

Alarm Valve Combo Unit

TASK 1



Features:

- 2 in 1 design combines the Area Alarm and Zone Valve Box to compensate for space restrictions
- True digital, illuminated LED display is readable even in poor lighting conditions
- High/low alarm set-points are field adjustable for each gas service
- Repeat alarm is adjustable from 1 to 60 minutes or off
- Gas-specific sensor with DISS nut and nipple
- Alarm buzzer in excess of 90 decibels
- Each module is marked with an approved medical gas identification label
- Pre-mounted pull-out ring allows for ease of maintenance
- Individual microprocessor for each display and sensor module; digital sensor is mounted locally
- Dry contacts for remote monitoring of the high and low alarm

General Specifications:

The Alarm Valve Combo Unit shall be an Amico Alert-1 Series.

Each AVC shall consist of the following components: an 18 Gauge steel valve box complete with a baked white enamel finish which can house one to six shut-off ball valves with tube extensions, gas-specific sensor (DISS nut and nipple connection), a hinged gas-specific compact alarm with illuminated LED digital display and an error message for an incorrect connection, an aluminum frame and a pull-out removable window.

Affixed to the opposing sides of the box will be two adjustable steel brackets for the purpose of mounting the box to the structural support. The steel brackets shall accommodate various finished wall thicknesses between 3/8" [9.5 mm] and 1-3/16" [30 mm] and shall be field adjustable. The frame assembly shall be constructed of anodized aluminum and shall be mounted to the back box assembly by standard number #6 x 3/8" tapping screws as provided.

The digital alarm shall read from 0-250 psi [0-1,724 kPa] for pressure and 0-30" Hg [-100-0 HgkPa] for vacuum. The digital read-out shall provide a constant indication of each service being measured. It will indicate a green "NORMAL" and a red "HIGH" or "LOW" alarm condition. If an alarm occurs, the "RED" alarm light shall flash and the audible alarm (which exceeds 90 decibels) will sound. Pushing the "ALARM MUTE" button will cancel the audible alarm but the unit will remain in the alarm condition until the problem is rectified. A repeat alarm function shall, when enabled on the compact alarm module, be capable of turning on the buzzer again (after a preset time) if the fault condition has not been rectified.

Each alarm module shall be individually microprocessor based and be field adjustable. The default set point on this alarm shall be +/- 20% variation from normal condition. In the calibration mode the following parameters shall be adjustable: high/low set-points, imperial/metric units, repeat alarm enable/disable (adjustable from 1 to 60 minutes) as well as psi, kPa or Bar readout (switch selected). Set points shall be adjustable by two on-board push buttons.

Access to the shut-off valves shall be by merely pulling the ring assembly to remove the window from the frame. The window can be reinstalled without the use of tools only after the valve handles have been returned to the open position. The window shall be marked to prohibit unauthorized persons from tampering with the valves with the following silk-screen caution:

"Medical Gas Control Valves with Alarms"
"Close Valves Only in Emergency"

The valve shall be a 3 piece ball-type design with a brass forging body and a chrome-plated brass ball for sizes 1/2" to 2" [1.3 cm to 5.1 cm]. Seats shall be reinforced Teflon (PTFE) and seals Viton for 1/2" to 2" [1.3 cm to 5.1 cm]. A blow-out proof stem shall be used and the valve shall have a maximum pressure rating of 600 psi [4,137 kPa].

Valves shall be operated by a lever-type handle requiring only a quarter turn from a fully open position to a fully closed position. All valves shall be equipped with a type "K" washed and degreased copper pipe stub. Each valve will be identified for gas specification as indicated on the hinged alarm label.

Input power to the Amico Alarm Valve Combo Unit is: 115 VAC to 220 VAC, 50 to 60 Hz.

Amico products comply with NFPA 99 and CSA Z7396.1.

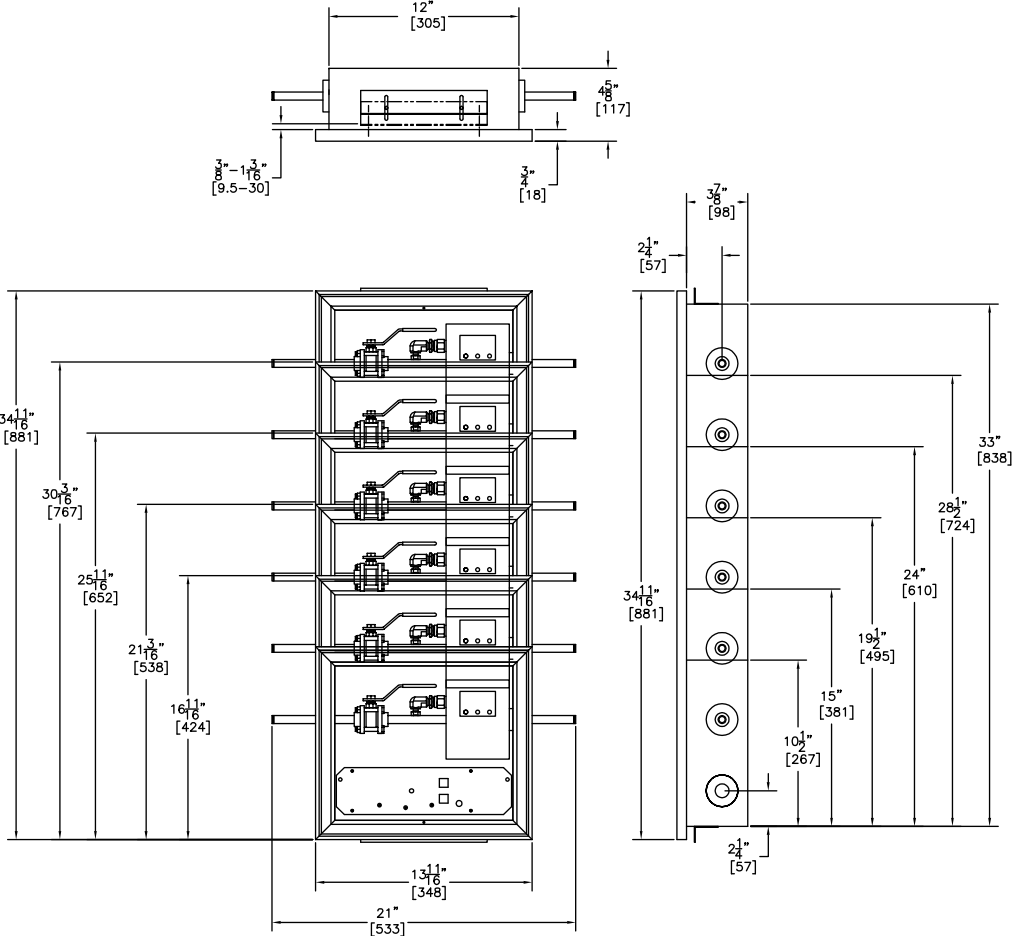
The Amico Alert-1 Alarm complies with the following electromagnetic compatibility standards: FCC Part 15 Class A and ICES-003 Class A.

Technical Specifications

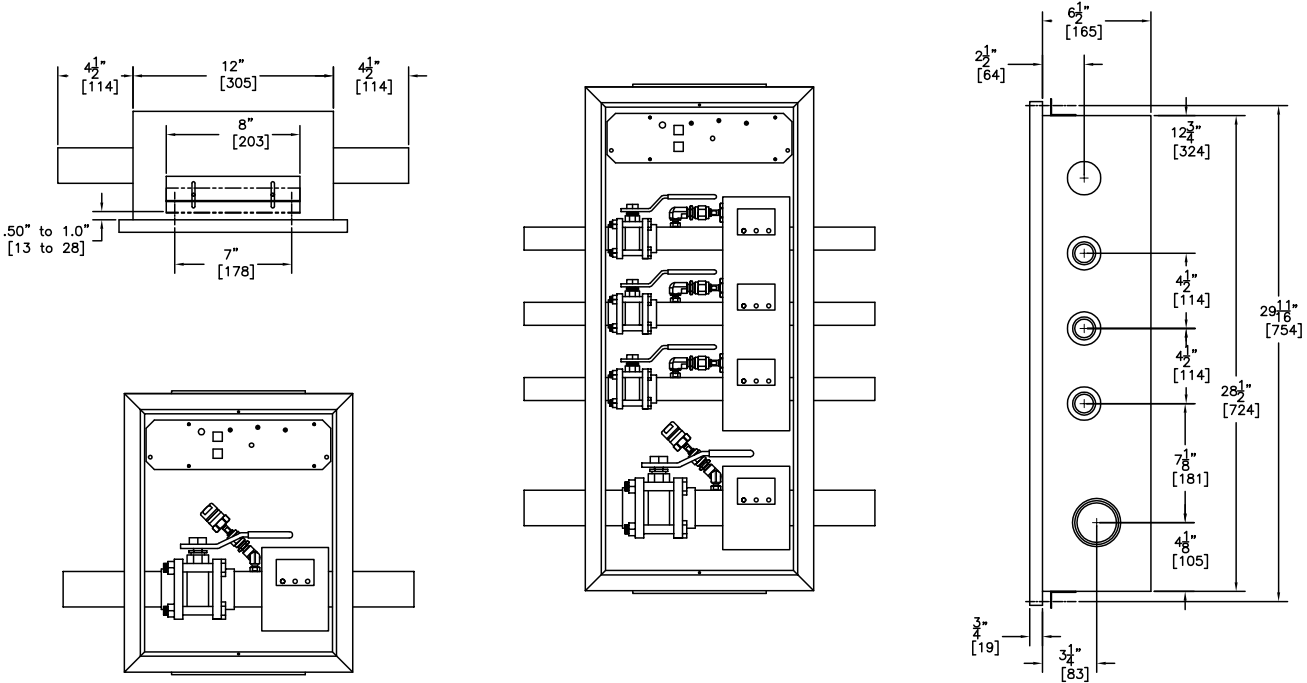


1/2" - 1-1/2" Valve Drawing

Inch
(mm)



2" Valve Drawing



AVL-XGXGXGXGXGXGXG

Replace "L" with the Language:

U	=	English (NFPA)
E	=	English (CSA/ISO)
F	=	French (CSA/ISO)
S	=	Spanish (NFPA)

The Letter "X" Defines the Valve Size:

1	=	1/2" [1.3 cm]	05
2	=	3/4" [1.9 cm]	07
3	=	1" [2.5 cm]	10
4	=	1-1/4" [3.2 cm]	12
5	=	1-1/2" [3.8 cm]	15
6	=	2" Full Port [5.1 cm]	20F

The Letter "G" Defines the Type of Gas:

O	=	Oxygen
A	=	Medical Air
V	=	MedVac
2	=	Nitrous Oxide
N	=	Nitrogen
C	=	Carbon Dioxide
W	=	WAGD (NFPA)
E	=	AGSS (ISO)
I	=	Instrument Air

NOTE:

The power supply will require 1 gang per box.

Example: English, 3 valves, 1/2" [1.3 cm] oxygen, 3/4" [1.9 cm] medical air and 1-1/4" [3.18 cm] medvac. Will be in a 4 gang box.
AVU-1O2A4V

The 1-1/2" [3.8 cm] valve will have an empty space above the valve.

Example: A box with a 1/2" [1.3 cm] oxygen, 3/4" [1.9 cm] medical air and a 1-1/2" [3.8 cm] medvac valves will require a 5 hole box not a 3 hole box.

The 2" [5.1 cm] valve will be assembled in a 6-1/2" [16.5 cm] deep box and shall accommodate up to a maximum of 4 gases. The 2" [5.1 cm] valve shall be positioned on the bottom of the assembly. Refer to 2" [5.1 cm] Valve Drawing provided on page 2.

The height measurements of the 6-1/2" [16.5 cm] valve box are the same as the 3-7/8" [9.84 cm] valve box. When comparing height measurements, consider the gap above the 2" [5.1 cm] valve.

Example: A valve box with 2" [5.1 cm], 1/2" [1.3 cm] and a power supply would be in a 3 gang 6-1/2" [16.5 cm] deep box, which would be the same height as the 4 gang 3-7/8" [9.84 cm] box.

Alarm Valve Combo Unit

TASK 2A



Features:

- 2 in 1 design combines the Area Alarm and Zone Valve Box to compensate for space restrictions
- True digital, illuminated LED display is readable even in poor lighting conditions
- High/low alarm set-points are field adjustable for each gas service
- Repeat alarm is adjustable from 1 to 60 minutes or off
- Gas-specific sensor with DISS nut and nipple
- Alarm buzzer in excess of 90 decibels
- Each module is marked with an approved medical gas identification label
- Pre-mounted pull-out ring allows for ease of maintenance
- Individual microprocessor for each display and sensor module; digital sensor is mounted locally
- Dry contacts for remote monitoring of the high and low alarm

General Specifications:

The Alarm Valve Combo Unit shall be an Amico Alert-1 Series.

Each AVC shall consist of the following components: an 18 Gauge steel valve box complete with a baked white enamel finish which can house one to six shut-off ball valves with tube extensions, gas-specific sensor (DISS nut and nipple connection), a hinged gas-specific compact alarm with illuminated LED digital display and an error message for an incorrect connection, an aluminum frame and a pull-out removable window.

Affixed to the opposing sides of the box will be two adjustable steel brackets for the purpose of mounting the box to the structural support. The steel brackets shall accommodate various finished wall thicknesses between 3/8" [9.5 mm] and 1-3/16" [30 mm] and shall be field adjustable. The frame assembly shall be constructed of anodized aluminum and shall be mounted to the back box assembly by standard number #6 x 3/8" tapping screws as provided.

The digital alarm shall read from 0-250 psi [0-1,724 kPa] for pressure and 0-30" Hg [-100-0 HgkPa] for vacuum. The digital read-out shall provide a constant indication of each service being measured. It will indicate a green "NORMAL" and a red "HIGH" or "LOW" alarm condition. If an alarm occurs, the "RED" alarm light shall flash and the audible alarm (which exceeds 90 decibels) will sound. Pushing the "ALARM MUTE" button will cancel the audible alarm but the unit will remain in the alarm condition until the problem is rectified. A repeat alarm function shall, when enabled on the compact alarm module, be capable of turning on the buzzer again (after a preset time) if the fault condition has not been rectified.

Each alarm module shall be individually microprocessor based and be field adjustable. The default set point on this alarm shall be +/- 20% variation from normal condition. In the calibration mode the following parameters shall be adjustable: high/low set-points, imperial/metric units, repeat alarm enable/disable (adjustable from 1 to 60 minutes) as well as psi, kPa or Bar readout (switch selected). Set points shall be adjustable by two on-board push buttons.

Access to the shut-off valves shall be by merely pulling the ring assembly to remove the window from the frame. The window can be reinstalled without the use of tools only after the valve handles have been returned to the open position. The window shall be marked to prohibit unauthorized persons from tampering with the valves with the following silk-screen caution:

"Medical Gas Control Valves with Alarms"
"Close Valves Only in Emergency"

The valve shall be a 3 piece ball-type design with a brass forging body and a chrome-plated brass ball for sizes 1/2" to 2" [1.3 cm to 5.1 cm]. Seats shall be reinforced Teflon (PTFE) and seals Viton for 1/2" to 2" [1.3 cm to 5.1 cm]. A blow-out proof stem shall be used and the valve shall have a maximum pressure rating of 600 psi [4,137 kPa].

Valves shall be operated by a lever-type handle requiring only a quarter turn from a fully open position to a fully closed position. All valves shall be equipped with a type "K" washed and degreased copper pipe stub. Each valve will be identified for gas specification as indicated on the hinged alarm label.

Input power to the Amico Alarm Valve Combo Unit is: 115 VAC to 220 VAC, 50 to 60 Hz.

Amico products comply with NFPA 99 and CSA Z7396.1.

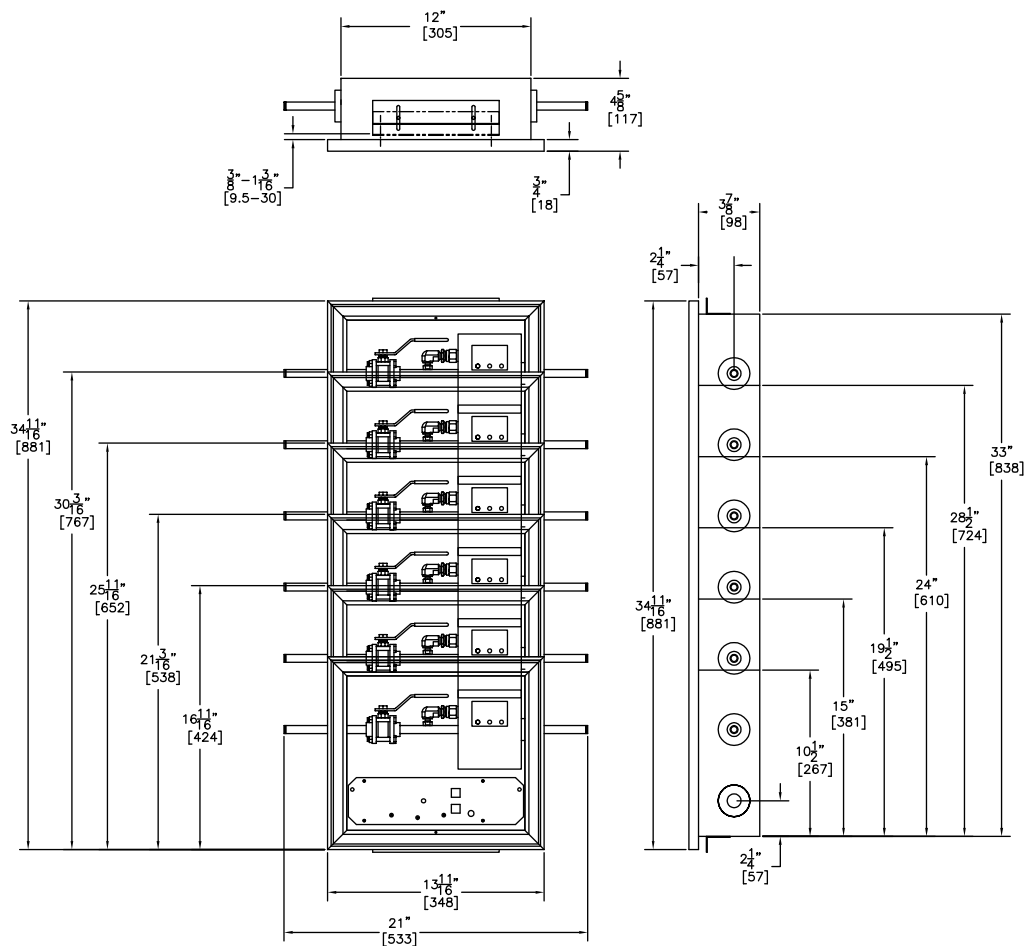
The Amico Alert-1 Alarm complies with the following electromagnetic compatibility standards: FCC Part 15 Class A and ICES-003 Class A.

Technical Specifications

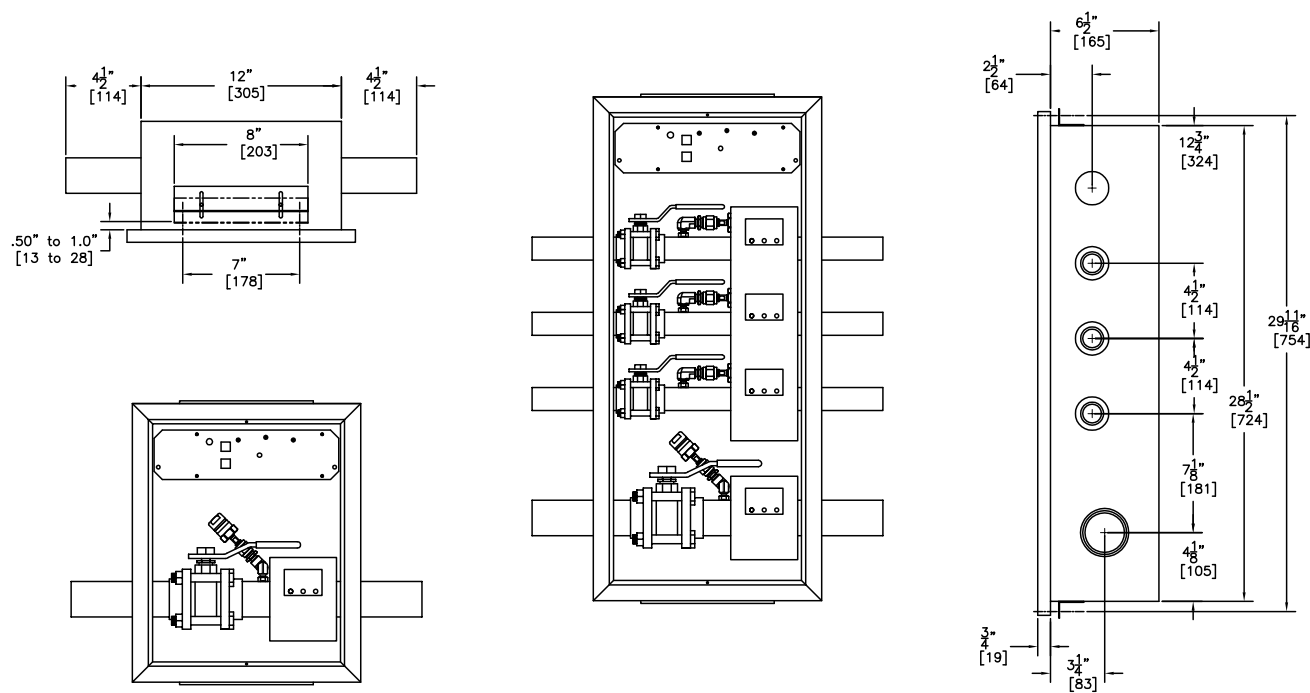


1/2" - 1-1/2" Valve Drawing

Inch
(mm)



2" Valve Drawing



AVL-XGXGXGXGXGXGXG

Replace "L" with the Language:

U	=	English (NFPA)
E	=	English (CSA/ISO)
F	=	French (CSA/ISO)
S	=	Spanish (NFPA)

The Letter "X" Defines the Valve Size:

1	=	1/2" [1.3 cm]	05
2	=	3/4" [1.9 cm]	07
3	=	1" [2.5 cm]	10
4	=	1-1/4" [3.2 cm]	12
5	=	1-1/2" [3.8 cm]	15
6	=	2" Full Port [5.1 cm]	20F

The Letter "G" Defines the Type of Gas:

O	=	Oxygen
A	=	Medical Air
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2	=	Nitrous Oxide
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C	=	Carbon Dioxide
W	=	WAGD (NFPA)
E	=	AGSS (ISO)
I	=	Instrument Air

NOTE:

The power supply will require 1 gang per box.

Example: English, 3 valves, 1/2" [1.3 cm] oxygen, 3/4" [1.9 cm] medical air and 1-1/4" [3.18 cm] medvac. Will be in a 4 gang box.
AVU-1O2A4V

The 1-1/2" [3.8 cm] valve will have an empty space above the valve.

Example: A box with a 1/2" [1.3 cm] oxygen, 3/4" [1.9 cm] medical air and a 1-1/2" [3.8 cm] medvac valves will require a 5 hole box not a 3 hole box.

The 2" [5.1 cm] valve will be assembled in a 6-1/2" [16.5 cm] deep box and shall accommodate up to a maximum of 4 gases. The 2" [5.1 cm] valve shall be positioned on the bottom of the assembly. Refer to 2" [5.1 cm] Valve Drawing provided on page 2.

The height measurements of the 6-1/2" [16.5 cm] valve box are the same as the 3-7/8" [9.84 cm] valve box. When comparing height measurements, consider the gap above the 2" [5.1 cm] valve.

Example: A valve box with 2" [5.1 cm], 1/2" [1.3 cm] and a power supply would be in a 3 gang 6-1/2" [16.5 cm] deep box, which would be the same height as the 4 gang 3-7/8" [9.84 cm] box.

Indicator Panel Box NFPA



Project

General Specifications:

Zone indicator panel boxes shall be an Amico Alert-1 series.

Each recessed zone indicator panel box shall consist of the following components: A steel box which can house two to seven zone shut-offs with tube extensions, an aluminum frame and a pull-out removable window. Gauges are included.

The indicator panel box shall be constructed of 18 gauge steel complete with a baked white enamel finish. Affixed to the opposite sides of the box will be two adjustable steel brackets for the purpose of mounting the box to the structural support. The steel brackets shall accommodate various finished wall thicknesses between 3/8" (9.5 mm) and 1-3/8" (30 mm) and shall be field adjustable.

The frame assembly shall be constructed of anodized aluminum and shall be mounted to the back box assembly by standard #6 * 3/8" tapping screws as provided. The removable front shall consist of a window with a pull-out ring pre-mounted to the center of the window.

Access to the zone shut-offs shall be by merely pulling the ring assembly to remove the window from the frame. The window can be reinstalled without the use of tools only after the shut-off handles have been returned to the open position.

The window shall be marked to prohibit unauthorized people from tampering with the zone indicator panel with the following silk-screen caution:

"MEDICAL GAS CONTROL VALVES CLOSE ONLY IN EMERGENCY"

The zone shut-offs shall be 3 piece, ball-type design with a brass forging body and a chrome plated, brass ball for sizes 1/2" to 2". Ball seats, stem seals and stem washer shall be reinforced Teflon (PTFE), with Viton stem and flange O-rings. A blow-out proof stem shall be used and the zone shut-off shall have a maximum pressure rating of 600 psi (4,137 kPa). All zone shut-offs materials shall be compatible with medical gases or vacuum service to 29" Hg (98.205 kPa).

Zone shut-offs shall be operated by a lever-type handle requiring only a quarter turn from a fully open position to a fully closed position.

All zone shut-offs shall be equipped with type "K" washed and degreased copper pipe stub extensions of sufficient length to protrude beyond the sides of the box.

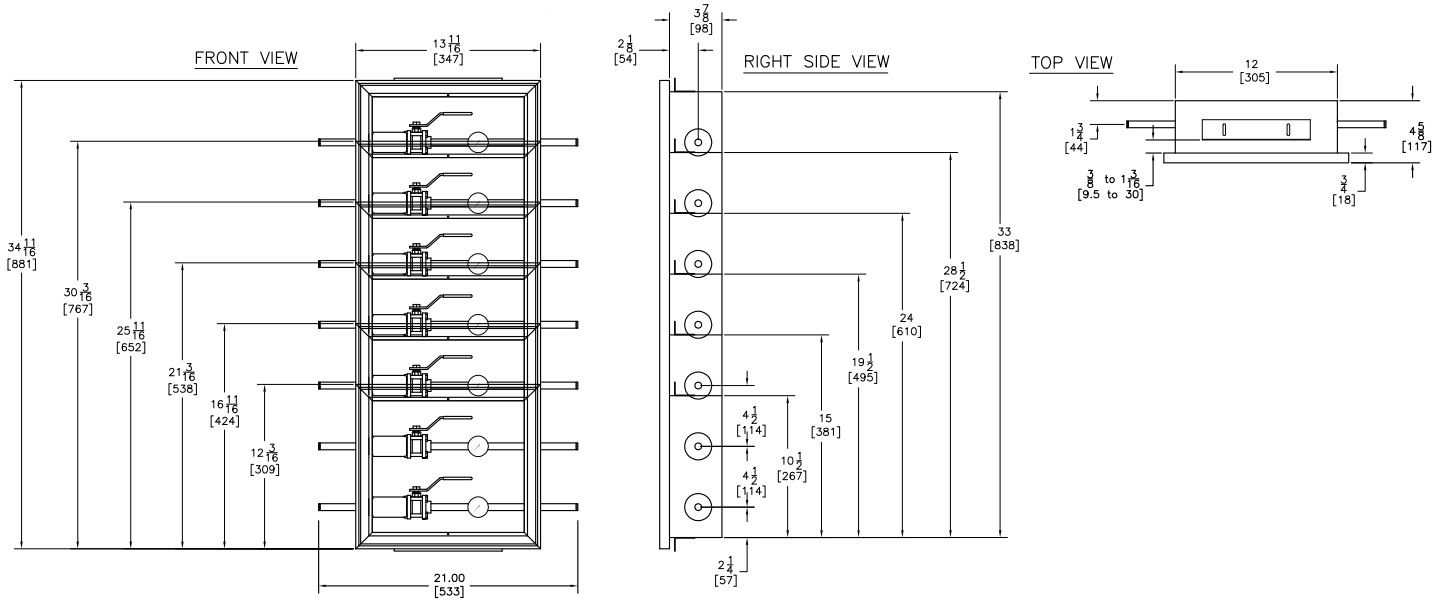
Each shut-off shall be supplied with an identification bracket which shall be riveted to the zone indicator panel box for the purpose of applying an approved medical gas identification label. A package of labels shall be supplied with each Zone Indicator Panel box assembly for application by the installer.

Amico products comply with NFPA 99.

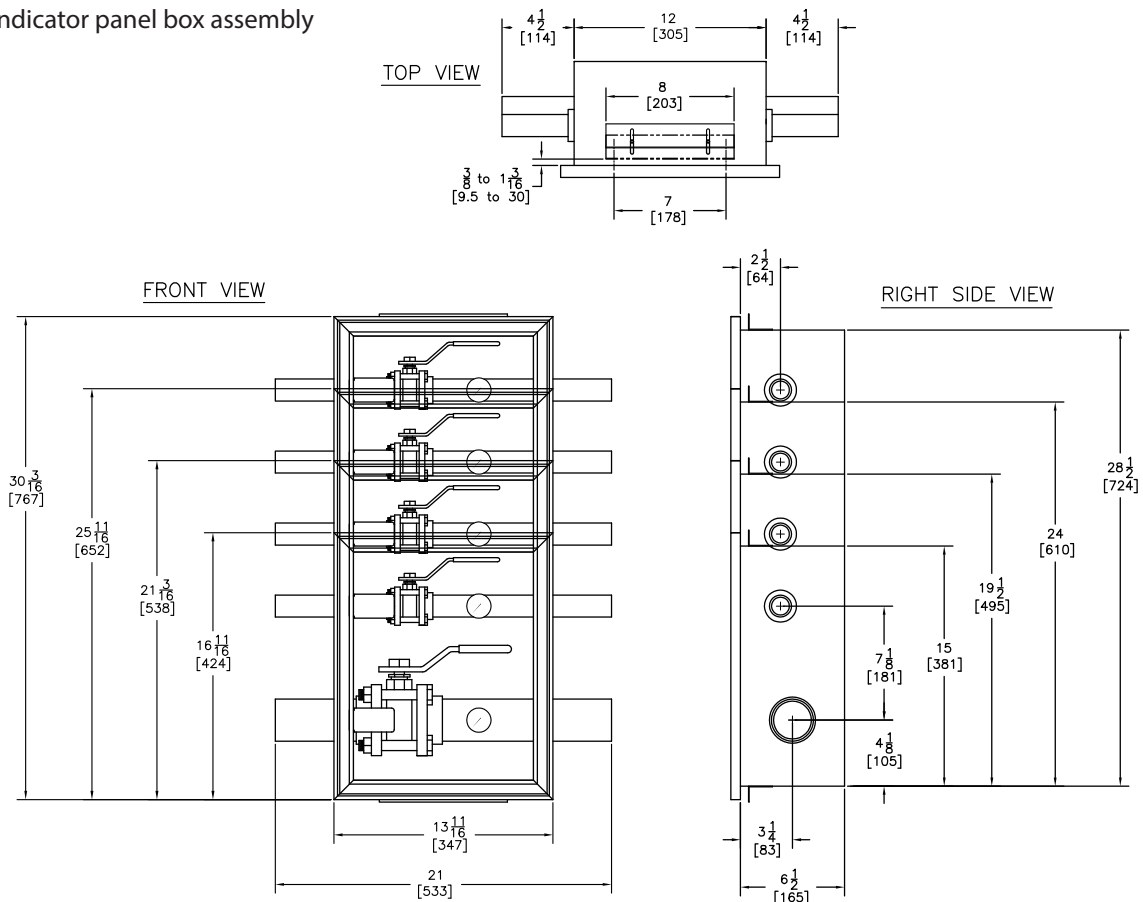
Technical Specifications

For 1/2" to 1 1/2" zone indicator panel box assembly

Inch
[mm]



For 2" zone indicator panel box assembly



Model Numbers

ZIL-MXXXXXXX

The Letter "L" Defines the Language:

U = English (NFPA)

S = Spanish (NFPA)

M = Monitoring (with gauge)

Replace "X" with the Size Required:

1/2"	= 1
3/4"	= 2
1"	= 3
1-1/4"	= 4
1-1/2"	= 5
2"	= 6

Example:

Triple box with gauge; English (NFPA); 1/2", 3/4" and 1-1/4" zone shut-off; Monitoring = **ZIU-M124**

NOTES:

All zone shut-offs are full port.

1/2" to 1-1/2" shut-offs in a multiple zone indicator panel box will be in a 3-7/8" deep box.

Shut-offs 1-1/2" and larger will have an empty space above the shut-off.

Please refer to the "Single Zone Indicator Panel Assembly" spec sheet for 2-1/2" and 3" assemblies.

Example:

A box with a 1/2", 3/4" and 1-1/2" shut-off will require a 4 hole box not a 3 hole box.

The 2" shut-off will be assembled in a 6-1/2" deep box and shall accommodate up to a maximum of 5 gases.

The 2" shut-off shall be positioned on the bottom of the assembly. Refer to 2" zone indicator box assembly drawing on page 2.

Master Alarm Microprocessor Based



Features:

- Microprocessor based with an individual microprocessor on each module
- A green LED indicator for normal and a red LED indicator for abnormal conditions
- Up to 60 functions in a standard configuration
- LED Alarm lights utilized for long life
- Area Alarm Modules can be intermixed with Master Alarm Modules
- Maintenance mode for ease of trouble shooting
- Self diagnostic circuitry for added reliability
- Modules can be upgraded in the field to interface to a building management system or slave alarm
- Alarm buzzer in excess of 90 decibels
- All modules to be mounted on a hinged frame for easy accessibility
- Last alarm flashes, acknowledged alarm shows continuous RED signal
- Repeat alarm adjustable 1, 12, 24 hours or off
- Dry contacts for remote monitoring of high and low alarms and the distance between the master module and source equipment can be up to 10,000 ft. (3,000 m)

General Specifications:

The Master Alarm system shall be an Amico Alert-2 series, complete with a five-year warranty.

Each module shall be microprocessor based and field adjustable. Each signal contains a green LED indicator for normal and a red LED indicator for abnormal conditions. When a fault occurs, the green LED turns off and the red LED illuminates, and the audible alarm sounds. The red LED flashes until the front panel alarm mute button is pressed. After the alarm mute button is pressed, the red LED remains illuminated but does not flash. The red indicator automatically turns off and the green LED illuminates when the fault is corrected. A repeat alarm function shall, when enabled, be capable of turning on the buzzer again, after a preset time, if the fault condition has not been rectified.

A maintenance mode shall, when enabled, latch the alarms, requiring a reset after the alarm condition has been rectified. This is to assist in tracking down wiring problems or faulty field devices. The master alarm shall identify the last alarm condition by flashing, while the already acknowledged alarm shows a continuous red signal.

A repeat alarm function shall, when enabled, be capable of turning on the buzzer again, after a preset time, if the fault condition has not been rectified.

Each module shall handle 10 functions and up to 6 modules can be accommodated per standard box for a total of 60 functions. Master alarms shall be modular in construction and shall be capable of adding extra modules in the field.

The Alarm system shall be a closed circuit self monitoring type. A green "POWER" light shall provide indication that the unit is energized. In addition "TEST" and "ALARM MUTE" buttons shall be easily accessible to operate and test the unit.

Every module shall be field upgradable to allow for interfacing to a building management system with the addition of an add-on circuit board which plugs into the master module.

The box shall be fabricated from 18 gauge [1.3 mm] steel and the box mounting brackets shall be adjustable to accommodate for different thickness of the wall.

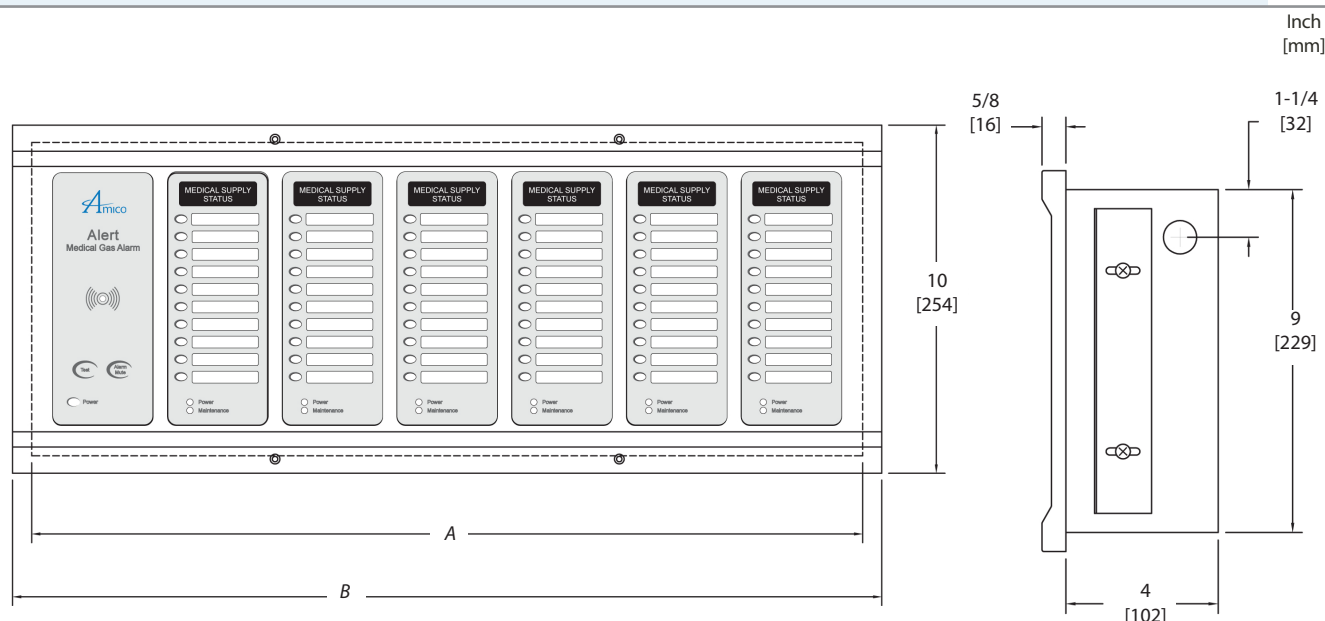
Input power to the Amico Alert-2 alarm is: 115 VAC to 220 VAC, 50 to 60 HZ.

The alarm is UL Listed. Amico products comply with NFPA-99, CSA Z7396.1 and CSA Z305.1.

The Amico Alert-2 Alarm complies with the following electromagnetic compatibility standards: FCC Part 15 Class A and ICES-003 Class A.

Project

Technical Specifications



Number of Display Modules	A	B	Gang
1 module	7 (178)	8 (203)	2
From 1 to 2 modules	11 (272)	12 (305)	3
From 1 to 3 modules	14 (356)	15 (381)	4
From 1 to 4 modules	17 (439)	18 (465)	5
From 1 to 6 modules	24 (610)	25 (635)	7

	10 Pts	20 Pts	30 Pts	40 Pts	50 Pts	60 Pts
A2M	9 lbs	9.5 lbs	11 lbs	17 lbs	19 lbs	21 lbs



10 functions =
A2M-E-10
2 gang back box



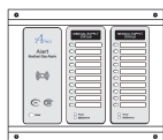
30 functions =
A2M-E-30
4 gang back box



10 functions =
A2M-E-10
3 gang back box



40 functions =
A2M-E-40
5 gang back box



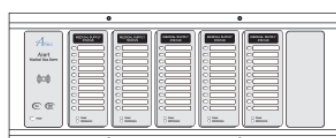
20 functions =
A2M-E-20
3 gang back box



40 functions =
A2M-E-40
7 gang back box



10 functions =
A2M-E-10
4 gang back box



50 functions =
A2M-E-50
7 gang back box



20 functions =
A2M-E-20
4 gang back box



60 functions =
A2M-E-60
7 gang back box

Model Numbers

C = Conversion

A2M(C)-L-XX

The Letter "L" Defines the Language:

E = English (CSA/NFPA)
F = French (CSA)
S = Spanish (NFPA)

The Letters "XX" Represents the Number of Functions

Distributed By:

Example: 2 Modules, English (20 Functions) = A2M-E-20

NOTE: Please specify the gang back box on each alarm.

Amico Corporation 85 Fulton Way, Richmond Hill, ON L4B 2N4, Canada | 71 East Industry Court, Deer Park, NY 11729, USA
Toll Free Tel: 1.877.462.6426 | Toll Free Fax: 1.866.440.4986 | Tel: 905.764.0800 | Fax: 905.764.0862

Dome Loaded Manifold NFPA



Features:

- Fully automatic with dual line regulators
- Input power 110 VAC to 240 VAC, 50 to 60 HZ
- Digital display noticeable even in poorest of lighting conditions
- 3/4" isolation valve for supply line
- Includes wall mounting bracket
- Removable cabinet enclosure made easy for easy installation and service
- Manifold complies with NFPA 99

General Specifications:

The Manifold shall be a fully automatic type and shall switch from "Bank in Use" to "Reserve Bank" without fluctuation in the final line pressure.

After the switchover, the "Reserve Bank" shall then become the "Bank in Use" and the "Bank in Use" shall become the "Reserve Bank." The control panel includes a line gauge, two bank gauges and incorporates six LED's: two green for "Bank in Use," two yellow for "Bank Ready" and two red for "Bank Empty" on the front of the cabinet. The manifold consists of two bank regulators (dome –bias) used to reduce the cylinder pressure to the two line regulators which in turn controls the final line pressure. The manifold has an intermediate and line relief valve that is internally connected to a common vent port, terminating into a 1/2" FNPT pipe.

The unit shall be compact, measuring 19" high x 17" wide x 9" deep.

NOTES

- The manifold shall be equipped with a 3/4" outlet shutoff valve. The valve comes complete with a 3/4" type "K" 6-3/4" [172mm] long pipe extensions and 1/8" port for an optional pressure switch.
- The header bars shall be equipped with high pressure shutoff valves outside the cabinet to allow for emergency isolation of the header bars. The header bar shall incorporate integral check valves for each station.
- The manifold is equipped with pressure transducers, which sends information to the main circuit board for operation of the fail-safe relay which transmits a remote signal to the master alarm or buzzer.
- The header bar mounting brackets are only supplied with more than 10 cylinders, for a staggered header bar, and more than 4 cylinders for a straight header bar.
- The Manifold cabinet has a NEMA-1 rating for general purpose use.
- Optional heaters are available for Nitrous Oxide and Carbon Dioxide manifolds.
- **The flow capacity of a nitrous oxide and carbon dioxide manifold depends upon the environmental conditions at the installation site and the number of cylinders in service. Installing them in a location that exposes it to an ambient temperature below 32°F (0°C) is not recommended.**
- The manifold shall be installed in accordance with the requirements stated by NFPA 99, CGA, and all applicable local codes. Amico recommends the control cabinet be located at an installation site protected from rain, snow and direct sunlight.
- CGA gas specific header bar with integral check valves and cylinder pigtail assemblies (to be ordered separately)

FLOW CAPACITY

Oxygen, Medical Air, Nitrous Oxide and Carbon Dioxide:

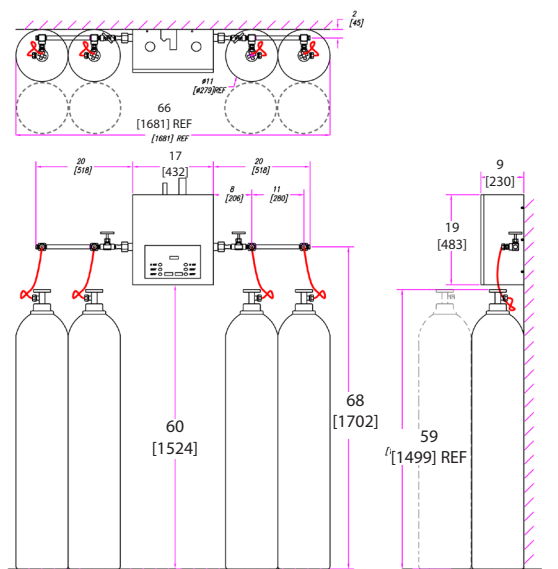
4,500 SCFH [2,123 L/min]

Nitrogen and Instrument Air:

6,000 SCFH [2,831 L/min]

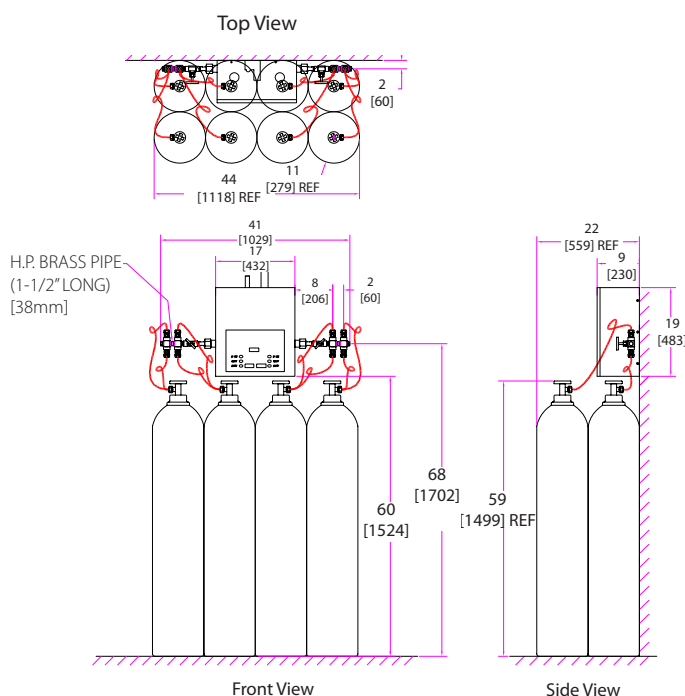
Technical Specifications

Figure 1: Standard Set-up



Standard 2x2 Dome Loaded Manifold with Straight Header Bars Layout

Figure 2: Optional Set-up

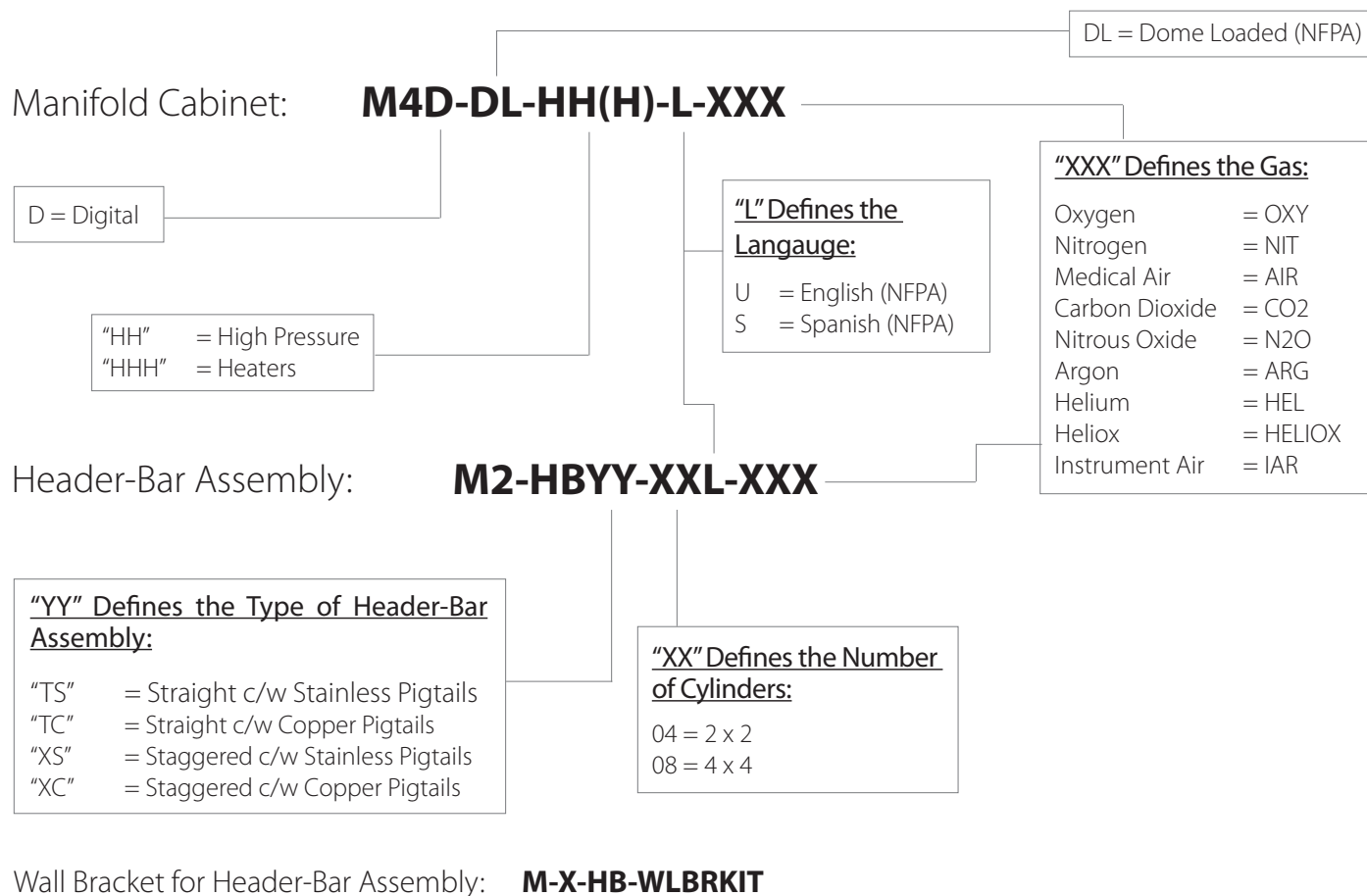


Inch
[mm]

Standard Setup Overall Length

No. of Cylinders	Overall Length
2	42 [1067]
4	42 [1067]
6	64 [1626]
8	64 [1626]
10	86 [2184]
12	86 [2184]
14	108 [2743]
16	108 [2743]
18	130 [3302]
20	130 [3302]

Model Numbers



Distributed By:

