1. Summary

ASM17 is low cost but multi-function diesel engine generator controller. It applies with 3 buttons and provides 3 kinds of operation mode: Manual, Auto, Off. No special training is required due to the easy operation. Fault protection includes: Emergency stop, Over speed, Low speed, High water temperature, Low oil pressure, and Over crank. ASM17 also indicates the running status and power status. ASM17 provides two configurable output ports,whitch may designate to control preheater , annunciator, ATS switch and servo motor or electronic speed regulation for idle starting and idle stoping . So ASM17 is able to provides all control functions for complete ATS control system . ASM17 equips with high firm continental-type terminal that provides easy plug in and removal. Furthermore, ASM17 has 10 pins Dip switch for adjusting parameter according to system requirements, and make it not only reducing stock but also meeting the various system specifications. ASM17 build-in 5 output powers relays which perform high power capacity reach to 5 Amp (DC) that saves the wring for connection with extra power relays. No matter in function, protection or operation performance, ASM17 is your best choice.

2. Operation

Fig. 1 ASM17 Controller Front Panel

A、LED Indication

- Emergency / Stop failure : Lighten–Emergency Flicker–Stop failure
- Over Speed Shutdown
- Low Speed Shutdown
- High Water Temperature Shutdown
- Low Oil Pressure Shutdown
- Over Crank
- Run: Lighten–Run in rated speed Flicker–Run in idle speed
- Power
- Manual Status Indicate
- Stop Status Indicate: Lighten–Standby Flicker–Cooling
- Automatic Status Indicate: Flicker--Cooling

B、Operation Key Switch

- ATS : Auto Start function by detect ATS terminal 12 grounded.
- Off : Stop running engine or stand still / Reset Alarm.
- Manual : Manual start engine directly.

3. Back Panel Function Description

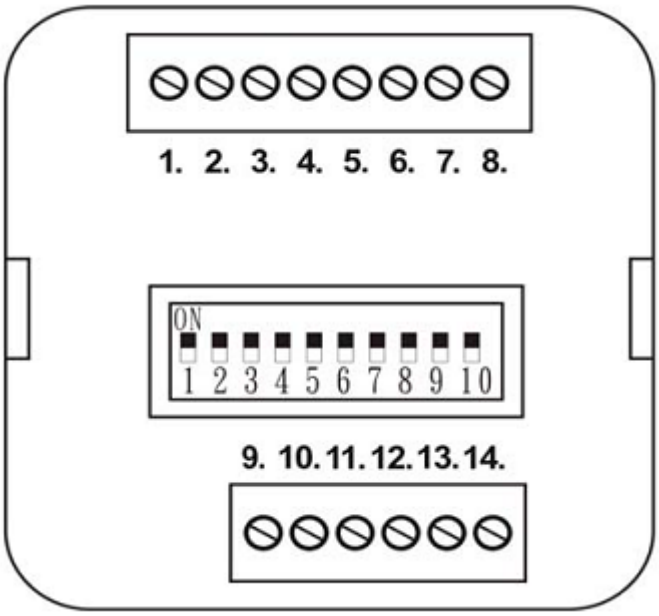

Fig. 2 ASM17 Controller Back Panel

A、 Terminal Description

Number	Description	Code
1	Input power (Battery +)	B+
2	Ground (Battery -)	GND
3	Output starter relay	Motor
4	Output fuel valve relay	Valve
5	Configurable output port1	Aux. Output1
6	Output stop relay	Stop
7	Configurable output port2	Aux. Output2
8	Charge fire point	Charge
9	Emergency shutdown button	Em. Stop
10	Input , High water temp.	HWT
11	Input, Low oil press.	L OP
12	Input , Auto start	ATS
13 , 14	Input , Frequency detect terminal	FD1,FD2

B、 Configurable Output Port Description

- Alarm: The designed programmable output relay will energize when any failure has been happened. The ouptput will remain on until the failure has been reset.
- Idle Control: The designed programmable output relay will energize in period of start idle delay and stop idle delay. Normally, it is used to electronic speed regulation for idle control.
- Raise/Drop Speed Control: The designed programmable output relay will energize when start idle delay has finished, and break after entering stop idle delay. Normally, it is used to control gun servo motor.
- ATS Switch Control: The designed programmable output relay will energize when start signal is in effect and generator set run normally, and break when start signal is noneffective.
- Preheat Control: The designed programmable output relay will energize in period of preheat delay and cranking, and break after cranking success or cranking failure.

C、 Dip Switch Settings Function

Pin1: Valve on to stop engine time/Crank rest time [ON: 10S/10S OFF: 20S/15S]

Pin2 & Pin3: Configurable output port 2 (Output terminal 7) function setting

Pin2	Pin3	Function of output terminal 7
OFF	OFF	Preheat
ON	OFF	Idle control
OFF	ON	Raise/Drop speed control
ON	ON	ATS switch control

Pin4 & Pin5: Configurable output port 1 (Output terminal 5) function setting

Pin4	Pin5	Function of output terminal 5
OFF	OFF	Alarm
ON	OFF	Idle control
OFF	ON	Raise/Drop speed control
ON	ON	ATS switch control

Pin6 & Pin7: Preheat/Idle delay time

Pin6	Pin7	Preheat/Idle delay time
OFF	OFF	1(10)
ON	OFF	5(30)
OFF	ON	10(60)
ON	ON	20(200)

Pin8: Escape motor by oil pressure switch [ON：Enable；OFF：Disable]

Pin9: Cooling time [ON:60S OFF:5S]

Pin10: System frequency [ON：50Hz；OFF：60Hz]

4. Control Flow Chart

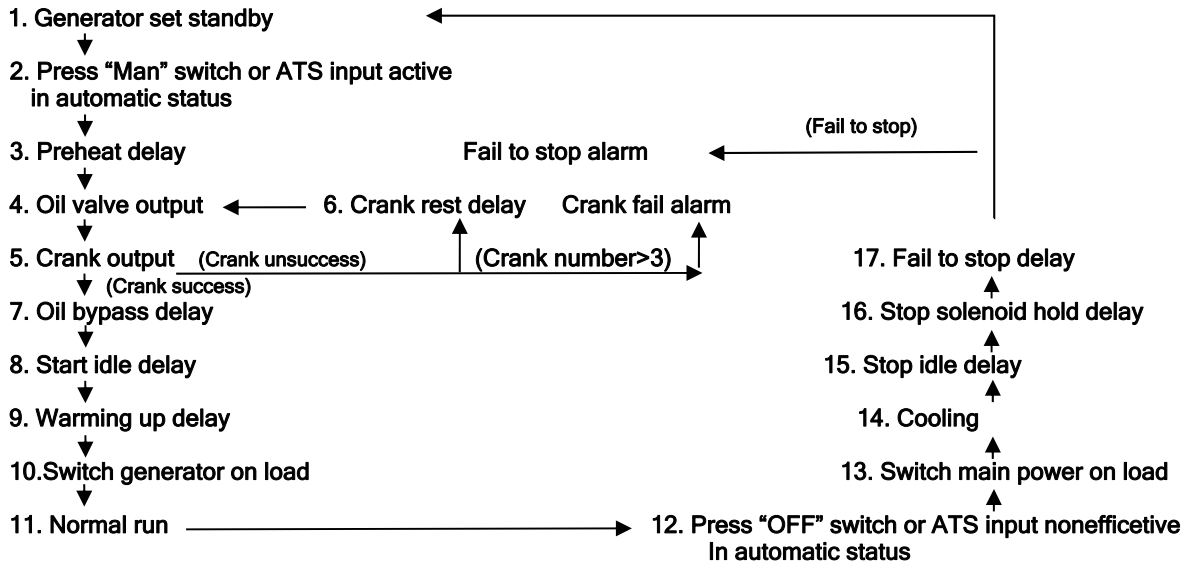

Fig. 3 Control Flow Chart of ASM17

5. Specification

- Power supply: 8 ~ 40V DC
- Power Consumption：<3 W (Standby <2W)
- Measuring Frequency：0 ~ 100Hz (100~300V AC)
- Relay Output ：5Amp 24V DC
- Dimension (W×H×D)：72mm × 72 mm × 58 mm
- Panel cut-out (W × H)： 66 mm × 66 mm
- Ambient Temperature Range：-30℃ ～ 70 ℃

6. Typical Application

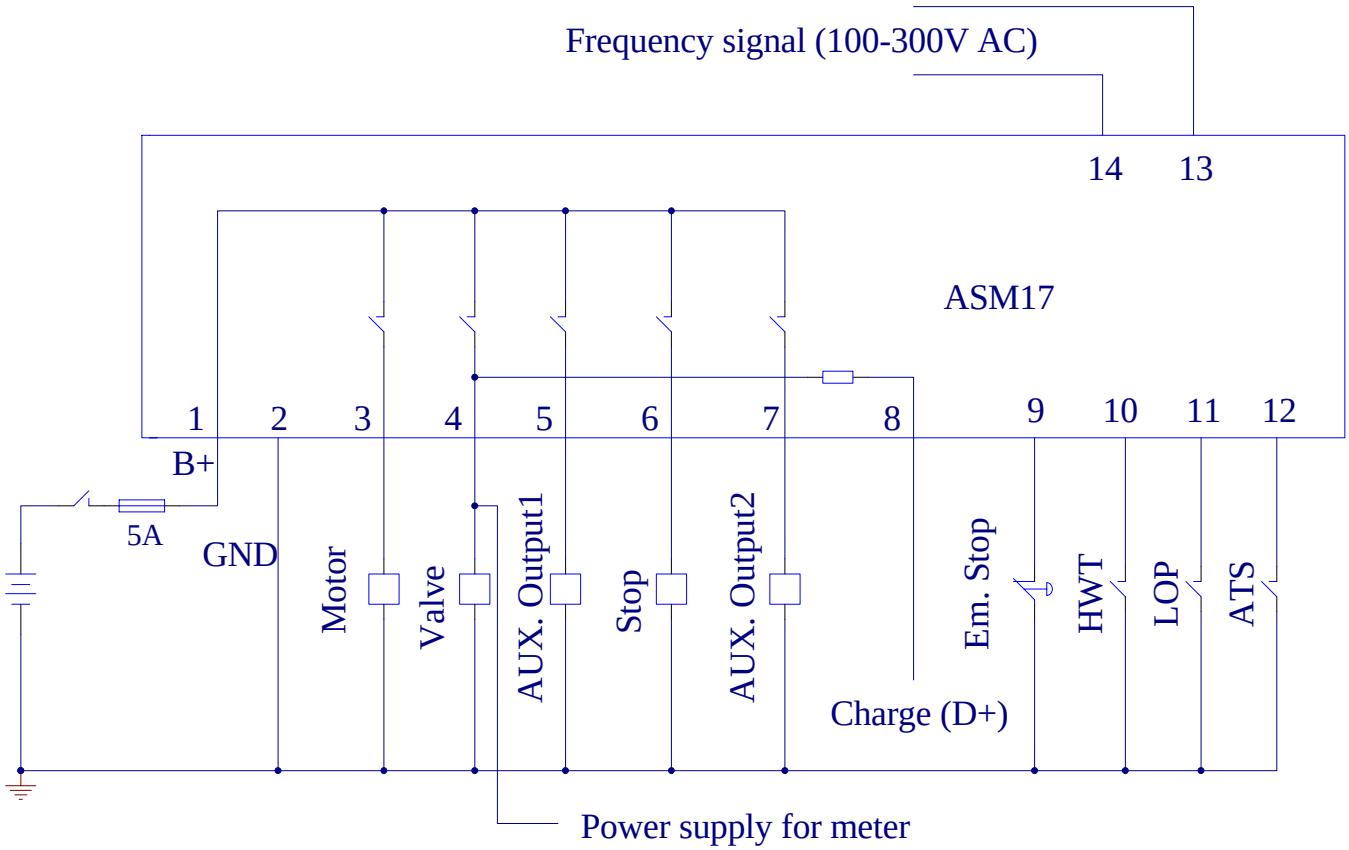

Fig. 4 Typical Diagram

7. Installation

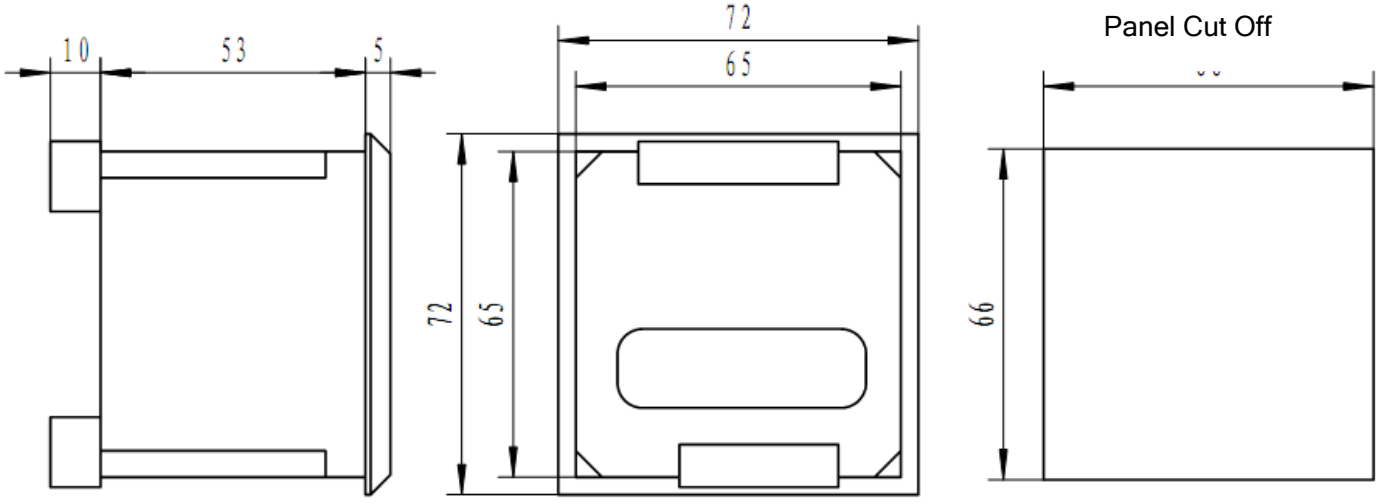

Fig. 5 Installation dimension

8. Test run

Before operation, inspections that are recommended as follows should be carried out:

a. Check and assure that all connections are correct , and that diameter of wire is suitable ;

b. The DC power supply of controller is equipped with fuse ,and the positive supply (B+) and the negative supply (GND) connected with battery are connected correctly ;

c. The emergency stop input is connected with the negative supply (GND) of the battery though the NC terminal of emergency stop button.

d. The suitable operation should be taken to prevent the engine from crank success

(such as dismantling the connection of crank motor),check and assure that it is correct , then connect with battery ,select manual mode ,the controller will execute program .

e. Press down start button ”Man”， the generator set will crank , after starts have been carried out three numbers ,the controller sends the signal that indicates crank failure ; Press key “OFF” to make the controller resetting ;

f. Restore the measure that prevents the generator set from crank success(such as restoring the connection of crank motor); Press start button “Man”again， the generator set will crank , if crank is normal , the generator set will operate from idle state (if idle has been set) to normal state . In the meantime， observe the running condition of engine as well as voltage and frequency of AC generator. If there is abnormal , stop the generator set ,then check connections of each part according to this hand book ;

g. Choose auto state thought the front panel， then break the ATS terminal from GND ,the controller switches over ATS (if it exist) to mains on load after pass through the main power normal delay , after cooling time , and then shut down to go into standby state until the ATS terminal break again;

h. After ATS terminal connect to GND again, the generator set will crank into normal running state, and then switch the ATS to generator set on load. If not, you may check the connections of ATS according to this hand book；

I. For more information, please contact our technicists in time

9. Troubleshooting

Fault Symptom	Possible measures
The controller is not work	1.Check the battery 2.Check the connection of controller 3.Check the DC fuse
Generator set stop	1.Check if the water temperature is over high 2.Check the voltage of generator 3.Check DC fuse
Controller emergency stop	1.Check if the emergency button is normal 2. Check if the negative pole of battery(GND) has been connected to emergency stop button correctly 3.Check if there is opening or short in connection
Low oil pressure alarm after crank success	Check the oil pressure sensor input and its connection
High water temperature alarm after crank success	Check the water temperature sensor input and its connection
Failure to crank	1. Check the actuator and its connection 2. Check fuel 3. Check the battery voltage 4. Check magnetic and its connection

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