

# Case Introduction (Electric Meter)

## 1. Function Implementation

Collect data from a relatively complex RS485 interface electric meter device, and report to the 61850 master station.

This electric meter device contains a large number of data points, all of which are telemetry type, so we only need one device model (YC\_RM telemetry).

## 2. Device RS485 Communication Parameters

Electric Meter Device No.2: 115200 baud, no parity, 1 stop bit

## 3. 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
		F_ABCD (32-bit float)	Keep 3 decimal places	YC_RM

0070H	Phase Voltage Ucn	float)	places	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 places	YC_RM 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. Testing

In the test folder of this case, there are modbus slave device simulation files. If you have modbus slave and IEDScout testing tool software installed on your computer, they can be used to simulate modbus slave devices and 61850 master station software respectively to complete testing.

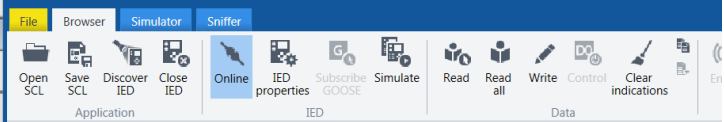
## Read Registers (Telemetry) Test Results



yc\_meter

ID = 1: F = 03

	Alias	00100	Alias	00120	Alias	00140
0	Uab	223	Ic	1.5	PFc	0
1		--		--		--
2	Ubc	223.3	IAvg	1.3	Pa	0
3		--		--		--
4	Uca	223.6	In	0	Pb	0
5		--		--		--
6	ULLAvg	223.3	F	50.2	Pc	0
7		--		--		--
8	Uan	381	PF	0	Qa	0.8
9		--		--		--
10	Ubn	382	P	0	Qb	0.9
11		--		--		--
12	Ucn	383	Q	0.06	Qc	1
13		--		--		--
14	ULNAvg	382	S	0	Sa	0
15		--		--		--
16	Ia	1.2	PFa	0	Sb	0
17		--		--		--
18	Ib	1.2	PFb	0	Sc	0
19		--		--		--



IEDs

simplex

IP address: 192.168.0.111

GOOSE

Reports

Setting Groups

Files

DataSets

Data Model

LD ORTU

LN LLN0

LN GGIO1

simplex • Data Model • ORTU • GGIO1

LN GGIO1 Generic process I/O

Name	Value
DO AnIn1	223
DO AnIn2	223.3
DO AnIn3	223.6
DO AnIn4	223.3
DO AnIn5	381
DO AnIn6	382
DO AnIn7	383
DO AnIn8	382
DO AnIn9	1.2
DO AnIn10	1.2
DO AnIn11	1.5
DO AnIn12	1.3
DO AnIn13	0
DO AnIn14	50.2
DO AnIn15	0
DO AnIn16	0
DO AnIn17	0.06
DO AnIn18	0
DO AnIn19	0
DO AnIn20	0
DO AnIn21	0

Information