

Cast Iron Junction Boxes

NEC/CEC:
Rated for Ordinary (Unclassified) Locations

I. Purpose of Enclosure

Enclosures are used to protect personnel against accidental contact with enclosed electrical devices or connections and to protect the enclosed devices or connections against specified external conditions. They also serve as intermediate pulling and splicing points in a conduit system.

II. Design of Enclosures

Enclosures are offered in different designs and construction to permit their use in various locations and areas. These are as follows:

Non-hazardous Locations:

1. Weatherproof boxes are so constructed as to be suitable for use outdoors under normal conditions. If it is necessary to prevent the entry of water under extreme conditions of weather, boxes listed as watertight or raintight are recommended.
2. Raintight boxes are so constructed as to exclude a beating rain. All boxes in this catalog which are designated as raintight have been so listed by Underwriters Laboratories, Inc. and CSA group.
3. Watertight boxes (NEMA Type 4) are constructed to meet the requirements listed under "NEMA DATA."
4. Submersible boxes are so constructed that they will exclude water when submerged under specified conditions of pressure and time.
5. Dust-tight boxes are so constructed to meet the requirements listed under "NEMA DATA".

Hazardous Locations:

Consult the Enclosures and Junction Boxes section for our complete offering.

III. Advantages of Cast Enclosures

Cast metal enclosures have the advantage over formed (fabricated) sheet metal enclosures for the following reasons:

- A. They are of one piece construction and do not have the disadvantages of spot welded seams usually found in formed sheet metal boxes.
- B. They have greater mechanical strength, have thicker walls and are suitable for drilling and tapping at the factory or in the field.
- C. They are corrosion resistant and can withstand more mechanical abuse.

IV. Cast Metals

CAST IRON BOXES will provide long life, are inherently corrosion resistant and have the lowest initial cost.

V. Finishes on Cast Enclosures

CAST IRON - The hot-dip galvanized finish which is applied to all our cast iron boxes will conform to ASTM Designation A153-73, Class A and NEMA requirements for rust-resistance.

VI. Hardware Used on Cast Enclosures

CAST IRON BOXES are furnished with stainless steel screws.

VII. Specification of Extras on Cast Enclosures

The type of holes to be provided for the entrance of conduit into the enclosure are defined under "Instructions for Ordering Boxes."

VIII. Specification of Extras on Cast Enclosures

The "Standard Construction" of each type of enclosure is shown on each listing. The extras which are available and must be specified are shown under "Additional Cost Items."

Cast Iron Junction Boxes — NEMA Data

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Our cast junction boxes are designed, constructed and tested to comply with NEMA standards. The following chart has been prepared to provide a quick reference for selecting enclosures to meet specific NEMA requirements.

A brief description of the more common types of enclosures used by the electrical industry relating to their environmental capabilities follows. Please refer to the appropriate sections of NEMA Standards Publication No. 250-2014. Enclosures for Electrical Equipment (1000 Volts Maximum) for complete information regarding applications, features and design tests.

Definitions Pertaining to Non-hazardous Locations

- **Type 1** enclosures are intended for use primarily to provide a degree of protection against contact with the enclosed equipment.
- **Type 2** enclosures are intended for indoor use primarily to provide a degree of protection against limited amounts of falling water.
- **Type 3** enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow and windblown dust; and that will be undamaged by the external formation of ice on the enclosure.
- **Type 3R** enclosures are intended for outdoor use primarily to provide a degree of protection against falling rain, sleet, and external ice formation.
- **Type 3S** enclosures are intended for outdoor use primarily to provide a degree of protection against windblown dust, rain, sleet, and provide for operation of external mechanisms when ice laden.
- **Type 4** enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, and hose-directed water.

- **Type 5** enclosures are intended for indoor use primarily to provide a degree of protection against dust and falling dirt.
- **Type 6** enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against the entry of water during occasional temporary submersion at a limited depth. (30 min. @ 6 ft.)
- **Type 6P** enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against the entry of water during prolonged submersion at a limited depth. (24 hrs. @ 6 ft.)
- **Type 12** enclosures are intended for indoor use primarily to provide a degree of protection against dust, falling dirt, and dripping non-corrosive liquids.
- **Type 12K** enclosures with knockouts are intended for indoor use primarily to provide a degree of protection against dust, falling dirt, and dripping non-corrosive liquids other than at knockouts.
- **Type 13** enclosures are intended for indoor use primarily to provide a degree of protection against dust, spraying of water, oil, and non-corrosive coolant.

Definitions Pertaining to Hazardous (Classified) Locations

- **Type 7** enclosures are for use indoors in locations classified as Class I, Groups A, B, C, or D, as defined in the National Electrical Code. See Enclosures and Junction Boxes section.
- **Type 9** enclosures are for use in indoor locations classified in Class II, Groups E, F, or G, as defined in the National Electrical Code. Enclosures and Junction Boxes section.

Type of Enclosure	Type 1 Type 5	Type 2	Type 3 Type 3R Type 3S	Type 4	Type 6	Type 12 Type 12K Type 13
WYS/YS	✓	✓	✓	✓		✓
WYL/YL	✓	✓	✓	✓		✓
WYF/YF	✓	✓	✓	✓	✓	✓
WYW/YW	✓	✓	✓	✓		✓
WYR/YR	✓	✓	✓	✓		✓
WYU/YU	✓	✓	✓			✓
WYT/YT	✓	✓	✓	✓		✓
WY58E/Y58E	✓	✓				

Cast Junction Box Ordering Information

Boxes Available for Raintight, Watertight, or Submersible Applications

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The following information should be given on all box orders:

Catalog Number and Inside Dimensions
(L x W x D) should be specified

Sketch showing size and location of conduit entrances should be furnished similar to Drilling Template, Fig. 2. Tables give recommended spacing between conduits and minimum distance from corner and back of box. When spacings are not specified, they will be located at our discretion.

Type of Conduit Entrances (see Fig. 1, below) should be specified as follows:

1. Slip-Hole (ASH) - conduit clearance hole.
2. Drilled and Tapped hole (ADT).
3. Bossed, Drilled and Tapped hole to provide greater thread engagement (ABDT).
4. Boss only (ABWH) - for Drilling and Tapping in field. Specify conduit size.

Mounting Lugs (See Fig. 1 below) are provided on all surface mounted boxes. Boxes up to 12" x 6" have 2 mounting lugs. Larger boxes have 4 mounting lugs. All mounting lugs will be located on the long sides of the box, unless otherwise specified. Refer to W-Series Cast Box Mounting Lug data for dimensional information.

Conduit Entrances:

Slip Holes: These are clearance holes for conduit. No threads are provided. Conduits are usually fastened in slip holes by means of locknuts and bushings. *STANDARD LOCKNUT SPACINGS MUST BE ALLOWED BETWEEN THE CONDUITS.*

Drilled and Tapped Holes are threaded holes provided in the enclosure wall into which the conduit is screwed. To meet UL requirements, they must conform to the following:

- 1 Enclosures for use in Non-hazardous Locations must have a wall thickness of not less than 1/4" at the tapped holes for the conduit and there shall be not less than 3-1/2 threads in the metal. *Compare the wall thickness shown in the catalog page for these enclosures with the chart below to determine the number of threads which the box wall will provide for the various conduit sizes. If more threads are required, please specify a Bossed, Drilled and Tapped hole, type ABDT.*

Bossed, Drilled and Tapped Holes are holes threaded thru the box wall and a boss (or pad) which has been added at the location of the conduit entrance to provide added wall thickness for 5 threads of engagement.

Conduit Size	Wall Inches Required in Millimeters (Inches)		
	No. of Threads Per Inch	3-1/2 Threads	5 Threads
1/2 - 3/4	14	6.35 (0.25)	0.17 (0.38)
1 - 2	11-1/2	0.14 (0.31)	0.2 (0.44)
2-1/2 - 6	8	0.2 (0.44)	0.29 (0.63)

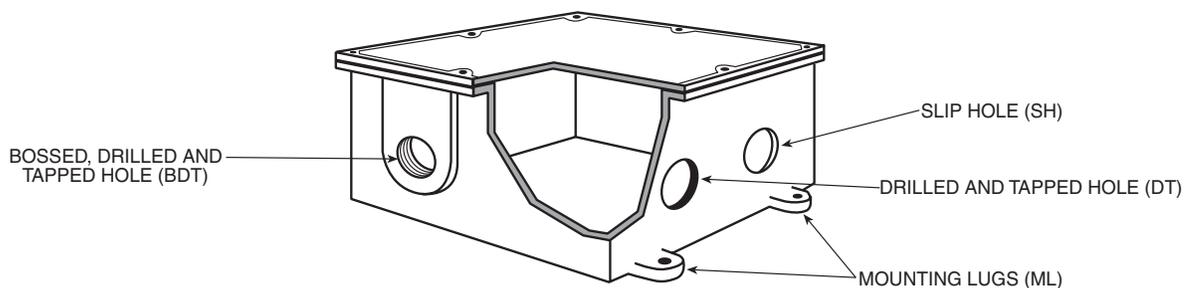


Fig. 1

Cast Iron Junction Box Ordering Information

Boxes Available for Raintight, Watertight, or Submersible Applications

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Drilling Template

- View looking into box – sides laid down.
- Dimensions are always understood to be Inside Measurements unless otherwise specified.
- See Drilling Template for Junction Boxes, for copier reproduction or computer scanning.

All boxes of the Type WYS/YS, WYL/YL, WYW/YW, and WYT/YT have a post in each corner and allowance must be made for them, when conduit entrances are to be located close to a corner. Dimension "A" in the table below is the minimum distance allowable from the sidewall of these boxes to the centerline of the conduit entrance, which provides the proper clearance between a locknut and the post. The "B" dimension will provide the proper clearance between a locknut or bushing and the sidewall of all other types of boxes and between a locknut or bushing and the backs of all boxes, including Types WYS/YS, WYL/YL, WYW/YW, and WYT/YT.

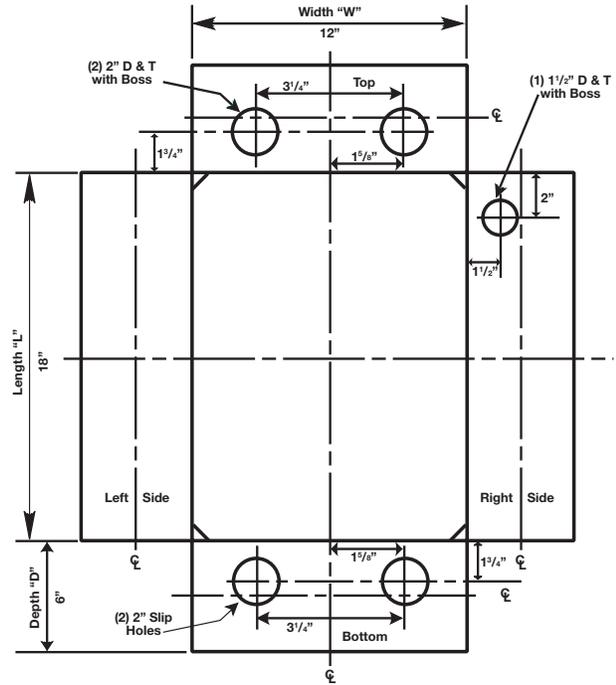
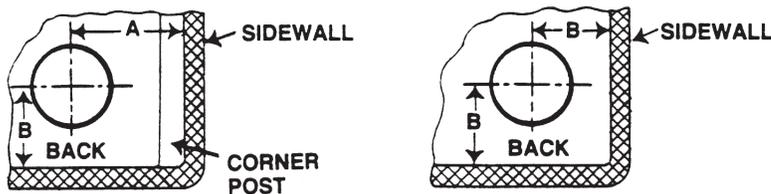


Figure 2

Minimum Allowable Spacing from Back and Sides

Allowance made for clearance over locknuts and bushings.



Types WYS/YS, WYL/YL, WYW/YW, and WYT/YT

Types WYF/YF, WYR/YR, WYU/YU

Conduit Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"
Dimension A mm (in)	31.8 (1.25)	35.1 (1.38)	41.4 (1.63)	47.8 (1.88)	50.8 (2.00)	60.5 (2.38)	66.8 (2.63)	76.2 (3.00)	82.6 (3.25)	92.2 (3.63)	107.9 (4.25)	123.9 (4.88)
Dimension B mm (in)	25.4 (1.00)	25.4 (1.00)	28.7 (1.13)	35.1 (1.38)	38.1 (1.50)	44.5 (1.75)	54.1 (2.13)	63.5 (2.50)	73.2 (2.88)	79.5 (3.13)	95.3 (3.75)	111.3 (4.38)

Cast Iron Junction Box Ordering Information

Boxes Available for Raintight, Watertight, or Submersible Applications

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Minimum Recommended Spacing Between Conduit Openings

Allowance made for clearance over locknuts and bushings.

When unions are used, additional space must be allowed. Table shows minimum distances between conduit opening centerlines in various size combinations. For example, if 1-1/2" and 3/4" openings are to be drilled and tapped into one side of box, the minimum spacing between centerlines would be 54.1 mm (2.13").

Space Between Centers of Conduit Millimeters (Inches)

Size of Conduit	Minimum Space Between Centers of Conduits ①											
	6	5	4	3-1/2	3	2-1/2	2	1-1/2	1-1/4	1	3/4	1/2
1/2	127.00 (5.00)	111.25 (4.38)	92.20 (3.63)	85.85 (3.38)	76.20 (3.00)	66.80 (2.63)	60.45 (2.38)	50.80 (2.00)	47.75 (1.88)	44.45 (1.75)	41.40 (1.63)	38.10 (1.50)
3/4	130.30 (5.13)	114.30 (4.50)	95.25 (3.75)	88.90 (3.50)	79.50 (3.13)	69.85 (2.75)	63.50 (2.50)	54.10 (2.13)	50.80 (2.00)	47.75 (1.88)	44.45 (1.75)	
1	133.35 (5.25)	117.60 (4.63)	101.60 (4.00)	92.20 (3.63)	82.55 (3.25)	76.20 (3.00)	66.80 (2.63)	60.45 (2.38)	57.15 (2.25)	50.80 (2.00)		
1-1/4	139.70 (5.50)	123.95 (4.88)	104.90 (4.13)	98.55 (3.88)	88.90 (3.50)	79.50 (3.13)	73.15 (2.88)	63.50 (2.50)	60.45 (2.38)			
1-1/2	136.65 (5.38)	127.00 (5.00)	107.95 (4.25)	101.60 (4.00)	92.20 (3.63)	82.55 (3.25)	76.20 (3.00)	66.80 (2.63)				
2	152.40 (6.00)	136.65 (5.38)	117.60 (4.63)	107.95 (4.25)	98.55 (3.88)	92.20 (3.63)	82.55 (3.25)					
2-1/2	158.75 (6.25)	143.00 (5.63)	123.95 (4.88)	117.60 (4.63)	107.95 (4.25)	98.55 (3.88)						
3	168.40 (6.63)	152.40 (6.00)	136.65 (5.38)	127.00 (5.00)	117.60 (4.63)							
3-1/2	177.80 (7.00)	158.75 (6.25)	143.00 (5.63)	133.35 (5.25)								
4	184.15 (7.25)	168.40 (6.63)	149.35 (5.88)									
5	203.20 (8.00)	184.15 (7.25)										
6	219.20 (8.63)											

① If Conduit Fittings are used additional spacing between conduits will be required. Determine spacings based on fittings being used.

Cast Iron Junction Box Drilling Template

Boxes Available for Raintight, Watertight, or Submersible Applications

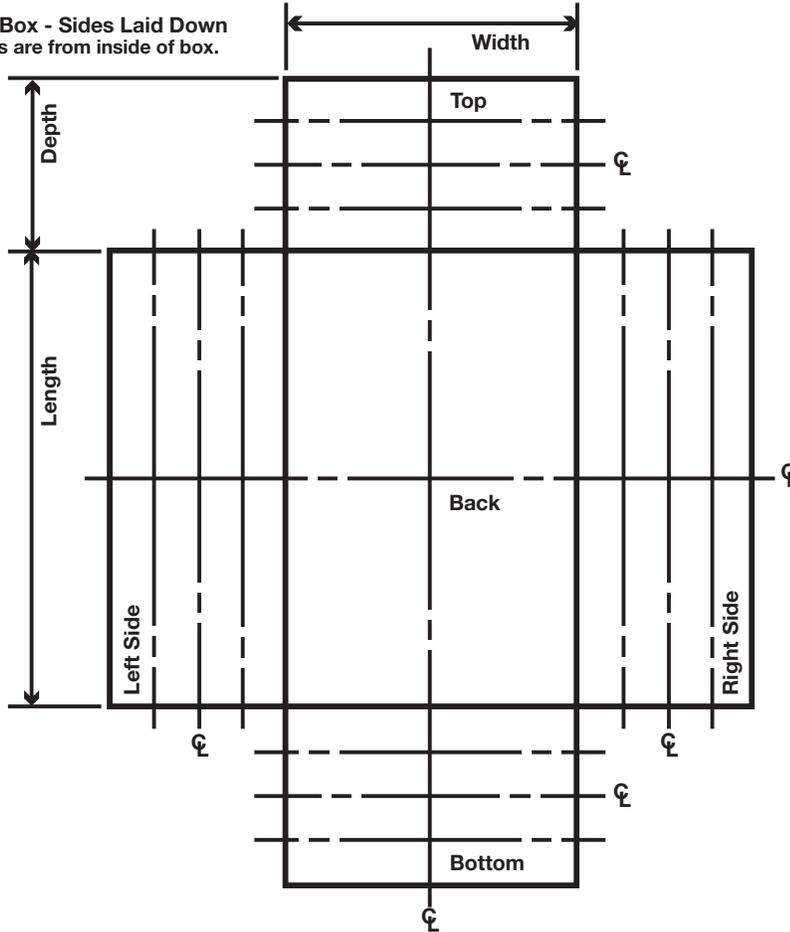
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DRILLING TEMPLATE for JUNCTION BOXES

For copier reproduction or computer scanning. Please send to your local representative for quotation or order confirmation.

Distributor _____ P.O. No. _____
 End User _____ Date _____
 Req. No. _____ Mark Box _____

Looking Into Box - Sides Laid Down
 All dimensions are from inside of box.



Drilling Data

NOTE: If location of openings are not definitely dimensioned, they will be located at our discretion.

- Slip-hole Only Drilled and Tapped
 Drilled and Tapped with Boss Boss Only

Catalog No. _____
 Quantity _____

Mounting Lugs

NOTE: Mounting Lugs are provided on all surface-mount boxes.

Additional Specifications: _____

Dwg. No. _____

Company/Location _____

Signature _____

Print Name _____

Cast Iron Junction Box Ordering Information

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Additional Cost Items

The table below shows the additional cost items available on the different types of enclosures shown in this catalog. These cost items are shown in the tables on the adjacent page and when not furnished as standard equipment the cost must be added to the base price of the box.

Special Equipment Consult Factory for Prices and Availability

- Lettering on Covers can be furnished. These are engraved letters and can be applied to the cover of any type box.
- Submersibility Tests can be made on our Types WYF/YF within the limitations shown on Flat Flanged Boxes catalog page listing these enclosures.
- Certifications can be furnished if specific requirements are provided at time of order.

✓ – Available option at additional charge.

S – Furnished as standard equipment at no additional charge

NA – Not permitted on this type of enclosure by NEMA and Underwriters Laboratories, Inc. standards and specifications, or basic construction of box will not allow or require this item.

ITEM Catalog Designation	Type of Enclosure							
	WYS/YS	WYL/YL	WYF/YF	WYW/YW	WYU/YU	WYR/YR	WYT/YT	WY58E/Y58F
Slip Holes (ASH)	✓	✓	✓	✓	✓	✓	✓	NA
Drill and Tap Holes (ADT)	✓	✓	✓	✓	✓	✓	✓	NA
Bosses Only (ABWH)	✓	✓	✓	✓	✓	✓	✓	NA
Drilled and Tapped Boss (ABDT)	✓	✓	✓	✓	✓	✓	✓	NA
Mtg. Lugs (AML)	S	S	S	S	✓	✓	✓	NA
Mtg. Plates (AYM)	✓	✓	✓	✓	✓	✓	✓	NA
Hinges (AHNG)	NA	NA	NA	S	✓	NA	NA	NA
Drain and Breather (AMDB)	✓	✓	✓	✓	✓	NA	NA	NA

ENCLOSURES AND JUNCTION BOXES: NEC/CEC WEATHERPROOF/DUSTPROOF JUNCTION AND OUTLET BOXES

Appleton® OZGEDNEY

Cast Iron Junction Box Ordering Information

Boxes Available for Raintight, Watertight, or Submersible Applications

NEC/CEC:
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Drilling and Tapping

Applies to: Types WYS, WYL, WYF, WYW, WYT, WYU, WYR.

Conduit Size Inches	Appleton Catalog Number			
	Drilling Only Slip Hole	Drilling and Tapping No Boss	Boss Only 5 Threads without Hole	Boss for 4 Threads and Tapping
1/2	ASH-50	ADT-50	ABWH-50	ABDT-50
3/4	ASH-75	ADT-75	ABWH-75	ABDT-75
1	ASH-100	ADT-100	ABWH-100	ABDT-100
1-1/4	ASH-125	ADT-125	ABWH-125	ABDT-125
1-1/2	ASH-150	ADT-150	ABWH-150	ABDT-150
2	ASH-200	ADT-200	ABWH-200	ABDT-200
2-1/2	ASH-250	ADT-250	ABWH-250	ABDT-250
3	ASH-300	ADT-300	ABWH-300	ABDT-300
3-1/2	ASH-350	ADT-350	ABWH-350	ABDT-350
4	ASH-400	ADT-400	ABWH-400	ABDT-400
4-1/2	ASH-450	ADT-450	ABWH-450	ABDT-450
5	ASH-500	ADT-500	ABWH-500	ABDT-500
6	ASH-600	ADT-600	ABWH-600	ABDT-600

Applies to: Types YS, YL, YF, YW, YT, YU, YR.

Conduit Size Inches	O-Z/Gedney Catalog Number			
	Drilling Only Slip Hole	Drilling and Tapping No Boss	Boss Only 5 Threads without Hole	Boss for 5 Threads and Tapping
1/2	SH-50	DT-50	BWH-50	BDT-50
3/4	SH-75	DT-75	BWH-75	BDT-75
1	SH-100	DT-100	BWH-100	BDT-100
1-1/4	SH-125	DT-125	BWH-125	BDT-125
1-1/2	SH-150	DT-150	BWH-150	BDT-150
2	SH-200	DT-200	BWH-200	BDT-200
2-1/2	SH-250	DT-250	BWH-250	BDT-250
3	SH-300	DT-300	BWH-300	BDT-300
3-1/2	SH-350	DT-350	BWH-350	BDT-350
4	SH-400	DT-400	BWH-400	BDT-400
4-1/2	SH-450	DT-450	BWH-450	BDT-450
5	SH-500	DT-500	BWH-500	BDT-500
6	SH-600	DT-600	BWH-600	BDT-600

Combination Drain and Breather Fittings

D and T and installation included.

Size (Inches)	Appleton Catalog Number	O-Z/Gedney Catalog Number
3/8	AMDB-38	MDB-38
1/2	AMDB-50	MDB-50

Grounding Kits

Wire Capacity Al-Cu Tinned Copper	Appleton Catalog Number	O-Z/Gedney Catalog Number
#14-4 AWG	AGK-04	GK-04
8-1/0 AWG	AGK-10	GK-10
6 AWG-250kcmil	AGK-25	GK-25

Letters Engraved on Box Covers

Description	Appleton Catalog Number	O-Z/Gedney Catalog Number
Up to 10 letters, one line	AENGRAVE-1	ENGRAVE-1
Up to 20 letters, two lines	AENGRAVE-2	ENGRAVE-2

ENCLOSURES AND JUNCTION BOXES: NEC/CEC WEATHERPROOF/DUSTPROOF JUNCTION AND OUTLET BOXES

Appleton® OZGEDNEY