SM100-C (III) HART-USB MODEM USER MANUAL

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Statement:

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1 SM100-C (III) Introduction

1.1 Product Introduction

The SM100 - C is a HART intelligent communicator designed by JIAXING SONGMAO and complied with the industrial standard. It communicates with any manufacturer of HART instruments, such as Rosemount, E + H, Siemens, Cologne, Yokogawa, SIC etc. The appearance is complied with integrated design, enabling to install and carry portably. The communicator is compatible with a standard USB interface and serial bus power supply to ensure the convenience and quickness.

Since the SM100 - C intelligent communicator is specially designed for industrial product integration, its design specialized in the temperature range, vibration, electromagnetic compatibility and interface diversity etc.. The SM100 - C ensures the stable and high efficient operation in the bad environment and makes it ideal for high quality with the device.

1.2 Product Specifications

- Supports Operation System Windows XP, Windows7, Windows10
- Compatible with USB V1.1, USB CDC V1.1 Standard
- Compatible with USB V2.0, USB CDC V2.0 Standard
- USB Bus Power Supply (Uninsulated Cables), DC 5V DC 30mA
- Standard HART Protocol Transmission
- Transparent Data Transfer
- Compatible with HART Protocol

1.3 Product Features

- Built-In Isolated DC 24V Output. Provide Power Supply and Communication to Two-Wire Channel Instrument, to Maximize the Reduction of Wiring.
- HART Signal Transfer with Isolation Transformer
- Built-In High Precision 250Ω Resistance. No need to add resistance if communication test.
- Provides Switch to Transfer with WIFI Connection
- LED Panel to Monitor the Operation Status

1.4 Main Parameters

- Physical Dimensions (L × W × H) : 71mm × 52 mm × 22 mm.
- Operation Ambient Temperature : $-20^\circ C \sim +80^\circ C$
- \bullet Relative Humidity: 10% \sim 80%

2 SM100-C (III) Diagram and LED Functions

2.1 Diagram



2.2 Connection Diagram

- Communication cable: Black USB cable (48cm), using for communication between SM100-C and PC, and provide power supply to SM100-C.
- Test cable: Red and black cables, using for connection between SM100-C and HART instruments.
- Serial port change-over switch: Two serial port conversion modes: USB and WIFI.

Switch to USB to enable the communication between communication cable and

PC. The communication cable is connected with PC.

Switch to WIFI to enable the communication between virtual serial port and

PC. The communication cable is connected with the charger.

HART change-over switch: Three HART conversion modes: 250Ω, NO, 24V/250Ω.

Switch to 250Ω to instruct the working status with built-in 250Ω resistance.

Switch to NO to instruct the working status without built-in 24V or 250 $\!\Omega$ resistance.

Switch to $24V/250\Omega$ to instruct the working status with built-in 24V and 250Ω resistance.

You can switch the change-over switch to the proper position according to the physical condition, then start the connection.

1. With Built-In 250Ω Resistance



2. Without Built-In 24V or 250Ω Resistance



3. With Built-In 24V and 250Ω Resistance



2.3 LED Indications

- POW Power LED: Constant lighting when normal communication
- TXD Communication LED: Blinking when data transfers
- RXD Communication LED: Blinking when data receives

3 Configuration Software Functions and Operation

3.1 Communicating Connection

1) Connecting to HART instrument

Please take the wiring diagram **2.2** for reference. According to the HART instrument, you can turn the HART change-over switch to the proper position, then connect the Test cable to the HART instrument.

2) Connecting to Serial port

Please take the wiring diagram 2.2 for reference. According to the physical condition, you can turn the Serial port change-over switch to the proper position, then connect the Communication cable.

a. USB Serial Port: Connect the USB communication cable to the computer. Right-click **Computer**, then choose **Property-Device Manager** to view the **Serial Number**.

b. WIFI Virtual Serial Port: Please refer to section of 4. WIFI Virtual Serial Port Creation to create Virtual Serial Number.

3) Turn on the configuration and debugging software. According to the serial number, select the correct serial number and open the serial port.

HART_Leters
HART_Meters Parameter configuration software
COM8 ▼ 打开审口 V5.5 (16-11-01)
Comm_Test M_Out_Correction Basic_Par_Set Meters_infor Temperature transmitter 3051 Parameter Sett SM100-C(II) Cont_diagram SM100-C(I) Cont_diagram
Pagis Decembers
Address Ma: 0 V First Device V Current value Dut Persontance of Current Query
Manufacturer ID: Variable 1: Unit:
Sensor Type:
First length:
HART 0-15 Cycle_query Variable 3: Unit:
Sensor serial No: Variable 4: Unit:
HEX (76 89 FD AD)
Manual HARTcommand: Auto_generation_Parity) Send
Machine code: 122000189255 After registration can be normal use (TEL : 4007-803-803 or 2850687718@co.com) N0_use
iend_command Buffer:
Send_Number Bytes: Receives_Number Bytes: Transfer Status:

3.2 Online Test

👼 HART_Het	ers							
COM		HART	_Meters	Parameter confi	guration softw	/are		
		1 开 审门 V5.5	(16-11-01)					
Comm_Test	M_Out_Correcti	on Basic_Par_Set	Meters_infor	Temperature transmitter	3051 Parameter Sett	SM100-C(II) Cont	_diagram SM100-C	(I) Cont_diagram
Basic Param	neters			HART_Meter Real-time dat	ta			1
Address No	: 0	First Device	<u> </u>	Current value:	mA Out_Percentage:	%	Current_Query	
Manufacture	er ID:	HADT & A	ddr. Quary	Variable 1:	Unit:	•		
Sensor Type	e:		uur_query	Variable 2:	Unit:	•	Pata Ouery	
First length:		HART 0-15	Cycle_query	Variable 3:	Unit:	•	QUELY	
Sensor seri	al No:			Variable 4:	Unit:	-		
HEX	(76 89 FD AD)	_					-	
Manual HAR	Tcommand: (Auto_	generation_Parity)					Send	
Machine c	ode: 1220001892	55 After registration of	can be normal use	CTEL: 4007-803-803 or 28	50667716@cq.com)	N0_use		
Send_command	Buffer:							
Data_receive Bu	uffer:						Clear con	ntents
	3						2	
Send_Num	ber Bytes:	Receives_1	lumber Bytes:	Transfer	Status:			

3.3 Instrument IO Correction

😹 HART_Meters	
COM: DOTT	HART_Meters Parameter configuration software
	<u> ゴガキロ</u> V5.5 (16-11-01)
Comm_Test M_Out	t_Correction Basic_Par_Set Meters_infor Temperature transmitter 3051 Parameter Sett SM100-C(II) Cont_diagram SM100-C(I) Cont_diagram
Output current	, Notice:set First Set 20 mA Output
Out_H_Current Adjus	mA SET Set in 18mA between 20 mA adjusting 4n SET Zoer Button
Out_L_Current Adjus	mA SET Notice:set First_Set 4 mA Output adjusting 20m SET Span Button
电流输出	
4mA Out	C 20mA Out C Exit the fixed output mode
C 8mA Out	C 16mA Out
C 12mA Out	C Other mA SET
Display Adjus	
Zoer ADJ	SET
Low_ADJ:	SET
Higt_ADJ:	SET
Send_command Buffer:	
Data_receive Buffer:	Clear contents
Send Number Byte	er Deneives Numher Rutes Transfer Status
John _ number byte	

3.4 Basic Parameters Configuration of Instrument

A HART_Teters	ART Meters Parameter config V5.5 (16-11-01)	guration software	
Comm_Test M_Out_Correction Basic_Par	r_Set Meters_infor Temperature transmitter	3051 Parameter Sett SM100-C(II) Cont_diagra	m SM100-C(I) Cont_diagram
Meas_Upper_limit: Meas	_Lower_limit: Unit:	▼ Query	
State of the signal First variable unit:	SET 20 mA Out Values:	4 mA Out Values: SET	J
Manufacturers:			
Burst mode command:	SET Into Burst n	Quit Burst mode	
-Sensing Information			
Send_command Buffer:		<	Clear contents
Send_Number Bytes: Rece	ives_Number Bytes: Transfer	Status:	

3.5 Basic Information of Instrument

👼 HARI_Meters								
COM:		HA I	RT_Meters	Para	meter confi	guration softw	/are	
		并中山	V5.5 (16-11-01)	1		22 10		
Comm_Test M_C	Out_Correctio	n Basic_Par	_Set Meters_infor	Temp	erature transmitter	3051 Parameter Sett	SM100-C(II) Cont_diagram	SM100-C(I) Cont_diagram
	MAX 32	characters						
Equipment informa	ition:			2	Query	SET		
markers	MAX 8	characters						
indi Koro.								
descriptor:	MAX 16	characters						
		-			0			
Manufacture dat	te:	year	month	date	Query	SET		
Sensing Serial NI	IM-				Query	SET	Restore the factory par	ameter
containing_containing			1	2]		
Assembly_NUM:					Query	SET	Backup sensor paran	neters
Modify_HART_Add	drr:		<u> </u>	2	Query			
Send_command Buffer								1
Data_receive Buffer:	1 and							Clear contents
							2	
Send_Number By	rtes:	Recei	ves_Number Bytes:		Transfer	Status:		

3.6 Parameters Configuration of Temperature Transmitter

HARI_leters
COME COME IJ开串口 HART_Meters Parameter configuration software V5.5 (16-11-01)
Comm_Test M_Out_Correction Basic_Par_Set Meters_infor Temperature transmitter 3051 Parameter Sett SM100-C(II) Cont_diagram SM100-C(I) Cont_diagram
Siemens temperature transmitter Siemens HART protocol sensor type Query SET
Emerson 644 temperature sensor and connection method sensor type : Connection mode : Query SET
Emerson 848 t temperature sensor and connection method Temperature channel: CH1 sensor type : Connection mode: Query SET
Temperature U ^{degc}
Send_command Bulfer: Clear contents
Send_Number Bytes: Transfer Status:

3.7 Differential Pressure and Multivariable Transmitter

HARI_Leters	
COME I FOR HART_Meters Parameter configuration software	
<u> 11 11 11 11 11 11 11 11 11 11 11 11 11</u>	
Comm_Test M_Out_Correction Basic_Par_Set Meters_infor Temperature transmitter 3051 Parameter Sett SM100-C(II) Cont_diagram SM100-C(I) Co	igram
Rosemount 3051 differential pressure transmitter set to zero	
differential pressure zero_SET	
Decempent 200 SMV multivariable parameter Settings	
Variable output configuration:	
Variable1: defferential pressure Variable2: defferential pressure Query	
Veriebles, defferential pressure Verieble (defferential pressure V	
Variable3:	
display setting	
Differ_Pressure: OFF Gage_Pressure: OFF Gage_Pressure: OFF	
Proces_Temper: Off Module_Temper: Off Output(%Rang): Off	
Flow_Rate: OFF Totalizer: OFF Query SET	
Send_command Buffer:	
Data receive Buffer	
Send Number Rutes	

4 WIFI Virtual Serial Port Creation

4.1 Cable Connection

You can switch the seral port to WIFI virtual serial port connector, and then connect USB cable with the charger to supply power.

4.2 Wireless Hotspot Connection

1) Search for the wireless network, and choose the wireless hotspot SM100 - C, then click Connect.

未连接	47
山口 连接可用	
无线网络连接	~
jxsmdz	
Tenda_37C438	liter
SM100-C	<u>.</u>
 通过此网络发送的信息可 见。 	能对其他人可
🦳 自动连接	
happyway	lte.
打开网络和共享中	P心

2) Configure the IP address for the wireless hotspot and modify it to the same network segment 192.168.0.#.

1 无线网络连接 状态 常规 连接 IPv4 连接: IPv6 连接: 媒体状态: SSID: 持续时间: 速度: 信号质量: 详细信息(D) 活动 已发送	Y 人送税利担益を //注 阿络 共享 注接时使用: ● ● 802.11n USB Wireless LAN Card ● ● ●	常規 加里网络支持此功能,则可以获 您需要从网络系统管理员处获得 ● 自动获得 IP 地址(0) ● 使用下面的 IP 地址(S): IP 地址(I): 子阿擁码(0): 默认网关(0): ■ 自动获得 DNS 服务器地址(● 使用下面的 DNS 服务器地址) 首选 DNS 服务器(A):	取自动指派的 IF 设置。否则, 适当的 IF 设置。 192 .168 . 0 . 37 255 .255 .255 . 0 192 .168 . 0 . 1 E) (C): 192 .168 . 0 . 1
	TCP/IP。该协议是默认的广域网络协议,它提供在不同 的相互连接的网络上的通讯。	□ 退出时验证设置 (L)	高级(V)

4.3 Virtual Serial Port Creation

You can start the virtual serial port configuration software, and click **Add**, and tap in the information of virtual serial port configuration in the pop-up window, then click **OK** to accomplish the creation for the virtual serial port. The serial port information would be displayed in the main window.

≪ V3.7.1.520 设备(D) 丁目(D) 注抗(D) Facilish 製助(H)	
● 査 注 ● 串ロ号 串ロ参数 串口状态 阿絡协议 目标IP ● 目标端口 串ロ接收 网络接收 网络状态 ↓ 注册ID ↓ CloudD	
虚拟串口: COM2 _	
网络协议: TCP Client _	
目标IP/读名: 192.168.0.188 目标演口: 7000	
本地端口: 8234	
_ ● → → → → → → → → → → → → → → → → → →	
≪ V3.7.1.520 设备(D) 工具(T) 选项(O) English 帮助(H)	- • •

5 Service and Warranty Information

- 1. The warranty period for the product is 36 months with normal operation conditions from the date of purchase by end-customers.
- 2. The company warrants the Product to be free from defects in workmanship and technology for the Warranty Period.
- 3. This Free Warranty does not include such as but not limited to:
 - a. The Product has been tampered with, repaired and/or modified without the permission from the company;
 - b. Damage to the Product caused by external force and other natural disaster.
- 4. When the warranty service is needed, please contact us with calling the service hotline. We would maintain the warranty service and deliver the product back as soon as possible.
- 5. This warranty liability limits to the warranty period for the breakdown maintenance of the product, and do not assume other responsibilities.