

Specification sheet for IoT LoRa Gateway, Model SC15L



LoRa devices SC15L, SC15L241, SC15L231P and Access Point SC15L APS are ideal for Machine monitoring and sending Sensor data using LoRa wireless technology, over long range.

SC15L LoRa transmitters connect transparently to the SC15L APS Access Point. SC15L241/231P sends IO data or field Modbus slave devices data to the SC15L APS, which gives output in Modbus RTU interface for monitoring. SC15L APS is used in 3 modes viz. Packet, Transparent and SC15L241/231P mode depending on application requirement.

General Specifications

- SC15L series support RS232 and RS485 interface.
- SC15L is used in Packet and Transparent modes and SC15L241 modes only.
- SC15L APS supports Packet mode, Transparent mode and SC15L241/SC15L241P mode.
- SC15L needs SC15LAPS as a Receiver to create communication channel.
- Typically, one receiver gateway can connect upto 100 SC15L series devices.
- SC15L241/P supports 2 Analog Inputs (4-20mA), 4 Digital Inputs (Potential/Potential Free factory settable), 1 Digital Output (Potential free) and 1 Pulse Input.
- Totalizer Values and Daily Flow values calculation using Pulse Input.

LoRa

Communication:

LoRa Module	: LM 10C 10H
Frequency Band	: 867 MHz
Distance	: Line-of-Sight Range: Upto 3.5km
Receiver Sensitivity	: -139dBm at SF12
Transmit Output Power	: 20dBm
LoRa data rate	: 6 level (0.3, 0.6, 1.0, 1.8, 3.1, 5.5 Kbps)
Antenna connector	: SMA female type, 3 dB standard Impedance of 50 ohms
Connection Modes	: Point to Point, Star

Hardware Specifications

16 bits CPU	
Program Memory	: 128K bytes
SRAM	: 96K bytes
Watchdog	: Built in H/W watchdog timer

RTU Interface

Serial port	: RS-485(2 Wire), RS-232(3-Wire), Screw type connector
Data bits	: 8
Stop bits	: 1, 2
Parity	: None, Even, Odd
Baud rate	: 2400 to 115200 bps
Termination Resistors	: Built in

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Analog Input

Resolution : 10 bits
No's of Inputs : 2
Current / Voltage input : Factory settable (Default: Current)
Current : 4- 20 mA
Voltage : 0-10V/0-5V
Input impedance : Current 100-ohm, Voltage 10 T ohms

Digital input

Number of inputs : 4
External Dry (Potential free)/Wet contact factory settable
Default : Potential free settings

Wet contact

Logic level 0 : 24 VDC
Logic level 1 : 0 VDC

External Dry contact (Potential free)

Logic level 0 : Close to GND
Logic level 1 : Open

Pulse Input

Number of Channel : 01
Nature of Input : External Dry (Potential Free)
Form : Astable Pulse Input

Values Calculate

Daily Flow
Totalizer

Digital output

Relay output
Number of outputs : 1
Relay coil voltage : 5V
Contact rating : 24VDC @ 10A, 230VAC @ 5A

Power

(For Model: SC15L, SC15L 241, SC15L 200, SC15L 240, SC15L 040 & SC15L APS)

Power supply : 24V DC, 1A (Voltage Range 9-30 VDC)
Connectors : 3 pin Industrial Screw type Terminal block, 3.81mm
Power Consumption : 0.8W @ 24V DC (No LoRa communication)
1.2 W @24VDC (During LoRa communication)
LED Indicators : Power, Status, Tx, Rx, Status
Data, RSSI (SC15L241 mode only)

(For Model: SC15L 231P)

Power supply : 12V DC
Connectors : 2 pin Industrial Screw type Terminal block, 3.81mm

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Power Consumption : 0.9W @ 12V DC (No LoRa communication)
 1.9 W @12VDC (During LoRa communication)
 LED Indicators : Power, Status, Tx, Rx
 Data, RSSI (SC15L231 mode only)

Environmental Conditions

Operating Temperature : 0 to +85°C
 Storage Temperature : -10 to +85°C
 Operating Humidity : 95% (unfreezing)

Mechanical

Enclosure : Metallic Enclosure with DIN rail and wall mounting
 Dimensions : 36 x 105 x 127 mm for enclosure (Excluding antenna)

Ordering Information:

Sr. No	Ordering Code	Description
1	SC15L	LoRa device with Serial interface
2	SC15L 200	LoRa device with 2 Analog Inputs (4-20 mA)
3	SC15L 040	LoRa device with 4 Digital Inputs (Potential free)
4	SC15L 240	LoRa device with 2 Analog Inputs (4-20 mA), 4 Digital inputs (Potential free)
5	SC15L 241	LoRa device with 2 Analog Inputs (4-20 mA), 4 Digital inputs (Potential free), 1 Digital Output (Potential free)
6	SC15L 231P	LoRa device with 2 Analog Inputs, 3 Digital inputs (Potential free), 1 Digital output and 1 Pulse Input
7	SC15L APS	Access point LoRa unit with Serial interface

Architecture

