
508 SERIES MICROPHONE STATIONS

GENERAL DESCRIPTION

The 508 Series Microphone Stations are advanced design, full featured microphone stations with a large array of options. Much of its versatility can be attributed to its on-board microcontroller. The 508 Series microphone stations provide an audio and control interface, with increased control capability due to the on-board microcontroller, between IED's hand held, and gooseneck microphones, and IED's 500ACS, 8000 Series TIPS™, and 2000 Series UDAPS™ systems.

All 508 Series microphone stations, with the exceptions of the 508T Telephone Interface and the 508BIO, include a 12 button keypad, a 2 line X 16 character LCD display, and busy and ready LED indicators. The LCD display is used to indicate and prompt the user for information, and to show progress. The red Busy LED indicates when the portion of the system requested is in use. The green Ready LED indicates when the desired portion of the system is available for an action or an announcement.

The audio section of the 508 Series microphone stations includes a balanced differential line receiver, a compressor, and a balanced line driver output which is capable of driving extremely long lines of shielded twisted pair cable without significant high frequency rolloff.

A test oscillator is built into the microphone station. It can be switched into the audio section, either by a specific keypad entry at the microphone station or by an entry at the main computer.

Since all of the functions are entered from the keypad, 508 Series microphone stations are not limited to four or five selections. They can, if desired, address any selection or function of which the system with which they are interfaced is capable.

If interfaced with a 500ACS system with a Flight Announcement System (FAS), all the flight announcement information can be entered using the keypad and prompts on the LCD display.

The 508 Series telephone interface station does not include a keypad or an LCD display, but it interfaces with and allows announcements and control functions from any tone type (DTMF) telephone. All keypad functions can be emulated using a tone type (DTMF) telephone.

All 508 Series rack mount microphone stations include an RS422 interface and the capability of adding a 508I 64 logic input card and a 508O 64 logic output card. With appropriate software installed, the RS422 electronics can interface with and control the 4000 Series Automatic Mixer System, the 564 Remote Control System, and/or other microphone stations. Control can be either direct or through a main computer system.

The 508I and 508O options, when included, are used to detect external switch closures and convert them to logic signals which serve as indications to the microcontroller of external events. The 508O can also be used to drive indicating devices such as LEDs, or to switch light loads such as relays.

All of the 508 Series microphone stations, except for the all of the desktop and all of the gooseneck type microphone versions, have the capability of functioning with any combination of up to three external 500HH Hand Held Microphones in addition to the local



microphone. The expansion microphones can be located up to 1000' away, interfacing to either a locking door or flush mount expansion plate. When expansion units are used, all microphones in the group operate on a priority basis. When the push-to-talk button is pressed on one microphone, the other microphones in the group are locked out until that push-to-talk button is released. The push-to-talk buttons on all units in the group are programmed for the same function. If the operator in a group needs to perform a different function, he/she must go to the four button station to perform any of the other four functions.

Custom panels can be designed with room layouts or special switch/LED configurations for airport information systems or automatic mixer room combining systems. Consult the factory for more information on these panels and systems.

Flush Mount Microphone Stations

Two different flush mount configurations of the 508 Series microphone stations are available, with three different microphone type options.

The 508VFM is the vertical version which has four microphone inputs and can be used with one to four microphones. One microphone can be connected directly to the microphone station, or, if desired, it can be located remotely, up to 1000' away, by using an expansion station. The additional microphones, if used, are connected to expansion stations which also can be mounted up to 1000' away from the main station.

The 508VFM microphone station has the capability of being locally powered and of having bidirectional serial communications via an RS422 port.

The electronics are mounted on a Lexan™ faceplate which has a velvet textured front surface. The faceplate fits a standard 6-gang back box. The orientation of the faceplate and back box is vertical.

The 508HFM is electrically and operationally similar to the 508VFM. It differs from the 508VFM in that the orientation of its faceplate and back box is horizontal.

All four versions of the flush mount microphone stations can be supplied with any of the following two microphone options:

500HH Hand held microphone
500G Gooseneck Microphone

All four versions of the 508 Series flush mount microphone stations can be mounted flush to a wall or counter, or surface mounted to a wall or counter.

In flush mounted applications for new construction, all four versions of the 508 Series flush mount microphone stations will mount in a standard 6-gang back box, RACO box #954 or 955 with raised device cover #825, or equivalent. The tabs must be removed as shown in figure 13. IED provides the 508FBB Flush Mount Back Box for this application. See figure 10.

In surface mounted applications, IED provides the 508SBB Surface Mount Back Box to house the all flush mount versions of the 508 Series. See figure 9. The 508SBB is painted the same color as the flush mount faceplates.

In flush mount applications for existing construction the 508SBB Surface Mount Back Box can be used with the 508FL flange to mount the flush mount microphone stations in

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an existing wall. The 508FL flange provides a 3/8" lip around the outside of the box to cover the edge of the cutout in the drywall around the back box.

Desktop Microphone Stations

One desktop configuration of the 508 Series microphone stations is available, with two different microphone type options.

The 508DT is the 508 Series desktop configuration with one microphone input and has the capability of being locally powered and of having bidirectional serial communications via an RS422 port.

The 508DT Desktop Microphone Stations can be supplied with any of the following three microphone options:

500HH Hand held microphone
500G Gooseneck Microphone

The 500G Gooseneck Microphone mounts directly to the desktop microphone station via an XLR connector. The 500HH does not have a direct method to mount to the desktop microphone station. It connects to the station via a 6-conductor coiled cord which is terminated with an RJ45 molded modular connector. Hangers for this microphone is available from IED. The microphone type to be used with the 508DT must be specified when ordering so that it can be supplied with the proper microphone connector.

Locking Door Microphone Stations

The locking door enclosure version of the 508 Series microphone station is available with one microphone type, the 500HH Hand held microphone.

The 508LD has four microphone inputs and can be used with one to four microphones. One microphone can be connected directly to the microphone station, or, if desired, it can be located remotely, up to 1000' away by using an expansion station. The additional microphones, if used, are connected to expansion stations which also can be mounted up to 1000' away from the main station.

The 508LD microphone station has the capability of being locally powered and of having bidirectional serial communications via an RS422 port.

This microphone stations make use of a locking door enclosure with an insert to which is mounted the LCD display and the electronics assembly. A hanger which will accept the microphone is mounted inside the enclosure. The enclosure can be either flush mounted or surface mounted.

The 500G Gooseneck Microphone is not an option for the locking door microphone stations.

Expansion Stations

The 508 Series Flush Mount and Locking Door Stations can use expansion microphone stations. The 508 Series and 500 Series microphone stations use the same expansion stations. The expansion stations can service microphones in two configurations.

The 500FME is a 4-gang flush mount expansion plate which can mount a remote microphone up to 1000' from the 508 Series Microphone Station. The plate itself is fabricated from velvet textured Lexan configured in a vertical orientation. The expansion plate as-



sembly consists of the mounting plate, an RJ45 receptacle for the microphone connector, and a hanger to hold the microphone when it is not in use.

The 500FME will accept the 500HH Hand Held Microphone.

The 500FME mounts in a standard 4-gang electrical box such as the RACO #952 or 953 with raised device cover #823 (see figure 13), or equivalent, or in the IED 500SBB, figure 11, or 500FBB, figure 12.

The 500LDE is a locking door expansion microphone station which can mount a remote microphone up to 1000' from the 508 Series microphone station. The 500LDE consists of a locking door enclosure with an insert which holds an RJ45 modular receptacle for the microphone connector, and a hanger to hold the microphone when it is not in use. It can be used for both flush mount or surface mount applications.

The 500LDE is supplied with the 500HH Hand Held Microphone.

Rack Mount Stations

The 508 Series microphone stations can be obtained in a number of different rack mountable models. All are designed to be installed in a standard EIA rack.

The 508RM is the basic rack mounted microphone station. It has three microphone interfaces, with one normally mounted in the front panel. The other two, if used, are for remote stations which can be located up to 1000' away. The 508RM also has one line level input with a switch for conveniently introducing an auxiliary source through the microphone station, if desired. The line level input and switch are mounted on the front panel.

The 508RMIO has all the features of the 508RM, and in addition includes one 508I Logic Input Card and one 508O Logic Output Card.

The 508SRM has all the features of the 508RM, and in addition includes a self-powered 4" speaker and volume control mounted on the front panel. The speaker is normally used in conjunction with the audio monitoring system.

The 508SRMIO has all the features of the 508SRM, and in addition includes one 508I Logic Input Card and one 508O Logic Output Card.

In all of the microphone stations described above, the electronics assemblies are mounted on a black anodized brushed aluminum panel which is 5 EIA rack spaces high.

All versions of the rack mount microphone stations can be supplied with any of the following two microphone options:

500HH Hand held microphone
500G Gooseneck Microphone

Telephone Interface Microphone Stations

The 508T-1 and 508T-2 are telephone interface microphone stations. The 508T-1 has one telephone interface, and the 508T-2 has two.

The 508T4-1 and 508T4-2 have the features of the 508T-1 and 508T-2, respectively, except that they have the capability of being locally powered and of having bidirectional serial communications via an RS422 port.

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All versions can be set to answer on either 1 or 4 rings. The selection is made by jumper placement. The 4 ring setting allows a caller ID system to detect and handle the call, if necessary, before the 508T answers. All versions have provision, if required by their

All models are rack mounted. These telephone interfaces allow dialing into the system from any tone-type (DTMF) telephone and accessing the features as would be done from a 508 Series microphone station keypad.

Logic I/O Units

The 508BIO is a rack mounted processor card with interface to a 508I Logic Input Card and a 508O Logic Output Card.

The 508BIO4 has the features of the 508BIO and in addition it has provision for local powering and bidirectional serial communications via an RS422 I/O port.

Microphone Station Options

Listed in Tables 1, 2, 3, and 4 are all of the 508 Series microphone stations available as standard products. Any other configuration that is requested would be considered a custom product. Consult the factory for pricing and delivery of custom microphone stations.



MICROPHONE →	HAND HELD	GOOSENECK
Enclosure	Model	
Vertical Flush Mount	508VFM-H	508VFM-G
Horizontal Flush Mount	508HFM-H	508HFM-G
Desktop	508DT-H	508DT-G
Locking Door	508LD-H	N/A
Rack Mount	508RM-H	508RM-G
Rack Mount ¹	508RMIO-H	508RMIO-G
Rack Mount with Speaker	508SRM-H	508SRM-G
Rack Mount with Speaker ¹	508SRMIO-H	508SRMIO-G

Table 1 - 508 Series Microphone Stations
Available Microphone/Microphone Station Combinations and Model Numbers

MICROPHONE →	HAND HELD	GOOSENECK
Enclosure	Model	
Flush Mount Expansion Station	500FME-H	N/A
Locking Door Expansion Station	500LDE-H	N/A

Table 2 - 500 Series and 508 Series
Expansion Microphone Stations

MODEL	DESCRIPTION
508FL	Mounting flange for both vertical and horizontal flush mount microphone stations.
508SBB	Surface mount back box for 508 Series microphone stations.
508FBB	Flush mount back box for 508 Series microphone stations.
508HBB	Horizontal angled back box for 508 Series microphone stations.
508VBB	Vertical angled back box for 508 Series microphone stations.
PS002	+12 V, 300 mA; +5 V, 800 mA wall mounted power supply
HHAT1900	Hand held microphone hanger

Table 3 - 508 Series Microphone Station
Optional Hardware

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MODEL	DESCRIPTION
508BIO	Processor card plus 508I and 508O card options
508BIO4 ²	508BIO plus RS422 communications option
508T-1	Single telephone interface
508T-2	Dual telephone interface
508T4-1 ²	Single telephone interface plus RS422 communications option
508T4-2 ²	Dual telephone interface plus RS422 communications option

Table 4 - Other 508 Rack Mounted Microphone Stations

TABLE NOTES
1. These microphone stations are provided with 508I Logic Input Card and 508O Logic Output Card
2. Microphone station has the capability of being locally powered and having bidirectional serial communications via an RS422 port.

SPECIFICATIONS

ELECTRICAL

1. Gain, normal	19 dB
2. Total Harmonic Distortion, THD	<.05%
Normal Setup, input = -15 dBu, f = 200 Hz - 20 kHz, 30 kHz low pass filter	
3. Frequency Response.	-1, +0.1 dB
20 Hz - 20 kHz, no filters	
4. Signal to Noise Ratio (S/N)	>75 dB
20 Hz to 20 kHz, referred to +4 dBu output, $R_L \geq 600 \Omega$	
5. Input Impedance	50 k Ω
6. Maximum Input	+8 dBu
7. Compression Threshold, normal setup	-14.5 dBu
8. Attack Time	1.5 ms
9. Release Time	
40 dB Input Drop	
10 dB Input Drop.	
15 sec.	
3 sec.	
10. Compression Ratio	6:1
11. Oscillator Frequency.	500 Hz
12. Oscillator Output, Normal	-15 dBu
13. Output Impedance.	<1 Ω
14. Maximum Output Capability	+24 dBu
Without compression, $R_L \geq 600 \Omega$	
15. Normal Output	+5 dBu
10 dB into compression, $R_L \geq 600 \Omega$	
16. Power Requirements	
Supply Voltage Range	
+25.5 VDC - +31 VDC	
Supply Current, Max.	
130 mA	
V = +30 VDC	

CONTROLS

1. Input Gain	Rotary Trimpot
2. Master Output Level Control.	Rotary Trimpot
3. Compressor Level Control	Rotary Trimpot
Note: All controls are factory preset for optimum performance. Consult factory for details.	

INDICATORS

1. Ready	1 Green LED
2. Busy	1 Red LED

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CONNECTORS (Cable connectors required to interface with microphone stations)

- | | |
|---|-------------------------|
| 1. Model 508DT-G | |
| Power and control | 1 each 3 pin male XLR |
| Signal | 1 each 3 pin female XLR |
| 2. Models 508VFM, 508HFM, 508LD | |
| Signal - 3 position plug-in screw terminal connector | Phoenix 1757022 |
| Power/control - 3 position plug-in screw terminal connector | Phoenix 1757022 |
| 3. Model 500FME | Phoenix 1792281 |
| Signal and power - 6 position plug-in screw terminal connectors | |

CONNECTING CABLE

All 508 Series Microphone Stations

1. Audio signal #22 AWG, stranded twisted pair w/overall shield
For distances up to approximately 2500 feet, Belden 8451, or equivalent
2. Control signal #22 AWG, stranded twisted pair w/overall shield
For distances up to approximately 2500 feet, Belden 8451, or equivalent

All 508 Series Expansion Plates

1. Audio signal #22 AWG, stranded twisted pair w/overall shield
For distances up to approximately 1000 feet, Belden 8451, or equivalent
2. Power and switch #22 AWG, stranded twisted pair w/overall shield
For distances up to approximately 1000 feet, Belden 8451, or equivalent

MECHANICAL

Size, Maximum Overall Dimensions

Model 508DT

Free standing, less gooseneck

- | | |
|------------------|-------|
| Height | 3.15" |
| Width | 6.25" |
| Depth | 7.1" |

Model 508VFM See figure 1

Model 508HFM See figure 2

Model 508LD See figure 3

Model 508FME See figure 4

Model 508LDE See figure 5

Model 508RM See figure 6

Model 508SRM See figure 7

Model 508FL See figure 8

Model 508SBB See figure 9

Model 508FBB. See figure 10

Model 500SBB See figure 11

Model 500FBB. See figure 12

ENVIRONMENTAL

1. Operating Temperature Range (+32 °F - +104 °F) 0 °C - +40 °C
2. Storage Temperature Range (-40 °F - +158 °F) -40 °C - +70 °C



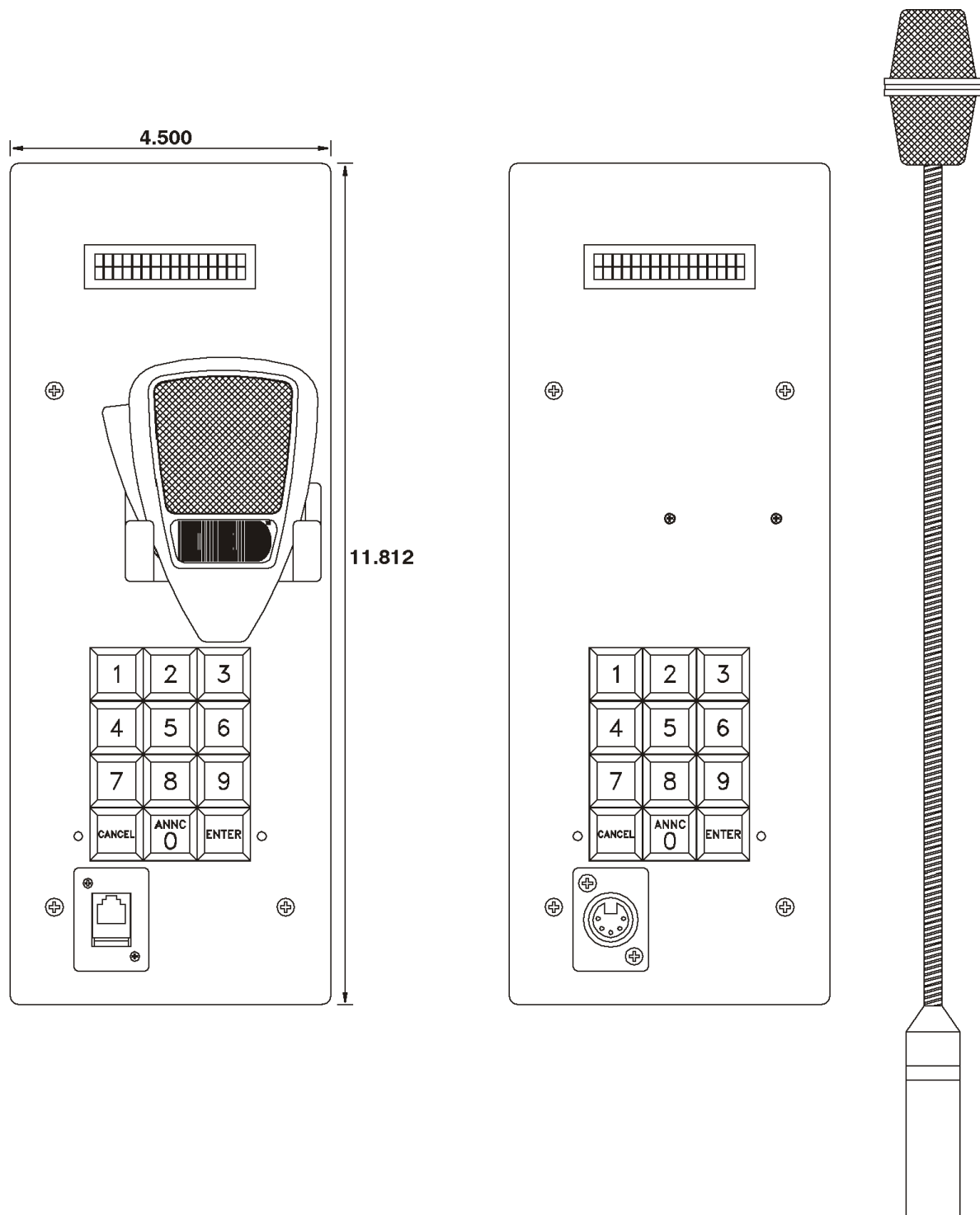


Figure 1 - Vertical Flush Mount Microphone Station
Model 508VFM, all microphone options shown

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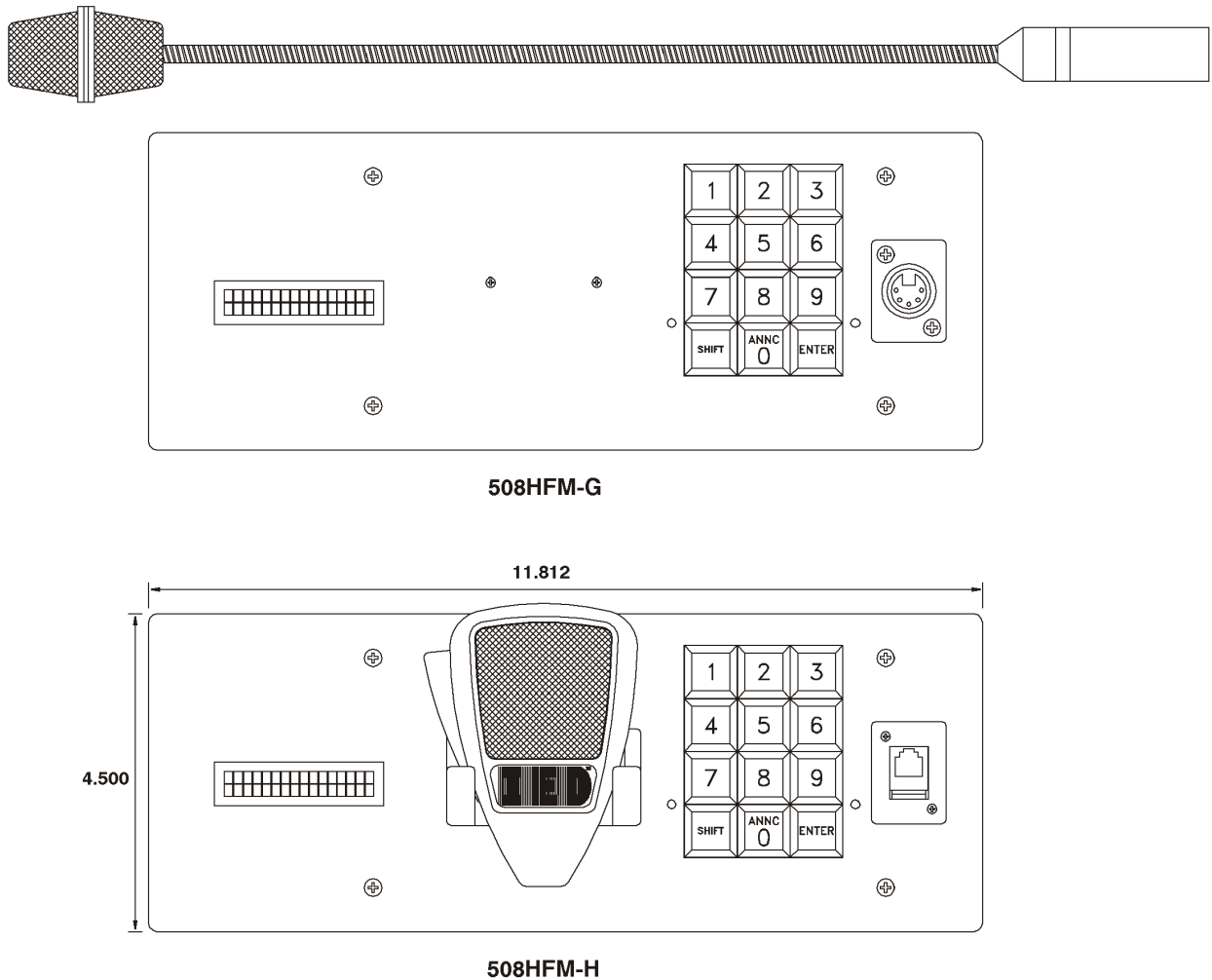


Figure 2 - Horizontal Flush Mount Microphone Station
Model 508HFM, all microphone options shown

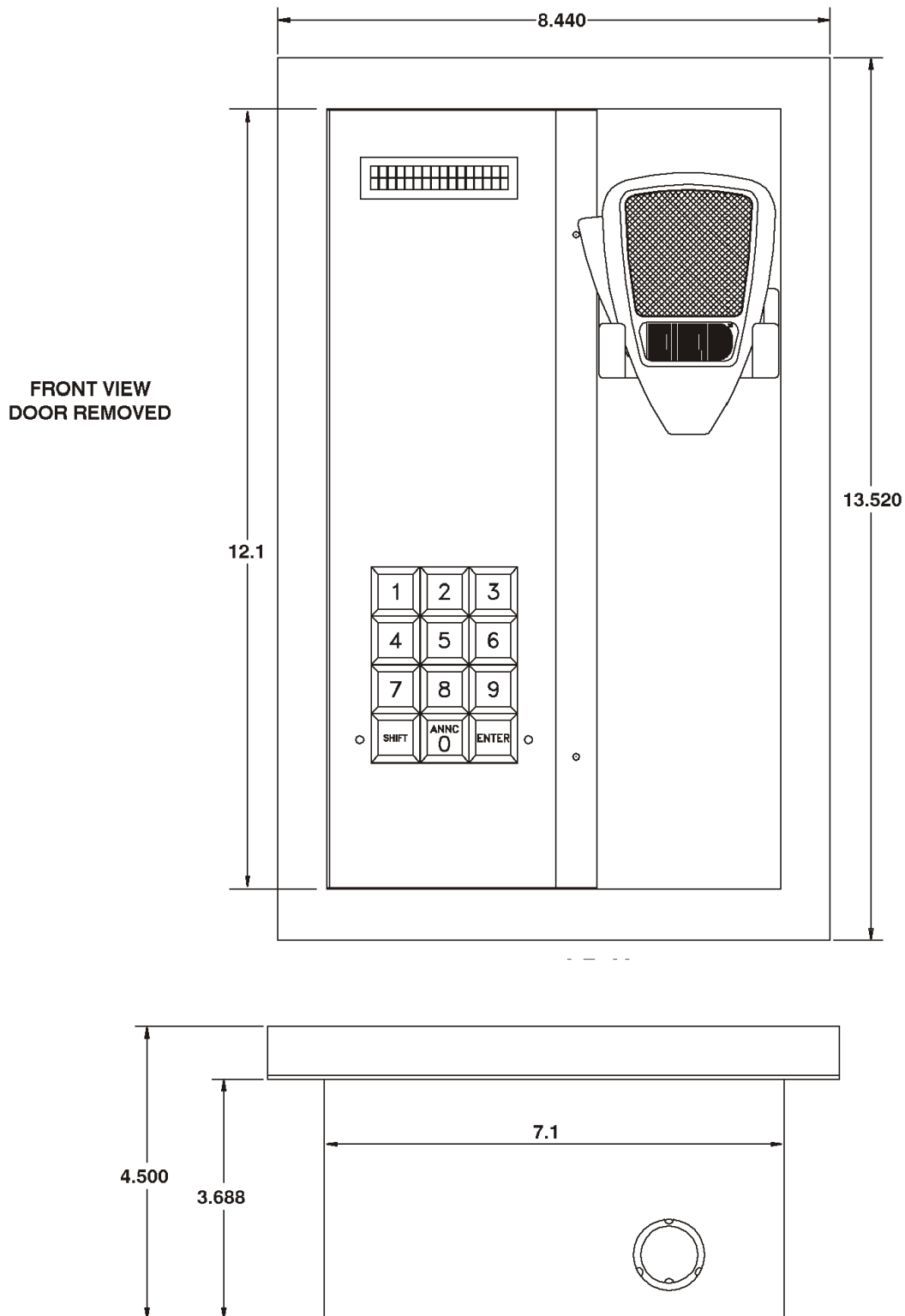


Figure 3 - Locking Door Enclosure Microphone Station
Model 508LD, microphone option shown

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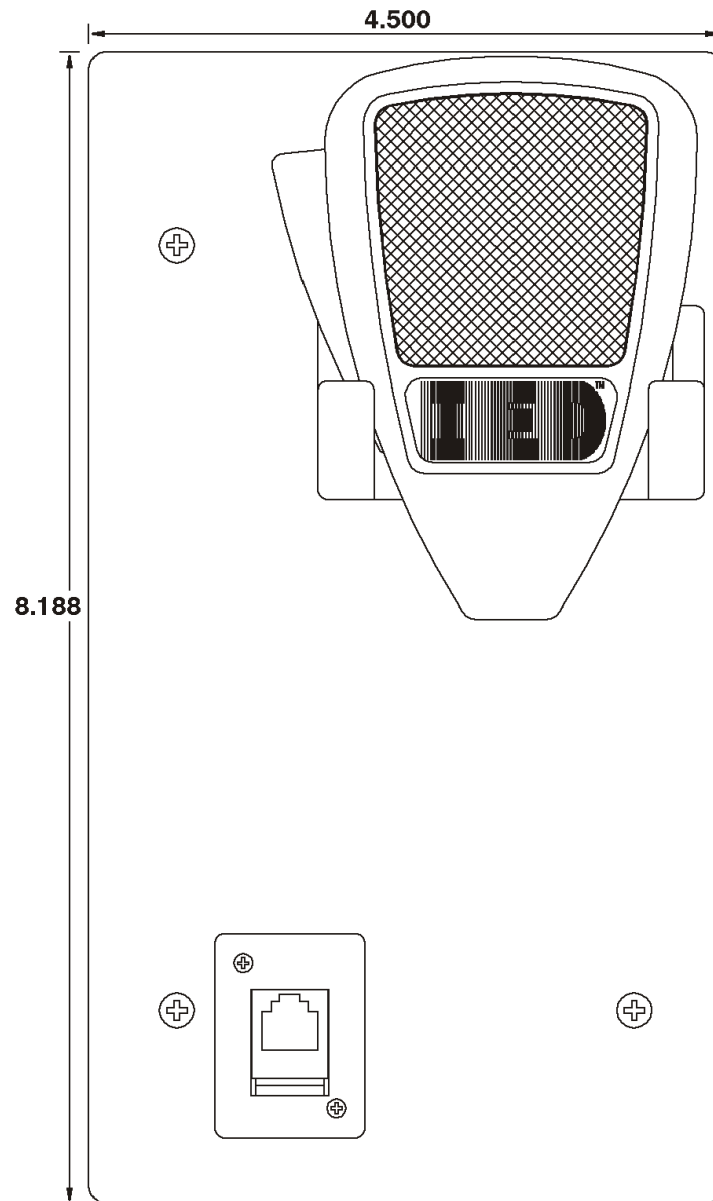
**500FME-H**

Figure 4 - 500FME Flush Mount Expansion Unit



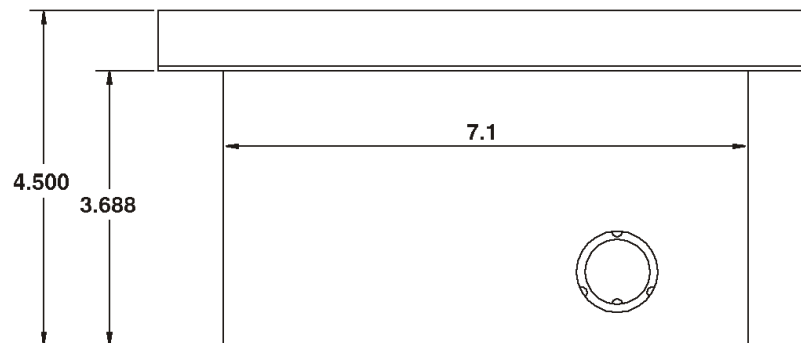
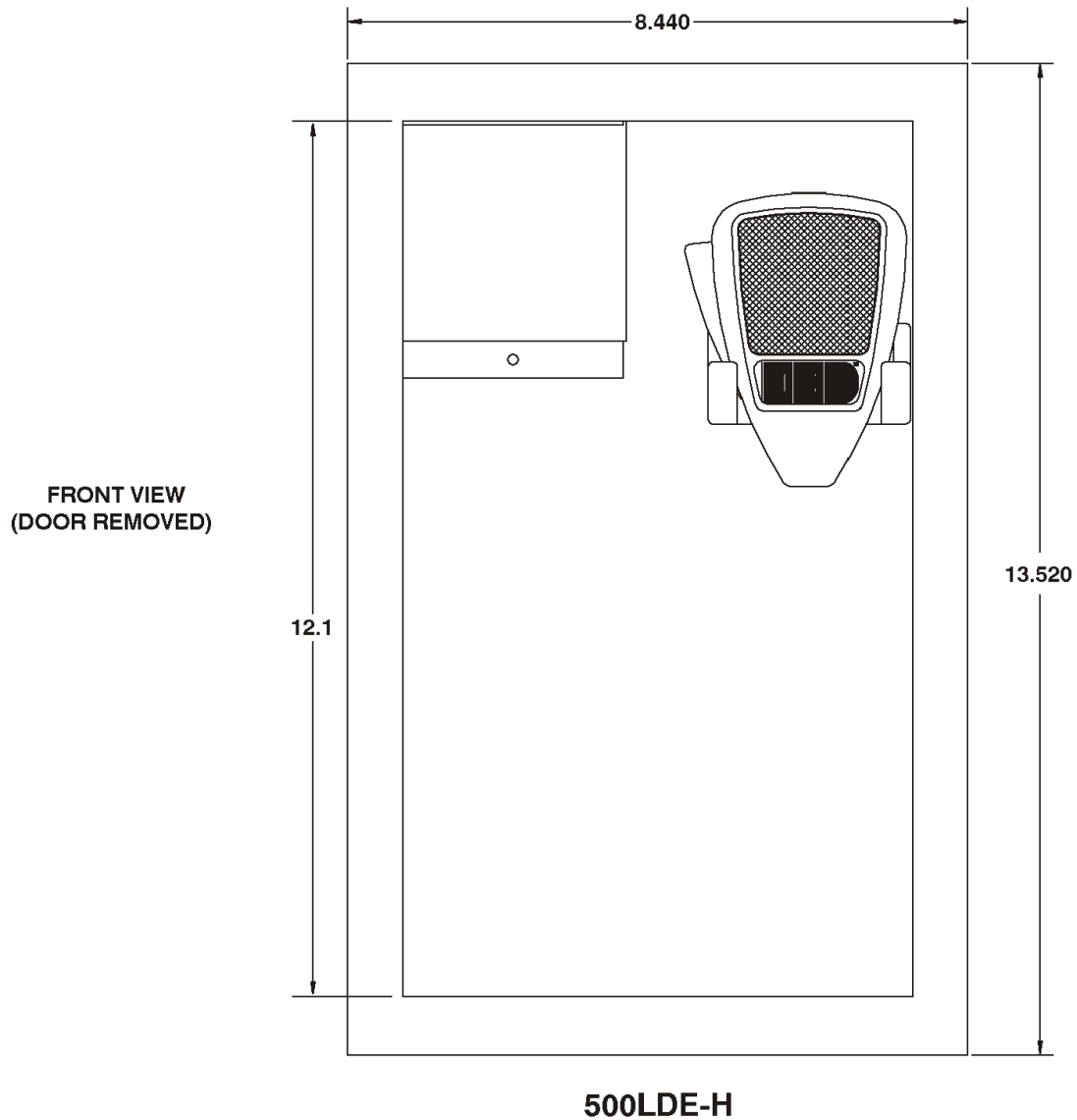


Figure 5 - 500LDE Locking Door Expansion Unit
All microphone options shown

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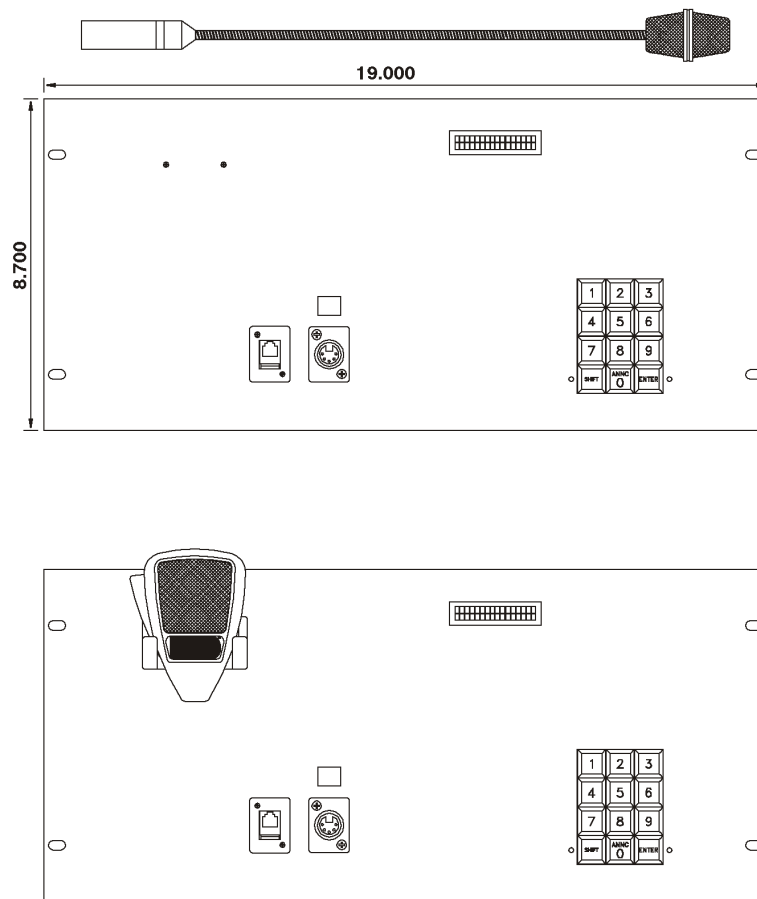


Figure 6 - Rack Mount Microphone Stations
Models 508RM and 508RMIO, all microphone options shown

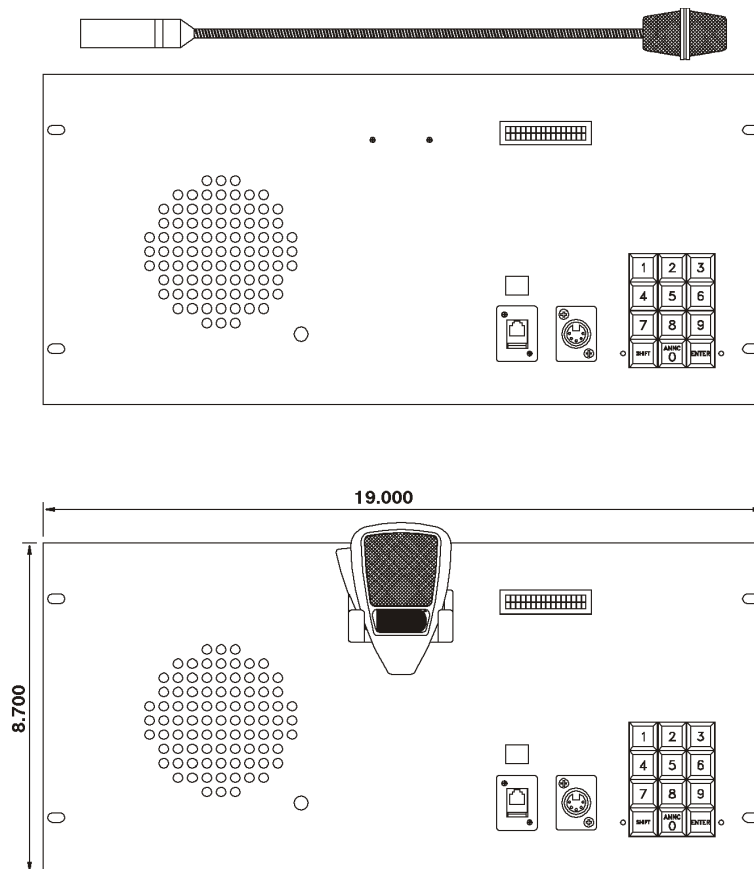


Figure 7 - Rack Mount Microphone Station with Speaker
Models 508SRM and 508SRMIO, all microphone options shown

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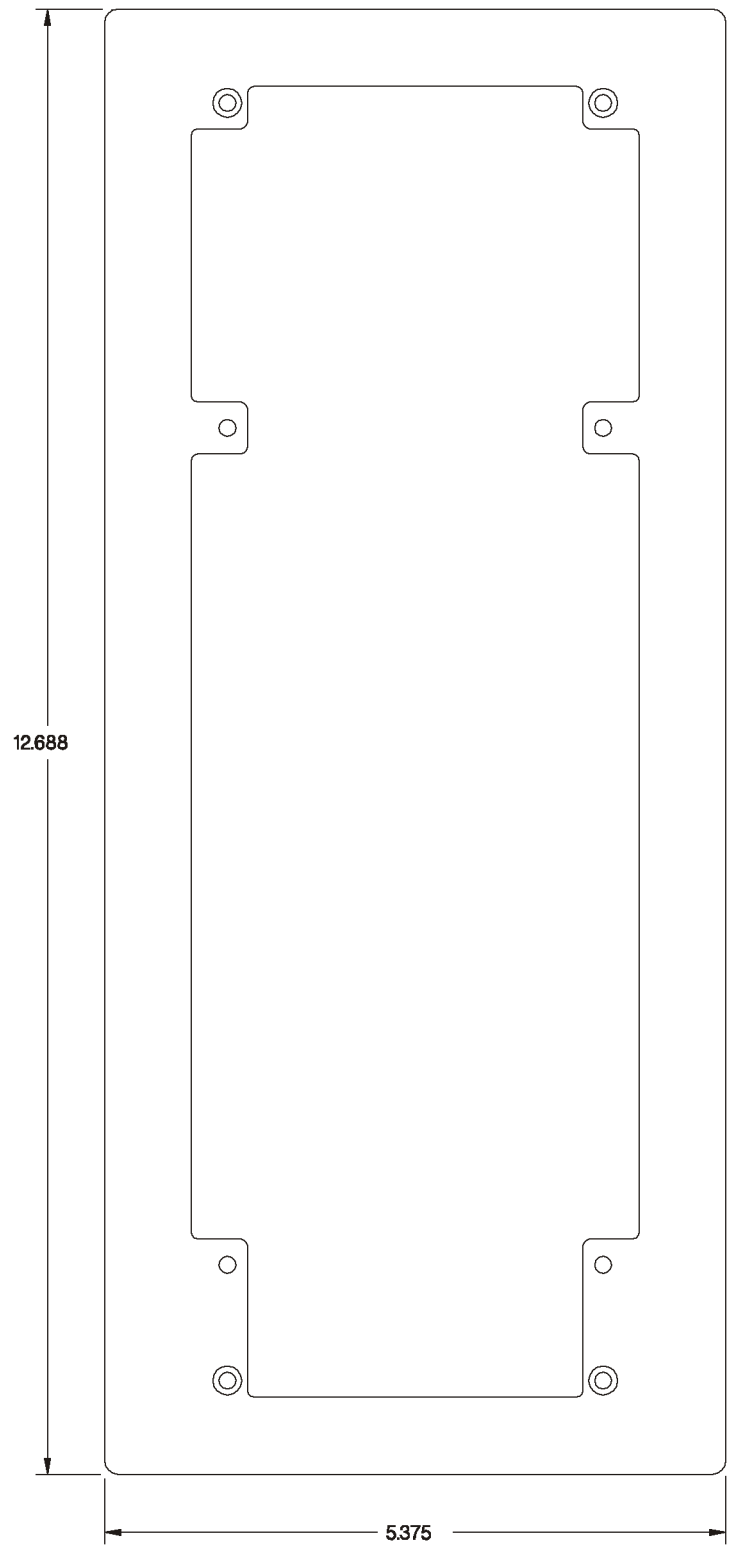


Figure 8 - 508FL Mounting Flange



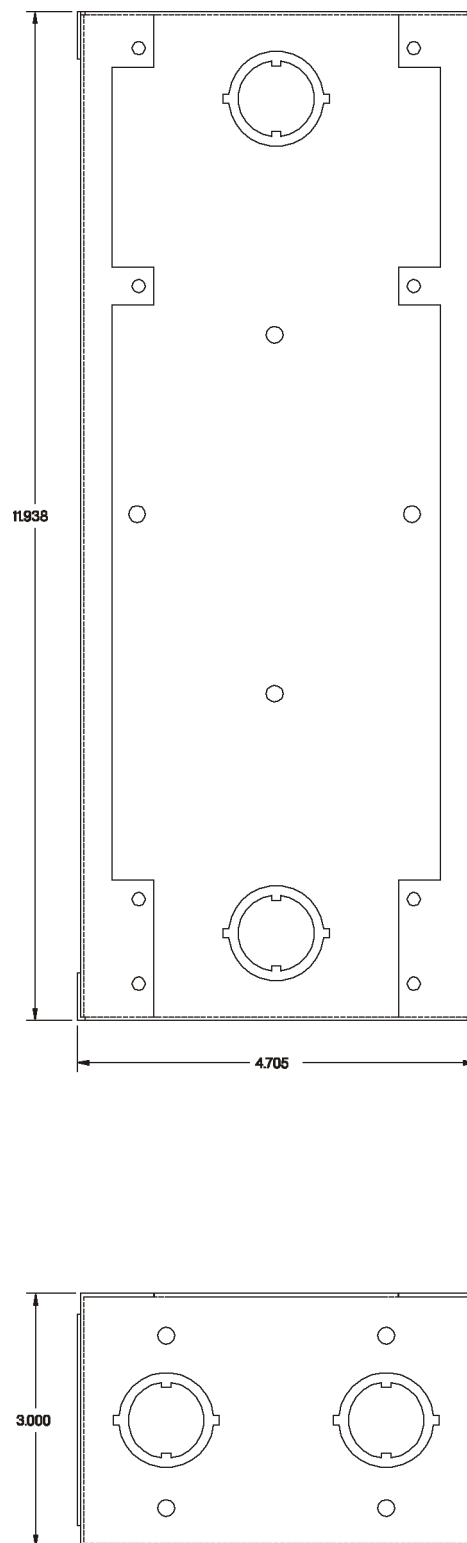


Figure 9 - 508SBB Surface Mount Back Box with Cover

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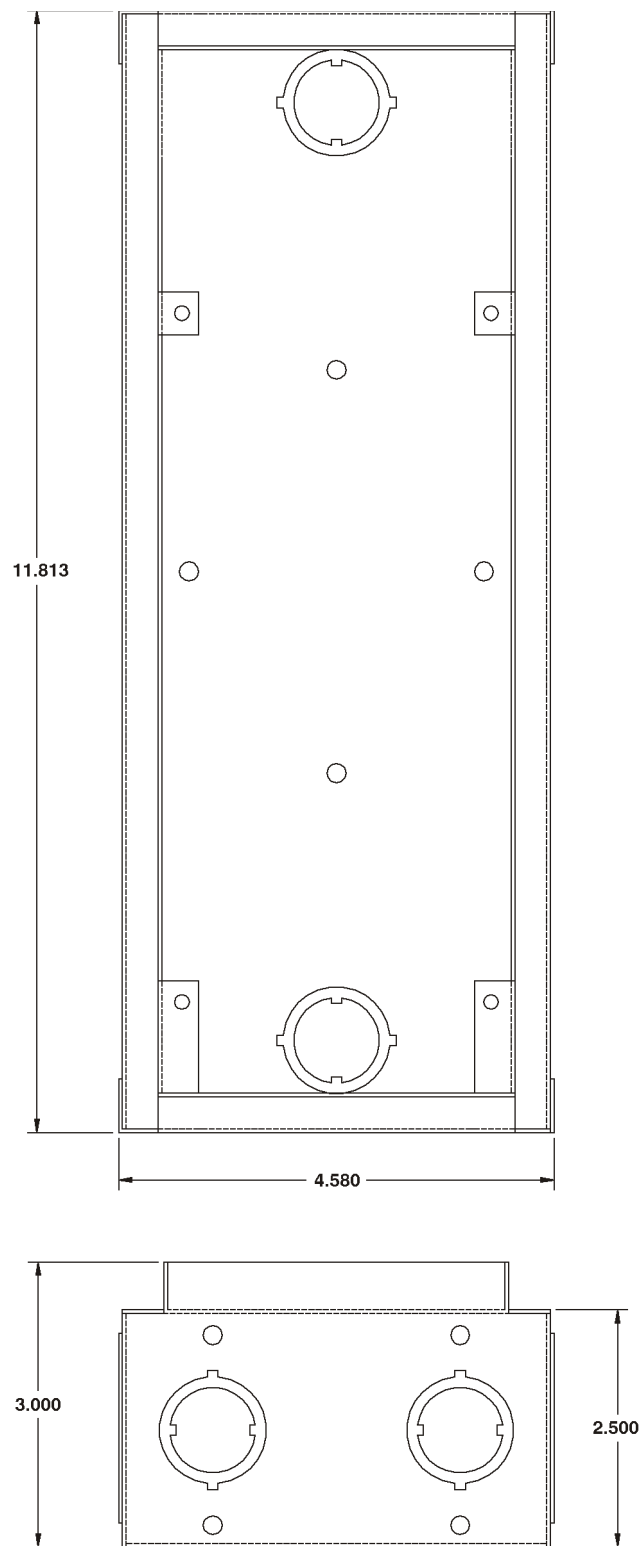


Figure 10 - 508FBB Flush Mount Back Box with Cover



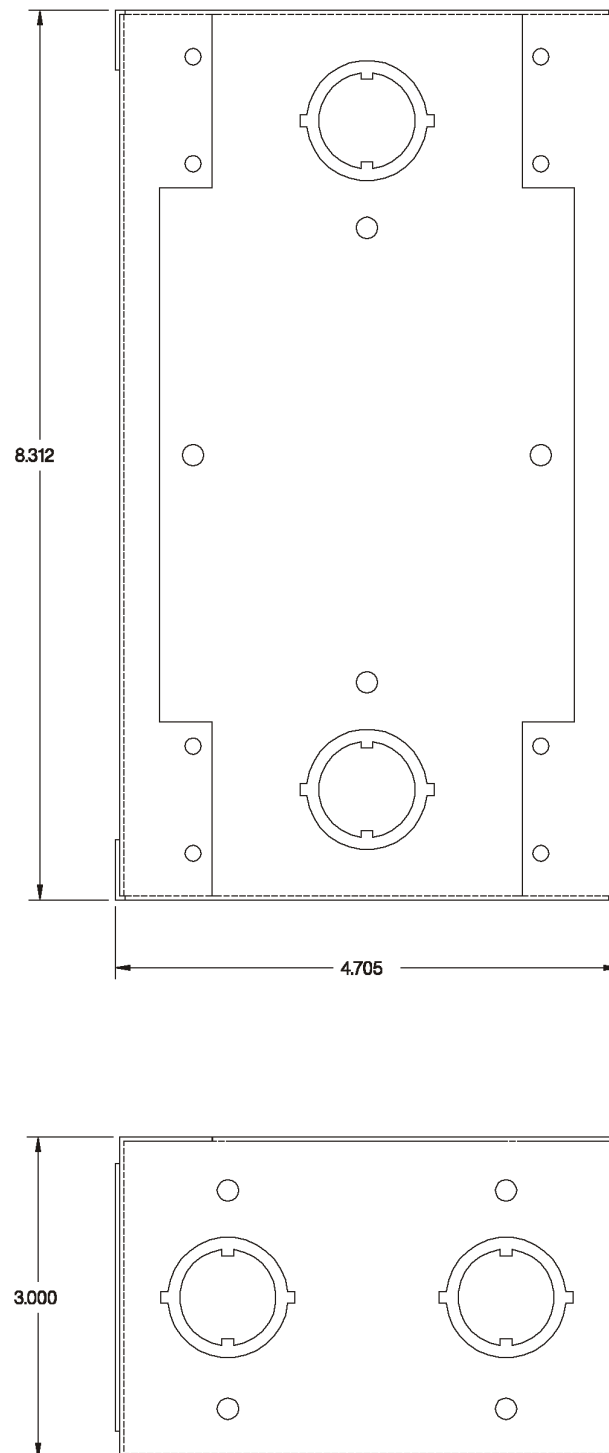


Figure 11 - 500SBB Surface Mount Back Box with Cover

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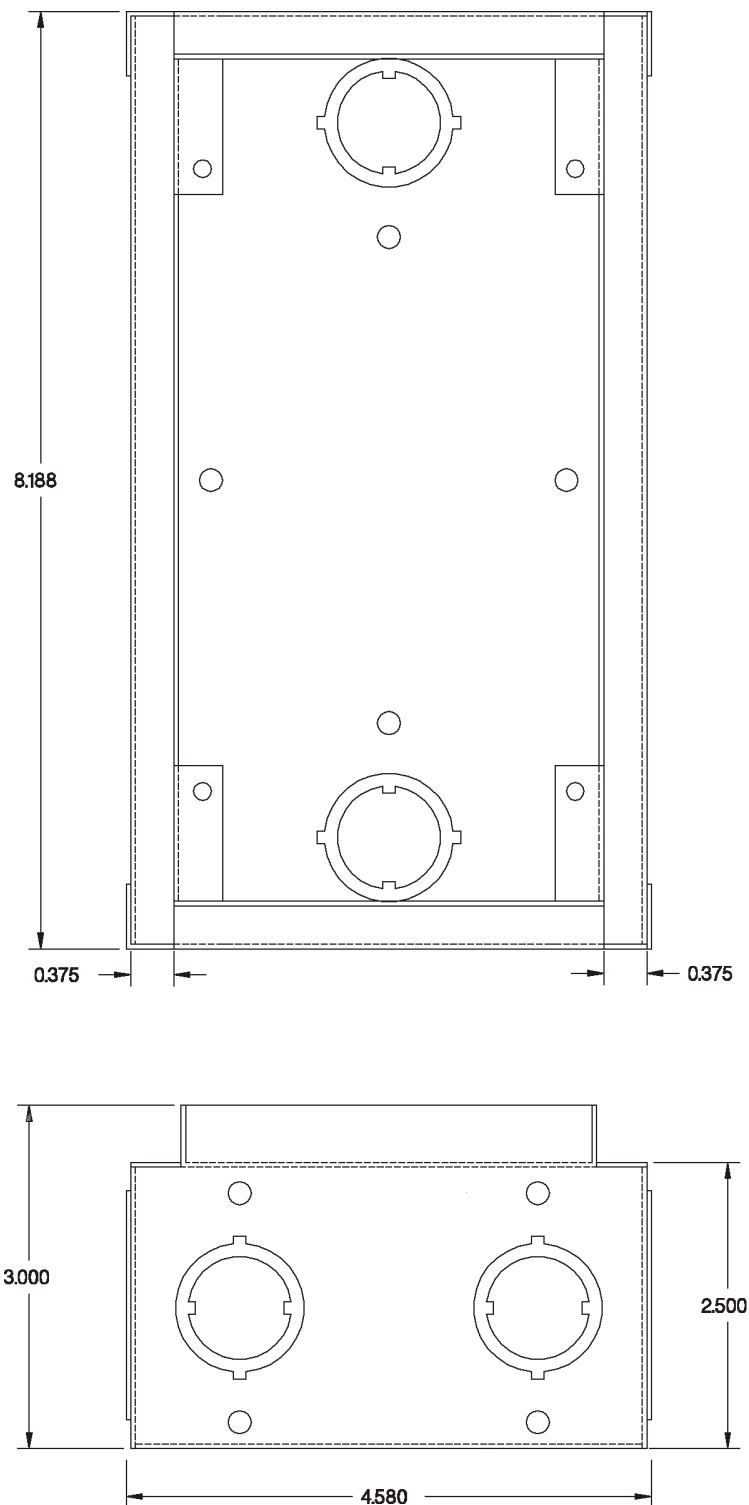


Figure 12 - 500FBB Flush Mount Back Box with Cover



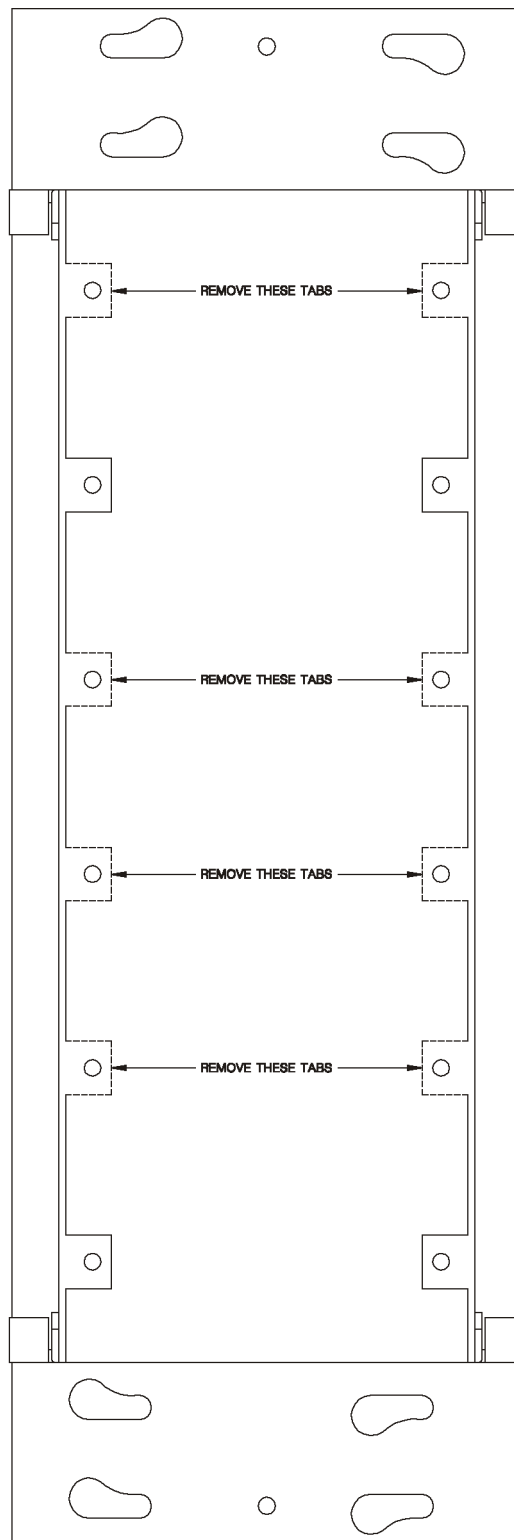


Figure 13 - RACO 6 Gang Back Box with Cover

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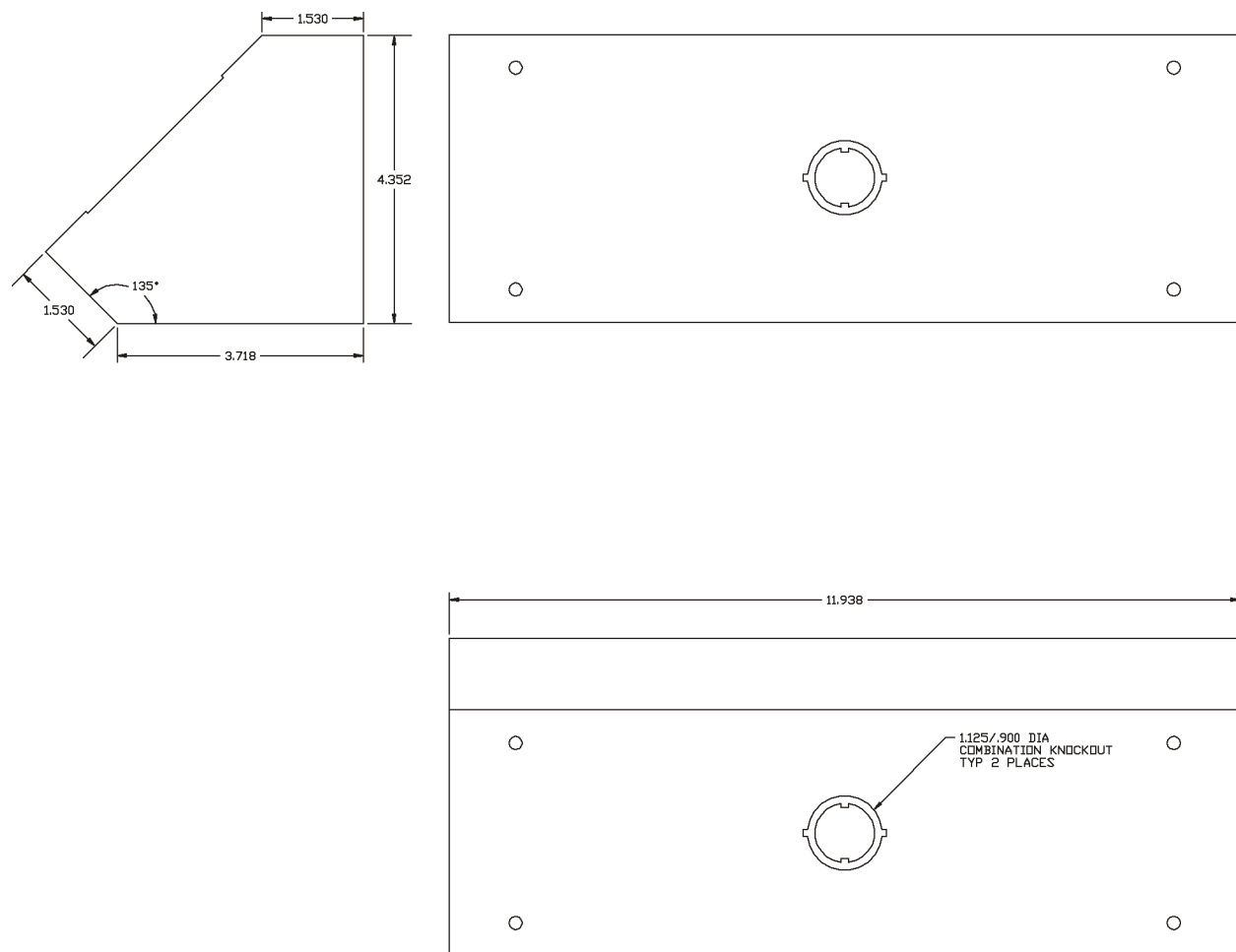


Figure 14 - Horizontal Angled Back Box
508HBB

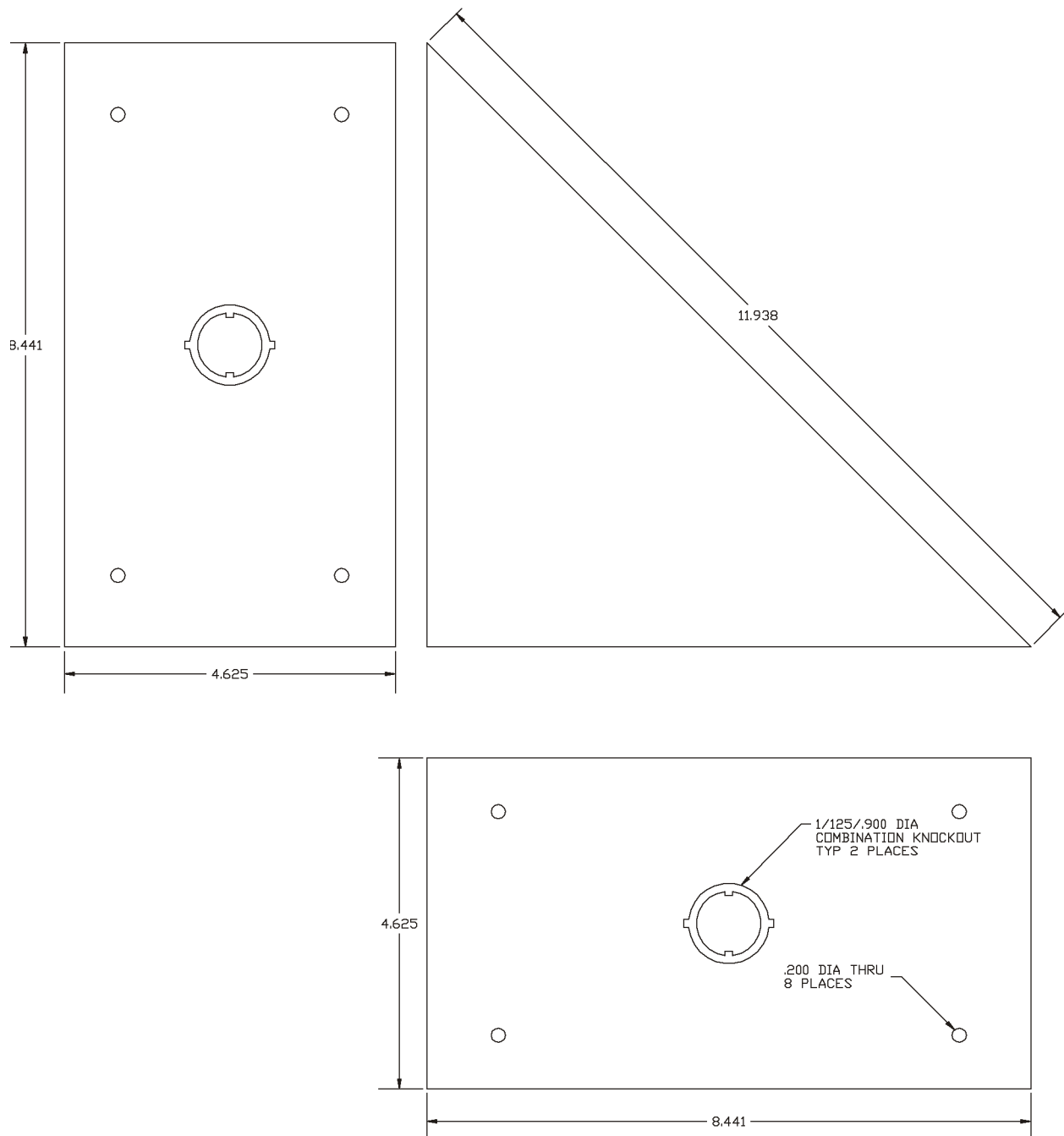


Figure 15 - Vertical Angled Back Box
508VBB

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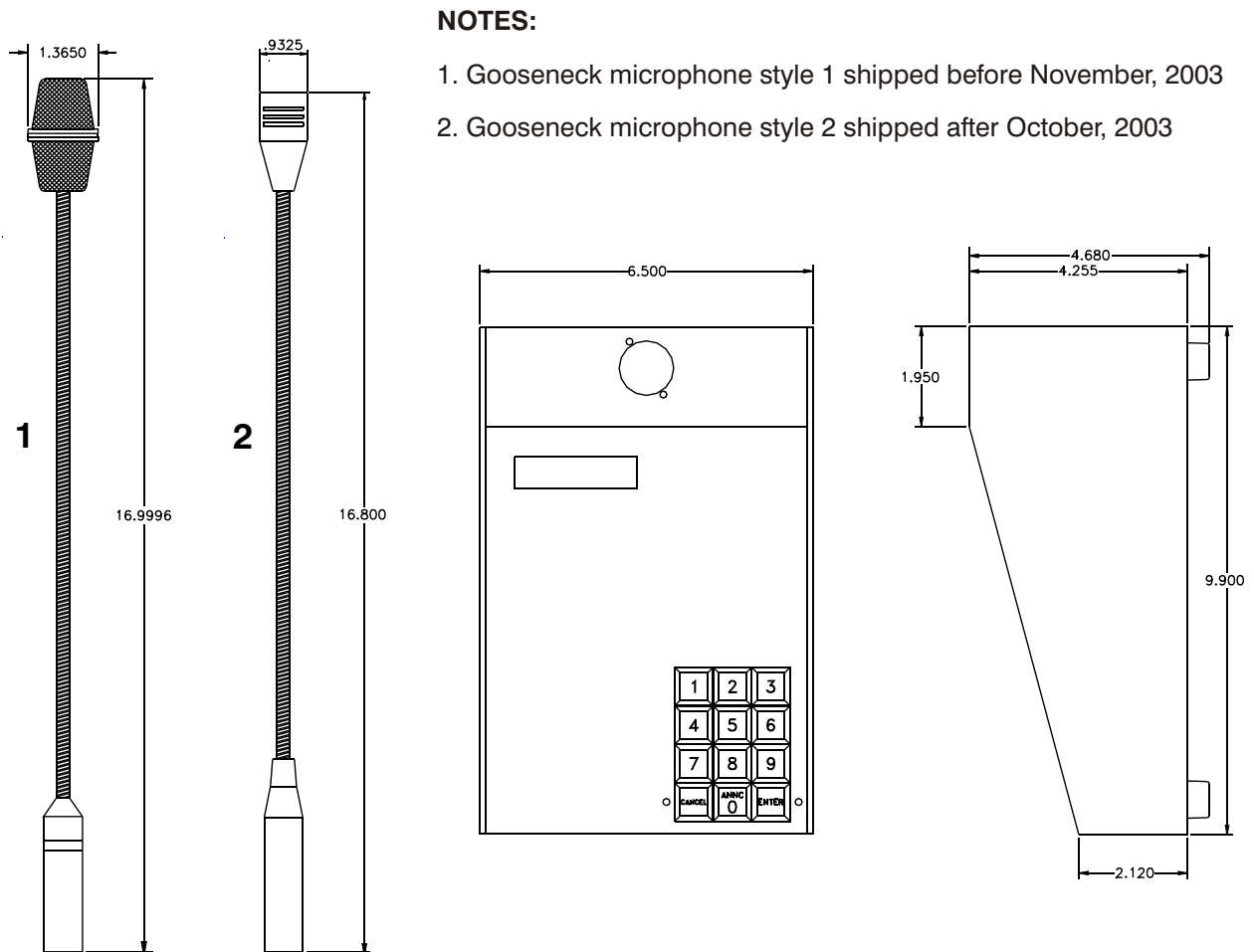


Figure 16 - 508DT-G Microphone Station

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