

Stand: 1/00

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Automation and Drives Group
Low-Voltage Controls and Distribution
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Siemens Aktiengesellschaft

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SIEMENS

**SENTRON® VL160X
Specifications**



SENTRON VL Series Product Specifications

VL160X Frame
160 Amperes

Specifications:

Category A

IEC 60947-2

EN60947

3-4

16-160 Amperes, 220/240Vac, 380/415Vac,
50-60Hz.

U_i 750Vac

U_{imp} 8kV

Type	I _N	U _E	I _{CU}	I _{CS}	I _{CM}
VL160XN	16-160A	220/240~ 380/415~ 690~	65kA 40kA 8kA	65kA 40kA 4kA	143kA 73.5kA
VL160XH	16-160A	220/240~ 380/415~ 690~	100kA 70kA 12kA	75kA 70kA 6kA	220kA 143kA

Endurance

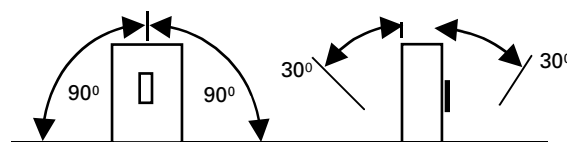
20,000 operations @ 120 per/hour

Watts loss (power loss)

at maximum rated current I_N

3 phase symmetrical load for line protection---50 watts

Permissible mounting position



Reverse feed-- All VL160X frame circuit breakers are suitable for reverse feed applications.

Breaker shipping weight 3 pole = 3.8 lbs. / 1.7kg.
4 pole = 4.9 lbs. / 2.2 kg.

Fixed thermal overload I_r equals I_N

Fixed short circuit releases I_i

I _r	Short circuit release
16---63A	600A
80---125A	1000A
160A	1600A

Adj. Thermal overload--I_r = .80 to 1.0 x I_N

CE Marked

Calibrations for 50°C ambient

Permissible Load

for various ambient temperatures close to the circuit-breaker, related to the rated current of the circuit-breaker used for line protection.

@ 40°C--100%

@ 50°C--100%

@ 60°C--93%

@ 70°C--86%

Catalog Information

Ampere
Rating

I _N	I _r	Model	Configuration
16	16	3VL1796	3 - 0AA0
20	20	3VL1702	3 - 0AA0
25	25	3VL1725	3 - 0AA0
32	32	3VL1703	3 - 0AA0
40	40	3VL1704	3 - 0AA0
50	50	3VL1705	3 - 0AA0
63	63	3VL1706	3 - 0AA0
80	80	3VL1708	3 - 0AA0
100	100	3VL1710	3 - 0AA0
125	125	3VL1712	3 - 0AA0
160	160	3VL1716	3 - 0AA0

1 = Standard interruption
2 = High interruption

D = Thermal/magnetic
protection---3 poles

E = Thermal/magnetic
protection---4 poles

3 = 3 poles

4 = 4 poles w/ left pole (N) switching

A = Fixed overload & short-circuit releases (3 & 4 pole)
(N) pole protected

D = Adjustable overload release / fixed short-circuit
release---3 pole only--overload adjustable 80 to 100% x I_N

E = Non-automatic circuit-breaker I_N = 100A, 125A, 160A
(instantaneous override)

H = Fixed overload & short-circuit releases (4 pole only)
(N) pole not protected

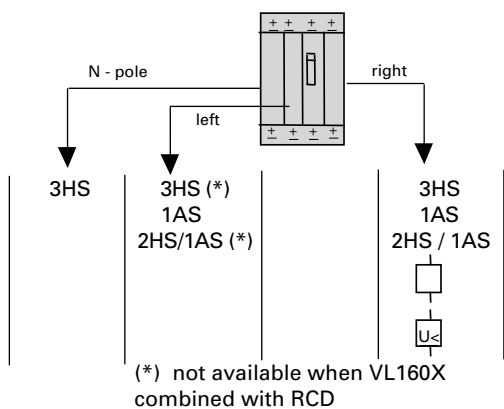
J = Adjustable overload release / fixed short-circuit release
(4 pole only)---(N) pole not protected

Thermal/magnetic circuit-breaker

All VL160X circuit-breakers are shipped with
factory mounted line and load side terminals

Internal accessories:

Maximum internal accessory combinations



Switch kits:

	Catalog
2HS (1NO +1NC)	3VL9400-2AB00
2HS (1NO +1NC) + 1AS (1NO)	3VL9400-2AD00 (left pole only)
1AS (1NC +1NO) use 1 switch only	3VL9400-2AG00 (left pole only)

Individual Auxiliary	Rated thermal current I_{th}	Rated making capacity
3SB3400-0K (NO contact)	10Amps	10Amps
3SB3400-0J (NC contact)	10Amps	10Amps

AC Volts

Rated operational voltage	24	48	110	230	400	600	
Rate operational current	10	10	10	10	10	1	(AC-12)
	6	6	6	6	3	1	(AC-15)

Shunt trip releases

	Catalog Number	Power Consumption
48 - 60Vac	3VL9400 01SM00	158 to 200va
110 - 127Vac	3VL9400-1SR00	136 to 158va
208 - 277Vac	3VL9400-1ST00	277 to 350va
380 - 600Vac	3VL9400-1SV00	158 to 237va
127Vdc	3VL9400-1SB00	110 watts
24Vdc	3VL9400-1SC00	110 watts
48 - 60Vdc	3VL9400-1SJ00	110 to 172 watts
110 - 127Vdc	3VL9400-1SK00	220 to 254 watts
220 - 250 Vdc	3VL9400-1SQ00	97 to 110 watts

Undervoltage releases

	Catalog Number	Power Consumption
110 - 127Vac	3VL9400-1UG00	4.5va
208Vac	3VL9400-1UM00	4.5va
220 - 250Vac	3VL9400-1UH00	4.5va
227Vac	3VL9400-1UQ00	4.5va
380 - 415Vac	3VL9400-1UJ00	4.5va
440 - 480Vac	3VL9400-1UK00	4.5va
550 - 526Vac	3VL9400-1UL00	4.5va
600Vac	3VL9400-1UL00	4.5va
12Vdc	3VL9400-1UT00	3.5watts
24Vdc	3VL9400-1UN00	3.5watts
48Vdc	3VL9400-1UP00	3.5watts
60Vdc	3VL9400-1UU00	3.5watts
110 - 127Vdc	3VL9400-1UR00	3.5watts
220 - 250Vdc	3VL9400-1US00	3.5watts

DC Volts

Rated operational voltage	24	48	110	230	
Rate operational current	10	5	2.5	1	(DC-12)
	3	1.5	0.7	0.3	(DC-13)

External Accessories

Rotary Drives

Direct drive

Standard	3VL9300-3HA00
Emergency Stop	3VL9300-3HC00

Rotary drive extended

Standard	3VL9300-3HF00
Emergency Stop	3VL9300-3HG00
Without knob	3VL9300-3HE00

Door-coupling rotary operating mechanism kit to be used with operator ---3VL9400-3HE00

Standard	8UC6212-1BD22
Emergency Stop	8UC6222-3BD22

Kit consists of --

- (1) proper handle with masking plate
- (1) coupling driver for 8mm shaft
- (1) 8mm extension shaft 300mm long
- (1) shaft coupling for 8mm shaft

Cylinder lock kit for field installation:

(key removal when circuit-breaker is in the OFF position)

Ronis	3VL9715-8HA00
CES	3VL9711-8HA00

Standard or Emergency-stop rotary drive operator auxiliary switch kits(s). Each switch is a change over contact design

1 - leading OFF to ON	3VL9300-3AS10
2 - leading OFF to ON	3VL9300-3AT10
1 - early-break ON to OFF	3VL9300-3AU10
2 - early-break ON to OFF	3VL9300-3AW10

Changeover switch specifications

Rated thermal current I_{th}	2A
Rated making capacity	2A restive - 0.5A inductive
AC	pf 0.7
Rated operational voltage	220Vac
Rated operational current	2A
Rated breaking capacity	2A resistive - 0.5A inductive

Walking-beam interlock mechanism:

Fixed mounted circuit-breakers	3VL9300-8LC00
Draw-out/Plug-in mounted	3VL9300-8LD00

Cable interlock system:

Kit contains operator plates only for two circuit breakers	3VL9300-8LA00
Recommended 0.5m long cable	3VL9300-8LH10

External accessories

Stored energy operators

Voltage		Power		with cylinder lock installed	Power
24 Vdc	3VL9300-3MJ00	< 500 watts		3VL9300-3MK00	< 500 watts
42-48 Vac/Vdc	3VL9300-3ML00	< 500 watts		3VL9300-3MM00	< 500 watts
60 Vac/Vdc	3VL9300-3MS00	< 500 watts		3VL9300-3MT00	< 500 watts
110-127 Vac/Vdc	3VL9300-3MN00	< 500 watts		3VL9300-3MP00	< 500 watts
220-250Vac/Vdc	3VL9300-3MQ00	< 500 watts		3VL9300-3MR00	< 500 watts
			Filli Giussani cylinder lock kit for field installation--	3VL9321-8HA00	

Front busbar extensions

requires the use of a Nut Keeper Plate for each pole

Straight

1 piece-----	3VL9200-4EA00
1 set = 3 pieces -----	3VL9200-4EC30
1 set = 4 pieces -----	3VL9200-4EC40

Flared

1 set = 3 pieces -----	3VL9200-4ED30
1 set = 4 pieces -----	3VL9200-4ED40

Rear terminals:

(round stock)

	Short length (1 piece)	3VL9100-4RA00
	Long length (1 piece)	3VL9100-4RB00
Kit:	(2) short + (1) long (3 pieces)	3VL9100-4RC30
	(2) short + (2) long (4 pieces)	3VL9100-4RF40

(flat terminals)

	Short length (1 piece)	3VL9100-4RK00
	Long length (1 piece)	3VL9100-4RL00
Kit:	(2) short + (1) long (3 pieces)	3VL9100-4RM30
	(2) short + (2) long (4 pieces)	3VL9100-4RN40

Terminal connectors:

Steel wrap around box terminal for VL250 circuit-breakers

1 piece-----	3VL9100-4TC00
1 set = 3 pieces-----	3VL9100-4TC30
1 set = 4 pieces-----	3VL9100-4TC40

Aluminum body box terminal

1 piece-----	3VL9100-4TD00
1 set = 3 pieces-----	3VL9100-4TD30
1 set = 4 pieces-----	3VL9100-4TD40

Wire range

solid wire-----	2.5 - 70mm ²
stranded with sleeve end--	2.5 - 70mm ²
flexible bus (w x h)	12 x 10mm ²

Wire range for Aluminum body only

Solid or stranded wire-----	10 - 95mm
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Terminal covers:

3 pole extended-----	3VL9300-8CA30
3 pole standard-----	3VL9300-8CB30
4 pole extended-----	3VL9300-8CA40
4 pole standard-----	3VL9300-8CB40

Inter-phase shield

1 piece-----	3VL9300-8CE00
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Plug-in socket assembly:

Includes base plate, sockets, busbarcover, mounting screws, base interlock, (does not include inter-phase shields)

Rear connected

	3 pole	3VL9100-4PA30
RCD load end mounted to 3 pole		3VL9100-4PB00
	4 pole	3VL9100-4PA40
RCD load end mounted to 4 pole		3VL9100-4PB40

Front connected

	3 pole	3VL9100-4PC30
RCD load end mounted to 3 pole		3VL9100-4PD30
	4 pole	3VL9100-4PC40
RCD load end mounted to 4 pole		3VL9100-4PD40

Plug-in socket for accessory voltage supply

each plug-in socket contains 8 positions—maximum of two sockets can be used with VL160X

Catalog no.	3VL9300-4PJ00
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Position signaling switch

to indicate connected or unconnected position of plug-in or draw-out assembly. Kit consists of 1 change switch. Each base can accept up to 2 switches.

Catalog no.	3VL9000-4WL00
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Handle padlocking device:

Catalog no.	3VL9300-3HL00
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Mounting screw kit

2 screws	3VL9300-8SA20
4 screws	3VL9300-8SA40