

Case Introduction (Collecting 1 Temperature Sensor and 1 Electric Meter)

1. Function Implementation

Collect data from 1 RS485 interface temperature and humidity sensor and 1 electric meter, and report to the 61850 master station.

2. Device RS485 Communication Parameters

- Temperature & Humidity Sensor No.1: modbus address=1, 4800 baud, no parity, 1 stop bit
- Electric Meter No.2: modbus address=2, 115200 baud, no parity, 1 stop bit

3. Temperature & Humidity Sensor Modbus Data Point Table

The following data points use Modbus 03 Read Holding Registers function code

Data Point Address	Name	Modbus Data Type	Additional Notes	61850 Data Type
0000H	Humidity	S_AB (16-bit signed integer)	Integer divided by 10, unit: 0.1%	YC_RM Telemetry-Float
0001H	Temperature	S_AB (16-bit signed integer)	Integer divided by 10, unit: 0.1 degree	YC_RM Telemetry-Float

4. Electric Meter Device Modbus Data Point Table

The following data points use Modbus 03 Read Holding Registers function code

Data Point Address	Name	Modbus Data Type	Additional Notes	61850 Data Type
0064H	Line Voltage Uab	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0066H	Line Voltage Ubc	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0068H	Line Voltage Uca	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
006AH	Line Voltage Average ULLAvg	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
006CH	Phase Voltage Uan	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
006EH	Phase Voltage Ubn	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0070H	Phase Voltage Ucn	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0072H	Phase Voltage Average ULNavg	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0074H	Current Ia	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0076H	Current Ib	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0078H	Current Ic	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
007AH	Three-Phase Current Average IAvG	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
007CH	Zero Sequence Current In	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
007EH	Line Frequency F	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0080H	Total Power Factor PF	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0082H	Total Active Power P	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0084H	Total Reactive Power Q	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0086H	Total Apparent Power S	F_ABCD (32-bit float)	Keep 3 decimal	YC_RM

		float)	places	Telemetry-Float
0088H	Phase A Power Factor PFa	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
008AH	Phase B Power Factor PFb	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
008CH	Phase C Power Factor PFc	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
008EH	Phase A Active Power Pa	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0090H	Phase B Active Power Pb	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0092H	Phase C Active Power Pc	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0094H	Phase A Reactive Power Qa	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0096H	Phase B Reactive Power Qb	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
0098H	Phase C Reactive Power Qc	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
009AH	Phase A Apparent Power Sa	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
009CH	Phase B Apparent Power Sb	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float
009EH	Phase C Apparent Power Sc	F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM Telemetry-Float

4. How to Use This Case

- Copy the init folder in this case to completely overwrite the init folder in the FLEXLUA_61850 software directory, then click Generate in Step 4 of the software to generate the required 3 files (main.lua, model.cfg, rtu.cid).
- The main.lua and model.cfg files need to be placed into the protocol converter through the USB-C port. The rtu.cid file can be provided to 61850 master station developers for device import.

5. Software Configuration Completed Page

Step 1: Create Model

Add Model

Reset

Name: TemperatureHumiditySensor

Detail

Copy

Delete

Name: Electric_Meter

Detail

Copy

Delete

Step 2: Create Device Instance

Add Device Instance

Reset

Name: 1_TH_Sensor

Detail

Copy

Delete

Name: 2_Electric_Meter

Detail

Copy

Delete

Success

File generation completed!

Please copy main.lua and model.cfg to the device. Provide rtu.cid to the IEC 61850 master station developers for import.

OK

Step 3: Global Parameters

Ethernet (61850)

mac: 0x00, 0x00, 0x00, 0x00, 0x00, 0x00

ip: 192, 168, 0, 111

subm: 255, 255, 255, 0

gw: 192, 168, 0, 1

dns: 8, 8, 8

port: 102

keepalive(s): 60

iedname: DevRtu

Report (61850)

YC_RM: ☒ period(ms): 3000 ☐ dchg

YX_RS: ☐ period(ms): ☒ dchg

RS485 (Modbus)

Poll_Time(ms): 5000

Reserve: 0

☐ SNMP

SNTP_IP:

SNTP_Port:

SNTP_Interval:

☐ NetAutoFix

AutoFix_Time(s):

AutoFix_Way: NET_REBOOT

Save Path: C:/Users/zq173/Desktop/FLEXLUA_61850/output

Step 4: Generate Files

[2025-10-09 19:55:00]----> 删除实例成功!

[2025-10-09 19:55:04]----> Device instance:1_TH_SensorTemperatureHumiditySensorTemperatureHumiditySensorsaved successfully

[2025-10-09 19:55:05]----> Successfully generated main.lua file.

[2025-10-09 19:55:05]----> Successfully generated rtu.cid file.

[2025-10-09 19:55:09]----> Successfully generated model.cfg file.

[2025-10-09 19:55:18]----> 删除实例成功!

[2025-10-09 19:55:21]----> Successfully generated main.lua file.

[2025-10-09 19:55:21]----> Successfully generated rtu.cid file.

[2025-10-09 19:55:24]----> Successfully generated model.cfg file.

[2025-10-09 19:55:34]----> Device instance:1_TH_SensorTemperatureHumiditySensorTemperatureHumiditySensorsaved successfully