



CATALOG

ReliaGear[®] neXT

UL 67 low-voltage distribution
power panelboards



In our ongoing commitment to offer superior value at every touchpoint, from ordering to installation to maintenance, we have combined the best technology of ABB and GE Industrial Solutions to bring you a true breakthrough in power panels.

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01

General characteristics

General characteristics

General characteristics	
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Install components in seconds. Instill confidence for a lifetime.

—
01 Improved finger-safe bus stack that meets IP20 standards in select models

—
02 Spring-loaded circuit breaker plug-in connectors

—
03 Bus stack can be flipped 180 degrees



EASY TO INSTALL

Modular, flexible, fast.

The ReliaGear neXT features a field-reversible bus stack that can be flipped 180 degrees to accommodate top or bottom feeds without extra parts. Ground and neutral locations are also field-swappable. These advantages plus plug-in, single-tool simplicity enable easy, fast component installation or replacement in the field. For even greater flexibility, circuit breakers can be installed anywhere on the bus stack.



OUTSTANDING RELIABILITY

Dependable connections.

Spring-loaded circuit breaker plug-in connectors with increased plating thickness for durability withstand repeated insertion and removal. Levering features further reduce installation and removal force. This plug-in connector design uses the magnetic forces generated by a short circuit to help make the connection even tighter and more reliable. There are fewer bolted joints that can become loose or require torque checks.



ENHANCED SAFETY FEATURES

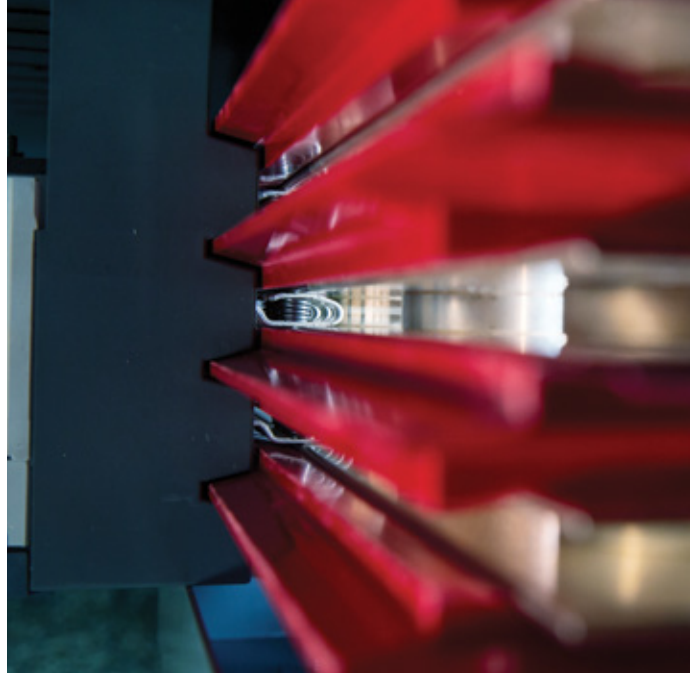
The next level of protection.

ABB is passionate about safety. From the largest piece of arc-resistant switchgear down to the smallest arc fault and ground fault sensing circuit breaker, ABB is always designing ways to help keep personnel out of harm's way. ReliaGear neXT panelboard and switchboard designs come with an improved finger-safe bus stack that meets IP20 standards. Thanks to the breaker-integrated Bluetooth® technology, it is also possible to set parameters and check measurements directly from your smartphone from an arc-free zone.





01



02




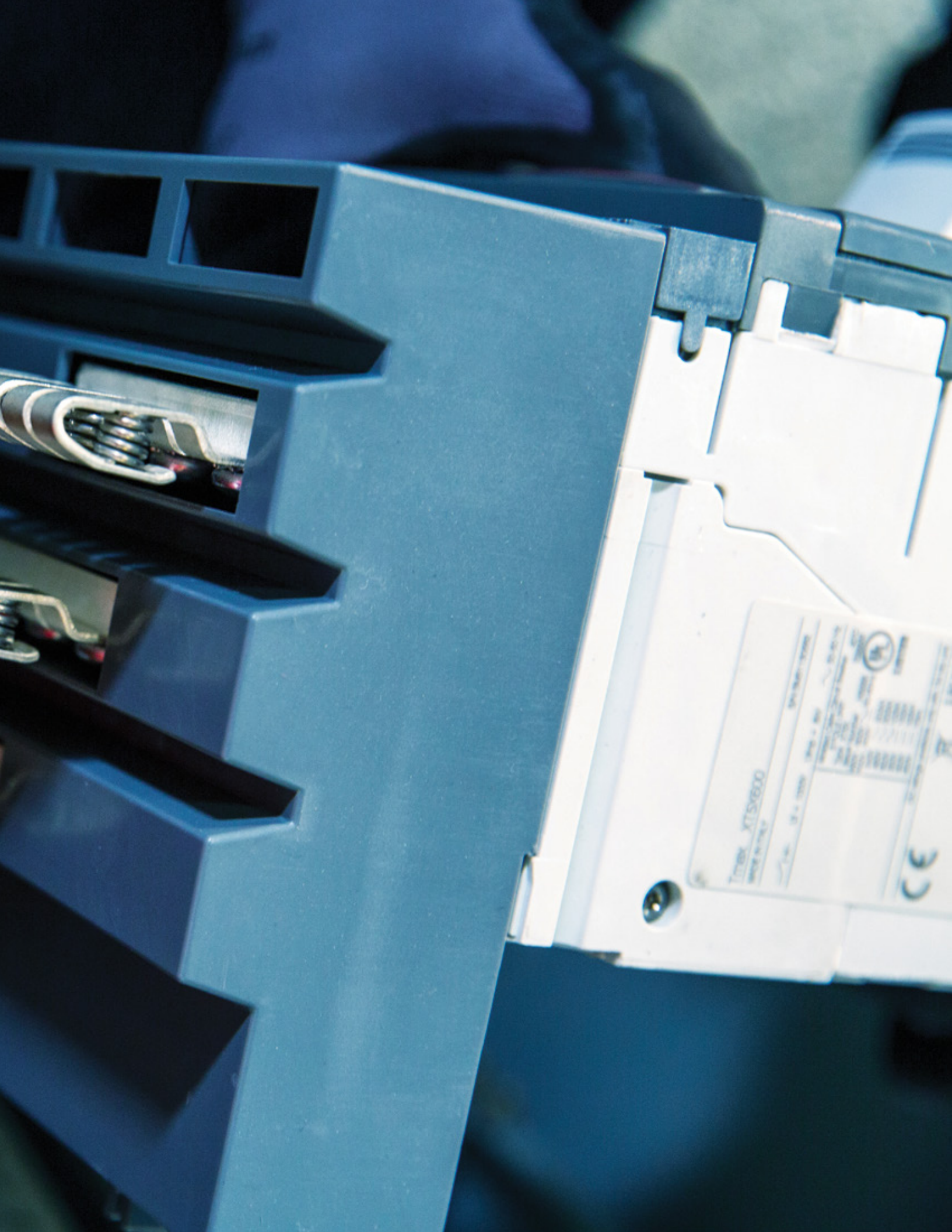
CAN BE
FLIPPED
180°



03

Tmax[®] XT plug-in circuit breakers feature spring-loaded primary disconnects, enabling fast installation, easy replacement and reliable connection to maximize your uptime.

A close-up photograph of Tmax XT plug-in circuit breakers. The image shows the blue metal housing of the breakers, with a prominent red safety handle in the foreground. The background is slightly blurred, showing more of the breaker assembly. The lighting is dramatic, with strong highlights and deep shadows.



T1081_XT151600
MADE IN CHINA

TECHNICAL SPECIFICATIONS	
Model	T1081_XT151600
Part No.	151600
Material	ABS
Color	Blue
Weight	1.2 kg
Dimensions (L x W x H)	150 x 100 x 50 mm
Operating Temperature	5°C to 40°C
Storage Temperature	-20°C to 60°C
Humidity	20% to 80% RH
RoHS Compliant	Yes
CE Marked	Yes

CE

Even more advantages.

—
01 Components can be installed in as little as 20 seconds
—

—
02 Remote access to accurate information anywhere, anytime
—



REDUCED COSTS

Speed up your project.

Reducing labor and saving time is crucial for electrical contractors. In fact, an 8% savings in labor costs for a typical large project can mean 133% more profit for the contractor.* ReliaGear neXT's intuitive single-person installation enables components to be installed in as few as 20 seconds, dramatically saving skilled-labor costs, reducing downtime and lowering the risk of mistakes.

*From "How to Make a Good Estimate Even Better" by Don Kiper, EC&M, 2017.



ADVANCED CONNECTIVITY

Link to data analysis in real time.

With ABB Ability® cloud connectivity, multiple communication options and built-in metering, the Tmax XT circuit breakers of ReliaGear neXT put facility managers in control. The extreme precision of the data measured means users have access to accurate information anywhere, anytime, making it easier to monitor resources and identify savings opportunities.

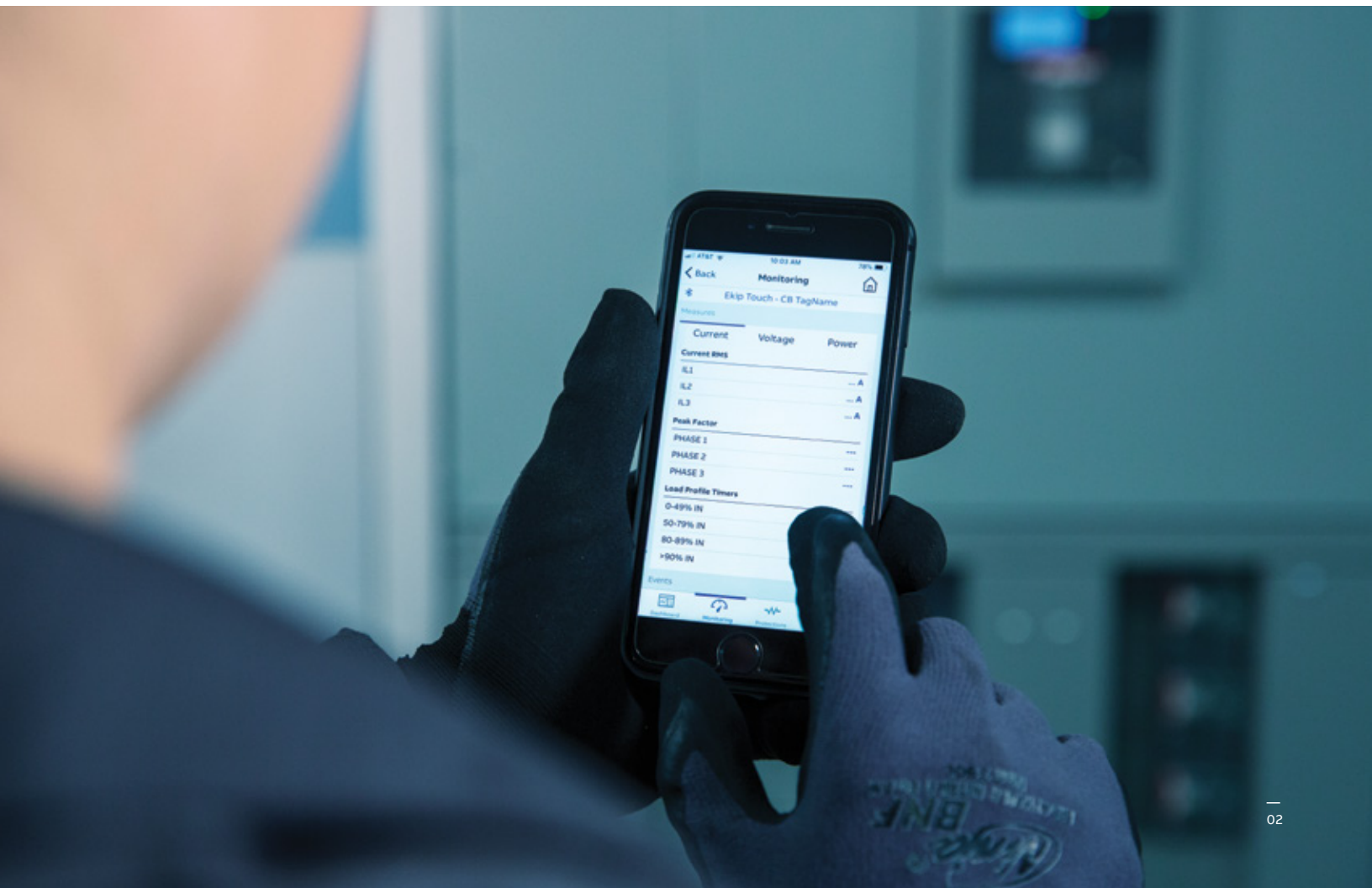


ORDERING AND LOGISTICS

Easy to stock.

With ReliaGear neXT, you have a single catalog number for all circuit breaker installation kits, convenient ordering with the **empower** configurator tool and ProStock options for quick deliveries. Power panels are available unassembled or with factory-assembled interior.

The **empower** tool provides a new PanelScan feature in addition to customizable dashboards, templates, product configurations and more to help users save time and reduce the risk of error.



Take your performance to the neXT level.

ReliaGear neXT — a go-to power panel for professionals looking to gain the competitive edge:

Contractors

For contractors, time is money. And traditional bolt-on power panels that require highly skilled labor and take hours to install or modify in-field can cost you big. But now there's ReliaGear neXT. It works harder, so you don't have to.

Distributors

Smart, optimized, simplified design helps distributors maximize stock inventory. The user-friendly and intuitive **empower** tool minimizes the configuration process time by providing product drawings, bills of materials and technical documentation.

Consultants and engineers

ReliaGear neXT adds value to any job, giving consultants the power to influence customer specifications, helping to make life easier, providing safety features for installers and significantly reducing downtime for end users. The broad offering allows ABB to provide the right product for the right application.

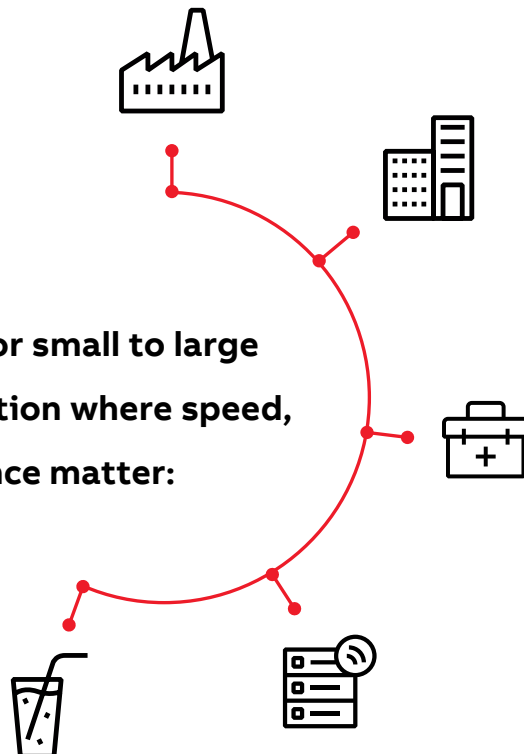
OEMs and panel builders

Versatility, easy installation and performance make ReliaGear neXT a perfect match for quality panels and any type of equipment.

Facility managers

ReliaGear neXT enables fast component installation or replacement, reducing downtime and cost. And its connectivity helps managers monitor resources and identify savings opportunities.

ReliaGear neXT is ideal for small to large projects and any application where speed, reliability and performance matter:



- Industrial complexes
- Commercial buildings
- Residential developments
- Health care facilities
- Data centers
- Food and beverage facilities
- Infrastructure projects
- And more



General characteristics

Standard and certifications

10

The low-voltage power panelboards and protection devices in this specification are designed and manufactured according to the latest revision of the following standards (unless otherwise noted):

- ANSI/NEMA PB 1, panelboards
- ANSI/NFPA 70, National Electrical Code
- Federal specification W-C-375, rev. B, amend. 1, circuit breakers, molded case; branch circuit and service
- Federal specification W-P 115, rev. C, panel, power distribution
- UL 489, molded case circuit breakers
- CSA 22.2 No. 5-13, molded case circuit breakers
- UL 50, enclosures for electrical equipment
- UL 67, panelboards
- UL 98, enclosed and dead front switches
- cUL listing low-voltage modular power panels
- Seismic certification according to ICC-ES AC156

02

Panelboard details

Panelboard details

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Panelboard details

Introduction

The ReliaGear neXT power panelboard can be equipped with circuit breakers from 15 A to 1200 A. The maximum short-circuit rating is equal to 100 kAIC up to 480 V or 65 kAIC at 600 V or the lowest current interruption rating of any device installed, except as noted in the series rating listed with an integral or remote main breaker or fusible switch installed ahead of the power panel.

ReliaGear neXT power panelboards can be used on the following system voltages:

- 240 V AC; 3-phase, 3-wire
- 480 V AC; 3-phase, 3-wire
- 600 V AC; 3-phase, 3-wire
- 208Y/120 V AC; 3-phase, 4-wire
- 480Y/277 V AC; 3-phase, 4-wire
- 600Y/347 V AC; 3-phase, 4-wire



Panelboard details

Enclosures

The ReliaGear neXT panelboard is offered in 12 enclosure size configurations, with three different widths (30", 40", 45") and four different heights (60", 72", 84", 96"). These configurations simplify design and maximize stock inventory. All enclosures are available in surface-mounted design.

Each enclosure is NEMA-compliant, ANSI 61 finished code gauge steel.

Different enclosure types are available and compliant with the UL 50 standard:

NEMA 1

For indoor use to provide a degree of protection to personnel against access to hazardous parts and to provide a degree of protection against ingress of solid foreign objects (falling dirt).

NEMA 2

For indoor use to provide a degree of protection to personnel against access to hazardous parts, falling dirt and harmful effects on the equipment due to the ingress of water (dripping and light splashing).

NEMA 3R

For either indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts, falling dirt and harmful effects on the equipment due to the ingress of water (rain, sleet and snow); and that will be undamaged by the external formation of ice and snow with no damage to the external enclosure.

NEMA 4/4X

For either indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts, falling dirt and windblown dust, and effects on the equipment due to the ingress of water (rain, sleet, snow, splashing water and hose-directed water) and with no damage from the external formation of ice on the enclosure. 4X is stainless steel and corrosion resistant.

NEMA 12

Without knockouts, for indoor use to provide a degree of protection to personnel against access to hazardous parts, falling dirt and circulating dust (lint, fibers and flyings) and to prevent harmful effects on the equipment due to the ingress of water (dripping and light splashing) and to provide a degree of protection against light splashing and consequent seepage of oil and non-corrosive coolants.



Panelboard details

Bus stack

The bus stack consists of a back pan, busbars assembled one on top of the other and an insulator to protect from live components. Some bus stack configurations are IP20¹ finger-safe, an industry-exclusive and patented feature.

It can be either bottom or top fed. Busbars can be copper or aluminum. Silver-plated copper busbars are available as heat-rated or density-rated (1000 A per square inch); aluminum busbars are available only as heat-rated.

Both main lug only (MLO) and main circuit breaker (MCB) configurations are available. The main circuit breaker can be either vertically or horizontally mounted. For the main lugs option, an appropriate barrier post kit is needed.

Standard mechanical lugs are available from 250 kcmil up to 750 kcmil. Compression lugs are also offered from 1/0 to 750 kcmil.

Sub-feed (dual main) lug and feed-through lug options are also available to address instances where a panelboard requires more than one enclosure.

Six bus stack ampere ratings are available: 250 A, 400 A, 600 A, 800 A, 1000 A and 1200 A.

The bus stack dimensions are optimized to reach the highest power density and number of circuits. Four different dimensions are available: 16X, 24X, 32X and 40X.

We define X-space as the number of mounting positions available on each bus stack side. One X-space is equal to 1.385". Each circuit-breaker frame and bus-stack-mounted accessory has specific requirements for X-spaces. Each set of lug pads also requires four mounting spaces. Refer to the breaker section for more details.

ReliaGear neXT features a field-reversible bus stack that can be flipped 180 degrees to accommodate top or bottom feeds without extra parts.

¹ Per IEC Standard 60529

Possible combinations of bus stack and enclosures

Bus height	16X			24X			32X			40X		
Bus type	NN	BL	BF	NN	BL	BF	NN	BL	BF	NN	BL	BF
Enclosure height (in.)												
60	•	•	•	•	•							
72		•	•		•	•	•	•	•			
84		•	•		•	•	•	•	•	•	•	•
96					•	•		•	•		•	•

NN: clean bus, no lug pads

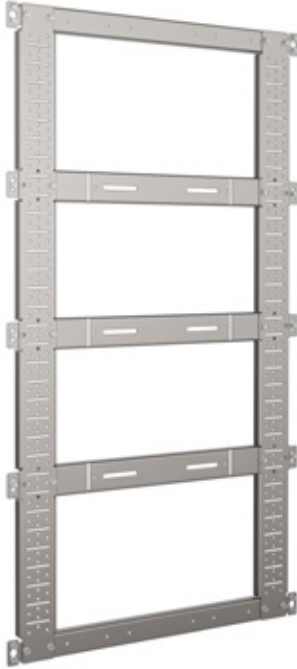
BL: 1 set of lug pads

BF: feedthrough, 2 sets of lug pads



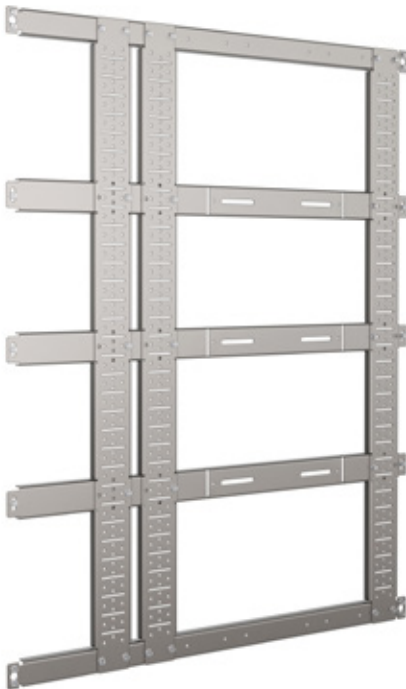
Panelboard details

Interior frame



To fit the bus stack into the enclosure, an interior frame is provided. For 30"-wide panels, the bus stack can be mounted only in the center of the enclosure. For 40"-wide panels, the bus stack must be offset, while on 45"-wide enclosures, the bus stack can be either center or offset mounted. These configurations help to achieve the highest ampacity and power density.

The interior frame also allows breakers to be well-positioned and properly bolted.



Panelboard details

Fronts, gutter doors, blanks and fillers

Top and bottom fronts, together with hinged gutter doors, complete the NEMA 1 enclosure style. Those grant independent access to either the incoming section or the branch distribution section. Vented fronts are needed when a 100% rated breaker is required.

Standard gutter doors do not prevent access to the breaker handle and trip unit settings. Options for locking doors are available (standard lock or Corbin TEU-1 key) to prevent access to the breakers.

With certain breaker frames, a filler is needed to cover the gap between the gutter door and the breaker load side. If the bus stack is not completely full of breakers, sheet metal blanks are needed to ensure isolation from live parts.



Panelboard details

Door-in-door option



A door-in-door option is also available with the ReliaGear neXT power panelboard.

This kit consists of two different doors, one within the other:

- The circuit breaker door, which provides access to the breaker operating levers with no risk of contact with live parts;
- The deadfront door, which gives access to the entire panel interior.

To complete the installation, a filler and a support are also needed.



Panelboard details

Panelboard configurations

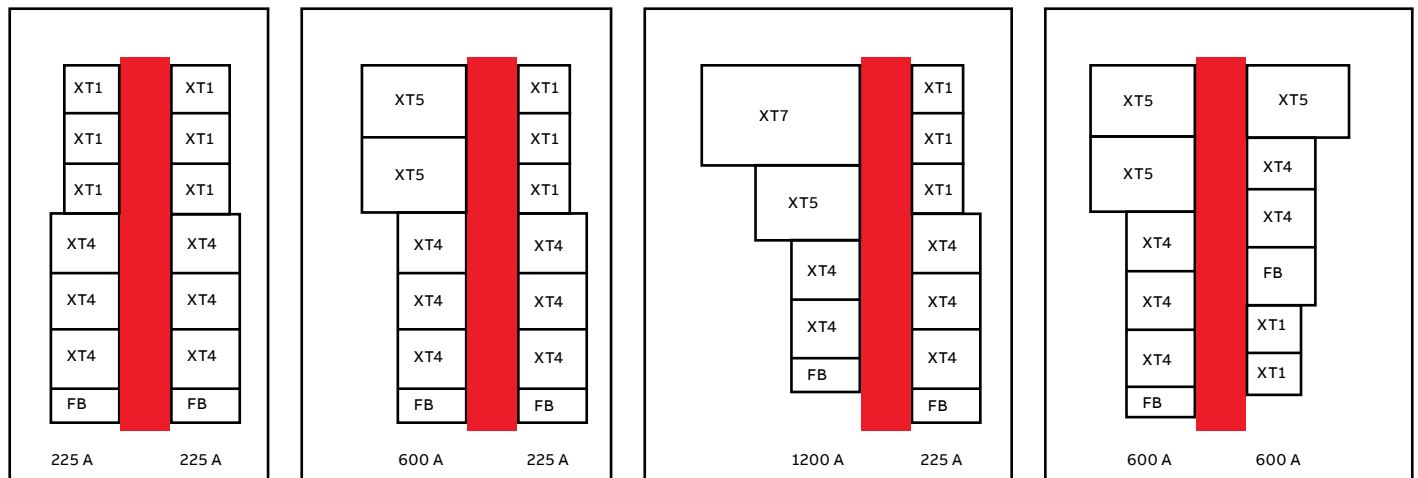
The ReliaGear neXT panelboard is available with differently sized bus stack configurations. Once the main bus ampacity is determined, the height of the bus determines both the height of the panelboard and the maximum number of available outgoing branch Tmax XT and Record Plus® FB circuit breaker X-spaces. Different circuit-breaker frame sizes require different numbers of mounting positions on the bus stack. See page 43 for details.

Main lugs and main circuit breaker options are both available up to 1200 A. The main circuit breaker can be either vertically or horizontally mounted. For vertical circuit-breaker mounting, XT5 or XT7 mounting kits are required.

All ReliaGear neXT panelboards are double sided, with branch breakers that can fit on both the left and right sides of the bus stack. The maximum ampacity of the breakers selected will determine the width of the panelboard needed. The bus stack can either be mounted in the center of the box or be offset to the right (default) or to the left. With an offset configuration, the maximum ampacity of the branch breakers mounted on the narrow and wide sides is different. This allows the panelboard to comply with the wire-bending space requirements per UL 67.

— Available configurations

Panelboard width (in.)	Bus stack position inside the box	Max. branch breaker ampacity on wide side (A)	Max. branch breaker ampacity on narrow side (A)
30	Center	225 (XT4)	225 (XT4)
40	Offset	600 (XT5)	225 (XT4)
45	Center	600 (XT5)	600 (XT5)
45	Offset	1200 (XT7)	225 (XT4)



— 30" center box

— 40" offset box

— 45" offset box

— 45" center box

— 4 configurations

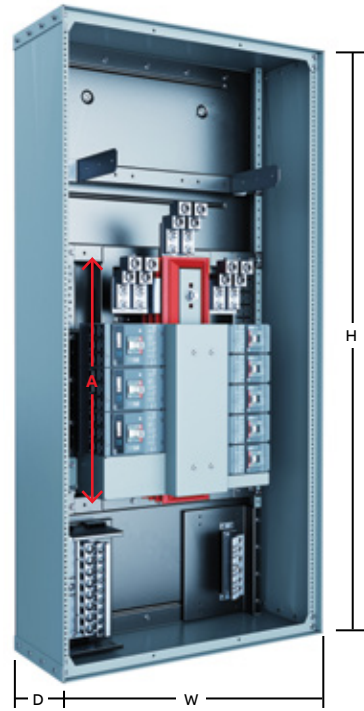
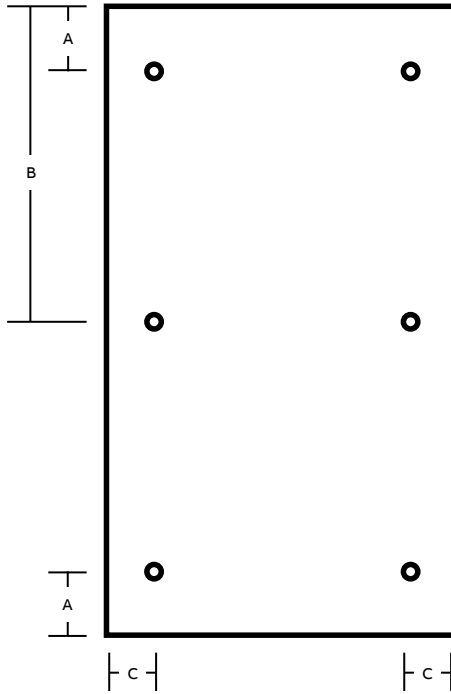
Panelboard details

Installation technical data

Torque values for panelboard hardware

Screw size	Location	Torque (in.-lb.)
1/4-20 steel-thread forming	Fronts to enclosure (sides)	85-95
	Interior frame to enclosure	
	Neutral and ground to enclosure	
	Fillers to gutter covers	
	Vertical main mounting kit for enclosure	
	Fronts to enclosure (top/bottom)	50-58
	Branch breakers to interior frame	
	Panelboard interior to interior frame	
	Vertical main insert/filler(s) to panels	
	Blanks to interior frame	

01 The enclosure depth is 10.8" for NEMA 1 and 14.5" for all other NEMA types. Refer to the drawing at right for mounting hole locations.



01

NEMA 1 enclosure mounting holes
Plate hole distance from edges

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

Panelboard dimensions

	60"	72"	84"	96"
H	60"	72"	84"	96"
A	16X	24X	32X	40X
W		30"	40"	45"
D			10.8" NEMA 1/2 14.5" NEMA 3R/4/4X/12	

Panelboard details

Accessories



Neutrals

Neutral with lug sizes ranging from 1/0 to 750 kcmil (accepting both copper and aluminum wires). Neutrals are all isolated, and bonding kit is included.



Grounds

Grounding kits are available in both isolated and bonded versions. They can accommodate 10 or 47 wires, aluminum or copper.



Service entrance kits

Service entrance barrier kits are available for XT4, XT5 and XT7 for the following wire sizes: 300 kcmil, 350 kcmil, 500 kcmil and 750 kcmil.

Panelboard details

Accessories



Surge protection devices

The SPD module is a plug-in accessory to be installed on the bus stack. This accessory can fit into panels 40" or 45" wide.

—
Available in different configurations according to system voltage, impulse current and type:

System voltage	120 V AC Wye, 277 V AC Wye, 347 V AC Wye, 480 V AC Delta
Impulse current	65 kA, 80 kA, 125 kA, 150 kA, 200 kA, 300 kA
SPD type (according to NEC)	Type 1: Surge arrester Type 2: TVSS



RELT module

When activated, the RELT (reduced energy let-through) module helps to mitigate arc flash hazard, limiting the duration of fault current through the use of a user-selectable and settable secondary instantaneous pickup setting. This is a plug-in accessory to be installed on the bus stack, compatible with XT5 and XT7 breakers with Ekip Touch trip units and can fit into panels 40" or 45" wide.

An additional wiring kit is needed to connect the module to the main circuit breaker, which must be equipped with an Ekip Signalling module.

Three different versions are available to cover all system voltages:

- 240 V–208/120 V
- 480 V–480/277 V
- 600 V–600/347 V



Panelboard details

Accessories



Single-point metering unit

The AMP1 power and energy meter provides an integrated solution for power monitoring and single-point metering. With exceptional performance, the AMP1 monitors key electrical parameters of the main power coming into the panelboard. This information can then be transmitted to a building automation system (BAS), or similar system, to analyze usage and identify potential cost-saving measures. Offering ANSI 12.20 0.5% accuracy, the AMP1 is revenue-grade and features:

- Voltage, amperage, power and energy monitoring
- Backlit LCD display
- Data logging option to ensure data is still preserved locally
- Communication via Modbus RTU or BACnet – Versatile and widely used protocols
- User-enabled password protection
- UL 67 approval

The AMP1 module is a plug-in accessory to be installed on the bus stack. This accessory can fit into panels 40" or 45" wide.

A set of current transformers must be selected according to the ampacity needed for metering, together with a mounting kit for proper installation.

03

Molded case circuit breakers

Molded case circuit breakers

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Tmax XT range

Molded case circuit breakers

The SACE Tmax XT range offers higher performance, better protection and more precise metering than equivalent units and can handle from 15 A up to 1200 A.

Combined with precise electronic trip units in small frames, the new range delivers significant time savings and enhances installation quality. Reliability is further increased, and speed of installation reduced, thanks to Bluetooth and Ekip connectivity for mobile devices. Tmax XT circuit breakers and their accessories are constructed in compliance with UL 489 and CSA C22.2 standards.



Molded case circuit breakers (MCCB)

				XT1
Frame size		[A]		125
Poles		[No.]		3
Rated voltage	(AC) 50–60 Hz	[V]		480 V Δ ⁽²⁾
Versions				Fixed
Interrupting ratings			N S H	
	240 V (AC)	[kA]	50 65 100	
	480 V (AC)	[kA]	25 35 65	
	600Y/347 V (AC)	[kA]	18 22 25	
	600 V (AC)	[kA]	– – –	
Mechanical life		[No. operations]		25000
		[No. hourly operations]		240
Dimensions – fixed (width x depth x height) ⁽³⁾	3 poles	[mm]/[in]		[76.2 x 70 x 130] / [3 x 2.75 x 5.12]
Weight ⁽³⁾	Fixed 3 poles	[kg]/[lb]		[1.1] / [2.43]

Trip units for power distribution

TMF

TMA

Ekip DIP

Ekip Touch

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

(2) 600Y/347

(3) Without line-side connectors

(4) The max. interrupting rating of breakers into the neXT power panelboard is 100 kA



XT4				XT5				XT7		
250				400-600				800-1000-1200		
3				3				3		
600				600				600		
Fixed				Fixed				Fixed		
N	S	H ⁽¹⁾	L ⁽¹⁾	N	S	H ⁽¹⁾	L ⁽¹⁾	S	H	L
65	100	150 ⁽⁴⁾	200 ⁽⁴⁾	65	100	150 ⁽⁴⁾	200 ⁽⁴⁾	65	100	200 ⁽⁴⁾
25	35	65	100	35	50	65	100	50	65	100
-	-	-	-	-	-	-	-	-	-	-
18	22	25	50	18	25	35	65	25	50	65
25000				20.000				10.000		
240				240				240		
[105 x 82.5 x 160] / [4.13 x 3.25 x 6.3]				[140 x 103 x 205] / [5.51 x 4.05 x 8.07]				[210 x 167 x 268] / [8.27 x 6.57 x 10.55]		
[2.5] / [5.51]				-				-		
•				•				•		
•				•				•		
•				•				•		
•				•				•		

Tmax XT range

100% rated breakers

All Tmax XT circuit breakers are available both as standard versions and as 100% rated versions. Because of the additional heat generated at 100% of continuous current rating, the use of specific 90 °C rated wires sized per 75 °C ampacity may be required.

Frame	Max. ampacity (A)	Wires
XT4	200	75 °C
XT5	400	75 °C
XT7	800	75 °C
XT7	1000	90 °C

Tmax XT range

Trip units

SACE Tmax XT trip units represent a new benchmark for molded case circuit breakers, being able to satisfy any performance requirement.

The Tmax XT trip units are designed to be used in a wide range of applications. These complete, flexible protection trip units can be adapted to the actual level of protection required, independently of the complexity of the system.

The range is available for three levels of performance to meet any requirement, from simple to advanced applications:

- TM thermal-magnetic trip unit
- Ekip DIP electronic trip unit
- Ekip Touch/Hi-Touch electronic trip units



Tmax XT range

Thermal-magnetic trip unit

The thermal-magnetic trip unit is an easy solution for protection against overloads and short circuits. Overload protection is ensured by the ABB thermal device, based on a temperature-dependent bimetal heated by current. Protection against short-circuit is realized with a magnetic device.



Rotary switch

Depending on the version, it is possible to set the desired thresholds for protection by turning the front rotary switch.

Tmax XT range

Thermal-magnetic trip unit

Field of application	Trip unit	L – overload protection			I – short-circuit protection	
		Current threshold	Trip time	Current threshold	Trip time	
Power distribution protection	TMF	Fixed	Fixed	Fixed	Fixed instantaneous	
	TMA	Adjustable	Fixed	Adjustable	Fixed instantaneous	

—
TMF

In [A]	15	20	25	30	35	40	45	50	60	70	80	90	100	110	125	150	175	200	225	250	
XT1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•						
XT4			•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•

—
TMA

In [A]	80	90	100	110	125	150	175	200	225	250	300	400	500	600
XT4	•	•	•	•	•	•	•	•	•	•				
XT5											•	•	•	•

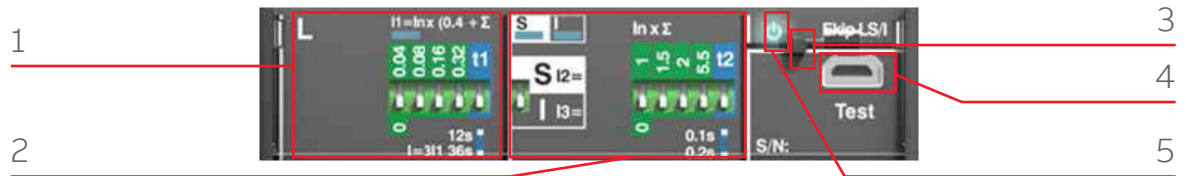
Tmax XT range

Ekip DIP

The first level of electronic trip units, Ekip DIP trip units, are based on microprocessor technologies and guarantee high reliability, protection adjustability and coordination.

They provide protection against overloads, selective short circuits, short circuits and ground faults. The power required for their operation is provided directly from the current sensors.

- Key:
1. DIP switches for overload-protection setting.
 2. DIP switches for short-circuit and time-delayed short-circuit.
 3. Slot for lead seal.
 4. Test connector.
 5. Power-on LED.



DIP switches

The DIP switches on the front of the trip unit allow manual settings when the trip unit is off.

LEDs

The LEDs on the front indicate the status of the release (on/off) and provide information about the protection tripped when the Ekip TT accessory is connected.

Front connector

The connector on the front of the unit allows the connection of:

- Ekip TT for trip testing, LED-test and signalling of the most recent trip.
- Ekip T&P for connection to a laptop with the Ekip Connect program (thus measurement reading, as well as trip and protection function tests, are made available to the user).

Thermal memory

All the Ekip DIP trip units include a thermal memory function. The trip unit records the trips that have occurred in the last few minutes. Since the trip causes overheating, to protect the cables and let them cool down, the trip unit imposes a shorter delay-tripping time in case of a fault. Thus, the system is protected against damage due to cumulative overheating. This can be disabled if needed by using the Ekip T&P.

Characteristics of electronic Ekip DIP trip units

Operating temperature	-25 °C to +70 °C
Relative humidity	98%
Self-supplied	0.2xIn (single phase)*
Auxiliary supply (where applicable)	24 V DC ± 20%
Operating frequency	45 to 66 Hz
Electromagnetic compatibility	IEC 60947-2 Annex F

*For 10 A: 0.4 in

Tmax XT range

Ekip DIP

Field of application	Trip unit	L – overload protection		S – selective short-circuit protection		I – short-circuit protection	
		Current threshold	Trip time	Current threshold	Trip time	Current threshold	Trip time
Power distribution protection	Ekip DIP	LS/I	Adjustable	Adjustable	Adjustable	Adjustable	Fixed
		LIG	Adjustable	Adjustable	–	–	Fixed
		LSI	Adjustable	Adjustable	Adjustable	Adjustable	Fixed
		LSIG	Adjustable	Adjustable	Adjustable	Adjustable	Fixed

In [A]	10	25	40	60	100	125	150	225	250	300	400	600	800	1000	1200
XT4			•	•	•		•	•	•						
XT5									•	•	•	•			
XT7												•	•	•	•

Tmax XT range

Ekip Touch/Hi-Touch

Ekip Touch/Hi-Touch trip units provide a wide series of protections and high accuracy measurements of all electrical parameters. They are intended to integrate perfectly with most common automation and supervision systems.



Communication and connectivity

The Ekip Touch/Hi-Touch trip units integrate perfectly into most common automation and energy management systems to improve productivity and energy consumption and for remote control. The circuit breakers can be equipped with communication modules for Modbus, Profibus and DeviceNet™ protocols, as well as Modbus TCP, Profinet and EtherNet/IP™. The modules can be easily installed even at a later date.

Furthermore, the IEC 61850 communication module enables connection to automation systems widely used in medium-voltage power distribution to create intelligent networks (smart grids). In addition, with an easy connection thanks to the Ekip Com hub module, the circuit breakers allow the system to be monitored via ABB Ability EDCS.

The integrated display makes interaction with the Ekip Touch/Hi-Touch an easy and intuitive experience for the user, and the embedded Bluetooth functionality allows fast interaction via EPiC (electrification products intuitive configurator), the new mobile application to configure and check the status of ABB low-voltage circuit breakers.

Tmax XT range

Ekip Touch/Hi-Touch

Trip unit	Current measurement and protection	Voltage, power, energy measurements	Voltage, power, energy protections	Embedded functions*
Ekip Touch LSI	•	○	○	○
Ekip Touch LSIG	•	○	○	○
Ekip Touch Measuring LSI	•	•	○	○
Ekip Touch Measuring LSIG	•	•	○	○
Ekip Hi-Touch LSI	•	•	•	•
Ekip Hi-Touch LSIG	•	•	•	•

• Default available

○ Additional features

* Please refer to the Tmax XT catalog 1SXU210248C0201 for more details.

In [A]	40	60	100	125	150	225	250	300	400	600	800	1000	1200
XT2	•	•	•	•									
XT5							•	•	•	•			
XT7										•	•	•	•

Record Plus FB

Molded case circuit breakers

GE Record Plus FB circuit breakers complete the breakers offering for the ReliaGear neXT panelboard.

The Record Plus FB line features true one- and two-pole construction, has a double-break contact system for fast response and current limitation to help with arc flash and coordination. This non-adjustable thermal-magnetic circuit breaker up to 100 A offers four interrupt tiers — through 100 kA at 480 V AC and 35 kA at 600/347 V AC.

Poles		1, 2
Amperes		15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
Trip unit		Fixed thermal-magnetic
	Nominal magnetic pickup, 15 A–100 A	12.5 x ±15%
Endurance/durability	No load	20,000
	Full load at 240 V AC	20,000
	Full load at 480 V AC	10,000

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



Mounting space requirements

For molded case circuit breakers

Each circuit breaker frame has specific requirements for the number of mounting positions (X-spaces). Thanks to the optimized dimensions of the XT1, the mounting positions required are lower when two or five breakers are mounted close to one another. SPD, metering and RELT also require X-space, since they are plug-in modules. Refer to the table below. In main lugs configuration, each set of lug pads occupies 4 X-spaces. A set of lug pads is needed also with a vertical main breaker.

Frame	Max. ampacity (A)	Poles	X-spaces
Single XT1	125	3	3
Two XT1	125	3	5
Five XT1	125	3	11
XT4	250	3	3
XT5	600	3	4
XT7	1200	3	6
FB	100	1	1
FB	100	2	2
SPD	-	-	10
RELT	-	-	3
Metering	-	-	4

Line-side connectors and lugs

For molded case circuit breakers

Line-side connectors

Each breaker horizontally mounted on the bus stack is provided with a line-side connector (LSC) and a mounting bracket. The LSC is designed to ensure an easy and accurate connection between the breakers and the conductive busbars. A patented clip design with a loaded spring ensures full contact in any circumstance. Each breaker frame has a specific LSC with the right number of clips to ensure the highest performance.

Breaker lugs offering

All ReliaGear neXT breakers are provided with a set of lugs on the load side. All lugs accept either copper or aluminum wires.

Breaker lugs

Frame	Ampacity (A)	Wire size (AWG or kcmil) Cu or Al	Number of cables per lug	Installation
XT1	125	#10-2/0	1	Horizontal
XT4	25-70	#14-1/0	1	Horizontal
XT4	80-225	#4-300	1	Horizontal
XT4	250	3/0-350	1	Horizontal
XT5	600	2/0-500	2	Horizontal/vertical
XT7	1200	4/0-500	4	Horizontal/vertical
XT7	1200	500-750	2*/3	Horizontal/vertical
FB	15-20	#14-#10	1	Horizontal
FB	25-60	#10-#4	1	Horizontal
FB	70-100	#1-1/0	1	Horizontal

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

Accessories

For molded case circuit breakers

Internal accessories

Common internal accessories (shunt trips, undervoltage releases, auxiliary switches, etc.) are available in common voltage ratings and are UL listed for field assembly.

Auxiliary contacts — AUX

The SACE Tmax XT and Record Plus FB circuit breakers can be equipped with auxiliary contacts that signal the status of the breaker and can be routed outside the circuit breaker itself.

The following information is available:

- Open/closed (Q): indication of the status of the circuit-breaker power contacts
- Trip (SY): signals that the circuit breaker is opening due to the intervention of the trip unit, or to the opening of undervoltage/shunt opening releases, or to the use of the test button

Shunt opening release — SOR/YO

This allows the circuit breaker to open by means of a non-permanent electrical control. Release operation is guaranteed for voltage between 70% and 110% of the rated power supply voltage (Un), in both alternating and direct current. The SOR is equipped with a built-in limit contact to shut off the power supply in the open position with the trip unit tripped. A remote-controlled emergency opening command can be generated by connecting an opening button to the SOR.

Frame	Voltage		
XT1-XT4-XT5	24-30 V AC/DC	110-127 V AC/ 110-125 V DC	220-240 V AC/ 220-250 V DC
XT7	24 V AC/DC	110-120 V AC	220-240 V AC
FB (2-pole only)	24 V AC/DC	110-130 V AC 110-125 V DC	220-240 V AC/ 250 V DC

Undervoltage release — UVR/YU

This allows the circuit breaker to open when the release is subject either to a power failure or a voltage drop. As prescribed in the standards, opening is guaranteed when the voltage is between 70% to 35% Un. After tripping, the circuit breaker can be closed again if the voltage exceeds 85% of Un. When the undervoltage release is not energized, neither the circuit breaker nor the main contacts can be closed. A remote-controlled emergency opening command can be generated by connecting an opening button to the UVR.

Frame	Voltage		
XT1-XT4-XT5	24-30 V AC/DC	110-127 V AC/ 110-125 V DC	220-240 V AC/ 220-250 V DC
XT7	24 V AC/DC	110-120 V AC	220-240 V AC
FB (2-pole only)	24 V AC/DC	110-130 V AC/ 110-125 V DC	220-240 V AC/ 250 V DC

Padlocks and key locks

Padlocks or key locks prevent the circuit breaker from being closed and/or opened. Maximum number of padlocks (PLL) and maximum stem dimensions are the following:

Frame	Padlocks*	Stem min.±max.
XT1-XT4	3	∅ 0.24"±0.275" / ∅ 6±7 mm
XT5-XT7	3	∅ 0.24±0.315" / ∅ 6±8 mm
FB	1	∅ 0.25" / ∅ 6.35 mm

*Padlocks are not included in the kits.

Multiple models of keylocks are offered: Kirk KCAM00010 / KCAM00010S (XT5-XT7), Ronis 1228 (XT1-XT4-XT5-XT7) and Castell (XT7). Kirk and Castell locks must be customer supplied, while Ronis is provided in the kits. Two options are available for Ronis: same keys and different keys. This allows the customer to create interlocking logics.

Internal modules

Available with several different communication protocols, the Ekip Com internal module is installed directly inside the circuit breaker. It allows the circuit breaker to be integrated in a communication network for supervision and control. Ekip Com internal modules can be used for XT4 and XT5. They can be connected to the trip unit when Ekip Touch is used. Protocols supported include:

- Modbus RTU
- Modbus TCP/IP
- Profinet
- EthernNet/IP
- IEC 61850

Accessories

For molded case circuit breakers

Cartridge modules

Cartridge Ekip Com modules, along with the internal modules, allow integration in any communication network. They can be used only on the XT7 circuit breaker equipped with an Ekip Touch/Hi-Touch trip unit, mounted directly on the terminal box. Several modules can be used simultaneously, enabling systems with different protocols. Modbus RTU, Profibus-DP and DeviceNet modules contain a terminating resistor and two DIP switches for optional activation to terminate the serial network or bus. The Profibus-DP module also contains a polarization resistor and two DIP switches for its activation.

- Modbus RTU
- Modbus TCP/IP
- Profinet
- Profibus
- Ethernet/IP
- DeviceNet
- IEC 61850

Ekip Com hub

The Ekip Com hub is the new communication module for cloud connectivity. A circuit breaker equipped with the Ekip Com hub can establish a connection with the ABB Ability Electrical Distribution Control System (EDCS) for the low-voltage power distribution panel. This dedicated module is available for the XT7 breaker even when other modules are present. For further information on ABB Ability EDCS, please visit new.abb.com/low-voltage/launches/abb-ability-edcs.

Signalling modules

The Ekip 2K signalling cartridge modules, available for XT7, supply two input and two output contacts for control and remote signalling of alarms and circuit breaker trips.

The Ekip 1K signalling module, available for the XT5, supplies one input contact and one output contact for control and remote signalling. It is installed inside the circuit breaker in the housing provided on the left down side of the circuit breaker and can be used when an Ekip Touch/Hi-Touch trip unit is present.

Ekip signalling modules can be programmed from the trip unit display or via the Ekip Connect software and app. When using Ekip Connect, combinations of events can be freely configured.

Ekip power supply

The Ekip power supply module supplies all Ekip trip units and modules present on the XT7 with several auxiliary power sources (in AC or DC). The cartridge module permits the installation of other advanced modules. It can be field installed at any time. Two versions are available according to the control voltage:

- Ekip supply 110–240 V AC/DC
- Ekip supply 24–48 V DC

This module is always needed with any Ekip Com module or the signalling 2K module.

Accessories

Installation manuals

Additional technical information, instructions and installation manuals can be found in the following documents:

Power panelboard

1SQC900003M0201	Low-voltage power panel installation manual – Bulk pack
1SQC900004M0201	Low-voltage power panel installation manual – Assembled interior

Accessories

1SQC900001M0201	AMP1 main circuit breaker meter
1SQC900002M0201	Door-in-door front
1SQC900005M0201	RELT unit
1SQC900006M0201	SPD unit
1SQC900007M0201	Solid neutral and ground fault neutral
1SQC900008M0201	Enclosures (NEMA 1, 3R, 4/4X, 12)
1SQC900009M0201	Dual main lug
1SQC900010M0201	Service entrance kit

04

**Panelboard selection guide/
numbering system**

Panelboard selection guide/numbering system

Panelboard selection guide/numbering system	
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Catalog number scheme

XT breakers



04

Part identifier

Code	Breaker family
XT	

Interrupting rating

Code	
N	N
S	S
H	H
V	V

Poles

Code	
3	3 poles

kAIC rating depending on voltage level; refer to performance table.

XT

1

N

U

3

015

Frame

Code	
1	XT1
4	XT4
5	XT5
7	XT7

Standard

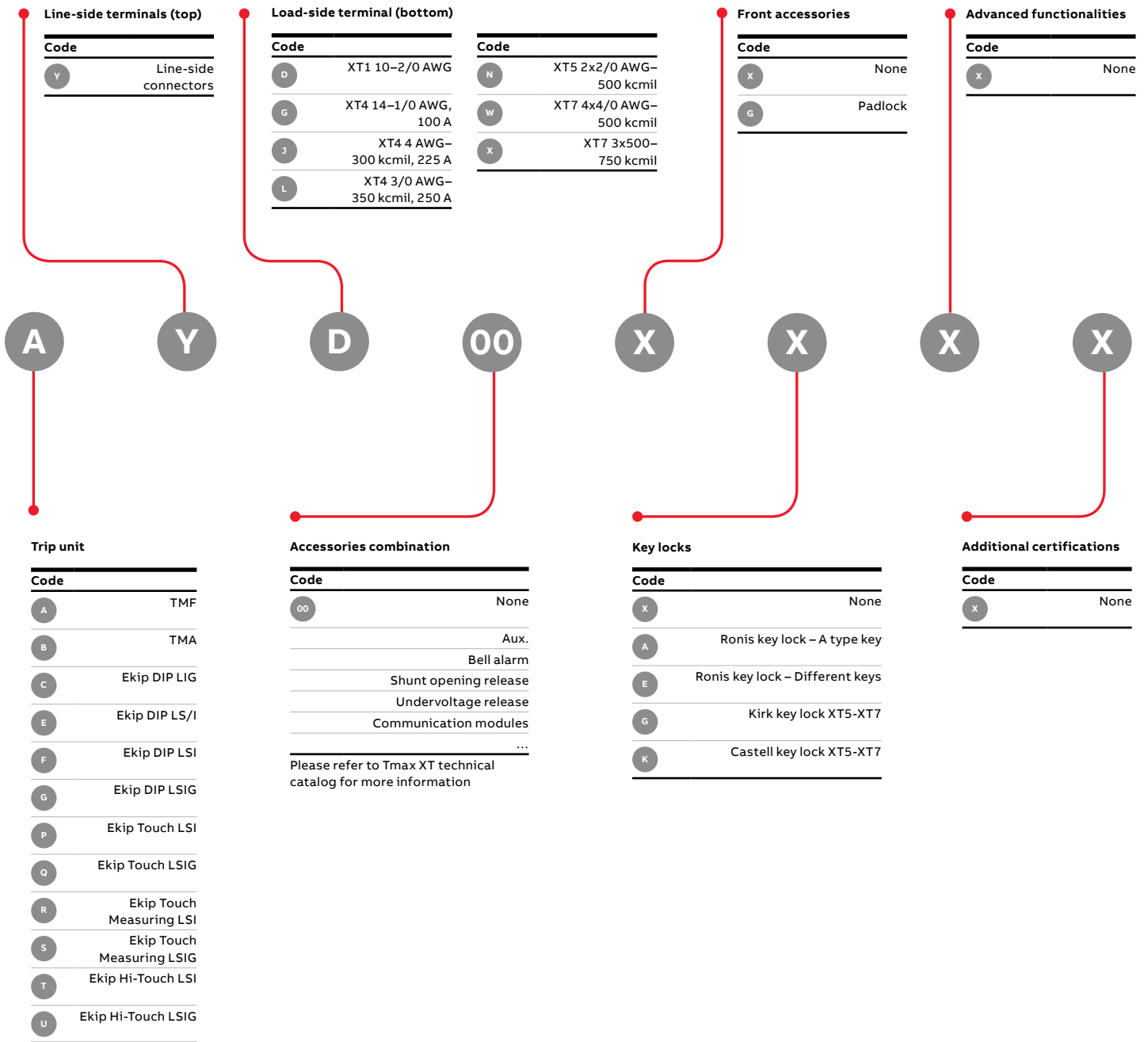
Code	
U	UL 80% rated
Q	UL 100% rated

Frame amps

Code	
015	15 A
020	20 A
025	25 A
030	30 A
035	35 A
040	40 A
045	45 A
050	50 A
060	60 A
070	70 A

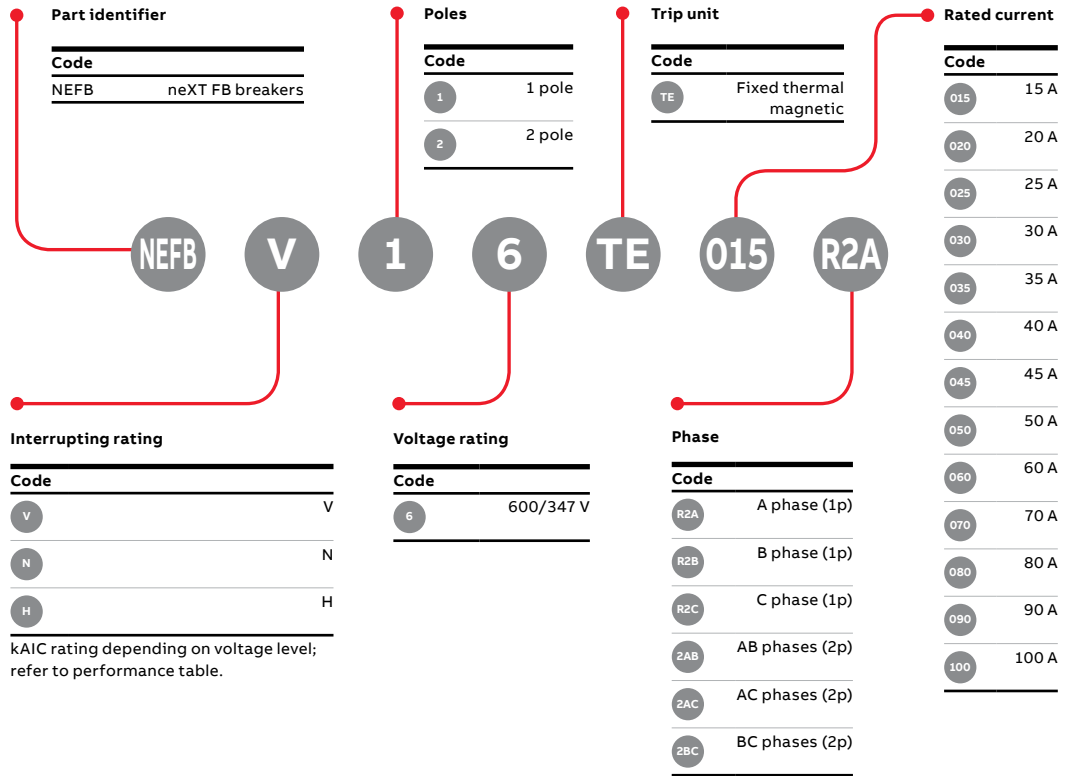
Code	
080	80 A
090	90 A
100	100 A
110	110 A
125	125 A
150	150 A
175	175 A
200	200 A
225	225 A
250	250A (XT4)

Code	
25A	250 A (XT5)
30A	300 A
40A	400 A
50B	500 A
60B	600 A
80C	800 A
10E	1000 A
12E	1200 A

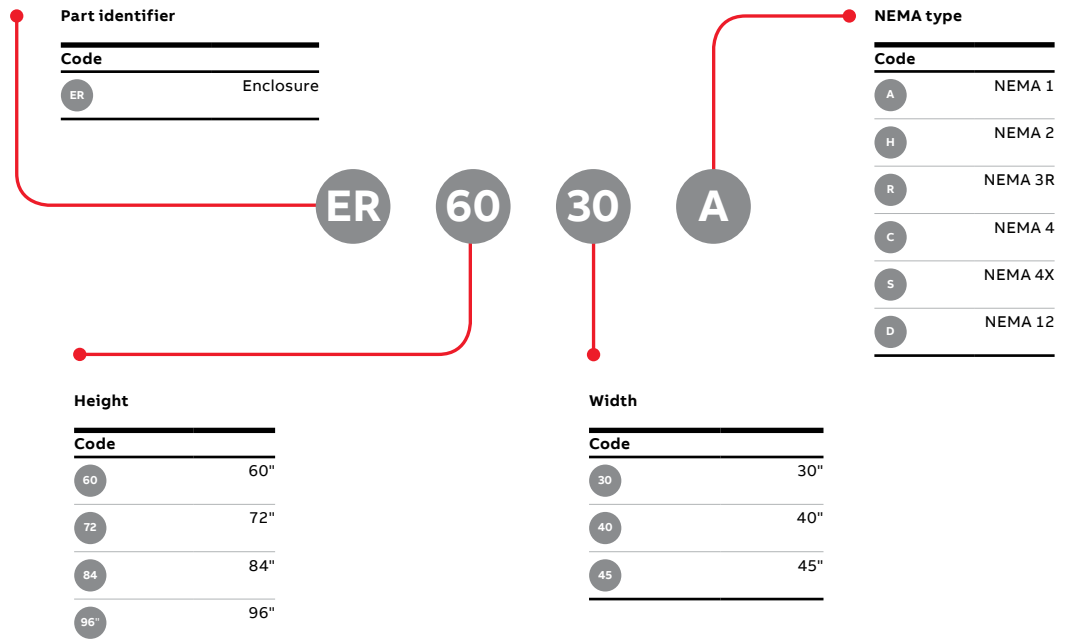


Catalog number scheme

FB breakers

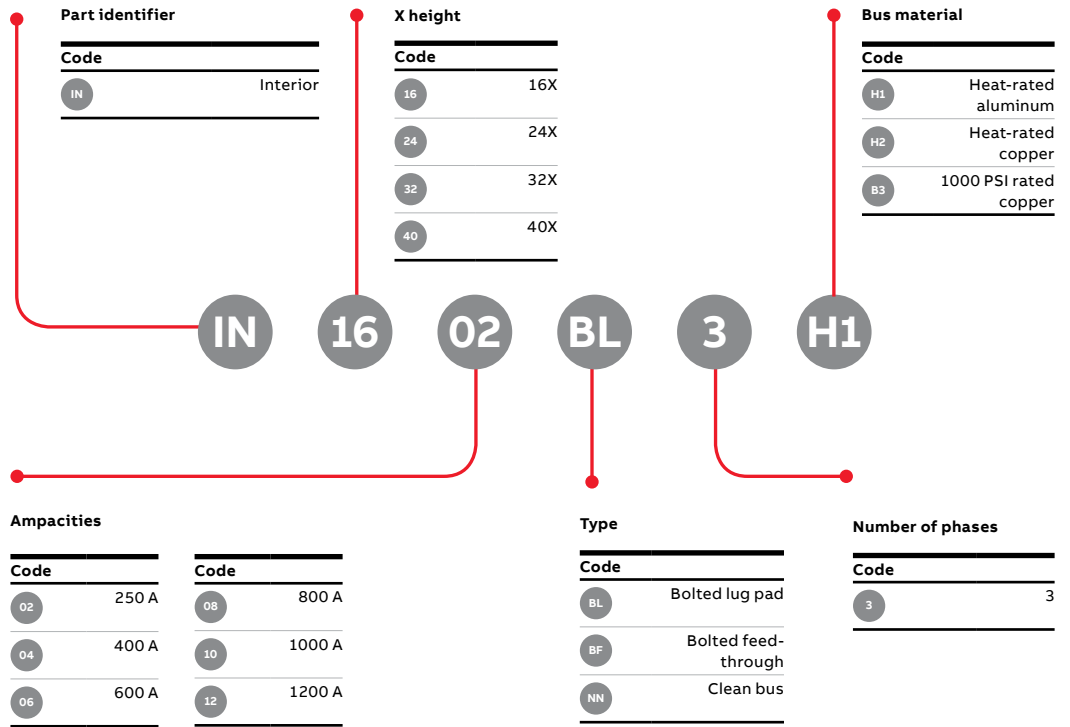


Enclosure

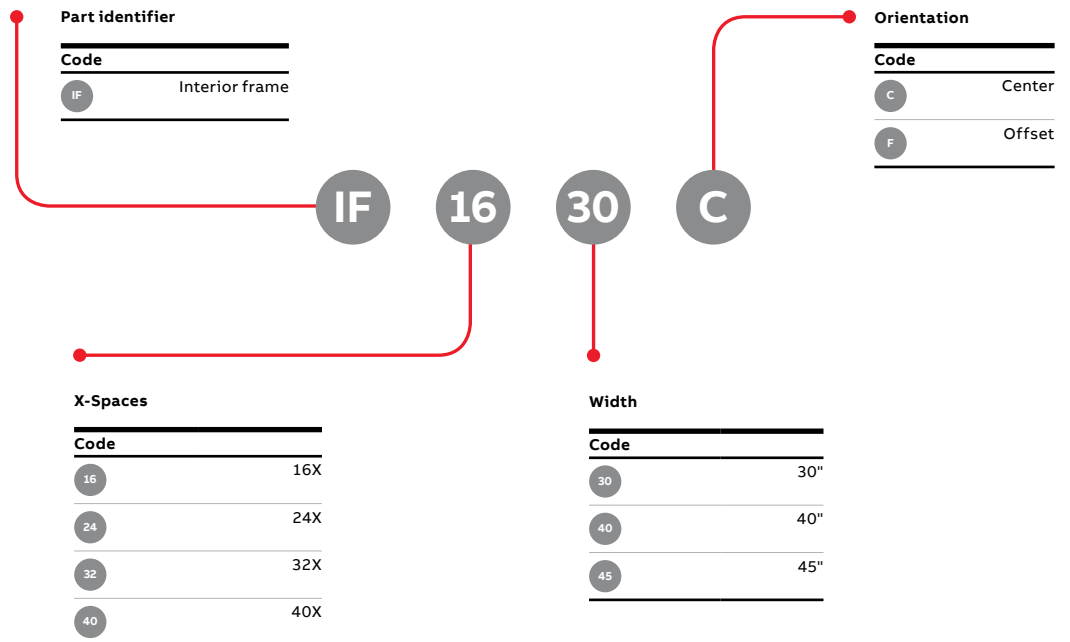


Catalog number scheme

Bus stack



Interior frame



Catalog number scheme

Main lugs



Part identifier

Code	Description
LG	Main lug

LG

ML

4

7

Wire size

Code	Wire size
7	750 kcmil
6	600 kcmil
5	500 kcmil
4	400 kcmil
35	350 kcmil
3	300 kcmil
2	250 kcmil
40	4/0
30	3/0
20	2/0
10	1/0

Lug type

Code	Description
ML	Mechanical
FL	Mechanical with feed-through
DL	Dual mechanical
CL	Compression
EC	Compression with feed-through
PC	Dual compression
TX	Vertical main CB with feed-through
RX	Horizontal main CB with feed-through

Number of lugs

Code	Number of lugs
1	1
2	2
4	4

Gutter covers



Part identifier

Code	Description
GC	Gutter cover

GC

30C

16

BL

A

Type

Code	Description
BL	Bolted lug pad
BF	Bolted feed-through
NN	Clean bus

Width and orientation

Code	Description
30C	30" center
40F	40" offset
45C	45" center
45F	45" offset

X height

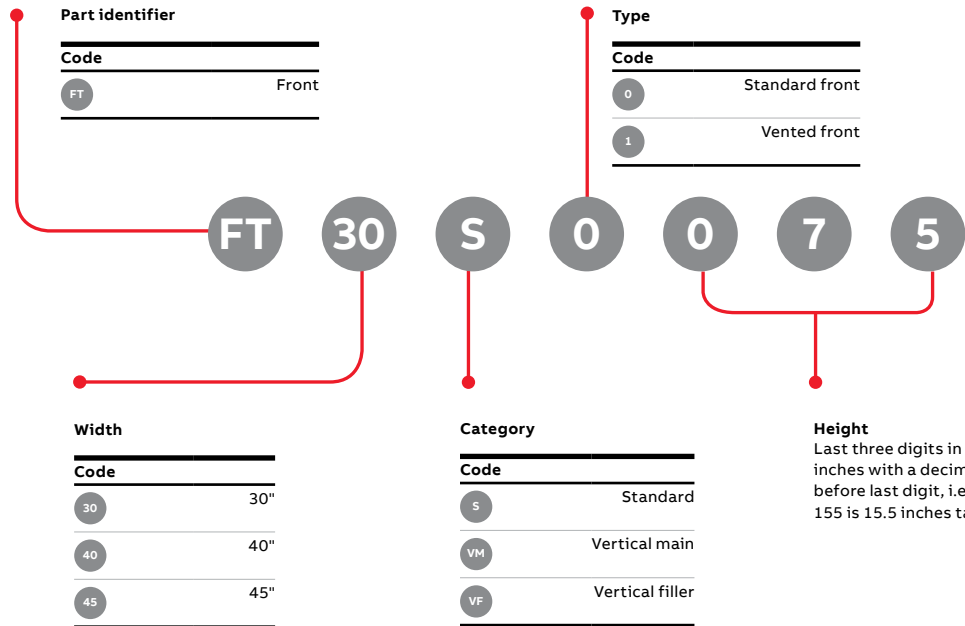
Code	Description
16	16X
24	24X
32	32X
40	40X

NEMA type

Code	Description
A	NEMA 1 with no locking covers
S	NEMA 1 with locking covers, standard lock
L	NEMA 1 with locking covers, Corbin TEU-1 key

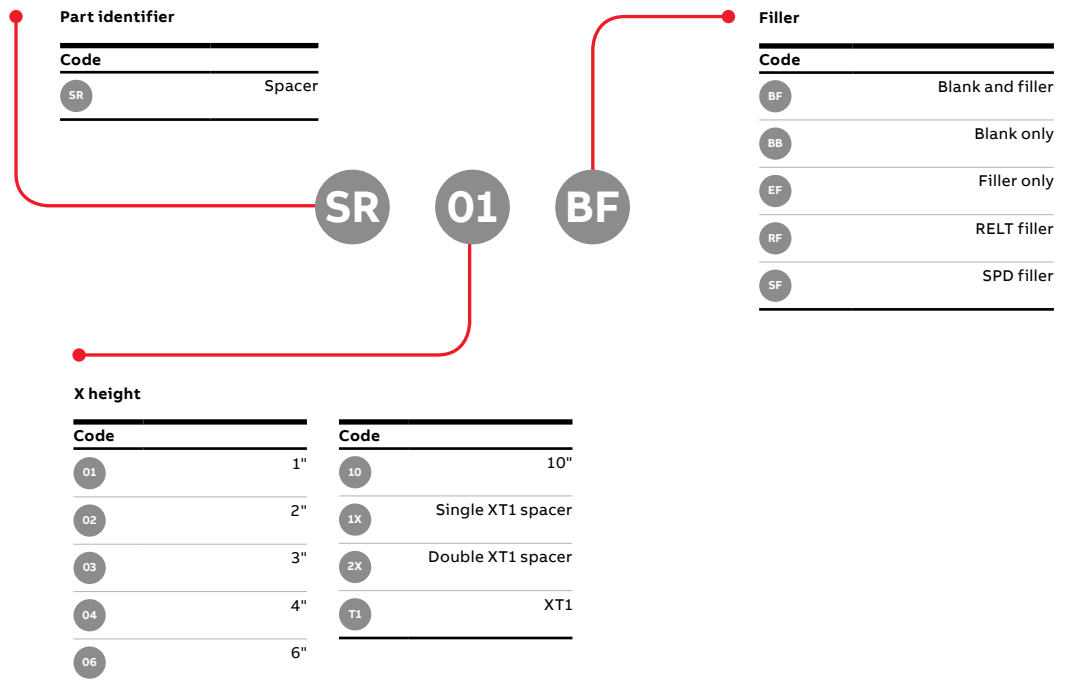
Catalog number scheme

Fronts



Note: Vented fronts to be used with 100% rated breakers.

Spacers



Catalog number scheme

Barrier post



Part identifier

Code	
BP	Barrier post

Orientation

Code	
C	Center
F	Offset

BP 30 C

Width

Code	
30	30"
40	40"
45	45"

Vertical main kits



Part identifier

Code	
VM	Vertical main kit

Orientation

Code	
C	Center
F	Offset

VM X7 30 C

Frame

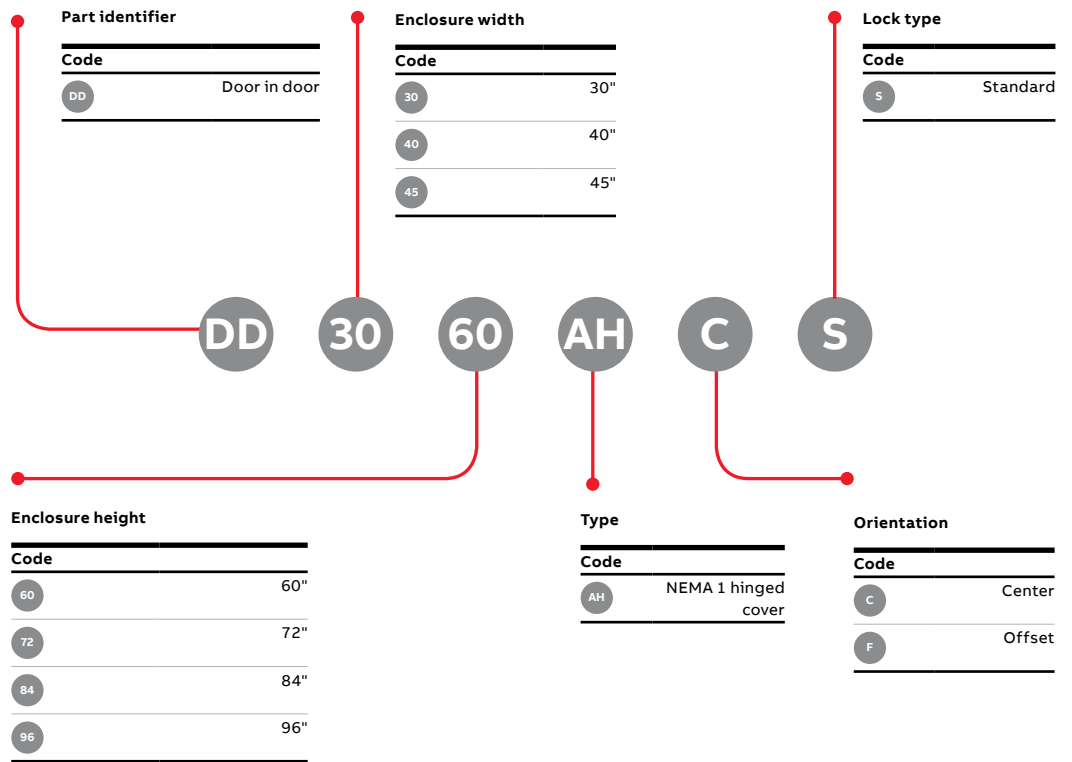
Code	
X5	XT5
X7	XT7

Width

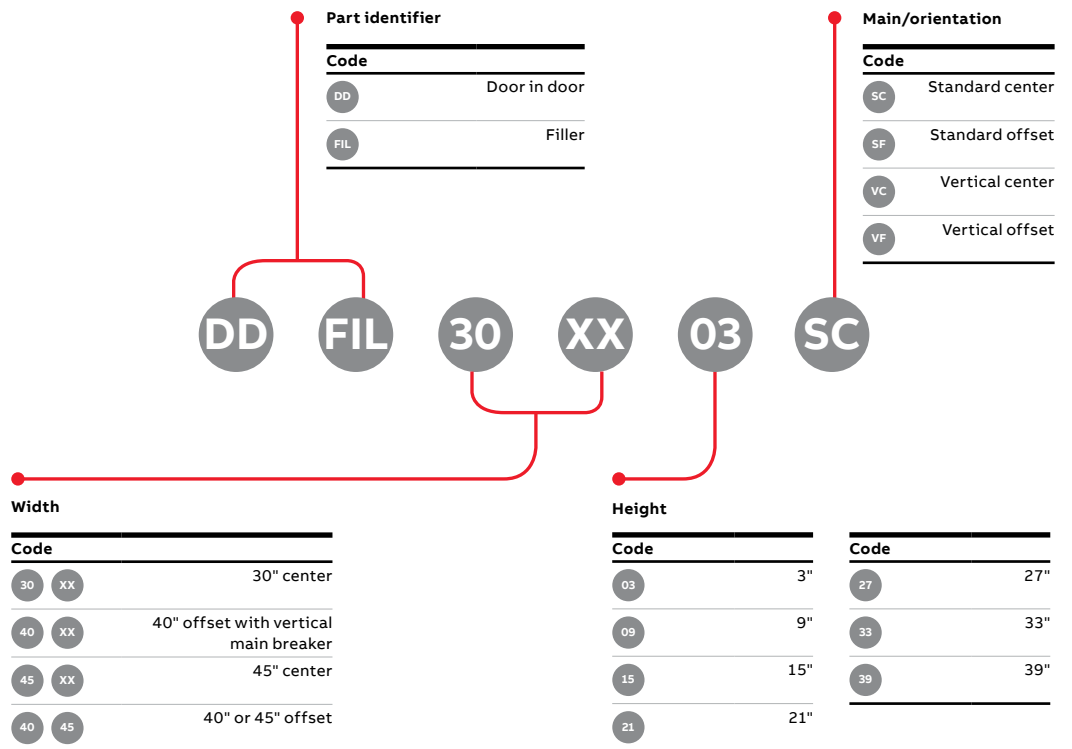
Code	
30	30"
40	40"
45	45"

Catalog number scheme

Door-in-door

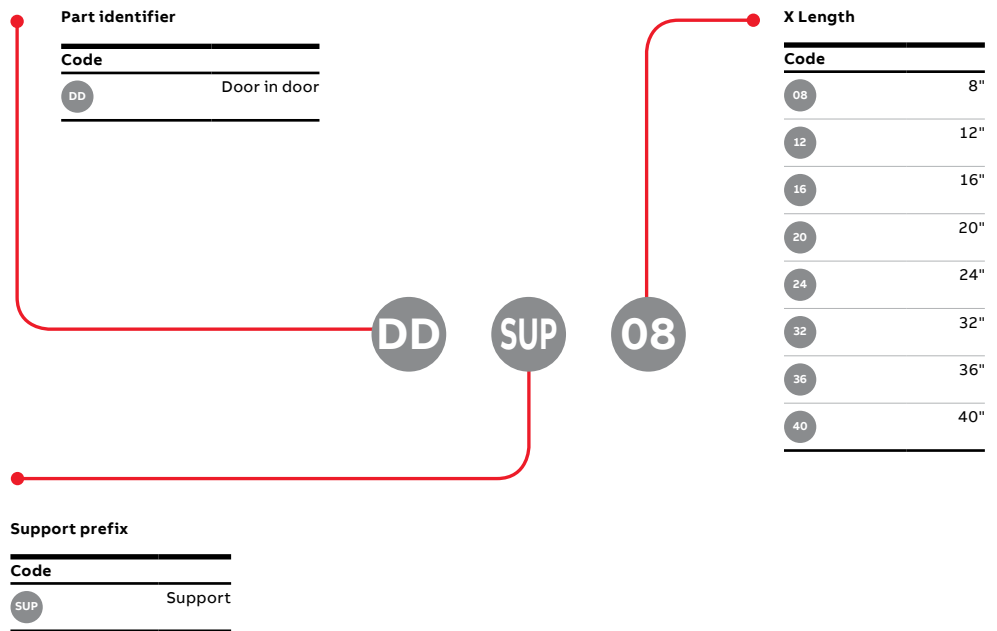


Door-in-door filler

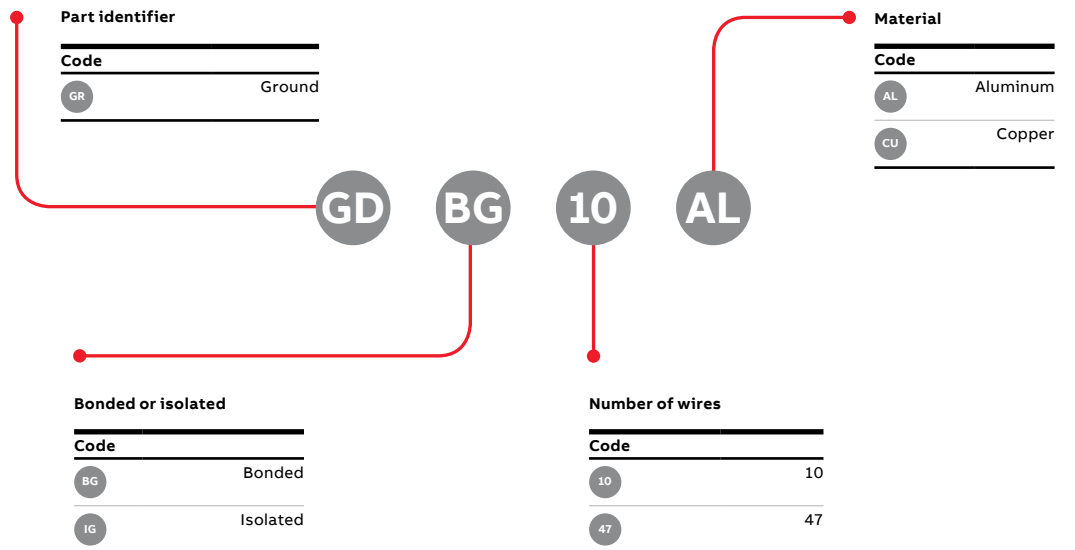


Catalog number scheme

Door-in-door filler support

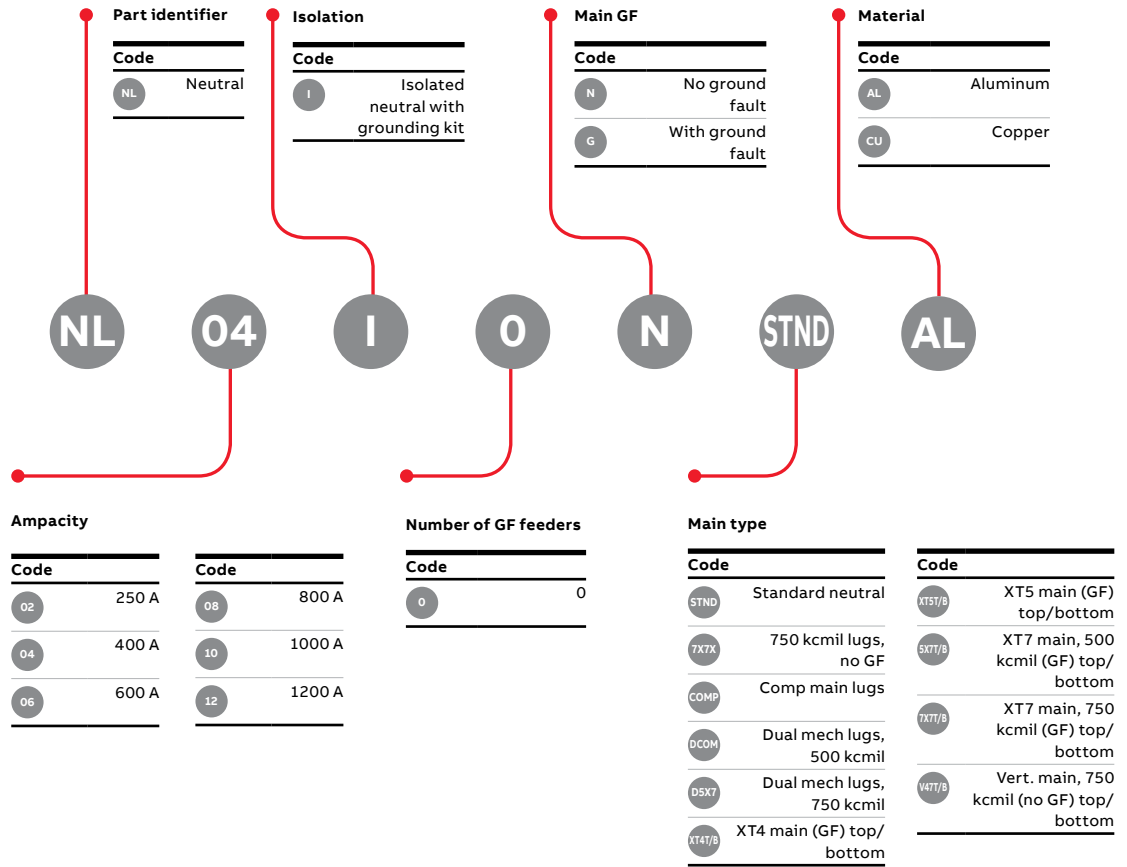


Grounds



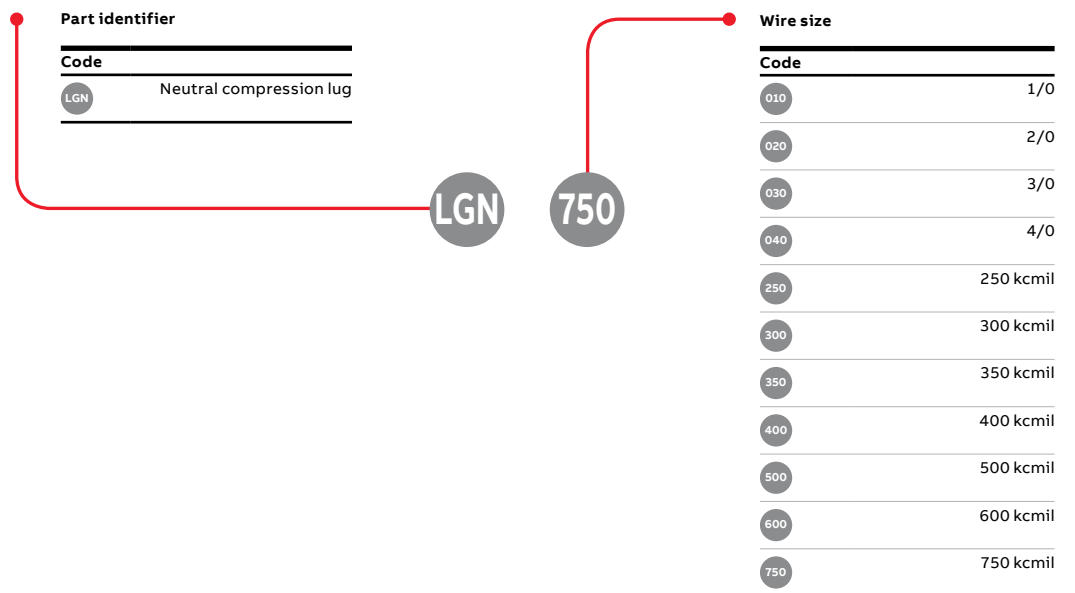
Catalog number scheme

Neutrals



Note 1: All neutrals include a bonding kit
 Note 2: Neutral compression lugs required

Neutral compression lugs



Catalog number scheme

Service entrance barrier



Part identifier

Code	
SB	Service entrance barrier

Number of poles

Code	
P3	3

SB X4 W35 P3

Breaker frame

Code	
X4	XT4
X5	XT5
X7	XT7

Wire size

Code	
W30	300 kcmil
W35	350 kcmil
W50	500 kcmil
W75	750 kcmil

Surge protection device (SPD)



Part identifier

Code	
SP	SPD

Disconnect device

Code	
XT4	XT4

SPD type

Code	
01	Type 1
02	Type 2

SP 120 Y 06 X4 01

Voltage type

Code	
120 Y	120 V AC Wye
277 Y	277 V AC Wye
347 Y	347 V AC Wye
480 D	480 V AC Delta

Impulse current

Code		Code	
06	65 kA	15	150 kA
08	80 kA	20	200 kA
12	125 kA	30	300 kA

Catalog number scheme

RELT



Part identifier

Code	
RT	RELT

Voltage

Code	
A	120/240 V, 208/120 V and 240 V Delta
B	480 V, 480 V Delta and 480/277
C	600 V, 600 V Delta and 600/347

Enclosure width

Code	
04	40"-45"

RT

04

A

Notes:

RELT is available for the 40"W and 45"W enclosures only.

When RELT is selected:

- For XT7, Ekip supply and Ekip signalling 2k are also required.
- For XT5, Ekip signalling 1K is also required.

Wire connector kit for RELT module



Part identifier

Code	
CN	Wire connector kit

For use with

Code	
001	XT5, XT7 vertical main
002	XT5 main (VR or HR)
003	XT7 main (VR or HR)

CN

001

Catalog number scheme

Single-point metering – AMP1



Part identifier

Code	
MT	Single-point metering – AMP1

Meter options

Code	
AP	Pulse
AM	AMP1, Modbus
AD	AMP1, Modbus data log
AB	AMP1, BACnet

MT 04 AP

Enclosure width

Code	
04	40"–45"

Note: Please also select a current transformer kit and a mounting kit.

Meter current transformer kit



Part identifier

Code	
MT	Meter current transformer kit

Ampacity

Code	
02	250 A
04	400 A
06	600 A
08	800 A
10	1000 A
12	1200 A

MT A 03 02 CT

Meter used

Code	
A	AMP1

Phase

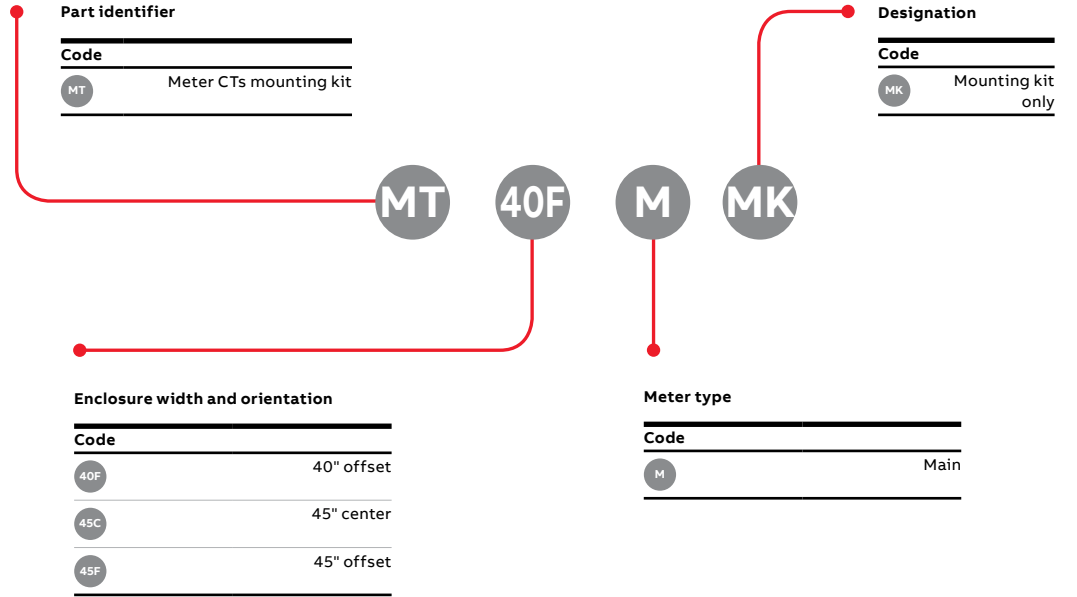
Code	
03	3-phase

CT designation

Code	
CT	For CTs only

Catalog number scheme

Meter CTs mounting kit



Additional information

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US

ABB Inc.
305 Gregson Drive
Cary, NC 27511

solutions.abb/reliagearnext