

REMOTE TERMINAL UNIT CONCENTRATOR



MODEL: RTU200Z-LR

Application



Street lighting



Area lighting



Park lighting



Ports lighting



Community lighting

Features



Communication Mode : 4G、Ethernet



LCD Display



High-performance 32-bit ARM9 MCU



Embedded Linux OS platform



Interface: 10/100M Ethernet, RS485, USB



Firmware upgrading: online, cable and local USB disk



Built-in smart meter: remotely data reading (including external meter)



Built-in 4 DO、8DI (6 DC IN+2 AC IN)



Built-in RTC : local scheduled task



Built-in RF communication module



Optional module: GPS



Fully sealed enclosure: anti-interference, withstand high voltage, lightning etc.

Basic Input Parameters

Ac Input	Min	Typical	Max	Unit	Note
Voltage	96	220	500	VAC	Single phase or three phases power supply
Frequency	47	50	63	Hz	
Power	2.0	3.0	5.0	W	

Hardware Platform

CPU Kernel	ARM9 kernel, 32-bit RISC structure processor
RTC	Adjusted circuit via high precision meter; Low consumption current; Built-in temperature compensation; Backup battery
RS485 Module	Support various external devices
Wireless comm. module	Built-in wireless communication module to ensure more stable communication
LCD Display	DS160*160 LCD display, showing all needed information
USB Port	High speed 2.0 USB port, support local upgrading and specific devices.
Meter	High precision electrical parameter detection circuit, support three-phase voltage and current; record active power, reactive power, electric energy etc;
Battery Management	Built-in 12V battery charge and discharge circuit management, stable and reliable

Control Interface Specification

Function	Channels	Description
DO(Relay Output)	4 route	Stem node output, Contact capacity: 250VAC/5A; public ACL end
DI Input	2 route	AC input, public ACN end
DI (On-Off Input)	6 route	Stem node input, public DICOM end
Voltage Detection	3 route	Detect phase voltage and line voltage of three-phase
Current Detection	3 route	Detect phase current and line current of three-phase via a current transformer
Leakage Detection	1 route	Detect leakage current via a zero-sequence current transformer
Battery Charging	1 route	Provide output to charge a 12V battery, with over-charge and over-discharge protection
DC Output	1 route	Provide 1-route 13.5V/200mA power supply for external use.
Remote Communication Module	1 pcs	Support LTE 4G Module
RS485 Communication Module	1 route	Read and control external devices that support RS485 protocol
Ethernet Communication Module	1 pcs	Support local communication, support Ethernet interface communication
USB interface	2 pcs	Support USB disk upgrading, Debug

Wireless Communication

Frequency	2.4GHz
Standard	EN 300440/EN 300328
Routing	Custom MESH
Range	2.4GHz~2.5GHz
Transmit Power	12.5dBm
Receive sensitivity	-105dBm
Coverage	1.3km visual distance

LTE Communication

LTE Band	GSM850, EGSM900, DCS1800, PCS1900
Speed	Maximum downlink: 85.6 KBPS Maximum uplink: 85.6 KBPS

Safety Performance Index

■ Terminal Clearance& Creepage Distance

Rated Voltage V	Electrical Clearance(mm)	Creepage Distance(mm)
U≤25	1	1.5
25<U≤60	2	2
60<U≤250	3	4
250<U≤380	4	5

■ Insulation Resistance

Rated Insulation Voltage(V)	Insulation Resistance Requirement (MΩ)		Test Voltage(V)
	Normal Condition	Damp & Heat Condition	
U≤60	≥10	≥2	250
60<U≤250	≥10	≥2	500
250<U	≥10	≥2	1000

■ Insulation Strength

Rated Insulation Voltage(V)	Effective value of Test Voltage(V)	Rated Insulation Voltage(V)	Effective value of Test Voltage(V)
U≤60	500	125<U≤250	2000
60<U≤125	1500	250<U≤400	2500

■ Impulse Withstand Voltage

Rated Insulation Voltage(V)	Effective value of Test Voltage(V)	Rated Insulation Voltage(V)	Effective value of Test Voltage(V)
U≤60	2000	125<U≤250	5000
60<U≤125	5000	250<U≤400	6000

EMC Index

■ ESD Immunity: 8KV direct

■ Voltage Dip and Interruption Immunity

■ Power Frequency Magnetic Field Immunity: 50Hz, 400A/m

■ Radiated Electromagnetic Field Immunity: 10V/m

■ Electrical Fast Transient Immunity

Testing Item	Level	Testing Value	Testing Circuit
Electrical Fast Transient	2	2.0KV(Coupling)	Communication line
	3	1.0KV	Status signal input
	4	2.0KV	AC input
	4	4.0KV	Power circuit

■ High Frequency Oscillatory Wave Immunity

Testing Item	Level	Testing Value	Testing Circuit
High Frequency Oscillatory Wave	2	1.0KV(common mode)	AC input, status signal input
	4	2.5KV(common mode) 1.25KV(differential mode)	Power circuit

■ Surge Immunity

Testing Item	Level	Testing Value	Testing Circuit
Surge	2	1.0KV(common mode)	Status signal input
	3	2.0KV(common mode)	
	4	4.0KV(common mode) 2.0KV(differential mode)	Power circuit

Basic Operating Environment

Parameter	Min	Typical	Max	Unit	Remarks
Working Temperature	-40	25	85	℃	
Relatively Humidity	5		95	%	Non condensing
Barometric Pressure	66		108	KPa	BB2 level
Size (L*W*H)	288*177*95			mm	

*Subject to change without notice