SmartGen SGCAN300 Canbus Relay Module User Manual

Contents

SmartGen SGCAN300 Canbus Relay Module

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Table 1 – Software Version

Date	Version	Note
2020-08-28	1.0	Original release.

Notation Clarification

Sign	Instruction
NOTE	Highlights an essential element of a procedure to ensure correctness.
CAUTION!	Indicates a procedure or practice, which, if not strictly observed, could result in damage or destruction of equipment.
WARNING!	Indicates a procedure or practice, which could result in injury to personnel or loss of life if not followed correctly.

OVERVIEW

SGCAN300 CANBUS RELAY MODULE can realize the mutual conversion between MSC1 and optical fiber, MSC1 and MSC2, RS485 and optical fiber. Using the module can increase the communication distance of MSC or RS485.

PERFORMANCE AND CHARACTERISTICS

- With conversion function of MSC1 and optical fiber, using a pair of modules can realize long distance MSC communication;
- With conversion function of RS485 and optical fiber, using a pair of modules can realize long distance RS485 communication;
- With data conversion function of MSC1 and MSC2, using a single module can increase the MSC communication distance;
- With one digital input, which can control signal conversion enabling;
- The effective type of input port can be set by the dial switch of the module;
- The baud rates of MSC1 and MSC2 can be set by the dial switch of the module;
- The baud rate of RS485 can be set by the dial switch of the module.

SPECIFICATION

Items	Contents
Operating Voltage	DC 8V~35V, Continuous Power Supply, DC Reverse Connection Protection
Power Consumption	<2W
RS485 Port	Isolation, Half Duplex, Baud Rate: 9600bps and 19200bps are optional

CAN Port	Isolation, Baud Rate: 50kbps, 125kbps, 250kbps and 500kbps are optional
Optical Fiber Port	Max. Transmission Distance: 10km, Type: SC
Vibration	5 – 8 Hz: ±7.5 mm 8 – 500 Hz: 2 g IEC 60068-2-6
Schock	50 g, 11 ms, half sine, finish the shock test from three directions. There are total 18 shocks per test. IEC 60068-2-27
Collision	25g, 16ms, half sine IEC 60255-21-2
Case Dimensions	71.6mm x 92mm x 60.7mm
Installation	35mm Guide Rail Mounting
Working Conditions	Temperature: (-25 +70)°C Humidity: (20 93)%RH
Storage Condition	Temperature: (-30 +80)°C
Weight	0.2kg

OPERATION

PANEL INDICATION

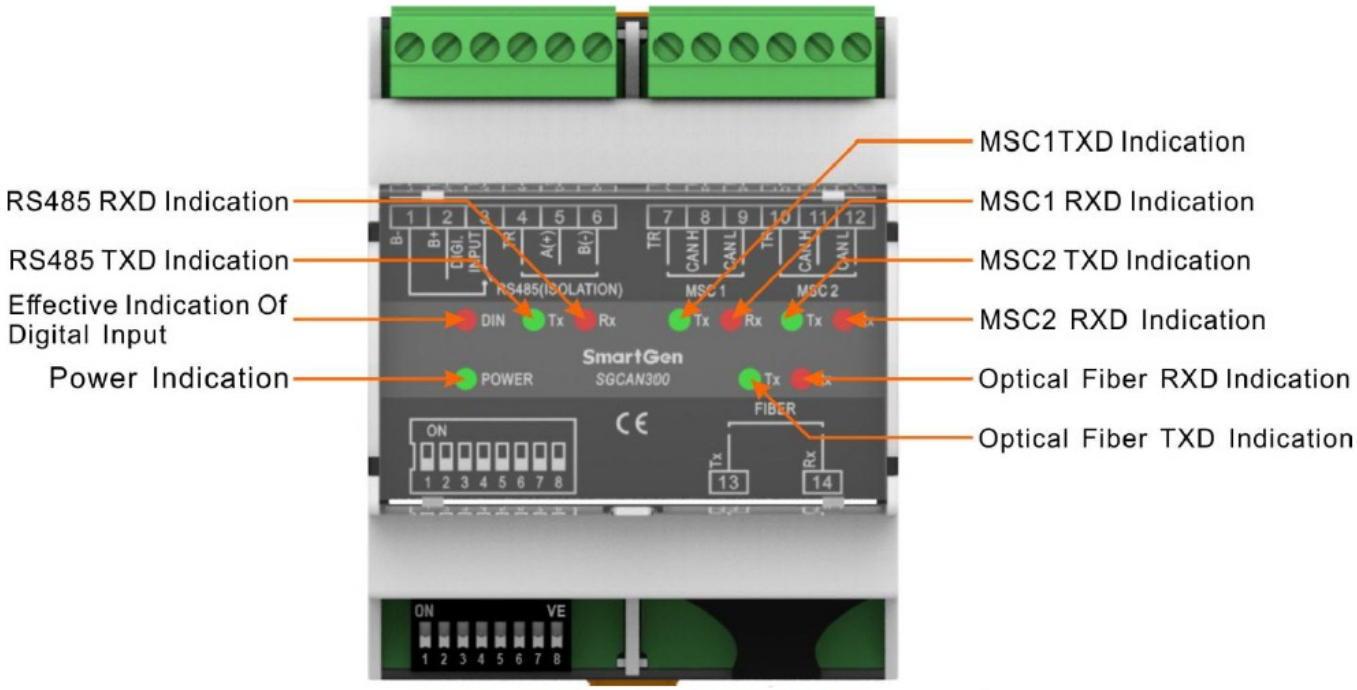

Fig. 1 – SGCAN300 Panel Indicator

NOTE: Partial indicator description.

Indicators Description

Indicator	Note
POWER	Normally light on
DIN	Normally light on when effective
TX	Fast flash (5 times per second) when sending the data
RX	Fast flash (5 times per second) when receiving the data

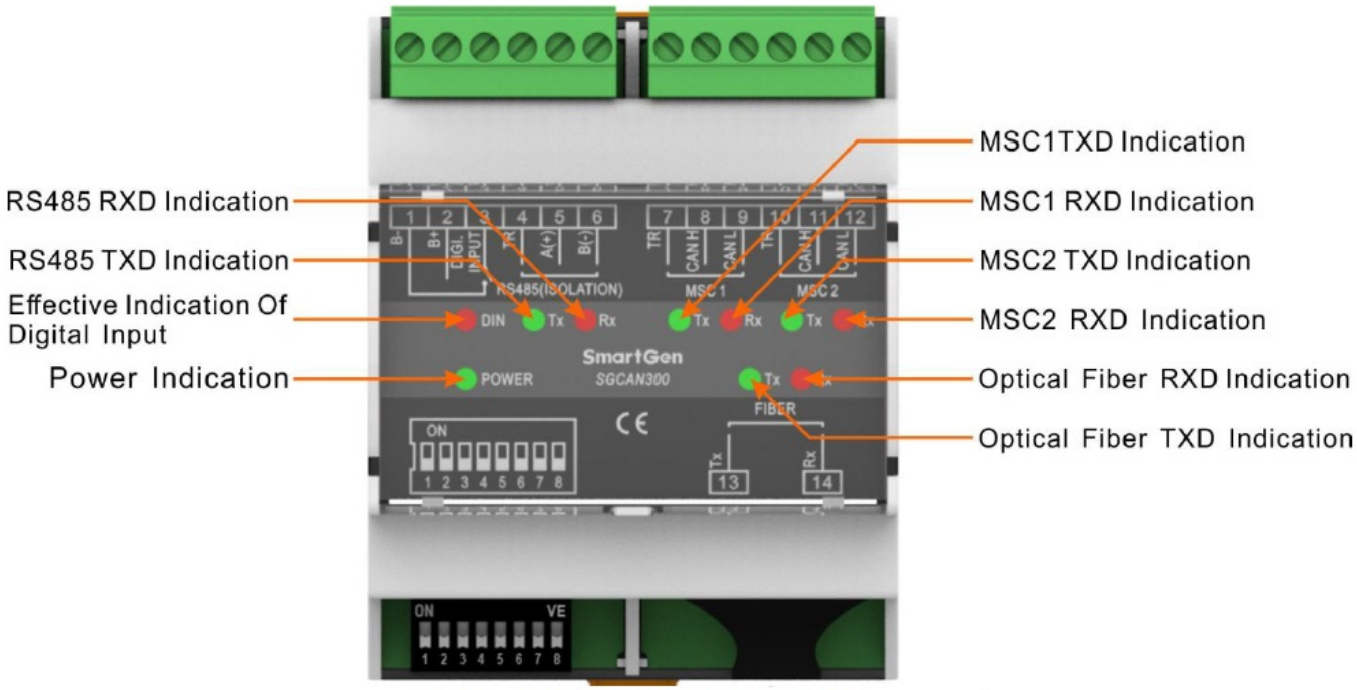

Fig. 1 – SGCAN300 Panel Indicator

Table 5 –Dial Switch Functions

Dial Sequence	Function
1	Effective Type of Input Port 0: Close is effective 1: Open is effective
2	MSC1 Baud Rate 00 250kbps 01 The third is 1 50kbps 10 The second is 1 125kbps 11 500kbps
3	
4	MSC 2 Baud Rate 00 250kbps 01 The fifth is 1 50kbps 10 The fourth is 1 125kbps 11 500kbps
5	
6	RS485 Baud Rate 0 9600bps 1 19200bps
7	Optical Fiber Mode 0: Optical fiber is connected with CAN1. (Input port should be effective) 1: Optical fiber is connected with RS485. (Input port should be effective)
8	Test Mode 1: Lamp test function. Each dial switch corresponds to an LED indicator light, light on when is 1.

NOTE: “ON” of dial switch is 1 and “Non-ON” is 0. There need power on again when baud rate changed.

MUTUAL CONVERSION OF MSC1 AND OPTICAL FIBER

When the digital input is effective, the dial switch 7 is placed to Non-ON, at which time the MS1 is connected with the optical fiber. The baud rate can be selected by dial switch 2 and 3. The other SGCAN300 module will go to the same setup. Connecting the optical fiber communication lines of two SGCAN300 modules, then the MSC1 interface of the two modules can be converted through the optical fiber.

MUTUAL CONVERSION OF RS485 AND OPTICAL FIBER

Place the dial switch 7 to ON, then the RS485 is connected with the optical fiber. The baud rate can be selected by dial switch 6. The other SGCAN300 module will go to the same setup. Connecting the optical fiber communication lines of two SGCAN300 modules, then the RS485 interface of the two muddles can be converted through the fiber.

MUTUAL CONVERSION OF MSC1 AND MSC2

When the digital input is effective, then the MSC1 is connected with the MSC2. The baud rate can be selected by dial switch 2,3,4,5, then the interfaces of MSC1 and MSC2 are converted

WIRING CONNECTION

The panel of SGCAN300 is as follows:

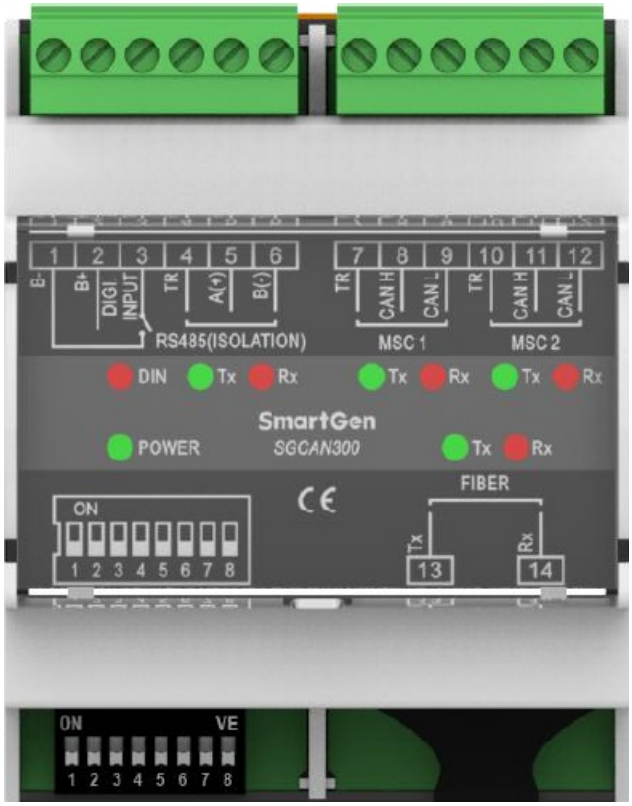

Table 6 – Terminal Connection Description

No.	Function	Cable Size	Note
1	DC Power Input B-	1.0mm2	Connect with negative pole of DC power.
2	DC Power Input B+	1.0mm2	Connect with positive pole of DC power.
3	Programmable Digital Input	0.5mm2	Connecting with B- is effective, it is used for bus switch status judgement.
4	RS485-TR	0.5mm2	If terminal resistance matching is required to short connect with Terminal 5, otherwise it is suspended.
5	RS485-A(+)	0.5mm2	RS485 communication interface.
6	RS485-B(-)	0.5mm2	
7	MSC1-TR	0.5mm2	If terminal resistance matching is required to short connect with Terminal 8, otherwise it is suspended.
8	MSC1-CANH	0.5mm2	CANBUS communication interface.
9	MSC1-CANL	0.5mm2	
10	MSC2-TR	0.5mm2	If terminal resistance matching is required to short connect with Terminal 11, otherwise it is suspended.
11	MSC2-CANH	0.5mm2	CANBUS communication interface.
12	MSC2-CANL	0.5mm2	
13	FIBER-TX	/	Optical fiber communication interface, SC connector with lock.
14	FIBER-RX	/	

TYPICAL APPLICATION

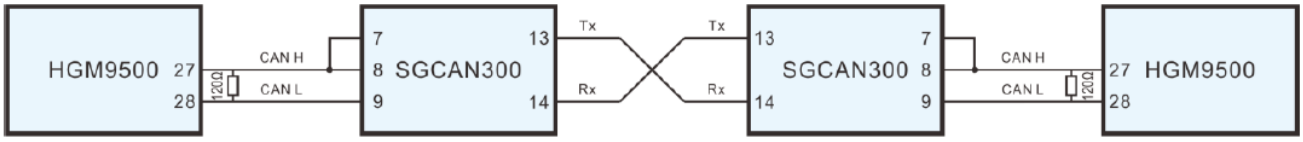

Fig. 3 – Typical Application Diagram of MSC1 and Optical Fiber Conversion

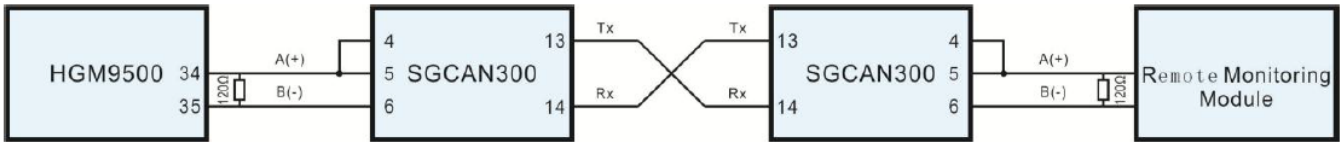

Fig. 4 –Typical Application Diagram of RS485 and Optical Fiber Conversion

Fig. 5 –Typical Application Diagram of MSC1 and MSC2

CASE DIMENSIONS AND INSTALLATION

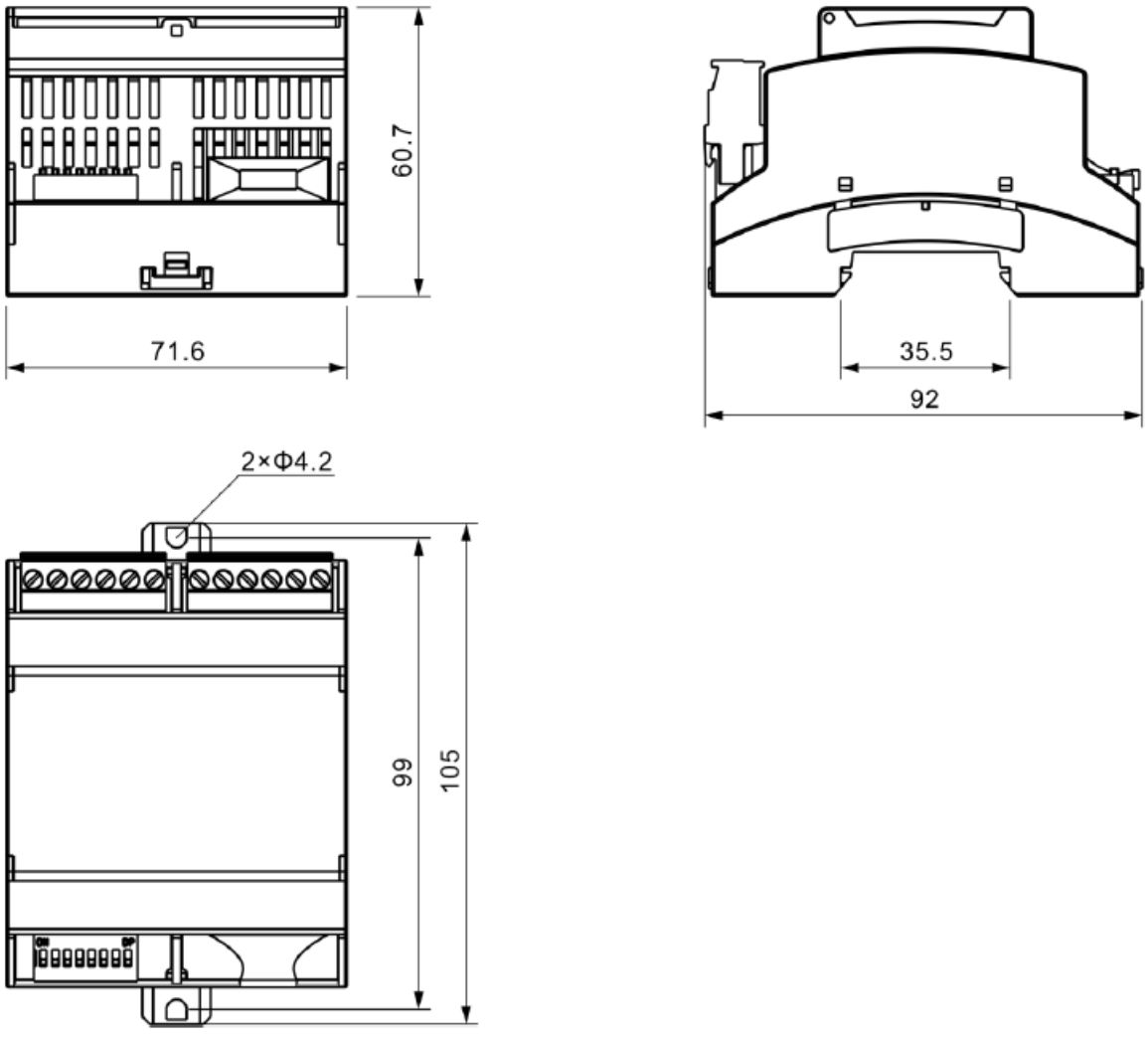

Fig.6 - Case Dimensions and Installation (Unit: mm)

TOUBLESHOOTING

Table 7 –Troubleshooting

Symptoms	Possible Solutions
Communication failure of MSC1 and MSC1 of the other module	1.Check communication line and communication terminal resistance; 2.Check digital input status and effective type; 3. Check whether the communication baud rate is consistent with the contr oller; 4. Check whether the dial switch 7 is Non-ON; 5. Observe the communication indicator light to judge the com munication error.
Communication failure of RS485 and RS485 of other module	1.Check communication line and communication terminal resistance; 2.Check whether the communication baud rate is consistent with the contro ller; 3. Check whether the dial switch 7 is ON; 4. Observe the communication indicator light to judge the com munication error.
Communication failure of MSC1 and MSC2	1. Check communication line and communication terminal resistance; 2. Check digital input status and effective type; 3. Check whether the communication baud rate is consistent with the contr oller; 4.Observe the communication indicator light to judge the communication error.
There is no response for power on and all lights are off	Check dial switch 8 and it should be Non-ON.

- SGCAN300 CANBUS Relay Module
- Version 1.0

Documents / Resources

	**SmartGen SGCAN300 Canbus Relay Module** [pdf] User Manual SGCAN300, Canbus Relay Module, SGCAN300 Canbus Relay Module, Relay Module

References

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