

SenseLive7400D

Din-rail 4G CAT1 DTU Configuration Datasheet

RS485 to 4G Modbus RTU to 4G Modbus TCP RS485 to MQTT DLT-645/RTU to Cloud/to platform JSON



1





Catalogue

1.	Introduction
2.	Technical Parameters
3.	Software Installation
4.	Hardware Connection
5.	Parameter Configuration
6.	MQTT Communication Settings
7.	JSON creation
8.	Check parameter in configuration tool
9.	Output on MQTT Explore





1. Introduction:-

SL7400D

SenseLive

SL7400D: The SL7400D is a compact and cost-effective CAT1 4G DTU, supporting RS485-to-4G transmission with speeds up to 10Mbps. It features guideway installation, wide voltage input (9–24V), and a fire-retardant shell for industrial use. The SL7400DN adds P2P and M2M cloud forwarding, enabling remote monitoring without a dedicated server. Both models support MQTT, Modbus RTU to JSON, HTTP, and edge computing, allowing seamless data collection, remote management, and cloud integration for industrial automation and IoT applications.

2. Technical parameters:-

Outside Interface	
Serial interface	RS485: 3.5mm terminal
Serial port	ONE, RS485 (485A, 485B, GND)
Power supply	3.5mm terminal
Reset	Push-button one-button reset factory Settings
Signal light	SYS, WORK, 4G LINK, TCP LINK, TXD, RXD
SIM card	Voltage: 3V, 1.8V; Size Micro SIM (none Nano SIM): Size is
	12x15mm×0.8mm
Antenna	50Ω /SMA Female stick antenna or suction cup antenna (default
interface	suction cup)
Size:	L x W x H: 37.6 x 83.6 x 89.2mm
Equipment:	35mm Din rail mounted
Communication	Interface
Wireless mode:	4G CAT1 supports modes:
	B3 (1800 MHz) – Airtel, Jio, Vi, BSNL
	B5 (850 MHz) – Jio, BSNL
	B8 (900 MHz) – Vi, BSNL
	B40 (2300 MHz) – Jio, Airtel, Vi
	B41 (2500 MHz) – Airtel (Limited areas)

3



Serial port paramete	r		
Baud rate	300~921.6Kbps ,	Check	None, odd check, even check
	customized baud	bit:	
	rate		
Digit bit	5 \sim 8 bits	Stop bit:	$1 \sim 2$ bits
Software			
Working mode	TCP Client side UI	OP	
Transformer	Modbus TCP、MQTT	JSON	
protocol			
Modbus	Modbus TCP to RTU		
gateway			
JSON gateway	Device side support M	odbus RTU	、DLT-645;
	Server support HTTP	POST/GET	、 MQTT
SSL	Support SSL encryption	on	
Off-line storage	256K		
Address	Support DNS resolution	on	
resolution:			
Configuration	Vircom tool, serial por	rt AT instruc	tion configuration
Hardware	1		
	9~24V DC		
input voltage			
input current	Dial up /4G communic	cation 50mA	@12V, idle 25mA@12V
Environment			
operating	-40~85℃ 5~95% RI	Η	
temperature, humidity			
storage temperature,	-45~100℃ 5~95% RH	H	
humidity:			



SenseLive SL7400D

3. Software Installation:-

To download Vicrom software just click on the below link.

http://senselive.io/download/software/SLVirCom.zip

4. Hardware Connection:-

- **Power Supply:** Connect on-site 2-wire power to positive and negative terminals.
- Serial Port: Connect based on user device. For the first 485 port, connect 485+ to 1A and 485- to 1B.



5. Parameter Configuration

1. After installing Vircom, connecting the hardware, running the software, and clicking on "Device Management," proceed with the necessary configurations.





SenseLive		
	SL7400D	

vir Virtual S	erial & Devic	e Manage	ement - VirCom				_		\times
Manage(M)	Config(C)	View(V)	Help(H)						
Start	C Stop	Devic	e Serial	<i>i</i> About					
I. Status	Cor	m C	OM Name	Туре	Device IP	Discription		Dev	ID
Information	ı								
[2025-03-0 [2025-03-0)1,11:53:43])1,11:53:42]	Create o Listen a	ok! t port 4196 OK.						A

Fig.1 Device management

2. In the Device Management interface, click on "Search Serial" as shown in the figure 2. Then, select a baud rate and COM port. After that, click on "Search," and the device will be connected.

Devic	e Man	agement													\times
I	Ту	Name	type	F	Dev IP	Loc	Dest IP	Work Mode	тср	Virtual S	Vircom St	Dev ID	т	R	
1	Se	SENS71101			192.168.1.200	502	192.168.1.12	TCP Client	Not	Haven't	Not Linked	E81A0B55	0	0	Auto Search
															Edit Device
															Banch Edit
															Danch Luit
															Search Serial
															Add Manually
															P2P Device
															IO Controller
															Search List
															Back

Fig.2 Device management



Search With Serial Port		×
COM:	COM7	
Band rate:	All Baud	Rate 💌
Data bits:	8	-
Parity:	None	-
Stop bits	1	-
Search	Back	Advanced

Fig.3 Search serial

3. After the serial port search, the configuration tool interface open as you see in fig 4.

G Config Tools	
-Step 1: select upgrad	 At command mode, or 2. Firmware le/configuration file download mode, including JSON configuration
COM:	COM7 -
Baudrate:	115200 💌
Databits:	8 🗸
Parity:	N 🗸
AT cm	d mode Firmware update/cfg mode

Fig.4 Configuration tool

6. MQTT Communication settings:-

- 1. Before MQTT communication make a folder on your PC, name as device.
- 2. In 4G configuration tool interface click on firmware configuration as show in fig 4.
- 3. In configuration save location select folder which is created on your PC, as show in fig 5.
- 4. Then click on MQTT configuration.

Copyright © 2025, SenseLive Technologies. Specifications and information given in this document are subject to change by SenseLive Technologies without prior notice

SenseLive



SenseLive

SL7400D

SenseLive	
	SL7400D

Vebpage&code download tool X	
Direct download mode Configuration save location C:\Users\haris\OneDrive\Desktop\SL5143D	
Special configs: Config file source: Read from local directory Modbus cfg. MQTT cfg. JSON cfg. Reg packet Cmd change HTTP cfg. Param file Clear local dir.	
C Code file download mode Select code file: C:\firmware.bin Download through the network 192.168.1.200	
Device IP address or domain: The second seco	
DevID: 28788B19AA78 Bind ID Flash size: 256 ✓ KB Please close any other configuration window before downloading. Download	

Fig.5 firmware configuration

MQTT settings	
Port for MQTT (only su	pported by XX12 series): 1 💌
MQTT server IP:	192.168.1.3
MQTT server port:	1883
User name:	Sense2023
Key:	******
MQTT ID(Unique):	
Subscribe Topic1:	mqttsub
Subscribe Topic2:	
Subscribe Topic3:	
Publish Topic:	Sense/Live/SL5143D

Fig.6 MQTT Setting

5. Configure the MQTT Broker, MQTT server IP, port, username, password, subscribe topic, publish topic and save it, then click on "Download" as you see in fig 5.

7. JSON Configuration:-

1. After configuring MQTT, return to the firmware configuration and click on the JSON configuration, as shown in Figure 5.



JSON	To Modbus RTU Settings
Co	onfig and Options Select port (only supported by XX12 series): 1 Time sharing collection for each port Time zone: +8.0 The keyword name is Unicode encoding
1.	Data transmit interval to 1000 (ms, range: 100 - 31718940, max 8.8hours,0 is no send Enable short link, when time come start link, then wait ms for establish TCF connection Then send data, then after 1s close connection. T Upload according to NTP time.
2. 3.	Select the cloud platform to access: None The Uplayer Frotocol of JSON: NONE/MQTT
	GET/FOST URL(not include the shead "http://") The Variable Name of the POST(No need for pure json):
4.	Add preix to uplead data(e.g. 01 02): Reg packet (sent when connecting to server): Afrer 1 times of uplead serial send data: Condition(Def. empty):
	Design timing send serial command table(support transparent transmission when NO JSON): Timing Send
6.	Add or Remove Modbus Registers: JSON Upload JSON Download Remove All
7.	Click to save JSON settings and display the results: Save JSON
8.	Export/Import config file. Opload Export Opload Import Opload Import "":0,

Fig.7 MQTT Setting

- 2. To set (water, energy) meters parameters ,Click on the "JSON upload".
- 3. Add slave address.

T400D

SenseL

- Add the corresponding JSON keyword to store multiple readings of the energy meter. This keyword can be a number or a character, depending on the energy meter.
- 5. Add the Modbus function code so that you know which number corresponds to which function.
- 6. Add register address as per energy meter.
- 7. Then, click on "Enter Next." The register address will increase by 1, and you must assign the corresponding JSON keyword one by one after every click.
- 8. Click on "Save and Exit." The saved JSON parameters will be visible. Then, go back to firmware configuration interface and click on "Download as show in fig 7."

9

Copyright © 2025, SenseLive Technologies. Specifications and information given in this document are subject to change by SenseLive Technologies without prior notice

SenseLive



SenseLive SL7400D

d JSON Node X							
Following is the 1. The design of register. It has been added: 📈							
JSON node data type: @ Object data(Default value, including this node and later ones with { }, need Input JSON keyword)							
C Array data(including data by [], without JSON keyword)							
Corresponding JSON Keyword: 1 Data source: Modbus RTV 💌 Fixed String: 🔽 No quotation							
Modbus RTU Settings							
- Slave Address: - IP: 0.0.0.0 - 645/698 Version: 97 Version - Read FE numbers: 0 -							
- Modbus Function Code: 3 - Port: 502 - Device ID(6B): 000000000001 - Write FE numbers: 0 -							
- Register Address: 0 - Data type: 9410 - 698 Data type: Total positiv - - Keep invalid 0 - 698 Client Addr(CA): 0							
1. Data length: 2 Bytes. 4 Bytes order: Big Endian (AI (big=endin 4 bytes: Data ABCD, low address store 2 bytes AB)							
2. Decimal point places: 4 💌 digit. After get as intenger left shift the decimal point. Embeded JSON Related							
3. Enable shift and scale: Subtract integer: O then divide float: Register is float Enter Embeded Exit Embeded							
4. Data format: Unsigned int 💌 Bool value at postion bit: 1 💌 Design and View							
5. Add unit name to rear: Del and Next							
6. Add quotation to data:							
7. The Period between two KTU cmd: 100 (ms) minimum 10. 100ms for 9600bps, and 500ms for 2400bps.							
If timeout wait more: 0 (ms), before send next command. Set 0 to disable this function.							
8. Transmit data to server when data changes:							
9. If RS485 device offline, set special value: 🗖 Special value type: Special value: 0 .Set data to 1 if online: 🗖							
10. Enable overrun alarm: 🔽 , minimum normal value: 🛛 🦷 maximum normal value: 🗍							

Fig.8 Add JSON node

8. Check parameter in configuration tool:-

- 1 Go back to the device management interface, click on Serial Search, and the Configuration Tool interface will open.
- 2. Click on "AT cmd mode." On right side information box show the data.
- 3. Click on "Login."
- 4. The default login key is 666666.
- 5. After logging in, you can change the baud rate and other parameters by clicking on "Advance parameters".

v Se	3 4G Config Tools								
	Step 1: select 1. At command mode, or 2. Firmware upgrade/configuration file download mode, including JSON configuration								
	COM:	СОМ7	•						
	Baudrate:	115200	•						
	Databits:	8	•						
	Parity:	N	•						
	АТ сл	id mode		Firmware	update/cfg mo	de			

Fig.9 Configuration tool



SenseLive	SL7400D	
	💩 4G Config Tools	×
	Step 1: select 1. At command mode, or 2. Firmware upgrade/configuration file download mode, including JSON configuration COM: COM7 • Baudrate: 115200 • Databits: 8 • Parity: N • AT cmd mode Firmware update/cfg mode Step 2: in at command mode, if you need to modify parameters, please log in first Login Login Step 3: main parameters of at instruction mode Baudrate: • Device ID: •	Information:
	Dest. Fort: Protocol: Get Parameter Set Main Param. Adv. Parameter Save Def. Load Def.	Clear SL+VER? Send AT CMD Status Config Login Not login

Fig.10 Configuration tool (information box)

9. Output on MQTT Explore:-

	Торіс				
+ Connections	MQTT Connection	ws://test.mosquitto.org:1883/			
mqtt.eclipse.org mqtt:/broker.senselive.io:1883/ elkem mqtt://dashboard.senselive.io:18	Name test.mosquitto.org	Validate certificate	Encryption (tls)		
broker.hivemq.org mqtt://broker.hivemq.org:1883/	Protocol Host ws:// vtest.mosquitte	o.org	Port 1883		
test.mosquitto.org ws://test.mosquitto.org:1883/					
broker.senselive.io mqtt://broker.senselive.io:1883/	Basepath	Username	Password 🔌 JB		
new connection mqtt://dashboard.senselive.in:18	DELETE 📋 🏚 AD	DVANCED	SAVE		

Fig.11 MQTT Explore Application





You can search the topic which is configure in device. \triangleright



Fig.12 Broker interface

