

SENTRON VL Series Product Specifications

VL160 Frame
160 Amperes

Electronic Releases

ETU TRIP RELEASE

Ampere Rating	I_N	I_r			
63	26 - 63	3VL2706	-	A	3 3 - 0AA0
100	40 - 100	3VL2710	-	A	3 3 - 0AA0
160	64 - 160	3VL2716	-	A	3 3 - 0AA0

All VL160 circuit-breakers are shipped with factory mounted incoming and outgoing box terminals

1 = Standard interruption
2 = High interruption
3 = Very High interruption

3 = 3 poles

A = Designates frame only
B = Line protection with LI functions
C = Line protection LIG functions residual earth for 3 phase 4 wire systems
D = Line protection with LIG functions—residual earth for 3 phase 3 wire systems
E = Line protection with LS functions (instantaneous override)
G = Line protection with LSG functions-residual earth for 3 phase 3 wire systems
H = Line protection with LSG functions-residual earth for 3 phase 4 wire systems
J = Line protection with LIG functions-for earth return systems
K = Line protection with LSI functions for earth return systems

ETU TRIP RELEASE

Ampere Rating	I_N	I_r			
63	26 - 63	3VL2706	-	B	4 3 - 0AA0
100	40 - 100	3VL2710	-	B	4 3 - 0AA0
160	64 - 160	3VL2716	-	B	4 3 - 0AA0

1 = Standard interruption
2 = High interruption
3 = Very High interruption

4 = 4 poles

A = Line protection with LI functions—(N) pole protected
B = Line protection with LI functions—(N) pole not protected
C = Line protection LIG functions—residual earth—(N) pole not protected
D = Line protection with LIG functions—residual earth—(N) pole protected
E = Line protection with LS functions—(fixed override)—(N) pole not protected
F = Line protection with LS functions—(fixed override)—(N) pole protected
G = Line protection with LSG functions—(fixed override)—(N) pole not protected
H = Line protection with LSG functions—(fixed override)—(N) pole protected

LCD TRIP RELEASE

Ampere Rating	I_N	I_r			
63	26 - 63	3VL2706	-	C	3 3 - 0AA0
100	40 - 100	3VL2710	-	C	3 3 - 0AA0
160	64 - 160	3VL2716	-	C	3 3 - 0AA0

1 = Standard interruption
2 = High interruption
3 = Very High interruption

3 = 3 poles
4 = 4 poles

H = Line protection with customer set LI/LS/LSI functions 3 pole only
J = Line protection with customer set LI/LS/LSI functions 4 pole only
L = Line protection with LSI functions for 3 phase 3 wire systems
M = Line protection with LSI functions for 3 phase 4 wire systems
N = Line protection with LSI functions for 3 phase 4 wire systems—4 pole only
P = Motor / generator protection with LI functions

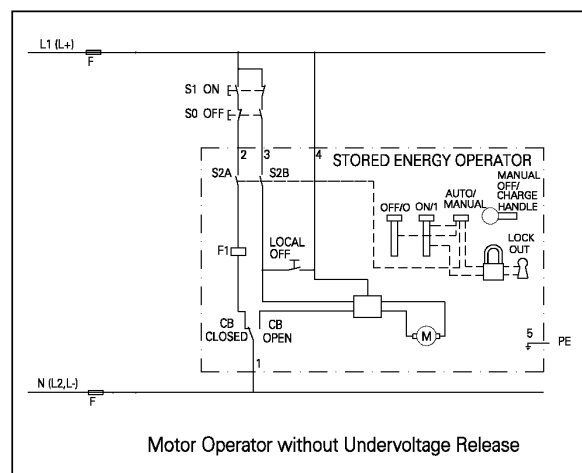
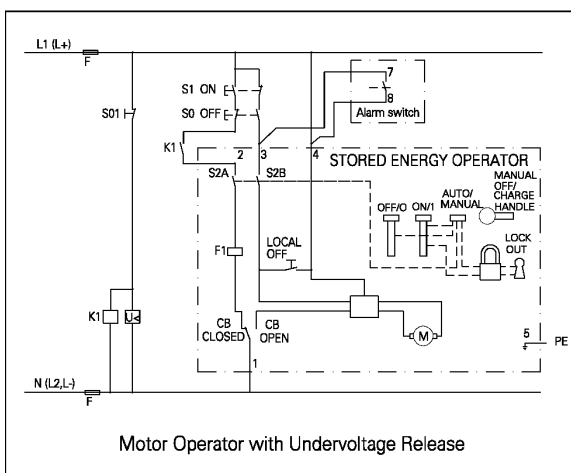
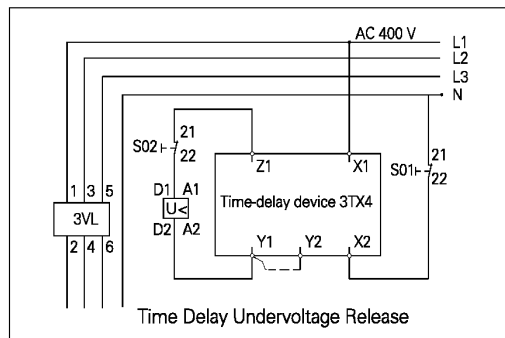
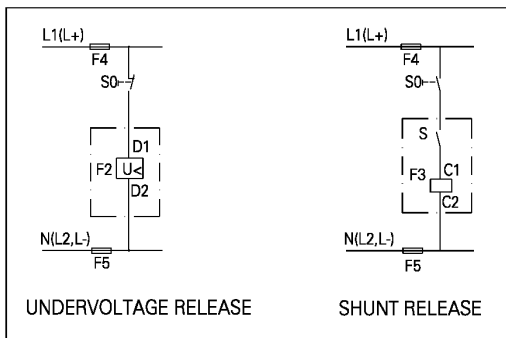
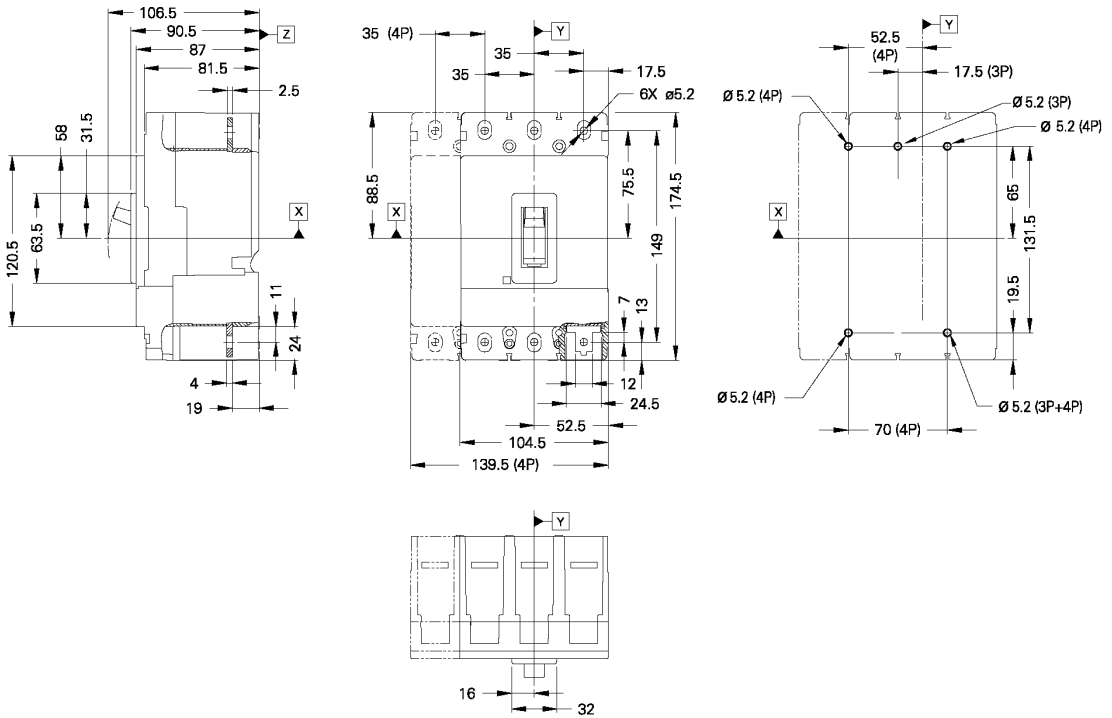
Hand held test kit for electronic trip releases

Test kit: (battery powered) for ETU/LCD releases, as well as interface with laptop or PC
Cat.no 3VL9000-8AK00

Communications adapter:

Allows for testing of ETU/LCD release as well as parameterization of LCD releases by interface with laptop or PC
Cat.no 3VL9000-8AM00

VL160



Stand: 1/00

<http://www.siemens.de/sentron-vl>
<http://www.siemens.de/energieverteilung>

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 Low-Voltage Controls and Distribution
 P. O. Box 32 40, D-91050 Erlangen, Germany

Subject to change without prior notice 01/00

Siemens Aktiengesellschaft

Order No. E20001-P285-A000-X-0000
 Dispostelle 27604/SEK 30191
 SEVL.52.9.01 PA



SIEMENS

SENTRON® VL160 Specifications



SENTRON VL Series Product Specifications

VL160 Frame
160 Amperes

Specifications:

Category A

IEC 60947-2

EN60947

3-4 Poles

50-160 Amperes, 220/240Vac, 380/415Vac,
690Vac

50-60hz.

U_i 750Vac

U_{imp} 8kV

Type	I _N	U _E	I _{CU}	I _{CS}	ICM
VL160N	16-160A	220/240~ 380/415~ 690~	65kA 40kA 14kA	65kA 40kA 7kA	143kA 73.5kA 28kA
VL160H	16-160A	220/240~ 380/415~ 690~	108kA 70kA 18kA	75kA 70kA 9kA	220kA 143kA 36kA
VL160L	16-160A	220/240~ 380/415~ 690~	200kA 100kA 20kA	150kA 75kA 10kA	440kA 220kA 42kA

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%

Endurance

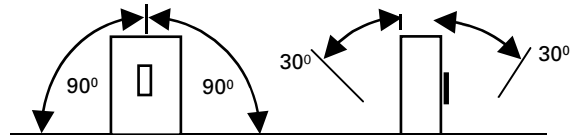
20,000 operations @ 120 per/hour

Watts loss (power loss)

at maximum rated current I_N

3 phase symmetrical load for line protection---50 watts
line protection---40 watts ETU/LCD

Permissible mounting position



Reverse feed--All VL160 frame circuit breakers are suitable for reverse feed applications.

Breaker shipping weight 3 pole = 4.6 lbs. / 2.1kg.

4 pole = 6.4 lbs. / 2.8kg.

Adj. thermal overload 80 to 100% x I_N

Adj. short circuit releases I_i

I _N	Short circuit release I _i
50	250 - 500
63	300 - 600
80	400 - 800
100	500 - 1000
125	625 - 1250
160	800 - 1600

Catalog Information

Ampere

Rating

I _N	I _r		
50	40 to 50	3VL2705 -	3 - 0AA0
63	50 to 63	3VL2706 -	3 - 0AA0
80	63 to 80	3VL2708 -	3 - 0AA0
100	80 to 100	3VL2710 -	3 - 0AA0
125	100 to 125	3VL2712 -	3 - 0AA0
160	125 to 160	3VL2716 -	3 - 0AA0

Thermal/magnetic circuit-breaker

All VL160 circuit-breakers are shipped with factory mounted incoming and outgoing box terminals

- 1 = Standard interruption
- 2 = High interruption
- 3 = Very 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

C = Adjustable thermal overload & short-circuit releases

(N) pole protected when using with 4 pole
(N) pole I_r - 50 to 100A = 100%, 125 to 160 = 60%

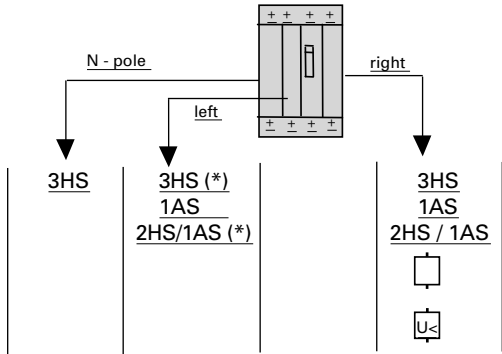
E = Non-adjustable circuit-breaker I_N = 100A, 1250A, 160A only

K = Starter protection only -- I_N = 100A, 125A, 160A

J = 4 pole (N) without protection

Internal accessories:

Maximum internal accessory combinations



(*) not available when VL160 is ETU or LED electronic release.

Switch kits:

	Catalog Number
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 Switch:

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

AC Volts

Rated operational voltage	24	48	110	230	400	600	
Rate operational current	10	10	10	10	10		(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 350va
208 - 277Vac	3VL9400-1ST00	277 to 350va
380 - 600Vac	3VL9400-1SV00	158 to 237va
12Vdc	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 - 250Vdc	3VL9400-1SQ00	97 to 220 watts

Undervoltage releases

	Catalog Number	
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 kit(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

Change over 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 making capacity-----	2A restive - 0.5A inductive

Walking-beam interlock mechanism:

Fixed mounted circuit-breakers-----	3VL9300-8LC00
Draw-out/Plug-in mounted-----	3VL9200-8LD00

Cable interlock system:

Kit contains 0.5 m cable and necessary operator plates-----3VL9300-8LA00

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)	3VL9200-4RA00
Long length (1 piece)	3VL9200-4RB00
Kit: (2) short + (1) long (3 pieces)	3VL9200-4RC30
(2) short + (2) long (4 pieces)	3VL9200-4RF40

(flat terminals)

Short length (1 piece)	3VL9200-4RK00
Long length (1 piece)	3VL9200-4RL00
Kit: (2) short + (1) long (3 pieces)	3VL9200-4RM30
(2) short + (2) long (4 pieces)	3VL9200-4RN40

Terminal connectors:

Steel wrap around box terminal for VL160 circuit-breakers

1 piece	-----3VL9200-4TC00
1 set = 3 pieces	-----3VL9200-4TC30
1 set = 4 pieces	-----3VL9200-4TC40

Aluminum body box terminal

1 piece	-----3VL9200-4TD00
1 set = 3 pieces	-----3VL9200-4TD30
1 set = 4 pieces	-----3VL9200-4TD40

Wire range

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

Wire range for Aluminum body only

Solid or stranded wire	-----	10 - 95mm ²
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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	3VL9200-4PA30
RCD load end mounted to 3 pole	3VL9200-4PB00
4 pole	3VL9200-5PA40
RCD load end mounted to 4 pole	3VL9200-4PB40

Front connected

3 pole	3VL9200-4PC30
RCD load end mounted to 3 pole	3VL9200-4PD30
4 pole	3VL9200-4PC40
RCD load end mounted to 4 pole	3VL9200-4PD40

Plug-in socket for accessory voltage supply

each plug-in socket contains 8 positions --maximum of two sockets can be used with VL160

Catalog no.	3VL9300-4PJ00
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Draw-out assembly:

Includes base plate, sockets, crank handle, base-interlock, necessary shields

Rear connected

3 pole	3VL9200-4WA30
RCD load end mounted to 3 pole	3VL9200-4WB30
4 pole	3VL9200-4WA40
RCD load end mounted to 4 pole	3VL9200-4WB40

Front connected

3 pole	3VL9200-4WC00
RCD load end mounted to 3 pole	3VL9200-4WD30
4 pole	3VL9200-4WC40
RCD load end mounted to 4 pole	3VL9200-4WD40

Position signaling

to indicate connected or unconnected position of plug-in or draw-out assembly. Kit consist of 1 change over 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