

# 1E EJB Custom-Built Control Panels

**Globally Certified—Individually Customized**

Cl. I, Div. 1 & 2, Groups B\*, C, D  
 Cl. I, Zones 1 & 2  
 Cl. II, Div. 1, Groups E, F, G  
 Cl. II, Div. 2, Groups F, G  
 Cl. III

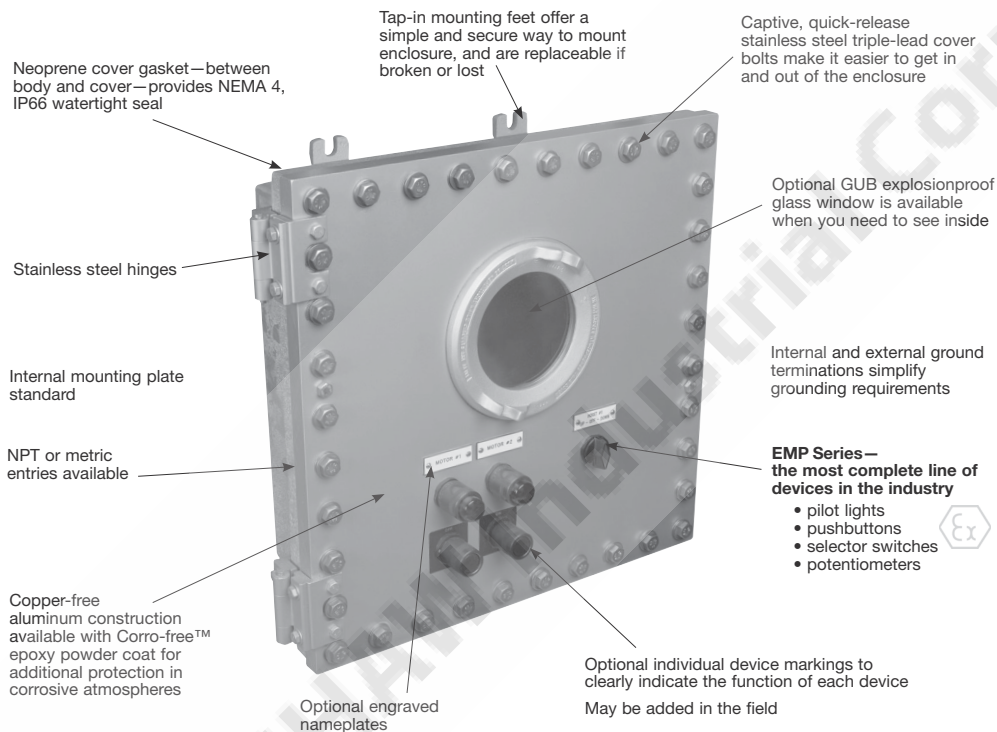
UL and cUL approved  
 Ex d IIB + H<sub>2</sub> T6  
 Certified to ATEX  
 Directive†  
 NEMA 3, 7B\*CD, 9EFG  
 IP66

The following pages will assist you in choosing the combination of features suited to your needs and requirements. The easy, five-step process will take you through the specification of cover openings, specifying devices, drilled and tapped conduit openings, device locations, and legend and nameplate selection.

After filling out your separate order form for each panel, fax it to your local Eaton's Crouse-Hinds Distributor. Please consult the factory for alternatives not detailed in these pages, such as other conduit arrangements, terminal blocks, or circuit breaker operating handles.

## Features:

- The foundation of the Custom-Built Control Panel is our tried and tested copper-free aluminum EJB enclosure. This corrosion resistant, heavy-duty enclosure features bolted construction, stainless steel hinges, and flexible tap-in mounting feet.



## Certifications and Compliances:

### EJB Custom Control Panels

- NEC/CEC:
  - Class I, Divisions 1 & 2, Groups B\*, C and D
  - Class I, Zones 1 & 2
  - Class II, Division 1, Groups E, F and G
  - Class II, Division 2, Groups F and G
  - Class III
- NEMA: 3, 7B\*CD, 9EFG
- cUL to CSA Standard C22.2 No. 30—C22.2 No. 25 Cl. II (E, F, G)
- Ex d IIB + H<sub>2</sub> T6
- UL Standard 1203
- IP66
- Certified to the ATEX Directive when ordered with -ATEX suffix.
- Custom Control Panel is component certified only. For assembly certification, please consult factory.

\*Groups C and D only when ordered with GUB window.  
 † Certified to the ATEX Directive when ordered with ATEX suffix.

## ATEX Certifications

- EJB Enclosure with Conduit Entries & Device Holes
 

⊕ II 2 G Ex d IIB + H <sub>2</sub>	Certificate #: ITS08ATEX15797U
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- EMP Devices
 

⊕ II 2 G Ex d IIB + H <sub>2</sub>	Certificate #: ITS07ATEX15652U
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- GUB0108 ATEX Window
 

⊕ II 2 G Ex d IIB + H <sub>2</sub>	Certificate #: ITS07ATEX15638U
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- ECD Breather/Drain
 

⊕ II 2 G Ex d IIB + H <sub>2</sub>	Certificate #: ITS07ATEX15639U
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Ordering and receiving Eaton’s Crouse-Hinds EJB Custom-Built Control Panels is now easier and faster than ever. Follow the steps below, fill out a separate order form for each panel, and fax it to your local Eaton’s Crouse-Hinds Distributor. It’s as simple as that!

**Easy Five Step Ordering Process:**

- 1 Specify cover openings and devices.
- 2 Specify conduit openings.
- 3 Determine device arrangement.
- 4 Specify device location.
- 5 Specify legend and nameplates.

**Step 1**

**Specify the openings required for the cover of the enclosure.**

Indicate in Section 1 of the order form the combination of devices, openings without devices, and windows required.

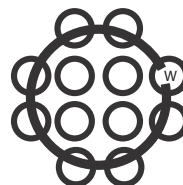
**Total the number of device openings required based on the devices, openings and windows specified in Section 1.**

Using Table 1, you can determine the smallest size enclosure required based upon the total number of devices/openings and the number of devices a window requires. (NOTE: The actual size of your custom panel enclosure may change based on the number and size of your entry requirements.)

**TABLE 1** DEVICE AND WINDOW INFORMATION

Total # of Device Openings Available		Device Layout	EJB Enclosure Catalog Number
9	=	3 X 3	EJB100806
16	=	4 X 4	EJB121204
16	=	4 X 4	EJB121206
16	=	4 X 4	EJB121208
36	=	6 X 6	EJB161606
36	=	6 X 6	EJB161608
24	=	6 X 4	EJB181206
24	=	6 X 4	EJB181208
36	=	9 X 4	EJB241208
36	=	9 X 4	EJB241210
54	=	9 X 6	EJB241808
54	=	9 X 6	EJB241810
81	=	9 X 9	EJB242408
81	=	9 X 9	EJB242410
52	=	13 X 4	EJB361208
78	=	13 X 6	EJB361808
78	=	13 X 6	EJB361810
117	=	13 X 9	EJB362408

Requires same area as 12 devices.  
May be installed in all boxes.



GUB0108—Symbol W  
4-3/4" dia. viewing area

**SIZE REQUIREMENTS**

EJB Size	Max. No. Windows
121204 to 181208	1
241208 to 362408	2

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### Step 2

Specify the number, size and location of conduit openings required on the sides, top and bottom of the enclosure body using the information in Tables 2, 3, and 4.

Refer to Table 2 to determine if the enclosure selected in Step 1 will accommodate the required conduit openings.  
From Table 3, determine the symbol(s) that correspond with the required conduit openings.

Place these symbols in the desired positions using the conduit arrangement diagrams in Table 4.

Any combination of the four arrangement diagrams may be used per side and all positions on a side with openings must have a symbol. The side number (1, 2, 3 or 4) must precede the conduit opening(s) symbols for the respective side. When a side of the enclosure does not require any conduit openings, the side number is omitted from the catalog number.

Enter the complete catalog number, including conduit opening designations, in Section 2 of the order form. Indicate on which side the hinges should be mounted. Check boxes in Section 2 for options desired.

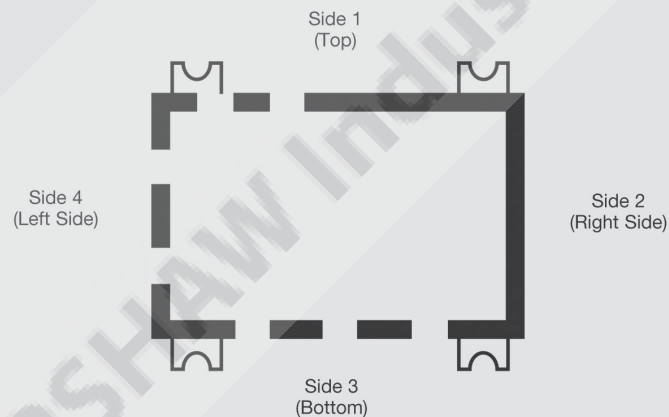
#### Example:

In Step 1, customer selects an EJB161606 based on the number of devices/openings specified (See Section 1 of sample order form). The following conduit openings are required: (2) 1" on the left side of the top; no openings on the right side; (3) 2" on the bottom; and (2) 3/4" on the left side.

Table 2 indicates the maximum size allowed for three conduit openings in an EJB161606 is 2-1/2". Therefore, an EJB161606 would be suitable.

Table 3 indicates a 3/4" opening is symbol B, a 1" opening is symbol C, a 2" opening is symbol G and no opening is a 0.

Using the conduit arrangement diagrams in Table 4, place the symbols for the desired openings in the appropriate positions. Remember, any combination of the four arrangement diagrams may be used and all positions on a side with openings must have a symbol even if no opening is required in a particular position.



Side 1:	<b>(2) 1" on the left side of the top</b>	<b>= 1CC00</b>
Side 2:	<b>No Openings</b>	<b>= No Symbols Required</b>
Side 3:	<b>(3) 2" on the bottom</b>	<b>= 3GGG</b>
Side 4:	<b>(2) 3/4" on the left side</b>	<b>= 4BB</b>

Complete catalog number is: **EJB161606- 1CC003GGG4BB**. Enter the completed catalog number, including conduit opening designations, in Section 2 of the order form. Indicate on which side the hinges should be mounted.

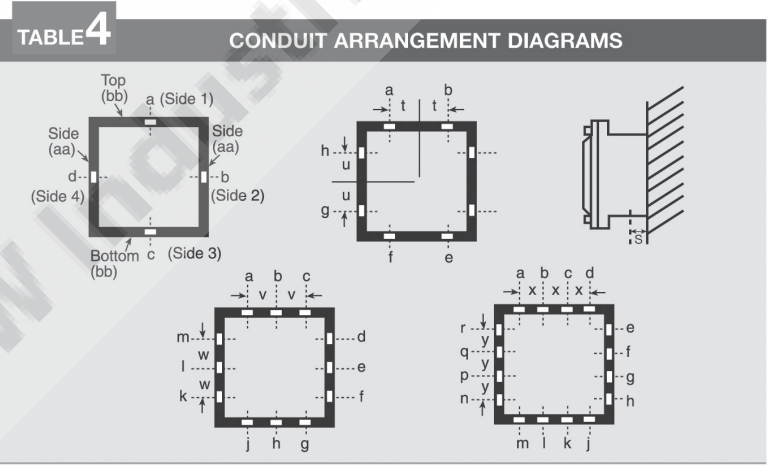
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**TABLE 2 CONDUIT ARRANGEMENTS**

CAT #	Maximum Trade Size and Number of Openings								Spacing Dimensions						
	Top and Bottom (bb)				Sides (aa)				S	T	U	V	W	X	Y
	1	2	3	4	1	2	3	4							
Drilled and Tapped Openings															
EJB100806	3-1/2	3	1-1/2	1-1/4	3-1/2	2-1/2	1-1/4	3/4	3-3/4	2-5/16	1-15/16	2-3/4	2-1/2	2-1/2	1-3/4
EJB121204	1-1/2	1-1/2	1-1/2	1-1/4	1-1/2	1-1/2	1-1/2	1-1/4	3	2-1/4	2-1/4	3-5/8	3-5/8	3-1/16	3-1/16
EJB121206	3-1/2	3-1/2	1-1/2	1-1/4	3-1/2	3-1/2	1-1/2	1-1/4	3-3/4	3	3	3-5/8	3-5/8	3-1/16	3-1/16
EJB121208	5	3-1/2	1-1/2	1-1/4	5	3-1/2	1-1/2	1-1/4	4-3/4	3	3	3-5/8	3-5/8	3-1/16	3-1/16
EJB161606	3-1/2	3-1/2	2-1/2	2	3-1/2	3-1/2	2-1/2	2	3-3/4	3	3	4-5/8	4-5/8	4-3/16	4-3/16
EJB161608	5	5	3	2	5	5	3	2	4-3/4	3-1/4	3-1/4	6	4-5/8	4-3/16	4-3/16
EJB181206	3-1/2	3-1/2	3-1/2	2-1/2	3-1/2	3-1/2	1-1/2	1-1/4	3-3/4	3	3	6	3-5/8	4-5/8	3-1/16
EJB181208	5	5	3-1/2	2-1/2	5	3-1/2	1-1/2	1-1/4	4-3/4	4-3/16	3	6	3-5/8	4-5/8	3-1/16
EJB241208	5	5	5	3-1/2	5	3-1/2	1-1/2	1-1/4	5-1/8	4-3/16	3	8-7/16	3-5/8	6	3-1/16
EJB241210	6	6	5	3-1/2	6	3-1/2	1-1/2	1-1/4	6-1/8	4-3/4	3	8-7/16	3-5/8	6	3-1/16
EJB241808	5	5	5	3-1/2	5	5	3-1/2	2-1/2	5-1/4	4-3/16	4-3/16	8-7/16	6	6	4-5/8
EJB241810	6	6	5	3-1/2	6	6	3-1/2	2-1/2	6-1/4	4-3/4	4-3/4	8-7/16	6	6	4-5/8
EJB242408	5	5	5	3-1/2	5	5	5	3-1/2	5-3/8	4-3/16	4-3/16	8-7/16	8-7/16	6	6
EJB242410	6	6	5	3-1/2	6	6	5	3-1/2	6-3/8	4-3/4	4-3/4	8-7/16	8-7/16	6	6
EJB361208	5	5	5	5	5	3-1/2	1-1/2	1-1/4	4-3/4	4-7/16	3	8-7/16	3-5/8	8-7/16	3-1/16
EJB361808	5	5	5	5	5	5	3-1/2	2-1/2	5-1/2	4-7/16	4-7/16	8-7/16	6	8-7/16	4-5/8
EJB361810	6	6	5	5	6	6	3-1/2	2-1/2	6-1/2	4-3/4	4-3/4	8-7/16	6	8-7/16	4-5/8
EJB362408	5	5	5	5	5	5	5	3-1/2	6	4-3/16	4-3/16	8-7/16	8-7/16	8-7/16	6

**TABLE 3 SYMBOLS FOR OPENINGS**

NPT Conduit Size	Drilled & Tapped Hole Symbol	Metric Openings	Drilled & Tapped Hole Symbol
1/2	A	M16	AM
3/4	B	M20	BM
1	C	M25	CM
1-1/4	E	M32	EM
1-1/2	F	M40	FM
2	G	M50	GM
2-1/2	H	M63	HM
3	J		
3-1/2	K		
4	L		
5	M		
6	N		



**Step 3**

Based upon the EJB selected, use Section 3 of the order form and outline the maximum number of columns and rows available (from Table 1) beginning in the upper left corner. Fill in the length of each side in the space provided.

Note that the left side will be hinged unless otherwise specified in Section 2. In our example, an EJB161606 was selected and according to Table 1, a total of 36 device spaces are available (6 columns and 6 rows). See sample order form.

**Step 4**

Place the appropriate letter symbol from Section 1 of the order form in the position you desire the devices or openings to be located. If a window is required, outline the position and number of spaces the window will occupy and place the symbol of the window (w) in the center.

Note that 2 windows per enclosure can be used. If more windows are required contact factory. (See appropriate window information in the sample order form)

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Step 5

Indicate the desired device marking (DSL legend plate) or engraved plate for each device or window in Section 4 of the order form.

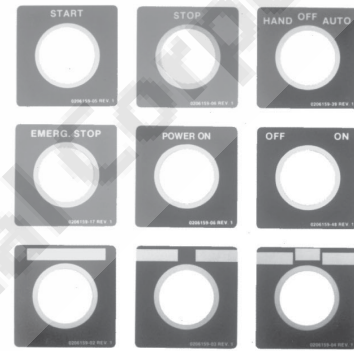
Engraved plates will be located above the device or window and are white letters on a black background. If an engraved plate is desired, fill in desired wording on engraved plate (up to 2 lines) on Section 4 of order form. If a device marking is required on EMP device, insert the DSL catalog number from those listed below (Table 5) on Section 4 of order form under column labeled "Device Marking." Be sure to specify the row and column location of the EMP device being marked. See sample order form.

That's it. *It's that simple.* Now fax the order form to your local Eaton's Crouse-Hinds Distributor.

TABLE 5 LEGEND PLATE SELECTOR CHART

Use the charts below to select the appropriate legend plate(s) for your application. Markings shown in bold print are etched; all others are stamped.

Single Function Legend Plates		Double Function Legend Plates		Triple Function Legend Plates	
Marking	Cat #.	Marking	Cat #.	Marking	Cat #.
Automatic	DSL16	Blank with 2 fields	DSL03	Auto-Off-Hand	DSL49
Blank	DSL01	<b>For-Rev</b>	DSL30	Blank with 3 fields	DSL04
Blank with single field	DSL02	Hand-Auto	DSL29	Fast-Off-Slow	DSL41
<b>Close</b>	DSL21	In-Out	DSL35	<b>For-Off-Rev</b>	DSL40
<b>Down</b>	DSL23	<b>Off-On</b>	DSL48	<b>Hand-Off-Auto</b>	<b>DSL39</b>
<b>Emerg. Stop</b>	DSL17	<b>Open-Close</b>	DSL32	<b>Run-Off-Jog</b>	<b>DSL38</b>
Fast	DSL46	Raise-Lower	DSL36	<b>Open-Off-Close</b>	DSL43
Forward	DSL18	<b>Run-Jog</b>	DSL28	Raise-Off-Lower	DSL87
Hand	DSL15	Safe-Run	DSL86	Slow-Off-Fast	DSL88
In	DSL24	Start-Stop	DSL37	Up-Off-Down	DSL44
Jog	DSL10	Slow-Fast	DSL65	1-Off-2	DSL42
Lower	DSL27	<b>Up-Down</b>	DSL33	Note: Background color for all legend plates is black with the following exceptions:	
<b>On</b>	DSL07				
<b>Off</b>	DSL08			<b>Marking</b>	<b>Plate Color</b>
<b>Open</b>	DSL20			Start	Green
Out	DSL25			Stop	Red
Power On	DSL14			Emerg. Stop	Red
Raise	DSL26				
Reset	DSL12				
Reverse	DSL19				
Run	DSL09				
<b>Safe</b>	DSL85				
Slow	DSL47				
<b>Start</b>	DSL05				
<b>Stop</b>	DSL06				
<b>Test</b>	DSL13				
Trip	DSL11				
<b>Up</b>	DSL22				



1E

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Please photocopy and fax all pages of order form (Sections 1-4) to your local Eaton's Crouse-Hinds Distributor.

Section 1: EMP Style Operators—UL, cULus and ATEX

Number of Devices: Indicate the Number of Devices, Openings Without Devices and Window(s) Required.

Pilot Lights			
	Diagram	Symbol	Quantity
EMP009-J1 (Red)		A	_____
EMP009-J1-LED		A1	_____
EMP0090-J1		A2	_____
EMP0098-J1		A4	_____
EMP009-J3 (Green)		B	_____
EMP009-J3-LED		B1	_____
EMP0090-J3		B2	_____
EMP0098-J3		B4	_____
EMP009-J6 (Amber)		C	_____
EMP009-J6-LED		C1	_____
EMP0090-J6		C2	_____
EMP0098-J6		C4	_____
EMP009-J10 (Clear)		E	_____
EMP0090-J10		E2	_____
EMP0098-J10		E4	_____
EMP009-J11 (Blue)		F	_____
EMP0090-J11	F2	_____	
EMP0098-J11	F4	_____	

Selector Switches – Two position			
	Diagram	Symbol	Quantity
EMP049		Q	_____
EMP059		R	_____

Selector Switches – Three position			
	Diagram	Symbol	Quantity
EMP069		S	_____
EMP069-S634		S4	_____
EMP069-S635		S5	_____
EMP079		T	_____
EMP079-S634		T4	_____
EMP079-S635		T5	_____
EMP089		U	_____
EMP089-S634		U4	_____
EMP089-S635		U5	_____

Pushbuttons—Single Pushbutton			
	Diagram	Symbol	Quantity
EMP019 (Black)		G	_____
EMP019 (Red)		H	_____
EMP019 (Green)		J	_____
EMP098 (Red)		K	_____

Selector Switches – Keyed Selector Switches			
	Diagram	Symbol	Qty
EMP0491		Q6	_____
EMP0492		Q7	_____
EMP0493		Q8	_____
EMP0591		R6	_____
EMP0592		R7	_____
EMP0593		R8	_____
EMP0691		S6	_____
EMP0692		S7	_____
EMP0693		S8	_____
EMP0694		S9	_____
EMP0791		T6	_____
EMP0792		T7	_____
EMP0793		T8	_____
EMP0794		T9	_____
EMP0891		U6	_____
EMP0892		U7	_____
EMP0893		U8	_____
EMP0894		U9	_____

Pushbuttons—Double Pushbutton, Single Operator			
	Diagram	Symbol	Quantity
EMP029 (Black)		L	_____
EMP029 (Red)		M	_____
EMP029 (Green)		N	_____

Pushbuttons—Double Pushbutton, Double Operator			
	Diagram	Symbol	Quantity
EMP039		P	_____

Total Number of all Devices on this page \_\_\_\_\_

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**Section 1: EMP Style Operators Continued**

**Number of Devices:** Indicate the Number of Devices, Openings Without Devices and Window(s) Required.

Openings Without Devices (For Future Expansion)	
	Symbol    Quantity
3/4" - 14 NPSM Opening (plugged)	V        _____

Windows			
	Symbol	Quantity	# of Openings
GUB0108	W	_____	_____

Total Number of all Device Openings from previous page \_\_\_\_\_

Total Number of all Devices / Openings from Section 1 \_\_\_\_\_

1E



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**Section 2**

**Completed Catalog Number:**

Specify the complete catalog number including conduit designations.

EJB \_\_\_\_\_

All Eaton's Crouse-Hinds Custom-Built Control Panels are provided with a mounting plate and hinges. Hinges are on left side of enclosure. If you desire hinges on one of the other sides, circle choice here: TOP RIGHT BOTTOM

Distributor:	Contact:
Customer:	Phone Number:
<b>EATON'S CROUSE-HINDS FACTORY USE ONLY</b>	
Catalog Number Entered:	
Reference #:	B#
<b>OPTIONS</b>	
For any of the following options, check here:	
___ ATEX Certified (ATEX)	
___ Breather and Drain (S756V)	
___ Epoxy finish, external (S752)	
___ Epoxy finish, internal and external (S753)	

**Section 3—Exterior Front View**

**Location of Devices and Windows in Cover:**

Outline the cover space available, beginning in the upper left corner of the grid, based upon the EJB selected. See Table 1 for device layout.

	size												
	1	2	3	4	5	6	7	8	9	10	11	12	13
A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	size												
D	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
J	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
K	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
L	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
M	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Bottom												
	Note: All device openings are spaced 2.62" center to center.												

**Section 4**

**Device Markings:**

Indicate by row and column position markings/legends for each device.

**Engraved Plate:**

Specify markings for each nameplate based upon the following:

Marking Size	Maximum Number of Characters/Line			
	1/8"	3/16"	1/4"	1/2"
Number of Characters	36	24	18	9

Specify		Device Marking (DSL) or Engraved Plate Line 1	Engraved Plate Line 2	Marking Size
Row	Column			