Non-Addressable Sync Functional Module

DC-M9420 Installation instructions

Cautions

ELECTRICAL HAZARD: Disconnect power from equipment prior to making any internal adjustments. Service should only be performed by qualified personnel.

FRAGILE: Inspect the equipment prior to installation. Do not install the equipment if damage is apparent. Do not attempt to disassemble this equipment. If damaged, return to the supplier.

ELECTROSTATIC HAZARD: This is sensitive electronic equipment. Apply safe ant-static practices when handling this equipment.

CIRCUIT LIMITATIONS: The maximum number of detectors connected to a single detection zone is limited by the control and indicating equipment, and may be limited by local regulations.

General Description

The synchronization functional module can be used in the same area for multiple sound alarm, light alarm, sound and light alarm, and so on through the simple two wire wiring to achieve synchronization. And the sound alarm signal can be independently controlled to start or stop, the light alarm can continue to keep sync flash.

The module supports Class A and Class B wiring loop, and can switch the Class B mode to Class A mode according to the online state automatically[1], Class A need not use the EOL resistor [2].

If there is an external power supply providing to the module, the module can expand the load capacity of the FACP NAC output, maximum quantity of the DC-M9420 in the same zone is 8 pcs, please check the wiring diagram for details.

If the DC IN is reverse polarity, the DC-M9420 will be no output, if the power input change to positive polarity and the DC-M9420 in master mode, the DC-M9420 will emit synchronization power signal.

Module has an status indicator LED, if output over current or NAC OUT wiring fault, the indicator LED will change from green to red flashing[3].

Note 1：If the wire connection mode is Class A and a fault of the NAC OUT wiring loop occurred, the module will automatically switch B Class to A Class mode.
Note 2：The internal EOLR is 4.7k Ohm
Note 3: If wiring fault occurred, the LED will flash in red color every sync pulse, if the NAC OUT loop over current, the LED will keep light in red color, and the NAC OUT will no output until the over current fault is clear.

Product Specifications

The following table is a DC-M9420 parameter, that typical current does not contain the consume by EOL resistance and notification appliances,

Nominal Voltage	Regulated 24 VDC
Sync Pulse Period	990ms±20ms
Positive Polarity Current consumption	35mA @ 33V
Reverse Polarity Current consumption	5uA @ 33V
Max Ripple Peak Voltage	2V
Operating Voltage Range	Regulated 16 VDC to 33 VDC
Operating Temperature	32° to 120° F (0° to 49°C)
Humidity Range	10% to 93%, non-condensing at 100° F (38°C)
Dimensions	114mm×114mm×29mm
Connections	Terminal for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2)
Mounting Box	4 × 4 inch Double Gang Box

Port Description

DC IN: DC-M9420 main power input port, can be connected to the output of the NAC OUT FACP [1], or other independent power supply device. The DC IN input must be connected to a stable power supply.
When connected to the output terminal of the NAC OUT FACP, the forward polarity voltage will activate the module into alarm state, and the module does not work if a reverse polarity be added. The DC-M9420 total current output capability is affected by the power supply output current, unless the power output capability is greater than the maximum output power of DC-M9420.

NAC OUT： NAC OUT is a power supply with sync signal that provides power to audible devices, strobe device, or audible and visual devices. A EOL resistance must be connect to the end of the loop when the loop works in Class B mode, the EOL resistance 4.7k Ohm (supplied).
CLASS A IN： DC-M9420 supports Class A wiring mode, shown in Figure 2, the loop through the appliances and back to the EOL resistor in the DC-M9420.

SYNC IN: Synchronous signal input port, if the module is working in slave mode, its NAC OUT port is synchronization with SYNC IN port. Maximum 8-DC-M9420s connected together for multiple synchronized operation in same zone.

SYNC OUT: Sync signal output port for connecting to other DC-M9420 devices or EOL resistance.

HORN IN: The HORN IN port is connected to the positive power, the NAC OUT output sync signal and power with audible activated, else the NAC OUT output sync signal and power with audible disabled.

HORN OUT： Connect to other DC-M9420 devices or EOLR.

DC-M9420 **STATUS：** DC-M9420 detects the NAC OUT wiring fault or over current fault, then the DC-M9420 will output a signal if these faults occurred, The port is

passive, it must be accessible by a NAC Extender or other compatible equipment.

Port Specifications

DC IN：Input Power Voltage 16～33V DC， maximum ripple peak voltage 2V，maximum current more than 4A，Maximum Reverse Voltage 40V

NAC OUT：Output Voltage 16~33V DC，maximum Total Continuous current Load 4A，EOL resister 4.7k

CLASS A IN：Output Voltage 16~33V DC，maximum Continuous current Load 4A(same with NAC OUT)，Built in EOL resister 4.7k

SYNC IN、**HORN IN**：Input Voltage 16~33V，maximum ripple peak voltage 2V， maximum current consume 10mA@±33V

SYNC OUT、**HORN OUT**：Same with SYNC IN and HORN IN

DC-M9420 STATUS： Open Collector Opto-coupler，maximum voltage 30V

DIP Switch Settings

DC-M9420 setting switch is located on the back of the product, shown in Figure 1, The setting modes and functional descriptions are listed in the following table:

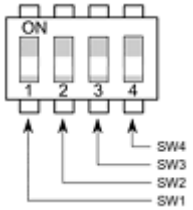

Figure 1.

SW1	SW2			Functional Description
ON	ON			Reserved
ON	OFF			Continue
OFF	ON			Temporal 3
OFF	OFF			March Time
		SW3	**SW4**	**Functional Description**
/	/	ON	/	Slave
		OFF		Master
			ON	DC (no Sync Output)
			OFF	Sync Output

Note： SW1, SW2, and SW4 will be invalid if DC-M9420 is set to Slave mode (SW3 set to ON).

Wiring

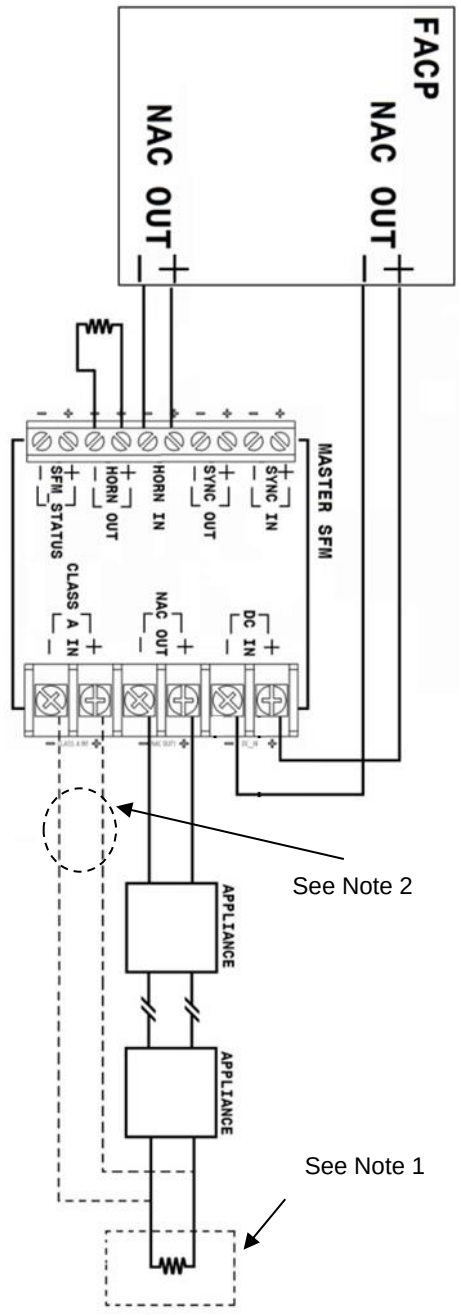

Figure 2. Typical Wiring Diagrams

Caution: DC-M9420 maximum total output capability is 4A, load current exceeds the maximum allowable current will cause DC-M9420 damage or work abnormally.

Note 1： The resistance value is determined by the FACP NAC OUT, please check the FACP installation instructions.
The EOLR should be connected after the last device has been installed.

Note 2： The EOLR need not be added if the loop wiring in Class A mode, the EOLR has built in DC-M9420.

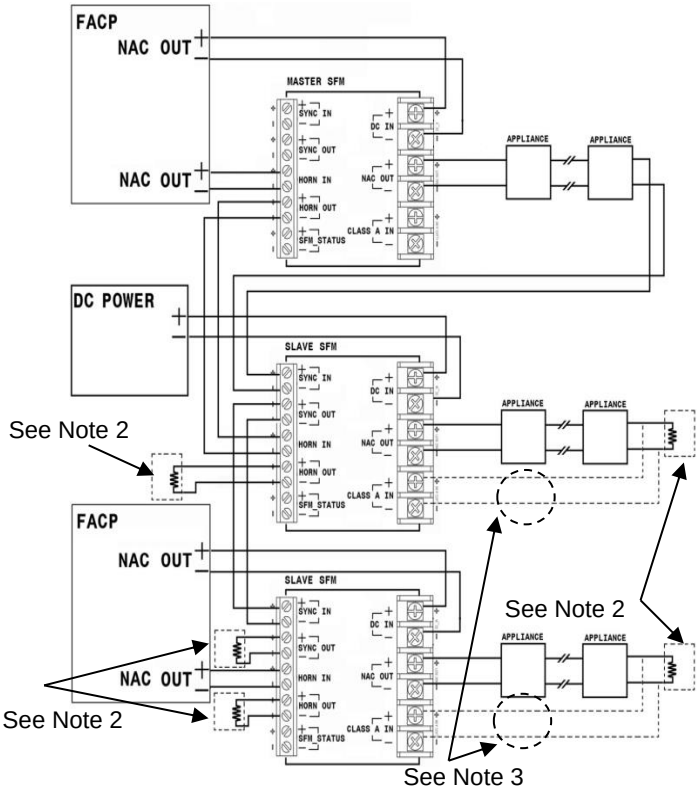

Figure 3. Multiple DC-M9420 Wiring Diagrams

Caution: DC-M9420 maximum total output capability is 4A, load current exceeds the maximum allowable current will cause DC-M9420 damage or work abnormality.

Note 1: Maximum 8- DC-M9420s connected together for multiple synchronized operation in same zone.

Note 2: The resistance value is determined by the FACP NAC OUT, please check the FACP installation instructions.
The EOLR should be connected after the last device has been installed.

Note 3: The EOLR need not be added if the loop wiring in Class A mode, the EOLR has built in DC-M9420.

Note 4: The diagrams shown in figure3 , all of the strobe devices are flashing synchronously, and the Horn or other audible devices are determined by the polarity of the HORN IN ports.

Mounting the DC-M9420

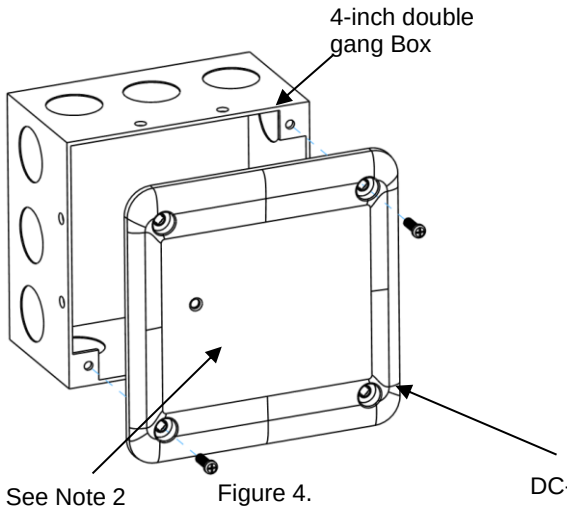

Figure 4.

DC-M9420 installed in 4-inch square electrical double gang box, the installation method shown in figure 4.

Note 1: The double Gang-Box minimum depth 2 inch.
Note 2: Working status indicator.
Note 3: Refer to the FACP Field Wiring Diagrams for detailed information on maximum wire run distances.
Note 4: *Wire type 18-12AWG.*
Note 5: Terminal T1（DC IN,NAC OUT and CLASS A IN）
Maximum tightening torque: 0.5Nm (4.4Lb.in)

Limited Warranty

GST will repair or replace the product to the original purchaser free of charge, if defective in materials or workmanship during the warranty period (24 months from the date of shipment), subject to the terms below. Please contact GST directly for a return merchandise authorization (RMA) number before returning goods under warranty. Shipment must be prepaid and GST will repair or replace the product if the failure was caused by a manufacturing defect. GST is not responsible for defects or problems as a result of conditions or applications including normal wear and tear; catastrophe; fault or negligence of any user or any party other than GST; improper installation, application, storage, maintenance, or use of products; other causes external to products; or failure to conform to any applicable recommendations of GST.

Gulf Security Technology Co., Ltd.
No. 80, Changjiang East Road, ETDZ, Qinhuangdao, Hebei, P. R. China 066004
Tel: +86 (0) 335 8502434
service.gst@carrier.com www.gst.com.cn