BEACONMEDÆS®

MEGA3™ Medical Gas Notification Alarm

SPECIFICATION

Medical Signaling Device

The MEGA3™ medical gas notification alarms provide master and area alarm signals as required by the latest edition of NFPA 99. The alarm is ETL listed to UL 1069 and CSA C22.2 No.205 Signal Equipment.

All field wiring and signals are self-monitoring and on a closed circuit. Fault signals activate on an open circuit.

10.2" Touch Screen LCD Display

- MEGA3™ Master, Area, and Combination Alarms have a 10.2" touch screen LCD display.
- The LCD touch screen display allows for all alarm programming and set up on site without the use of tools.
- A Green NORMAL condition on the home screen shows that there are no alarms active.
- The home page includes a location/area served badge for the alarm panel, customizable with the keyboard feature of the touch screen during the set up process.
- LCD display contains an adjustable background with many color/brightness options.
- LCD display backlight includes a "sleep mode" option via motion sensor to preserve screen life, adjustable from 5 minutes to 60 minutes. By default, the alarm sleep mode option is not active and the backlight remains on all of the time. If option is active and an alarm occurs during "sleep mode", the backlight turns on and remains on during the alarm condition.
- A full diagnostic self-test of the alarm tests the alarm signals (green and red), the LED indicators on the front panel, the audible horn, and displays all of the alarm set points. Initiate test with the touchscreen controls.

Power

- Input power to the alarm panel is 100 to 250 VAC 50/60 Hz, fused on the input side rated at 250mA, time-delayed.
- The internal power supply converts the input voltage to low voltage 24 VDC.
- All user accessible electronics and wiring utilize low voltage.
- Plastic guard protects user from high voltage wiring.

Area Alarm Digital Sensor

- Gas specific digital gas sensor contains a transducer capable of providing factory calibrated signals to the alarm panel.
- Gas sensors may be located inside the alarm rough-in (local) or outside the alarm rough-in (remote).
- When installed remotely, sensors may be located up to 1524 m (5,000 feet) from the alarm panel.
- Pipeline connections are 3/8" nominal (1/2" OD) type K copper tube and include a DISS check fitting.
- Digital gas sensors include a "heartbeat" flashing green LED light to designate that sensor is functioning correctly.

Master Alarm Panel (Up to 40 Input signals)

Area Alarm Panel (Up to 8 gas services)

Combination Alarm (Up to 10 Input signals, 6 gas services,
Up to 20 Input signals, 4 gas services,
Up to 30 Input signals, 2 gas service.)

Area Alarm Panel Configuration

- Area alarm panel monitors 1 to 8 digital gas sensor modules, installed locally or remotely.
- Display screen continuously displays the monitored gas pressures or vacuum in the piping system.
- Customize gas badges on the display for gas types, color, and language. Type in areas served per gas during set up process through the touchscreen interface.
- Program the units of measure for each gas badge to read PSI, BAR, and kPa in increments of 1 PSI, .1 BAR, and to 10 kPa respectively.
- Visual indicators for system pressure or vacuum are NORMAL (green) and individual indicators (red) for alarm fault condition such as LOW or HIGH pressure.
- Low and high alarm points are factory set per NFPA 99 standards, but remain field programmable through touch screen interface.
- The Area alarm panel contains a general fault relay for the entire panel or add an optional relay board to provide the pressure fault status for each gas.

Master Alarm

- Master alarm panel monitors up to 40 normally closed dry contact switch signals wired locally.
- Status for each signal, shown on the touchscreen, is Green under normal conditions (closed) and flashing Red under fault conditions (open).
- During a fault condition, the visual green NORMAL display turns off, the location icon flashes red, the active alarm icon flashes red, and the audible alarm sounds.
- Optional relay boards provide up to 48 dry contacts normally closed relays for connection to a building automation system. Relay ratings are 30 VAC/VDC 3A max.
- Master alarms allow for optional relay outputs tied to single or multiple alarm conditions.
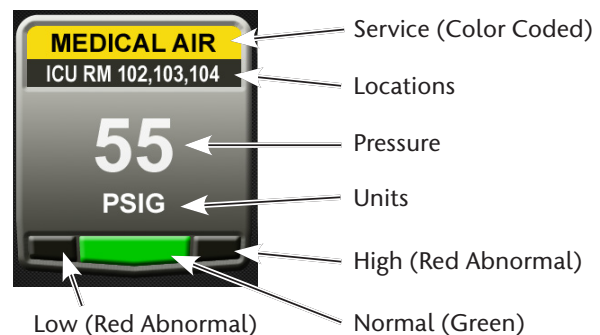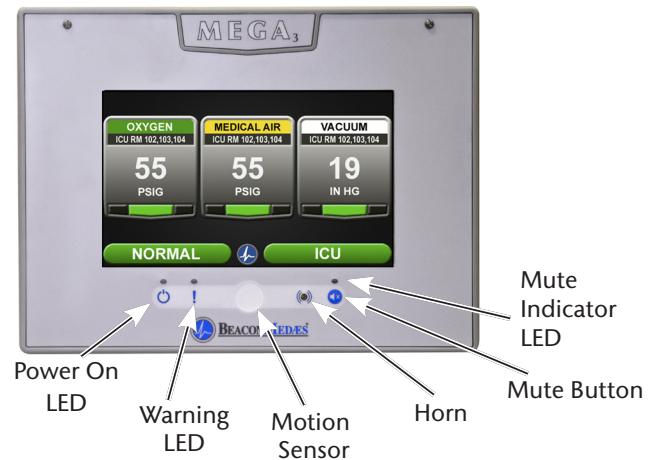
Combination Alarm

- Alarm panels monitor a combination of normally closed dry contact switch signals, digital gas sensor modules, and 4-20mA transducers.
- Alarm panel is capable of monitoring up to 30 normally closed dry contact switch signals wired locally or up to 6 digital gas sensors.

4-20mA Option

- Set up any 2 or 3 wire 4-20mA transducer with user-defined values.
- Customize badges through the touchscreen interface to display the 4-20mA readings, including color, identification, location, value settings, and alarm set points (high and low).
- Each 4-20mA monitored condition shows a separate green display when NORMAL and a red display when in ALARM.

Front Panel Indicators

- Green POWER ON LED indicator illuminates when the alarm panel is powered.
- WARNING LED alerts the user to unused signals and communication issues which are not alarm causing conditions.
- Audible HORN produces a minimum sound pressure level of 80 dBA measured at a distance of 3 ft. (.92m), adjustable to 90 dBA at 3 ft. (.92m).
- MUTE button indicator LED flashes red during an alarm condition and remains illuminated as a constant red after silencing until the fault is corrected.

Area Gas Badge

Transport & Storage

During transport and storage, do not exceed an ambient temperature range of 0°F to 130°F (-18°C to 55°C), a relative humidity range of 10% to 85% with non-condensation, and an atmospheric pressure range of 950 hPa (millibar) to 1050 hPa (millibar).
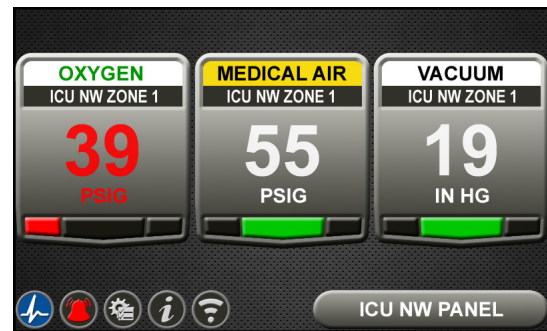
MEGA3™ Alarm: In Alarm

Active Alarm Screen

The Active Alarm screen provides detailed information about pressure or signals that are in alarm condition:
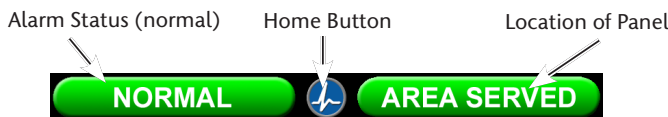
• Gas Type
• Gas Location
• Gas Pressure or Signal.

The alarm panel ships with the default response of switching to the Active Alarm screen upon an alarm condition. An option for the alarm to remain on the main screen is available through the set up process. With either option, toggling between the Main Display Screen and Active Alarm screen is possible.
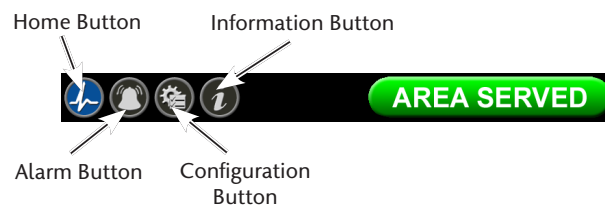

Main Display Screens in Alarm

MEGA3™ Alarm: Easy to Navigate Toolbar

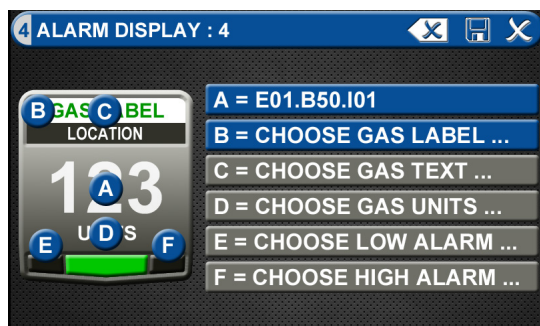Alarm Status (normal)   Home Button   Location of Panel

Normal Toolbar

The Normal toolbar is available when the alarm is operating in normal status. To switch to the Icon toolbar, touch the Home button.
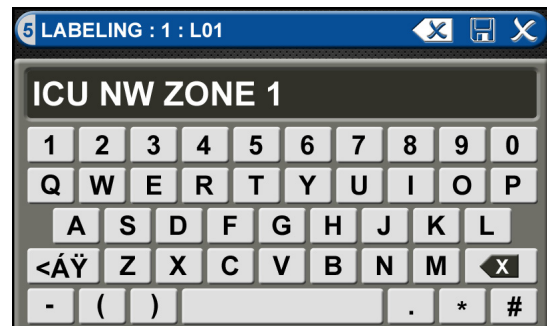

Home Button   Information Button

Alarm Button   Configuration Button

Icon Toolbar

MEGA3™ Alarm: Set Up

Area Alarm Panel: Custom Badge Set Up
• Area Alarm panels are factory set with the ordered gas badges.
• Custom configurations are possible (gas colors, gas names, units, low/high set points). Apply to gas sensors or 4-20mA inputs.

Custom Labeling
Alphanumeric keyboard functionality on touchscreen allows for custom labeling. Customize source signals, gas texts, panel locations, and areas monitored.

MEGA3™ Alarm Models

M3 - ___ - _
     B   C

Variable B Alarm Type and Size	
Allowable Value	**Description**
B00	Blank
M01	Master, 0 Inputs, 16 Relay Outputs
M10	Master, 20 Inputs
M11	Master, 20 Inputs, 16 Relay Outputs
M12	Master, 20 Inputs, 32 Relay Outputs
M13	Master, 20 Inputs, 48 Relay Outputs
M20	Master, 40 Inputs
M21	Master, 40 Inputs, 16 Relay Outputs
M22	Master, 40 Inputs, 32 Relay Outputs
A10	Area Alarm, Up to 8 Area Gases
C01	Combination, 10 Inputs, 6 Relay Outputs, Up to 3 Area Gases
C10*	Combination, 20 Inputs, Up to 6 Area Gases
C11*	Combination, 20 Inputs, 16 Relay Outputs, Up to 6 Area Gases
C12*	Combination, 20 Inputs, 32 Relay Outputs, Up to 6 Area Gases
C40	Combination, 7 Inputs, 6 Relay Outputs, 4 Inputs for 4-20mA devices
C41*	Combination, 27 Inputs, 6 Relay Outputs, 4 Inputs for 4-20mA devices
C44*	Combintation, 7 Inputs, 6 Relay Outputs, 4 Inputs for 4-20mA devices, Up to 6 Area Gases

Variable C Gas Type (Area and Combination Only)	
Allowable Value	**Description**
O	Oxygen
X	Nitrous Oxide
A	Medical Air
V	Medical Vacuum
W	WAGD
N	Nitrogen
C	Carbon Dioxide (CO2)
D	Oxygen 100 psig
F	Medical Air 100 psig
G	Carbon Dioxide 100 psig
9	Instrument Air
1	CO2-O2 (CO2 over 7%)
2	O2-CO2 (CO2 not over 7%)
3	HE-O2 (HE over 80%)
4	O2-HE (HE not over 80%)
7	Laboratory Air
8	Laboratory Vacuum
H	Helium
J	Argon
S	Surgical Air
B	AGSS
E	N2O-O2
M	Mixed Gas

Notes:

* Limitations on Combination Panels:

- C10, C11, C12 Combinations
    » 0-10 source signal Inputs used, Display up to 6 Area gases
    » 11-20 source signal Inputs used, Display up to 4 Area gases
- C41
    » 0-20 source signal Inputs used, Display up to 4 4-20mA devices
    » 21-27 source signal Inputs used, Display up to two 4-20mA devices
- C44
    » Display up to 6 gas badges maximum, combination of 4-20mA and area gases, with maximum 4 4-20mA badges.

Example: Master Alarm with 20 input signals

Example Model Number: M3-M10

Example: Area Alarm with 3 gases - Oxgyen, Medical Air and Medical Vacuum
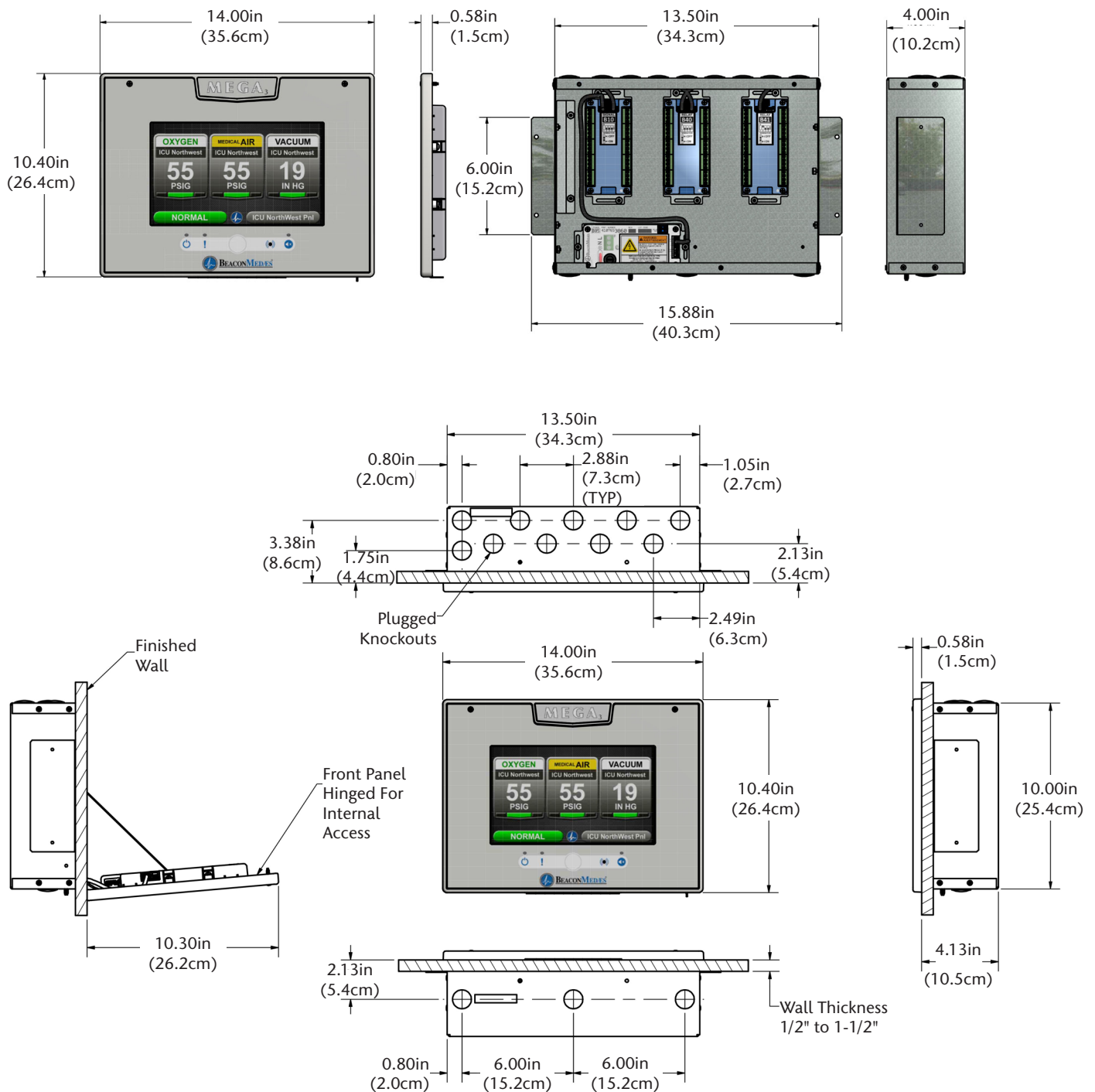
Example Model Number: M3-A10-OAV

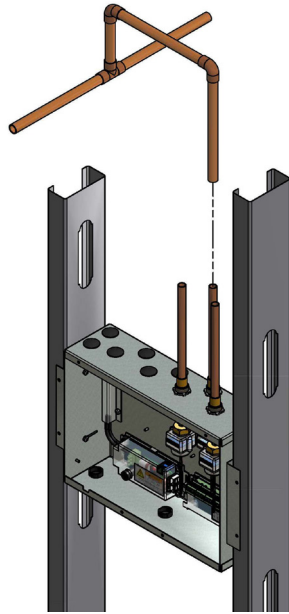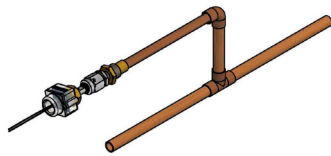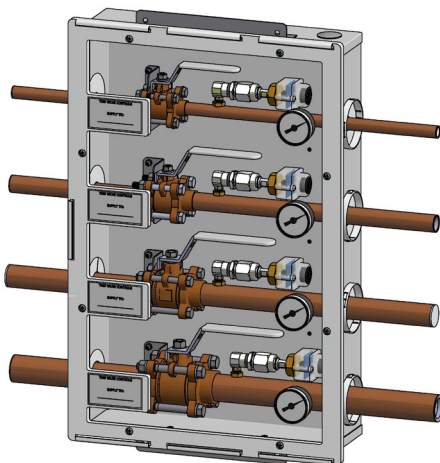*Example:* Combination Alarm with 10 Inputs, 6 Relay Outputs, and 3 gases - Oxygen, Medical Air, and Medical Vacuum

Example Model Number: M3-C01-OAV

Example: Combination Alarm with 7 Inputs, 6 Relay Outputs, 4 4-20mA devices, and 2 gases - Oxygen, Medical Air

Example Model Number: M3-C44-OA

MEGA3™ Alarm Dimensions

MEGA3™ Area Alarm Gas Sensor Installation

Local Sensor Installation

Remote Sensor Installation

Zone Valve Box Sensor Installation

(For Zone Valve Box mounting, an additional Installation Kit is required, part number 4107 4016 25 for each sensor)

MEGA3™ Alarm: Additional Components

Gas Sensor Module Options	
Part Number	**Gas Type Sensor Assembly**
4107 4016 75	Oxygen
4107 4016 76	Nitrous Oxide
4107 4016 77	Medical Air
4107 4016 78	Medical Vacuum
4107 4016 79	Nitrogen
4107 4016 80	Instrument Air
4107 4016 81	WAGD
4107 4016 82	Carbon Dioxide
4107 4016 83	Carbon Dioxide/Oxygen
4107 4016 84	Oxygen/Carbon Dioxide
4107 4016 85	Helium/Oxygen
4107 4016 86	Oxygen/Helium
4107 4016 87	Helium
4107 4016 88	Laboratory Air
4107 4016 89	Laboratory Vacuum
4107 4016 90	Oxygen 100 psig
4107 4016 91	Medical Air 100 psig
4107 4016 92	Carbon Dioxide 100 psig
4107 4016 93	Argon
4107 4016 94	AGSS
4107 4016 95	Nitrous Oxide/Oxygen

Gas Sensor Assembly includes the Gas Specific Sensor, DISS Check Fitting, and Copper Tube.

TotalAlert Infinity™ alarms are expandable with additional modules, see Operation & Maintenance Manual for options and part numbers.

Gas Specific DISS Check Fitting

7" Copper Tube 3/8" (1/2" outer diameter)

Gas Specific Sensor

LLOYD'S REGISTER · LRQA — ISO 13485
LLOYD'S REGISTER · LRQA — ISO 14001
LLOYD'S REGISTER · LRQA — OHSAS 18001