CONPROSYS™ Industrial IoT
Test report for LA6-POE Series

20 February 2018
CONTEC Co., Ltd.

1

Device list for Test

Item Name	Model	Manufacture
Network Signal Tower	LA6-5DSNWB-POE	PATLITE
M2M Gateway	CPS-MG341-ADSC1-111	CONTEC
Laptop PC	※1	
LAN cables	We used two commercially available products.※2	

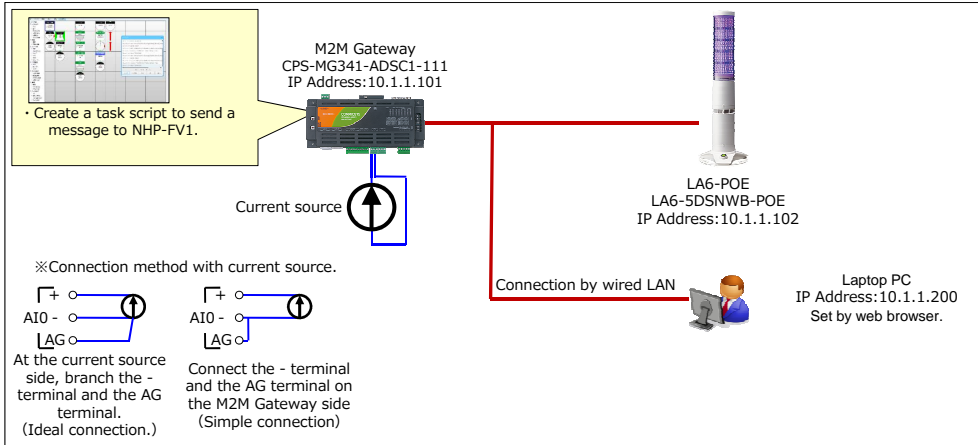※1 : We used a PC running Microsoft Internet Explorer 11.x or later.
※2 : The M2M controller body has two LAN ports. They are set in the HUB mode.
Thus when connecting a Signal Tower NH-FV Series and a Laptop PC, it is not necessary to connect the HUB.

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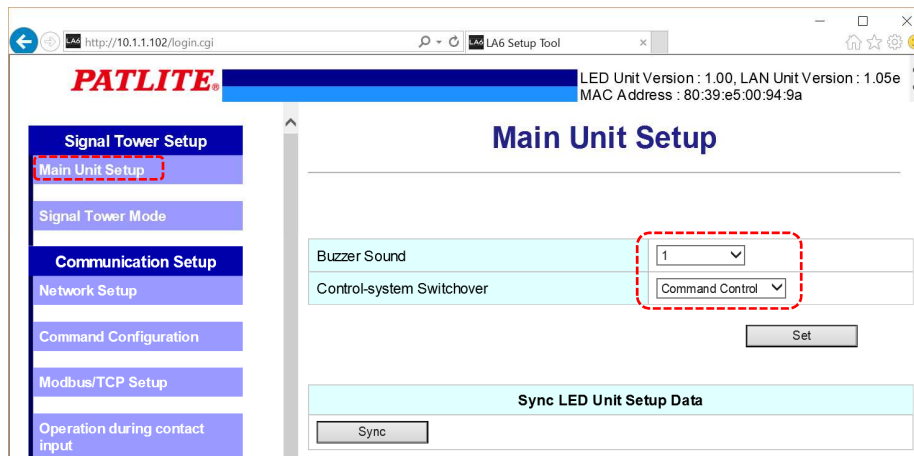
2

Connection state

Overview

LA6-POE, M2M Gateway, PC connected via wired LAN.
Measure the current of the current source connected to AI0 of the M2M Gateway and change the lighting pattern of LA6-POE accrding to the measured value.

· Create a task script to send a message to NHP-FV1.

M2M Gateway
CPS-MG341-ADSC1-111
IP Address:10.1.1.101

Current source

LA6-POE
LA6-5DSNWB-POE
IP Address:10.1.1.102

Connection by wired LAN

Laptop PC
IP Address:10.1.1.200
Set by web browser.

※Connection method with current source.

AI0 -
AG

At the current source side, branch the - terminal and the AG terminal.
(Ideal connection.)

AI0 -
AG

Connect the - terminal and the AG terminal on the M2M Gateway side
(Simple connection)

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LA6-POE setting state

Select "Main Unit Setup" on the LA6-POE Web Setup screen.
Set the Buzzer Sound to an arbitrary value. Set Control-system Switchover switching to "Command Control".

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LA6-POE setting state

Check IP Address setting and Net Mask setting.

LA6-POE setting state

Check the Port Number of Modbus/TCP Setup.

Creation of lighting pattern by data setting application made by PATLITE

Use the data setting application "EDITOR for LA series" to create lighting patterns of Group No.1 to No.6 in Smart Mode and transfer the data to LA6-POE.

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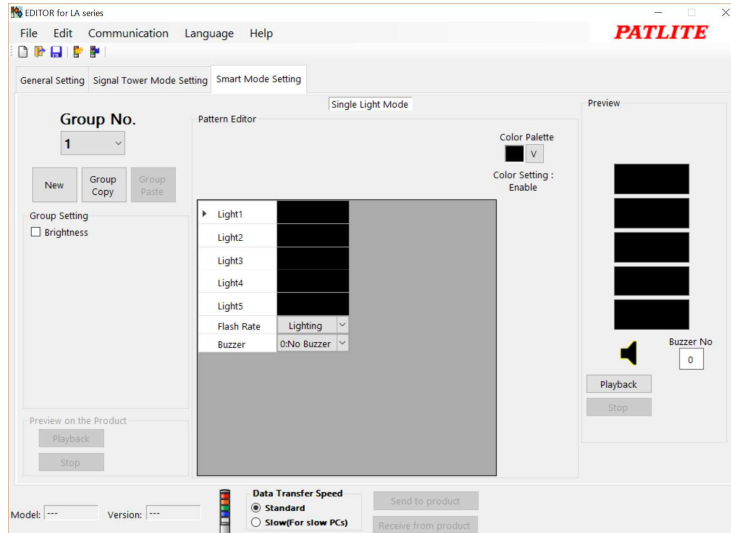
How to restore Task on M2M Gagteway (CONPROSYS)

1. Open M2M Gateway with Web Browser on Laptop PC.

2. Login to M2M Gateway setting menu.

3. Select [Maintenance menu]-[Task edit]

4. Select [File]-[Open from local disk…] on the Task edit.

5. Select "task0_xxxxxxxxxxxx.dat" file from the folder where you extracted the downloaded file, and click [Open].

6. Select [File]-[Save task…] on the Task edit. And save it as an arbitrary file name Task0 - 9.

7. Select [File]-[Open from local disk…] on the Task edit.

8. Select "task1_xxxxxxxxxxxx.dat" file from the folder where you extracted the downloaded file, and click [Open].

9. Select [File]-[Save task…] on the Task edit. Any file name other than those specified in "5": Save as Task0 - 9.

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M2M Gateway setting state

Select [Maintenance menu]-[LINK config].
Set arbitrary "Link name" and "Link type" to "MODBUS_TCP.lin" and click "add".
"Link name" is added. Click "config...", set the IP address of LA6-POE to be connected, the port number of Modbus/TCP and click "upd".

Set according to the setting of Modbus/TCP of LA 6-POE.

M2M Gateway setting state

[Maintenance menu]-[CPU config], set the name of an arbitrary unit, confirm that "link name" is the "Link name" set in the previous section, and click "add".
As the "Unit name" is added, click "config".
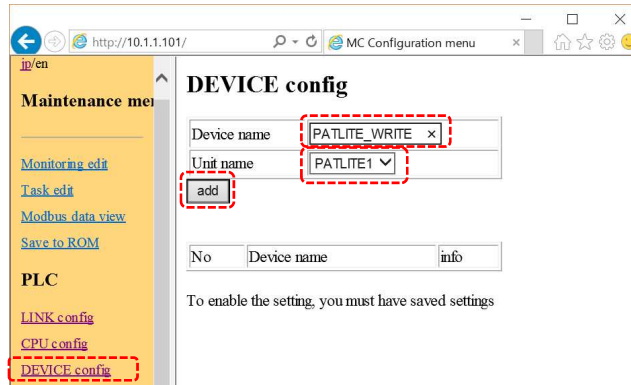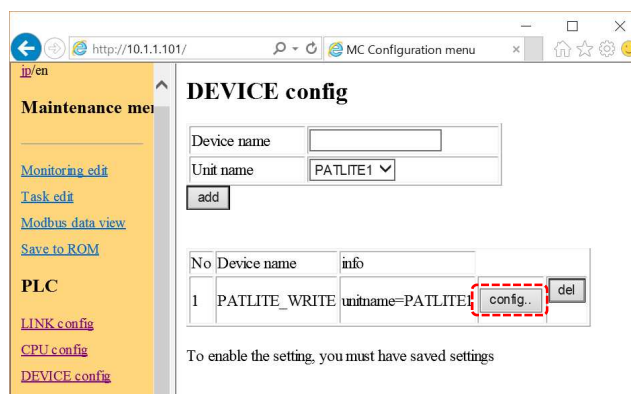

Set as shown on the right and click "upd".

M2M Gateway setting state

Select [Maintenance Menu] – [Device Config], set an arbitrary [Device Name], confirm that "Unit Name" is "Unit Name" set in the previous section, and click [add].

M2M Gateway setting state

As "Device name" is added as shown below, click [config...].

M2M Gateway setting state

Set as follows in "DEVICE config(detail)" shown below.

http://10.1.1.101/	MC Configuration menu ×

DEVICE config(detail)

jp/en

Maintenance me

Monitoring edit
Task edit
Modbus data view
Save to ROM

PLC

LINK config
CPU config
DEVICE config

Data collect conf

Data transfer setting
Azure IoT Hub setting
Time sync setting
Service setting
File view

Device name	PATLITE_WRITE
Unit name	PATLITE1
Cpu name	MODBUS
Device type	HoldingRegister ▾
Start address	0
End address	10
Modbus remap address	0
Read/Write	Write ▾
Scan Interval(msec)	100
Data type	unsigned 16bit data ▾
Cloud key	
Cloud interval(sec)	

upd

Return

Setting for accessing with Modbus function code "Write Multiple Registers (10H)" of LA6-POE.

Specify the range of the register address defined by "LA6-POE".

Specify the start address for remapping the register address of LA 6-POE to the Modbus address of the M2M Gateway.

Select "Write" to write data to LA6-POE.

Specify the communication interval 100 msec (Min.) in Modbus.

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M2M Gateway setting state

Add a device name different from the device name up to the previous item and set it as follows.

http://10.1.1.101/	MC Configuration menu ×

jp/en

DEVICE config(detail)

Maintenance me

Monitoring edit
Task edit
Modbus data view
Save to ROM

PLC

LINK config
CPU config
DEVICE config

Data collect conf

Data transfer setting
Azure IoT Hub setting
Time sync setting
Service setting

Device name	PATLITE_READ
Unit name	PATLITE1
Cpu name	MODBUS
Device type	HoldingRegister ▾
Start address	0
End address	10
Modbus remap address	16
Read/Write	Read ▾
Scan Interval(msec)	100
Data type	unsigned 16bit data ▾
Cloud key	
Cloud interval(sec)	

upd

Return

Setting for accessing with Modbus function code "Read Holding Registers(03H)" of LA6-POE.

Specify the range of the register address defined by "LA6-POE".

Specify the start address for remapping the register address of LA 6-POE to the Modbus address of the M2M Gateway.

Select "Read" to read data from LA6-POE.

Specify the communication interval 100 msec (Min.) in Modbus.

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M2M Gateway setting reference information

The function code in Modbus communication of the M2M Gateway is as follows depending on the device type, READE / WRITE setting.

Device Type	READ		WRITE	
	Code	Function	Code	Function
Coil Status	0x01	Read Coil Status	0x0F	Force Multiple Coils
Input Status	0x02	Read Input Status	—	—
Holding Register	0x03	Read Holding Register	0x10	Preset Multiple Registers
Input Register	0x04	Read Input Register	—	—

The function codes supported by LA6-POE are as shown in the table below.
Since both of them can handle 0x03 and 0x10, we chose the Device type:"Holding Register" in the setting of M2M Gateway.

Code (Hex)	Function Name	Functional Description
02H	Read Input Status	The contact input status is read.
03H	Read Holding Registers	The present status of the Signal Tower and buzzer are read.
06H	Write Single Register	1 byte of the data address in the Register is changed, and the Signal Tower and buzzer are controlled.
08H	Diagnostics	Reads the energized state of the Signal Tower control board.
10H	Write Multiple Registers	Two or more bytes of the data address in the Register is changed, and the Signal Tower and buzzer are controlled.

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M2M Gateway setting state

Use the "Modbus data view" of the M2M Gateway to check the communication status with the LA6-POE.

This is the start address to which the PLC or Modbus device will be remapped. Click "get" to update the display.

Data written from the M2M Gateway to the LA6-POE will be displayed.

Displays the register address status of "LA6-POE".

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8

The meaning of TAG

TAG	The meaning of TAG	
TAG00	Data of AI0	Current 0 to 20 mA input to AI0 is stored as 0 to 4095 data.
TAG01	The determination result of the current data.	Depending on the data stored in TAG 00, 0 to 5 are stored.

If the value of TAG00 is 4 or less, Group Number 1 is output to LA6-POE.

If the value of TAG00 is 819 or less (about 4 mA or less), Group Number 2 is output to LA6-POE.

If the value of TAG00 is 1638 or less (about 8 mA or less), Group Number 3 is output to LA6-POE.

If the value of TAG00 is 2457 or less (about 12 mA or less), Group Number 4 is output to LA6-POE.

If the value of TAG00 is 3276 or less (about 16 mA or less), Group Number 5 is output to LA6-POE.

When the value of TAG00 exceeds 3276 (about 16 mA), Group Number6 is output to LA6-POE.

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17