

EDS Factory Sealed Tumbler Switches

Explosionproof, Dust-Ignitionproof

UNILETS™ for Use with Threaded Metal Conduit.

NEC:

Class I, Division 1 and 2, Groups B♦, C, D

Class II, Division 1 and 2, Groups E, F, G

Class III

NEMA 3, 7 B♦CD, 9EFG

Applications

- Designed to prevent arcing of enclosed switches in ignitable atmospheres during connect and disconnect operation of lighting and light power loads.
- For use in classified areas where ignitable vapors, gases or highly combustible dusts are present.
- For installation in:
 - Chemical plants
 - Petrochemical plants
 - Refineries
 - Other process industries

Features

- Enclosures have external mounting lugs for ease of mounting.
- Smooth, rounded integral bushing in each hub protects conductor insulation.
- Enclosures furnished with internal ground screw.
- 20 Amp and 30 Amp units available for use with 120-277 Vac.
- Factory sealed switches are designed to a UL Standard so that any arcing devices are contained within an explosionproof labyrinth switch (standard switch and sealing chamber on select models). Tumbler switch devices are approved for installation without additional external sealing fittings.
- 1/2" and 3/4" 1-gang units suitable for Class I, Group B, in addition to Class I, Groups C and D; Class II, Groups E, F and G; and Class III.
- 20 Amp 4-way and all 30 Amp models utilize a switch enclosed in separate sealing chamber. Smooth double-face, accurately ground surfaces on sealing chamber flange mate with cover and body to provide positive flame-tight construction.
- Sealing chamber has prewired factory sealed pigtail leads to switch.
- Corrosion resistant, strong stainless steel hex head cap screws attach cover/body/sealing chamber assembly for approved flame-tight construction.
- Threaded stainless steel operating handle provides positive Corrosion resistant operation.
- Choice of front-operating or side rocker arm handle—each may be locked in ON or OFF position.

Standard Materials

- Body and cover: malleable iron
- Sealing chamber (on select models): copperfree (4/10 of 1% max.) aluminum
- Handle: nylon 6/6
- Optional nameplate mounting bracket: corrosion resistant stainless steel

Standard Finishes

- Tumbler switches: triple-coat—(1) zinc electroplate, (2) chromate, and (3) epoxy powder coat



Front Operated

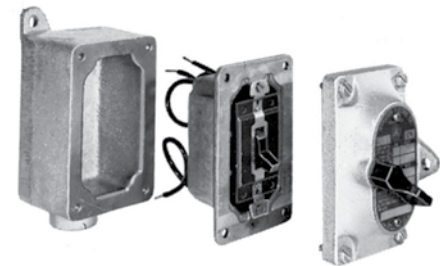


Rocker Arm Operated

Illustrated Features



Handles may be locked in ON or OFF position



Separate sealing chamber and switch construction.
Used on 20 Amp 4-way and all 30 Amp models.



Explosionproof Labyrinth Switch
Used on all 20 Amp models excluding 4-way.

♦ Indicates items which are suitable for Class I, Group B, as well as Class I, Groups C and D; Class II, Groups E, F, G; and Class III. See product selection pages for suitable items.

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NEMA 3, 7 B♦CD, 9EFG

Options

- 1- or 2-gang copperfree (4/10 of 1% max.) aluminum bodies and covers ① available. Add suffix – **A**.
- **NPBRKT** nameplate mounting bracket to make circuit description/identification easy.
 - Pre-drilled holes in bottom of bracket allow direct mounting to control stations with existing cover bolts.
 - Pre-drilled holes in middle of bracket allow mounting of customer's circuit identification nameplate; epoxy glue may also be used for mounting (phenolic nameplate not included).
 - Bracket eliminates costly field installation of drilling and tapping to accommodate circuit identification nameplate.
 - Brackets fit side-by-side on 2-, 3- and 4-gang boxes and 3-devices.

Standard Materials

- Body and cover: malleable iron

NEC Certifications and Compliances

- UL Standards: UL 894, UL 1203
- UL Listed: E10523, E81751

Ordering Information for "Custom" Units

- Devices, covers and bodies may be ordered separately so that a *different* EDS chamber/switch assembly may be used in *each* gang.
- Order components separately as follows:
 - (1) select mounting body catalog number,
 - (2) select cover catalog number with desired switch operation (1-pole, 2-pole, 3-way or 4-way).

How to Order Hub Arrangements

- Simply send sketch indicating sizes and locations for brazed hubs on body or bodies selected from catalog listings. Orient sketch so that cover opening faces front and mounting lugs face upward and downward (box wall opposite cover should be referred to as the *back* of box).

Bodies and Hubs Available

- Tumbler switches may be ordered in single thru five gang deep malleable iron blank bodies with brazed hubs as specified at any location.
- Tumbler switches may be ordered with tandem malleable iron boxes with additional brazed hubs as specified.
- Standard malleable iron single and 2-gang tumbler switches may be ordered with additional brazed hubs as specified.
- Single and 2-gang tumbler switches may be ordered with aluminum boxes with additional brazed hubs as specified.

Related Products

- For classified-location push button, pilot light and selector switch control stations, see *EFD/EFDB and EDS Control Stations and Pilot Lights*.

♦ Indicates items which are suitable for Class I, Group B, as well as Class I, Groups C and D; Class II, Groups E, F, G; and Class III. See product selection pages for suitable items.

① Aluminum rocker arm cover is not available.





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Malleable Iron Body and Cover. Furnished with Internal Ground Screw.

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Class I, Division 1, Groups B+, C, D
 Class I, Division 2, Groups B, C, D
 Class II, Division 1 and 2, Groups E, F, G
 Class III
 NEMA 3, 7CD, 9EFG

	Hub Size (Inches)	Switch	Dead-End	Catalog Number ①	Feed-Thru
1-Gang — Front Operated					
20 Amp — 120-277 Vac ②					
	1/2	1-Pole	EDS150-F1	EDSC150-F1	
	1/2	2-Pole	EDS150-F2	EDSC150-F2	
	1/2	3-Way	EDS150-F3W	EDSC150-F3W	
	1/2	4-Way	EDS150-F4W ④	EDSC150-F4W ④	
Dead-End	3/4	1-Pole	EDS175-F1	EDSC175-F1	
	3/4	2-Pole	EDS175-F2	EDSC175-F2	
	3/4	3-Way	EDS175-F3W	EDSC175F3W	
	3/4	4-Way	EDS175-F4W ④	EDSC175F4W ④	
	1	1-Pole	EDS110-F1	EDSC110-F1	
	1	2-Pole	EDS110-F2	EDSC110-F2	
	1	3-Way	EDS110-F3W	EDSC110-F3W	
	1	4-Way	EDS110-F4W ④	EDSC110-F4W ④	
30 Amp — 120-277 Vac ③					
Feed-Thru	3/4	1-Pole	EDS175-F13 ④	EDSC175-F13 ④	
	3/4	2-Pole	EDS175-F23 ④	EDSC175-F23 ④	
	3/4	3-Way	EDS175-F3W3 ④	EDSC175-F3W3 ④	
	1	1-Pole	EDS110-F13 ④	EDSC110-F13 ④	
	1	2-Pole	EDS110-F23 ④	EDSC110-F23 ④	
	1	3-Way	EDS110-F3W3 ④	EDSC110-F3W3 ④	
2-Gang — Front Operated					
20 Amp — 120-277 Vac ②					
	1/2	1-Pole	EDS250-F1	EDSC250-F1	
	1/2	2-Pole	—	EDSC250-F2	
	1/2	3-Way	—	EDSC250-F3W	
	1/2	4-Way	—	EDSC250-F4W ④	
Dead-End	3/4	1-Pole	EDS275-F1	EDSC275-F1	
	3/4	2-Pole	—	EDSC275-F2	
	3/4	3-Way	EDS275-F3W	EDSC275-F3W	
	3/4	4-Way	—	EDSC275-F4W ④	
	1	1-Pole	EDS210-F1	EDSC210-F1	
	1	2-Pole	EDS210-F2	EDSC210-F2	
	1	3-Way	EDS210-F3W	EDSC210-F3W	
	1	4-Way	EDS210-F4W ④	EDSC210-F4W ④	
Feed-Thru					

① For aluminum backbox and cover, add suffix -A.

② 20 Amp — 1 HP at 120 Vac and 2 HP at 240 Vac.

③ 30 Amp — 2 HP at 120 Vac or 240 Vac.

④ Contains standard switch and sealing chamber.



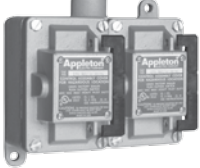
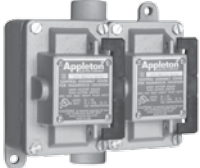
◆ Shaded area indicates items suitable for Class I, Group B, as well as Class I, Groups C and D; Class II, Groups E, F, G; and Class III.

EDS Factory Sealed Tumbler Switches

Explosionproof, Dust-Ignitionproof

Malleable Iron Body and Cover. Furnished with Internal Ground Screw.

NEC:
 Class I, Division 1, Groups B+, C, D
 Class I, Division 2, Groups B, C, D
 Class II, Division 1 and 2, Groups E, F, G
 Class III
 NEMA 3, 7 B+CD, 9EFG

		Hub Size (Inches)	Switch	Catalog Number ①	
				Dead-End	Feed-Thru
1-Gang — Rocker Arm Operated					
20 Amp — 120-277 Vac ②					
	Dead-End	1/2	1-Pole	EDS150-R1	EDSC150-R1
		1/2	2-Pole	EDS150-R2	EDSC150-R2
		1/2	3-Way	EDS150-R3W	EDSC150-R3W
		1/2	4-Way	EDS150-R4W ④	EDSC150-R4W ④
	Feed-Thru	3/4	1-Pole	EDS175-R1	EDSC175-R1
		3/4	2-Pole	EDS175-R2	EDSC175-R2
		3/4	3-Way	EDS175-R3W	EDSC175-R3W
		3/4	4-Way	EDS175-R4W ④	EDSC175-R4W ④
30 Amp — 120-277 Vac ③					
		3/4	1-Pole	EDS175-R13 ④	EDSC175-R13 ④
		3/4	2-Pole	EDS175-R23 ④	EDSC175-R23 ④
		3/4	3-Way	EDS175-R3W3 ④	EDSC175-R3W3 ④
		1	1-Pole	EDS110-R13 ④	EDSC110-R13 ④
		1	2-Pole	EDS110-R23 ④	EDSC110-R23 ④
		1	3-Way	EDS110-R3W3 ④	EDSC110-R3W3 ④
2-Gang — Rocker Arm Operated					
20 Amp — 120-277 Vac ②					
	Dead-End	1/2	1-Pole	EDS250-R1	EDSC250-R1
		1/2	2-Pole	—	EDSC250-R2
		1/2	3-Way	—	EDSC250-R3W
		1/2	4-Way	—	EDSC250-R4W ④
	Feed-Thru	3/4	1-Pole	EDS275-R1	EDSC275-R1
		3/4	2-Pole	—	EDSC275-R2
		3/4	3-Way	EDS275-R3W	EDSC275-R3W
		3/4	4-Way	—	EDSC275-R4W ④
		1	1-Pole	EDS210-R1	EDSC210-R1
		1	2-Pole	EDS210-R2	EDSC210-R2
		1	3-Way	EDS210-R3W	EDSC210-R3W
		1	4-Way	EDS210-R4W ④	EDSC210-R4W ④

① For aluminum backbox, add suffix -A.

② 20 Amp — 1 HP at 120 Vac and 2 HP at 240 Vac.

③ 30 Amp — 2 HP at 120 Vac or 240 Vac.

④ Contains standard switch and sealing chamber.

◆ Shaded area indicates items suitable for Class I, Group B, as well as Class I, Groups C and D; Class II, Groups E, F, G; and Class III.

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 Class III
 NEMA 3, 7CD, 9EFG

Factory Assembled Switch Assembly

	Switch Type	Catalog Number			
		20 Amp, 120–277 Vac ①		30 Amp, 120–277 Vac ②	
		Malleable Iron	Aluminum	Malleable Iron	Aluminum
 Front Cover	1-Pole	EDKF21-Q ③	EDKF21-AQ ③	EDKF31-Q ④	EDKF31-AQ ④
	2-Pole	EDKF22-Q ③	EDKF22-AQ ③	EDKF32-Q ④	EDKF32-AQ ④
	3-Way	EDKF23W-Q ③	EDKF23W-AQ ③	EDKF33W-Q ④	EDKF33W-AQ ④
	4-Way	EDKF24W-Q ④	EDKF24W-AQ ④	—	—
 Rocker Cover/Chamber	1-Pole	EDK-R21-Q ③		EDK-R31-Q ④	
	2-Pole	EDK-R22-Q ③		EDK-R32-Q ④	
	3-Way	EDK-R23W-Q ③		EDK-R33W-Q ④	
	4-Way	EDK-R24W-Q ④		—	
 Factory Sealed Switch Only	1-Pole	LAB21		—	
	2-Pole	LAB22		—	
	3-Way	LAB23W		—	

Nameplate Mounting Bracket

Description	Catalog Number
 <p>Bracket with blank silver/black nameplate for EFDB series</p> <p>To order bracket with control station, add suffix -NPBRKT to end of catalog number.</p> <p>To order engraved nameplates, add desired markings after catalog number. Maximum of 2 lines with 12 characters (including spaces) per line.</p> <p><i>Note: Mount bracket between cover screws and cover. Do not mount bracket between ground joint flame path between cover and backbox.</i></p>	NPBRKT-EFDB




① 20 Amp Switches 1 HP at 120 Vac and 2 HP at 240 Vac.
 ② 30 Amp Switches 2 HP at 120 Vac or 240 Vac.
 ③ Contains Factory Sealed Switch; no sealing chamber.
 ④ With sealing chamber.

EFD Factory Sealed Tumbler Switches

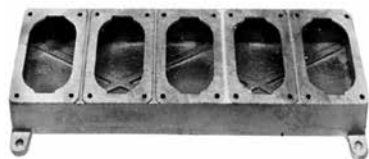
Furnished with Internal Ground Screw.

NEC:
 Class I, Division 1 and 2, Groups C, D
 Class II, Division 1 and 2, Groups E, F, G
 Class III
 NEMA 7CD, 9EFG

Mounting Bodies

	Type	Hub Size (Inches)	Catalog Number	
			Malleable Iron	Aluminum
1-Gang				
	Dead-End	1/2	EFD150NLQ	EFD150ANLQ
		3/4	EFD175NLQ	EFD175ANLQ
		1	EFD110NLQ	EFD110ANLQ
	Feed-Thru	1/2	EFDC150NLQ	EFDC150ANLQ
		3/4	EFDC175NLQ	EFDC175ANLQ
		1	EFDC110NLQ	EFDC110ANLQ
2-Gang				
	Dead-End	1/2	EFD250NLQ	EFD250ANLQ
		3/4	EFD275NLQ	EFD275ANLQ
		1	EFD210NLQ	EFD210ANLQ
	Feed-Thru	1/2	EFDC250NLQ	EFDC250ANLQ
		3/4	EFDC275NLQ	EFDC275ANLQ
		1	EFDC210NLQ	EFDC210ANLQ
Tandem ①				
	Dead-End	1/2	EFDT50NLQ	—
		3/4	EFDT75NLQ	—
		1	EFDT10NLQ	—
	Feed-Thru	1/2	EFDC250NLQ	—
		3/4	EFDC275NLQ	—
		1	EFDC210NLQ	—

Blank Bodies for Brazed Hubs



Construct complete catalog numbers per EFD Cast Device Boxes Ordering Information on following page. Hubs will be located in center of walls and evenly spaced unless otherwise specified. Where spacings are critical, submit sketch showing exact spacing requirements.

1-Gang	EFD1NL
2-Gang	EFD2NL
3-Gang	EFD3NL
4-Gang	EFD4NL
5-Gang	EFD5NL

① For tandem bodies, external seals must be installed within 1.5 meters (5 feet) of each conduit entrance for Class I, Groups C and D.

EDS Factory Sealed Tumbler Switches

Blank Bodies for Brazed Threaded Hubs

Single, Two, Three, Four and Five Gang Boxes. Brazed Threaded Hubs for Rigid Conduit, 1/2" thru 1"; Brazed Union Hubs, 1/2" thru 1".

NEC:

Class I, Division 1 and 2, Groups C, D
 Class II, Division 1 and 2, Groups E, F, G
 Class III
 NEMA 7CD, 9EFG

Cast Device Box Ordering Information

- Determine catalog number as follows:**
- (1) Select EFD device box catalog number;
 - (2) Select "Standard Hub Arrangement Diagram" number; and
 - (3) Select symbols that represent hub sizes from "Symbol Table." (Use "0" where no hub is required, and separate the various divisions of the complete catalog number by dashes.)

Example

The blank body device box selected is EFD3NL and the hub arrangement is diagram #8. Hub "a" is to be 3/4" brazed threaded; hub "b", 1" brazed threaded; hub "c", 3/4" brazed threaded; hub "d", no hub is required; and hub "e", 1" brazed union. The complete catalog number will be: **EFD-3NL-8-23203E**

If a "Standard Hub Arrangement" is not suitable for the application, or when hubs are to be more accurately spaced, submit sketch locating hubs (1) from centerlines of walls and (2) from outside back of box (or from mounting lug surface if lugs are supplied).

All hubs will be located in centerlines of walls and evenly spaced unless otherwise specified.

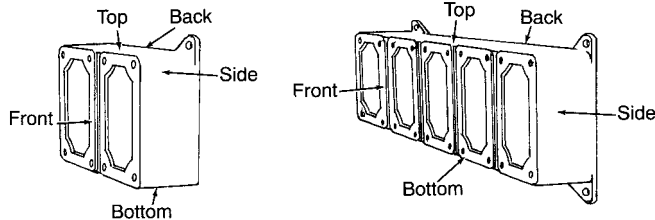
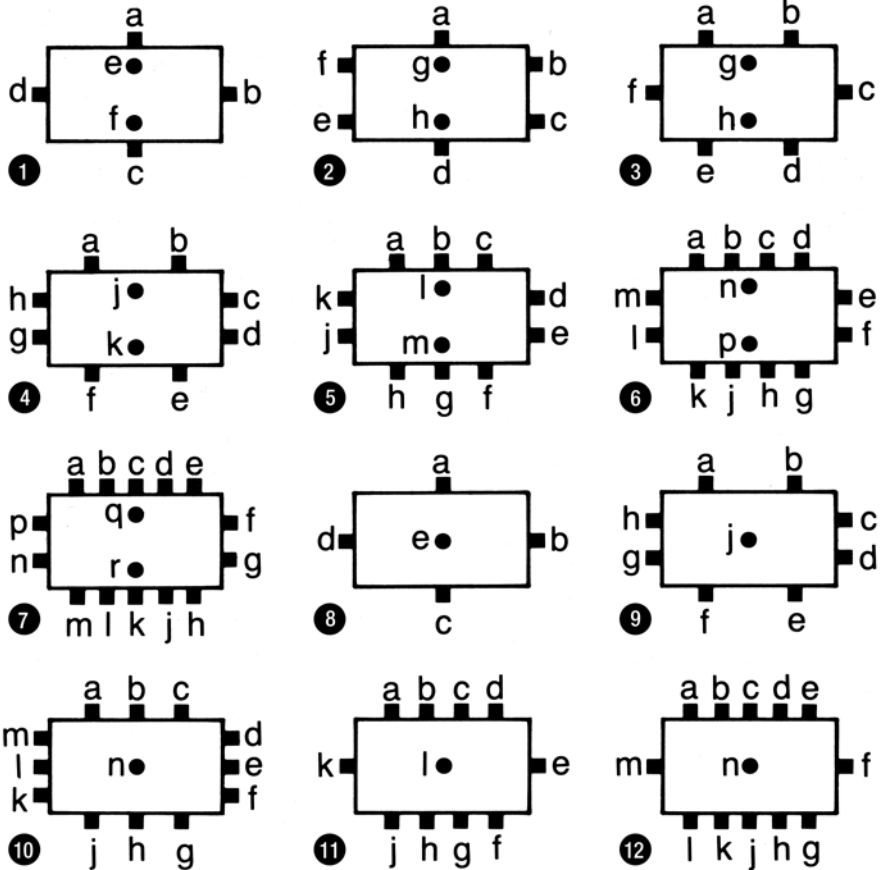
Symbol Table

Hub Size (Inches)	Brazed Threaded Hub Symbol	Brazed Union Hub Symbol
Blank	0	0
1/2	1	1E
3/4	2	2E
1	3	3E

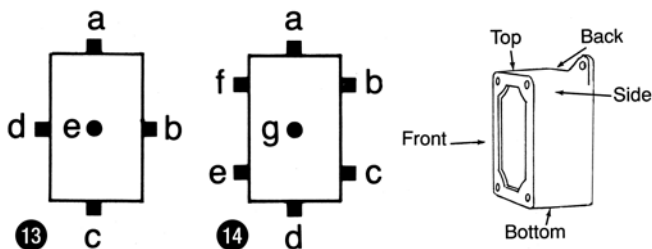
Standard Hub Arrangement Diagrams

Hub "a" is always TOP of box

2-, 3-, 4- and 5-Gang (Front View)



1-Gang (Front View)



Appleton

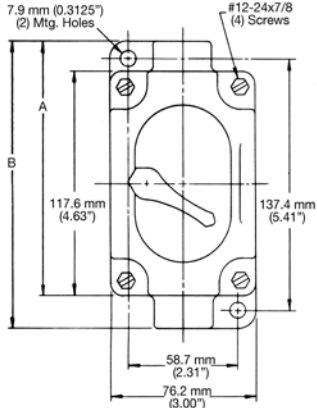
CONTROLS: NEC/CEC EXPLOSIONPROOF CONTROL STATIONS AND SWITCHES

EDS Factory Sealed Tumbler Switches

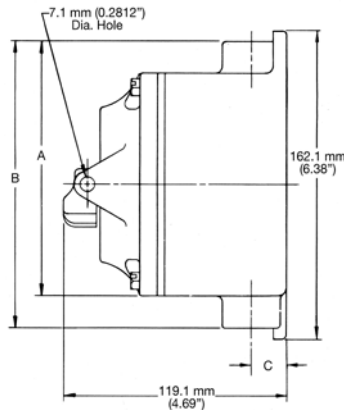
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Dimensions in Millimeters (Inches)

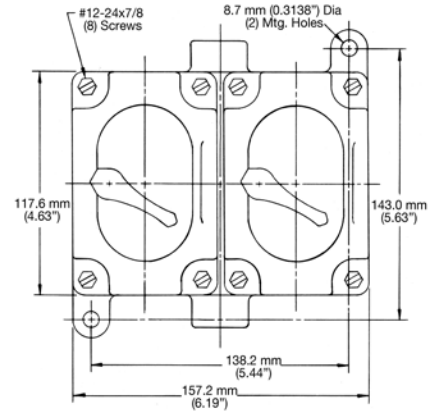
Front Operated Tumbler Switches



Front — 1-Gang



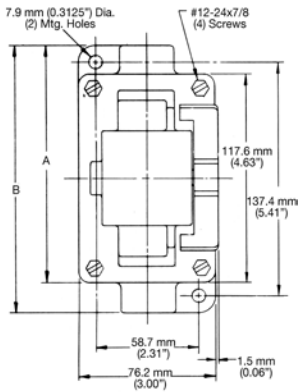
Side



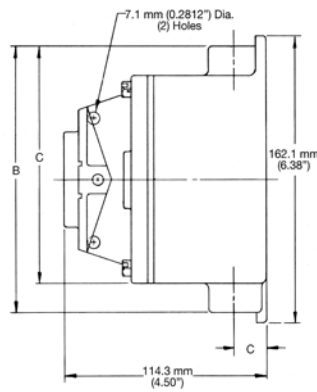
Front — 2-Gang

Hub Size (Inches)	Dimensions in Millimeters (Inches)		
	A	B	C
1/2 and 3/4	136.7 (5.38)	155.7 (6.13)	19.8 (0.78)
1	139.7 (5.50)	160.3 (6.31)	23.9 (0.94)

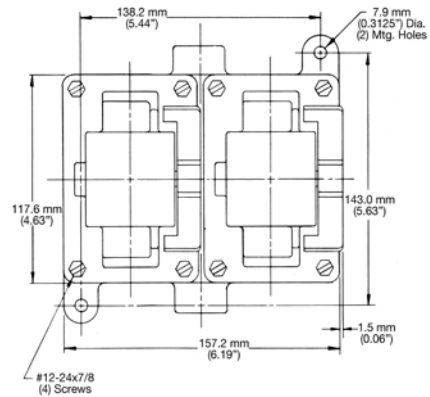
Rocker Arm Operated Tumbler Switches



Front — 1-Gang



Side



Front — 2-Gang

Hub Size (Inches)	Dimensions in Millimeters (Inches)		
	A	B	C
1/2 and 3/4	136.7 (5.38)	155.7 (6.13)	19.8 (0.78)
1	139.7 (5.50)	160.3 (6.31)	23.9 (0.94)

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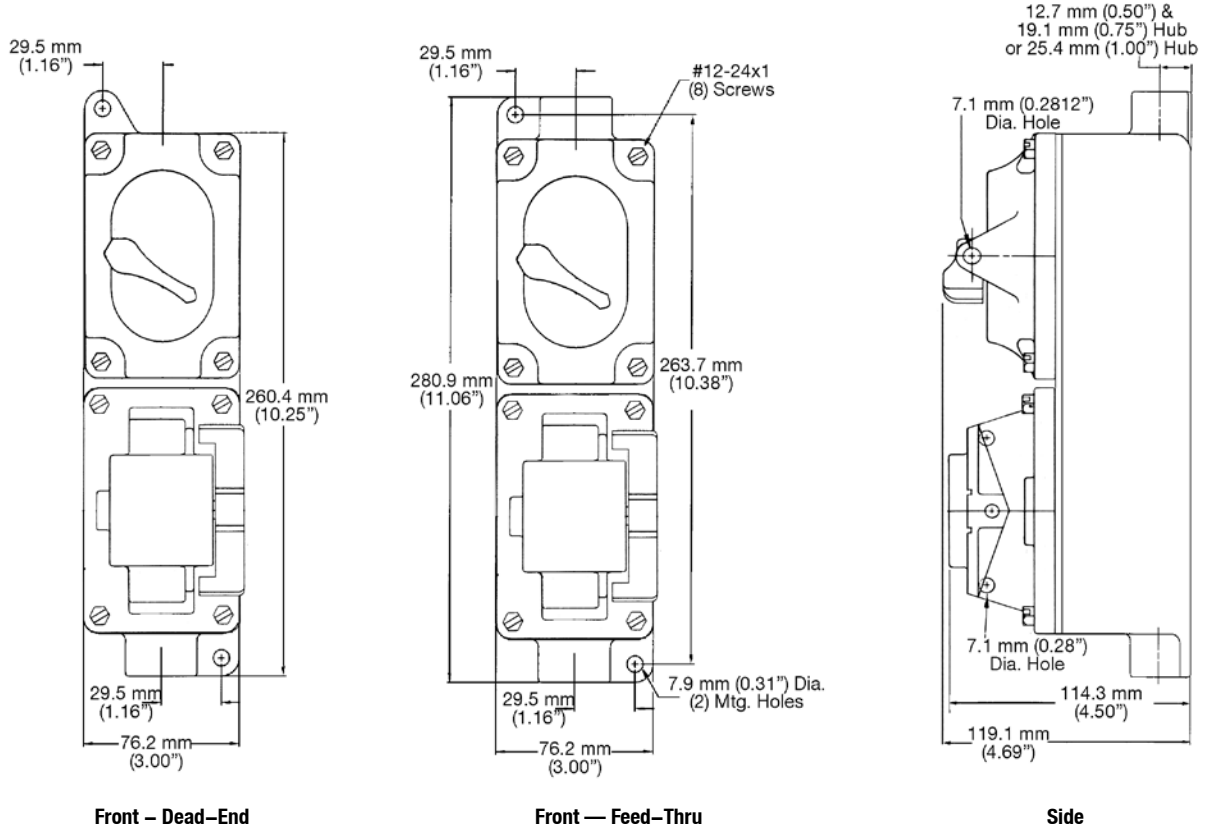
EDS Factory Sealed Tumbler Switches

NEC:

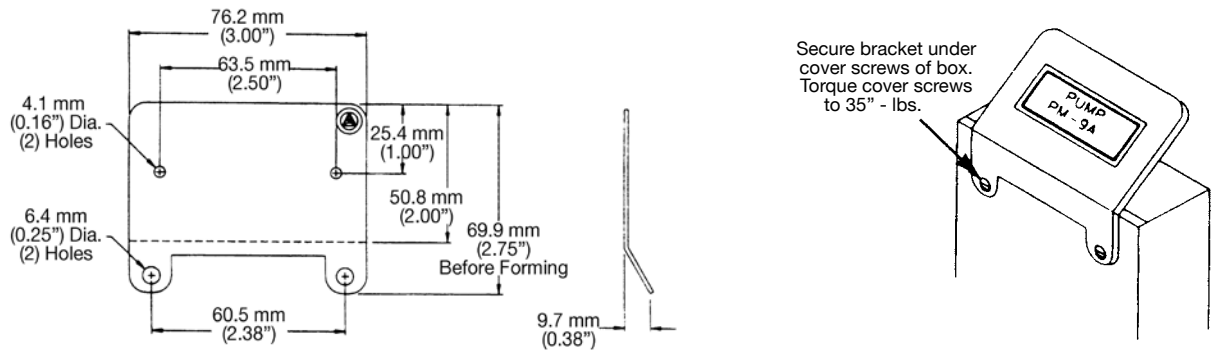
- Class I, Division 1, Groups B♦, C, D
- Class I, Division 2, Groups B, C, D
- Class II, Division 1 and 2, Groups E, F, G
- Class III
- NEMA 3, 7 B♦CD, 9EFG

Dimensions in Millimeters (Inches)

Tandem



NPBRKT Nameplate Mounting Bracket



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