Medium voltage products

V-Contact VSC
Medium voltage vacuum contactors

Power and productivity
for a better world™

V-Contact VSC
Medium voltage vacuum contactors

- Vacuum interruption technique
- Actuator with permanent magnets
- Multivoltage electronic feeder
- Fixed or withdrawable version for UniGear and Unisec switchgears and PowerCube enclosures/units
- Single Command Operated
- Double Command Operated
- Undervoltage functionality available on request on DCO version
- Very low surge contact material
- Mechanical life up to 1,000,000 operations cycles (both in SCO and DCO version)
- Dedicated VSC-S execution for back-to-back capacitor switching.

General characteristics				Ref. to IEC 62271-106 Standard
Rated voltage			[kV]	4.1
Rated insulation voltage			[kV]	–
Power Frequency Withstand voltage at 50 Hz			[kV]	6.2
Impulse withstand voltage			[kVbil]	6.2
Rated frequency			[Hz]	4.3
Rated service current			[A]	4.101
Short-time withstand current for 1 s			[A]	6.6
Rated peak current			[kA]	6.6
Breaking capacity up to			[kA]	4.107
Short-circuit making capacity up to			[kA]	4.107
Number of operations (rated values)		Contactor DCO	[op./hour]	4.102.2
		Contactor SCO	[op./hour]	4.102.2
Maximum rated admissible overcurrent for ½ period (peak value)			[kAp]	-
(Category AC4) 100 closing operations			[A]	6.102.4
(Category AC4) 25 opening operations			[A]	6.102.5
Rated voltage of the switching devices and auxiliary circuits				4.8,4.9
Feeder type 1: 24÷60 V dc (basic version)				–
Feeder type 2: 24÷60 V dc (full option version)				–
Feeder type 3: 110÷250 V ac/dc (basic version)				–
Feeder type 4: 110÷250 V ac/dc (full option version)				–
Normal current			[A]	4.4.101
Mechanical life	**VSC**	number of cycles		6.101
		number of operations		
	VSC-S	number of cycles		
		number of operations		
Apparatus wear classification (type)				4.107.3
Short-circuit breaking capacity (O-3min-CO-3min-CO)			[A]	6.104
Short-circuit making capacity (O-3min-CO-3min-CO)			[A peak]	6.104
Switching times	Opening time (lower and upper limit) [ms]			–
	Closing time (lower and upper limit) [ms]			–
Tropicalisation			(IEC 721-2-1)	–

(1) Version for 42 kV 50 Hz x 1 min. between phases and between phase and earth available on request - (only VSC12/G contactors without fuseholders and withdrawable VSC12/PG for UniGear panels l = 650 mm).
(2) Depending on the capacity of the coordinated fuse.
(3) Value linked to the breaking capacity of the fuse: refer to the fuse manufacturer's documentation.
(4) Not applicabile for VSC-S versions.
(5) Version with 32 kV -50Hz x 1 min between phases and between phase and earth available on request - (only VSC7/G contactors without fuseholders, withdrawable VSC7/PG for UniGear panels l = 650 mm and VSC7/PNG for UniGear MCC).

	VSC 7 - VSC 7/F - VSC 7/G - VSC 7/P VSC 7/PN - VSC 7/PG - VSC 7/PNG			VSC 12 - VSC 12/F - VSC 12/G VSC 12/P - VSC 12/PN - VSC 12/PG VSC S/G - VSC S/F - VSC S/PG VSC S/PNG		
	Contactor	Starter	Combined with fuses	Contactor	Starter	Combined with fuses
	3.4.105	3.4.110	3.4.110.5	3.4.105	3.4.110	3.4.110.5
	7,2	7,2	7,2	12	12	12
	7,2	7,2	7,2	12	12	12
	20 (5)	20 (5)	20 (5)	28 (1)	28 (1)	28 (1)
	60	60	60	75	75	75
	50-60	50-60	50-60	50-60	50-60	50-60
	400	400	– (2)	400 (4)	400 (4)	– (2)
	6,000	6,000	6,000	6,000	6,000	6,000
	15	15	15	15	15	15
	–	–	50 (3)	–	–	50 (3)
	–	–	50 (3)	–	–	50 (3)
	1,200	1,200	1,200	1,200	1,200	1,200
	1,200	1,200	1,200	1,200	1,200	1,200
	55	–	–	55	–	–
	4,000	4,000	4,000	4,000	4,000	4,000
	4,000	4,000	4,000	4,000	4,000	4,000
	•	•	•	•	•	•
	•	•	•	•	•	•
	•	•	•	•	•	•
	•	•	•	•	•	•
	400	400	– (2)	400	400	– (2)
	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
	400,000	400,000	400,000	400,000	400,000	400,000
	200,000	200,000	200,000	200,000	200,000	200,000
	C	C	C	C	C	–
	5,000	5,000	–	5,000	5,000	–
	13,000	13,000	–	13,000	13,000	–
	35...60	35...60	35...60	35...60	35...60	35...60
	60...90	60...90	60...90	60...90	60...90	60...90
	•	•	•	•	•	•

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General characteristics						
Ultimate performances for (value refers to fixed versions without fuseholder)		**VSC 7 - 400A (6)**				**VSC 12 - 400 A (6)**
Rated voltage	[kV]	2,2/2,5	3,3	3,6/5	6,2/7,2	12
Motors	[kW]	1,000	1,500	1,500	3,000	5,000
Transformers	[kVA]	1,100	1,600	2,000	4,000	5,000
Capacitors (only for VSC-S versions)	[kVAr]	1,000	1,500	1,500	3,000	4,800
Ultimate performances for back-to-back capacitor banks		**VSC-S/G - VSC-S/F - VSC-S/PG - VSC-S/PNG**				
Rated voltage	[kA]	2,2/2,5	3,3	3,6/5	6,2/7,2	12
Rated current	[A]	250	250	250	250	250
Maximum transient current of the capacitor	[kA]	8	8	8	8	8
Maximum transient frequency of capacitor connection	[kHz]	2,5	2,5	2,5	2,5	2,5

Weights and overall dimensions				Fixed contactor				
				VSC 7 VSC 7/G	**VSC 12**	**VSC 12/G**	**VSC S/G**	**VSC 12/F VSC S/F**
Weight (excluding the fuses)			[kg]	20	20	35	35	35
Overall dimensions		Height	H [mm]	371	424	494	598	532
		Width	W [mm]	350	350	466	466	466
		Depth	D [mm]	215	215	622	623	702

Weights and overall dimensions				Withdrawable contactor				
				VSC 7/P VSC 7/PG	**VSC 12/P VSC 12/PG**	**VSC 7/PN VSC 7/PNG**	**VSC 12/PN VSC S/PNG VSC S/PG**	**VSC 7 VSC 7/G**
Weight (excluding the fuses)			[kg]	52	52	54	54	20
Overall dimensions		Height	H [mm]	636	636	653	653	371
		Width	W [mm]	531	531	350	350	350
		Depth	D [mm]	657	657	673	673	215

General

I V-Contact VSC medium voltage contactors operate with alternating current and are normally used for controlling users requiring a large number of hourly operations.

V-Contact VSC contactors introduce permanent magnet operating mechanisms, already widely used, tried-and tested and appreciated in medium voltage circuit-breakers, to the world of medium voltage contactors.

Experience acquired by ABB in the field of medium voltage circuit-breakers equipped with “MABS” permanent magnet operating mechanisms has allowed an optimized actuator (MAC bistable operating mechanism) to be developed for medium voltage contactors.

The permanent magnet actuator is operated by means of a multiple-voltage electronic feeder. These feeders differ depending on their integrated functions and the auxiliary supply voltage.

Available versions

V-Contact VSC contactors are available in both fixed and withdrawable versions.

The withdrawable versions are designed for use with UniGear and UniSec switchgears and PowerCube units. On request the contactors are available in one of the two versions below.

– SCO (Single Command Operated): closing takes place by supplying auxiliary power to the closing input command of the feeder. Opening takes place when the auxiliary power is intentionally cut-off or unintentionally (for instance due to lack of auxiliary power in the auxiliary circuit) cut-off.
– DCO (Double Command Operated): closing takes place by supplying the input of the closing command input of the apparatus in an impulsive way. Opening takes place when the opening command input of the contactor is supplied in an impulsive way.

VSC/F – VSC S/F

VSC - VSC/G - VSC S/G

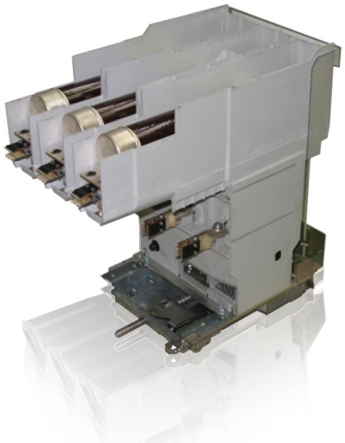
VSC/P – VSC/PG – VSC S/PG

UniGear ZS1

PowerCube units

UniSec WBC

VSC/PN – VSC/PNG



PowerCube PBN

UniGear MCC

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Feeders

The feeder is available in the “Standard” or “Full option” versions. “Basic version” provide internal watchdog, ready to operate condition indication, control of continuity of the internal wiring, check of voltage level of the capacitor.

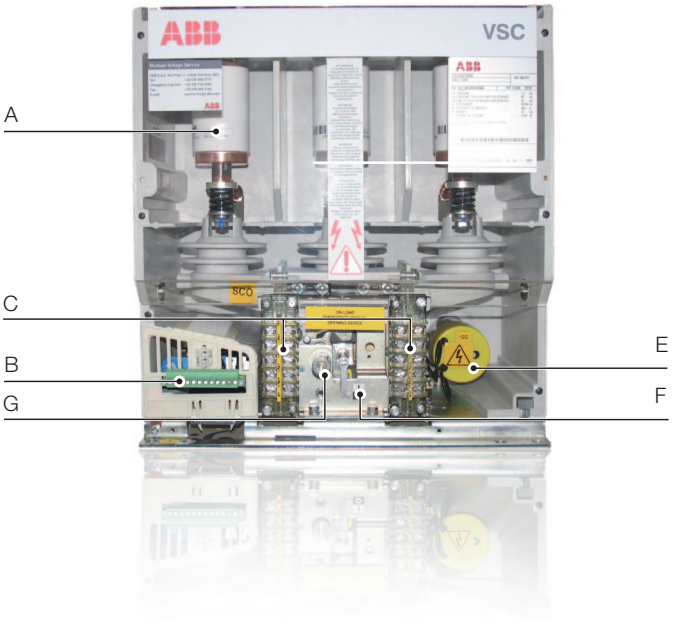
“Full option” version also provides monitoring of the temperature of electronic and of the operating conditions of the capacitor.

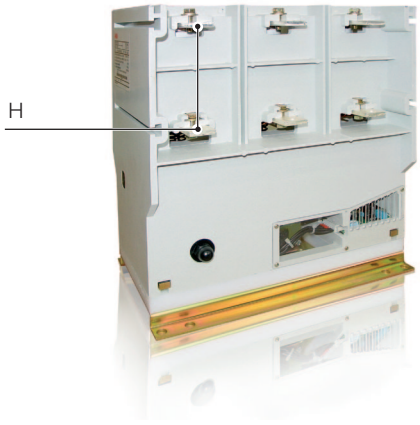
Power required from contactor auxiliary circuits

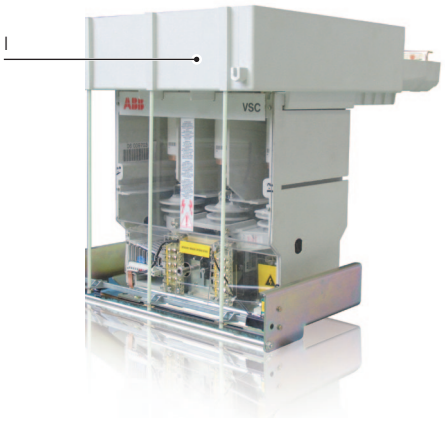
Auxiliary supply voltage	Start up (1)	After close operation	After open operation	Continuous power consumption
	6 sec	1,2 sec	1,2 sec	
24…250 V c.c. 110…250 V c.a.	35 W	25 W	30 W	5 W

(1) Value applicable to a fully discharged capacitor condition.

Main components







A Vacuum interrupters
B Electronic Feeder
C Auxiliary contacts
D Interfacing shaft with the switchgear kinematics (*)
E Capacitor
F Mechanical “open/closed” signalling device H Manual
G Emergency opening
H Terminals
I Fuse Holder

(*) The interface shaft on the left-hand side is available for VSC 7 (7.2 kV) only.

Notes

Contact us

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