SmartGen

MAKING CONTROL SMARTER

DIN16A

DIGITAL INPUT MODULE

USER MANUAL

郑州众智科技股份有限公司

SMARTGEN(ZHENGZHOU)TECHNOLOGY CO.,LTD.

SmartGen **Registered trademark**
No. 28 Xuemei Street, Zhengzhou, Henan, China
Tel: +86-371-67988888/67981888/67992951
+86-371-67981000 (overseas)
Fax: +86-371-67992952
Web: www.smartgen.com.cn/
www.smartgen.cn/
Email: sales@smartgen.cn

.

Table 1 Software Version

Date	Version	Content
2017-04-15	1.0	Original release.
2020-05-15	1.1	Modify function descriptions of Input port.
2024-12-12	1.2	Update the logo of SmartGen and the information of company.

CONTENTS

1 OVERVIEW

DIN16A digital input module is an expansion module which has 16 auxiliary digital input channels and the name of each channel can be defined by users. The input port status collected by DIN16A is transmitted to the HMC9000S controller for processing via CANBUS port.

2 TECHNICAL PARAMETER

Table 2 Technical Parameter

Item	Content
Working Voltage	DC18.0V~ DC35.0V continuous power supply
Power Consumption	<2W
Case Dimension	107.6mm x 89.7mm x 60.7mm
Working Conditions	Temp.：(-25~+70)°C Humidity：(20~93)%RH
Storage Conditions	Temp.：(-25~+70)°C
Weight	0.25kg

3 PROTECTION

3.1 WARNING

Warnings are not shutdown alarms and do not affect the operation of the gen-set. When DIN16A module is enabled and detects the warning signal, the controller HMC9000S will initiate a warning alarm and the corresponding alarm information will be displayed on LCD.

Warning types are as follows:

Table 3 Warning Alarm List

No.	Items	DET Range	Description
1	DIN16A Auxiliary Input 1-16	User-defined.	When the HMC9000S controller detects that the DIN16A auxiliary input 1-16 alarm signal and the action set as “Warning”, it will initiate a warning alarm and the corresponding alarm information will be displayed on LCD. (Each string of DIN16A input can be defined by users, such as input port 1 defined as “High Temp Warning”, when it is active, corresponding alarm information will displayed on LCD.)

3.2 SHUTDOWN ALARM

When DIN16A module is enabled and detects the shutdown signal, the controller HMC9000S will initiate a shutdown alarm and the corresponding alarm information will be displayed on LCD.

Shutdown alarms are as follows:

Table 4 Stop Alarm List

No.	Items	Detection Range	Description
1	DIN16A Auxiliary Input 1-16	User-defined.	When the HMC9000S controller detects that the DIN16A auxiliary input 1-16 alarm signal and the action set as “Shutdown”, it will initiate a shutdown alarm and the corresponding alarm information will be displayed on LCD. (Each string of DIN16A input can be defined by users, such as input port 1 defined as “High Temp Shutdown”, when it is active, corresponding alarm information will displayed on LCD.)
Note: The types of shutdown alarm of auxiliary input port are effective only when users configure them. Only emergency shutdown and overspeed shutdown work when the controller is in override mode.			

4 PANEL CONFIGURATION

Users can set the parameters of DIN16A via HMC9000S module. Pressing and holding Enter button for more than 3 seconds will enter the configuration menu, which allows users to set all DIN16A parameters, as follows:

Note: Pressing Stop can exit setting directly during setting.

Table 5 Parameter Configuration List

Items	Range	Default Values	Remarks
1. Input 1 Set	(0-50)	0：Not used	DIN16A setting
2. Input 1 Type	(0-1)	0：Close to activate	DIN16A setting
3. Input 2 Set	(0-50)	0：Not used	DIN16A setting
4. Input 2 Type	(0-1)	0：Close to activate	DIN16A setting
5. Input 3 Set	(0-50)	0：Not used	DIN16A setting
6. Input 3 Type	(0-1)	0：Close to activate	DIN16A setting
7. Input 4 Set	(0-50)	0：Not used	DIN16A setting
8. Input 4 Type	(0-1)	0：Close to activate	DIN16A setting
9. Input 5 Set	(0-50)	0：Not used	DIN16A setting
10. Input 5 Type	(0-1)	0：Close to activate	DIN16A setting
11. Input 6 Set	(0-50)	0：Not used	DIN16A setting
12. Input 6 Type	(0-1)	0：Close to activate	DIN16A setting
13. Input 7 Set	(0-50)	0：Not used	DIN16A setting
14. Input 7 Type	(0-1)	0：Close to activate	DIN16A setting
15. Input 8 Set	(0-50)	0：Not used	DIN16A setting
16. Input 8 Type	(0-1)	0：Close to activate	DIN16A setting
17. Input 9 Set	(0-50)	0：Not used	DIN16A setting
18. Input 9 Type	(0-1)	0：Close to activate	DIN16A setting
19. Input 10 Set	(0-50)	0：Not used	DIN16A setting
20. Input 10 Type	(0-1)	0：Close to activate	DIN16A setting
21. Input 11 Set	(0-50)	0：Not used	DIN16A setting
22. Input 11 Type	(0-1)	0：Close to activate	DIN16A setting
23. Input 12 Set	(0-50)	0：Not used	DIN16A setting
24. Input 12 Type	(0-1)	0：Close to activate	DIN16A setting
25. Input 13 Set	(0-50)	0：Not used	DIN16A setting
26. Input 13 Type	(0-1)	0：Close to activate	DIN16A setting
27. Input 14 Set	(0-50)	0：Not used	DIN16A setting
28. Input 14 Type	(0-1)	0：Close to activate	DIN16A setting
29. Input 15 Set	(0-50)	0：Not used	DIN16A setting
30. Input 15 Type	(0-1)	0：Close to activate	DIN16A setting
31. Input 16 Set	(0-50)	0：Not used	DIN16A setting
32. Input 16 Type	(0-1)	0：Close to activate	DIN16A setting

5 DEFINITION OF INPUT PORT

5.1 DEFINITION CONTENTS OF DIGITAL INPUT

Table 6 Definition Contents List of Digital Input

NO.	Items	Contents	Description
1	Function set	(0-50)	More details please refer to Function Setting.
2	Active Type	(0-1)	0：Close to activate 1：Open to activate
3	Effective Range	(0-3)	0：From Safety on 1：From Crank 2：Always 3：Never
4	Effective Action	(0-2)	0：Warn 1：Shutdown 2：Indication
5	Input Delay	(0-20.0)s	
6	Display string	User-defined names of input port	Input port names can be edited via PC software only.

6 REAR PANEL

Panel drawing of DIN16A:

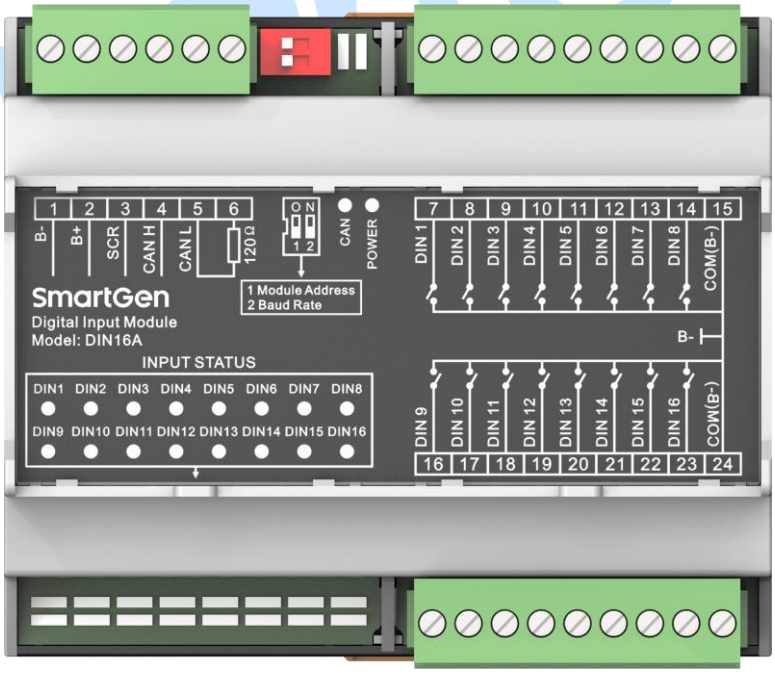

Fig.1 DIN16A Panel

Table 7 Description of Terminal Connection

No.	Function	Cable Size	Description
1.	DC input B-	2.5mm²	DC power supply negative input.
2.	DC input B+	2.5mm²	DC power supply positive input.
3.	SCR (CANBUS)	0.5mm²	Connect CANBUS communication port to expansion CAN port of HMC9000S. Impedance-120Ω shielding wire with its one end grounded is recommended. There is 120Ω terminal resistance inside already; if needed, make terminal 5, 6 short circuits.
4.	CAN(H) (CANBUS)	0.5mm²	
5.	CAN(L) (CANBUS)	0.5mm²	
6.	120Ω	0.5mm²	
7.	DIN1	1.0mm²	Digital input
8.	DIN2	1.0mm²	Digital input
9.	DIN3	1.0mm²	Digital input
10.	DIN4	1.0mm²	Digital input
11.	DIN5	1.0mm²	Digital input
12.	DIN6	1.0mm²	Digital input
13.	DIN7	1.0mm²	Digital input
14.	DIN8	1.0mm²	Digital input
15.	COM(B-)	1.0mm²	Connect to B- is allowed.
16.	DIN9	1.0mm²	Digital input
17.	DIN10	1.0mm²	Digital input
18.	DIN 11	1.0mm²	Digital input
19.	DIN 12	1.0mm²	Digital input
20.	DIN 13	1.0mm²	Digital input
21.	DIN 14	1.0mm²	Digital input
22.	DIN 15	1.0mm²	Digital input
23.	DIN 16	1.0mm²	Digital input
24.	COM(B-)	1.0mm²	Connect to B- is allowed.
DIP switch	SWITCH		Address selection：It is module 1 when the switch 1 is connected to terminal 12 while module 2 when connect to ON terminal. Baud rate selection: It is 250kbps when the switch 2 is connected to terminal 12 while 125kbps when connect to ON terminal.
LED Indicator	INPUT STATUS		When DIN1~DIN16 input are active, corresponding DIN1 ~ DIN16 indicators are illuminate.

7 DIN16A TYPICAL APPLICATION

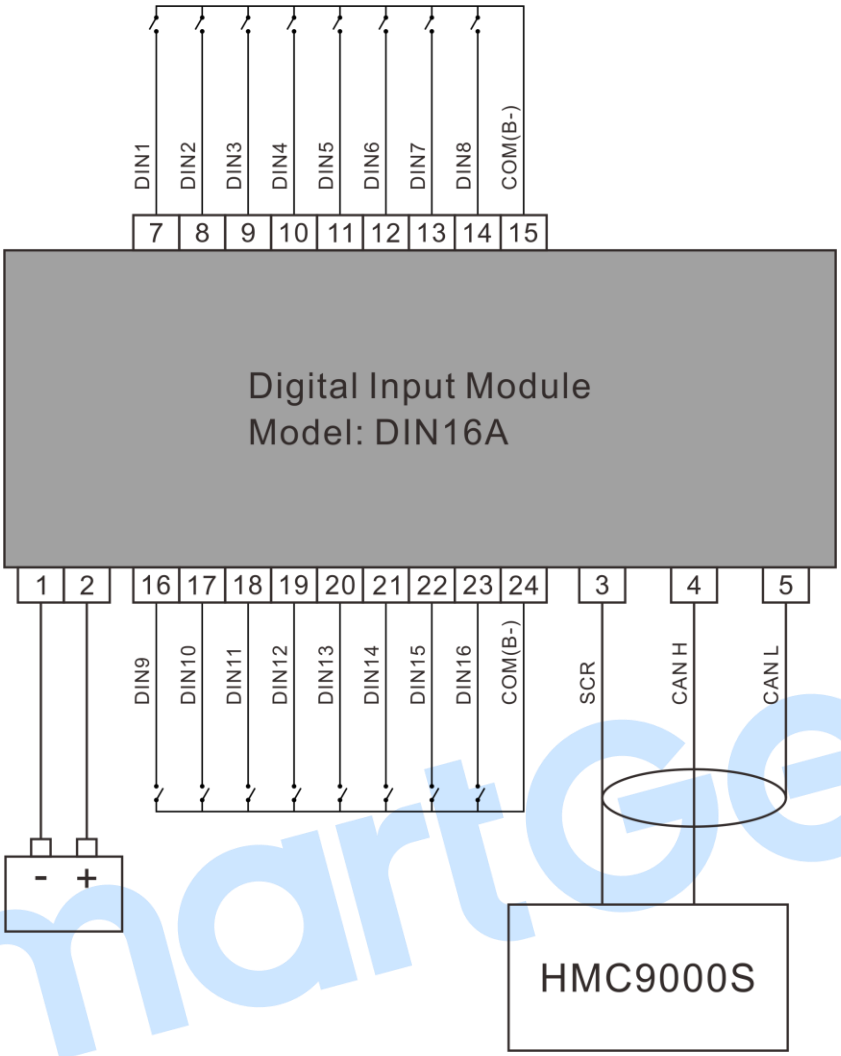

Fig.2 Typical Wiring Diagram

8 INSTALLATION

Case dimension：

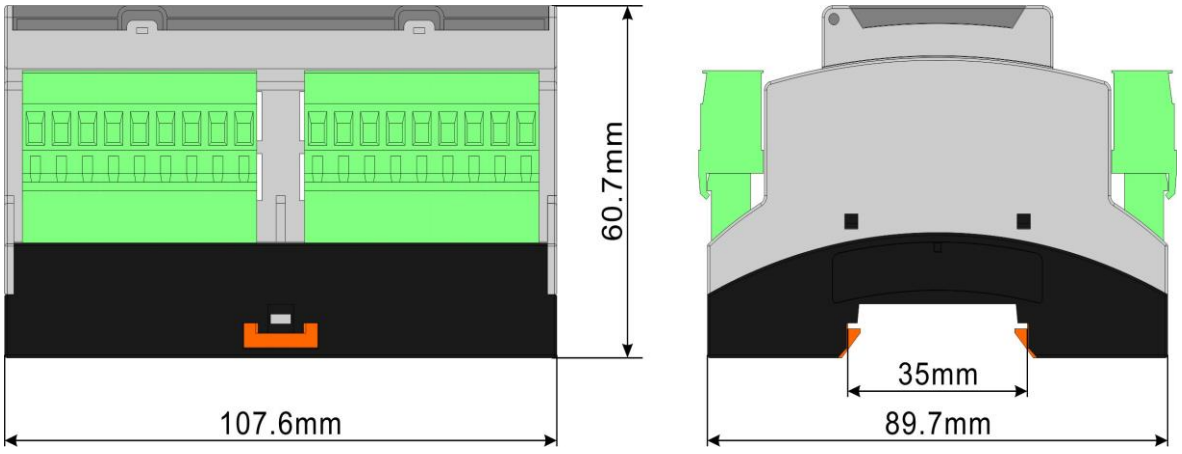

Fig.3 Case Dimension and Panel Cutout

9 FAULT FINDING

Symptom	Possible remedy
Controller no response with power.	Check starting batteries; Check controller connection wirings;
CANBUS communication failure	Check wiring.
Auxiliary input alarm	Check wiring. Check if input polarities configuration is correct.