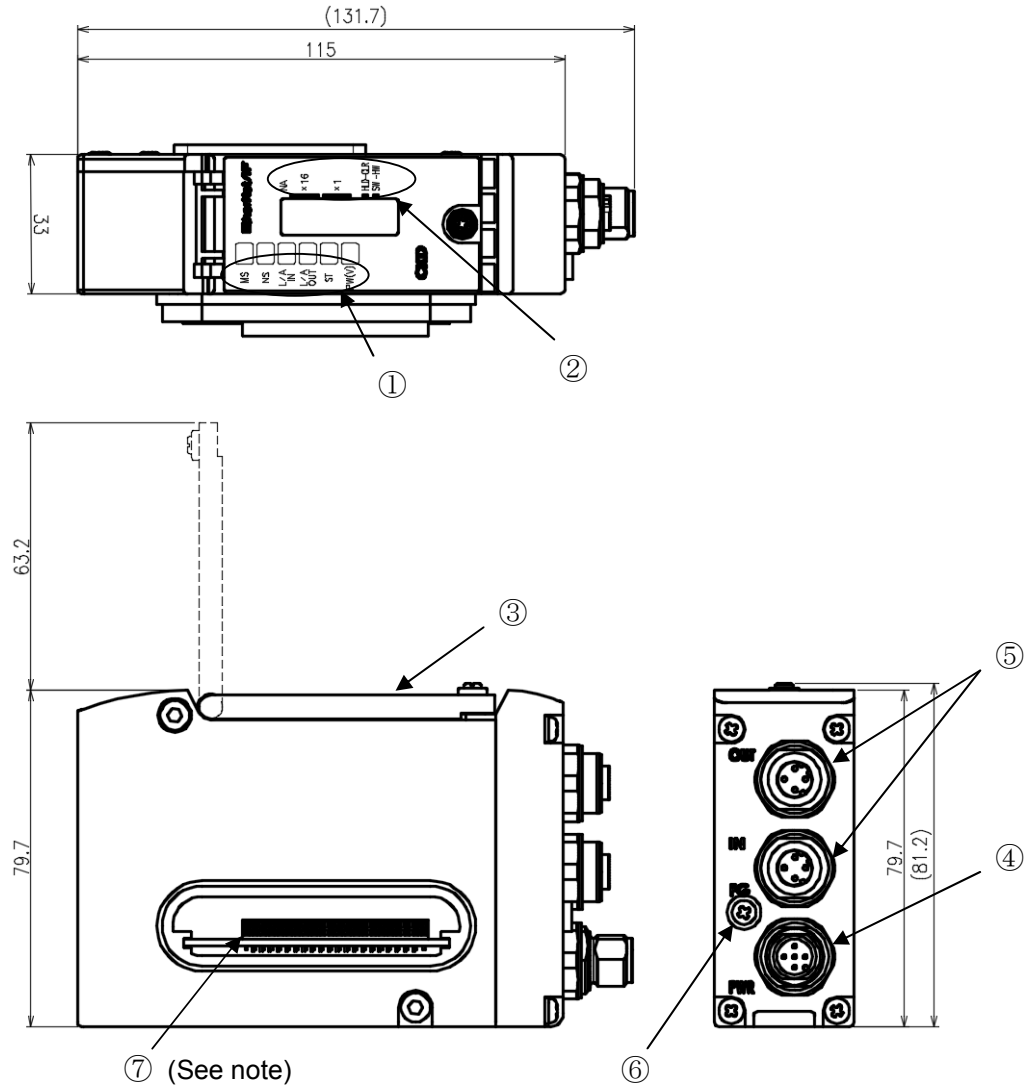
Item		Specifications					
Model No.		NW4G*-T7EN 1	NW4G*-T7EN 2	NW4G*-T7EN B7	NW4G*-T7EN P1	NW4G*-T7EN P2	NW4G*-T7EN PB7
Unit power supply voltage		21.6VDC to 26.4VDC(24VDC ±10%)					
Unit power current consumption		130mA or less (at 24.0 VDC with all points ON)					
Valve power supply voltage		22.8 VDC to 26.4 VDC(24VDC +10%,-5%)					
Valve power current consumption		15mA or less (with all points OFF) 20mA or less (with all points ON and without load)					
Output type (polarity)		+COM (NPN)			-COM (PNP)		
Number of input/output points		(0/16)	(0/32)	(16/16)	(0/16)	(0/32)	(16/16)
IP address setting		Between 01 and FE (in hex) [1 and 254 (in dec)] *1 (set using switches)					
Output setting when communication error occurs		Hold (maintains final output of all points) / Clear (clears all outputs of points) *2					
Insulation resistance		30 MΩ or more with 500 VDC between external terminals and case					
Withstand voltage		500 VAC for 1 minute between external terminals and case					
Shock resistance		294.0m/s^2 in 3 directions, 3 times each					
Storage temperature		-20 to 70℃					
Storage humidity		30 to 85%RH (no dew condensation)					
Ambient temperature		-5 to 55℃					
Ambient humidity		30 to 85%RH (no dew condensation)					
Ambient atmosphere		No corrosive gas					
Communication protocol		EtherNet/IP compliant					
Link parameters		Auto negotiation (100M / 10Mbps, full / half duplex)					
EtherNet/IP connector		M12 4-pin D cord					
Output isolation type		Photocoupler isolation					
Max. load current		40mA per output point					
Leakage current		0.1mA or less					
Residual voltage		0.5V or less					
Fuse rating		Valve power: 24V, 3A / Unit power 24V, 2A (both fuses are not replaceable)					
Status indicator		LED(communication status, unit power and valve power statuses *3)					
Number of occupied stations		1 station					
Degree of protection		IP65					
Vibration proof	Durability	10Hz to 150Hz to 10Hz, 1 octave/min, 15 sweeps each in X, Y, Z directions at half-amplitude of 0.75 mm or acceleration of 98.0 m/s^2, whichever is smaller					
	Malfunction	10 Hz to 150 Hz to 10 Hz, 1 octave/min, 4 sweeps each in X, Y, Z directions at half-amplitude of 0.5 mm or acceleration of 68.6 m/s^2, whichever is smaller					

*1. In hardware setting mode, first part of the IP address is fixed and predefined as 192.168.1.

*2. Selection can be made only when the operation mode setting is OFF (hardware setting mode).

*3. Valve power status can be monitored only when the voltage within the specified range is supplied to power the unit.

1.4 Dimension of adapter unit



① Status monitoring light
These LEDs indicate adapter unit status and network status.

② Switches
These DIP switches and rotary switches are used to set the adapter unit IP address, the output when a communication error occurs, and the operating mode.

③ Cover
The cover protects the status monitoring lights and the switches.

④ Unit/ valve power plug (M12×1 port [PWR] A-cord)
This plug is for connecting the socket for powering the unit/ valve.

⑤ Network connector socket (M12×2 ports [IN, OUT] 4-pin D-cord)
IN: I/O port for EtherNet/IP communication
OUT: I/O port for EtherNet/IP communication
(There is no difference in the function between IN and OUT ports)

⑥ FG Terminal
This terminal connects to FG.

⑦ Input/output block connector
This connector can be connected to the input/output block. (Note: Only the W4G-OPP8-7EN-*B is compatible.)

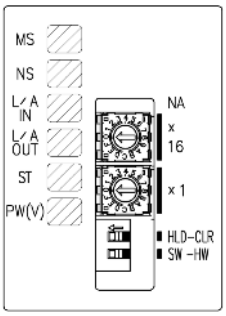
1.5 Switches and LED indicators

CAUTION: ● Discharge static electricity that has built up on your body before touching the adapter unit. Otherwise, static electricity can cause damage to the adapter unit.

1) Switches

The switches are used to set the adapter unit IP address, the output when a communication error occurs, and the operating mode. The adapter unit functions according to the IP address, the output mode, and the operating mode loaded at power-up.

Name of Switch	Purpose
[NA (node address) switch setting] NA X 16: higher-digit X 1: lower-digit	Used to set the NA part of the IP address to a value between 01 and FE (In hexadecimal) [1 to 254 (in decimal)]. Higher-digit is set with the X 16 switch and lower-digit is set with the X 1 switch. See "3.1 Switch settings" for details on how to set these switches.
[Output mode setting] HLD – CLR	Used to specify whether to hold (HLD) or clear (CLR) the output status when a communication error occurs.
[Operation mode setting] SW - HW	Used to specify whether to use switches (hardware setting mode) or software setting mode when setting the IP address and output mode.



2) LED Indicators

These: LEDs indicate adapter unit status and network status. See table below for their descriptions.

Name	Function	Status	
ST	Indicates adapter unit status	No light	Unit power OFF
		Solid yellow/Flashing green	Error with adapter unit
		Solid green	Normal
PW(V)	Indicates valve power status	No light	Valve power: OFF
		Solid green	Valve power: ON
MS	Indicates adapter unit status related to EtherNet/IP	Flashing green	No IP address set or setting communication
		Solid green	Normal
		Flashing red	Improper switching setting
		Solid red	Error with adapter unit
NS	Indicates network status related to EtherNet/IP	Flashing green	No link
		Solid green	Link established (normal)
		Flashing red	Communication time out
		Solid red	Duplicate address
L/A IN	Indicates Ethernet (IN) port status	No light	No link, no data transfer
		Solid green	Link established, no data transfer
		Solid green/Rapidly flashing yellow	Link established, transferring data
L/A OUT	Indicates Ethernet (OUT) port status	No light	No link, no data transfer
		Solid green	Link established, no data transfer
		Solid green/Rapidly flashing yellow	Link established, transferring data

2. PRECAUTIONS

- For the power supplies used in network power and valve power, use AC/DC power supply adapters (e.g., switching power supplies) that comply with EMC standards in order to confirm with the requirements of the relevant EC Directive.
- Before turning the power ON or OFF, confirm the safety of the surroundings as the components in the system, including the valve (cylinder), may move unexpectedly.
- Refer to the user's manual provided for the scanner (master) concerning the transmission delay time. The transmission delay within the entire system depends on the scan time achieved by the PLC and on other devices included in the system.
- Solenoid valve response time varies by the model. Refer to the valve specification for the delay in response time.
- The time it takes for the solenoid valve to turn OFF is delayed by approximately 20 msecs since there is a surge absorbing circuit incorporated in the adapter unit.
- Make sure the power cables and network cables are connected according to the specifications to avoid any incorrect wiring.
- Do not subject the power cables and network cables to tension and impact.
- Before turning the power ON, make sure that all cables and connectors are connected firmly.
- Never attempt to disassemble, modify, and/or repair the adapter unit. Doing so may result in failure or malfunction of the adapter unit.
- Many precision devices are mounted inside the adapter unit. Do not drop the adapter unit nor apply vibration or impact to the unit.
- Do not connect or disconnect any connectors while the power is being supplied. Doing so may result in failure or malfunction.
- Mold and rust can develop on the product if it is exposed to high humidity during transportation. Include moisture absorbers and tightly seal the package.
- Install the adapter unit at least 200 mm away from high-voltage cables and power lines, or lay the high-voltage cables and power lines in grounded metal tubings.

3. OPERATION

3.1 Switch settings

⚠ CAUTION:

- Discharge static electricity that has built up on your body before touching the adapter unit. Otherwise, static electricity can cause damage to the adapter unit.
- The adapter unit will not identify the setting if the power is supplied. Make sure the power is turned OFF upon setting as they are read into the unit only at power-up.
- The cover on the adapter unit is an easy-to-open one that requires only one finger to flip it open. Keep the cover closed at all times except when setting the switches. Otherwise, foreign matter may enter into the internal circuit from the cover and cause unexpected failure, or the cover itself may get damaged. Be extremely careful not to allow any foreign matter to enter the adapter unit when setting the switches.
- Make sure not to touch the internal circuit board when setting the switches as they are precisely built and can be damaged if mishandled.

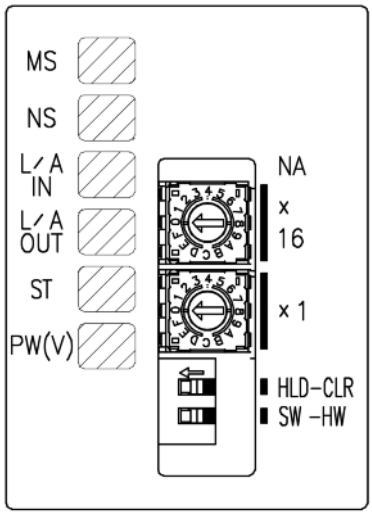
1) IP address setting (When operation mode setting is OFF: hardware setting mode)
The NA part of the IP address (192.168.1.NA) is set using the rotary switches.
Note: “00” and “FF” are invalid values.
When the operation mode setting is ON (i.e., software setting mode), the switches are invalid.

NA (Node Address) switch	[IP address setting] NA ×16 higher-digit, ×1 lower-digit
Setting range	01 to FE (in hexadecimal) 【1 to 254 (in decimal)】

NA is read into memory at power-up
Duplicate IP address (NA) cannot be assigned

X16: higher-digit		
Switch setting (Hexadecimal)	⇔	**Decimal**
0	⇔	0
1	⇔	16
2	⇔	32
3	⇔	48
4	⇔	64
5	⇔	80
6	⇔	96
7	⇔	112
8	⇔	128
9	⇔	144
A	⇔	160
B	⇔	176
C	⇔	192
D	⇔	208
E	⇔	224
F	⇔	240

X1: lower-digit		
Switch setting (Hexadecimal)	⇔	**Decimal**
0	⇔	0
1	⇔	1
2	⇔	2
3	⇔	3
4	⇔	4
5	⇔	5
6	⇔	6
7	⇔	7
8	⇔	8
9	⇔	9
A	⇔	10
B	⇔	11
C	⇔	12
D	⇔	13
E	⇔	14
F	⇔	15



The decimal value "71" is equal to "64" plus "7" (71=64+7) According to the table above, set the higher-digit switch to "4" and the lower-digit switch to "7" (i.e., "47" in hexadecimal).

2) Output mode setting (when operation mode setting is OFF: hardware setting mode)

Specify whether to hold or clear the output when an error occurs.

Note: When operation mode setting is ON (i.e., in software setting mode), this switch is invalid.

Name of switch	Purpose
HLD - CLR ([Output mode setting])	Specify whether to hold or clear the output when an error (such as bus line error or time over) occurs. OFF: Clear mode ON(slide in the direction of the arrow): Hold mode

3) Operation mode setting

Specify whether to use switches (hardware setting mode) or software setting mode when setting the IP address and output mode.

Name of switch	Purpose
SW - HW (Operation mode setting)	Specify whether to configure settings using switches or software. OFF: Hardware setting mode ON (slide in the direction of the arrow): Software setting mode (See "3.2 Software setting mode" for details.)

3.2 Software setting mode

The IP address of the adapter unit can be set using the software.

- The IP address may become lost in the software setting mode. If that is the case, start up the unit in the hardware setting mode. Then, restart the unit in the software setting mode. (The unit will start up with the default IP address: 192.168.1.250.)
- Refer to "3.1 Switch settings" to use the software setting mode.
- The default IP address of the unit is always 192.168.1.250. To avoid duplicate MACID error, do not initialize the IP address of multiple units at the same time.
- Note that the output mode setting is the clear mode in the software setting mode.

Change IP address: Method 1

Setting the IP address using CIP service of EtherNet/IP

(1) Switch the operation mode setting from the hardware setting mode to the software setting mode with the unit power turned OFF.

(2) After confirming the safety of the surroundings, turn the unit power ON. (It will start up in the software setting mode and the default IP address is 192.168.1.250)

(3) Input necessary parameters referring to TCP/IP object class described in the table below.

(4) After confirming the safety of the surroundings, turn OFF the unit power once and turn it ON again. The adapter unit starts up with the IP address input in (3). (Since the unit will start operating with the IP address, safety of the surroundings must be confirmed)

Note: As long as the unit is started up in the software setting mode, the IP address in (3) will be stored even when the power is OFF. However, starting up the unit in the hardware setting mode will activate both NA (IP address setting) and output mode setting (HC) switches, and overwrite the stored IP address in the software setting mode to the default address: 192.168.1.250.

- TCP/IP object class:

Class hexadecimal (decimal)	Instance	Attribute	Name	Size	Initial Value hexadecimal (decimal)
F5 (245)	1	5	IP Address	4bytes	C0A801FA (192.168.1.250)
			Network Mask	4bytes	FFFFFF00 (255.255.255.0)
			Gateway Address	4bytes	00000000 (00.00.00.00)
			Name Server, Name Server 2, Domain Name	10bytes	00000000000000000000

When data is called according the table above,
(service code【0x0E】):Get_Attribute_Single)、result will
be as the following because of the arrangement order of data.

Result: FA01A8C000FFFFFF0000000000000000000000000000

To set the IP address to 10.17.34.01 (others maintain their initial values),
the following data is to be input using service code (service code:【0x10】:Set_Attribute_Single).
Input data: 0122110A00FFFFFF0000000000000000000000000000

Note :Notations (such as object class) may be in hexadecimal or decimal depending on the tool employed.

Change IP address: Method 2

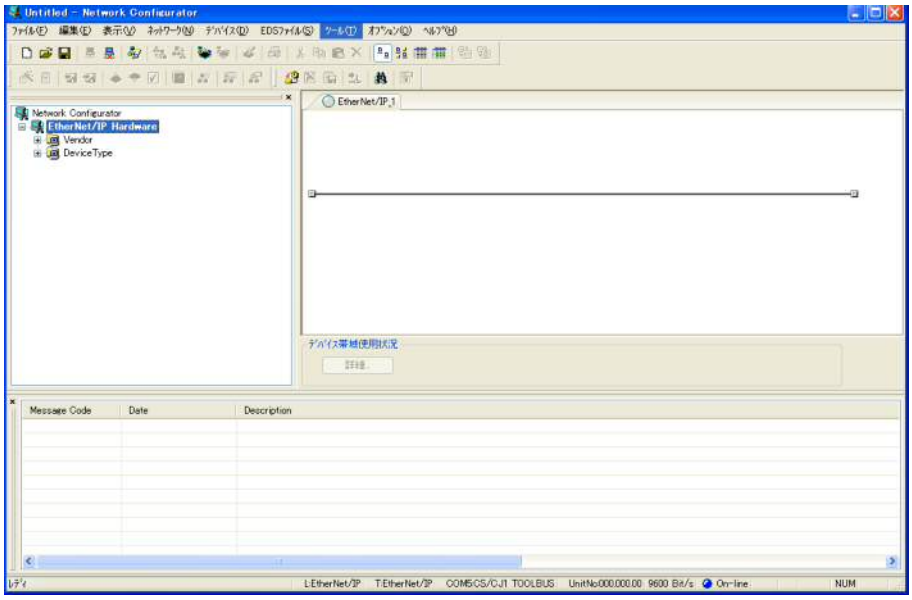
Setting the IP address using a tool provided by the PLC manufacturer.

(1) Switch the operation mode setting from the hardware setting mode to the software setting mode with the unit power turned OFF.

(2) After confirming the safety of surroundings, turn the unit power ON. (It will start up in the software setting mode and the default IP address is 192.168.1.250)

(3) Set the IP address using the tool PLC manufacturer provided. (Below is an example of the setting procedure with a Network Configurator - provided by Omron Corporation.)

Startup Network Configurator and display online mode.



Select Tool: An example of a TCP/IP setting below. (10.17.34.1 is set as a new IP address).

Click this button and enter the new IP address.

(4) After confirming the safety of the surrounding, turn OFF the unit power and turn it ON again. The adapter unit starts up with the IP address input in (3). (Since the unit will start operating with the IP address, safety of surroundings must be confirmed).

Note: As long as the unit is started up in the software setting mode, the IP address in (3) will be stored even when the power is OFF. However, starting up the unit in the hardware setting mode will activate both the NA (IP address) and output mode setting (HC) switches, and overwrite the stored IP address in the software setting mode to the default address (192.168.1.250).

3.3 Correspondence between the adapter unit output No. and PLC address No.

1) PLC addresses correspondence tables

The tables below describe the correspondence using PLC manufactured by OMRON Corporation as a typical example.

◆NW4G*-T7EN*1 (16-point output specification)

PLC allocated memory address	Output Bit 00-15															
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Adapter unit output No.	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16

◆NW4G*-T7EN*2 (32-point output specification)

PLC allocated memory address	Output Bit 00-15																Output Bit 16-31															
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Adapter unit output No.	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32

◆NW4G*-T7EN*B7 (16-point output specification) In the case of 8 solenoid pts., 4 input block units, 2 output block units.

PLC allocated memory address	Output Bit 00-15																Input Bit 00-15															
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Adapter unit output No.	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8																								
Input block No.																	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3	4-0	4-1	4-2	4-3
Output block No.									3-0	3-1	3-2	3-3	4-0	4-1	4-2	4-3																

Note: With regard to the adapter unit, please connect the input block first and then the output block.
Note: Please set the rotary switches as “3”, “4” for the output block from the adapter unit side.

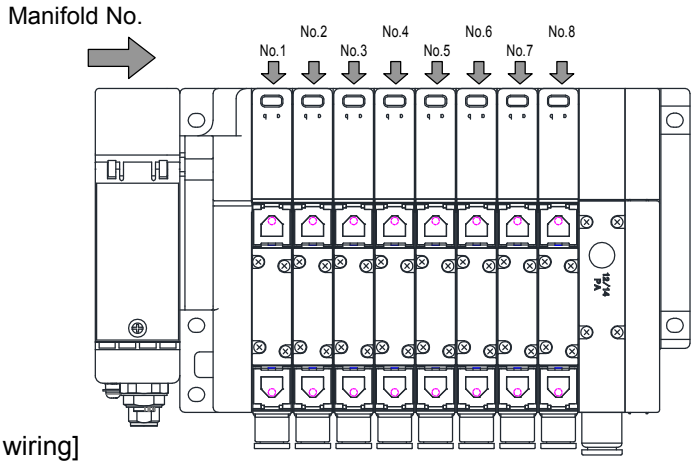
◆NW4G*-T7EN*B7 (16-point output specification) In the case of 12 solenoids pts., 4 input block units, 1 output block unit.

PLC allocated memory address	Output Bit 00-15																Input Bit 00-15															
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Adapter unit output No.	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12																				
Input block No.																	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3	4-0	4-1	4-2	4-3
Output block No.													4-0	4-1	4-2	4-3																

Note: With regard to the adapter unit, please connect the input block first and then the output block.
Note: Please set the rotary switch as “4” for the output block.

2) Examples of Valve No. assignments corresponding to the adapter unit T7EN* solenoid output No
The valve No. 1a, 1b, 2a, 2b, … indicate the station numbers such as station No.1, station No.2, and so on; while the alphabets 'a' and 'b' mean, respectively, the solenoid on the a-side and the solenoid on the b-side of the "double-solenoid type" valve.
Depending on the valve model selected by the customer, the appearance and the maximum number of stations will differ.

◆NW4G*-T7EN*1 (16-point output specification)



Note: The figure is an example of double-solenoid type valves mounting 8 stations on the manifold. There is no solenoid on the b-side for single-solenoid type.

[Standard wiring]

● When all valves mounted on the manifold are single solenoids:

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	13a	14a	15a	16a

● When all valves mounted on the manifold are double solenoids:

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b

● When both single and double solenoids valves are mounted on the manifold (an example is shown above):

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	2a	3a	3b	4a	4b	5a	6a	7a	7b	8a	9a	10a	10b	11a	11b

[Double wiring] (Note: "B" indicates a blank station.)

● When all valves mounted on the manifold are single solenoids:

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	B	2a	B	3a	B	4a	B	5a	B	6a	B	7a	B	8a	B

● When all valves mounted on the manifold are double solenoids:

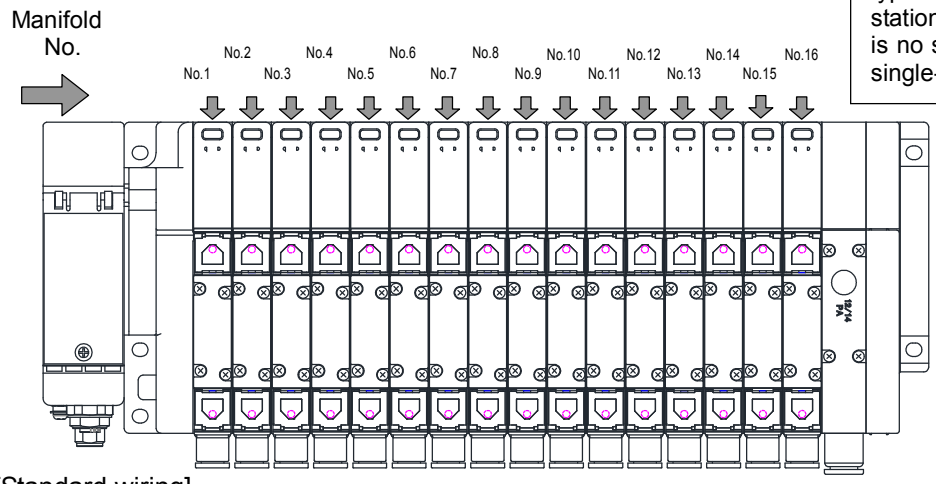
Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b

● When both single and double solenoids valves are mounted on the manifold (an example is shown above):

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	B	2a	B	3a	3b	4a	4b	5a	B	6a	B	7a	7b	8a	B

◆NW4G*-T7EN*2 (32-point output specification)

Note: The figure below is an example of double-solenoid type valves mounting 16 stations on the manifold. There is no solenoid on the b-side for single-solenoid type.



[Standard wiring]

- When all valves mounted on the manifold are single-solenoid types:

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	13a	14a	15a	16a	17a	18a	19a	20a	21a	22a	23a	24a	25a	26a	27a	28a	29a	30a	31a	32a

- When all valves mounted on the manifold are double-solenoid types:

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b	9a	9b	10a	10b	11a	11b	12a	12b	13a	13b	14a	14b	15a	15b	16a	16b

- When both single and double solenoids valves are mounted on the manifold (an example is shown above):

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	2a	3a	3b	4a	4b	5a	6a	7a	7b	8a	9a	10a	10b	11a	11b	12a	13a	14a	14b	15a	15b	16a									

[Double wiring] (Note: “B” indicates a blank station.)

- When all valves mounted on the manifold are single-solenoid types:

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	B	2a	B	3a	B	4a	B	5a	B	6a	B	7a	B	8a	B	9a	B	10a	B	11a	B	12a	B	13a	B	14a	B	15a	B	16a	B

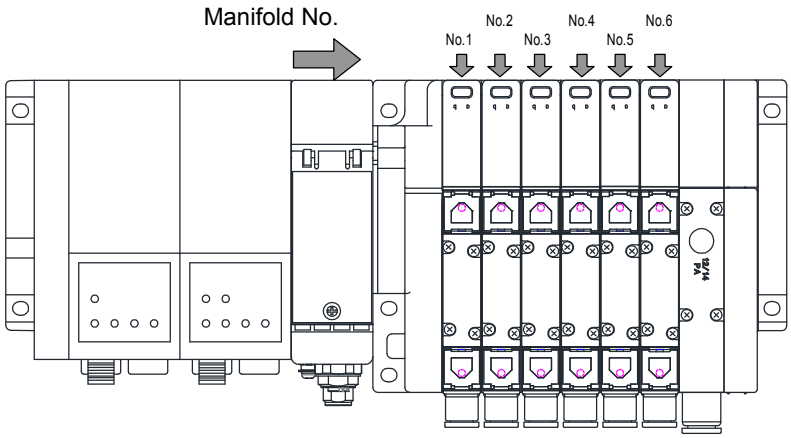
- When all valves mounted on the manifold are double-solenoid types:

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b	9a	9b	10a	10b	11a	11b	12a	12b	13a	13b	14a	14b	15a	15b	16a	16b

- When both single and double solenoids valves are mounted on the manifold (an example is shown above):

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	B	2a	B	3a	3b	4a	4b	5a	B	6a	B	7a	7b	8a	B	9a	B	10a	B	11a	11b	12a	12b	13a	B	14a	B	15a	15b	16a	B

◆NW4G*-T7EN*7 (16-point output, 1 output block unit and 1 input block unit specification)



Note: The figure below is an example of double-solenoid type valves mounting 6 stations, 1 output block unit and 1 input block unit on the manifold. There is no solenoid on the b-side for single-solenoid type.

[Standard wiring]

- When all valves mounted on the manifold are single-solenoid types:

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	4-1	4-2	4-3	4-4

Note: Please set the rotary switch as “4” for the output block.

- When all valves mounted on the manifold are double-solenoid types:

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	4-1	4-2	4-3	4-4

Note: Please set the rotary switch as “4” for the output block.

- When both single and double solenoids valves are mounted on the manifold (an example is shown above):

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	2a	3a	3b	4a	4b	5a	6a	7a	7b	8a	9a	4-1	4-2	4-3	4-4

Note: Please set the rotary switch as “4” for the output block.

[Double wiring] (Note: “B” indicates a blank station.)

- When all valves mounted on the manifold are single-solenoid types:

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	B	2a	B	3a	B	4a	B	5a	B	6a	B	4-1	4-2	4-3	4-4

Note: Please set the rotary switch as “4” for the output block.

- When all valves mounted on the manifold are double-solenoid types:

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	4-1	4-2	4-3	4-4

Note: Please set the rotary switch as “4” for the output block.

- When both single and double solenoids valves are mounted on the manifold (an example is shown above):

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Valve No.	1a	B	2a	B	3a	3b	4a	4b	5a	B	6a	B	4-1	4-2	4-3	4-4

Note: Please set the rotary switch as “4” for the output block.

3.4 Programming

This adapter unit is regarded as an adapter device (slave) with 16 output points: T7EN*1, 32 output points: T7EN*2, and 16 input/output points: T7EN*B7. There are 2 types of I/O data: output data transmitted from a scanner to an adapter device and input data transmitted from an adapter device to a scanner.

This adapter acts as an output device which transmits output data to valves after receiving it from the scanner. Regardless of the model, the input data is transmitted to the scanner as 2 bytes of reserved data.

Note: Depending on the make and model of the scanner, both the reserved data (2 bytes) along with the header data (4 bytes) for a total of 6 bytes of data may be required for setting. Please confirm the setting with the scanner's operating manual.

When programming, refer to the PLC manufacturer's manual, and to the tables shown below for I/O mapping. The characteristics of this adapter such as output status setting when errors occur, and the +COM/-COM output specifications, have no relevance to the programming.

Output data mapping

I/O Points		Output data	Bit															
T7EN*2	T7EN*1		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
32	16	2bytes	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
	-	4bytes	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Input data mapping (only the T7EN*7 is compatible)

I/O Points	Input data	Bit																
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
16	2bytes	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	

The I/O Assembly instance is used when setting the EtherNet/IP connection. This adapter will use the Instance in the table below with the general purpose device, and so refer to it when setting the connection.

I/O Assembly Instance

Item		Specifications					
Model		T7EN1	T7EN2	T7ENB7	T7ENP1	T7ENP2	T7ENPB7
Adapter unit		W4G-OPP8 -1EN	W4G-OPP8 -2EN	W4G-OPP8 -7EN-B	W4G-OPP8 -1EN-P	W4G-OPP8 -2EN-P	W4G-OPP8 -7EN-PB
Output data	Instance	100 (Dec)	101 (Dec)	100 (Dec)	100 (Dec)	101 (Dec)	100 (Dec)
	Size	2 (bytes)	4 (bytes)	2 (bytes)	2 (bytes)	4 (bytes)	2 (bytes)
Input data	Instance	110 (Dec)		110 (Dec)	110 (Dec)		110 (Dec)
	Size	2 (bytes)		2 (bytes)	2 (bytes)		2 (bytes)

3.5 Network configuration with EDS (Electronic Data Sheet) file

In order for the EtherNet/IP device to join the network, it is necessary to register the communication specification of the device to the network using the EDS file. Please refer to the user's manual provided by the scanner unit manufacturer for registering the EDS file. Also, to ensure a suitable network configuration, use the latest EDS file which complies with the model / product version.

How to register the device

Please confirm the address and specifications (model name) of the device that will be used before registering it as both the device and EDS file will need to be matched first. Refer to the following table for the device specifications and EDS file.

Specifications of the device and model names in the EDS file

Model	Adapter unit	Device Version	Name of EDS file	Target lot
T7EN1	W4G-OPP8-1EN	Rev1.4	CKD_OPP8_1EN.eds	Until Sep.15,2019
		Rev2.2	CKD_OPP8_1EN_v0202.eds	From Sep.16,2019
T7EN2	W4G-OPP8-2EN	Rev1.4	CKD_OPP8_2EN.eds	Until Sep.15,2019
		Rev2.2	CKD_OPP8_2EN_v0202.eds	From Sep.16,2019
T7ENB7	W4G-OPP8-7EN-B	Rev1.4	CKD_OPP8_7EN_B.eds	Until Sep.15,2019
		Rev2.2	CKD_OPP8_7EN_B_v0202.eds	From Sep.16,2019
T7ENP1	W4G-OPP8-1EN-P	Rev1.4	CKD_OPP8_1EN_P.eds	Until Sep.15,2019
		Rev2.2	CKD_OPP8_1EN_P_v0202.eds	From Sep.16,2019
T7ENP2	W4G-OPP8-2EN-P	Rev1.4	CKD_OPP8_2EN_P.eds	Until Sep.15,2019
		Rev2.2	CKD_OPP8_2EN_P_v0202.eds	From Sep.16,2019
T7ENPB7	W4G-OPP8-7EN-PB	Rev1.4	CKD_OPP8_7EN_PB.eds	Until Sep.15,2019
		Rev2.2	CKD_OPP8_7EN_PB_v0202.eds	From Sep.16,2019

Note: For the device version, make sure that the lavel on the product.

4. INSTALLATION

The network cables and power cables must be connected to the W4G*-T7EN*** in order for it to function. Incorrect connection causes not only malfunctions but in some cases, critical transmission damage to this adapter unit as well as other related devices. Before use, read this instruction manual and the user's manuals of the PLC and other devices that will be connected for correct connections.

CAUTION:

- Discharge static electricity that has built up on your body by touching a grounded metal object before handling the EtherNet/IP device. Failure to do so may damage the adapter unit.
- Do not touch electrical wiring connections (exposed live parts) as there is a risk of electric shock. Always disconnect the power supply before wiring. Also, never touch live parts with wet hands.
- Do not subject the power cables and network cables to tension and impact. Long cables can exert unexpected momentum and impact due to its weight, and this can consequently damage the connectors and devices. Take preventative measures such as securing the cables part way along its length to reduce inertia.
- To prevent noise problems, keep the following in mind when wiring:
  (1) If noise is likely to have an influence, make an effort to provide a separate power supply for each manifold solenoid valve and wire them independently.
  (2) Do not make the power and FG cables needlessly long, but wire them with the shortest possible lengths.
  (3) Do not share power with noise generating devices such as inverters and motors.
  (4) Do not lay the power cables, network cables, and other power lines parallel to each other.
  (5) Be sure to connect the shielding of the network cables to the equipotential bonding close to the adapter unit.
  (6) Refer to "EtherNet/IP Media Planning and Installation Manual" for wiring.
- Make sure the power cables and network cables are connected correctly within the specifications to avoid any incorrect wiring. Incorrect wiring can cause the adapter unit to malfunction or to be damaged.
- Make sure that all cables and connectors are connected firmly before turning the power ON.

4.1 Connecting and wiring to the network connector socket

While the EtherNet/IP offers flexible wiring methods with standard Ethernet cables, it is restricted by the wiring materials, devices, scanners, switching hubs, etc. Be sure to thoroughly understand these specifications before wiring. (Refer to the user's manual provided by the scanner manufacturer and ODVA).

The network connector plug is not included with this adapter unit. Separately purchase a connector plug which meets the required specifications. Wire the network cables to the connector plug and attach it to the network connector socket on the unit.

[Recommended cable with connector plug: M12-RJ-45 (Cat.5e)]

XS5W-T421-☐MC-K	straight	Mfd by OMRON
09 45 700 50☐☐	straight	Mfd by HARTING

Note: Code in the "☐" will vary depending on the specification.

[Recommended assembly connector]

21 03 281 1405	M12 Assembly connector	Mfd by HARTING
09 45 151 1100	RJ45 Assembly connector	Mfd by HARTING

[Recommended cable (Cat.5e)]

09 45 600 01☐☐	Commercial Ethernet cable	Mfd by HARTING

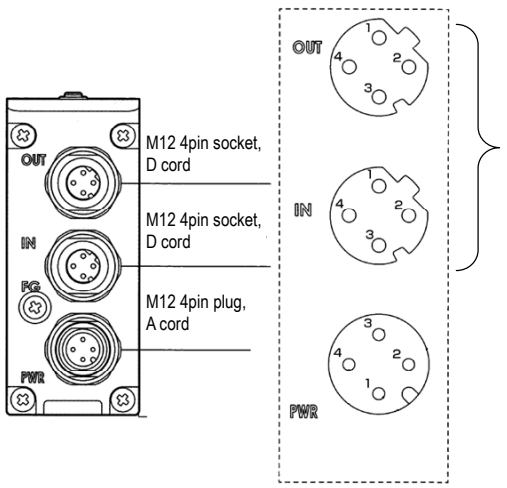
Note: Code in the "☐" will vary depending on the specification.

Connecting the network cable(s)

Connect the network cable(s) to the connector plug according to the following steps.

(1) After confirming safety, stop network communications and power OFF all peripheral devices.

(2) Refer to the diagram below and wire the EtherNet/IP compliant cable to the M12 connector.



Port	Pin No.	Signal	Function
IN/ OUT	1	TXD+	Transmit data+
	2	TXD-	Transmit data-
	3	RXD+	Receive data+
	4	RXD-	Receive data-

CAUTION:

- Be sure to use EtherNet/IP compliant cables for the network cable.
- Make sure that the network cables have a sufficient bending radius, and do not forcibly bend them.
- Keep the network cables away from the power cables as well as high-voltage cable(s).
- In the case that a communication connector (OUT) is unused, be sure to plug it with a waterproof cap.

  [Recommended waterproof cap]
  21 01 000 0003 Cap M12 Mfd by HARTING

4.2 Connecting and wiring to the unit/valve power plug

A unit/valve power socket is not included with this adapter unit. Separately purchase a power socket which meets the required specifications. Wire the power cables to the power socket and by attaching it to the unit's power plug, power will be supplied to the unit.

[Unit's power supply]
To operate this adapter unit, supply 21.6 VDC to 26.4 VDC power with the least noise.

[Valve's power supply]
To operate solenoid valves (which act as loads), supply 22.8 VDC to 26.4 VDC power with the least noise.

[M12 multi-core type power cable]

XS2F-D421-☐8☐-☐ Straight Mfd by OMRON

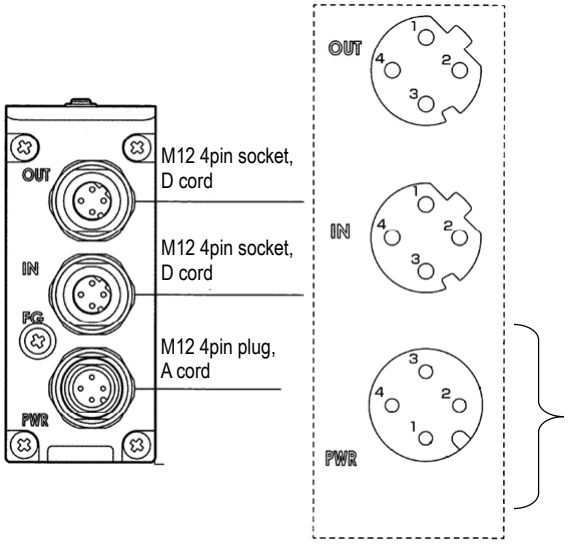
Note: Code in the "☐" will vary depending on the specification.

[M12 connector and power cable]
21 03 212 2305 Assembly type M12 connector Mfd by HARTING
Wire size: AWG22-18, applicable cable diameter:φ6-8

1) Connecting the power cable

Connect the unit/valve power cable to the power socket according to the following steps.

(1) After confirming safety, turn OFF the power source that is to be connected to the adapter unit.
(2) According to the diagram below, connect the power cable's 24 V power line to the plug's 24 V terminal, and the 0 V power line to the 0 V terminal with the polarity matched.



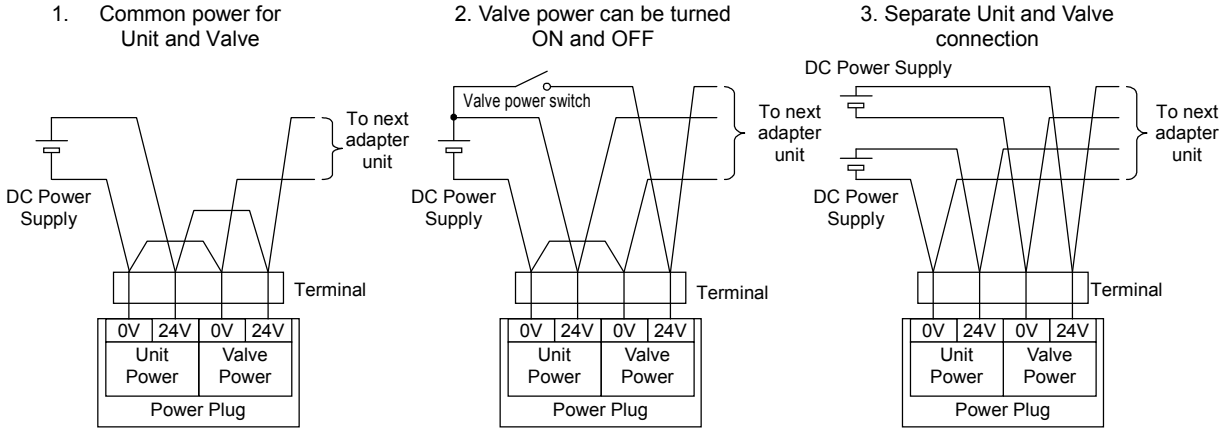
Port	Pin No.	Function
PWR	1	Unit power supply: 24V
	2	Valve power supply: 24V
	3	Unit power supply: 0V
	4	Valve power supply: 0V

CAUTION:

- Carefully check the polarities and rated voltage before making any connections.
- Calculate the current consumption before selecting the appropriate power cable.
- Keep in mind that a voltage drop may occur from powering multiple adapter units (remote I/O stations) from 1 power supply when selecting and wiring the cables.
- Secure the specified power supply voltage by taking countermeasures, such as wiring the power cables in multiple systems or installing other power supplies if a voltage drop cannot be avoided.
- Set a terminal block before the power plug and wire the power cables at the terminal block if the cables are daisy chained.

2) Wiring the power cables

Figures 1 to 3 below are examples of power supply wiring to the power plug.
Try other variations if necessary.



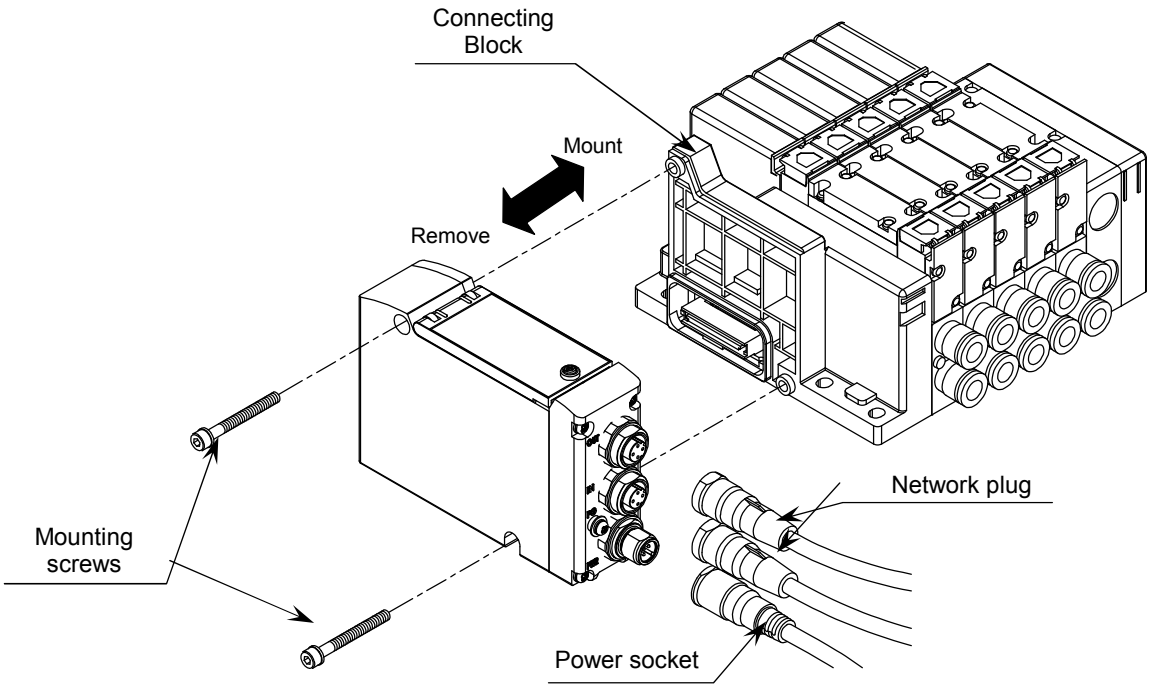
5. MAINTENANCE

5.1 Removing the adapter unit

(1) After confirming safety, stop network communication and turn power OFF on all peripheral devices.
(2) After confirming safety, turn power OFF to the unit and valves.
(3) Remove the network plug and the power socket.
(4) Remove the adapter unit's mounting screws.
(5) Hold the adapter unit and remove by applying a lateral force.

5.2 Mounting the adapter unit

(1) Set the IP address of the adapter unit.
(2) Hold the adapter unit and align the connectors of it and the connecting block, and slowly apply lateral force pushing them together.
(3) Make sure that the adapter unit and the connecting block are connected and firmly tighten together with the mounting screws. (Proper tightening torque: 1.2N·m)
(4) After confirming that the power to the unit and valve are OFF, install the network plug and the power socket. Installation with the power ON may result in the system suddenly becoming operational, creating a dangerous situation. Please confirm safety before proceeding.
[Network plug] Reference tightening torque: 0.6N·m
(The torque will differ depending on the plug, and so confirm with the plug maker.)
[Power socket] Reference tightening torque: 0.45N·m
(The torque will differ depending on the socket, and so confirm with the socket maker.)
(5) After confirming safety, turn each power supply ON.



CAUTION:

- Before turning the power ON or OFF, ensure the safety of the surroundings as the components in the system and the valves (cylinders) may move unexpectedly.
- Before turning the adapter unit's power ON, confirm the unit's IP address, and the output setting when a communication error occurs.
- Do not touch electrical wiring connections (exposed live parts) as there is a risk of electric shock.
- The inside of the adapter unit is a precision construction. Do not drop, apply unusual vibration or impact the unit.
- Do not connect or disconnect any connector plugs while the power is being supplied. Doing so may result in failure or malfunction.
- In the case that the network connector (OUT) is not being used, be sure to use place a waterproof cap on it.
  [Recommended waterproof cap]
  21 01 000 0003 Cap M12 Mfd by HARTING

5.3 Troubleshooting

Troubleshooting needs to be conducted on the system as a whole rather than just on a single unit. Depending on the communication status, the system may suddenly begin to move, and so when conducting maintenance, be sure to exercise ample caution and ensure safety.

[Problem 1] ST, PW(V) does not light up

・Power may not be ON. Make sure that the power cable is not damaged and the supplied power voltage is within the specified range.

・A fuse blowout may have occurred in the adapter unit. If the system does not recover after restarting the product, replace the adapter unit.

[Problem 2] ST LED: green flashes, yellow lights up, yellow & green flash

・The adapter unit may not be operating properly. Check that the supplied power and voltage are within the specifications and that a high voltage or high current cable which generates noise is not in the vicinity of the communication line or the adapter unit.

・If the system does not recover after restarting the product, replace the adapter unit.

[Problem 3] MS LED: red flashes

・The switch setting may not be appropriate for the operating mode. Check the setting, turn OFF and turn back ON the power.

[Problem 4] MS LED: green flashes (for more than 30 seconds)

・The communication mode may not be established. Make sure that the network cables are connected properly.

[Problem 5] MS LED: red lights up

・If the system does not recover after restarting the product, replace the adapter unit.

[Problem 6] NS LED: green flashes (for more than 30 seconds)

・The communication is on standby. Make sure that the scanner settings, IP address and subnet mask are correctly set.

[Problem 7] NS LED: red flashes

・The communication may have timed-out. Check that a high voltage or high current cable which generates noise is not in the vicinity of the communication line or adapter unit, and confirm the communication line is connected.

・The communication may be unstable. Check the communication cycle time as well as the processing capacity of the scanner and switching hub.

[Problem 8] NS LED: red lights up

・The IP address may be duplicated. Confirm the IP address.

・If the system does not recover after restarting the product, replace the adapter unit.

5.4 Maintenance of the device

This section describes the daily maintenance of devices, methods of cleaning and inspecting, and replacing the adapter unit.

1) Cleaning

Clean the device periodically in the following manner to ensure its optimum state.

(1) For daily cleaning, wipe the device with a dry, soft cloth.

(2) If dirt remains even after wiping with a dry cloth, use a damp cloth with 2% diluted detergent that has been firmly wrung out.

(3) Rubber, vinyl, and tape products may stain the adapter unit if they are left on for long periods of time. Remove such items during regular cleaning.

2) Inspection

Always perform periodic inspections to ensure that the everything is in an optimum state. Periodic inspections should be carried out at least once every 6 to 12 months; however, for an adapter unit used in environments subject to high temperatures, humidity and/or excessive dust, inspections should be carried out more frequently.

■ Inspection items

Periodically inspect the following items to ensure that they do not deviate from the criteria.
If the items deviate from the criteria, improve the ambient environment to fall within the criteria or adjust the adapter unit itself.

Inspection Items	Inspection details	Criteria	Inspection method
Environment	Are the ambient and in-panel temperatures suitable?	Refer to the specifications of the adapter unit.	Thermometer
	Are the ambient and in-panel humidity suitable?	Refer to the specifications of the adapter unit.	Hygrometer
	Is there any accumulated dust?	There should be no dust.	Visual
Condition of installation	Is the adapter unit securely mounted?	There should be no looseness.	Allen wrench
	Is the network cable connector fully inserted?	There should be no looseness.	Visual
	Are there any damages to the connection cables?	There should be no external abnormalities.	Visual

3) Replacing the adapter unit

The network consists of devices (scanners, adapters), and so any malfunctioning device can affect the entire network. Therefore, to restore network functions as soon as possible, it is recommended that spare units be kept on hand in order to replace the malfunctioning unit.

■ Precautions

When replacing the unit after a periodic inspection has revealed a problem, check that the new unit does not have any errors after replacement.

■ Setting the new adapter unit after replacement

Before replacing the adapter unit, understand the specification changes required of the switches, etc., for the new adapter so that they will be exactly the same as before it was replaced on the system.

6. Appendix(EDS file)

6.1 W4G-OPP8-1EN (T7EN1)

```
$ EZ-EDS Version 3.11.1.20151008 Generated Electronic Data Sheet

$ ******************************************************************************
$ File:     CKD Corporation EtherNet/IP.EDS
$ Date:     10-30-2015
$ ******************************************************************************
$
$ ******************************************************************************
$
$ Changes:
$ Version   Date          Name     Description
$ ---------------------------------------------------------------
$   1.2         10-30-2015        - created
$   1.4         09-16-2019        - changed MajRev and MinRev
$
$ ******************************************************************************

[File]
        DescText = " W4G-OPP8-1EN";
        CreateDate = 10-30-2015;
        CreateTime = 00:00:00;
        ModDate = 05-10-2019;
        ModTime = 11:15:00;
        Revision = 1.4;
        HomeURL = "https://www.ckd.co.jp/";

[Device]
        VendCode = 201;
        VendName = "CKD Corporation";
        ProdType = 43;
        ProdTypeStr = "Generic Device";
        ProdCode = 880;
        MajRev = 2;
        MinRev = 2;
        ProdName = "W4G-OPP8-1EN";
        Catalog = " W4G-OPP8-1EN";
        Icon = "opp8.ico";

[Device Classification]
        Class1 = EtherNetIP;

[Params]
        Param1 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                     $ Descriptor
                0xC8,                       $ Data Type
                4,                          $ Data Size in bytes
                "RPI",                      $ name
                "",                         $ units
                "ƒÊs order 1ms  `10s setting default 5s ",       $ help string
                1000,10000000,50000,        $ min, max, default data values
```

```
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places
        Param2 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                     $ Descriptor
                0xC7,                       $ Data Type
                2,                          $ Data Size in bytes
                "Assembly Output Size", $ name
                "",                         $ units
                "",                         $ help string
                2,2,2,                      $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places
        Param3 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                     $ Descriptor
                0xC7,                       $ Data Type
                2,                          $ Data Size in bytes
                "Assembly Input Size",  $ name
                "",                         $ units
                "",                         $ help string
                2,2,2,                      $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places

$ ==================================
$ == COMMUNICATION PATH SETTING ==
$ ==================================

        Param4 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                     $ Descriptor
                0xC6,                       $ Data Type
                1,                          $ Data Size in bytes
                "Output_CP",                $ name
                "",                         $ units
                "Output Connection Point",      $ help string
                100,100,100,                $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places
        Param5 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                     $ Descriptor
                0xC6,                       $ Data Type
                1,                          $ Data Size in bytes
                "Input_CP",                 $ name
                "",                         $ units
                "Input Connection Point",       $ help string
                110,110,110,                $ min, max, default data values
```

```
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                           $ decimal places
    Param6 =
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0010,                     $ Descriptor
            0xC6,                       $ Data Type
            1,                          $ Data Size in bytes
            "InputOnly_CP",             $ name
            "",                         $ units
            "Input Only Connection Point",      $ help string
            193,193,193,                $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                           $ decimal places
    Param7 =
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0010,                     $ Descriptor
            0xC6,                       $ Data Type
            1,                          $ Data Size in bytes
            "ListenOnly_CP",            $ name
            "",                         $ units
            "Listen Only Connection Point",     $ help string
            192,192,192,                $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                           $ decimal places

$ ==================================
$ == INPUT OUTPUT DATA SETTING   ==
$ ==================================

    Param8 =
            0,
            ,,
            0x0000,
            0xC7,
            2,
            "Output Data",
            "",
            "",
            0,255,0,
            ,,,,
            ,,,,
            0;
    Param9 =
            0,
            ,,
            0x0000,
            0xC7,
            2,
            "Input Data(Dummy Data)",
            "",
            "",
            0,255,0,
```

```
                ,,,,
                ,,,,
                0;


[Groups]
        Group1 =
                "Basic Configuration",
                1,
                1;
        Group2 =
                "Status",
                4,
                2,3,6,7;
        Group3 =
                "IO Data",
                2,
                4,5;

[Assembly]
        Assem100 =
                "16 Solenoid Output",
                "20 04 24 64 30 03",
                2,
                0x0000,
                ,,
                16,Param4;
        Assem110 =
                "Input Data (Dummy Data)",
                "20 04 24 6E 30 03",
                2,
                0x0000,
                ,,
                16,Param5;



[Connection Manager]
        Connection1 =
                0x04010002,                 $ Trigger and Transport
                0x44644405,                 $ Point Multicast
                Param1,2,Assem100,          $ OT RPI Size format
                Param1,2,Assem110,          $ TO rpi size format
                ,,                          $ config 1
                ,,                          $ config 2
                "Exclusive Owner ",         $ connection name
                "",                         $ help string
                "20 04 24 01 2C [Param4] 2C [Param5]";      $ path


[Port]
        Port1 =
                TCP,
                "Port 1",
                "20 F5 24 01",
                2;
```

```
[Capacity]

        ConnOverhead = .004;              $ Connection Overhead

        MaxIOConnections = 3;             $ Maximum number of Class 1 Connections
        MaxMsgConnections = 6;            $ Maximum number of Class 3 Connections
        TSpec1 = TxRx, 10, 2000;          $ packets per sec @ 10 bytes
        TSpec2 = TxRx, 504, 1500;         $ packets per sec @ 504 bytes

[TCP/IP Interface Class]
        Revision = 4;
        MaxInst = 1;
        Number_Of_Static_Instances = 1;
        Max_Number_Of_Dynamic_Instances = 0;

[Ethernet Link Class]
        Revision = 3;
        MaxInst = 2;
        Number_Of_Static_Instances = 2;
        Max_Number_Of_Dynamic_Instances = 0;
        InterfaceLabel1 = "ETH1";
        InterfaceLabel2 = "ETH2";

$ ******************************************************************************
$ EOF
$ ******************************************************************************
```

6.2 W4G-OPP8-2EN (T7EN2)

```
$ EZ-EDS Version 3.11.1.20151008 Generated Electronic Data Sheet

$ ******************************************************************************
$ File:     CKD Corporation EtherNet/IP.EDS
$ Date:     10-30-2015
$ ******************************************************************************
$
$ ******************************************************************************
$
$ Changes:
$ Version   Date          Name     Description
$ ---------------------------------------------------------------
$   1.2         10-30-2015        - created
$   1.4         09-16-2019        - changed MajRev and MinRev
$
$ ******************************************************************************

[File]
        DescText = " W4G-OPP8-2EN";
        CreateDate = 10-30-2015;
        CreateTime = 00:00:00;
        ModDate = 05-10-2019;
        ModTime = 11:15:00;
        Revision = 1.4;
        HomeURL = "https://www.ckd.co.jp/";

[Device]
        VendCode = 201;
        VendName = "CKD Corporation";
        ProdType = 43;
        ProdTypeStr = "Generic Device";
        ProdCode = 881;
        MajRev = 2;
        MinRev = 2;
        ProdName = "W4G-OPP8-2EN";
        Catalog = " W4G-OPP8-2EN";
        Icon = "opp8.ico";

[Device Classification]
        Class1 = EtherNetIP;

[Params]
        Param1 =
                0,                              $ reserved, shall equal 0
                ,,                             $ Link Path Size, Link Path
                0x0000,                         $ Descriptor
                0xC8,                           $ Data Type
                4,                             $ Data Size in bytes
                "RPI",                          $ name
                "",                            $ units
                "ƒÊs order 1ms  `10s setting default 5s ",       $ help string
                1000,10000000,50000,       $ min, max, default data values
                ,,,,                          $ mult, div, base, offset scaling
                ,,,,                          $ mult, div, base, offset links
                ;                               $ decimal places
        Param2 =
```

```
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0000,                      $ Descriptor
            0xC7,                        $ Data Type
            2,                          $ Data Size in bytes
            "Assembly Output Size", $ name
            "",                         $ units
            "",                         $ help string
            4,4,4,                      $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                            $ decimal places
    Param3 =
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0000,                      $ Descriptor
            0xC7,                        $ Data Type
            2,                          $ Data Size in bytes
            "Assembly Input Size",    $ name
            "",                         $ units
            "",                         $ help string
            2,2,2,                      $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                            $ decimal places

$ ====================================
$ == COMMUNICATION PATH SETTING ==
$ ====================================

    Param4 =
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0000,                      $ Descriptor
            0xC6,                        $ Data Type
            1,                          $ Data Size in bytes
            "Output_CP",                 $ name
            "",                         $ units
            "Output Connection Point",       $ help string
            101,101,101,                 $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                            $ decimal places
    Param5 =
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0000,                      $ Descriptor
            0xC6,                        $ Data Type
            1,                          $ Data Size in bytes
            "Input_CP",                  $ name
            "",                         $ units
            "Input Connection Point",       $ help string
            110,110,110,                 $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                            $ decimal places
    Param6 =
```

```
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0010,                      $ Descriptor
                0xC6,                        $ Data Type
                1,                          $ Data Size in bytes
                "InputOnly_CP",              $ name
                "",                         $ units
                "Input Only Connection Point",       $ help string
                193,193,193,                 $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                            $ decimal places
        Param7 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0010,                      $ Descriptor
                0xC6,                        $ Data Type
                1,                          $ Data Size in bytes
                "ListenOnly_CP",             $ name
                "",                         $ units
                "Listen Only Connection Point",       $ help string
                192,192,192,                 $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                            $ decimal places

$ ====================================
$ == INPUT OUTPUT DATA SETTING   ==
$ ====================================

        Param8 =
                0,
                ,,
                0x0000,
                0xC7,
                2,
                "Output Data",
                "",
                "",
                0,255,0,
                ,,,,
                ,,,,
                0;
        Param9 =
                0,
                ,,
                0x0000,
                0xC7,
                2,
                "Input Data(Dummy Data)",
                "",
                "",
                0,255,0,
                ,,,,
                ,,,,
                0;
```

```
[Groups]
        Group1 =
                "Basic Configuration",
                1,
                1;
        Group2 =
                "Status",
                4,
                2,3,6,7;
        Group3 =
                "IO Data",
                2,
                4,5;

[Assembly]
        Assem101 =
                "32 Solenoid Output",
                "20 04 24 65 30 03",
                4,
                0x0000,
                ,,
                32,Param4;
        Assem110 =
                "Input Data (Dummy Data)",
                "20 04 24 6E 30 03",
                2,
                0x0000,
                ,,
                16,Param5;



[Connection Manager]
        Connection1 =
                0x04010002,                 $ Trigger and Transport
                0x44644405,                 $ Point Multicast
                Param1,4,Assem101,          $ OT RPI Size format
                Param1,2,Assem110,          $ TO rpi size format
                ,,                          $ config 1
                ,,                          $ config 2
                "Exclusive Owner ",         $ connection name
                "",                         $ help string
                "20 04 24 01 2C [Param4] 2C [Param5]";      $ path


[Port]
        Port1 =
                TCP,
                "Port 1",
                "20 F5 24 01",
                2;

[Capacity]

        ConnOverhead = .004;                $ Connection Overhead
```

```
        MaxIOConnections = 3;              $ Maximum number of Class 1 Connections
        MaxMsgConnections = 6;             $ Maximum number of Class 3 Connections
        TSpec1 = TxRx, 10, 2000;           $ packets per sec @ 10 bytes
        TSpec2 = TxRx, 504, 1500;          $ packets per sec @ 504 bytes

[TCP/IP Interface Class]
        Revision = 4;
        MaxInst = 1;
        Number_Of_Static_Instances = 1;
        Max_Number_Of_Dynamic_Instances = 0;

[Ethernet Link Class]
        Revision = 3;
        MaxInst = 2;
        Number_Of_Static_Instances = 2;
        Max_Number_Of_Dynamic_Instances = 0;
        InterfaceLabel1 = "ETH1";
        InterfaceLabel2 = "ETH2";

$ ******************************************************************************
$ EOF
$ ******************************************************************************
```

6.3 W4G-OPP8-7EN-B (T7ENB7)

```
$ EZ-EDS Version 3.11.1.20151008 Generated Electronic Data Sheet

$ ******************************************************************************
$ File:     CKD Corporation EtherNet/IP.EDS
$ Date:     10-30-2015
$ ******************************************************************************
$
$ ******************************************************************************
$
$ Changes:
$ Version   Date          Name     Description
$ ---------------------------------------------------------------------
$   1.2         05-01-2016        - created
$   1.4         09-16-2019        - changed MajRev and MinRev
$
$ ******************************************************************************


[File]
        DescText = "W4G-OPP8-7EN";
        CreateDate = 05-01-2016;
        CreateTime = 00:00:00;
        ModDate = 05-10-2019;
        ModTime = 11:15:00;
        Revision = 1.4;
        HomeURL = "https://www.ckd.co.jp";

[Device]
        VendCode = 201;
        VendName = "CKD Corporation";
        ProdType = 43;
        ProdTypeStr = "Generic Device";
        ProdCode = 882;
        MajRev = 2;
        MinRev = 2;
        ProdName = "W4G-OPP8-7EN";
        Catalog = " W4G-OPP8-7EN";
        Icon = "opp8.ico";

[Device Classification]
        Class1 = EtherNetIP;

[Params]
        Param1 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                     $ Descriptor
                0xC8,                       $ Data Type
                4,                          $ Data Size in bytes
                "RPI",                      $ name
                "",                         $ units
                "ƒÊs order 1ms  `10s setting default 5s",      $ help string
                1000,10000000,50000,      $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
```

```
        ,,,,                        $ mult, div, base, offset links
        ;                           $ decimal places
Param2 =
        0,                          $ reserved, shall equal 0
        ,,                          $ Link Path Size, Link Path
        0x0000,                     $ Descriptor
        0xC7,                       $ Data Type
        2,                          $ Data Size in bytes
        "Assembly Output Size",     $ name
        "",                         $ units
        "",                         $ help string
        2,2,2,                      $ min, max, default data values
        ,,,,                        $ mult, div, base, offset scaling
        ,,,,                        $ mult, div, base, offset links
        ;                           $ decimal places
Param3 =
        0,                          $ reserved, shall equal 0
        ,,                          $ Link Path Size, Link Path
        0x0000,                     $ Descriptor
        0xC7,                       $ Data Type
        2,                          $ Data Size in bytes
        "Assembly Input Size",      $ name
        "",                         $ units
        "",                         $ help string
        2,2,2,                      $ min, max, default data values
        ,,,,                        $ mult, div, base, offset scaling
        ,,,,                        $ mult, div, base, offset links
        ;                           $ decimal places
Param4 =
        0,                          $ reserved, shall equal 0
        ,,                          $ Link Path Size, Link Path
        0x0000,                     $ Descriptor
        0xC6,                       $ Data Type
        1,                          $ Data Size in bytes
        "Output_CP",                $ name
        "",                         $ units
        "Output Connection Point",  $ help string
        100,100,100,                $ min, max, default data values
        ,,,,                        $ mult, div, base, offset scaling
        ,,,,                        $ mult, div, base, offset links
        ;                           $ decimal places
Param5 =
        0,                          $ reserved, shall equal 0
        ,,                          $ Link Path Size, Link Path
        0x0000,                     $ Descriptor
        0xC6,                       $ Data Type
        1,                          $ Data Size in bytes
        "Input_CP",                 $ name
        "",                         $ units
        "Input Connection Point",   $ help string
        110,110,110,                $ min, max, default data values
        ,,,,                        $ mult, div, base, offset scaling
        ,,,,                        $ mult, div, base, offset links
        ;                           $ decimal places
Param6 =
        0,                          $ reserved, shall equal 0
        ,,                          $ Link Path Size, Link Path
```

```
                0x0010,                 $ Descriptor
                0xC6,                   $ Data Type
                1,                      $ Data Size in bytes
                "InputOnly_CP",         $ name
                "",                     $ units
                "Input Only Connection Point",      $ help string
                193,193,193,            $ min, max, default data values
                ,,,,                    $ mult, div, base, offset scaling
                ,,,,                    $ mult, div, base, offset links
                ;                       $ decimal places
        Param7 =
                0,                      $ reserved, shall equal 0
                ,,                      $ Link Path Size, Link Path
                0x0010,                 $ Descriptor
                0xC6,                   $ Data Type
                1,                      $ Data Size in bytes
                "ListenOnly_CP",        $ name
                "",                     $ units
                "Listen Only Connection Point",     $ help string
                192,192,192,            $ min, max, default data values
                ,,,,                    $ mult, div, base, offset scaling
                ,,,,                    $ mult, div, base, offset links
                ;                       $ decimal places
        Param8 =
                0,                      $ reserved, shall equal 0
                ,,                      $ Link Path Size, Link Path
                0x0000,                 $ Descriptor
                0xC7,                   $ Data Type
                2,                      $ Data Size in bytes
                "Output Data",          $ name
                "",                     $ units
                "",                     $ help string
                0,255,0,                $ min, max, default data values
                ,,,,                    $ mult, div, base, offset scaling
                ,,,,                    $ mult, div, base, offset links
                ;                       $ decimal places
        Param9 =
                0,                      $ reserved, shall equal 0
                ,,                      $ Link Path Size, Link Path
                0x0000,                 $ Descriptor
                0xC7,                   $ Data Type
                2,                      $ Data Size in bytes
                "Input Data",           $ name
                "",                     $ units
                "",                     $ help string
                0,255,0,                $ min, max, default data values
                ,,,,                    $ mult, div, base, offset scaling
                ,,,,                    $ mult, div, base, offset links
                ;                       $ decimal places

[Groups]
        Group1 =
                "Basic Configuration",
                1,
                1;
        Group2 =
                "Status",
```

```
                4,
                2,3,6,7;
        Group3 =
                "IO Data",
                2,
                4,5;

[Assembly]
        Assem100 =
                "16 Solenoid Output",
                "20 04 24 64 30 03",
                2,
                0x0000,
                ,,
                16,Param4;
        Assem110 =
                "Input Data ",
                "20 04 24 6E 30 03",
                2,
                0x0000,
                ,,
                16,Param5;

[Connection Manager]
        Connection1 =
                0x04010002,          $ 0-15    = supported transport classes
                                     $ 16      = trigger: cyclic
                                     $ 17      = trigger: change of state
                                     $ 18      = trigger: application
                                     $ 19-23   = trigger: reserved
                                     $ 24      = application type: listen-only
                                     $ 25      = application type: input-only
                                     $ 26      = application type: exclusive-owner
                                     $ 27      = application type: redundant-owner
                                     $ 28-30   = reserved
                                     $ 31      = Direction: Client = 0 / Server = 1
                0x44644405,          $ 0       = O->T fixed size supported
                                     $ 1       = O->T variable size supported
                                     $ 2       = T->O fixed size supported
                                     $ 3       = T->O variable size supported
                                     $ 4-5     = O->T number of bytes per slot (obsolete)
                                     $ 6-7     = T->O number of bytes per slot (obsolete)
                                     $ 8-10    = O->T Real time transfer format
                                     $ 11      = reserved
                                     $ 12-14   = T->O Real time transfer format
                                     $ 15      = reserved
                                     $ 16      = O->T connection type: NULL
                                     $ 17      = O->T connection type: MULTICAST
                                     $ 18      = O->T connection type: POINT2POINT
                                     $ 19      = O->T connection type: reserved
                                     $ 20      = T->O connection type: NULL
                                     $ 21      = T->O connection type: MULTICAST
                                     $ 22      = T->O connection type: POINT2POINT
                                     $ 23      = T->O connection type: reserved
                                     $ 24      = O->T priority: LOW
                                     $ 25      = O->T priority: HIGH
                                     $ 26      = O->T priority: SCHEDULED
```

```
                                        $ 27        = O->T priority: reserved
                                        $ 28        = T->O priority: LOW
                                        $ 29        = T->O priority: HIGH
                                        $ 30        = T->O priority: SCHEDULED
                                        $ 31        = T->O priority: reserved
                    Param1,2,Assem100,      $ O->T RPI, size, format
                    Param1,2,Assem110,      $ T->O RPI, size, format
                    ,,                  $ proxy config size, format
                    ,,                  $ target config size, format
                    "Exclusive Owner ",     $ Connection Name
                    "",                 $ help string
                    "20 04 24 01 2C [Param4] 2C [Param5]";      $ Path

[Port]
        Port1 =
                    TCP,
                    "Port 1",
                    "20 F5 24 01",
                    2;

[Capacity]
        TSpec1 = TxRx, 10, 2000;
        TSpec2 = TxRx, 504, 1500;

[TCP/IP Interface Class]
        Revision = 4;
        MaxInst = 1;
        Number_Of_Static_Instances = 1;
        Max_Number_Of_Dynamic_Instances = 0;

[Ethernet Link Class]
        Revision = 3;
        MaxInst = 2;
        Number_Of_Static_Instances = 2;
        Max_Number_Of_Dynamic_Instances = 0;
        InterfaceLabel1 = "ETH1";
        InterfaceLabel2 = "ETH2";
```

6.4 W4G-OPP8-1EN-P（T7ENP1）

```
$ EZ-EDS Version 3.11.1.20151008 Generated Electronic Data Sheet

$ ******************************************************************************
$ File:     CKD Corporation EtherNet/IP.EDS
$ Date:     10-30-2015
$ ******************************************************************************
$
$ ******************************************************************************
$
$ Changes:
$ Version   Date          Name     Description
$ ---------------------------------------------------------------
$   1.2         10-30-2015        - created
$   1.4         09-16-2019        - changed MajRev and MinRev
$
$ ******************************************************************************

[File]
        DescText = "W4G-OPP8-1EN-P";
        CreateDate = 10-30-2015;
        CreateTime = 00:00:00;
        ModDate = 05-10-2019;
        ModTime = 11:15:00;
        Revision = 1.4;
        HomeURL = "https://www.ckd.co.jp/";

[Device]
        VendCode = 201;
        VendName = "CKD Corporation";
        ProdType = 43;
        ProdTypeStr = "Generic Device";
        ProdCode = 883;
        MajRev = 2;
        MinRev = 2;
        ProdName = "W4G-OPP8-1EN-P";
        Catalog = "W4G-OPP8-1EN-P";
        Icon = "opp8.ico";

[Device Classification]
        Class1 = EtherNetIP;

[Params]
        Param1 =
                0,                              $ reserved, shall equal 0
                ,,                              $ Link Path Size, Link Path
                0x0000,                         $ Descriptor
                0xC8,                           $ Data Type
                4,                              $ Data Size in bytes
                "RPI",                          $ name
                "",                             $ units
                "ƒÊs order 1ms  `10s setting default 5s ",       $ help string
                1000,10000000,50000,       $ min, max, default data values
                ,,,,                            $ mult, div, base, offset scaling
                ,,,,                            $ mult, div, base, offset links
                ;                               $ decimal places
```

```
    Param2 =
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0000,                      $ Descriptor
            0xC7,                        $ Data Type
            2,                          $ Data Size in bytes
            "Assembly Output Size", $ name
            "",                         $ units
            "",                         $ help string
            2,2,2,                      $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                            $ decimal places
    Param3 =
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0000,                      $ Descriptor
            0xC7,                        $ Data Type
            2,                          $ Data Size in bytes
            "Assembly Input Size",   $ name
            "",                         $ units
            "",                         $ help string
            2,2,2,                      $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                            $ decimal places

$ ==================================
$ == COMMUNICATION PATH SETTING ==
$ ==================================

    Param4 =
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0000,                      $ Descriptor
            0xC6,                        $ Data Type
            1,                          $ Data Size in bytes
            "Output_CP",                 $ name
            "",                         $ units
            "Output Connection Point",      $ help string
            100,100,100,                 $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                            $ decimal places
    Param5 =
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0000,                      $ Descriptor
            0xC6,                        $ Data Type
            1,                          $ Data Size in bytes
            "Input_CP",                  $ name
            "",                         $ units
            "Input Connection Point",       $ help string
            110,110,110,                 $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                            $ decimal places
```

```
        Param6 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0010,                     $ Descriptor
                0xC6,                       $ Data Type
                1,                          $ Data Size in bytes
                "InputOnly_CP",             $ name
                "",                         $ units
                "Input Only Connection Point",      $ help string
                193,193,193,                $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places
        Param7 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0010,                     $ Descriptor
                0xC6,                       $ Data Type
                1,                          $ Data Size in bytes
                "ListenOnly_CP",            $ name
                "",                         $ units
                "Listen Only Connection Point",     $ help string
                192,192,192,                $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places

$ ==================================
$ == INPUT OUTPUT DATA SETTING   ==
$ ==================================

        Param8 =
                0,
                ,,
                0x0000,
                0xC7,
                2,
                "Output Data",
                "",
                "",
                0,255,0,
                ,,,,
                ,,,,
                0;
        Param9 =
                0,
                ,,
                0x0000,
                0xC7,
                2,
                "Input Data(Dummy Data)",
                "",
                "",
                0,255,0,
                ,,,,
                ,,,,
                0;
```

```
[Groups]
        Group1 =
                "Basic Configuration",
                1,
                1;
        Group2 =
                "Status",
                4,
                2,3,6,7;
        Group3 =
                "IO Data",
                2,
                4,5;

[Assembly]
        Assem100 =
                "16 Solenoid Output",
                "20 04 24 64 30 03",
                2,
                0x0000,
                ,,
                16,Param4;
        Assem110 =
                "Input Data (Dummy Data)",
                "20 04 24 6E 30 03",
                2,
                0x0000,
                ,,
                16,Param5;



[Connection Manager]
        Connection1 =
                0x04010002,                 $ Trigger and Transport
                0x44644405,                 $ Point Multicast
                Param1,2,Assem100,          $ OT RPI Size format
                Param1,2,Assem110,          $ TO rpi size format
                ,,                        $ config 1
                ,,                        $ config 2
                "Exclusive Owner ",       $ connection name
                "",                       $ help string
                "20 04 24 01 2C [Param4] 2C [Param5]";      $ path


[Port]
        Port1 =
                TCP,
                "Port 1",
                "20 F5 24 01",
                2;

[Capacity]

        ConnOverhead = .004;                $ Connection Overhead
```

```
        MaxIOConnections = 3;              $ Maximum number of Class 1 Connections
        MaxMsgConnections = 6;             $ Maximum number of Class 3 Connections
        TSpec1 = TxRx, 10, 2000;           $ packets per sec @ 10 bytes
        TSpec2 = TxRx, 504, 1500;          $ packets per sec @ 504 bytes

[TCP/IP Interface Class]
        Revision = 4;
        MaxInst = 1;
        Number_Of_Static_Instances = 1;
        Max_Number_Of_Dynamic_Instances = 0;

[Ethernet Link Class]
        Revision = 3;
        MaxInst = 2;
        Number_Of_Static_Instances = 2;
        Max_Number_Of_Dynamic_Instances = 0;
        InterfaceLabel1 = "ETH1";
        InterfaceLabel2 = "ETH2";

$ ******************************************************************************
$ EOF
$ ******************************************************************************
```

6.5 W4G-OPP8-2EN-P (T7ENP2)

```
$ EZ-EDS Version 3.11.1.20151008 Generated Electronic Data Sheet

$ ******************************************************************************
$ File:     CKD Corporation EtherNet/IP.EDS
$ Date:     10-30-2015
$ ******************************************************************************
$
$ ******************************************************************************
$
$ Changes:
$ Version   Date          Name     Description
$ ---------------------------------------------------------------
$   1.2         10-30-2015        - created
$   1.4         09-16-2019        - changed MajRev and MinRev
$
$ ******************************************************************************

[File]
        DescText = "W4G-OPP8-2EN-P";
        CreateDate = 10-30-2015;
        CreateTime = 00:00:00;
        ModDate = 05-10-2019;
        ModTime = 11:15:00;
        Revision = 1.4;
        HomeURL = "https://www.ckd.co.jp/";

[Device]
        VendCode = 201;
        VendName = "CKD Corporation";
        ProdType = 43;
        ProdTypeStr = "Generic Device";
        ProdCode = 884;
        MajRev = 2;
        MinRev = 2;
        ProdName = "W4G-OPP8-2EN-P";
        Catalog = "W4G-OPP8-2EN-P";
        Icon = "OPP8.ico";

[Device Classification]
        Class1 = EtherNetIP;

[Params]
        Param1 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                     $ Descriptor
                0xC8,                       $ Data Type
                4,                          $ Data Size in bytes
                "RPI",                      $ name
                "",                         $ units
                "ƒÊs order 1ms  `10s setting default 5s ",       $ help string
                1000,10000000,50000,        $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places
```

```
        Param2 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                      $ Descriptor
                0xC7,                        $ Data Type
                2,                          $ Data Size in bytes
                "Assembly Output Size", $ name
                "",                         $ units
                "",                         $ help string
                4,4,4,                      $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                            $ decimal places
        Param3 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                      $ Descriptor
                0xC7,                        $ Data Type
                2,                          $ Data Size in bytes
                "Assembly Input Size",   $ name
                "",                         $ units
                "",                         $ help string
                2,2,2,                      $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                            $ decimal places

$ ==================================
$ == COMMUNICATION PATH SETTING ==
$ ==================================

        Param4 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                      $ Descriptor
                0xC6,                        $ Data Type
                1,                          $ Data Size in bytes
                "Output_CP",                 $ name
                "",                         $ units
                "Output Connection Point",      $ help string
                101,101,101,                 $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                            $ decimal places
        Param5 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                      $ Descriptor
                0xC6,                        $ Data Type
                1,                          $ Data Size in bytes
                "Input_CP",                  $ name
                "",                         $ units
                "Input Connection Point",       $ help string
                110,110,110,                 $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                            $ decimal places
```

```
    Param6 =
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0010,                      $ Descriptor
            0xC6,                        $ Data Type
            1,                          $ Data Size in bytes
            "InputOnly_CP",              $ name
            "",                         $ units
            "Input Only Connection Point",      $ help string
            193,193,193,                 $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                            $ decimal places
    Param7 =
            0,                          $ reserved, shall equal 0
            ,,                          $ Link Path Size, Link Path
            0x0010,                      $ Descriptor
            0xC6,                        $ Data Type
            1,                          $ Data Size in bytes
            "ListenOnly_CP",             $ name
            "",                         $ units
            "Listen Only Connection Point",      $ help string
            192,192,192,                 $ min, max, default data values
            ,,,,                        $ mult, div, base, offset scaling
            ,,,,                        $ mult, div, base, offset links
            ;                            $ decimal places

$ ==================================
$ == INPUT OUTPUT DATA SETTING   ==
$ ==================================

    Param8 =
            0,
            ,,
            0x0000,
            0xC7,
            2,
            "Output Data",
            "",
            "",
            0,255,0,
            ,,,,
            ,,,,
            0;
    Param9 =
            0,
            ,,
            0x0000,
            0xC7,
            2,
            "Input Data(Dummy Data)",
            "",
            "",
            0,255,0,
            ,,,,
            ,,,,
            0;
```

```
[Groups]
        Group1 =
                "Basic Configuration",
                1,
                1;
        Group2 =
                "Status",
                4,
                2,3,6,7;
        Group3 =
                "IO Data",
                2,
                4,5;

[Assembly]
        Assem101 =
                "32 Solenoid Output",
                "20 04 24 65 30 03",
                4,
                0x0000,
                ,,
                32,Param4;
        Assem110 =
                "Input Data (Dummy Data)",
                "20 04 24 6E 30 03",
                2,
                0x0000,
                ,,
                16,Param5;



[Connection Manager]
        Connection1 =
                0x04010002,                 $ Trigger and Transport
                0x44644405,                 $ Point Multicast
                Param1,4,Assem101,          $ OT RPI Size format
                Param1,2,Assem110,          $ TO rpi size format
                ,,                        $ config 1
                ,,                        $ config 2
                "Exclusive Owner ",       $ connection name
                "",                       $ help string
                "20 04 24 01 2C [Param4] 2C [Param5]";      $ path


[Port]
        Port1 =
                TCP,
                "Port 1",
                "20 F5 24 01",
                2;

[Capacity]

        ConnOverhead = .004;                $ Connection Overhead
```

```
        MaxIOConnections = 3;              $ Maximum number of Class 1 Connections
        MaxMsgConnections = 6;             $ Maximum number of Class 3 Connections
        TSpec1 = TxRx, 10, 2000;           $ packets per sec @ 10 bytes
        TSpec2 = TxRx, 504, 1500;          $ packets per sec @ 504 bytes

[TCP/IP Interface Class]
        Revision = 4;
        MaxInst = 1;
        Number_Of_Static_Instances = 1;
        Max_Number_Of_Dynamic_Instances = 0;

[Ethernet Link Class]
        Revision = 3;
        MaxInst = 2;
        Number_Of_Static_Instances = 2;
        Max_Number_Of_Dynamic_Instances = 0;
        InterfaceLabel1 = "ETH1";
        InterfaceLabel2 = "ETH2";

$ ******************************************************************************
$ EOF
$ ******************************************************************************
```

6.6 W4G-OPP8-7EN-PB (T7ENPB7)

```
$ EZ-EDS Version 3.11.1.20151008 Generated Electronic Data Sheet

$ ******************************************************************************
$ File:     CKD Corporation EtherNet/IP.EDS
$ Date:     10-30-2015
$ ******************************************************************************
$
$ ******************************************************************************
$
$ Changes:
$ Version   Date          Name     Description
$ ---------------------------------------------------------------
$   1.2         05-01-2016        - created
$   1.4         09-16-2019        - changed MajRev and MinRev
$
$ ******************************************************************************

[File]
        DescText = "W4G-OPP8-7EN-P";
        CreateDate = 05-01-2016;
        CreateTime = 00:00:00;
        ModDate = 05-10-2019;
        ModTime = 11:15:00;
        Revision = 1.4;
        HomeURL = "https://www.ckd.co.jp";

[Device]
        VendCode = 201;
        VendName = "CKD Corporation";
        ProdType = 43;
        ProdTypeStr = "Generic Device";
        ProdCode = 886;
        MajRev = 2;
        MinRev = 2;
        ProdName = "W4G-OPP8-7EN-P";
        Catalog = " W4G-OPP8-7EN-P";
        Icon = "opp8.ico";

[Device Classification]
        Class1 = EtherNetIP;

[Params]
        Param1 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                     $ Descriptor
                0xC8,                       $ Data Type
                4,                          $ Data Size in bytes
                "RPI",                      $ name
                "",                         $ units
                "ƒÊs order 1ms  `10s setting default 5s",      $ help string
                1000,10000000,50000,        $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places
```

```
Param2 =
        0,                          $ reserved, shall equal 0
        ,,                          $ Link Path Size, Link Path
        0x0000,                      $ Descriptor
        0xC7,                        $ Data Type
        2,                          $ Data Size in bytes
        "Assembly Output Size", $ name
        "",                         $ units
        "",                         $ help string
        2,2,2,                      $ min, max, default data values
        ,,,,                        $ mult, div, base, offset scaling
        ,,,,                        $ mult, div, base, offset links
        ;                            $ decimal places
Param3 =
        0,                          $ reserved, shall equal 0
        ,,                          $ Link Path Size, Link Path
        0x0000,                      $ Descriptor
        0xC7,                        $ Data Type
        2,                          $ Data Size in bytes
        "Assembly Input Size",   $ name
        "",                         $ units
        "",                         $ help string
        2,2,2,                      $ min, max, default data values
        ,,,,                        $ mult, div, base, offset scaling
        ,,,,                        $ mult, div, base, offset links
        ;                            $ decimal places
Param4 =
        0,                          $ reserved, shall equal 0
        ,,                          $ Link Path Size, Link Path
        0x0000,                      $ Descriptor
        0xC6,                        $ Data Type
        1,                          $ Data Size in bytes
        "Output_CP",                 $ name
        "",                         $ units
        "Output Connection Point",       $ help string
        100,100,100,                 $ min, max, default data values
        ,,,,                        $ mult, div, base, offset scaling
        ,,,,                        $ mult, div, base, offset links
        ;                            $ decimal places
Param5 =
        0,                          $ reserved, shall equal 0
        ,,                          $ Link Path Size, Link Path
        0x0000,                      $ Descriptor
        0xC6,                        $ Data Type
        1,                          $ Data Size in bytes
        "Input_CP",                  $ name
        "",                         $ units
        "Input Connection Point",       $ help string
        110,110,110,                 $ min, max, default data values
        ,,,,                        $ mult, div, base, offset scaling
        ,,,,                        $ mult, div, base, offset links
        ;                            $ decimal places
Param6 =
        0,                          $ reserved, shall equal 0
        ,,                          $ Link Path Size, Link Path
        0x0010,                      $ Descriptor
        0xC6,                        $ Data Type
```

```
                1,                          $ Data Size in bytes
                "InputOnly_CP",             $ name
                "",                         $ units
                "Input Only Connection Point",      $ help string
                193,193,193,                $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places
        Param7 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0010,                     $ Descriptor
                0xC6,                       $ Data Type
                1,                          $ Data Size in bytes
                "ListenOnly_CP",            $ name
                "",                         $ units
                "Listen Only Connection Point",     $ help string
                192,192,192,                $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places
        Param8 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                     $ Descriptor
                0xC7,                       $ Data Type
                2,                          $ Data Size in bytes
                "Output Data",              $ name
                "",                         $ units
                "",                         $ help string
                0,255,0,                    $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places
        Param9 =
                0,                          $ reserved, shall equal 0
                ,,                          $ Link Path Size, Link Path
                0x0000,                     $ Descriptor
                0xC7,                       $ Data Type
                2,                          $ Data Size in bytes
                "Input Data",               $ name
                "",                         $ units
                "",                         $ help string
                0,255,0,                    $ min, max, default data values
                ,,,,                        $ mult, div, base, offset scaling
                ,,,,                        $ mult, div, base, offset links
                ;                           $ decimal places

[Groups]
        Group1 =
                "Basic Configuration",
                1,
                1;
        Group2 =
                "Status",
                4,
                2,3,6,7;
```

```
        Group3 =
                "IO Data",
                2,
                4,5;

[Assembly]
        Assem100 =
                "16 Solenoid Output",
                "20 04 24 64 30 03",
                2,
                0x0000,
                ,,
                16,Param4;
        Assem110 =
                "Input Data ",
                "20 04 24 6E 30 03",
                2,
                0x0000,
                ,,
                16,Param5;

[Connection Manager]
        Connection1 =
                0x04010002,             $ 0-15      = supported transport classes
                                        $ 16        = trigger: cyclic
                                        $ 17        = trigger: change of state
                                        $ 18        = trigger: application
                                        $ 19-23     = trigger: reserved
                                        $ 24        = application type: listen-only
                                        $ 25        = application type: input-only
                                        $ 26        = application type: exclusive-owner
                                        $ 27        = application type: redundant-owner
                                        $ 28-30     = reserved
                                        $ 31        = Direction: Client = 0 / Server = 1
                0x44644405,             $ 0         = O->T fixed size supported
                                        $ 1         = O->T variable size supported
                                        $ 2         = T->O fixed size supported
                                        $ 3         = T->O variable size supported
                                        $ 4-5       = O->T number of bytes per slot (obsolete)
                                        $ 6-7       = T->O number of bytes per slot (obsolete)
                                        $ 8-10      = O->T Real time transfer format
                                        $ 11        = reserved
                                        $ 12-14     = T->O Real time transfer format
                                        $ 15        = reserved
                                        $ 16        = O->T connection type: NULL
                                        $ 17        = O->T connection type: MULTICAST
                                        $ 18        = O->T connection type: POINT2POINT
                                        $ 19        = O->T connection type: reserved
                                        $ 20        = T->O connection type: NULL
                                        $ 21        = T->O connection type: MULTICAST
                                        $ 22        = T->O connection type: POINT2POINT
                                        $ 23        = T->O connection type: reserved
                                        $ 24        = O->T priority: LOW
                                        $ 25        = O->T priority: HIGH
                                        $ 26        = O->T priority: SCHEDULED
                                        $ 27        = O->T priority: reserved
                                        $ 28        = T->O priority: LOW
```

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                                        $ 29        = T->O priority: HIGH
                                        $ 30        = T->O priority: SCHEDULED
                                        $ 31        = T->O priority: reserved
                    Param1,2,Assem100,      $ O->T RPI, size, format
                    Param1,2,Assem110,      $ T->O RPI, size, format
                    ,,                  $ proxy config size, format
                    ,,                  $ target config size, format
                    "Exclusive Owner ",     $ Connection Name
                    "",                 $ help string
                    "20 04 24 01 2C [Param4] 2C [Param5]";      $ Path

[Port]
        Port1 =
                    TCP,
                    "Port 1",
                    "20 F5 24 01",
                    2;

[Capacity]
        TSpec1 = TxRx, 10, 2000;
        TSpec2 = TxRx, 504, 1500;

[TCP/IP Interface Class]
        Revision = 4;
        MaxInst = 1;
        Number_Of_Static_Instances = 1;
        Max_Number_Of_Dynamic_Instances = 0;

[Ethernet Link Class]
        Revision = 3;
        MaxInst = 2;
        Number_Of_Static_Instances = 2;
        Max_Number_Of_Dynamic_Instances = 0;
        InterfaceLabel1 = "ETH1";
        InterfaceLabel2 = "ETH2";
```