Medical Gas Alarm (MGA-37)

Description

The MGA-37 is an alarm unit that monitors general-purpose inputs, reading NO/NC relay contacts. These contacts can be from machinery, equipment, monitoring equipment, valves, and etcetera.

This model supports up to six channels and four dry contact inputs per channel.
A channel bypass feature is present. For example, should the user wishes to only use a single channel, set CH 1 Enable, CH 2-3-4-5-6 to Disable.

Specifications

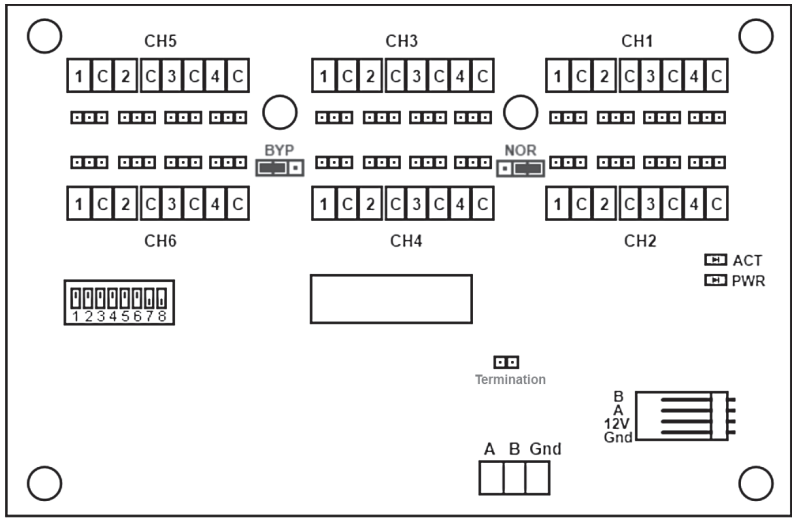
Electrical	
Operating Voltage	85 ~ 264 VAC
Operating Frequency	50 / 60 Hz
Operating Temperature	40 °C (max)
Power Consumption	10 W (typ.)

Inputs	
Number of Channels	6 (max)
Number of Inputs	24
Input Type	Dry Contact

Back up Battery	
Typical battery capacity	12V, 1.2Ah
Nominal battery charge voltage	13.8 V
Low battery detection voltage	10.1 V
Backup battery runtime	Up to 6 hours (1.2Ah)

Board Layout & Hardware Settings

Input Board



DIP Sw.	Channel	ON	OFF
1	CH1	*CH Enabled/NO*	CH Disabled/NC
2	CH2	*Enabled/NO*	Disabled/NC
3	CH3	*Enabled/NO*	Disabled/NC
4	CH4	*Enabled/NO*	Disabled/NC
5	CH5	*Enabled/NO*	Disabled/NC
6	CH6	*Enabled/NO*	Disabled/NC
7	Channel Mode	NO/NC Mode	*Bypass Mode*
8	Reserved	Reserved	Reserved

Factory Default position

There are 4 sensor inputs per channel. Each input can be individually bypassed if required. Position the jumper to BYP position to bypass.
The jumpers are located between the channel terminal blocks.

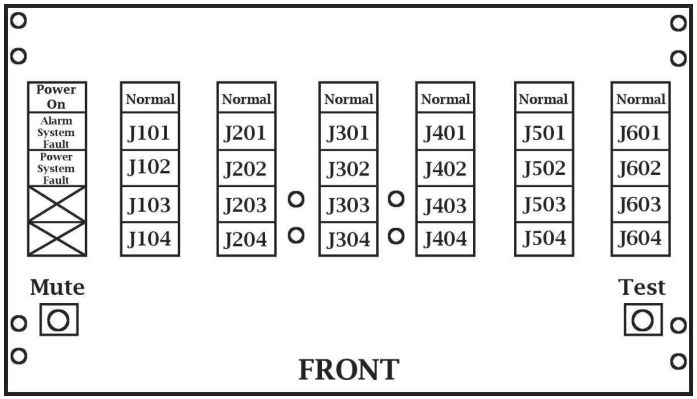
Under Bypass mode, a channel can be disabled entirely by sliding the corresponding channel's DIP switch to OFF.
Once a channel is disabled at the DIP switch, its input will be disabled regardless of the position of jumpers in that particular channel.

Under NO/NC mode, the channel affected will have be either NO or NC. To bypass, please use the jumpers near the terminal block.

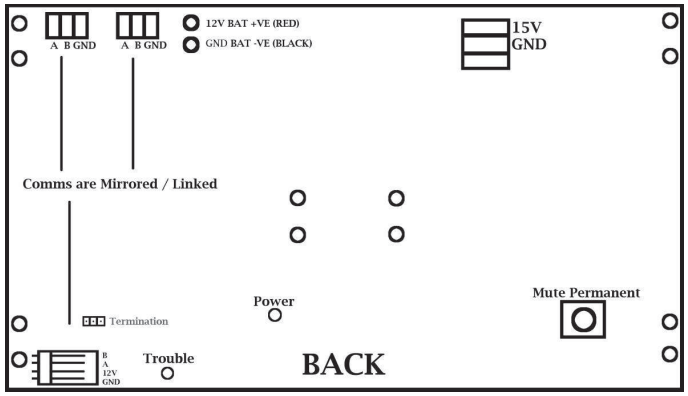
All A, B, GND connections are linked.

ACT LED flashes to indicate Activity.

LED Board



For the operations of Mute & Test, please refer to the **Operation** section. J101~J104, J201~J204, J301~J304, J401~J404, J501~J504, J601~J604 refers to the jumper locations on the Input Board. To activate J101, connect the equipment to be monitored at the terminal blocks CH1 – [1-C] at the Input Board.



Power LED is to indicate the power supply presence. Trouble LED flashes if there is an alarm. The mute permanent button is to mute indefinitely until a new fault occurs or a fault is restored.

Operation

The MGA-37 has two boards to operate correctly, Input Board & LED Board. External wiring is to be connected to the Input Board. The Input Board then communicates with the LED Board. The LED Board then relays the visual and audible indication. Additionally, it also performs battery testing & monitoring, and AC mains monitoring.

On every power up, the unit will always run a Test.

During **Normal** operation, the 'Normal' green LEDs will be lit. No red LEDs should be lit.

All **Alarm** indications are pulsed Red. For example, if there is a fault on the channel, the LED Board will pulse a Red LED at the faulted channel; if there is a mains failure, the Red LED will be pulsed at the Power System Fault location, and etcetera.
The 'Normal' green LED on the faulted channel will be disabled if there is a fault on the channel.

The **Mute** button is for operators to silence the audible alarm for up to duration of five (5) minutes or until a new fault is generated, whichever comes first. To permanently silence the audible alarm, it is strongly recommended to clear the fault; or the operator could open the casing to push the Mute Permanent button on the back side of the LED Board.
A new fault will always re-trigger the audible alarm.

The **Test** button is used for the operators to visually check for any defects in the LEDs and ensure proper audible operation of the internal buzzer. During a Test, all LEDs should light up once and the buzzer should beep several times.

Error Codes

The following table shows the relationship between the Conditions, LEDs, and Buzzer. These indications are locally generated.

Conditions	Indication	
	LED	**Buzzer**
Normal	All Green	No Beeps
Alarmed	Pulsing Red	Repeating Single Beeps
AC Fail	Power System Fault	Double Beeps between 7 second intervals
Battery Fail	Power System Fault	Triple Beeps between 7 second intervals
Communication Fail	Alarm System Fault	Triple Beeps between 7 second intervals
User Inputs		
Button Press	No Changes	Very Short Beep
Mute Button	No Changes	Double Beeps on valid button press
Permanent Mute Button	No Changes	Double Beeps on valid button press
Test Button	LEDs will run	Double Beeps on valid button press Double Beeps when test is finished