

SENTRON Series Circuit-Breakers

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Selection and ordering data

UL/NEMA SENTRON Series Circuit-Breakers

CQD and QJ version, 1-, 2- and 3-pole, up to 225 A

3-pole, up to 2000 A

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Accessories

3-pole, up to 2000 A

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

Dimensions

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UL/NEMA Sentron Series Circuit-Breakers

CQD and QJ Version, 1-, 2- and 3-pole, up to 225 A

Selection and ordering data							
 <p>CQD Version</p>				 <p>QJ Version</p>			
Version type	Overload release $I_n = I_r$	Short-circuit release I_i	1-pole	2-pole	3-pole	Dimensions mm	
			Switching capacity 65 kA at AC 120 V Release calibration 40 °C	Switching capacity 14 kA at AC 277/480 V Release calibration 40 °C			Weight Approx. (kg)
A	A	A	Order No. Price	Order No. Price	Order No. Price		
Circuit-breakers suitable for worksites and industry							
with fixed-setting overload/short-circuit releases							
CQD 100 A	15	850	CQD115 CQD120 CQD125	CQD215 CQD220 CQD225	CQD315 CQD320 CQD325	2-pole L = 124 W = 51 D = 73	
	20	850					
	30	1100	CQD130 CQD135 CQD140	CQD230 CQD235 CQD240	CQD330 CQD335 CQD340	(0.45)	
	35	1300					
	40	1300	CQD145 CQD150 CQD160	CQD245 CQD250 CQD260	CQD345 CQD350 CQD360	3-pole L = 124 W = 76 D = 73	
	45	1300					
	50	1400	CQD170 CQD180 CQD190 CQD1100	CQD270 CQD280 CQD290 CQD2100	CQD370 CQD380 CQD390 CQD3100	(0.68)	
	60	1400					
	70	1400					
	80	1400					
	90	1400					
	100	1400					
				Switching capacity 10 kA at AC 240 V			
QJ2 225 A	60	600	Not available	QJ22 □ 060 QJ22 □ 070 QJ22 □ 080 QJ22 □ 090	QJ23 □ 060 QJ23 □ 070 QJ23 □ 080 QJ23 □ 090	2-pole L = 178 W = 76 D = 64 (1.41)	
	70	600					
	80	800		QJ22 □ 100 QJ22 □ 110 QJ22 □ 125 QJ22 □ 150	QJ23 □ 100 QJ23 □ 110 QJ23 □ 125 QJ23 □ 150	3-pole L = 178 W = 114 D = 73 (1.45)	
	90	800					
	100	900					
	110	900					
	125	1500					
	150	1800					
	175	2650		QJ22 □ 175	QJ23 □ 175		
	200	2650		QJ22 □ 200	QJ23 □ 200		
	225	2650		QJ22 □ 225	QJ23 □ 225		
				Switching capacity 22 kA at AC 240 V			
QJH2 225 A	60	600	Not available	QJH22 □ 060 QJH22 □ 070 QJH22 □ 080 QJH22 □ 090	QJH23 □ 060 QJH23 □ 070 QJH23 □ 080 QJH23 □ 090	2-pole L = 178 W = 76 D = 64 (1.41)	
	70	600					
	80	800		QJH22 □ 100 QJH22 □ 110 QJH22 □ 125 QJH22 □ 150	QJH23 □ 100 QJH23 □ 110 QJH23 □ 125 QJH23 □ 150	3-pole L = 178 W = 114 D = 64 (1.45)	
	90	800					
	100	900					
	110	900					
	125	1500					
	150	1800					
	175	2650		QJH22 □ 175	QJH23 □ 175		
	200	2650		QJH22 □ 200	QJH23 □ 200		
	225	2650		QJH22 □ 225	QJH23 □ 225		
Release calibration 40 °C 50 °C				B M			

UL/NEMA Sentron Series Circuit-Breakers

CQD and QJ Version, 1-, 2- and 3-pole, up to 225 A

Accessories																							
		For versions CQD External mounting on the left side Order No.	QJ Only factory-mounted Order No.																				
Opening coil <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">AC V</th> <th style="width: 50%;">DC V</th> </tr> </thead> <tbody> <tr><td>120</td><td>–</td></tr> <tr><td>240</td><td>–</td></tr> <tr><td>–</td><td>–</td></tr> <tr><td>480</td><td>–</td></tr> <tr><td>600</td><td>–</td></tr> <tr><td>–</td><td>12</td></tr> <tr><td>–</td><td>24</td></tr> <tr><td>–</td><td>48</td></tr> <tr><td>–</td><td>125</td></tr> </tbody> </table>		AC V	DC V	120	–	240	–	–	–	480	–	600	–	–	12	–	24	–	48	–	125	CQDST120 CQDST240 CQDST277 CQDST480 CQDST600 CQDST12 CQDST24 CQDST48 CQDST125	S01QJ0R3 S01QJ0R3 Not available Not available Not available Not available S07QJ0R3 S09QJ0R3 S10QJ0R3
AC V	DC V																						
120	–																						
240	–																						
–	–																						
480	–																						
600	–																						
–	12																						
–	24																						
–	48																						
–	125																						
Minimum voltage coil <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">AC V</th> <th style="width: 50%;">DC V</th> </tr> </thead> <tbody> <tr><td>120</td><td>–</td></tr> <tr><td>240</td><td>–</td></tr> <tr><td>277</td><td>–</td></tr> <tr><td>480</td><td>–</td></tr> <tr><td>600</td><td>–</td></tr> <tr><td>–</td><td>12</td></tr> <tr><td>–</td><td>48</td></tr> <tr><td>–</td><td>125</td></tr> </tbody> </table>		AC V	DC V	120	–	240	–	277	–	480	–	600	–	–	12	–	48	–	125	CQDUV120 CQDUV240 CQDUV277 CQDUV480 Not available CQDUV24 CQDST48 Not available	Not available		
AC V	DC V																						
120	–																						
240	–																						
277	–																						
480	–																						
600	–																						
–	12																						
–	48																						
–	125																						
Auxiliary contact 1 inverter 2 inverters		Not available CQDA2	A01QJ0R3 A02QJ0R3																				
Alarm contact 1 inverter		CQDBA	Not available																				

UL/NEMA Sentron Series Circuit-Breakers

3-pole, up to 2000 A

Selection and ordering data



ED Version



FD Version



JD Version



LD Version

Version type	Overload release $I_n = I_r$	Short-circuit release I_i	Switching capacity 18 kA at AC 480 V		High switching capacity 42 kA at AC 480 V		Extra-high switching capacity 65 kA at AC 480 V		Dimensions mm
			Order No.	Price	Order No.	Price	Order No.	Price	
									Weight Approx. (kg)
with fixed-setting overload and short-circuit releases									
ED 125 A	15	600	ED43 □ 015		HED43 □ 015		HHED63 □ 015		ED4, HED6 L = 161 W = 76 D = 102 (1.8)
	20	600	ED43 □ 020		HED43 □ 020		HHED63 □ 020		
	25	600	ED43 □ 025		HED43 □ 025		HHED63 □ 025		
	30	600	ED43 □ 030		HED43 □ 030		HHED63 □ 030		
	35	600	ED43 □ 035		HED43 □ 035		HHED63 □ 035		
	40	600	ED43 □ 040		HED43 □ 040		HHED63 □ 040		
	45	600	ED43 □ 045		HED43 □ 045		HHED63 □ 045		
	50	600	ED43 □ 050		HED43 □ 050		HHED63 □ 050		
	60	1000	ED43 □ 060		HED43 □ 060		HHED63 □ 060		
	70	1000	ED43 □ 070		HED43 □ 070		HHED63 □ 070		HHED6 L = 166 W = 76 D = 102 (1.8)
	80	1000	ED43 □ 080		HED43 □ 080		HHED63 □ 080		
	90	1000	ED43 □ 090		HED43 □ 090		HHED63 □ 090		
	100	1000	ED43 □ 100		HED43 □ 100		HHED63 □ 100		
	110	1000	ED43 □ 110		HED43 □ 110		HHED63 □ 110		
	125	1000	ED43 □ 125		HED43 □ 125		HHED63 □ 125		
with fixed-setting overload release and adjustable short-circuit release									
			Switching capacity 35 kA		High switching capacity 65 kA		Extra-high switching capacity 100 kA		
FD 250 A	70	600–900	FXD63 □ 070		HFXD63 □ 070		HHFXD63 □ 070		L = 241 W = 114 D = 102 (4.5)
	80	600–900	FXD63 □ 080		HFXD63 □ 080		HHFXD63 □ 080		
	90	600–900	FXD63 □ 090		HFXD63 □ 090		HHFXD63 □ 090		
	100	700–1200	FXD63 □ 100		HFXD63 □ 100		HHFXD63 □ 100		
	110	700–1200	FXD63 □ 110		HFXD63 □ 110		HHFXD63 □ 110		
	125	800–1500	FXD63 □ 125		HFXD63 □ 125		HHFXD63 □ 125		
	150	800–1500	FXD63 □ 150		HFXD63 □ 150		HHFXD63 □ 150		
	175	900–2000	FXD63 □ 175		HFXD63 □ 175		HHFXD63 □ 175		
	200	900–2000	FXD63 □ 200		HFXD63 □ 200		HHFXD63 □ 200		
	225	1100–2500	FXD63 □ 225		HFXD63 □ 225		HHFXD63 □ 225		
	250	1100–2500	FXD63 □ 250		HFXD63 □ 250		HHFXD63 □ 250		
JD 400 A	200	1250–2500	JXD63 □ 200		HJXD63 □ 200		HHJXD63 □ 200		L = 279 W = 191 D = 102 (8.9)
	225	1250–2500	JXD63 □ 225		HJXD63 □ 225		HHJXD63 □ 225		
	250	1250–2500	JXD63 □ 250		HJXD63 □ 250		HHJXD63 □ 250		
	300	1250–2500	JXD63 □ 300		HJXD63 □ 300		HHJXD63 □ 300		
	350	2000–4000	JXD63 □ 350		HJXD63 □ 350		HHJXD63 □ 350		
	400	2000–4000	JXD63 □ 400		HJXD63 □ 400		HHJXD63 □ 400		
LD 600 A	450	2000–4000	LXD63 □ 450		HLXD63 □ 450		HHLXD63 □ 450		L = 279 W = 191 D = 102 (8.9)
	500	3000–6000	LXD63 □ 500		HLXD63 □ 500		HHLXD63 □ 500		
	600	3000–6000	LXD63 □ 600		HLXD63 □ 600		HHLXD63 □ 600		
Release calibration									
40 °C			↑		↑		↑		
50 °C			B		B		B		
			M		M		M		

Note:
Higher switching capacities available on request.

UL/NEMA Sentron Series Circuit-Breakers

3-pole, up to 2000 A

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Selection and ordering data



LMD Version



ND Version



PD Version




RD Version

Version type	Overload release $I_n = I_r$	Short-circuit release I_i	Switching capacity 50 kA at AC 480 V		High switching capacity 65 kA at AC 480 V		Extra-high switching capacity 100 kA at AC 480 V		Dimensions mm Weight Approx. (kg)
			Order No.	Price	Order No.	Price	Order No.	Price	
with fixed-setting overload release and adjustable short-circuit release									
LMD 800 A	500 600 700 800	3000–6000 3000–6000 3200–8000 3200–8000	LMXD63 <input type="checkbox"/> 500 LMXD63 <input type="checkbox"/> 600 LMXD63 <input type="checkbox"/> 700 LMXD63 <input type="checkbox"/> 800	HLMXD63 <input type="checkbox"/> 500 HLMXD63 <input type="checkbox"/> 600 HLMXD63 <input type="checkbox"/> 700 HLMXD63 <input type="checkbox"/> 800	Not available		Not available		L = 406 W = 191 D = 114 (20)
ND 1200 A	900 1000 1200	5000–10000 5000–10000 5000–10000	NXD63 <input type="checkbox"/> 900 NXD63 <input type="checkbox"/> 100 NXD63 <input type="checkbox"/> 120	HNXD63 <input type="checkbox"/> 900 HNXD63 <input type="checkbox"/> 100 HNXD63 <input type="checkbox"/> 120	CND63 <input type="checkbox"/> 900 CND63 <input type="checkbox"/> 100 CND63 <input type="checkbox"/> 120			L = 406 W = 229 D = 152 (58.1)	
PD 1600 A	1200 1400 1600	5000–10000 5000–10000 5000–10000	PXD63 <input type="checkbox"/> 120 PXD63 <input type="checkbox"/> 140 PXD63 <input type="checkbox"/> 160	HPXD63 <input type="checkbox"/> 120 HPXD63 <input type="checkbox"/> 140 HPXD63 <input type="checkbox"/> 160	CPD63 <input type="checkbox"/> 120 CPD63 <input type="checkbox"/> 140 CPD63 <input type="checkbox"/> 160			L = 406 W = 229 D = 152 (58.1)	
RD 2000 A	1600 1800 2000	5000–10000 5000–10000 5000–10000	RXD63 <input type="checkbox"/> 160 RXD63 <input type="checkbox"/> 180 RXD63 <input type="checkbox"/> 200	HRXD63 <input type="checkbox"/> 160 HRXD63 <input type="checkbox"/> 180 HRXD63 <input type="checkbox"/> 200	Not available				L = 406 W = 229 D = 152 (78.3)

Release calibration 40 °C 50 °C	↑	↑	↑
	B M	B M	B M

UL/NEMA Sentron Series Circuit-Breakers





3-pole, up to 2000 A

Accessories							
 <p>Accessories for ED version</p>			For versions				
			ED	FD	JD, LD, LMD	ND, PD, RD	
		Order No.	Order No.	Order No.	Order No.		
Opening coil Mounting: for ED version, external on the left side. For all other versions: internal mounting on the right or left side.							
		AC V	DC V				
		24	–	S17ED60	S17FD60	S17JLD6	Not available Not available S01MN6 S02MN6
		48	–	S18ED60	S18FD60	S18JLD6	
		120	–	S01ED60	S01FD60	S01JLD6	
		208	–	S02ED60	S02FD60	S02JLD6	
		240	–	S03ED60	S03FD60	S03JLD6	S03MN6 S15MN6 S04MN6 S06MN6
		277	–	S15ED60	S15FD60	S15JLD6	
		480	–	S04ED60	S04FD60	S04JLD6	
		600	–	S06ED60	S06FD60	S06JLD6	
		–	12	S16ED60	S16FD60	S16JLD6	S16MN6 S07MN6 S09MN6 S11MN6 S13MN6
		–	24	S07ED60	S07FD60	S07JLD6	
		–	48	S09ED60	S09FD60	S09JLD6	
		–	125	S11ED60	S11FD60	S11JLD6	
		–	250	S13ED60	S13FD60	S13JLD6	
Combination of opening coil and auxiliary contact Mounting: for ED version, external on the left side. For all other versions: internal mounting on the right or left side.							
		AC V	DC V				
		24	–	Not available	Not available	Not available	Not available Not available S01MN64A S02MN64A
		48	–	Not available			
		120	–	S01ED62A			
		208	–	S02ED62A			
		240	–	S03ED62A	Not available	S03JLD62A	S03MN64A S15MN64A S04MN64A Not available
		277	–	S15ED62A			
		480	–	S04ED62A			
		600	–	Not available			
		–	12	Not available	S16JLD62A S07JLD62A S09JLD62A S11JLD62A S13JLD62A	S16MN64A S07MN64A S09MN64A S11MN64A S13MN64A	
		–	24	S07ED62A			
		–	48	S09ED62A			
		–	125	S11ED62A			
		–	250	S13ED62A			
Combination of opening coil, auxiliary contact and alarm contact Mounting: for ED version, external on the left side. For all other versions: internal mounting on the right or left side.							
		AC V	DC V				
		120	–	S01ED62AA	Not available	Not available	Not available
		208	–	S02ED62AA			
		240	–	S03ED62AA			
		–	24	S07ED62AA	1 accessory module can be mounted on the right pole, on the left pole or on both – 1 Order No. is equivalent to 1 module.		
		–	48	S09ED62AA			
		–	125	S11ED62AA			
		–	250	S13ED62AA			

UL/NEMA Sentron Series Circuit-Breakers

3-pole, up to 2000 A

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Accessories						
 <p>Accessories for ED version</p>			For versions			
			ED	FD	JD, LD, LMD	ND, PD, RD
		Order No.	Order No.	Order No.	Order No.	
 <p>Accessories for FD version</p>	Minimum voltage coil Mounting: for ED version, external on the left side. For all other versions: internal mounting on the right or left side.					
	AC V	DC V				
	120	–	U01ED60	U01FD60	U01JLD6	U01MN6
	208	–	U02ED60	U02FD60	U02JLD6	U02MN6
	240	–	U03ED60	U03FD60	U03JLD6	U03MN6
	277	–	U16ED60	U16FD60	U16JLD6	U16MN6
	480	–	U06ED60	U06FD60	U06JLD6	U06MN6
	600	–	U08ED60	U08FD60	U08JLD6	U08MN6
	–	24	U13ED60	U13FD60	U13JLD6	U13MN6
	–	48	U14ED60	U14FD60	U14JLD6	U14MN6
–	125	U10ED60	U10FD60	U10JLD6	U10MN6	
–	250	U12ED60	U12FD60	U12JLD6	U12MN6	
 <p>Accessories for JD, LD, LMD versions</p>	Combination of minimum voltage coil and auxiliary contact Mounting: for ED version, external on the left side. For all other versions: internal mounting on the right or left side.					
	AC V	DC V				
	120	–	U01ED62A	W01FD64	U01JLD62A	U01MN64A
	208	–	U02ED62A	W02FD64	U02JLD62A	U02MN64A
	240	–	U03ED62A	W03FD64	U03JLD62A	U03MN64A
	277	–	U16ED62A	W16FD64	U16JLD62A	U15MN64A
	480	–	U06ED62A	W06FD64	U06JLD62A	U04MN64A
	600	–	Not available	W08FD64	Not available	Not available
	–	24	U13ED62A	W13FD64	U13JLD62A	U07MN64A
	–	48	U14ED62A	W14FD64	U14JLD62A	U09MN64A
–	125	U10ED62A	W10FD64	U10JLD62A	U11MN64A	
–	250	U12ED62A	W12FD64	U12JLD62A	U13MN64A	
 <p>Accessories for ND, PD, RD versions</p>	Auxiliary contact Mounting: for ED version, external on the left side. For all other versions: internal mounting on the right or left side.					
	AC V	DC V				
	240	–	A01ED62	A01FD62	Not available	Not available
	480	–	A01ED64	A01FD64	A01JLD64	A01MN64
	–	250	A01ED62	A01FD62	A01JLD64	A01MN64
	Alarm contact Mounting: for ED version, external on the left side. For all other versions: internal mounting on the right or left side.					
	AC V	DC V				
	240	–	B00ED62	Not available	Not available	Not available
	480	–	B00ED64	B00FD64	B01JLD64	B00MN64
	–	250	B00ED62	B00FD64	B01JLD64	B00MN64
Combination of minimum voltage, auxiliary contact and alarm contact Mounting: for ED version, external on the left side. For all other versions: internal mounting on the right or left side.						
AC V	DC V					
120	–	U01ED62AA	Not available	Not available	Not available	
208	–	U02ED62AA				
240	–	U03ED62AA				
–	24	U13ED62AA				
–	48	U14ED62AA				
–	125	U10ED62AA				
–	250	U12ED62AA				
1 accessory module can be mounted on the right pole, on the left pole or on both – 1 Order No. is equivalent to 1 module.						

UL/NEMA Sentron Series Circuit-Breakers

3-pole, up to 2000 A

Current-limiting circuit-breakers for AC, compact design

UL/NEMA Sentron series circuit-breakers

All breakers have been tested and qualified to the requirements set out in UL/NEMA specifications:

Ampere rating range: 15 A – 2000 A
Symmetric Ampere Rating
UL RMS (kA):
10/65

UL Sentron series moulded-case circuit-breakers protect system components and loads from thermal overload and short-circuits.

These circuit-breakers are enhanced by an extended accessory line, for solving any installation requirement. For instance: opening coil, minimum voltage coil, auxiliary contacts, alarm contacts, mechanical connecting studs, handles to control from outside a door, device for locking connection, etc., all these accessories are easy to install, even by the user.

These circuit-breakers are available in the following models:

Model ED up to 125 A
Model FD up to 250 A
Model JD up to 400 A
Model LD up to 600 A
Model LMD up to 800 A
Model ND up to 1200 A
Model PD up to 1600 A
Model RD up to 2000 A

The breaking capacity is identified by a color code as follows:

Blue: standard breaking capacity
Black: high and extra-high breaking capacity

UL/NEMA Sentron series circuit-breakers use the principle of "blow-apart" contact. Starting from the basic laws of physics, this principle is based on the electromagnetic repulsion force between adjacent conductors which carry currents in opposite directions. In these circuit-breakers, contacts that carry current are arranged so as to generate opposite magnetic fields. The contact arms, one fixed and one movable, are positioned close to each other. As the fault current rises, magnetic repulsion forces the contacts to part. This forced separation immediately generates an arc. This arc acts as a major source of current impedance, restricting fault energy to lower levels for fast extinguishing in the arc chute.

• Quality

Sentron series circuit-breakers are manufactured to the highest quality standards within a ISO 9002 certified facility.

• Moulded Case

Circuit-breaker housing is made of high impact, high dielectric strength polymer material.

• Positive operation

"ON" and "OFF" states are indicated by the position of the operating handle. An intermediate position indicates that the circuit-breaker is in a tripped position.

• Flexibility of application

Sentron series circuit-breakers may be used for individual enclosures, switchboards, lighting and power panels as well as in motor control centers.

• Minimum downtime

Downtime is reduced and fuse replacement is eliminated in Sentron series circuit-breakers. In case of overload or short-circuit, the breaker trips, stopping current flow and protecting the conductors. After the normal conditions are restored, the breaker can be closed ("ON") again.

• Space saving

By virtue of their compact design, the Sentron series are space-saving, which is a major factor to equipment users. By offering high interruption ratings in small compact versions, the savings to users can be substantial.

• Trip-free mechanism

By design, the Sentron series circuit-breakers use a trip-free mechanism, which is an integral part of the quick-make, quick-break mechanism that is independent of the handle toggle. It opens the circuit-breaker contacts under overload and short-circuit conditions, even if the breaker handle is held in the "ON" position.

• Three-pole disconnection

These circuit-breakers solve the problem of a failure on one phase. When a short-circuit or an overload occurs on a single conductor, the three-polar disconnection mechanism opens all contacts of the circuit-breakers at the same time. The same occurs when the circuit-breaker is driven by an accessory.

• Thermal trip

This provides protection against sustained overloads. The thermal trip is common to all models.

• Electromagnetic trip

This provides protection against short-circuits. For model ED the electromagnetic trip is fixed. For models FD to RD the electromagnetic trip is adjustable.

• Test pushbutton

All Sentron series circuit-breakers feature a pushbutton which can be pressed to check the opening/closing operation of the circuit-breaker mechanism.

• Contacts

All contacts are alloy materials designed to give above-normal endurance during service use.

• Arc chutes

Arc chutes are designed to confine, divide and extinguish an arc each time the breaker contacts interrupt a short-circuit. The arc chute, therefore, must dissipate the arcs that are caused when the circuit-breaker interrupts current flow. It contains a stack of U-shaped steel plates held together by insulating material. The steel plates divide the arc and cool the gases generated by the arc.

• Further versions

Further circuit-breaker versions are available as follows:

With exchangeable release:

enables change to a different rating.

With electronic release:

enables very fine adjustments for specific applications.

With magnetic release:

to be used only for motor start up.

Without magnetic or thermal release:

to be used as switch disconnector.

UL/NEMA circuit-breakers for AC, CQD and QJ versions

The **CQD** and **QJ** versions of the circuit-breakers are compact and ideally suitable for industry and work-sites.

They feature a high breaking capacity, i.e. 10/22 kA at 240 V (**QJ** version) and 65 kA at 240 V and 14 kA at 480 V (**CQD** version).

The **CQD** version is fixed by means of screws and/or rail according to DIN.

The **QJ** version is screwed.

QJ version circuit-breakers: 2-pole and 3-pole.

CQD version circuit-breakers: 1-pole, 2-pole and 3-pole. Set of accessories available.

Circuit-Breakers

1- to 3-pole, up to 2000 A

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Technical data								
	CQD/QJ		Sentron series					
Version	CQD	QJ	E	F	J, L	M, N	P, R	
Number of poles	1, 2, 3	2, 3	3	3	3	3	3	
Rated current I_n	A	100	225	125	250	400, 600	600, 1200	1600, 2000
Rated impulse withstand voltage U_{imp} Main leads	kV	–	–	8	8	8	8	–
Ambient temperature in operation	°C	–20 up to +70						
Permissible load for different temperatures around the circuit-breaker, as a function of the circuit-breaker rated current – Circuit-breakers for line protection								
% for 40 °C	100	100	100	100	100	100	100	100
% for 50 °C	92	92	92	94	92	94	94	94
% for 55 °C	87	87	87	90	87	87	87	87
% for 60 °C	83	83	83	87	84	84	84	84
% for 70 °C	72	–	72	80	75	76	76	76
Short-circuit breaking capacity UL 489/NEMA								
AC for 240 V	65 – –	10 22 –	65 100 100	65 100 20	65 100 200	65 100 200	65 100 200	65 100 200
AC for 480 V	14 ¹⁾ – –	– – –	18 42 65	36 65 10	35 65 100	60 65 100	50 65 100	50 65 100
AC for 600 V	– – –	– – –	– – 25	22 25 2	25 35 50	26 50 50	25 50 65	25 50 65
Endurance (UL/NEMA) Maximum operation frequency.	Operating cycles 1/h	10000 360	8000 300	10000 360	6000 240	6000 240	3500 50	2500 60
Cross-section and type of terminals for main conductors Type of terminals Solid or stranded conductors	mm ²	Box terminals 2.5–50.0	Box terminals 16.0–150	Box terminals 2.5–50.0	Box terminals 35.0–150	Box terminals 45.0–240.0	Box terminals 50.0–240.0	Box terminals 50.0–240.0
Circuit-breaker loss power for rated current I_n with symmetric load on the three phases – for line protection	W	15.6	27	12.1	26.4	55/86.5	119/225	228/415
Permissible mounting position								

1) Rated breaking capacity for 277/480 V AC.

IEC, UL/NEMA Circuit-Breakers 1-, 2- and 3-pole, up to 2000 A

Characteristic curves (IEC, UL/NEMA Circuit-Breakers)

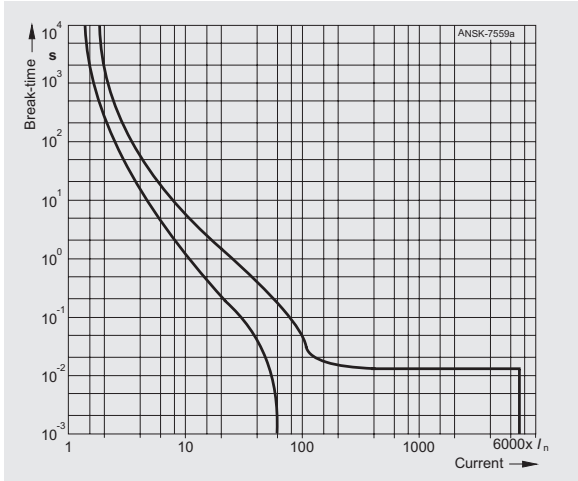


Fig. 5/1 3VF2, CQD versions

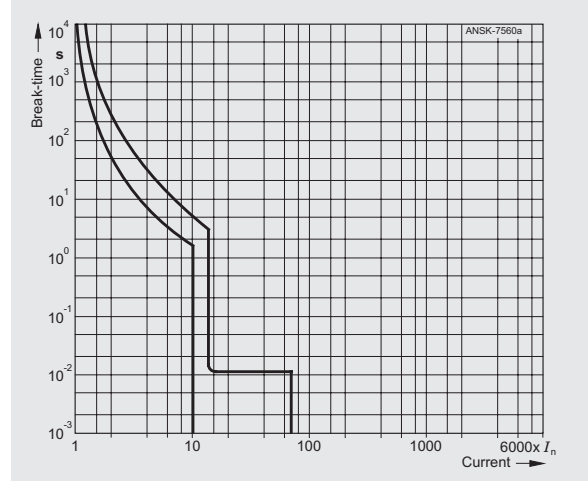


Fig. 5/2 QJ version
QJ2, QJH2 types

Characteristic curves (UL/NEMA Circuit-Breakers)

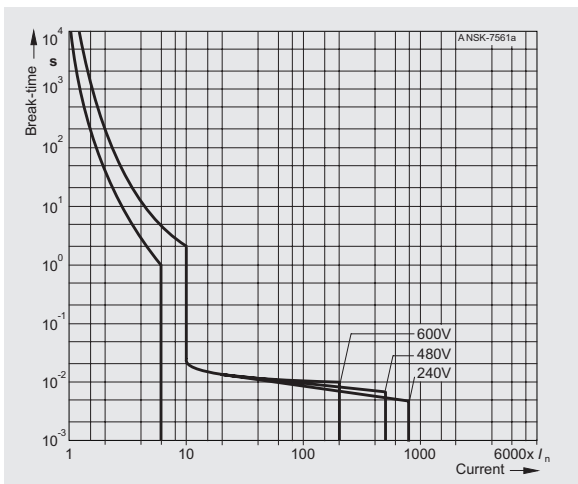


Fig. 5/3 ED version
ED4, HED4, HHED6 types

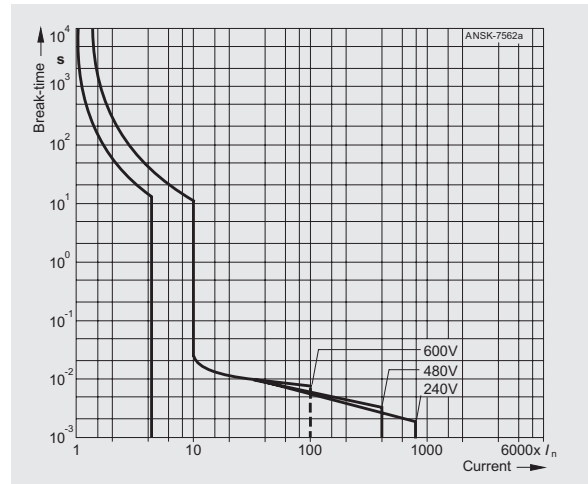


Fig. 5/4 FD version
FXD6, HFXD6, HHFXD6 types

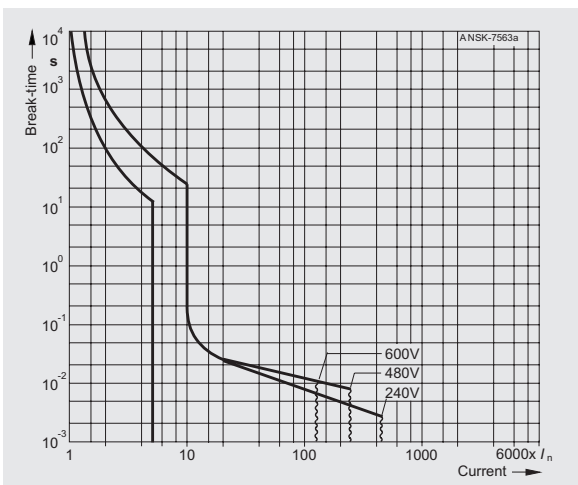


Fig. 5/5 JD version
JXD6, HJXD6, HHJXD6 types

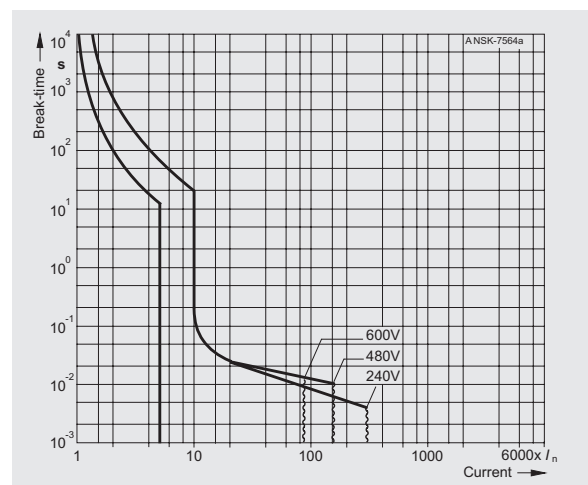


Fig. 5/6 LD version
LXD6, HLXD6, HHLXD6 types

Characteristic curves

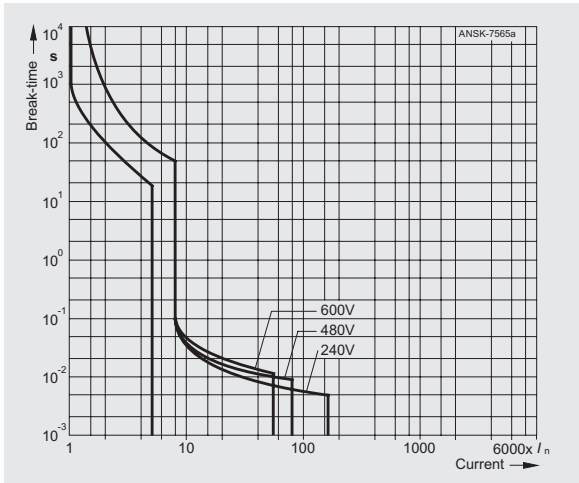


Fig. 5/7 ND version
NXD6, HNXD6, CND6 types

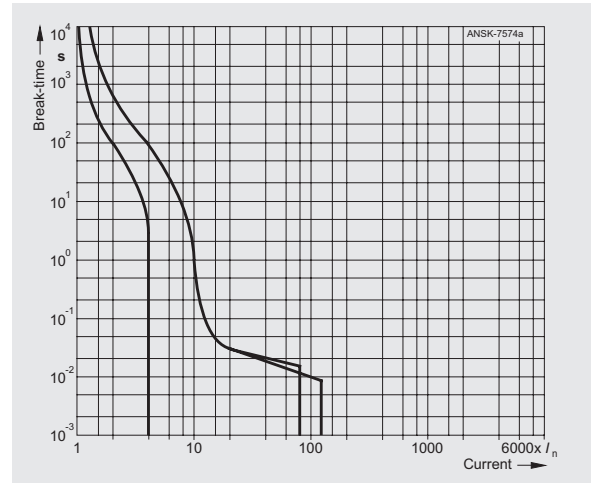


Fig. 5/8 LMD version
LMXD6, HLMXD6 types

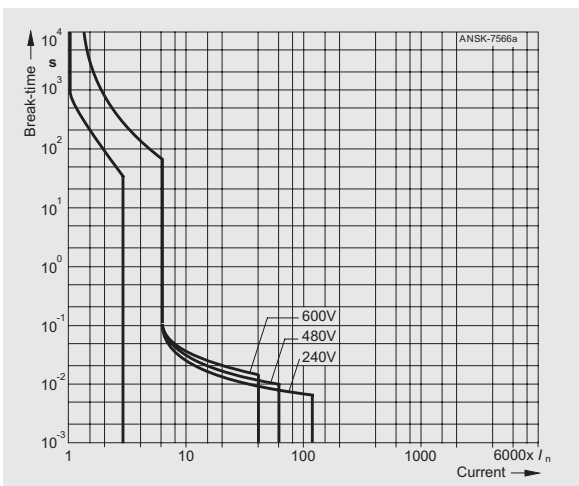


Fig. 5/9 PD version
PXD6, HPXD6, CPD6 types

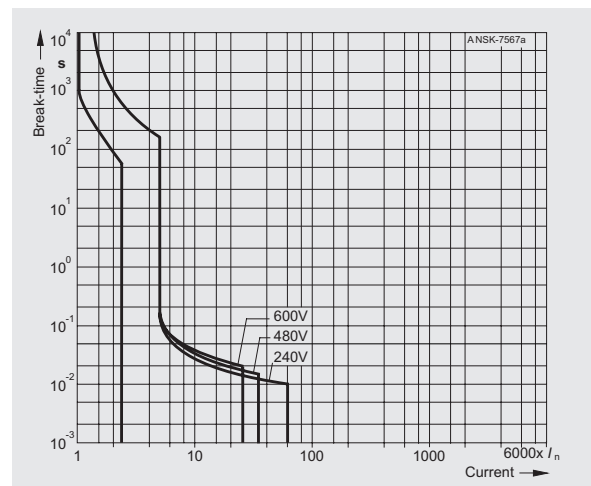
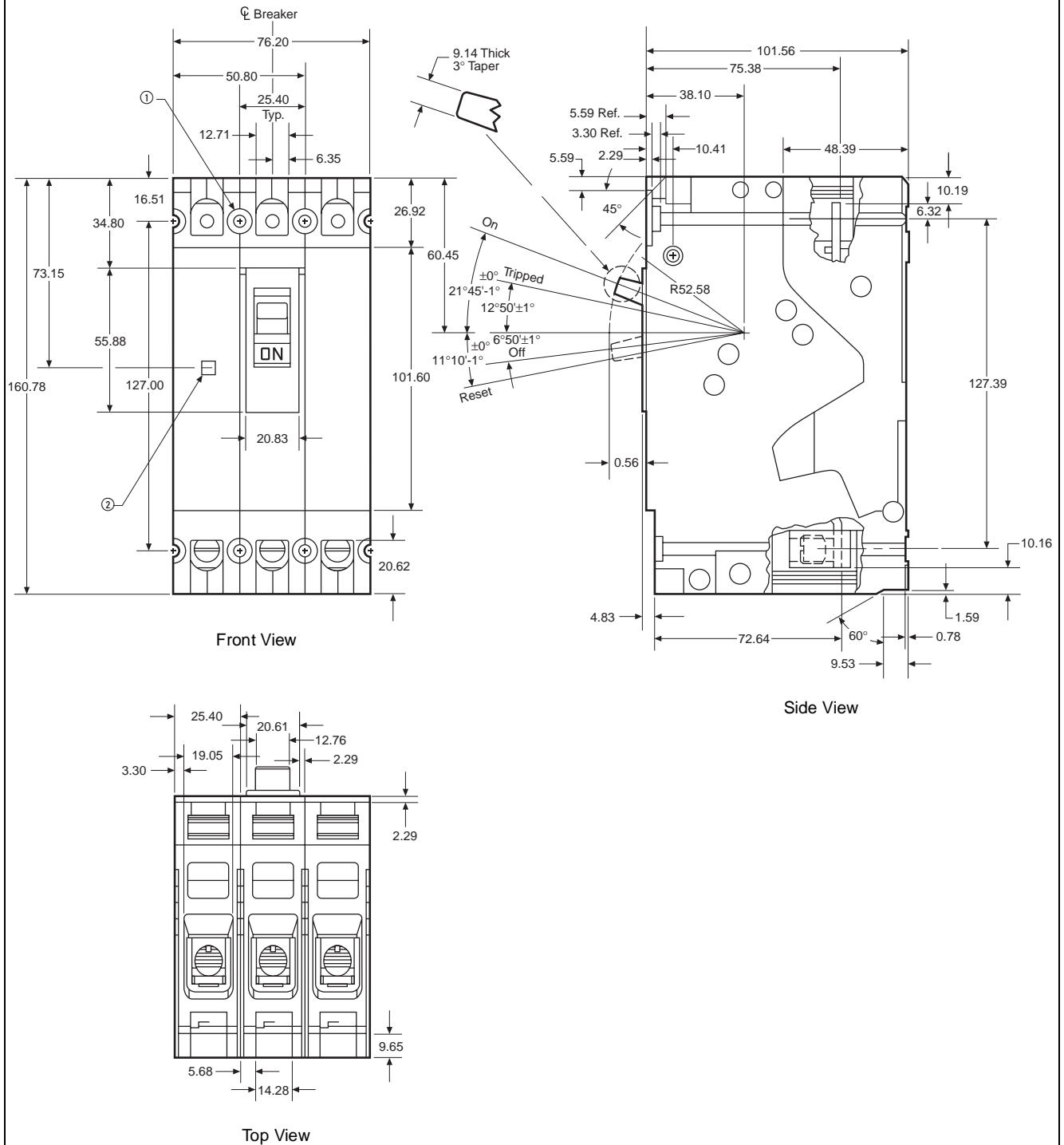


Fig. 5/10 RD version
RXD6, HRXD6 types

5

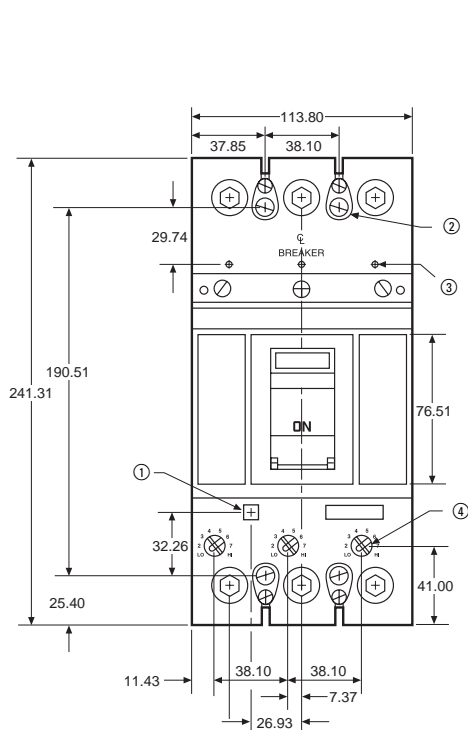
Circuit-Breakers

ED circuit-breakers

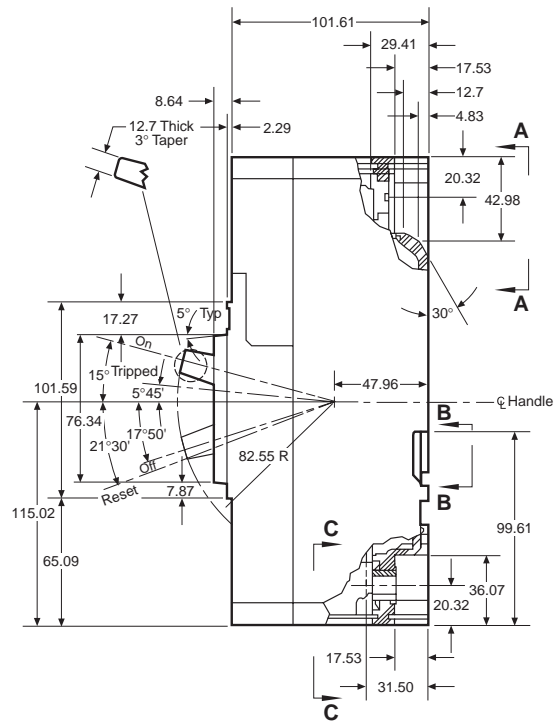


- ① 4.23 \varnothing mounting hole
9.63 \varnothing \times 3.30 counterbore depth
- ② Test button
5.33 Sq.

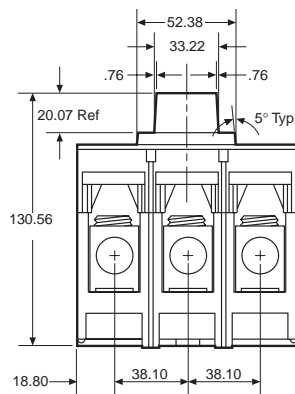
FD circuit-breakers



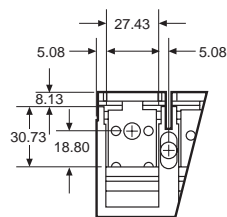
Front View



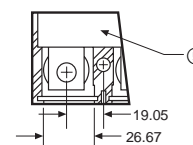
Side View



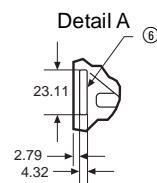
Top View



Detail A



Detail C

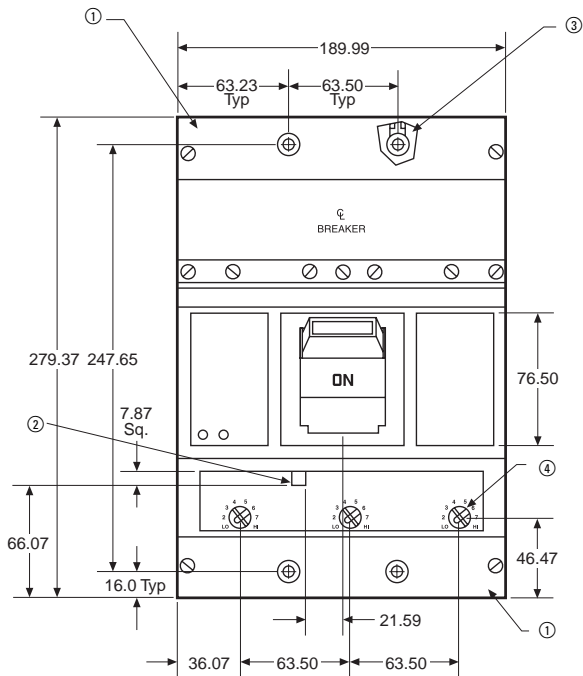


Detail B

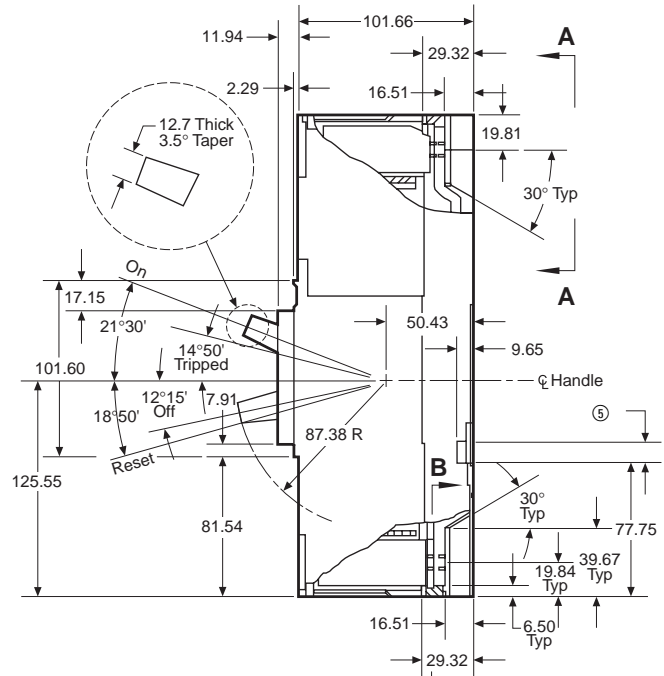
- ① Test push-button
7.87 sq.
- ② 6.86 \varnothing mounting holes
12.70 \varnothing \times 9.65 counterbore depth,
4 holes
- ③ 3.18 \varnothing \times 8.64 depth
3 blind holes
- ④ Magnetic release adjustment
- ⑤ Release module
- ⑥ Auxiliary cable outlet
(both sides)

Circuit-Breakers

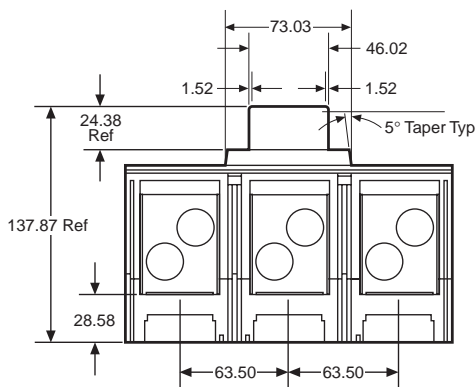
JD and LD circuit-breakers



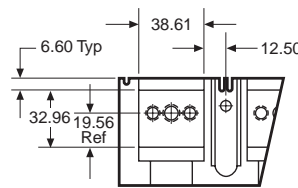
Front View



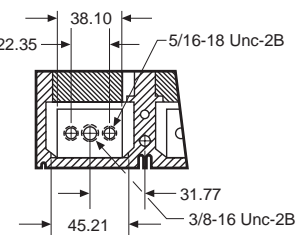
Side View



Top View



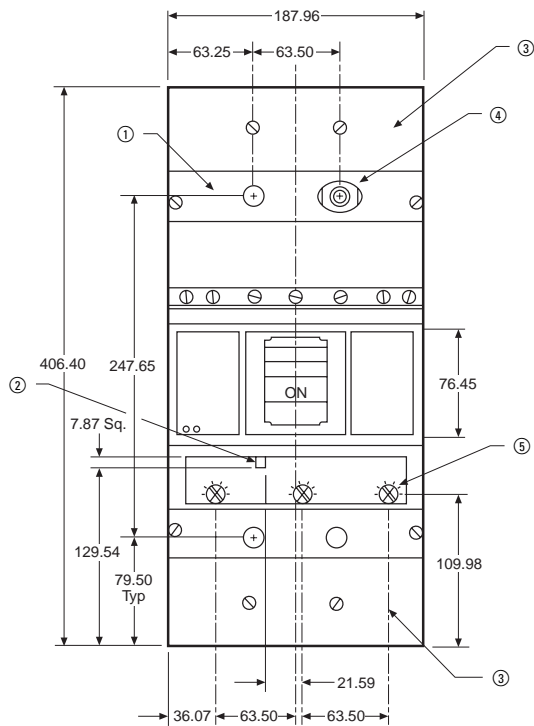
Detail A



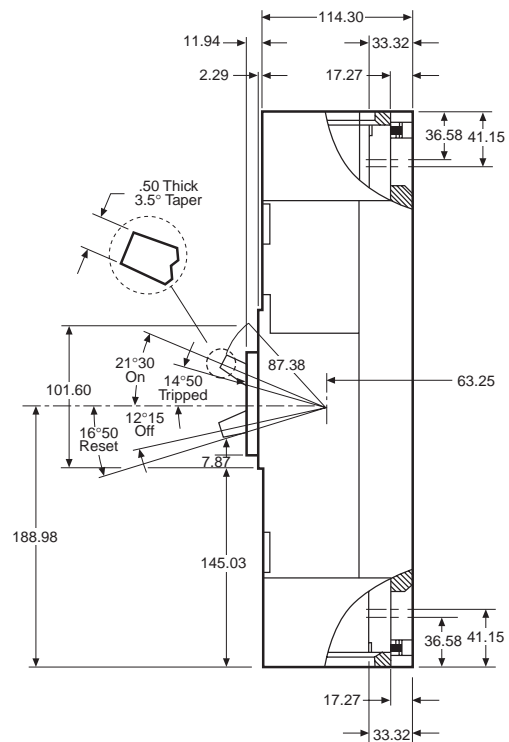
Detail B

- ① Removable connector cover
- ② Test push-button
- ③ 7.14 \varnothing mounting holes
13.49 \varnothing \times 39.37 depth counterbore
4 holes
- ④ Magnetic release adjustment
- ⑤ 12.7 \times 7.87 cableway

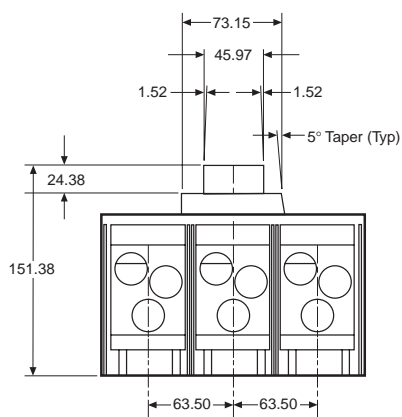
LMD circuit-breakers



Front View



Side View

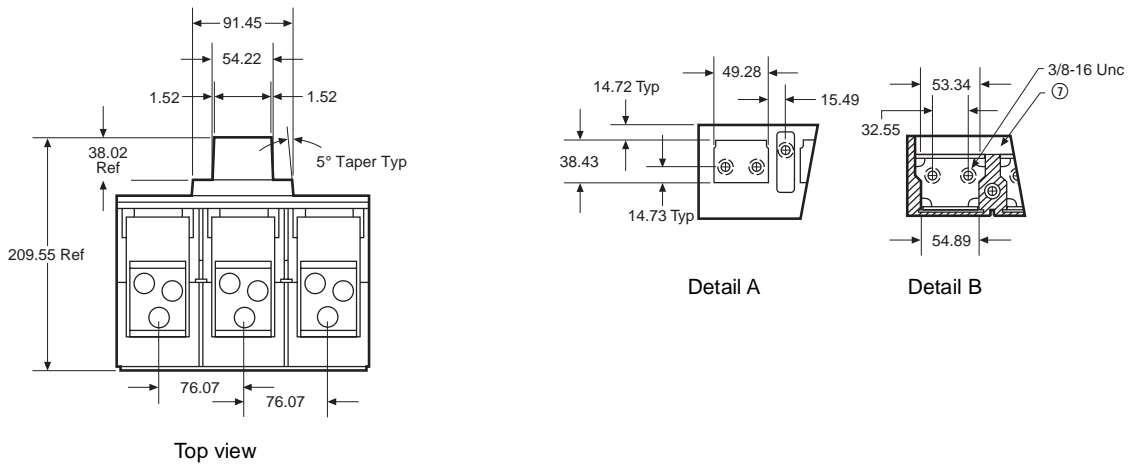
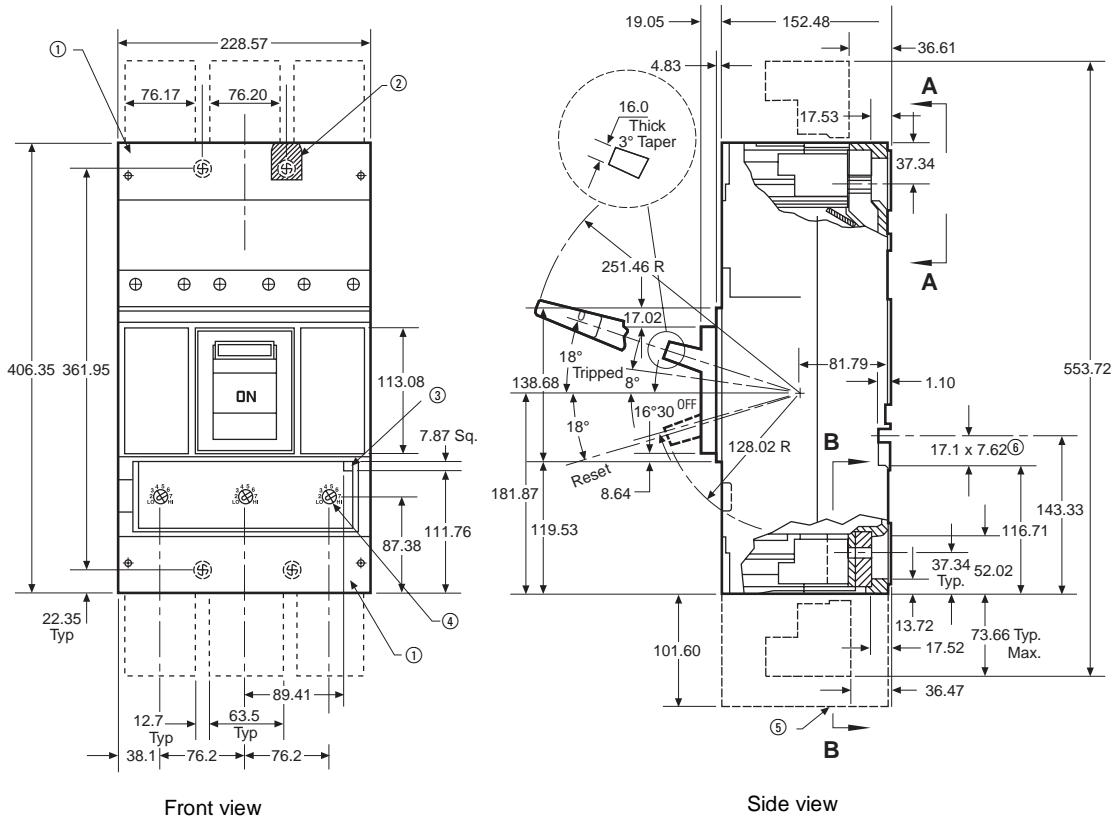


Top View

- ① Removable cover
- ② Test push-button
- ③ Removable terminal cover
- ④ 0.281 Ø mounting holes
0.531 Ø × 1.55 counterbore depth
4 holes
- ⑤ Magnetic release adjustment

Circuit-Breakers

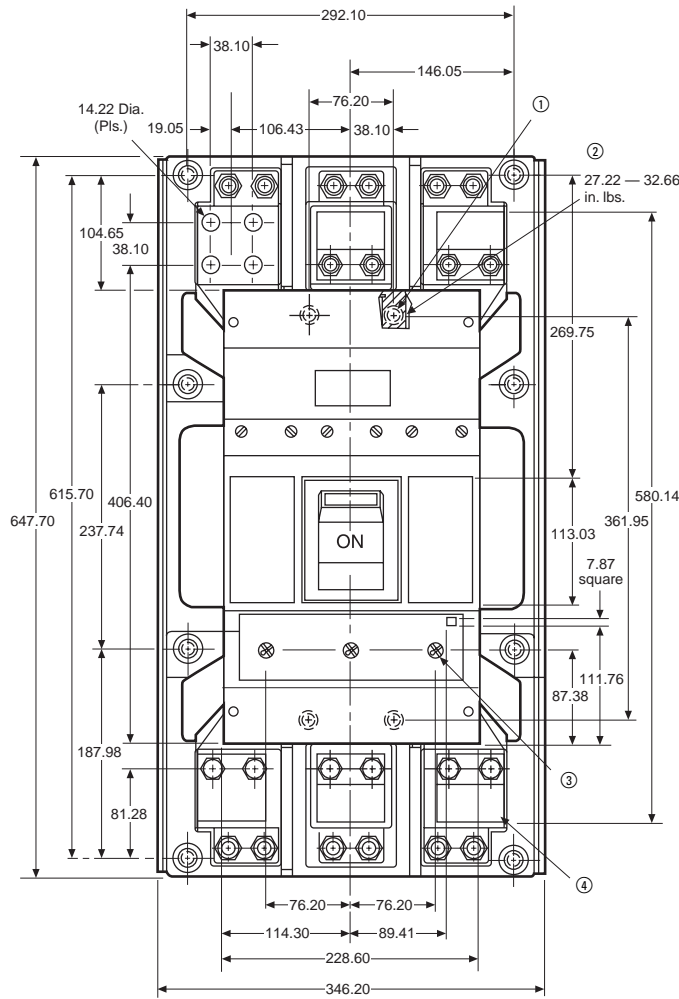
ND circuit-breakers



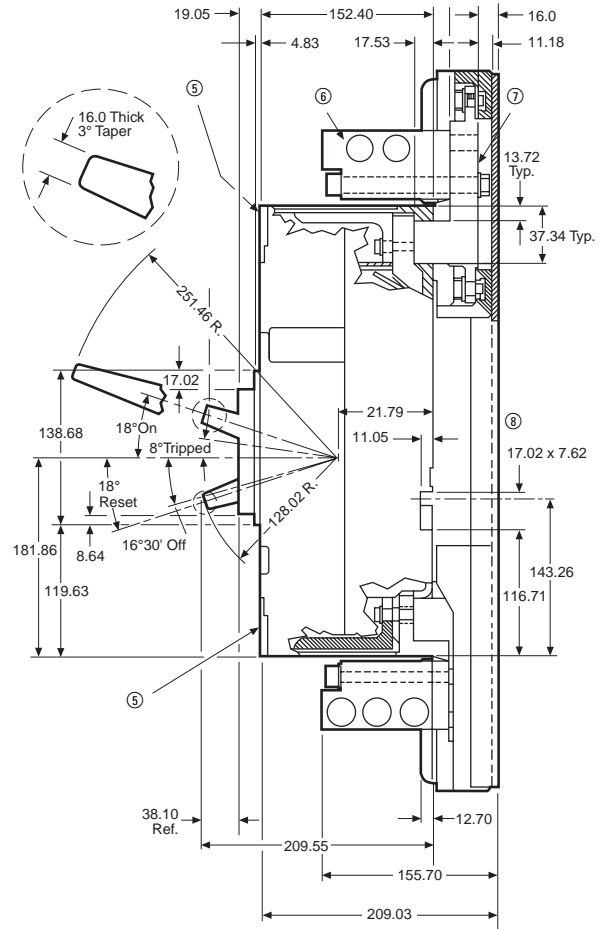
- | | |
|--|-------------------------------|
| ① Removable terminal cover | ④ Magnetic release adjustment |
| ② 11.18 \varnothing mounting holes
17.53 \varnothing x 22.23 counterbore depth
4 holes | ⑤ Connector cover |
| ③ Test push-button | ⑥ Cableway |
| | ⑦ Release unit |

PD and RD circuit-breakers

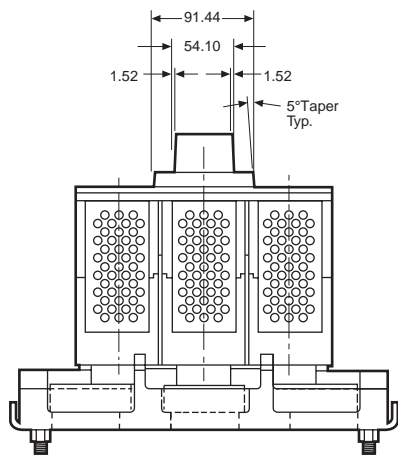
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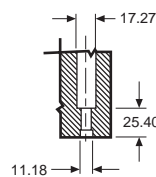
Front view



Side view



Top view

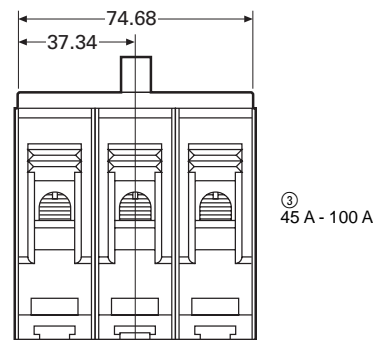
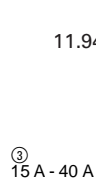
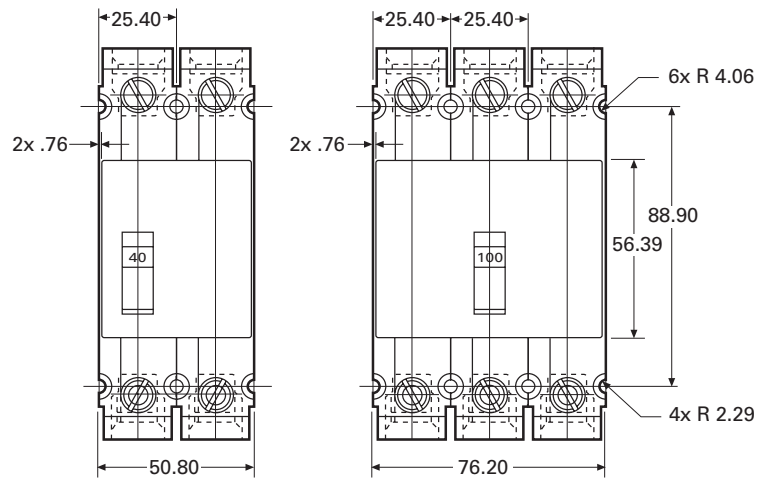
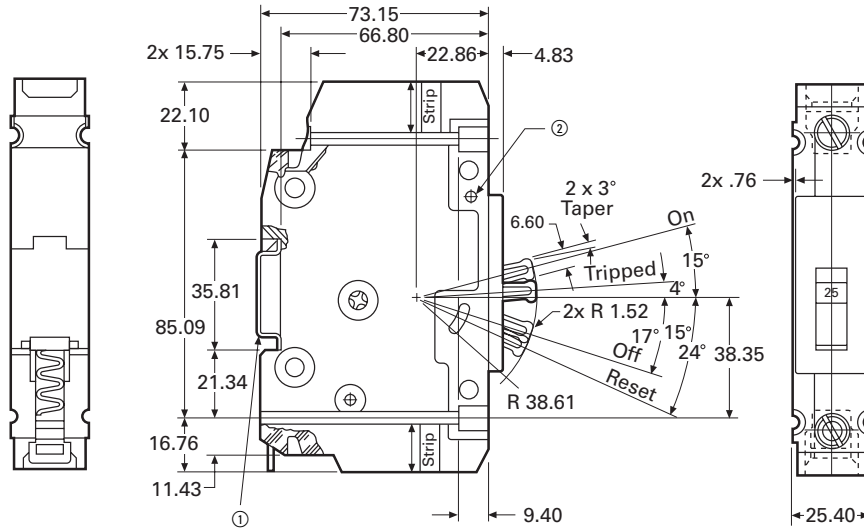


Section A

- ① 11.18 Ø mounting holes
17.53 Ø counterbore
see : Section A
- ② Tightening torque a
- ③ Magnetic release adjustment
- ④ Special note: The connector TC5R600
is to be mounted on the sets of lower holes.
It is necessary only with RD and HRD frames
- ⑤ Removable terminal cover
- ⑥ Cable connector
- ⑦ Mounting pad
- ⑧ Cableway

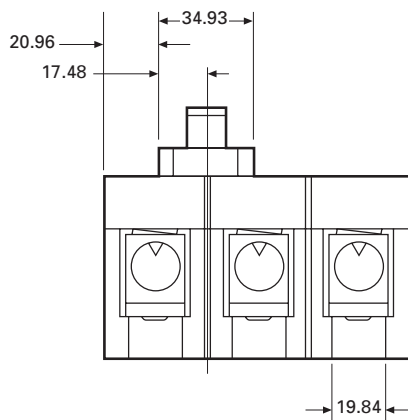
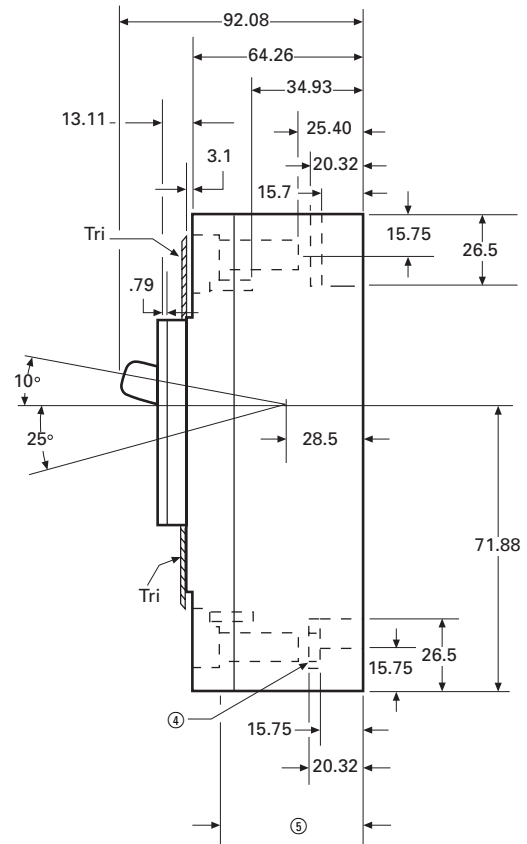
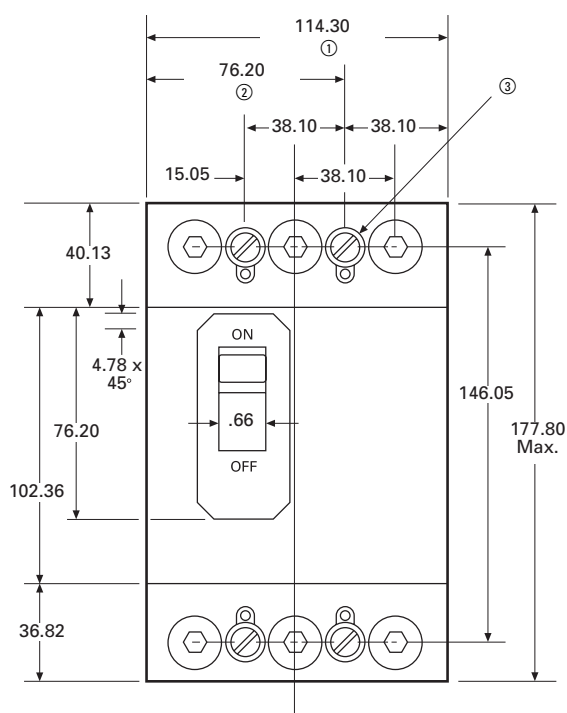
Circuit-Breakers

CQD circuit-breakers



- ① For DIN standard mounting rail
- ② Mounting position "A" for accessories
- ③ Connectors

QJ circuit-breakers



- ① 3-pole
- ② 2-pole
- ③ Fixing screws, 10-32 x 2.5
0.314 x 0.141R mounting hole
Ø 532 counterbore
- ④ Thread UNC 2B 9.65 x 16
- ⑤ 55.58 (4 pcs.)
Holes for fixing screws