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HMI Proface "Modbus RTU" Mitsubishi FR E700 VFD

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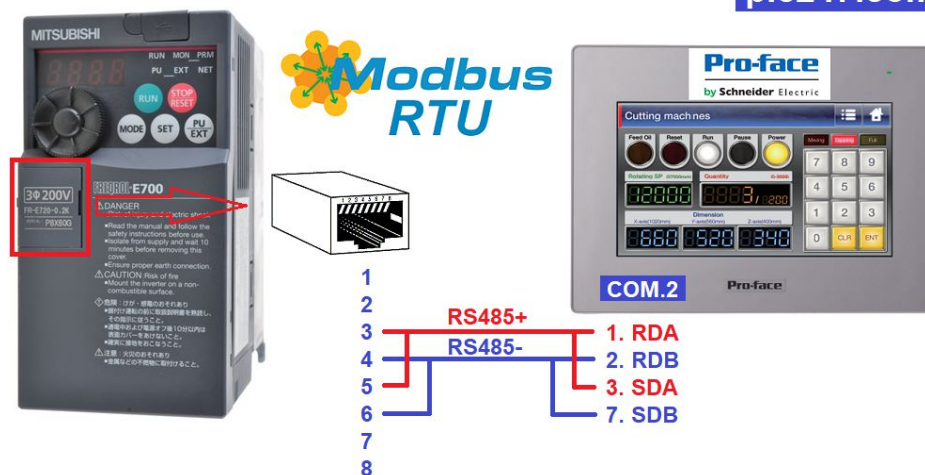


Hello, in previous posts, plc247.com used HMI Proface GP4402WW to connect and control different Omron And Autronics Temperature Controllers.

Today, plc247.com will continue to guide you to use HMI GP4402WW to control Mitsubishi FR E700 Series Inverter through Modbus RTU RS485 Communication.

HMI GP4402WW & FR E720 “Wiring Diagram”

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Mitsubifhi FR E700 Modbus RTU Configuration

In addition to the basic parameters of the inverter, we need to set other communication parameters as follows

+ Pr117: **1** (Slave Address)

+ Pr118: **96** (Baudrate 9600)

+ Pr119: **0** (8bit, stop bit = 1)

+ Pr120: **2** (Even)

+ Pr121: **0000**

+ Pr123: 9999



+ Pr124: 1

+ Pr340: 1

+ Pr549: 1

+ Pr79: 2 (Last Setting)

Registers Address Table

Modbus registers

● System environment variable

Register	Definition	Read/write	Remarks
40002	Inverter reset	Write	Any value can be written
40003	Parameter clear	Write	Set H965A as a written value.
40004	All Parameter clear	Write	Set H99AA as a written value.
40006	Parameter clear *1	Write	Set H5A96 as a written value.
40007	All parameter clear *1	Write	Set HAA99 as a written value.
40009	Inverter status/control input instruction*2	Read/write	See below.
40010	Operation mode/inverter setting *3	Read/write	See below.
40014	Running frequency (RAM value)	Read/write	According to the Pr:37 settings, the frequency and selectable speed are in 1r/min increments.
40015	Running frequency (EEPROM value)	Write	

<Inverter status/control input instruction>

Bit	Definition	
Control input instruction		Inverter status
0	Stop command	RUN (inverter running) *2
1	Forward rotation command	Forward rotation
2	Reverse rotation command	During reverse rotation
3	RH (high-speed operation command)*1	SU (up-to-frequency)
4	RM (middle-speed operation command)*1	OL (overload)
5	RL (low-speed operation command)*1	0
6	0	FU (frequency detection) *2
7	RT (second function selection)	ABC (fault) *2
8	AU (current input selection)	0
9	0	0
10	MRS (output stop) *1	0
11	0	0
12	RES (reset) *1	0
13	0	0
14	0	0
15	0	Fault occurrence

<Operation mode/inverter setting>

Mode	Read Value	Written Value
EXT	H0000	H0010
PU	H0001	—
EXT	H0002	—
JOG	H0003	—
PU	H0004	—
JOG	H0005	—
NET	H0006	H0014
PU+EXT	H0007	—

The restrictions depending on the operation mode changes according to the computer link specifications.



Register	Description	Unit
40201	Output frequency/speed *1	0.01Hz/1
40202	Output current	0.01A
40203	Output voltage	0.1V
40205	Output frequency setting/speed setting *1	0.01Hz/1
40207	Motor torque	0.1%
40208	Converter output voltage	0.1V
40209	Regenerative brake duty	0.1%
40210	Electronic thermal relay function load factor	0.1%
40211	Output current peak value	0.01A
40212	Converter output voltage peak value	0.1V
40214	Output power	0.01kW
40215	Input terminal status *2	—

Register	Description	Unit
40216	Output terminal status *3	—
40220	Cumulative energization time	1h
40223	Actual operation time	1h
40224	Motor load factor	0.1%
40225	Cumulative power	1kWh
40252	PID set point	0.1%
40253	PID measured value	0.1%
40254	PID deviation	0.1%
40258	Option input terminal status*4	—
40259	Option input terminal status 2*5	—
40260	Option output terminal status *6	—
40261	Motor thermal load factor	0.1%
40262	Inverter thermal load factor	0.1%
40263	Cumulative power 2	0.01kWh

Note: Proface HMI – Mitsubishi FR E700 VFD

Address Using = 400001 + (VFD Address – 40001)

- Set Word 400009 = **2** >>> Motor Forward Run
- = **4** >>> Motor Reverse Run
- = **0** >>> Stop



>>> **Frequency Setting Address** = 400001 + (40014 – 40001) = **400014**

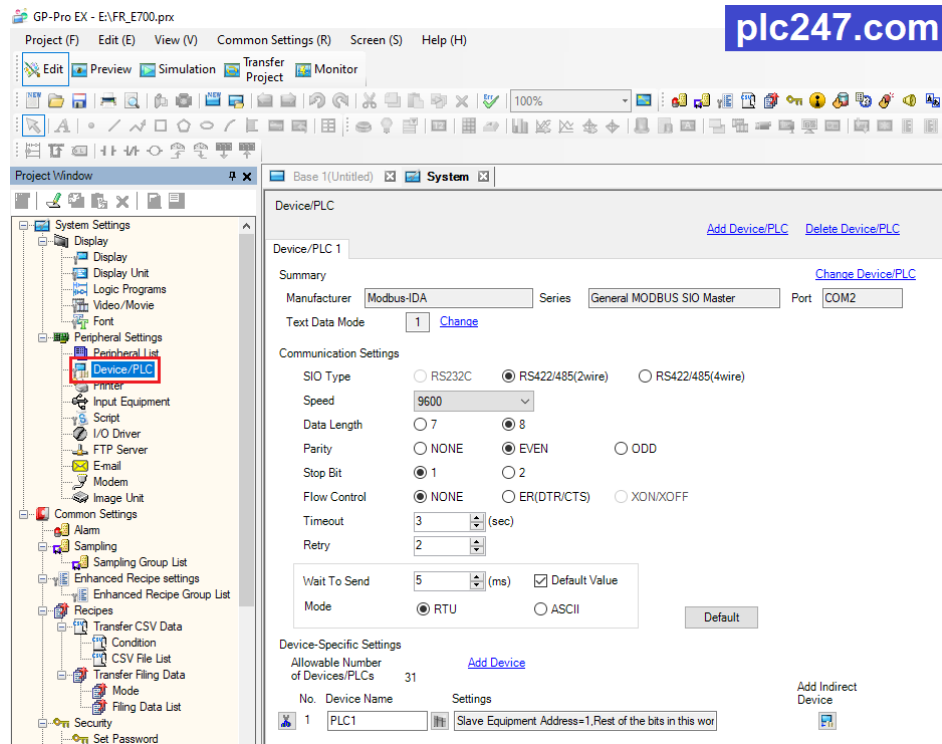
>>> **Output Frequency Address** = 400001 + (40201 – 40001) = **400201**

>>> **Output Current Address** = 400001 + (40202 – 40001) = **400202**

>>> **Output Voltage Address** = 400001 + (40203 – 40001) = **400203**

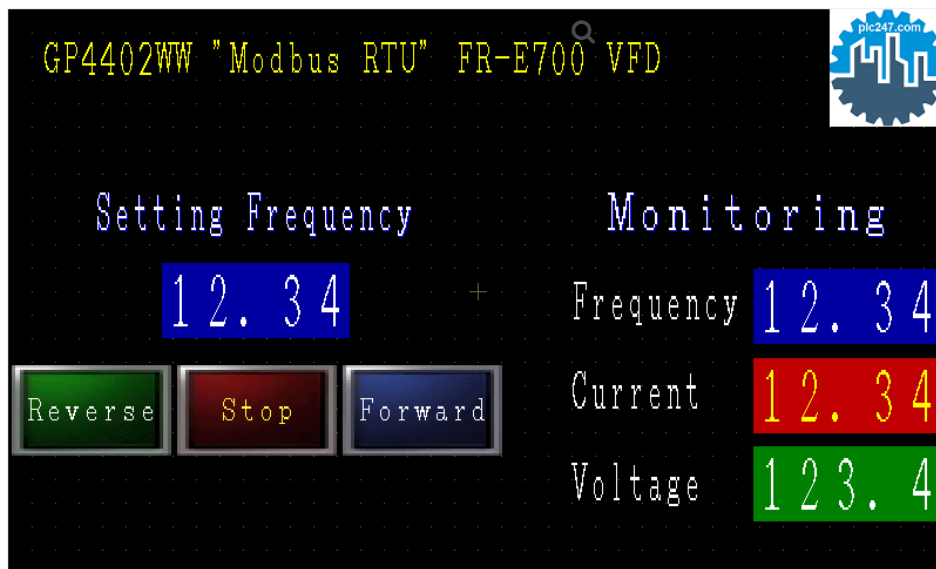
Proface HMI GP4402WW Communication Setting

You configure the communication parameters of the HMI like
FR-E700 VFD

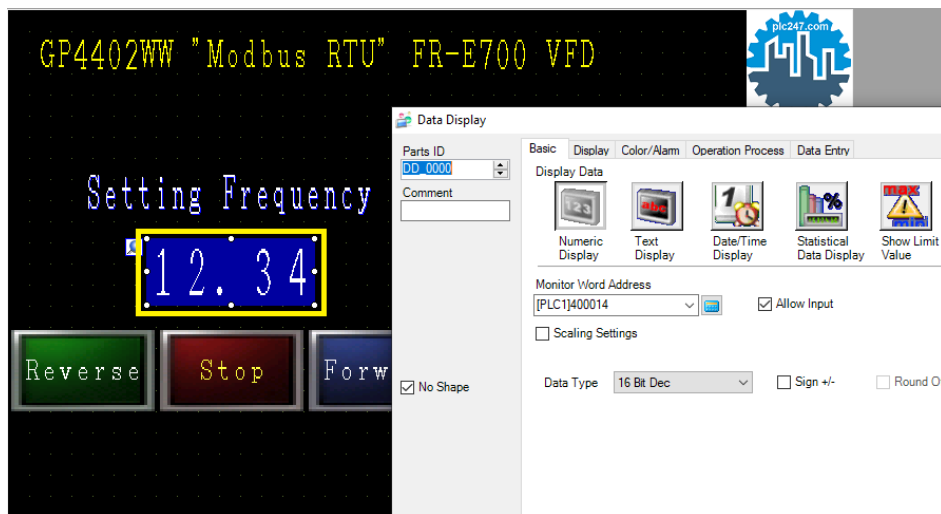


HMI Programming

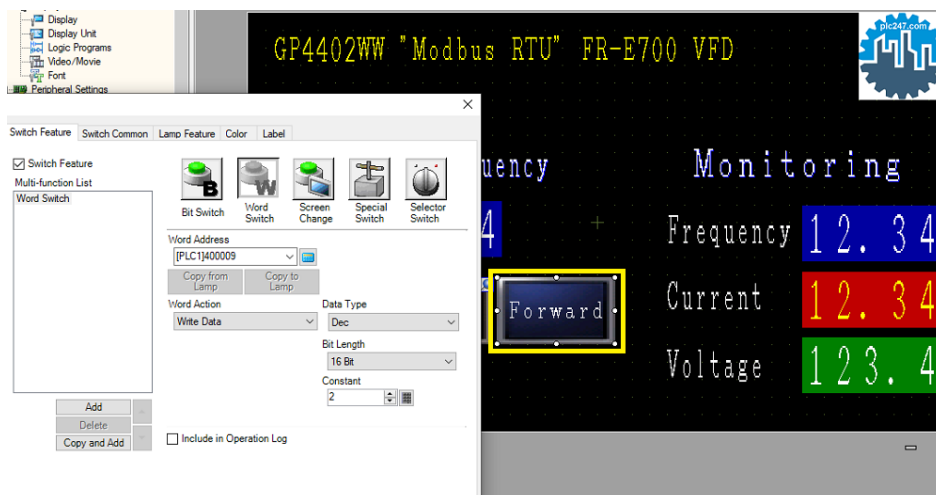
+ Control Panel

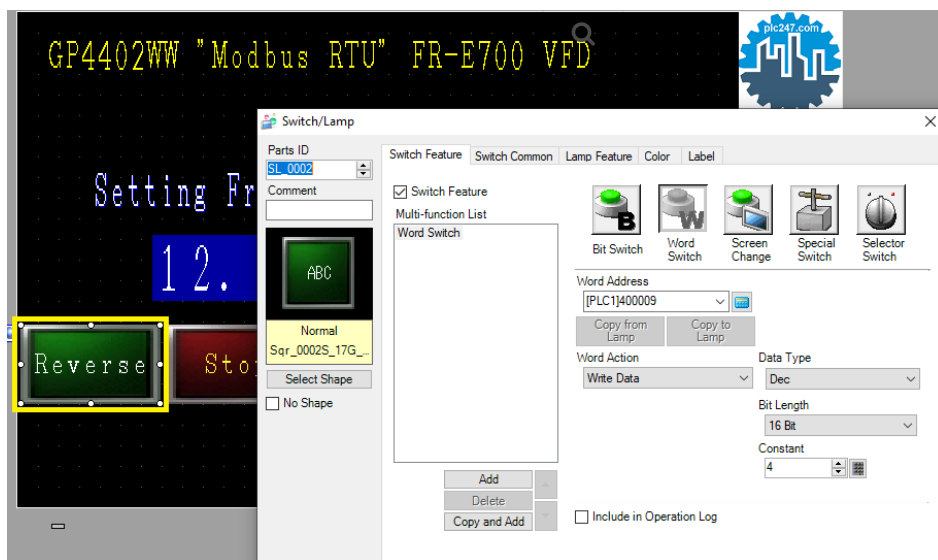


+ Setting Frequency

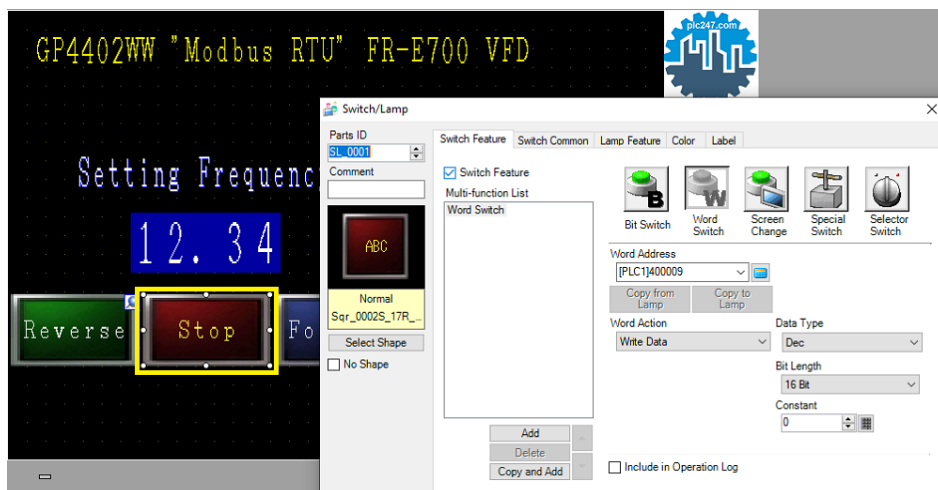


+ Forward Run

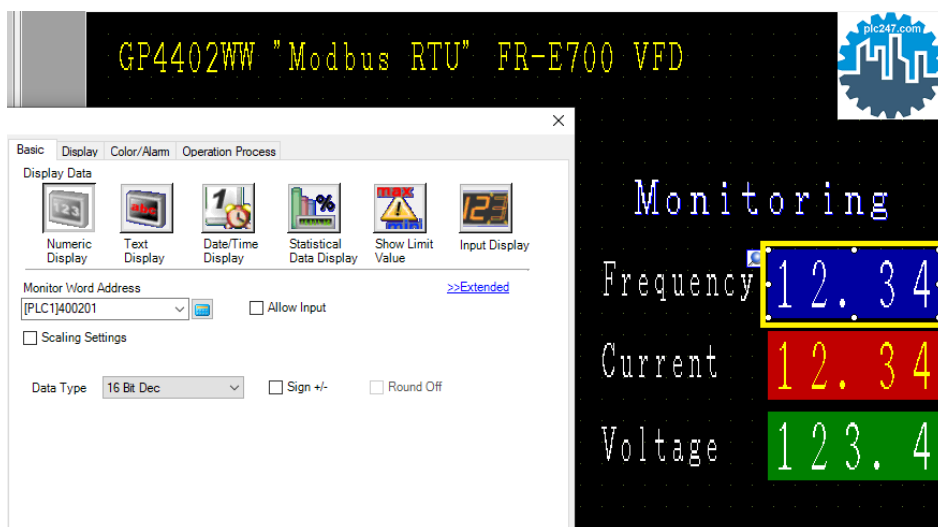


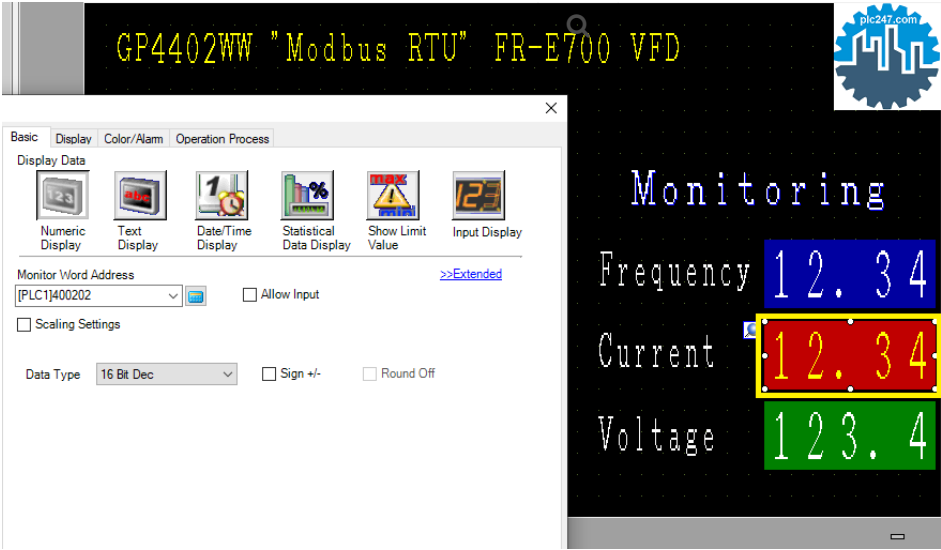


+ Stop

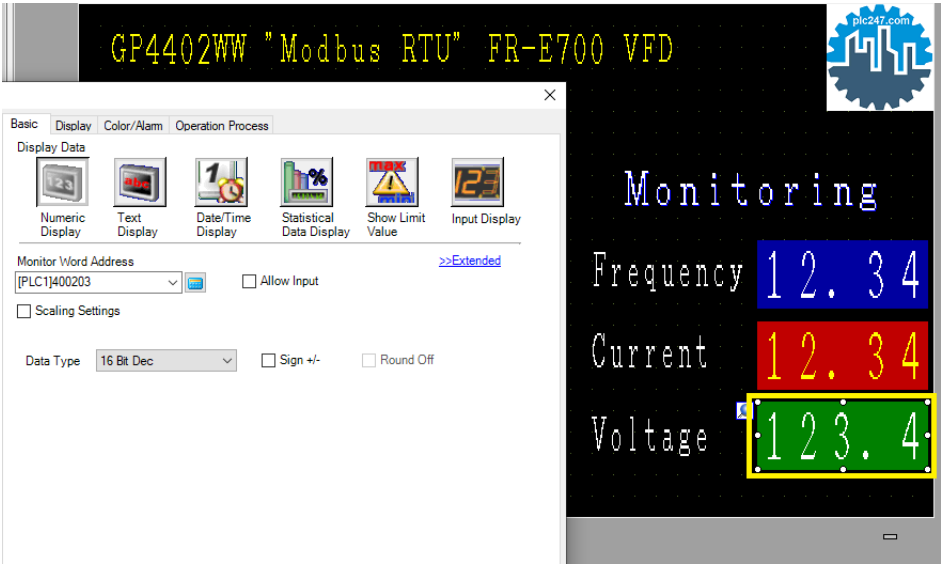


+ Output Frequency





+ Output Voltage



Video Tutorial

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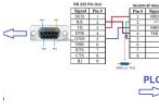
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