STANDARDS

BELL® UPC Vendor Number 050169.

Where applicable, BELL® products are engineered in accordance with the standards established by Underwriters Laboratories and the Canadian Standards Association. Dimensional data listed in this catalog is intended for general reference with broad tolerance limits.

2020 NEC®

When specifying BELL® Weatherproof boxes and covers, consult the requirements of the National Electrical Code®, Article 314.16 (B) and 406.9 (B). Article 314.16 (B) details the NEC® requirements for the maximum number of conductors allowed for a BELL® Weatherproof installation. Article 406.9 (B) provides details on the NEC® requirements for receptacles being used in wet locations.

For your convenience, we have reprinted the pertinent NEC® articles. In all cases, consult your local electrical code and inspector interpretation.

Wiring Capacity: BELL® Weatherproof Boxes and Extensions

Maximum Number of Conductors or Minimum Size Box (Article 314.16 (B)

The purpose of Section 314.16 (B) is to determine the maximum conductor count or the minimum box size required for the job. It also can be used to figure how many other conductors may be added without exceeding the Code-prescribed limit. Most applications have determined the number of conductors. The rules of Section 314.16 (B) are used to determine the Code recognized limit, or smallest box that may be installed.

Selection of any BELL® Weatherproof box or extension for use in any electrical circuit work must take into consideration the maximum number of wires permitted in the box. Safe electrical practice demands that wires not be jammed into boxes because of the possibility of nicks, abrasions, or other damage to the insulating material, creating the potential for ground faults or short circuits.

314.16 Number of Conductors in Outlet, Device, and Junction Boxes, and Conduit Bodies. Boxes and conduit bodies shall be of an approved size to provide free space for all enclosed conductors. In no case shall the volume of the box, as calculated in 314.16(A), be less than the fill calculation as calculated in 314.16(B). The minimum volume for conduit bodies shall be as calculated in 314.16(C).

The provisions of this section shall not apply to terminal housings supplied with motors or generators.

Boxes and conduit bodies enclosing conductors 4 AWG or larger shall also comply with the provisions of 314.28. Outlet and device boxes shall also comply with 314.24.

(A) Box Volume Calculations. The volume of a wiring enclosure (box) shall be the total volume of the assembled sections and, where used, the space provided by plaster rings, domed covers, extension rings, and so forth, that are marked with their volume or are made from boxes the dimensions of which are listed in Table 314.16(A). (1) Standard Boxes. The volumes of standard boxes that are not marked with their volume shall be as given in Table 314.16(A).

(2) Other Boxes. Boxes 1650 cm3 (100 in.3) or less, other than those described in Table 314.16(A), and nonmetallic boxes shall be durably and legibly marked by the manufacturer with their volume. Boxes described in Table 314.16(A) that have a volume larger than is designated in the table shall be permitted to have their volume marked as required by this section.

(B) Box Fill Calculations. The volumes in paragraphs 314.16(B)(1) through (B)(5), as applicable, shall be added together. No allowance shall be required for small fittings such as locknuts and bushings. Each space within a box installed with a barrier shall be calculated separately.

(1) Conductor Fill. Each conductor that originates outside the box and terminates or is spliced within the box shall be counted once, and each conductor that passes through the box without splice or termination shall be counted once. Each loop or coil of unbroken conductor not less than twice the minimum length required for free conductors in 300.14 shall be counted twice. The conductor fill shall be calculated using Table 314.16(B). A conductor, no part of which leaves the box, shall not be counted.

Exception: An equipment grounding conductor or conductors or not over four fixture wires smaller than 14 AWG, or both, shall be permitted to be omitted from the calculations where they enter a box from a domed luminaire or similar canopy and terminate within that box.

(2) Clamp Fill. Where one or more internal cable clamps, whether factory or field supplied, are present in the box, a single volume allowance in accordance with Table 314.16(B) shall be made based on the largest conductor present in the box. No allowance shall be required for a cable connector with its clamping mechanism outside the box.

(3) Support Fittings Fill. Where one or more luminaire studs or hickeys are present in the box, a single volume allowance in accordance with Table 314.16(B) shall be made for each type of fitting based on the largest conductor present in the box.

(4) Device or Equipment Fill. For each yoke or strap containing one or more devices or equipment, a double volume allowance in accordance with Table 314.16(B) shall be made for each yoke or strap based on the largest conductor connected to a device(s) or equipment supported by that yoke or strap. A device or utilization equipment wider than a single 50 mm (2 in.) device box as described in Table 314.16(A) shall have double volume allowances provided for each gang required for mounting.

(5) Equipment Grounding Conductor Fill. Where up to four equipment grounding conductors or equipment bonding jumpers enter a box, a single volume allowance in accordance with Table 314.16(B) shall be made based on the largest equipment grounding conductor or equipment bonding jumper entering in the box.A 1⁄4 volume allowance shall be made for each additional equipment grounding conductor or equipment bonding jumper that enters the box, based on the largest equipment grounding conductor or equipment bonding conductor.

(C) Conduit Bodies.

(1) General. Conduit bodies enclosing 6 AWG conductors or smaller, other than short-radius conduit bodies as described in 314.16(C)(3), shall have a cross-sectional area not less than twice the cross-sectional area of the largest conduit or tubing to which they can be attached. The maximum number of conductors permitted shall be the maximum number permitted by Table 1 of Chapter 9 for the conduit or tubing to which it is attached.

(2) With Splices, Taps, or Devices. Only those conduit bodies that are durably and legibly marked by the manufacturer with their volume shall be permitted to contain splices, taps, or devices. The maximum number of conductors shall be calculated in accordance with 314.16(B). Conduit bodies shall be supported in a rigid and secure manner.

(3) Short Radius Conduit Bodies. Conduit bodies such as capped elbows and service-entrance elbows that enclose conductors 6 AWG or smaller, and are only intended to enable the installation of the raceway and the contained conductors, shall not contain splices, taps, or devices and shall be of an approved size to provide free space for all conductors enclosed in the conduit body.

406.9 Receptacles in Damp or Wet Locations.

(A) Damp Locations. A receptacle installed outdoors in a location protected from the weather or in other damp locations shall have an enclosure for the receptacle that is weatherproof when the receptacle

is covered (attachment plug cap not inserted and receptacle covers closed).

An installation suitable for wet locations shall also be considered suitable for damp locations.

A receptacle shall be considered to be in a location protected from the weather where located under roofed open porches, canopies, marquees, and the like, and will not be subjected to a beating rain or water runoff. All 15- and 20-ampere, 125- and 250-volt nonlocking receptacles shall be a listed weather-resistant type.

Informational Note: The types of receptacles covered by this requirement are identified as 5-15, 5-20, 6-15, and 6-20 in ANSI/NEMA WD 6-2016, Wiring Devices — Dimensional Specifications.

(B) Wet Locations.

(1) Receptacles of 15 and 20 Amperes in a Wet Location. 15- and 20-ampere, 125- and 250-volt receptacles installed in a wet location shall have an enclosure that is weatherproof whether or not the attachment plug cap is inserted. An outlet box hood installed for this purpose shall be listed and shall be identified as "extra-duty." All 15- and 20- ampere, 125- and 250-volt nonlocking-type receptacles shall be listed weather-resistant type.

Informational Note No. 1: Requirements for extra-duty outlet box hoods are found in ANSI/UL 514D-2016, Cover Plates for Flush-Mounted Wiring Devices.

Informational Note No. 2: The types of receptacles covered by this requirement are identified as 5-15, 5-20, 6-15, and 6-20 in ANSI/NEMA WD 6-2016, Wiring Devices — Dimensional Specifications.

Exception: 15- and 20-ampere, 125- through 250-volt receptacles installed in a wet location and subject to routine high-pressure spray washing shall be permitted to have an enclosure that is weatherproof when the attachment plug is removed.

(2) Other Receptacles. All other receptacles installed in a wet location shall comply with 406.9(B)(2)(a) or (B)(2)(b).

(a) A receptacle installed in a wet location, where the product intended to be plugged into it is not attended while in use, shall have an enclosure that is weatherproof with the attachment plug cap inserted or removed.

(b) A receptacle installed in a wet location where the product intended to be plugged into it will be attended while in use (e.g., portable tools) shall have an enclosure that is weatherproof when the attachment plug is removed.

(C) Bathtub and Shower Space. Receptacles shall not be installed within a zone measured 900 mm (3 ft) horizontally and 2.5 m (8 ft) vertically from the top of the bathtub rim or shower stall threshold. The identified zone is all-encompassing and shall include the space directly over the tub or shower stall.

(D) Protection for Floor Receptacles. Standpipes of floor receptacles shall allow floor-cleaning equipment to be operated without damage to receptacles.

(E) Flush Mounting with Faceplate. The enclosure for a receptacle installed in an outlet box flush-mounted in a finished surface shall be made weatherproof by means of a weatherproof faceplate assembly that provides a watertight connection between the plate and the finished surface.

GENERAL FEATURES AND BENEFITS

BELL® Weatherproof products all offer these features and benefits:

- Rugged seamless die cast construction that will not allow entry of moisture
- Reinforced connector outlets to provide a secure mechanical installation
- State-of-the-art powder coat paint for maximum weatherability and scratch resistance
- Bilingual instructions provided with every product
- Installation hardware and ground screws included where applicable
- Shrink-wrap packaging that keeps all components together
- UPC-A barcoding to help lower transaction costs

Refer to the pages that follow for more specific information about BELL® products.

National Electric Code® and NEC® is a registered Trademark of the National Fire Protection Association.

Calculate The Minimum Size Box

Section 314-16(B) describes in detail the method of counting wires, as well as clamps, fittings, or devices (i.e., switches, receptacles, combination devices) — by establishing an equivalent conductor-value for each. These values are added together to get a total number of conductors. The minimum size box is the smallest one in cubic inch size that can accommodate that number of conductors.

Points to Remember:

1. No matter how many ground wires come into a box, they only count as one conductor within the box.
2. Any wire running unbroken through the box counts as one wire.

Table 314.16(B)
Volume Allowance Required per Conductor

Size of Conductor	Free Space Within Box for Each Conductor	
(AWG)	cm^3	$in.^3$
18	24.6	1.50
16	28.7	1.75
14	32.8	2.00
12	36.9	2.25
10	41.0	2.50
8	49.2	3.00
6	81.9	5.00

3. Each wire coming into a splice device (crimp or twist-on type) is counted as one wire.
4. Each wire coming into the box and connecting to a device counts as one wire of that size.
5. Where devices are mounted in the box, the total conductor count must be increased by two for each mounting strap.

Example – BELL® Weatherproof

Supply power to a single switch with #14 conductors. Metal conduit will be used as the wire way. You must provide space for four conductors and one switch, totally a conductor count of 6. Read across the line in Table 314.16(B) for a #14 conductor. Multiply 6 times the free space within a box. For each conductor for a #14 conductor 2.00. This example requires a minimum box of 12.0 cubic inches.

DIE-CAST ALUMINUM BOXES

APPLICATIONS

- For use in branch circuit wiring in wet, damp or dry locations
- May be used as a weatherproof junction box, or as a housing for receptacles, switches and GFCI's

PRODUCT FEATURES

- Reinforced connector outlets
- Durable powder coat finish
- Eight box mounting options with detachable lugs provided
- Closure plugs included
- Ground screw installed
- Multilingual instructions in each package
- Internal threads on hubs comply with NEMA requirements. Hubs accept all threaded fittings and threaded conduit

COMPLIANCES

- UL – File E195978
- NEMA 3R Rated

2-GANG

5333-0, 5341-0

5335-0, 5343-0

5337-0 to 5337-5, 5345-0

5337-1

5337-2

5334-0, 5342-0

5340-0, 5348-0

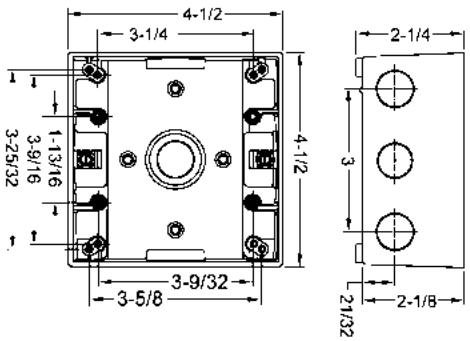
5338-0, 5346-0

5388-0, 5389-0

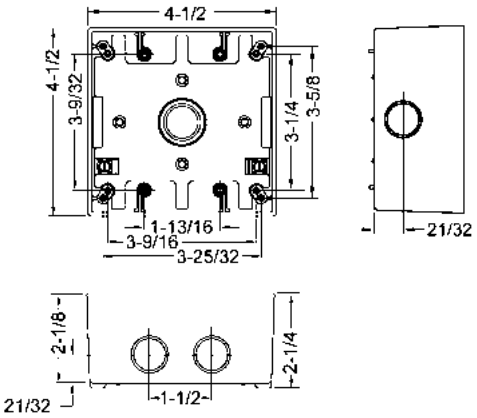
CATALOG #	CUBIC IN. (CM³)	DESCRIPTION COLOR	DESCRIPTION OUTLETS	PKG. TYPE	STD. PKG.	BARCODE
2" Deep, with Lugs – Three Threaded Outlets – 4-1/2" X 4-1/2"						
5333-0	32.0 (524.4)	Gray	(3) 1/2"	Shrink	12	
5341-0	32.0 (524.4)	Gray	(3) 3/4"	Shrink	12	
2" Deep, with Lugs – Four Threaded Outlets – 4-1/2" X 4-1/2"						
5335-0	31.0 (508.0)	Gray	(4) 1/2"	Shrink	12	
5343-0	31.0 (508.0)	Gray	(4) 3/4"	Shrink	12	
2" Deep, with Lugs – Five Threaded Outlets – 4-1/2" X 4-1/2"						
5337-0	31.0 (508.0)	Gray	(5) 1/2"	Shrink	12	
5337-1	31.0 (508.0)	White	(5) 1/2"	Shrink	12	
5337-5	31.0 (508.0)	Gray	(5) 1/2"	Carded	4	
5345-0	31.0 (508.0)	Gray	(5) 3/4"	Shrink	12	
5334-0	32.0 (524.4)	Gray	(5) 1/2"	Shrink	12	
5342-0	32.0 (524.4)	Gray	(5) 3/4"	Shrink	12	
2" Deep, with Lugs – Seven Threaded Outlets – 4-1/2" X 4-1/2"						
5340-0	30.2 (494.9)	Gray	(7) 1/2"	Shrink	12	
5348-0	30.2 (494.9)	Gray	(7) 3/4"	Shrink	12	
5338-0	31.0 (508.0)	Gray	(7) 1/2"	Shrink	12	
5346-0	31.0 (508.0)	Gray	(7) 3/4"	Shrink	12	
2-5/8" Deep, with Lugs – Five Threaded Outlets – 4-1/2" X 4-1/2"						
5388-0	36.0 (589.9)	Gray	(5) 3/4"	Shrink	9	
5389-0	36.0 (589.9)	Gray	(5) 1"	Shrink	9	

SEE END OF SECTION (PG D37) FOR DETAILED DRAWINGS »

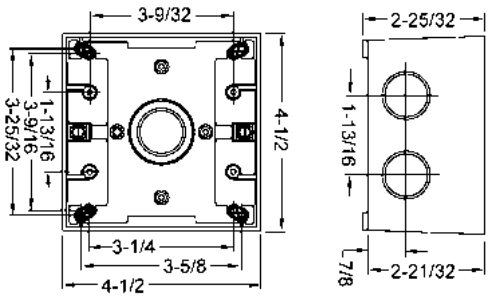
2-GANG BOXES WITH 7 OUTLETS
CAT. NOs. 5340-0, 5348-0



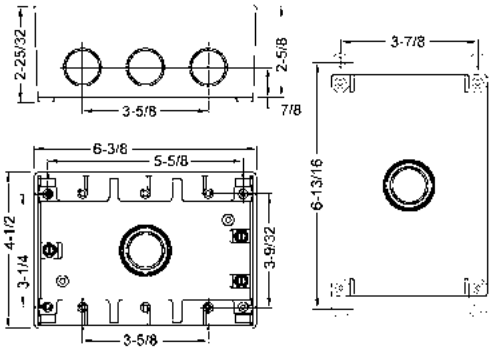
CAT. NOs. 5338-0, 5346-0



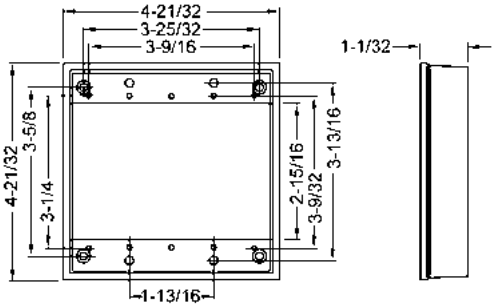
2-GANG BOXES WITH 5 OUTLETS
CAT. NOs. 5388-0, 5389-0



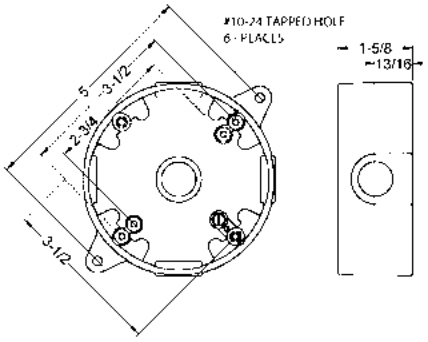
3-GANG BOX



2-GANG EXTENSION



4" ROUND SPLICE BOXES



4" ROUND EXTENSION ADAPTERs