

ConVac

Medium-voltage (MV) vacuum contactor up to 12 kV



Reliable and flexible indoor vacuum contactor solution for industries, utility, service-providers and marine sectors.

Low level chopping current of the vacuum interrupters and long mechanical life makes ConVac the right solution to switch motor, transformers and capacitor banks.

Suitable for circuits up to 50 kA fault levels if equipped with suitable MV fuses.

Description

ConVac is suitable for applications that require a high number of operations and/or a very high switching frequency, such as:

- Three-phase motors**
- AC-3 or AC-4 class according IEC standards
 - E1 and E2 class according UL/CSA standard (7.2 kV freestanding only)

- Capacitors**
- Single and back-to-back application according to IEC 62271-106 and IEEE C39.09a:
- ConVac 7 400 A: 250A Class C2
 - ConVac 7R: 250A Class C2
 - ConVac 7/P: 250A Class C2
 - ConVac 12: 250A Class C1
160A Class C2

Transformers

Small footprint, flexible and user-friendly solution for switching.

- Maximize your result**
- Easy to install and customize
 - All electrical connections are plug-and socket with integrated terminal box. This method saves up to 40% of wiring time.
 - Plug-in accessories to reduce the customization time up to 80% and that can be assembled by the customer

- Optimize investments**
- Freestanding units allow panel design optimization and lower development efforts thanks to:
 - common platform between ConVac 7 400 A and ConVac 12
 - same fixing and terminals position
 - flexible installation position
 - Draw-out units provided with a full range of accessories, including units self-supplied by an on-board VT

- Optimize logistic**
- One single freestanding unit conforming to IEC, UL and CSA standards at 7.2 kV
 - Plug-in accessories to reduce the customization time up to 80%, which are also common for 7.2 and 12 kV units


A complete indoor vacuum contactor product line

ABB ConVac vacuum contactor is suitable for the following standards:

Standard	ConVac 7 400A	ConVac 7R 400A	ConVac 7 800A	ConVac7/P	ConVac 12
Type	Freestanding	Freestanding	Freestanding	Draw-out	Freestanding
IEC 62271-106	•			•	•
UL347 6th edition	•	•	•		
CSA C22.2	•	•	•		



Technical Characteristics

Parameters			IEC62271-106 (04-2021)				UL347 6 th edition		
			Ref. std	Value			Ref. std	Value	
Rated voltages				ConVac 7	ConVac 7/P	ConVac 12		ConVac 7R ConVac 7 400 A	ConVac 7 800A
	Rated voltage [Ur]	[kV]	5.2	7.2	7.2	12	4.1	7.2	7.2
	Rated insulation level [Ud] at 50/60Hz	(1 min)[kV]	5.3	20 (32 ⁶)	20 (32 ⁶)	28 (42 ⁶)	4.2	20 (32 ⁶)	20
	Rated insulation level (Up), impulse	[kVp]	5.3	60	60	75	4.2	60	60
Rated frequency [fr]		[Hz]	5.4	50-60	50-60	50-60	-	50-60	50-60
Rated current									
	Rated operational current (Ie)	[A]	5.101	400	400	400	4.101	400	800
	Thermal current (Ith)	[A]	9.102.5	400	400	400	4.4.101	400	800
Short circuit and overload performance									
	Short-time withstand current [Ik] + rated duration [tk] or rated momentary current	[A]	5.6 5.8	6000x1sec 4000x4sec	6000x1sec 4000x4sec	6000x1sec 4000x4sec	4.6.2 4.7.2	6000x1sec	12500x1sec
	Rated peak current	[kA peak]	5.7	15.6	15.6	15.6	4.6.1	-	-
	Short-time withstand current for 30 s	[A]	7.6	2400	2400	2400	6.202	2400	5000
	Short circuit breaking current (Isc)- combined with fuses	[kA rms]	5.107	50	50	50	4.107 4.202	50 (Class E2 ⁽¹⁾)	50 (Class E2 ⁽¹⁾)
	Rated short-circuit making current (I _{ma})- combined with fuses	[kA rms]	5.107	130 ⁽³⁾	130 ⁽³⁾	130 ⁽³⁾	4.107 4.202	•	•
	Damage classification		5.107.2.3	C	C	C	-	-	-
	Short-circuit breaking capacity	[kA]	5.107	5	5	6	4.202	6 at 60Hz (Class E1)	12.5 at 60Hz (Class E1)
	Short circuit making capacity	[kA]	5.107	13	13	15.6	4.202	15 at 60Hz (Class E1)	32.5 at 60Hz (Class E1)
	Short circuit sequence		7.103	CO-3'-CO-3'CO	CO-3'-CO-3'CO	CO-3'-CO-3'CO	4.202	CO-2'-CO-2'CO	CO-2'-CO-2'CO
	Rated making and breaking capacities, by utilization category of use	Category	5.104	AC-4	AC-4	AC-4	-	-	-
	Rated making and breaking capacities and overload	[kA]	-	-	-	-	4.103 6.102	10CO at 4kA 40CO at 2.4kA	10CO at 8kA 40CO at 4.8kA
	Capacitive switching capabilities (62271-106 / IEEE C37.09a)		5.112	-	-	-	IEEE C37.09a	-	-
	Configuration			back to back	back to back	back to back		back to back	-
	Restrike performance	Class		class C2	class C2	class C1	class C2	class C2	
	Rated current	[A]		250	250	250	160	250	-
	Inrush peak	[kA peak]		8	8	8	8	8	-
	Inrush current frequency	[Hz]		2500	2500	2500	4250	2500	-
Electrical life (AC3)		Cycles	4.106	100.000	100.000	100.000	4.106	100.000	-
Mechanical life									
	Rated duty	[Cycles/hour]	5.102.2	1200	1200	1200	4.102.2	1200	600
Life	Electrical latching	[Cycles]	7.102	1000000	1000000	1000000	6.101	1000000	300000
	Mechanical latching	[Cycles]	7.102	100000	100000	100000	6.101	100000	100000
Rated supply voltage of switching devices, and of auxiliary and control circuits (U _a)			5.9	-		-	4.8, 4.9	-	-
	Feeder type 1 (Drive unit and closing coil)	[Vdc - Vac 50-60Hz]	-	110÷125	110÷125	110÷125	-	110÷125	110÷125
	Feeder type 2 (Drive unit and closing coil)	[Vdc - Vac 50-60Hz]	-	220÷240	220÷240	220÷240		220÷240	220÷240
	Start-up current (Drive unit and closing coil)	[A peak] x 200ms	-	7÷10.5	7÷10.5	7÷10.5	-	7÷10.5	7÷10.5
	Holding	[W]	-	50	50	50	-	50	50
	Pick-up voltage	[Vdc - Vac 50-60Hz]	-	80%	80%	80%	-	80%	80%
	Drop-out voltage	[Vdc - Vac 50-60Hz]	-	65%	65%	65%	-	65%	65%
	Opening coil-Kit RiMe (only for latched contactors)	[Vdc - Vac 50-60Hz]	-	24-48 Vdc only 110-125 Vac dc 220-240 Vac dc	24-48 Vdc only 110-125 Vac dc 220-240 Vac dc	24-48 Vdc only 110-125 Vac dc 220-240 Vac dc	-	24-48 Vdc only 110-125 Vac dc 220-240 Vac dc	24-48 Vdc 110-125 Vac dc 220-240 Vac dc
	Start-up current RiMe kit 24V dc	[A peak]x100ms	-	40	40	40	-	40	40
	Start-up current RiMe kit 48V dc	[A peak]x100ms	-	25	25	25	-	25	25
	Start-up current RiMe kit 110-125Vac dc 50-60Hz	[A peak]x100ms	-	10	10	10	-	10	10
	Start-up current RiMe kit 220-240Vac dc 50-60Hz	[A peak]x100ms	-	7	7	7	-	7	7
Operating time									
	Opening time - Electrically latched	[ms]	-	80÷100	80÷100	80÷100	-	45÷80 (ConVac 7R) 80÷100 (ConVac 7)	45÷80
	Opening time - Mechanically latched (kit RiMe)	[ms]	-	15÷35	15÷35	15÷35	-	15÷35	15÷35
	Closing time	[ms]	-	40÷70	40÷70	40÷70	-	40÷70	40÷70
Operating temperature ⁽¹⁾		[°C]	IEC 60068	-30÷ +70	-25÷ +55	-30÷ +70	C37.09	-30÷ +40 ⁽²⁾	-30÷ +40 ⁽²⁾
Weight				15-20 [kg] / 33-44 [lbs]	50-80 [kg] / 116-176 [lbs]	15-20 [kg] / 33-44 [lbs]		15-20 [kg] / 33-44 [lbs]	15-20 [kg] / 33-44 [lbs]
Overall dimensions		High	H	377 [mm] / 14.8 [inch]	635 [mm] / 25 [inch]	380 [mm]		377 [mm] / 14.8 [inch] ⁽³⁾	377 [mm] / 14.8 [inch]
		Width	W	342 [mm] / 13.5 [inch]	530 [mm] / 20.8 [inch]	342 [mm]		342 [mm] / 13.5 [inch] ⁽³⁾	342 [mm] / 13.5 [inch]
		Depth	D	210 [mm] / 8.3 [inch]	658 [mm] / 25.9 [inch]	230 [mm]		210 [mm] / 8.3 [inch] ⁽⁵⁾	210 [mm] / 8.3 [inch]

⁽¹⁾ For UL Class E2 interrupting capability with R/C Mersen fuse A072B3DBRO-18R (ConVac 7 400 A) A072B2DARO-24R (ConVac 7R)

⁽²⁾ For higher temperature please contact ABB

⁽³⁾ Highest prospective peak current. Highest cut-off current of the SCPD intended is 45kA

⁽⁴⁾ UL Class E2 interrupting capability with R/C Mersen fuse A072B3DARO-57X

⁽⁵⁾ ConVac 7 R ask ABB

⁽⁶⁾ High performance version - not available on ConVac 7R, for UL rating please ask ABB