

Outdoor NB-IoT Gateway for DLMS / COSEM Power Meter Reading

SCB211DL/270DL Series

Outdoor DLMS COSEM Meter NB-IoT Gateway

SCB211/270DL is a smart DLMS COSEM Meter Cellular Gateway with NB-IoT network. The IP68 UL94V2 plastic Anti-UV enclosure and the M12 Cable Gland connectors can protect from dust, moisture, and rain from the outdoor environment.

The Duo embedded MQTTS, COAP protocols enables HES auto discovery and meter reading integration for Smart Meter System. The ThingsMaster OTA safeguards the device from the remote-control center to detect and fix abnormalities at local sites.



Features & Benefits

Low Power NB-IoT Cellular Network

LTE Cat NB2:

Frequency Bands: B1/B2/B3/B4/B5/B8/B12 /B13/B18/B19/B20/B25/B28/B66/B71/B85
NB2 supports max. 158.5kbps UpLink & 127kbps DownLink
NB2 is backward compatible with NB1

LTE Cat M1:

Frequency Bands: B1/B2/B3/B4/B5/B8/B12 /B13/B18/B19/B20/B25/B28/B66/B71/B85
NB2 supports max. 1119kbps UpLink & 588kbps DownLink

EGPRS: 850/900/1800/1900MHz

Power Meter Connection

- 1 x RS485 Power Meter and 1 Power Input 24VDC
- Internal RJ45 Ethernet Port for configuration
- Send DLMS OBIS Codes to HES via **MQTT/COAP** protocol
- Directly Powered from Power Meter, no extra power supply needed

Rugged Design for Industrial Outdoor Application

- Effective heat dissipation design for operating in -40~70°C environments
- CE Marking
- IEC61000-6-2/IEC61000-6-4 heavy industrial EMC compliance

Enhanced Cyber Security & Redundancy

- Support Firewall for inbound/outbound traffic
- HTTPs/SSH secure login
- Support TACACS+ multi-user authentication for privileged user management

Industrial IoT LAN & Cloud Management

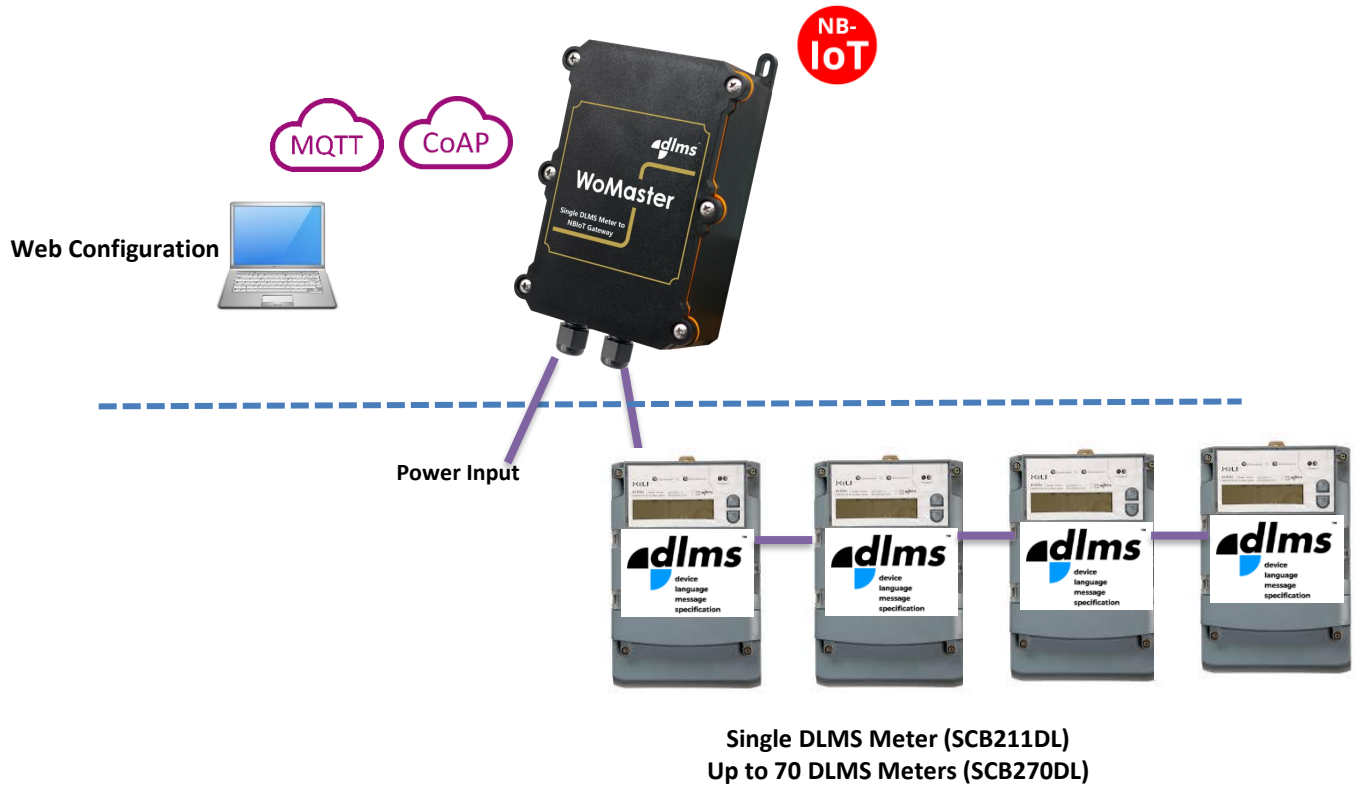
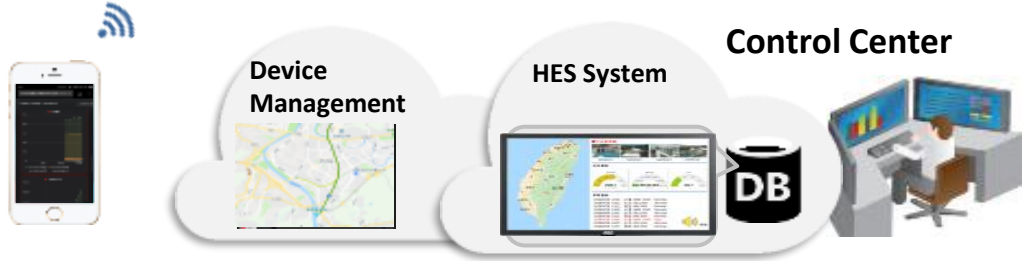
- Various configuration paths, including CGI WebGUI, CLI, SNMP
- NAPT for local traffic protection
- Support SNMPv3 and entity-MIB (RFC4133), MIB II (RFC1213)
- NTP v3 time management
- WoMaster Software Utilities
 - NetMaster**: Network Management System with auto-topology
 - ViewMaster**: Configuration Management
 - ThingMaster**: Interactive monitoring dashboard by Modbus Tag to collect data from Modbus devices
 - ThingMaster OTA**: Realtime map showing the status, signal strength, location of the remote devices, over-the-air batch device registration, configuration and firmware update, alerts on critical events to prevent downtime
- Diagnostic tool includes Ping, TFTP, SNMP Trap, E-mail Alert and System Log



✓ Ready Total Solution for IoT

Cloud Service

ThingsMaster OTA



✓ Support DLMS/COSEM Standard

DLMS/COSEM (IEC 62056, EN13757-1) is the global standard for smart energy metering, control and management. It specifies an object-oriented data model, an application layer protocol and media-specific communication profiles.

DLMS/COSEM comprises three key components:

- COSEM - Companion Specification for Energy Metering - the object model capable of describing virtually any application;
- OBIS - Object Identification System, the naming system of the objects
- DLMS - Device Language Message Specification - the application layer protocol that turns the information held by the objects into messages.

With the support of DLMS/COSEM, and OBIS Codes, SCB211DL can directly report and control DLMS meters, saving significant cost and effort on additional gateway or converters.

Serial Port 1 Settings

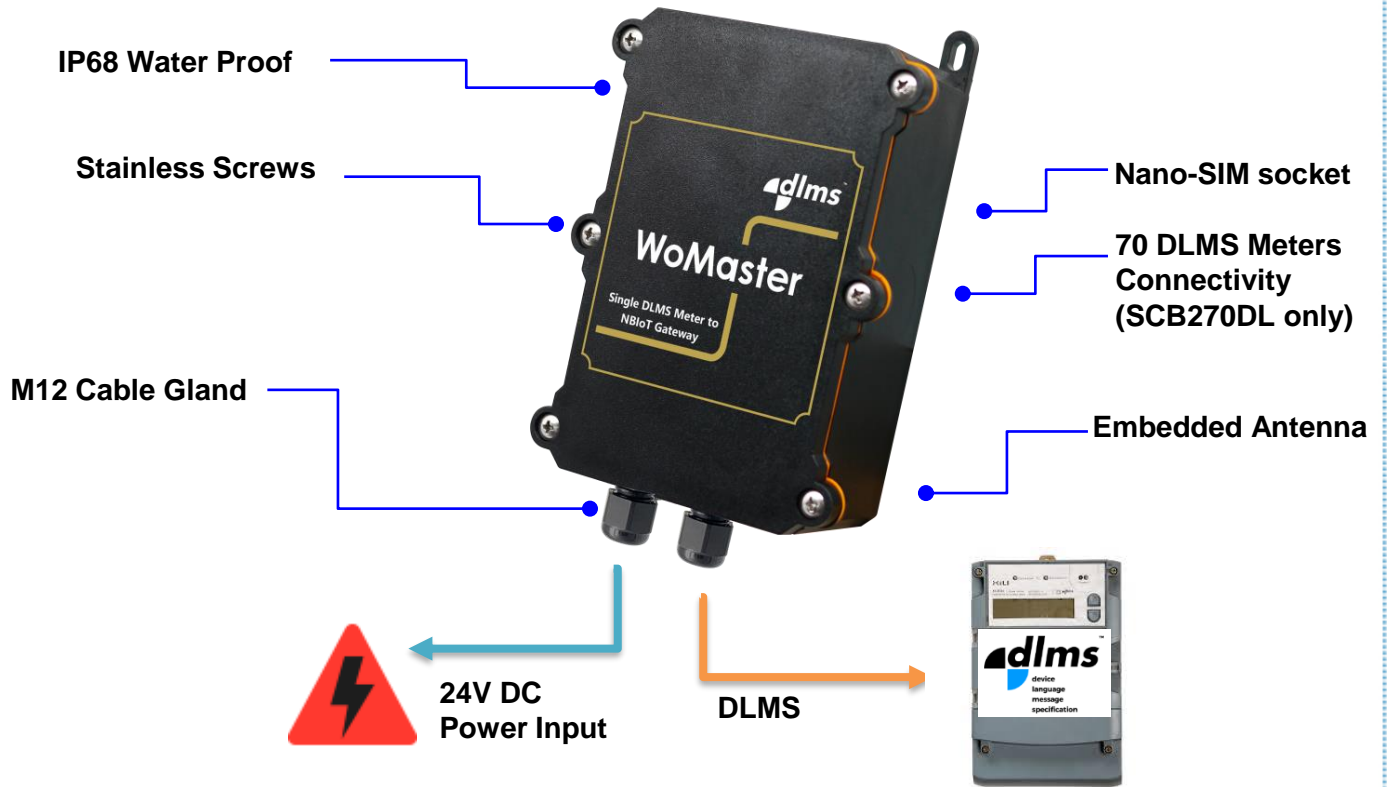
Basic Settings

Interface	RS485-2w
Baudrate	9600
Parity	NONE
Databit	8 bits
Stopbit	One Stopbit
Flow Control	NONE
Terminal Resistor	DISABLE
Service Mode	DLMS

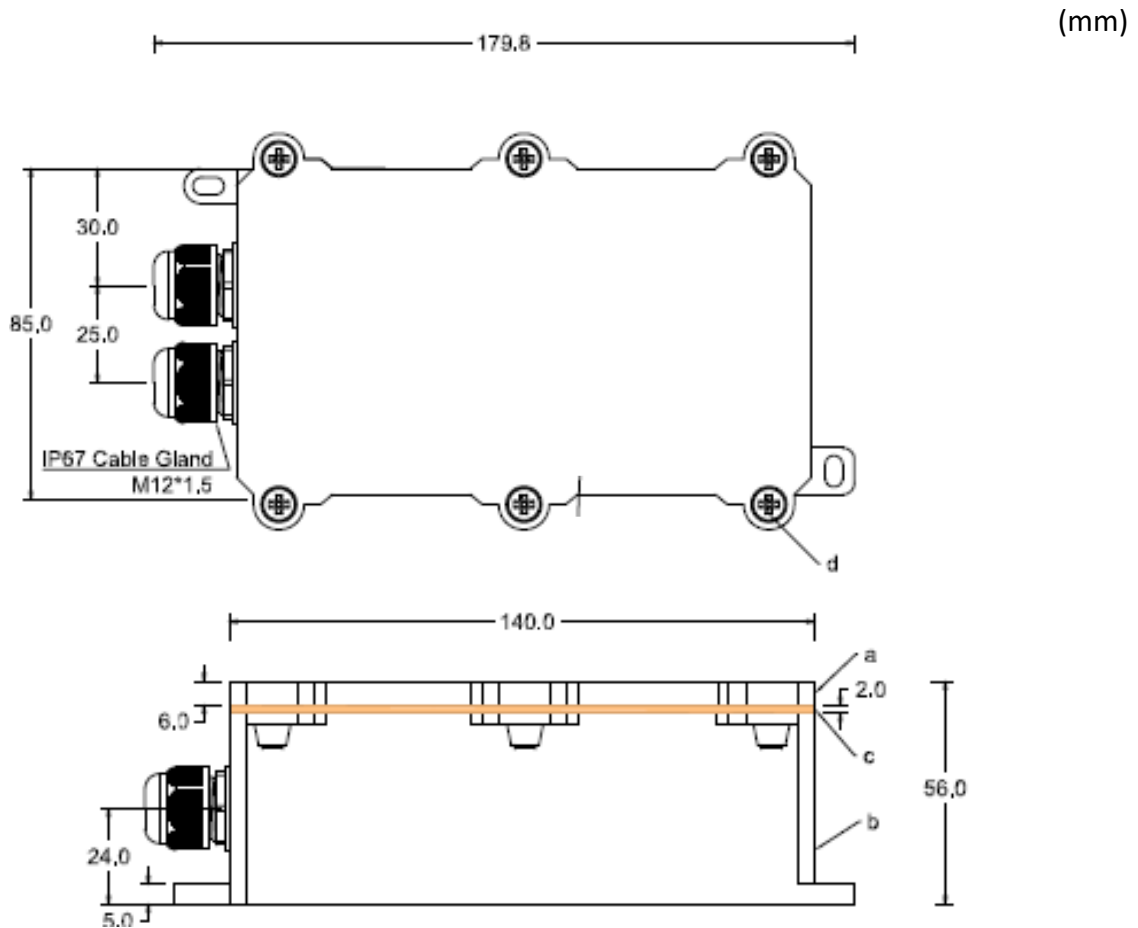
Submit Cancel



Interfaces



Dimensions



Technology	
Standard	3GPP Release 14 IEEE 802.11i for Wireless Security IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet
Interface	
Ethernet Port	1 x 10/100Base-TX RJ45 LAN, Auto Negotiation, Auto MDI/MDI-X LED6 Ethernet: Link Up: Green ON, Activity: Green Blinking
System LED	LED1 Power/Sys: Power ON/System Ready: Green ON, Firmware Updating: Green Blinking LED2 NB-IoT: NB-IoT Connected: Green On, 2/3G Connected: Green Blinking, Disconnected: Off LED3 SIM: SIM Ready: Green ON, SIM not existing: Off LED4 Serial: Serial Port Activity: Green Blinking, No Activity: Off LED5 DLMS: DLMS Enabled: Green On
Reset	System Reset(2~6 Seconds) / Default Settings Reset(over 7 Seconds)
Antenna	1 NB-IoT antenna w/ IPEX cable
SIM Socket	1 x Nano SIM, Hinge Type
DLMS	1x RS485 2-Wire, with isolation/2kV surge, 3-pin for RS485/DLMS: A: RS485+, SG: Signal Ground, B: RS485-
Power Input	2 Pin for 24VDC Power input: V+, V- 1 Pin for E-GND (Earth Ground), 1 Pin NC: No feature.
SD	1 x Micro SD, Hinge Type
Cellular Properties	NB-IoT+M1
Standard	Support 3GPP Release 14 Support LTE Cat M1 and LTE Cat NB2, LTE Cat NB2 is backward compatible with LTE Cat NB1
Data Rate	Cat M1: Max. 588Kbps (DL), Max. 1119Kbps (UL) Cat NB2: Max. 127Kbps (DL), Max. 158.5Kbps (UL) EDGE: Max. 296Kbps (DL), Max. 236.8Kbps (UL) GPRS: Max. 107Kbps (DL), Max. 85.6Kbps (UL)
Band Information	Cat M1: LTE-FDD B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85 Cat NB2: LTE-FDD B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85 EGPRS: 850/900/1800/1900MHz
Power Requirement	
Input Voltage	24V (18~30VDC)
Reverse Polarity Protect	Yes
Input Current	0.11A@24VDC
Power Consumption	2.64W@24VDC, Suggest to reserve +15% tolerance power.
Mechanical	
Installation	Wall Mount
Enclosure Material	UL94V2 Plastic with Anti-UV function, 6 x Stainless Screws
Dimension	85 (W) x 179.8 (H with connectors) x 56 mm (D) 85 (W) x 140 (H without connectors) x 56 mm (D)
Ingress Protection	IP68
Weight	395g (not include extended cable & package)
Environmental	
Operating Temperature & Humidity	-40°C~70°C , 5%~95% Non- Condensing
Storage Temperature	-40°C~85°C
MTBF	>200,000 hours
Warranty	3 years

Software	
Management Interface	CGI WebGUI, Command Line Interface (CLI), IPv4/IPv6*, Telnet, SNMP v1/v2c/v3, DDNS, DHCP server/client, TFTP, FTP(active/passive) , System Log, SMTP, ARP response over 802.2 LLC SNAP, Proxy ARP, DNS (client/proxy)
Security	IEEE 802.1X/RADIUS, TLS v1.2, HTTPS/SSH, First login password management Encryption: 64/128-bit WEP(Wired Equivalent Privacy), TKIP(WPA-PSK), AES(WPA2-PSK), MAC Filter
Advanced Security	TACACS+, Multi-user authentication
Time Management	NTP, SNTP, Cellular Time
WAN/Routing/NAT/Firewall/VPN	Firewall: Stateful Inspection firewall, IP/Port Filter, MAC ACL
IIoT Industrial Protocol	Modbus RTU, Modbus RTU to TCP Conversion , COAP , MQTT/MQTTS , RESTful API*
Private Cloud	ThingsMaster, ThingMaster OTA
Public Cloud	AWS Agent, Azure Agent
Serial communication	TCP Server/TCP Client/UDP mode, TCP Alive check, Force TX Delimiter/Timeout/interval/length, MODBUS RTU mode, DLMS Mode
Meter Protocol	DLMS/COSEM (IEC 62056)
Location	Manual Configuration
MIB	MIB-II, Entity MIB, WoMaster Private MIB
Utility	ViewMaster, NetMaster, Ping, Traceroute

Approval	
CE	CE RED Compliance EN 62368-1 Safety EN 50385/EN62311 MPE assessment EN 301 489-1/52, EN 55032/55024 EN61000-4-2 ESD, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5 Surge, EN61000-4-6 CS, EN61000-4-8 Magnetic Field EN 301 908-1
EMI	CISPR 22, FCC part 15B Class A
EMC	EN61000-6-2/EN61000-6-4 compliance



Ordering Information

Model Name	Description
SCB211DL-NB-DC	Industrial Smart Meter Gateway, Single DLMS Meter Gateway, NB1/NB2*+M1, NB2* B1/2/3/4/5/8/12/13/18/19/20/25/28/66/71/85, internal 2dBi antenna
SCB270DL-NB-DC	Industrial Smart Meter Gateway, 70 DLMS Meter Gateway, NB1/NB2*+M1, NB2* B1/2/3/4/5/8/12/13/18/19/20/25/28/66/71/85, internal 2dBi antenna
	WiFi by request GPS support by request

**Please check with WoMaster for available NBloT Version V1 or V2*