

Section 5

Switchboards



Power-Style™ Commercial Multi-Metering Switchboard Lineup

Power-Style™ Commercial Multi-Metering (CMM) Switchboards

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Frequently Asked Questions

FAQs

Visit the online FAQs page to find additional technical information covering all products including discontinued and obsolete products.
<https://www.se.com/us/en/faqs/home/>



EUSERC UCT,
Single Main Circuit Breaker
with I-Line Distribution Panel



EUSERC UCT,
Fusible Multiple Mains

Speed-D™ Switchboards

Meter Sockets, Covers, Hardware Kits

Meter socket kits include meter socket (ringless type or ring type—see tables below) and instruction bulletin. The connection cables from the line bus to the meter socket and from the meter socket to the tenant main disconnect are not included. These should be provided by the contractor.

Table 5.1: EUSERC Meter Socket with Test Block Kit (Ring Type; Class 2756)

Voltage System	Poles	Description	Catalog No.	
			Single-Phase	Phase
120/240 V, 208Y/120 V, or 240/120 V Delta	AB	Old design: plug on to line side bus	CM522ABE	—
	AC		CM522ACE	—
	BC		CM522BCE	—
208Y/120 V, 240/120 V Delta, or 480Y/277 V	AC	New design: lugs on line side	CMLL522E	—
		Old design: plug on to line side bus	—	CM732E
—	New design: lugs on line side		—	CMLL732E

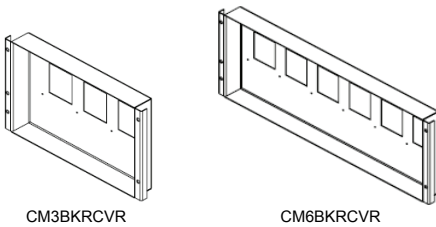
Table 5.2: Lever Bypass Meter Socket (Ringless Type; Class 2755)

Voltage System	Poles	Description	Catalog No.	
			Single-Phase	Phase
480Y/277 V	ABC	Old design: plug on to line side bus	—	8024878850
		New design: lugs on line side	—	CMLL732

Table 5.3: Cover and Hardware Kits

Description	Tenant Main Structure	Catalog No.
CMM Circuit Breaker Cover Kit [1]		
Allows PowerPact™ H, J, and Q circuit breakers to be installed in legacy design CMM structures.	3-Socket	CM3BKRCVR
	6-Socket	CM6BKRCVR
CMM Meter Cover Kit for EUSERC Applications		
Includes meter cover, test block cover, and hardware.	3-Socket	CM7CR20ER
	6-Socket	CM7CR32ER
CMM Meter Cover Kit for Lever Bypass Applications		
Meter socket cover		CM7CR20R [2]
Blank cover		CM20BLK [2]
CMM Universal Hardware Kit		
Required to add any tenant main disconnect.		CMUHWKIT

For additional information or for custom applications, please contact your local Schneider Electric representative. Or, visit us on the web at www.se.com/us/en/.



CM3BKRCVR

CM6BKRCVR

[1] A new circuit breaker cover is required when adding a PowerPact Q, H, or J circuit breaker to a legacy design tenant metering structure. The new cover has larger openings to accommodate the padlock attachment for these circuit breakers.

[2] Order point: PDS

Class **2755, 2756** / Refer to Catalog **2756CT9601**

Tenant Main Disconnects

Table 5.4: Circuit Breakers

Ampacity	Catalog No.	SCCR		Load Lug Information
		240 V	480 V	
100 A F-frame Circuit Breaker				
60 A	FAL34060	25 kA	18 kA	#12 - 1/0 AWG Al or Cu
70–100 A	FAL34___[3]			
60 A	FHL36060	65 kA	25 kA	
70–100 A	FHL36___[3]			
Padlock Attachment	HPAFK	—	—	—
PowerPact™ Q-frame 250 A Circuit Breaker (240 Vac) [4] [5]				
110–200 A	QDL32___[6]	25 kA	N/A	#4 - 300 kcmil Al or Cu
110–200 A	QGL32___[6]	65 kA	N/A	
110–200 A	QJL32___[6]	100 kA	N/A	
Padlock Attachment	QBPAF	—	—	—
PowerPact H-frame 150 A Circuit Breaker (600 Vac, 250 Vdc)				
60 A	HDL36060	25 kA	18 kA	#4 - 3/0 kcmil Al or Cu
70–100 A	HDL36___[7]			
110–150 A				
60 A	HGL36060	65 kA	35 kA	
70–100 A	HGL36___[7]			
110–150 A				
60 A	HJL36060	100 kA	65 kA	
70–100 A	HJL36___[7]			
110–150 A				
60 A	HLL36060	100 kA	100 kA	
70–100 A	HLL36___[7]			
110–150 A				
Padlock Attachment	S37422	—	—	—
PowerPact J-frame 250 A Circuit Breaker (600 Vac, 250 Vdc)				
175–200 A	JDL36___[8]	25 kA	18 kA	#4 - 300 kcmil Al or Cu
175–200 A	JGL36___[8]	65 kA	35 kA	
175–200 A	JJL36___[8]	100 kA	65 kA	
175–200 A	JLL36___[8]	100 kA	100 kA	
Padlock Attachment	S37422	—	—	

Class T Fusible Pullouts, CMM Pullout Heads

Table 5.5: Class T Fusible Pullouts (Universal Hardware Kit CMUHWKIT Required)

Ampacity	Catalog No. [9]	SCCR		Wire Size Al or Cu
		240 V [10]	480 V	
100 A	FTL3100	100 kA	N/A	#14 - 1/0 AWG
200 A	FTL3200	100 kA	N/A	#4 - 250 kcmil
60 A	FTL43060	N/A	100 kA	#14 - #2
100 A	FTL43100	N/A	100 kA	#14 - 1/0 AWG
200 A	FTL43200	N/A	100 kA	1/0 AWG - 300 kcmil

Table 5.6: CMM Pullout Heads

Mains			Catalog No. [11] (Pullout Head — No Base)
Voltage System	Rating (A)	Poles	
1Ø3W 120/240 V 3Ø4W 240/120 V Delta 3Ø4W 208Y/120 V	100	3	4050707050 [12]
	200	3	4050705950 [12]
	60	3	—
3Ø4W 480Y/277 V	100	3	—
	200	3	—
	60	3	—

[3] To complete the catalog number for these PowerPact F-frame circuit breakers, replace ___ with the required ampacity (070, 080, 090, or 100).
 [4] A shunt trip is not available on PowerPact Q-frame circuit breakers.
 [5] A new circuit breaker cover is required when adding a PowerPact Q-, H-, or J-frame circuit breaker to an old-design tenant metering structure. This new cover has larger openings to accommodate the padlock attachment for these circuit breakers. See [Table 5.3 Cover and Hardware Kits, page 5-2](#) for ordering information.
 [6] To complete the catalog number for PowerPact Q-frame circuit breakers, replace ___ with the required ampacity (110, 125, 150, 175, or 200).
 [7] To complete the catalog number for PowerPact H-frame circuit breakers, replace ___ with the required ampacity (070, 080, 090, 100, 110, 125, or 150).
 [8] To complete the catalog number for PowerPact J-frame circuit breakers, replace ___ with the required ampacity (175 or 200).
 [9] Discount schedules: FTL3100 and FTL3200 = DE5; FTL43060, FTL43100, and FTL43200 = PE1A.
 [10] 240 V fusible pullouts cannot be used on a Lever Bypass CMM. Only 480 V pullouts can be used.
 [11] Discount schedule: DE5.
 [12] Order point: Lexington, KY.

Merchandised Speed-D Switchboards

Table 5.7: Subfeed Circuit Breakers [1] [2]

Description	Rating (A)	2-Pole [3]		3-Pole	
		Catalog No.		Catalog No.	
		Left	Right	Left	Right
Subfeed Circuit Breaker Kits — Includes circuit breaker, connectors and mounting hardware.	100	SASFB100L()	SASFB100R()	SASFB100L	SASFB100R
	110	SASFB110L()	SASFB110R()	SASFB110L	SASFB110R
	125	SASFB125L()	SASFB100R()	SASFB125L	SASFB125R
	150	SASFB150L()	SASFB150R()	SASFB150L	SASFB150R
	175	SASFB175L()	SASFB175R()	SASFB175L	SASFB175R
	200	SASFB200L()	SASFB200R()	SASFB200L	SASFB200R
	225	SASFB225L()	SASFB225R()	SASFB225L	SASFB225R

Masterclad™ Medium Voltage Metalclad Switchgear (UL Listed)

The Reliability of a Quality Design

The quality of Square D™ brand Masterclad medium voltage metalclad switchgear stems from a design and manufacturing process that focuses on long-term switchgear performance with the highest degree of reliability.

Based on specific customer application needs, Schneider Electric engineers and technicians select the appropriate standard sections and bus configurations, with the ability to customize where needed. After the specified circuit breakers, instrument and control power transformers, relays, meters and other components are selected and approved. All are factory-assembled, wired, and tested as a complete assembly.



Two-high Masterclad 5–27 kV Indoor, Metalclad Switchgear

Table 5.8: Ratings

Nominal voltage (kV)	4.16	7.2	13.8	24.9						
Maximum voltage (kV)	4.76	8.25	15.0	27.0						
BIL (kV)	60	95	95	125						
Frequency (Hz)	50/60									
Continuous amperes (A)	1200–4000			1200–2000						
MVA (reference only)	250	350	500	500	500	750	1000	1500	1250	2000
Short-time rating (kA) 3 seconds	40	50	63	50	25	40	50	63	25	40
Close and latch rating (kA) (peak)	104	130	164	130	65	104	130	164	68	108

Type VR Vacuum Circuit Breaker

The VR breaker is a horizontal drawout type designed to provide long life, reduced maintenance, and ease of handling. The Type RI advanced design motor-charged stored energy mechanism is a model of reliability with simplicity—with an operating life exceeding ANSI requirements. The VR circuit breaker is UL labeled and includes a permanently mounted manual charging handle.

Standard features include:

- 3-cycle interrupting rating
- Rated per ANSI/IEEE C37.06, C37.09, C37.013, C37.54
- UL Listed
- Motor operated, spring-charged, stored-energy operating mechanism
- Permanently mounted manual charging handle
- Five normally open and normally closed auxiliary contacts
- Wheels that roll directly to floor level from lower cell



Vacuum VR Circuit Breaker for Masterclad Switchgear

Switchgear Construction

- High-speed operation—3-cycles
- Removable (draw-out) circuit breaker
- Grounded metal barriers enclose all live parts
- Automatic shutters driven by breaker racking mechanism
- Closed door breaker position indication
- Closed door breaker racking mechanism
- Insulated main bus—aluminum or copper
- Standard glass polyester insulators or optional epoxy and porcelain insulators
- Mechanical interlocks
- Disconnect type CPT and VT trucks
- Grounded breaker truck in and between test/disconnected and connected positions
- Low voltage instrument/control compartment isolated from primary voltage areas
- Compliance to ANSI/IEEE standards C37.20.2 and C37.55 (designed and tested to comply with or exceed ANSI and IEEE standards)



Masterclad 27 kV, Outdoor Non Walk-in, Metalclad Switchgear

[1] Cannot use subfeed circuit breaker kit with multiple mains service section switchboards.

[2] For use on all Speed-D switchboards except Series E4.

[3] Two pole circuit breaker catalog numbers are completed by adding required phase connection letters as suffix (for example, SASFB100LAC).

- ISO 9001 Certification (Designed and manufactured in a facility that is Quality Systems Certified by Underwriters Laboratories, Inc.® to ISO 9001)
- Indoor NEMA 1 enclosure
- Outdoor NEMA 3R enclosure
 - Walk-in enclosure
 - Non walk-in enclosure

Active, Arc-Resistant Arc Terminator™ Arc Extinguishing System

Active system detects and controls the effects of internal arcing faults. It complies with ANSI C37.20.7 requirements for arc-resistant switchgear for Type 1, Type 2B, and Type 2C enclosures, even with the switchgear doors open.

In the event of a confirmed arcing fault inside a Masterclad switchgear or Motorpact equipment lineup containing an Arc Terminator (AT) system, the AT system provides a low impedance parallel path to effectively transfer the fault current from the arc to the 3-phase main bus assembly of the switchgear.

The AT system consists of the following components:

- A high-speed closing, or shorting, switch is designed to close on the main bus of the switchgear. This creates a three-phase short circuit fault confined to the main bus. Upstream protective device must clear fault within allowed time per applicable standard.
- The controller box is the central processing device that responds to the signals given by the current sensors and the optical sensors. The current sensor module and the control logic process incoming current and optical signals and send a signal to the output triggering circuit. The output triggering circuit releases stored energy to initiate closing of the mechanical switch and provides optical isolation to prevent false triggering
- Optical sensors are located in each medium voltage compartment within switchgear structures. A dedicated, properly sized set of current transformers is located at the incoming power source(s).

Benefits

- Prevents pressure buildup
- Reduces release of toxic materials
- Eliminates need for reinforced switchgear
- Eliminates special requirements for buildings or plenums
- Minimizes equipment damage
- Reduces operating downtime



Arc Terminator™
Arc Extinguishing System