

TOSHIBA

TOSHIBA INTERNATIONAL CORPORATION

POWER APPARATUS & COMPONENTS

Vacuum Contactors

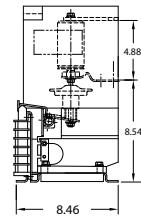
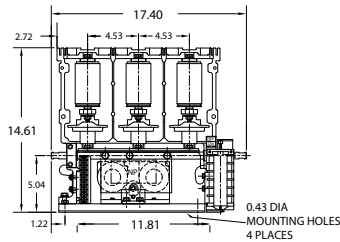


COMPACT DESIGN ADVANCED TECHNOLOGY

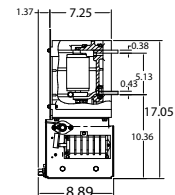
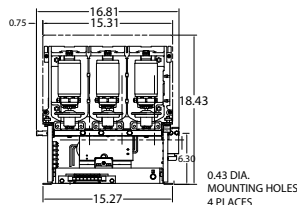
No external surge suppressors are required with Toshiba's Medium Voltage Vacuum Contactors. Special main contact materials minimize chopping currents in our compact and lightweight design delivering optimal electrical performance. Using a vacuum bottle system design TIC's contactors are suitable for high-dust areas and increase longevity while decreasing maintenance requirements. TIC's MV vacuum contactors offer a wide margin of protective coordination with any type of power fuse, increase electrical safety and reliability, and deliver high interrupting performance.



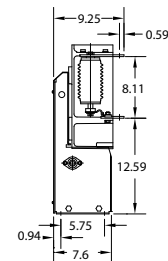
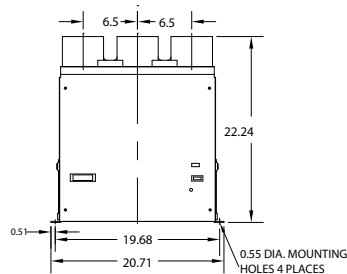
HCV-5HA/7HA



HCV-6KAU



CV-10HA/B



MEDIUM VOLTAGE APPLICATIONS

Model Number	HCV-5HA(L) HCV-7HA(L) (400 A)	CV-10HA(L) (400 A)	CV-10HB(L) (320 A Continuous, 230 A Breaking)	HCV-6KA(L)U (720 A)	
0.8 PF Induction/ Synchronous Motor	2.2 to 2.5 kV	1750 HP	—	N/A	2500 HP
	3 to 3.3 kV	2250 HP	—		3000 HP
	4 to 5 kV	3000 HP	—		4500 HP
	6 to 6.6 kV	4500 HP	—		6000 HP
	6.9 to 7.2 kV	—	3500 HP		—
	11 to 12 kV	—	5500 HP		—
	13.8 kV	—	7000 HP		—
1.0 PF Synchronous Motor	2.2 to 2.5 kV	2000 HP	—	N/A	2500 HP
	3 to 3.3 kV	2500 HP	—		3000 HP
	4 to 5 kV	3500 HP	—		4500 HP
	6 to 6.6 kV	5000 HP	—		6000 HP
	6.9 to 7.2 kV	—	4000 HP		—
	11 to 12 kV	—	6000 HP		—
	13.8 kV	—	7500 HP		—
Three-Phase Transformer	2.2 to 2.5 kV	1500 kVA	—	N/A	2500 kVA
	3 to 3.3 kV	2000 kVA	—		3500 kVA
	4 to 5 kV	3000 kVA	—		4500 kVA
	6 to 6.6 kV	4000 kVA	—		7000 kVA
	6.9 to 7.2 kV	—	3000 kVA		—
	11 to 12 kV	—	5500 kVA		—
	13.8 kV	—	6500 kVA		—
Three-Phase Capacitor	2.2 to 2.5 kV	1500 kVAR	N/A	1500 kVAR	2000 kVAR
	3 to 3.3 kV	2000 kVAR		2000 kVAR	2000 kVAR
	4 to 5 kV	2000 kVAR		2000 kVAR	2000 kVAR
	6 to 6.6 kV	2000 kVAR		3000 kVAR	2000 kVAR
	6.9 to 7.2 kV	—		3000 kVAR	—
	10 to 13.8 kV	—		5000 kVAR	—

FEATURES:

- Insulating barrier separates low and high voltage parts.
- Switching arc is contained within a vacuum bottle system design.
- Meets International standards UL, CSA, AS, BS, NEMA, and IEC.

INDUSTRIES SERVED

- Oil & Gas
- Mining & Minerals
- Chemical
- Water & Wastewater

APPLICATIONS

- Blowers
- Chillers
- Compressors
- Conveyors
- Fans
- Mixers
- Process Machinery
- Pumps



Model	HCV-5HA	HCV-5HAL	HCV-7HA	HCV-7HAL	HCV-6KAU	HCV-6KALU	CV-10HA(L)	CV-10HB(L)	
Rated Supply Voltage (Rated Maximum Voltage)	2.4 to 6.6 kV (7.2 kV)						11 to 13.8 kV (15 kV)	11 to 12 kV (13.8 kV)*	
Operational Current	400 A		400 A		720 A		400 A		
Rated Thermal Current	450 A		450 A		800 A		450 A		
Interrupting Current	7000 A @ 5 kV (4500 A @ 7.2 kV)		7200 A		7200 A		5000 A @ 12 kV (4000 A @ 15 kV)	5000 A **	
Peak Withstand Current	15.8 kA		20 kA		20 kA		12.5 kA		
Class E1 MVA	29/60/54 (2400 V/5000 V/6900 V)		30/62/86 (2400 V/5000 V/6900 V)		30/62/86 (2400 V/5000 V/6900 V)		95/96 (11 kV/13.8 kV)	95 (11 kV)	
Class E2 MVA	200/400/600 (2400 V/5000 V/6900 V)		200/400/600 (2400 V/5000 V/6900 V)		200/400/600 (2400 V/5000 V/6900 V)		953/1195 (11 kV/13.8 kV)		
Withstand Overload Current	2400 A for 30 Seconds		2400 A for 30 Seconds		4320 A for 30 Seconds		2400 A for 30 Seconds		
	6000 A for 1 Second		6000 A for 1 Second		10,800 A for 1 Second		8000 A for 1 Second		
Short Circuit Current (E2)	50 kA (130 kA Peak) See Coordination Below		50 kA (130 kA Peak) See Coordination Below		50 kA (130 kA Peak) See Coordination Below		50 kA (130 kA Peak) See Coordination Below		
Coordination W/Current Limiting Fuses	Peak Let-Thru 65 kA Max.		Peak Let-Thru 77 kA Max.		Peak Let-Thru 85 kA Max.		Peak Let-Thru 36 kA Max.		
Switching Frequency	1200/Hr	300/Hr	1200/Hr	300/Hr	600/Hr	300/Hr	300/Hr	120/Hr	
Mechanical Life	2.5 Million	0.25 Million	2.5 Million	0.25 Million	1 Million	0.20 Million	0.25 Million		
Electrical Life	0.25 Million		0.25 Million		0.20 Million		0.10 Million		
Impulse Withstand	60 kV						75 kV (95 kV)****		
Dielectric Strength	18.2 kV, 1 Minute		18.2 kV, 1 Minute		18.2 kV, 1 Minute		35.75 kV (42 kV)***, 1 Minute		
Control Voltage	Standard	120 VAC, 50/60 Hz				115 to 240 VAC/ 125 to 250 VDC		100 to 240 VAC/ 125 to 250 VDC	
	Optional	240 VAC/125 VDC/250 VDC				-		-	
	Tripping	-	24, 32, 48, 125, 250 VDC	-	24, 32, 48, 125, 250 VDC	-	24, 32, 48, 125, 250 VDC	-	125 VDC
Auxiliary Contact Ratings	Arrangement	3NO-3NC	2NO-2NC	3NO-3NC	2NO-2NC	3NO-3NC	2NO-2NC	4NO-2NC	2NO-1NC
	Current	10 A (A600)							
	Voltage	600 V Maximum, 48 V Minimum							
	AC	720 VA (P.F. 0.35)							
DC	60 W (L/R 150 ms)								
Application Conditions	Altitude w/o Derating	Lower than 3300 ft (1000 m)							
	Ambient	-5° to 40°C							
	Relative Humidity	45 to 85%							
	Vibration	Maximum 20 Hz to 1 G							
Shock	Maximum 30 G								
Weight in lbs. (kg)	43 (19.5)	44 (20.0)	44 (19.5)	45 (20.0)	60 (27)	62 (28)	88 (40)	91 (41)	

