



TECHNICAL BROCHURE

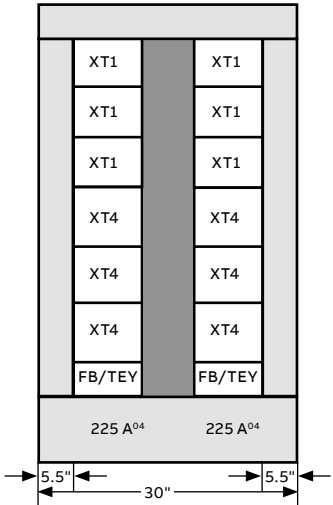
ReliaGear™ neXT

UL 67 low-voltage distribution
power panelboards

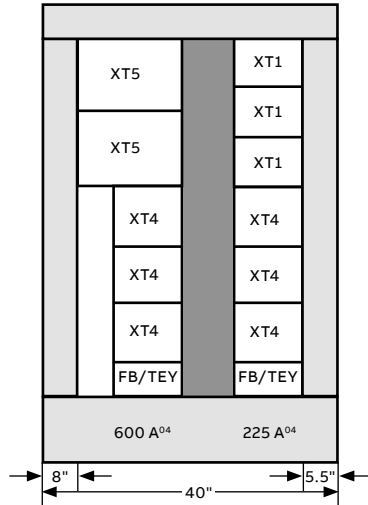


Interiors

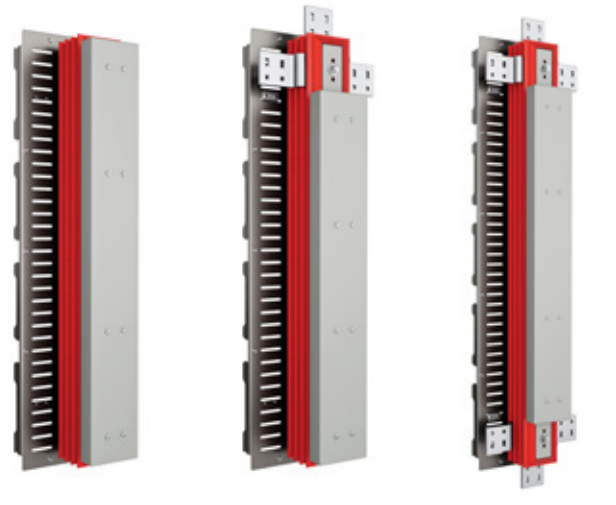
ReliaGear neXT panelboard interiors feature plug-in and bolt-on (when vertical main circuit breakers are selected) technology, IP 20 "finger-safe" features (on clean bus only) and center or offset mounting positions within the enclosure. Main lug, feed-through lug and clean bus options exist. X-height or X-space refers to the space occupied by individual (plug-in) components on the interior bus. One X-space for ReliaGear neXT equals 1.385 inches.



30" wide circuit breaker panel
Center-mounted interior



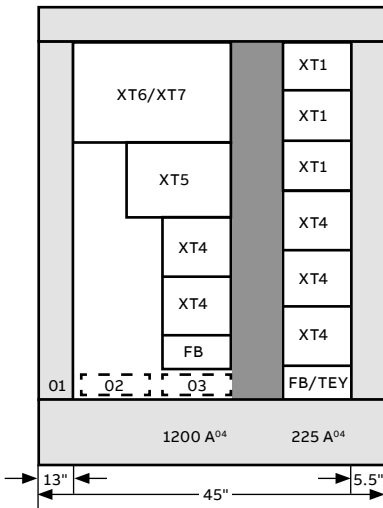
40" wide circuit breaker panel
Offset-mounted interior



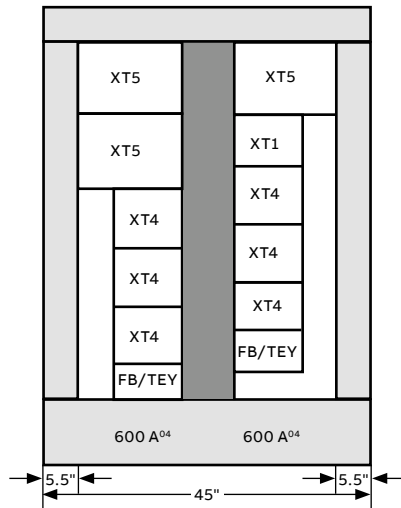
Clean bus

Main lug

Feed-through lug



45" wide circuit breaker panel
Offset-mounted interior



45" wide circuit breaker panel
Center-mounted interior

Standard interior heights

- 16X⁰⁵
- 24X⁰⁵
- 32X⁰⁵
- 40X⁰⁵

Interior materials

- Tin- and silver-plated aluminum (heat rated)
- Tin- and silver-plated copper (heat rated or 1000 A per sq. in. density rated)

01 Typical standard, hinged gutter covers

02 Typical sheet metal fillers cover the space between gutter covers and circuit breakers/blanks

03 Typical sheet metal blanks cover the future space for adding circuit breakers to the interior

04

Maximum ampacity circuit breaker allowed per this side of interior

05

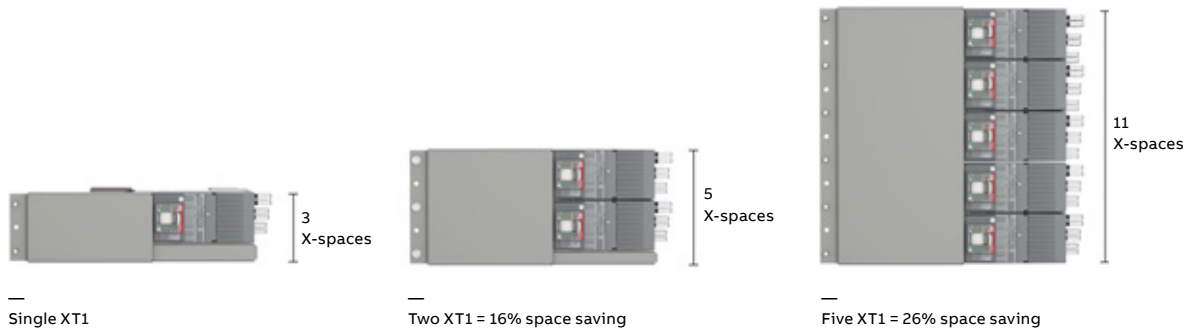
Interiors are double sided; double standard interior heights for available mounting space (Ex. 16X bus has 32X max. of circuit breaker mounting space)

X-space requirements for plug-in devices

X-space requirements for plug-in devices

See table below for the X-space requirements of plug-in components.

Frame	Max. ampacity (A)	Poles	X-space
Single XT1	125	3	3
Two XT1	125	3	5
Five XT1	125	3	11
XT4	250	3	3
XT5	600	3	4
XT6	800	3	6
XT7	1200	3	6
FB/TEY	100/70	1	1
FB/TEY	100/125	2	2
SPD	-	-	10
RELT	-	-	3
AMP1 main meter	-	-	4



XT1 circuit breaker assemblies — panelboard density and mounting hardware

The small footprint of XT1 allows this panel to offer multiple options to improve circuit breaker density. As you configure and order ReliaGear neXT panelboards, you'll notice that XT1 are grouped in quantities of one, two or five. As part of this feature, unique mounting brackets are required when adding XT1 breaker assemblies to existing installations. See below for X-space and mounting brackets required.

Frame	X-space	% X-space savings (compared to single XT1 kits)	Mounting hardware
Single XT1	3	-	SR1XBF
Two XT1	5	16%	SR2XBF
Five XT1	11	26%	SR5XBF

XT1 group mounting brackets are included in panelboard orders from the factory, but are sold separately when adding an XT1 to an existing installation.

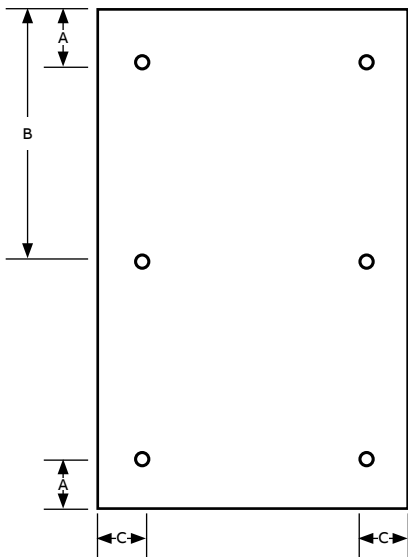
Enclosures

ReliaGear neXT panelboards come in three widths (30", 40" and 45") and four heights (60", 72", 84" and 96"). Enclosure sizing is determined by three criteria: 1) wire-bending space required for main device; 2) interior height; and 3) the largest main or branch devices selected. For additional detail, please refer to document 15QC900008M0201 for NEMA 1, 2, 3R, 4, 4X and 12 enclosure dimensions.

Enclosure depths

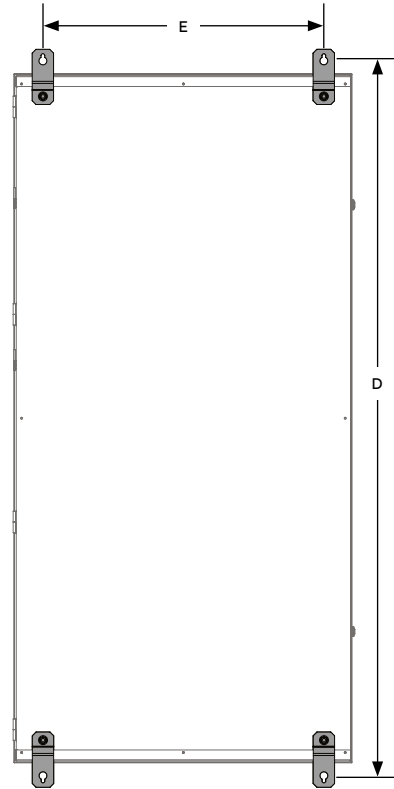
Type	Depth	
	Box	Box and front/door
NEMA 1	11"	11"
NEMA 1 + DID	11"	14.5"
NEMA 2 (with drip hood)	11"	16.3"
NEMA 2 + DID (with drip hood)	11"	16.3"
NEMA 3R	14.5" *	14.5" *
NEMA 4 / 4X / 12	14.5" *	14.8" *

*Does not include additional depth needed for hanging brackets / handle.



NEMA 1 and NEMA 2 mounting hole locations

Height	Holes	A (in)	B (in)	C (in)
60"	4	5	-	8
72"	4	5	-	8
84"	6	5	42	8
96"	6	5	48	8



NEMA 3R, 4, 4X, 12 mounting hole locations

Enclosure exterior size (in)	Dimension D (in)	Dimension E (in)
30 (33.5) W x 60 (61.0) H	65.97	24.47
30 (33.5) W x 72 (73.0) H	77.97	24.47
30 (33.5) W x 84 (85.0) H	89.97	24.47
30 (33.5) W x 96 (97.0) H	101.97	24.47
40 (43.5) W x 60 (61.0) H	65.97	34.47
40 (43.5) W x 72 (73.0) H	77.97	34.47
40 (43.5) W x 84 (85.0) H	89.97	34.47
40 (43.5) W x 96 (97.0) H	101.97	34.47
45 (48.5) W x 60 (61.0) H	65.97	39.47
45 (48.5) W x 72 (73.0) H	77.97	39.47
45 (48.5) W x 84 (85.0) H	89.97	39.47
45 (48.5) W x 96 (97.0) H	101.97	39.47

Note: Values in parentheses are overall enclosure dimensions.

Connections and terminations

Panelboard connection types

This table lists X-space required for interior bus connection types. One X-space for ReliaGear neXT equals 1.385 inches. ReliaGear neXT offers main lug, vertical main breaker and horizontal main breakers. This panelboard also offers feed-through lugs and clean bus, if no feed-through is required. ReliaGear neXT interiors can be reversed in the field for feed direction.

Maximum ampacity	Box widths	Connection to interior	X-space
250, 400, 600, 800, 1000, 1200	30, 40, 45	Bolted main, single or dual mechanical lug	4 per side
		Bolted main, single or dual compression lug	
		Vertical main breaker pads	
		Bolted main with feed-through lug pads	8 per side
		Clean bus (horizontal main breaker)	See circuit breaker X-height table

Main breaker

ReliaGear neXT offers vertical and horizontal main connection types. This table list the X-space required and minimum enclosure widths per main breaker type. Vertical main breakers connect to main lug pads, which use 4X of circuit breaker mounting space along the interior bus. Vertical main circuit breakers also require a vertical main mounting kit. See catalog numbering in document 1SQC900001C0201.

Maximum ampacity	Main breaker type	Orientation	X-space	Minimum enclosure width (interior orientation)
225	XT4	Horizontal	3	30" (center)
600	XT5	Horizontal	4	40" (offset)
800	XT6	Horizontal	6	45" (offset)
1200	XT7	Horizontal	6	45" (offset)
600	XT5	Vertical	4	30" (center)
1200	XT7	Vertical	4	30" (center)

Standard main lug terminations (Cu/Al mechanical)

Standard mechanical lugs shown. Oversized (500–750 kcmil) mechanical lugs and compression lugs are also available. Please refer to document 1SQC900001C0201 for complete offering.

Main amps	Lug	Wires per lug	Qty. of lugs per phase	Wire range (AWG/kcmil)
250	LGML260*	2	1	#2–600
400	LGML260*	2	1	#2–600
600	LGML260*	2	1	#2–600
800	LGML260*	2	2	#2–600
1000	LGML260*	2	2	#2–600
1200	LGML260*	2	2	#2–600

* A (aluminum) or C (copper) suffix lugs available.

Lug catalog number contains 1 lug. Lug quantity to be ordered to be based on number of wires and number of phases in panel. For example, in an 800 A panel, incoming Cu wires are qty. 3, 300 kcmil wires per phase. Customer to order qty. 6 LGML260C.

Standard dual main lug terminations (Cu/Al mechanical)

Standard mechanical lugs shown. Oversized (500–750 kcmil) mechanical lugs and compression lugs are also available. Please refer to document 1SQC900001C0201 for complete offering.

Main amps	Lug	Wires per lug	Qty. of lugs per phase	Wire range (AWG/kcmil)
250	LGML260*	2	2	#2–600
400	LGML260*	2	2	#2–600
600	LGML260*	2	2	#2–600
800	LGMD460*	2	4	#2–600
1000	LGMD460*	2	4	#2–600
1200	LGMD460*	2	4	#2–600

* A (aluminum) or C (copper) suffix lugs available.

Lug quantity to be ordered to be based on number of wires and number of phases in panel. For example in an 800 A dual main lug panel, incoming Cu wires are qty. 3, 300 kcmil wires per phase. Customer to order qty. 3 LGMD460C.

Connections and terminations

Standard neutral lug terminations

Standard extrusions shown. Additional lugs may be added to these base extrusions when required (ground fault, vertical main, dual main, etc.)

Lug amp rating	No. of wires	Wire size (AWG/kcmil)	Recommended tightening torque
250/400	2 (main)	#2-600 (Cu/Al)	3/8" Internal hex, 375 lb-in
	5	#6-250 (Cu) #6-300 (Al)	5/16" Internal hex, 275 lb-in
	16	#14-2/0 (Cu) #12-2/0 (Al)	7/16" Straight slot, 50 lb-in
	24	#8-#4 (Cu-Al) #12-#10 (Al) #14-#10 (Cu)	1/4" Straight slot, 45 lb-in 1/4" Straight slot, 25 lb-in
600/800/1200	8 (main)	#2-600 (Cu/Al)	3/8" Internal hex, 375 lb-in
	10	#6-250 (Cu) #6-300 (Al)	5/16" Internal hex, 275 lb-in
	9	#14-2/0 (Cu) #12-2/0 (Al)	7/16" Straight slot, 50 lb-in
	10	#8-#4 (Cu-Al) #12-#10 (Al) #14-#10 (Cu)	1/4" Straight slot, 45 lb-in 1/4" Straight slot, 25 lb-in

Standard ground lug terminations

Grounds available in bonded or isolated, 10 or 47 wire, Al or Cu forms.

Wire count	No. of wires	Wire size (AWG/kcmil)
47	2 (main)	#2-600 (Cu/Al)
	16	#14-2/0 (Cu) #12-2/0 (Al)
	5	#6-250 (Cu) #6-300 (Al)
	24	#8-#4 (Cu-Al) #12-#10 (Al) #14-#10 (Cu)
10	10	6-2/0 AWG

Standard circuit breaker terminations (Cu/Al)

Standard terminations shown. ReliaGear neXT plug-in breaker assemblies are preassembled with line-side connector and load-side lugs, and main breakers are suitable for reverse-feed applications.

Frame	Ampacity	Installation	Circuit breaker frame		Catalog number	Cables per lug	Terminal lugs (Cu-Al)	
			Poles				Range (AWG/kcmil)	Cu or Al
XT1	125	Horizontal	3		KXT2CUAL2-3PC	1		#10-2/0
XT4	25-70	Horizontal	3		KXT4CUAL1-3PC	1		#14-1/0
XT4	80-225	Horizontal	3		KXT4CUAL2-3PC	1		#4-300
XT4	250	Horizontal	3		KXT4CUAL3-3PC	1		3/0-350
XT5	600	Horizontal/vertical	3		KXT5CUAL2X500K-3PC	2		2/0-500
XT6	800	Horizontal	3		KXT6CUAL3X400K-3PC	3		2/0-400
XT7	1200	Horizontal/vertical	3		KXT7CUAL4X500K-3PC	4		4/0-500
XT7	1200	Horizontal/vertical	3		KXT7CUAL3X750KC-3PC	2*/3		500-750
FB/TEY	15-20	Horizontal	1, 2		FCAL12/**	1		#14-#10
FB/TEY	25-60	Horizontal	1, 2		FCAL13/**	1		#10-#4
FB/TEY	70	Horizontal	1, 2		FCAL14/**	1		#1-1/0
TEY	-	Horizontal	1, 2		**	1		#4-2/0

*) Max. two 750 kcmil cables allowed up to 800 A in horizontal installation due to wire-bending space limitation

**) TEY lugs are captive, please replace complete breaker

Tmax[®] XT molded case circuit breakers



Tmax XT

Model	Frame size (amps)	No. of poles	Rated voltage 50–60 Hz AC	Interrupt ratings (kA)	Dimensions – fixed, 3 poles	Trip units for power distribution
					W x H x D ⁽³⁾ mm (in.)	
XT1	125	3	480Δ ⁽¹⁾	At 240 V AC: N = 50, S = 65, H = 100 At 480 V AC: N = 25, S = 35, H = 65 At 600Y/347 V AC: N = 18, S = 22, H = 25	76.2 x 185.16 x 264.67 (3 x 7.29 x 10.42)	TMF
XT4	250	3	600	At 240 V AC: N = 65, S = 100, H = 150, L = 200, V = 200 At 480 V AC: N = 25, S = 35, H ⁽²⁾ = 65, L ⁽²⁾ = 100, V ⁽²⁾ = 100 At 600 V AC: N = 18, S = 22, H ⁽²⁾ = 25, L ⁽²⁾ = 50, V ⁽²⁾ = 65	104.9 x 198.12 x 248.67 (4.13 x 7.8 x 9.79)	TMF, Ekip DIP, Ekip Touch
XT5	400–600	3	600	At 240 V AC: N = 65, S = 100, H = 150, L = 200 At 480 V AC: N = 35, S = 50, H ⁽²⁾ = 65, L ⁽²⁾ = 100 At 600 V AC: N = 18, S = 25, H ⁽²⁾ = 35, L ⁽²⁾ = 65	139.45 x 206.25 x 387.6 (5.49 x 8.12 x 15.26)	TMA, Ekip DIP, Ekip Touch
XT6	800	3	600	At 240 V AC: N = 65, S = 100, H = 200 At 480 V AC: N = 35, S = 50, H = 65 At 600 V AC: N = 20, S = 25, H = 35	209.04 x 211.33 x 487.93 (8.23 x 8.32 x 19.21)	TMA, Ekip DIP
XT7	800–1000–1200	3	600	At 240 V AC: S = 65, H = 100, L = 200 At 480 V AC: S = 50, H = 65, L = 100 At 600 V AC: S = 25, H = 50, L = 65	210.06 x 276.61 x 487.93 (8.27 x 10.89 x 19.21)	Ekip DIP, Ekip Touch

⁽¹⁾ Current-limiting circuit breaker in 480 V AC and 600 V AC

⁽²⁾ 600 Y/347 V AC

⁽³⁾ Dimensions include line-side connector and mounting bracket

Record Plus® FB and TEY molded case circuit breakers



1-pole FB



2-pole FB



1-pole TEY



2-pole TEY

Record Plus FB

Poles	1, 2
Amperes	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
Trip unit	Fixed thermal-magnetic

Interrupting ratings

Ampere rating	Maximum voltage	Type	Poles	UL listed interrupting rating rms symmetrical kA AC voltage				
				240 V	277 V	347 V	480 V	600 V
15-100	600Y/347 V AC	FBV	1	35	35	22	-	-
			2	65	-	-	35	22
		FBN	1	65	65	25	-	-
			2	150	-	-	65	25
		FBH	1	100	100	35	-	-
			2	200	-	-	100	35

TEY

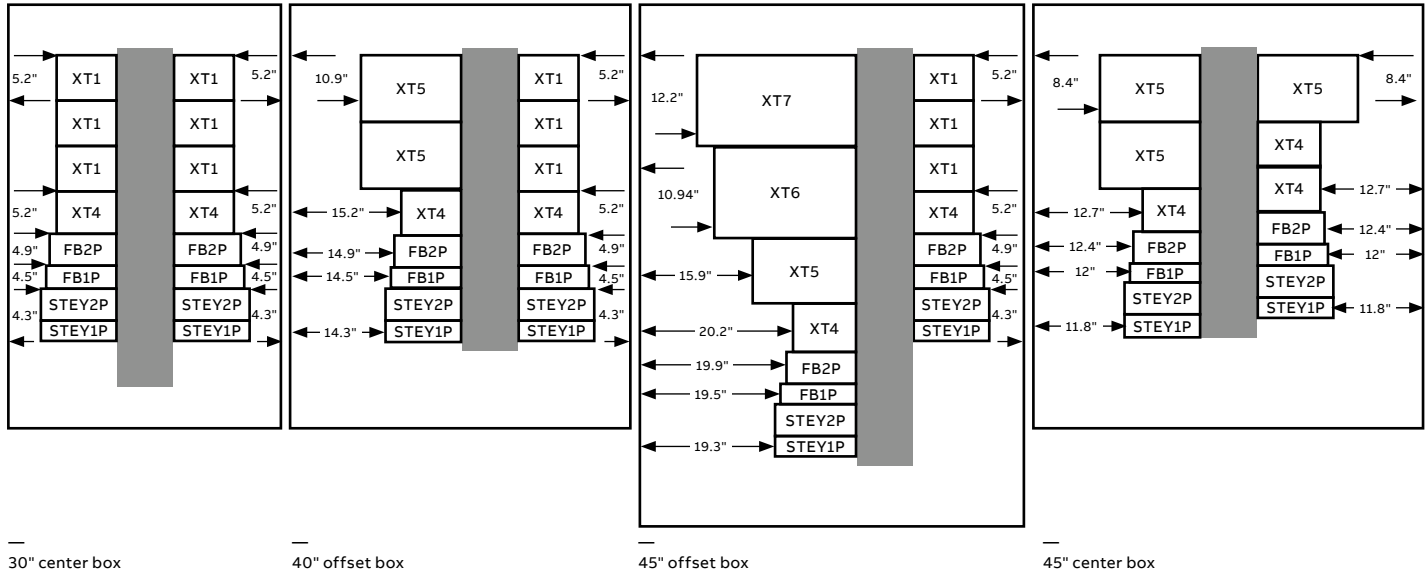
Poles	1, 2
Amperes	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125
Trip unit	Fixed thermal-magnetic

Interrupting ratings

Ampere rating	Maximum voltage	Type	Poles	UL listed interrupting rating rms symmetrical kA AC voltage	
				120/240 V	480/277 V
15-70 (1-pole)	277 V AC (1-pole)	TEYD	1-2	65	25
15-125 (2-pole)	480Y/277 V AC (2-pole)	TEYH	1-2	65	35
		TEYL	1-2	100	65

Wire bending and conduit space

Circuit breaker wire bending space

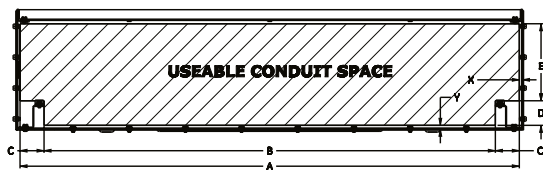


Typical available conduit space

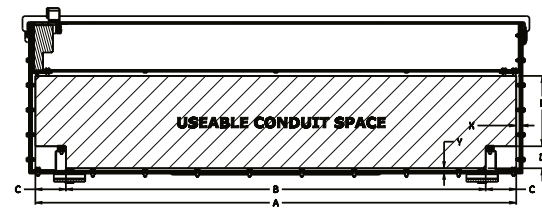
Conduit hubs should comply with the requirements in the Standard for Conduit, Tubing, and Cable Fittings, UL 514B. Conduit hubs should comply with the requirements of the UL 50E NEMA rating of the ReliaGear neXT enclosure on which they are installed to maintain the enclosure's rating. Consider your specific neutral and ground configuration when planning conduit space. For additional dimensional detail, reference document 15QC900008M0201.

Conduit space (top and bottom)	Enclosure width	Enclosure type			
		NEMA 1	NEMA 2*	NEMA 3R	NEMA 4/4X/12
A (in.)	45		44		46
	40		39		41
	30		29		31
B (in.)	30/40/45				40
C (in.)	30/40/45		2	2.9	3.3
D (in.)	30/40/45				2.2
E (in.)	30/40/45				6.7
Y (in.) (distance off backwall)	30/40/45	0.35	0.45	0.45	0.38
X (in.) (distance off right sidewall)	30/40/45	0.25	0.4	0.5	0.1

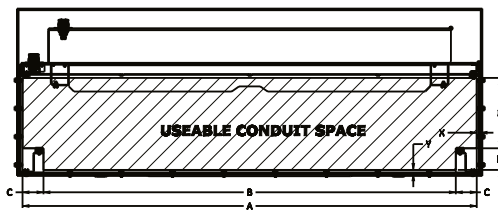
*NEMA 2 has double top wall due to drip hood. All other enclosure conduit space is a single thickness of sheet metal.



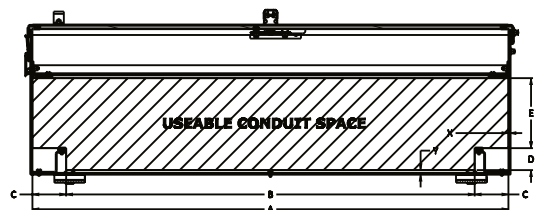
Top and bottom NEMA 1



Top and bottom NEMA 3R



Top and bottom NEMA 2



Top and bottom NEMA 4/4X/12

General information

General

- Panelboards are listed and labeled by Underwriters Laboratories, Inc. in accordance with UL Standards 50 and 67, and shall conform to the latest requirements of the National Electrical Code (NEC) and NEMA Standard PB.1.
- The panelboard will meet service entrance requirements when specified.
- Boxes are furnished without knockouts. Panel boxes and fronts are cold-rolled steel and furnished with ANS1 light gray polyester textured powder coat.
- A four-piece front and hinged gutter covers are provided by default to provide ease of wiring access. All screw fasteners are ¼–20 thread and zinc coated to retard corrosion.
- Main and branch circuit breakers shall be quick-make, quick-break and trip-indicating. Interrupting rating of the circuit breaker shall not be less than the maximum short-circuit currents available at the incoming line terminals as shown on the plans.
- ReliaGear neXT circuit breakers are compatible with ReliaGear SB switchboards. ReliaGear neXT components are not compatible with any other panelboard type.

Publications

Title	Document Number
Guideform specification	15QC900001D0201
Assembly Instructions — Factory assembled	15QC900004M0201
Assembly Instructions — Bulk pack	15QC900003M0201
Door-in-door instructions	15QC900002M0201
Dual main lugs	15QC900009M0201
Grounds and neutrals	15QC900007M0201
NEMA 3R, 4, 4X and 12 enclosures	15QC900008M0201
RELT unit	15QC900005M0201
SPD unit	15QC900006M0201
AMP1 main circuit breaker meter	15QC900001M0201
Service entrance barrier	15QC900010M0201