

VCP-T/T-VAC medium voltage  
vacuum circuit breakers

# Control and protect with Eaton's compact medium voltage circuit breakers

**EATON**

*Powering Business Worldwide*



Eaton has dedicated years of research, design and testing to create a comprehensive product portfolio of medium voltage circuit breakers that serves all segments of the electrical industry such as utility, commercial, industrial, mining and marine.

As part of these efforts, Eaton has developed a very compact and lightweight line of medium voltage circuit breakers, VCP-T/T-VAC, that provide high duty cycle, fast interruption, reduced maintenance and are environmentally friendly. The VCP-T medium voltage circuit breakers have been tested and proven to ANSI C37.04 and C37.09 standards, where the T-VAC medium voltage circuit breakers have been tested and proven to IEC 62271-100 standards.

#### Small without compromise

The VCP-T/T-VAC medium voltage circuit breaker has been designed for use when space is at a premium. It is ideal for applications such as wind applications, data centers, power houses, shipboard use, restricted locations and low profile areas. Key characteristics include:

- 60% smaller and 50% lighter than comparable breakers
- Compact footprint for 25 kA and 40 kA up to 15/17.5 kV
- Two-step energy (spring) or magnetically actuated mechanisms available
- Reduced material and shipping costs
- Reduced installation space and weight
- Installation/startup savings
- Three-cycle (50 ms) interrupting time for spring-actuated circuit breakers and five-cycle (83 ms) interrupting time for magnetic-actuated circuit breakers
- Mechanical endurance up to 20,000 operations for spring-actuated circuit breakers and up to 100,000 operations for magnetic-actuated circuit breakers

#### True metal-clad circuit breaker

The VCP-T/T-VAC medium voltage circuit breaker delivers all the features of a metal-clad circuit breaker:

- Fixed or drawout configurations available
- Fully horizontal drawout feature with connect, test and disconnect positions that provides ease of operation and interchangeability. Levering-in (racking) system is an integral part of the breaker
- Trip-free interlock prevents breaker from closing, manually or electrically, while it is being levered or when in an intermediate position
- Metal-clad insulation/isolation
- Spring-loaded multi-finger primary disconnects
- Automatic steel primary safety shutters
- Choice of breaker mounted protection for automatic short-circuit and overload protection without the need for external control power

#### Value-added flexibility

The VCP-T/T-VAC design offers unmatched flexibility even after installation. All configurations simplify design, installation and use:

- Through-the-door or closed-door operation (for fixed circuit breakers)

- Common family of accessories
- Field-installable accessories such as second shunt trip, undervoltage release and key interlocks
- Clear and concise operating panel
- Labeled and dedicated secondary control circuit terminals
- All circuit breaker functions, indicators and controls are grouped on an easily accessible panel on the front of the circuit breaker
- Visible main contact erosion indicator

#### Optional Digitrip™ protective relays

- True rms sensing
- Microprocessor-based
- Self-powered
- Local verification of trip settings with or without tripping the circuit breaker
- Model 520V/520MCV:
  - Arcflash Reduction Maintenance System™
  - Basic protection (LSIG)
- Model 1150V:
  - Basic protection (LSIG)
  - Metering and communications





VCP-T drawout circuit breaker



VCP-TR fixed circuit breaker

## VCP-T/VCP-TR (ANSI)

## 17-inch frame

The VCP-T (drawout) and VCP-TR (fixed) breakers are available in two frame sizes. The 17-inch frame has ratings up to 15 kV, 25 kA and 1200 A in the drawout configuration, and up to 15 kV, 25 kA and 1600 A in the fixed configuration. The 21-inch frame has ratings up to 15 kV, 40 kA and 2000 A in the drawout configuration, and up to 15 kV, 40 kA and 2500 A in the fixed configuration.

Additionally, the 17-inch frame is available with a magnetic-actuated mechanism. The VCP-TL (drawout) can achieve ratings up to 15 kV, 25 kA and 1200 A, while the VCP-TRL (fixed) can achieve ratings up to 15 kV, 25 kA and 1600 A. The magnetic-actuated mechanism provides fewer moving parts, requires less maintenance and offers longer mechanical life and reliability as this mechanism is capable of achieving up to 100,000 mechanical operations.

Capacitor switching capabilities are included in certain VCP-T/VCP-TR/VCP-TL/VCP-TRL breaker configurations.

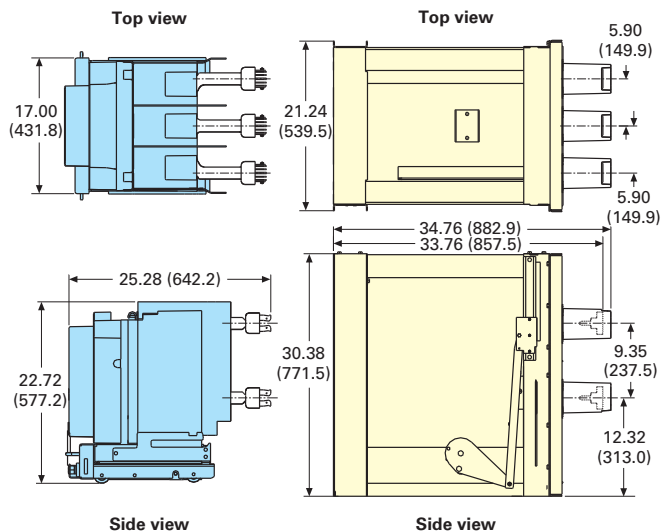
### VCP-T/VCP-TR features available

Feature	Standard	Optional
Metal-clad insulation/isolation ❶	<input type="checkbox"/>	—
Copper primary conductors	<input type="checkbox"/>	—
Silver-plated primary connections	<input type="checkbox"/>	—
Manual charging ❷	<input type="checkbox"/>	—
Electrical motor charging ❸	—	<input type="checkbox"/>
Integral charging handle	<input type="checkbox"/>	—
Auxiliary switch (5a and 5b) ❹	<input type="checkbox"/>	—
Mechanical operations counter	<input type="checkbox"/>	—
24, 48, 125 and 250 Vdc; 120 and 240 Vac control voltages	<input type="checkbox"/>	—
Shunt trip ❺	<input type="checkbox"/>	—
Shunt trip (2nd) ❻	—	<input type="checkbox"/>
Spring release ❸	—	<input type="checkbox"/>
Undervoltage release ❸	—	<input type="checkbox"/>
ON and OFF pushbuttons	<input type="checkbox"/>	—
ON and OFF pushbutton cover ❹	—	<input type="checkbox"/>
Prevent close cover ❷	—	<input type="checkbox"/>
Key interlock (Ronis, Castell, Kirk) ❸	—	<input type="checkbox"/>
Integral lifting means ❹	<input type="checkbox"/>	—
Closed door operation (fixed breakers)	<input type="checkbox"/>	—
Identified/dedicated secondary contacts	<input type="checkbox"/>	—
Secondary disconnect block	<input type="checkbox"/>	—
Secondary screw type terminal block ❿	—	<input type="checkbox"/>
Two-step stored energy mechanism	<input type="checkbox"/>	—
0.3S co 3 min. Co	<input type="checkbox"/>	—
Anti-pump	<input type="checkbox"/>	—
Trip free	<input type="checkbox"/>	—
Latch check switch	<input type="checkbox"/>	—
Drawout design	<input type="checkbox"/>	—
Integral trip unit	<input type="checkbox"/>	—
Interlock two and three breakers	<input type="checkbox"/>	—

- ❶ 11-gauge steel grounded barrier between mechanism, control circuits and primary conductors.
- ❷ Includes shunt trip.
- ❸ Includes shunt trip and spring release, field installable.
- ❹ Heavy-duty, double break, wipe type for customer use.
- ❺ Field installable, viewed through viewing window, maximum three devices—any combination.
- ❻ Limits access to pushbuttons, metal or plastic.
- ❼ Prevents access to ON pushbutton—used in conjunction with pushbutton cover.
- ❸ Prevents breaker from closing.
- ❹ Used with standard sling.
- ❿ Supplied separately as a kit.

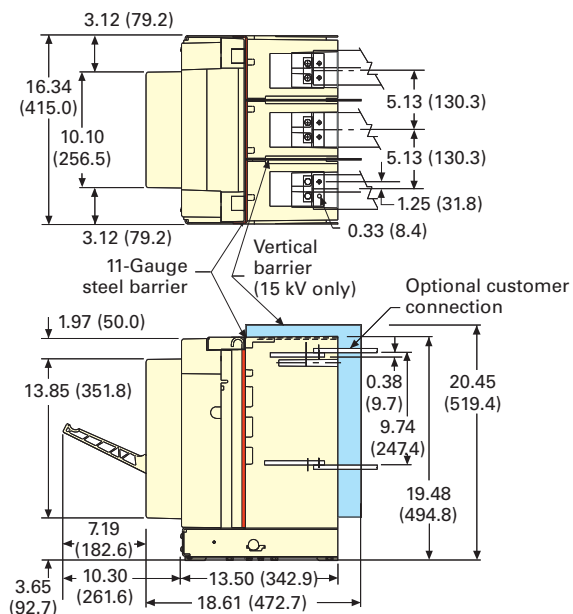


### VCP-T drawout circuit breaker and cassette (17-inch frame) ❶



❶ Dimensions in inches (mm)

### VCP-TR fixed circuit breaker (17-inch frame) ❶



❶ Dimensions in inches (mm)

### VCP-T/VCP-TR breaker ratings certified to ANSI C37.04 and C37.09

Circuit breaker type	Insulation level				Short-circuit ❷ breaking current (kA rms)	Short-circuit making current (kA peak)	Mechanical endurance C-O (operations)	Approx. weight fixed/drawout (lb)
	Rated max. voltage (kV rms)	Power frequency (kV rms)	Impulse withstand (kV peak)	Continuous current (A rms)				
50 VCP-T16 and 50 VCP-TR16	4.76	19	60	600 1200 1600 ❶	16	42	20,000 10,000 10,000	157/237 159/239 161/NA
50 VCP-T20 and 50 VCP-TR20	4.76	19	60	600 1200 1600 ❶	20	52	10,000 10,000 10,000	163/243 165/245 167/NA
50 VCP-T25 and 50 VCP-TR25	4.76	19	60	600 1200 1600 ❶	25	65	10,000 10,000 10,000	169/249 171/251 173/NA
75 VCP-T16 and 75 VCP-TR16	8.25	20	75 ❸	600 1200 1600 ❶	16	42	20,000 10,000 10,000	158/238 160/240 162/NA
75 VCP-T20 and 75 VCP-TR20	8.25	20	75 ❸	600 1200 1600 ❶	20	52	10,000 10,000 10,000	164/244 166/246 168/NA
75 VCP-T25 and 75 VCP-TR25	8.25	20	75 ❸	600 1200 1600 ❶	25	65	10,000 10,000 10,000	170/250 172/252 174/NA
150 VCP-T16 and 150 VCP-TR16	15	36	95	600 1200 1600 ❶	16	42	10,000 10,000 10,000	159/239 161/241 163/NA
150 VCP-T20 and 150 VCP-TR20	15	36	95	600 1200 1600 ❶	20	52	10,000 10,000 10,000	165/245 167/247 169/NA
150 VCP-T25 and 150 VCP-TR25	15	36	95	600 1200 1600 ❶	25	65	10,000 10,000 10,000	171/251 173//253 175/NA

❶ 1600 A available as fixed VCP-TR breaker only.

❷ Also 2-second short-time current rating.

❸ Use 15 kV breaker and cassette when impulse withstand >75 kV is required.



VCP-T drawout circuit breaker

## VCP-T/VCP-TR (ANSI)

20-inch frame



### VCP-T/VCP-TR features available

Feature	Standard	Optional
Metal-clad insulation/isolation ❶	<input type="checkbox"/>	—
Spring-loaded primary finger disconnect	<input type="checkbox"/>	—
Silver-plated primary cassette stabs	<input type="checkbox"/>	—
Manual charging ❷	<input type="checkbox"/>	—
Integral charging handle	<input type="checkbox"/>	—
Electrical motor charging ❸	—	<input type="checkbox"/>
Auxiliary switch (5a and 5b) ❹	<input type="checkbox"/>	—
Mechanical operations counter	<input type="checkbox"/>	—
24, 48, 125 and 250 Vdc; 120 and 240 Vac control voltages	<input type="checkbox"/>	—
Shunt trip ❺	<input type="checkbox"/>	—
Shunt trip (2nd) ❺	—	<input type="checkbox"/>
Spring release ❺	—	<input type="checkbox"/>
Undervoltage release ❺	—	<input type="checkbox"/>
ON and OFF pushbuttons	<input type="checkbox"/>	—
Capacitor switching capabilities	—	<input type="checkbox"/>

- ❶ 11-gauge steel grounded barrier between mechanism, control circuit and primary conductors.
- ❷ Includes shunt trip.
- ❸ Includes shunt trip and spring release, field installable.
- ❹ Heavy-duty, double break, wipe type for customer use.
- ❺ Field installable, viewed through viewing window, maximum three devices—any combination.

### Tested for capacitor switching capabilities— “definite purpose” to ANSI C37

Cable charging	Grounded banks	
	Single bank	Back-to-back
25 A	250 and 1000 A	250 A with inrush current 4 kApk at 5.9 kHz and 1000 A with inrush current 15 kApk at 25 kHz

**Note:** Ratings of 250 and 1000 A cover capacitor bank applications from 75 to 1000 A.



VCP-T/VCP-TRL circuit breakers

- Linear magnetic actuator mechanism up to 100,000 operations; vacuum interrupter up to 30,000 operations
- Fewer moving parts
- Less maintenance

## VCP-TL/VCP-TRL (ANSI)

17-inch frame



### VCP-TL/VCP-TRL features available

Feature	Standard	Optional
Metal-clad insulation/isolation ❶	<input type="checkbox"/>	—
Spring-loaded primary finger disconnect	<input type="checkbox"/>	—
Silver-plated primary cassette stabs	<input type="checkbox"/>	—
Integral manual open handle	<input type="checkbox"/>	—
Auxiliary switch (5a and 5b) ❷	<input type="checkbox"/>	—
Mechanical operations counter	<input type="checkbox"/>	—
36–60 Vac and 36–72 Vdc control or 100–240 Vac and 100–353 Vdc control voltages	<input type="checkbox"/>	—
Trip function ❸	<input type="checkbox"/>	—
Close function ❸	<input type="checkbox"/>	—
ON and OFF pushbuttons	<input type="checkbox"/>	—
Mechanical closed/open indicator	<input type="checkbox"/>	—
Externally mounted undervoltage release	—	<input type="checkbox"/>
Capacitor switching capabilities	—	<input type="checkbox"/>

- ❶ 11-gauge grounded steel barrier between mechanism, control circuit and primary conductors.
- ❷ Heavy-duty, double break, wipe type for customer use.
- ❸ Dry contacts required for remote operation.

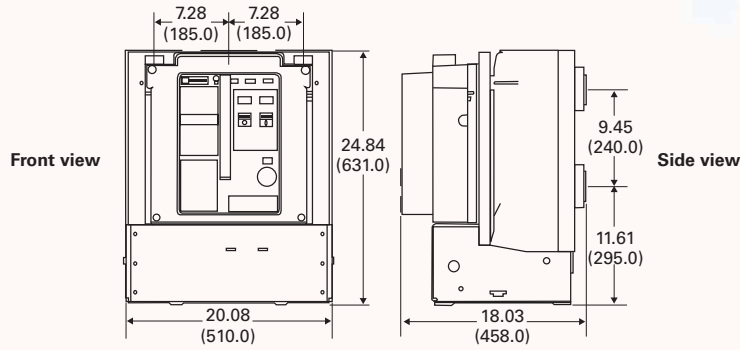
### Tested for capacitor switching capabilities— “definite purpose” to ANSI C37

Cable charging	Grounded banks	
	Single bank	Back-to-back
25 A	250 and 630 A	250 A with inrush current 15 kApk at 5 kHz and 630 A with inrush current 15 kApk at 1.5 kHz

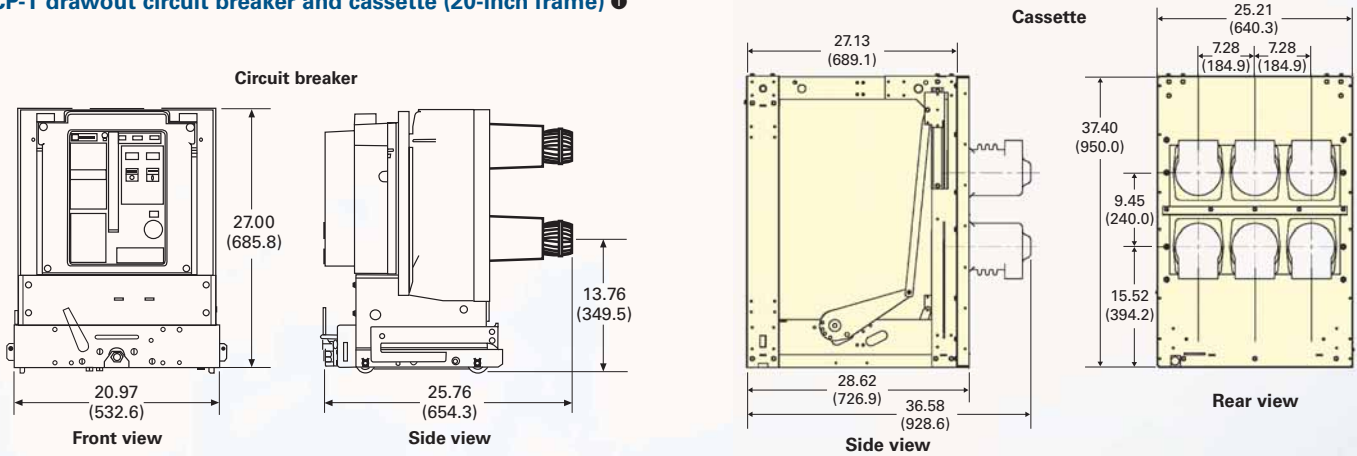
**Note:** Ratings of 250 and 630 A cover capacitor bank applications from 75 to 630 A.

# VCP-T/VCP-TR (ANSI) 20-inch frame

## VCP-TR fixed circuit breaker (20-inch frame) ❶



## VCP-T drawout circuit breaker and cassette (20-inch frame) ❶



❶ Dimensions in inches (mm)

## VCP-T/VCP-TR breaker ratings (ANSI C37.04 and C37.09)

Circuit breaker type ❶	Rated max. voltage (kV rms)	Insulation level			Short-circuit ❷ breaking current (kA rms)	Short-circuit making current (kA peak)	Mechanical endurance C-O (operations)	Approx. weight fixed/drawout (lb)
		Power frequency (kV rms)	Impulse withstand (kV peak)	Continuous current (A rms)				
50 VCP-T25 and 50 VCP-TR25	4.76	19	60	2000 2500 ❸	25	65	10,000	330/420
75 VCP-T25 and 75 VCP-TR25	8.25	20	75 ❹	2000 2500 ❸	25	65	10,000	330/420
150 VCP-T25 and 150 VCP-TR25	15	36	95	2000 2500 ❸	25	65	10,000	330/420
50 VCP-T32 and 50 VCP-TR32	4.76	19	60	600 1200 2000 2500 ❸	31.5	82	10,000	330/420 330/420 338/430 342/NA
75 VCP-T32 and 75 VCP-TR32	8.25	20	75 ❹	600 1200 2000 2500 ❸	31.5	82	10,000	330/420 330/420 338/430 342/NA
150 VCP-T32 and 150 VCP-TR32	15	36	95	600 1200 2000 2500 ❸	31.5	82	10,000	334/425 334/425 342/435 346/NA
50 VCP-T40 and 50 VCP-TR40	4.76	19	60	600 1200 2000 2500 ❸	40	104	10,000	334/425 334/425 342/435 346/NA
75 VCP-T40 and 75 VCP-TR40	8.25	20	75 ❹	600 1200 2000 2500 ❸	40	104	10,000	334/425 334/425 342/435 346/NA
150 VCP-T40 and 150 VCP-TR40	15	36	95	600 1200 2000 2500 ❸	40	104	10,000	338/430 338/430 346/440 350/NA

❶ Independent shunt trips are available for use with traditional protective relaying schemes.

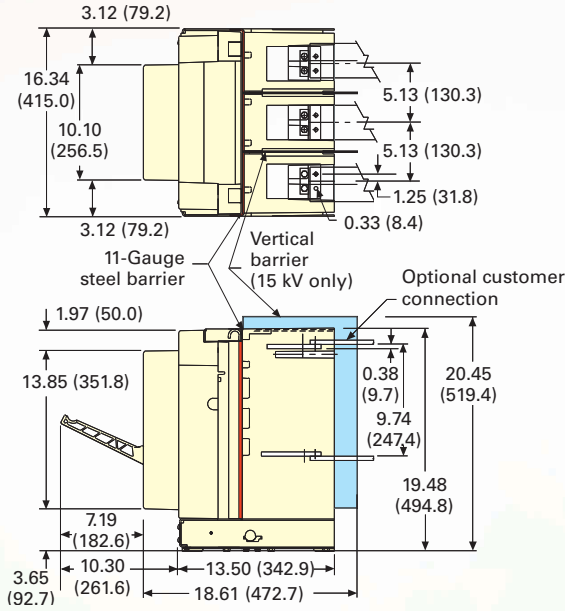
❷ Also 2-second short-time current rating.

❸ 2500 A available as fixed VCP-TR circuit breaker only.

❹ Use 15 kV breaker and cassette when impulse withstand >75 kV is required.

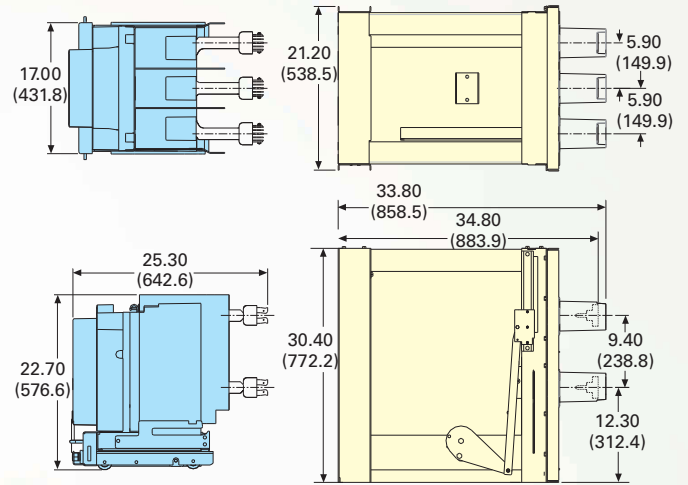
# VCP-TL/VCP-TRL (ANSI) 17-inch frame

## VCP-TRL fixed circuit breaker (17-inch frame) ❶



❶ Dimensions in inches (mm)

## VCP-TL drawout circuit breaker and cassette (17-inch frame) ❶



❶ Dimensions in inches (mm)

## VCP-TL/VCP-TRL breaker ratings (ANSI C37.04 and C37.09)

Circuit breaker type ❶	Insulation level				Continuous current (A rms)	Short-circuit ❷ breaking current (kA rms)	Short-circuit making current (kA peak)	Mechanical ❸ endurance C-O (operations)	Approx. weight fixed/drawout (lb)
	Rated max. voltage (kV rms)	Power frequency (kV rms)	Impulse withstand (kV peak)						
50 VCP-TL16 and 50 VCP-TRL16	4.76	19	60	600 1200 1600 ❹	16	42	100,000	153/232 155/234 157/NA	
50 VCP-TL20 and 50 VCP-TRL20	4.76	19	60	600 1200 1600 ❹	20	52	100,000	159/237 161/239 163/NA	
50 VCP-TL25 and 50 VCP-TRL25	4.76	19	60	600 1200 1600 ❹	25	65	100,000	166/243 168/245 170/NA	
75 VCP-TL16 and 75 VCP-TRL16	8.25	20	75 ❺	600 1200 1600 ❹	16	42	100,000	155/232 157/234 159/NA	
75 VCP-TL20 and 75 VCP-TRL20	8.25	20	75 ❺	600 1200 1600 ❹	20	52	100,000	161/239 161/241 163/NA	
75 VCP-TL25 and 75 VCP-TRL25	8.25	20	75 ❺	600 1200 1600 ❹	25	65	100,000	166/245 168/247 170/NA	
150 VCP-TL16 and 150 VCP-TRL16	15	36	95	600 1200 1600 ❹	16	42	100,000	155/234 157/237 159/NA	
150 VCP-TL20 and 150 VCP-TRL20	15	36	95	600 1200 1600 ❹	20	52	100,000	161/239 163/241 166/NA	
150 VCP-TL25 and 150 VCP-TRL25	15	36	95	600 1200 1600 ❹	25	65	100,000	168/245 170/247 172/NA	

- ❶ Independent shunt trips are available for use with traditional protective relaying schemes.
- ❷ Also 2-second short-time current rating.
- ❸ Operating mechanism up to 100,000 operations, vacuum interrupter up to 30,000 operations.
- ❹ 1600 A available as fixed VCP-TRL circuit breaker only.
- ❺ Use 15 kV breaker and cassette when impulse withstand >75 kV is required.



T-VAC drawout circuit breaker



T-VACR fixed circuit breaker

## T-VAC (IEC)

The T-VAC (drawout) and T-VACR (fixed) breakers are available in two frame sizes. The 17-inch frame has ratings up to 175 kV, 25 kA and 1250 A in the drawout configuration, and up to 175 kV, 25 kA and 1600 A in the fixed configuration. The 21-inch frame has ratings up to 175 kV, 40 kA and 2000 A in the drawout configuration, and up to 175 kV, 40 kA and 2500 A in the fixed configuration.

T-VAC/T-VACR include configurations with capacitor switching capabilities.

## 17-inch frame

### T-VAC/T-VACR features available

Feature	Standard	Optional
Metallic safety barrier ❶	<input type="checkbox"/>	—
Copper primary conductors	<input type="checkbox"/>	—
Silver-plated primary connections	<input type="checkbox"/>	—
Manual charging ❷	<input type="checkbox"/>	—
Electrical motor charging ❸	—	<input type="checkbox"/>
Integral charging handle	<input type="checkbox"/>	—
Auxiliary switch (5a and 5b) ❹	<input type="checkbox"/>	—
Mechanical operations counter	<input type="checkbox"/>	—
24, 48, 125, 250 Vdc; 120, 240 Vac control voltages	<input type="checkbox"/>	—
Shunt trip ❺	<input type="checkbox"/>	—
Shunt trip (2nd) ❻	—	<input type="checkbox"/>
Spring release ❻	—	<input type="checkbox"/>
Undervoltage release ❻	—	<input type="checkbox"/>
On and off pushbuttons	<input type="checkbox"/>	—
On and off pushbutton cover ❽	—	<input type="checkbox"/>
Prevent manual close cover ❼	—	<input type="checkbox"/>
Key interlock (Ronis, Castell, Kirk) ❾	—	<input type="checkbox"/>
Integral lifting means ❿	<input type="checkbox"/>	—
Closed door operation	<input type="checkbox"/>	—
Identified/dedicated secondary contacts	<input type="checkbox"/>	—
Secondary disconnect block	<input type="checkbox"/>	—
Secondary screw type terminal block ❿	—	<input type="checkbox"/>
Two-step stored energy mechanism	<input type="checkbox"/>	—
Open—close—open duty cycle	<input type="checkbox"/>	—
Anti-pump	<input type="checkbox"/>	—
Trip free	<input type="checkbox"/>	—
Latch check switch	<input type="checkbox"/>	—
Visible contact erosion indicator	<input type="checkbox"/>	—
Visible contact wipe indicator	<input type="checkbox"/>	—
Drawout design	<input type="checkbox"/>	—
Integral trip unit	—	<input type="checkbox"/>
Interlock 2 and 3 breakers	—	<input type="checkbox"/>

❶ 3 mm earthed steel barrier between control circuit, mechanism and circuit conductors.

❷ Includes shunt trip.

❸ Includes shunt trip and spring release, field installable.

❹ Heavy-duty, double break, wipe type for customer use.

❺ Field installable, viewed through viewing window, maximum three devices (any combination).

❻ Limits access to pushbuttons, metal or plastic.

❼ Prevents access to ON pushbutton—used in conjunction with pushbutton cover.

❽ Prevents breaker from closing.

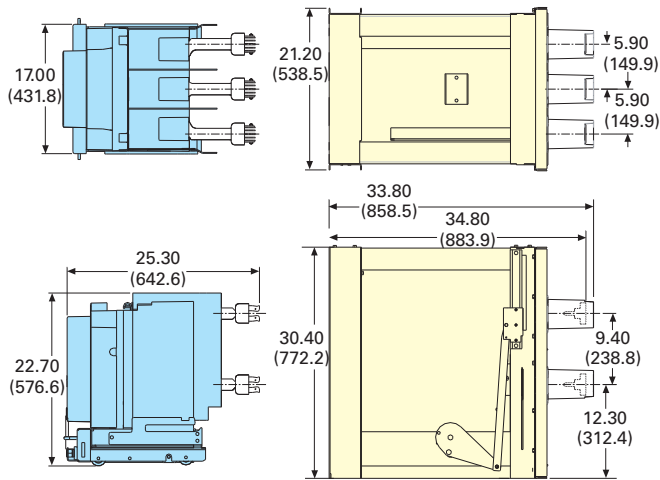
❾ Used with standard sling.

❿ Supplied separately as a kit.



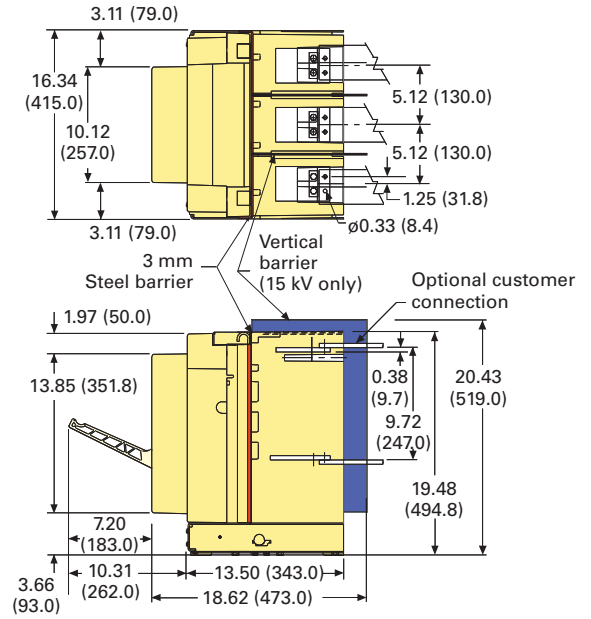


**T-VAC drawout breaker and cassette dimensions (17-inch frame) ①**



① Dimensions in inches (mm)

**T-VACR fixed circuit breaker (17-inch frame) ①**



① Dimensions in inches (mm)

**50 and 60 Hz T-VAC/T-VACR breaker ratings certified to IEC 62271-100**

Circuit breaker type	Insulation level				Short-circuit breaking current (kA rms)	Short-circuit making current (kA peak)	Mechanical endurance C-O (operations)	Approx. weight fixed/drawout (kg)
	Rated max. voltage (kV rms)	Power frequency (kV rms)	Impulse withstand (kV peak)	Continuous current (A rms)				
72 T-VAC16 and 72 T-VACR16	7.2	20	60	630	16	42	20,000	71/107
				1250				72/108
				1600 ①				73/NA
72 T-VAC20 and 72 T-VACR20	7.2	20	60	630	20	52	10,000	71/110
				1250				72/111
				1600 ①				73/NA
72 T-VAC25 and 72 T-VACR25	7.2	20	60	630	25	65	10,000	71/113
				1250				72/114
				1600 ①				73/NA
12 T-VAC16 and 12 T-VACR16	12	28	75	630	16	42	20,000	71/108
				1250				72/109
				1600 ①				73/NA
12 T-VAC20 and 12 T-VACR20	12	28	75	630	20	52	10,000	71/111
				1250				72/112
				1600 ①				73/NA
12 T-VAC25 and 12 T-VACR25	12	28	75	630	25	65	10,000	71/113
				1250				72/114
				1600 ①				73/NA
175 T-VAC16 and 175 T-VACR16	17.5	38	95	630	16	42	10,000	71/108
				1250				72/109
				1600 ①				73/NA
175 T-VAC20 and 175 T-VACR20	17.5	38	95	630	20	52	10,000	71/111
				1250				72/112
				1600 ①				73/NA
175 T-VAC25 and 175 T-VACR25	17.5	38	95	630	25	65	10,000	71/114
				1250				72/115
				1600 ①				73/NA

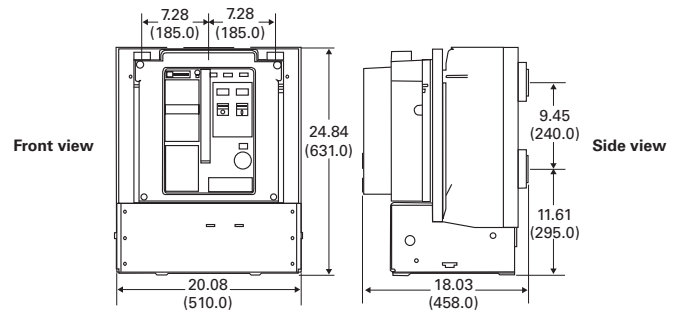
① 1600 A available as fixed T-VACR breaker only.

② Also 3-second short-time current rating.



T-VAC drawout circuit breaker (20-inch frame)

T-VACR fixed circuit breaker (20-inch frame) ❶



❶ Dimensions in inches (mm)

20-inch frame



Selected T-VAC/T-VACR features □ available

Feature	Standard	Optional
Solidly earthed steel safety barrier ❶	<input type="checkbox"/>	—
Spring-loaded primary finger disconnect	<input type="checkbox"/>	—
Silver-plated primary connections	<input type="checkbox"/>	—
Manual charging ❷	<input type="checkbox"/>	—
Integral charging handle	<input type="checkbox"/>	—
Electrical motor charging ❸	—	<input type="checkbox"/>
Auxiliary switch (5a and 5b) ❹	<input type="checkbox"/>	—
Mechanical operations counter	<input type="checkbox"/>	—
24, 48, 125 and 250 Vdc; 120 and 240 Vac control voltages	<input type="checkbox"/>	—
Shunt trip	<input type="checkbox"/>	—
Shunt trip (2nd) ❺	—	<input type="checkbox"/>
Spring release ❺	—	<input type="checkbox"/>
Undervoltage release ❺	—	<input type="checkbox"/>
ON and OFF pushbuttons	<input type="checkbox"/>	—
Capacitor switching capabilities	—	<input type="checkbox"/>

❶ 3 mm earthed steel barrier between control circuit, mechanism and circuit conductors.

❷ Includes shunt trip.

❸ Includes shunt trip and spring release, field installable.

❹ Heavy-duty, double break, wipe type for customer use.

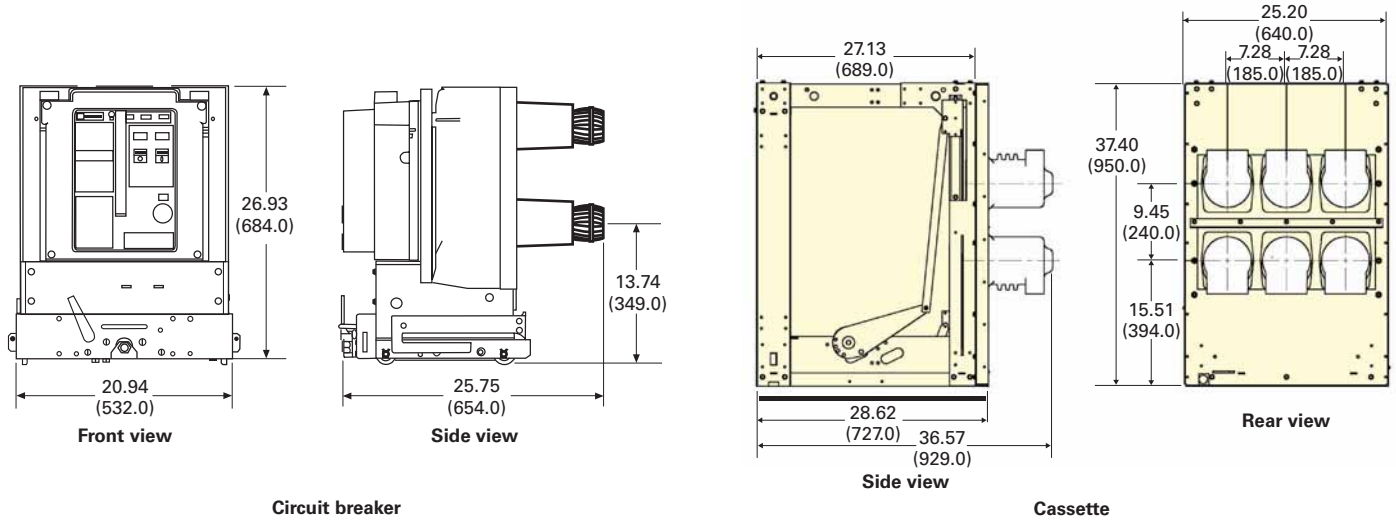
❺ Field installable, viewed through viewing window, maximum three devices—any combination.

Certified for capacitor switching capabilities to “Class C2” in accordance with IEC 62271-100

Cable charging	Ungrounded banks	
	Single bank	Back-to-back
31.5 A	250 and 1000 A	250 A with inrush current 18 kApk at 2.4 kHz and 1000 A with inrush current 18 kApk at 2.4 kHz

**Note:** Ratings of 250 and 1000 A cover capacitor bank applications from 75 to 1000 A.

## T-VAC drawout circuit breaker and cassette (20-inch frame) ❶



❶ Dimensions in inches (mm)

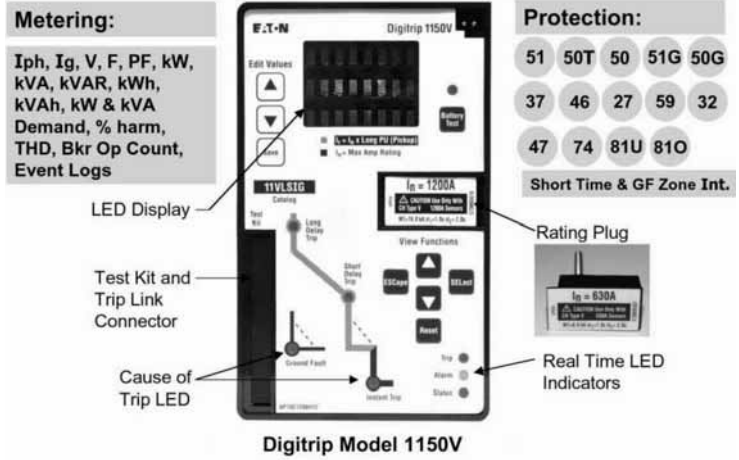
## 50 and 60 Hz T-VAC/T-VACR breaker ratings certified to IEC 62271-100

Circuit breaker type ❶	Voltage (kV rms)	Insulation level withstand voltage			Short-circuit ❷ Breaking current ( $I_{sc}$ ) (kA rms)	Short-circuit making current (kA peak)	Mechanical endurance C-O (operations)	Approx. weight fixed/drawout (kg)
		Power frequency (kV rms)	Lightning impulse ( $U_w$ ) (kV peak)	Normal current ( $I_n$ ) (amps)				
72 T-VAC25 and 72 T-VACR25	7.2	20	60	2000 2500 ❸	25	63	10,000	157/199 159/NA
120 T-VAC25 and 120 T-VACR25	12	28	75	2000 2500 ❸	25	63	10,000	157/199 159/NA
175 T-VAC25 and 175 T-VACR25	17.5	38	95	2000 2500 ❸	25	63	10,000	161/203 163/NA
72 T-VAC32 and 72 T-VACR32	7.2	20	60	630 1250 2000 2500 ❸	31.5	82	10,000	153/195 153/195 157/199 159/NA
120 T-VAC32 and 120 T-VACR32	12	28	75	630 1250 2000 2500 ❸	31.5	82	10,000	153/195 153/195 157/199 159/NA
175 T-VAC32 and 175 T-VACR32	17.5	38	95	630 1250 2000 2500 ❸	31.5	82	10,000	155/197 155/197 159/201 161/NA
72 T-VAC40 and 72 T-VACR40	7.2	20	60	630 1250 2000 2500 ❸	40	104	10,000	155/197 155/197 159/201 161/NA
120 T-VAC40 and 120 T-VACR40	12	28	75	630 1250 2000 2500 ❸	40	104	10,000	155/197 155/197 159/201 161/NA
175 T-VAC40 and 175 T-VACR40	17.5	38	95	630 1250 2000 2500 ❸	40	104	10,000	157/199 157/199 161/203 163/NA

❶ Independent shunt trips are available for use with traditional protective relaying schemes.

❷ Also 3-second short-time current rating.

❸ 2500 A available as fixed T-VACR circuit breaker only.



### Integral protective relays

All VCP-T/VCP-TL/T-VAC medium voltage circuit breakers can be supplied with integral breaker mounted protective relays for overload circuit protection and metering. The integral relays are self-powered from specially designed and tested current sensors.

Type VCP-T/T-VAC circuit breakers can be equipped with Eaton's Digitrip 520V/520MCV or Digitrip 1150V protection relays.

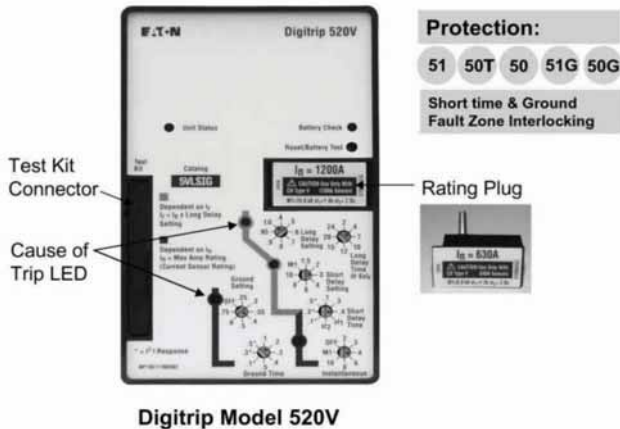
The Digitrip 520V/520MCV is used for basic overcurrent protection. The Digitrip 520MCV relay includes an Arcflash Reduction Maintenance System feature that may be activated at the breaker or remotely. When activated, the maintenance mode feature lowers the available arc flash energy at the connected downstream device by faster clearing of the downstream fault.

The Digitrip 1150V is used for advanced current and voltage protections, and metering and communication functions. The Arcflash Reduction Maintenance System feature is included on the 1150V relay as standard.

The power required to operate the protective relay's basic over-current protection functions is provided by secondary output from the current sensors once the three-phase primary current through the circuit breaker exceeds approximately 10 to 12% of the current sensor rating or single-phase primary current exceeds approximately 30% of the current sensor rating.

The relay continuously analyzes secondary current signals from the current sensors and when preset current levels and time delay settings are exceeded, sends a trip signal to the trip actuator of the circuit breaker. The trip actuator causes tripping of the circuit breaker by providing the required mechanical force for tripping.

The trip actuator is automatically reset each time the circuit breaker opens. The current sensors, protective relay and circuit breaker are fully tested as a system for time-over-current response over the entire current range up to the interrupting rating of the circuit breaker. An optional overcurrent trip switch (OTS) with one latching type Form C contact can be provided to indicate tripping of the circuit breaker by the action of an integral protective relay.



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