SERIES VN

HEAVY DUTY CAM SWITCHES 25 AMP - 1200 AMP

600 Volt & 1000 Volt
Load Make/Load Break
Positive Opening

SERIES VN IDEAL FOR HEAVY INDUSTRIAL DUTY

- **Bypass Switch**
- **Reversing Switch**
- **Machine Disconnect**
- **Motor Switch**
- **Step Switch**
- **Two Speed Switch**
- **Ammeter Switch**
- **Volmeter Switch**
- **Custom Versions**

To 12 Pole, 12 Positions
(25 Amp - 20 Poles max)
for AC or DC Applications

ELEKTRA

ELEKTRA CAM SWITCHES
MACHINE SAFETY DISCONNECT OPTION

FEATURING

- *HANDLE-SHAFT SELF-ALIGNING SYSTEM*
- IP65 DUSTTIGHT / WATERTIGHT METAL / NON-METAL ENCLOSURES
- STEEL SHAFT
- HORSEPOWER RATED

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EE CONTROLS

INDEX
SERIES VN

Series VN Cam Switch by Elektra includes one of the most complete Cam Switch product lines available in the world. Elektra, a specialty made switch manufacturer with 75 years experience as a major international supplier, manufactures industrial cam switches and disconnects through 1200 amp, 600 volt and 1000 volt ratings.

GENERAL CONTENTS SERIES VN

• 11 Sizes to 1200 Amp • 1000 Volt AC, size 400 Amp to 1200 Amp • 600 Volt AC and DC Ratings
• Multi-Circuit 12 poles • Multi-Step 12 Positions • Front Operators, IP65 Dust Tight / Water Tight
• Complete Enclosure Selection - Metal or Non Metal

CAM SWITCHES TO 1200 AMPS

MAIN POWER SWITCH PRODUCTS:

Series D Disconnects to 1200 Amp with Auto Ailgnment Operator Handles. Disconnects with Undervoltage Trip.
(Catalog ET, 32 pages)

Series D1 Multi-Purpose 25 Amp Switches (Catalog D1, 12 pages)

Series VN Heavy Duty Cam Switches
(Catalog VN, 20 pages)

INTERNATIONAL STANDARDS All Elektra Switches meet International Standards and CE specifications as well as UL and CSA specifications. All switches are designed with Positive Break and Quick Make - Quick Break mechanisms.

PRODUCT INDEX SERIES VN CATALOG

SERIES VN HEAVY DUTY MOUNTING OPTIONS

"S" Safety Door Interlock is standard with the Auto Alignment system for ease of mounting. The safety Door Interlock System interlocks the door so the panel door cannot be opened with power "ON". The switch must be turned "OFF" before door can be opened.

This **auto alignment system** includes extra mounting tolerance in the door coupling to allow for both extra installation mounting drilling tolerance and future door sag. Too often users and installers are frustrated due to the exact mounting tolerance required by most other designs.

"F" Front Mount provides mounting directly to the enclosure with the external operator handle and name plate directly connected to the contact mechanism mounted to the inside. Front mounting to the door is with two or four screws.

Operator handle B knob is standard on all Series VN switches. The sliver black (Type SI) name plate is also standard. Type SI name plates can be engraved with special markings as required.

"B" Base Mount provides mounting directly to the base panel inside enclosure. The marking name plate and B knob can be secured directly to the top of the switch.

"H" Single Hole Mounting is available as an option for 22mm (7/8"). When full size 30mm mounting is desired, ring washer (P/N #ED 134353) is included.

FZD Cylinder Lock
Key Operated
Sizes V2N, V3N

Cylinder Lock Off
BZD version lock off is available on special order for sizes V2N through VN200.

Cam Switch - Mixed Ratings

For switching applications where the contacts have very different power current ratings on the poles or low current auxiliary switching requirements, switch chambers of various sizes can be coupled together.

EXTRA POLES

Switch VN80 Coupled with V2N Aux.

***NOTE:** If overlaping contacts are required, Add: $5 to the list price and specify overlaping contacts are required.

POWER POLE PRICE ADDITION Additional Cost to add poles of same current rating to switch			AUXILIARY CONTACTS (25 Amp) Cost Addition each pole	
Series	*** Add 1 Power Pole**	*** Add 2 Power Poles**	**V2N Auxiliary**	**Gold Concave Auxiliary Design**
	List	**List**	**List**	**List**
V2N	+$18	+$36	+$18	+$30
V3N	+$19	+$38		
VN 32	+$22	+$44		
VN 50	+$22	+$44		
VN 80	+$56	+$112		
VN 125	+$65	+$130		
VN 200	+$160	+$320		

PRICE EXAMPLE: Additional cost to add poles to different current rated switches, or adding Gold Contact Auxiliary Poles, use above pole cost plus one attachment plate charge. To determine cost, the base switch type is the *higher* current unit.

ATTACHMENT PLATE	
Base Switch Type	**Attachment Cost List**
V2N	-
V3N	+$20
VN 32, 50	+$30
VN 80	+$40
VN 125, 200	+$50

Auxiliary Contacts

Gold Flash
Concave Contact Design

Extra auxiliary contacts can easily be added to higher power Cam Switches, for switching light currents or low power switch currents. Designers recognize high contact pressure as a basic requirement for highly reliable circuit continuity on pilot duty circuits.

Type V2N, with a high 25 Amp auxiliary rating, provides the needed high fidelity switching. **Through the years, many companies specify these higher current switches for needed reliable meter circuits, temperature and monitor circuits and similar applications.**

Gold Flash Auxiliary Contacts. Special Auxiliary Contact Design. Specially designed gold concave moveable and stationary contacts are also available and provide extreme long life highly reliable auxiliary contact operation. Concave auxiliary contact design provides high pressure contact at two points on the ridge of the contact. Because of random movement of the movable contact on each operation, these contact points change location on each operation. The concave design also greatly reduces the possibility of dust particles which can cause intermittent operation and yet provides the higher current capability.

Continuity Problems

Low current continuity contact problems can be caused by wiping action design, one contact point designs, or serrated contacts. The use of the Elektra concave contact design provides increased contact switching reliability. Other auxiliary design possibilities are not the final answer.

Wipe Direction Design

Center Point Design

Serrated Contact Design

Dust pile up can make mound

Normal Contact Pressure pounds down point

Dust Collector

GOLD FLASH CONTACTS, CORROSIVE ENVIRONMENTS. Corrosive areas, particularly sulfuric, require gold contact auxiliaries to maintain reliable switching of low current circuits. The above noted gold plated auxiliary contacts are readily available on request and can be added to higher power cam switches.

OPERATORS - IP65

ENCLOSURES - IP65

IP65 is standard with VN operator handles

NEMA / IP65

IP65 is for Industrial and Outdoor Applications and is capable of hose test water tightness.

IP65 is used internationally for similar applications as NEMA 4, or 4X.

1st Digit
6

Complete protection against dust.

2nd Digit
5

Protected against water sprayed from a hose from all directions.

(See IP standard for exact specifications)

CAM SWITCHES TO 1200 AMPS

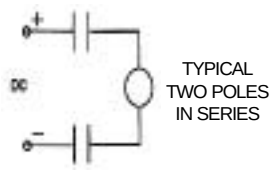
DC Ratings

Series VN Cam Switches can be applied on DC applications, however, depending on the D.C. voltage, contacts must be wired in series for reliable DC circuit interruption. Correct cam switch selection is based on Load Current, Load DC Voltage, and Circuit Time Constant (L/R). Low D.C. voltages and resistive D.C. loads are much easier to switch than highly inductive loads and higher D.C. voltages.

The following table lists for each type VN Switch the maximum DC current allowed and the number of contacts to be connected in series for a range of voltages and for two different utilization categories (time constants). By connecting additional poles in series the switch can be used for higher voltages. This chart test load had mixed, resistive and inductive and is used for guidance.

DC Current Ratings Type VN Cam Switch

Motor Cam Switch DC Rating. ( ) designates number of poles in series

			V2N	V3N	VN32	VN50	VN80	VN12	VN200
DC-23A L/R=15ms  TYPICAL TWO POLES IN SERIES	24VDC	Amp	16 (1)	25 (1)	40 (1)	50 (1)	100 (1)	125 (1)	150 (1)
	48VDC	Amp	16 (2)	25 (2)	40 (2)	50 (2)	100 (2)	125 (2)	150 (2)
	60VDC	Amp	16 (3)	25 (3)	40 (3)	50 (3)	100 (3)	125 (3)	150 (3)
	120VDC	Amp	8 (3)	12 (3)	20 (3)	25 (3)	40 (3)	50 (3)	60 (3)
	240VDC	Amp	8 (5)	10 (5)	16 (6)	20 (6)	-	-	-
DC-13 Control Switch Rating L/R=50ms Rated Current I_e Voltage per contact connected in series		Amp	10	20	25	-	-	-	-
		Volt	32	32	24	-	-	-	-

SERIES VN HEAVY DUTY BYPASS CAM SWITCHES

BYPASS SWITCH with "OFF" position (Change over switch) **Open Type**

To 250 Amp, 600 Volt
400 Amp to 1200 Amp, 690 Volt

Load Make/Load Break
Positive Opening

Safety door interlock includes misalignment feature

1-0-2 600V	Amps CSA/UL General Purpose	Amps IEC	No. Chambers	Catalog Number	Front Mount	List	Base Mount	List	Safety Door Interlock	List
2 POLE	25	25	2	E V2N-2U B1-	-FS	$60	-BS	$65	-SS	$80
	35	32	2	E V3N-2U B3-	-FS	$81	-BS	$87	-SS	$101
	50	45	2	E VN32-2U B3-	-FS	$151	-BS	$198	-SS	$171
	60	63	2	E VN50-2U B4-	-FS	$203	-BS	$210	-SS	$224

1-0-2 600V	Amps CSA/UL General Purpose	Amps IEC	No. Chambers	Catalog Number	Front Mount	List	Base Mount	List	Safety Door Interlock	List
3 POLE	25	25	3	E V2N-3U B1-	-FS	$79	-BS	$98	-SS	$113
	35	32	3	E V3N-3U B3-	-FS	$98	-BS	$104	-SS	$108
	50	45	3	E VN32-3U B3-	-FS	$192	-BS	$198	-SS	$214
	60	63	3	E VN50-3U B4-	-FS	$261	-BS	$269	-SS	$283
	100	100	3	E VN80-3U B4-	-FS	$337	-BS	$345	-SS	$364
	100	150	3	EVN125-3U B5-	-FS	$772	-BS	$801	-SS	$832
	200	250	6	E VN200-3U B5-	-FS	$1310	-BS	$1370	-SS	$1400

1-0-2 600V	Amps CSA/UL General Purpose	Amps IEC	No. Chambers	Catalog Number	Front Mount	List	Base Mount	List	Safety Door Interlock	List
4 POLE	25	25	4	E V2N-4UB1-	-FS	$97	-BS	$102	-SS	$117
	35	32	4	E V3N-4UB3-	-FS	$117	-BS	$123	-SS	$137
	50	45	4	E VN32-4UB3-	-FS	$225	-BS	$231	-SS	$247
	60	63	4	E VN50-4UB4-	-FS	$315	-BS	$323	-SS*	$337
	100	100	4	E VN80-4UB4-	-FS	$419	-BS	$427	-SS*	$446
	100	150	4	EVN125-4UB5-	-FS	$953	-BS	$983	-SS*	$1013
	200	250	4	E VN200-4UB5-	-FS	$1716	-BS	$1747	-SS*	$1776

(Applications requiring 4 pole units above 250 Amp, please contact EE Controls.)

1-0-2 1000V	Amps IEC	No. Chambers	Catalog Number	Front Mount	List	Base Mount	List	Safety Door Interlock	List
3 POLE	400	3	E NLU-400-3U	-FS	+	-BS	+	-SS	+
	630	3	E NLU-630-3U	-FS	+	-BS	+	-SS	+
	800	6	E NLU-800-3U	-FS	+	-BS	+	-SS	+
	1200	6	E NLU-1200-3U	-FS	+	-BS	+	-SS	+

+ Contact Factory for Pricing

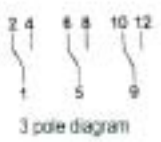
Ratings were requested from UL/CSA. Higher ratings are possible to match IEC.
Name plate is 1-0-2. Many other standard name plates are available at no extra cost. Check with factory.
Example: **DRIVE-OFF-BYPASS**

*Size 4 and 5 plate not available on B *Operator* with safety door interlocks.

BYPASS SWITCH *without* "OFF" position (Change over switch) **Open Type**

To 250 Amp, 600 Volt
400 Amp to 1200 Amp, 1000 Volt

Load Make/Load Break
Positive Opening



					- Suffix			
1- 2 600V 2 POLE	Amps CSA/UL General Purpose	Amps IEC	No. Chambers	Catalog Number	Front Mount	List	Base Mount	List
	25	25	2	E V2N-2UD B1-	-FS	$60	-BS	$65
	35	32	2	E V3N-2UD B3-	-FS	$81	-BS	$87
	50	45	2	E VN32-2UD B3-	-FS	$151	-BS	$198
	60	63	2	E VN50-2UD B4-	-FS	$203	-BS	$210

1- 2 600V 3 POLE	Amps CSA/UL General Purpose	Amps IEC	No. Chambers	Catalog Number	Front Mount	List	Base Mount	List
	25	25	3	E V2N-3UD B1-	-FS	$79	-BS	$98
	35	32	3	E V3N-3UD B3-	-FS	$98	-BS	$104
	50	45	3	E VN32-3UD B3-	-FS	$192	-BS	$198
	60	63	3	E VN50-3UD B4-	-FS	$261	-BS	$269
	100	100	3	E VN80-3UD B4-	-FS	$337	-BS	$345
	100	150	3	EVN125-3UD B5-	-FS	$772	-BS	$801
	200	250	6	E VN200-3UD B5-	-FS	$1310	-BS	$1370

1- 2 690V 3 POLE	Amps IEC	No. Chambers	Catalog Number	Front Mount	List	Base Mount	List
	400	3	E NLU-400 3UD-	-FS	+	-BS	+
	630	3	E NLU-630 3UD-	-FS	+	-BS	+
	800	6	E NLU-800- 3UD-	-FS	+	-BS	+
	1200	6	E NLU-1200- 3UD-	-FS	+	-BS	+

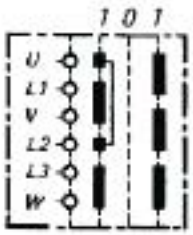
+ Contact factory for pricing

1- 2 600V 4 POLE	Amps CSA/UL General Purpose	Amps IEC	No. Chambers	Catalog Number	Front Mount	List	Base Mount	List
	25	25	4	E V2N-4UD B1-	-FS	$97	-BS	$102
	35	32	4	E V3N-4UD B3-	-FS	$117	-BS	$123
	50	45	4	E VN32-4UD B3-	-FS	$225	-BS	$231
	60	63	4	E VN50-4UD B4-	-FS	$315	-BS	$323
	100	100	4	E VN80-4UD B4-	-FS	$419	-BS	$427
	100	150	4	EVN125-4UD B5-	-FS	$953	-BS	$983
	200	250	4	E VN200-4UD B5-	-FS	$1716	-BS	$1747

SERIES VN HEAVY DUTY REVERSING CAM SWITCHES

REVERSING
3 phase / Single phase
Open and Enclosed

To 100 HP 200 Amp / 600 Volt
400 Amp to 1200 Amp / 1000 Volt
FOR OFF REV



3 Phase Diagram


-FS Open


-S4 Enclosed
T24

REVERSING - MAINTAINED OPERATION

Amps	Max Horse Power						Catalog No.	-Suffix			
UL/CSA General Purpose	1 phase ▲ 120 V	1 phase ▲ 240V	3 phase ▲ 230V	3 phase ▲ 480V	3 phase ▲ 600V	No. of Chambers		Open -FS List	Enclosed -S4 List	-4X List	Enclosed -M65 List
25	1	1	5	7.5	7.5	-	See Series D1	$57	$80 (1)	-	$99 (4)
25	1.5	2	5	10	10	3	E V2N- 3W B.1*	$74	$97 (1)	$124 (3)	$117 (4)
35	2	3	7.5	15	20	3	E V3N- 3W B3-*	$95	$118 (2)	$160 (3)	$138 (4)
50	3	7.5	10	25	20	3	E VN32- 3W B3-*	$171	$207 (2)	$236 (3)	$295 (4)
60	5	10	20	40	30	3	E VN50- 3W B4-*	$245	$296 (2)	$310 (3)	$396 (5)
100	5	15	25	50	50	3	E VN80- 3W B4-*	$315	$435 (2)	$465 (2)	$466 (5)
100	7.5	15	30	60	50	3	E VN125- 3W B5-*	$720	-	$940 (3)	$1205 (5)
200	10	20	40	75	100	3	E NV200- 3W B5-*	$1193	-	-	$1777 (5)

Amp IEC	No. Chambers	Catalog No.	- Suffix Front Mount	List	Base Mount	List
400	3	E NLU 400-3W-	-FS	+	-BS	+
630	3	E NLU 630-3W-	-FS	+	-BS	+
800	6	E NLU 800-3W-	-FS	+	-BS	+
1200	6	E NLU 1200-3W-	-FS	+	-BS	+

+ Contact factory for pricing

Enclosure Notes:

(1) IP65 (4) Metal IP65
(2) IP55 (5) Metal Nema 4 /12
(3) Nema 4X

▲ Reversing Wiring Diagram
Both 1 phase units and 3 phase units are identical, except for addition of one wire jumper A. For factory inclusion of jumper A change catalog number from 3W to 1W. No extra charge.

M65 Metal Enclosed with Molded Drip Shield, size Type D1 or VN2 only.


-S4 Enclosed
T25


-MK2 Enclosed

To supply M65 with **Drip Shield** (per photo) replace M65 with MK2.
K - Ball Handle Design add $4 List
2 - For Drip Shield for sizes D1, V2N add $4 List

P/N Example:
E V2N-3WB1-**M65** $117 List
E V2N-3WB1-**MK2** $125 List

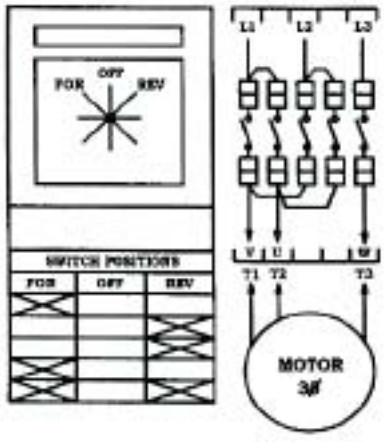
REVERSING Spring Return to Center (FOR-OFF-REV) 3 Phase

Amps	Max Horse Power						Catalog No.	-Suffix			
UL/CSA General Purpose	1 phase ▲ 120 V	240V	3 phase ▲ 230V	480V	600V	No. of Chambers		Open -FS List	Enclosed -S4 List	-4X List	Enclosed -M65 List
25	1	2	5	7.5	7.5	See Series D1	-	$57	$80 (1)	-	$99 (4)
25	1.5	2	5	10	10	3	E V2N- 3WR2 B1-	$74	$97 (1)	$124 (3)	$117 (4)
35	2	3	7.5	15	20	3	E V3N- 3WR2 B3-	$95	$118 (2)	$160 (3)	$138 (4)
50	3	7.5	10	25	20	3	E VN32- 3WR2 B3-	$171	$207 (2)	$236 (3)	$295 (4)
60	5	10	20	40	30	3	E VN50- 3WR2 B4-	$245	$296 (2)	$310 (3)	$396 (5)

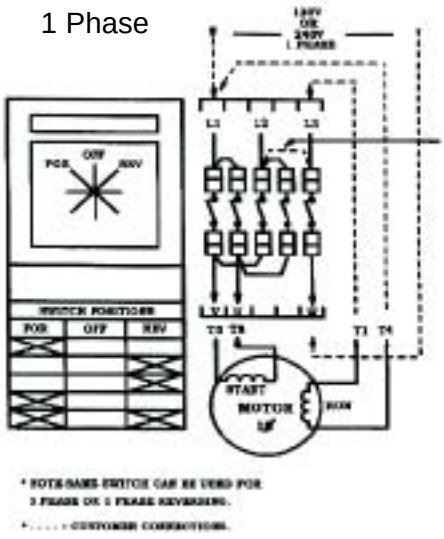
SPRING RETURN from left side only to center is available. In catalog number, replace **"WR2" with "WR1"**

REVERSING WIRING DIAGRAM

3 Phase



1 Phase



Single Phase Jumper

Type "B"

Type "K1" Type "L"

Note: K1, L Type for V2N & V3N only

Handle Options for Reversing Motor Switches

Type VN Operators have "B" handle design as standard. Reversing Units can be supplied with optional handle styles:
"K1" Metal Ball Handle Design add $4 list
or
"L" Plastic Handle Design add $4 list
LR-Red, **LB**-Black

ENCLOSURES IP65

NEMA / IP65

IP65 is for Industrial and Outdoor Applications and is capable of hose test water tightness.

IP65 is used internationally for similar applications as NEMA 4, or 4X.

IP55 Protected against dust. (No harmful deposit) and against water sprayed from a hose from all directions.

1st Digit 6

Complete protection against dust.

2nd Digit 5

Protected against water sprayed from a hose from all directions.

(See IP standard for exact specifications)

TWO SPEED MOTOR SWITCHES / 3 PHASE

TWO SPEED: Constant or Variable Torque

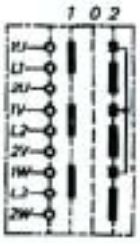
Max. Horse Power 3 Phase				-Suffix Single Winding (1-0-2) (LOW-OFF-HIGH)▲				-Suffix Two Winding (0-1-2) (LOW-OFF-HIGH)▲ ▲			
230V	460V	600V	Catalog No.	Open Front Panel Mount	List	S4 Enclosed	List	Open Front Panel Mount	List	S4 Enclosed	List
5	7.5	7.5	***See series D1 catalog***	-	-	-	-	-	-	-	-
5	10	10	E V2N-P2T B1-*	-FS	$97	-S4	$120	-	-	-	-
5	10	10	E V2N-PP1T B1-*	-	-	-	-	-FS	$80	-S4	$103
7.5	15	20	E V3N-P2T B3-*	-FS	$117	-S4	$140	-	-	-	-
7.5	15	20	E V3N-PP1T B3-*	-	-	-	-	-FS	$99	-S4	$122
10	25	20	E VN32-P2T B3-*	-FS	$225	-S4	$261	-	-	-	-
10	25	20	E VN32-PP1T B3-*	-	-	-	-	-FS	$192	-S4	$228
20	40	30	E VN50-P2T B4-*	-FS	$315	-S4	$366	-	-	-	-
20	40	30	E VN50-PP1T B4-*	-	-	-	-	-FS	$261	-S4	$312
25	50	50	E VN80-P2T B4-*	-FS	$419	-S4	$539	-	-	-	-
25	50	50	E VN80-PP1T B4-*	-	-	-	-	-FS	$337	-S4	$457

TWO SPEED: Constant or Variable Torque

For Constant Horse Power, use same part number as above, except change T to H (for constant HP).

Example: Constant torque #E V2N-P2T-
Constant H.P. #E V2N-P2H-
Price does not change.

CONNECTION DIAGRAMS



▲ 2 Speed, 1 Winding (LOW-OFF-HIGH)

▲▲ 2 Speed, 2 Winding (OFF-LOW-HIGH)

Type S4 Enclosed

M65 Metal Enclosures and NEMA 4X Enclosures are also available, similar to reversing units.

OTHER TWO SPEED CAM SWITCH OPTIONS

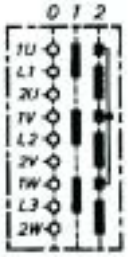
Two Speed Reversing

TWO SPEED: 3 PHASE - CONNECTION DIAGRAMS

For **SINGLE WINDING MOTORS** (2 speed)

VN-P11▲
1-0-2
(LOW-OFF-HIGH)

VN-P1
0-1-2
(OFF-LOW-HIGH)



VN-PJ
0-1-2
(OFF-LOW-HIGH)

with “J” contact for contactor pick up (see circuit)

VN-WP
2-1-0-1-2
REVERSING
2 Speed

FORWARD HIGH-LOW | OFF | **REVERSE** LOW-HIGH

For **TWO WINDING MOTORS** (2 speed)

VN-P11
1-0-2
(LOW-OFF-HIGH)

VN-PP1▲▲
0-1-2
(OFF-LOW-HIGH)

VN-PPJ
0-1-2
(OFF-LOW-HIGH)

with “J” contact for contactor pick up (see circuit)

THREE SPEED 3 PHASE 1-75HP Selection

VN-P31
0-1-2-3

Circuit P31 is for motor with 1st and 2nd speed single winding and 3rd speed separate winding. Other motor winding versions are also available.

(▲) (▲ ▲) *Part Number and prices for these specific units are on previous page.*

SERIES VN HEAVY DUTY OFF-ON CAM SWITCHES

OFF - ON SWITCH ▲

Load Make/Load Break **Open Type**
Positive Opening

25 Amp to 250 Amp, 600 Volt
400 Amp to 1200 Amp, 690 Volt


4 Pole Diagram

1 Pole (0-1) Available to 1200 Amp.
(Check with factory)

2 Pole (0-1) 45º Switch Angle 600 Volt

Amps CSA/UL General Purpose	Amps IEC	No. Chambers	Catalog Number	- Suffix Front Mount	List	Base Mount	List	Safety Door Interlock	List
25	25	1	E V2N-2B1-	-FS	$51	-BS	$56	-SS	$71
35	32	1	E V3N-2B3-	-FS	$66	-BS	$72	-SS	$86
50	45	1	E VN32-2B3-	-FS	$106	-BS	$112	-SS	$128
60	63	1	E VN50-2B4-	-FS	$167	-BS	$175	-SS	$189

3 Pole (0-1) 45º Switch Angle ▲ 600 Volt

Amps CSA/UL General Purpose	Amps IEC	No. Chambers	Catalog Number	- Suffix Front Mount	List	Base Mount	List	Safety Door Interlock	List
25	25	2	E V2N-3B1-	-FS	$57	-BS	$62	-SS	$77
35	32	2	E V3N-3B3-	-FS	$74	-BS	$80	-SS	$94
50	45	2	E VN32-3B3-	-FS	$128	-BS	$134	-SS	$150
60	63	2	E VN50-3B4-	-FS	$187	-BS	$195	-SS	$209
100	100	2	E VN80-3B4-	-FS	$214	-BS	$221	-SS	$241
100	150	2	EVN125-3B5-	-FS	$546	-BS	$575	-SS	$606
200	250	4	E VN200-3B5-	-FS	$894	-BS	$923	-SS	$954

3 Pole (0-1) 400 Amp to 1200 Amp 690 Volt

Amps IEC	No. Chambers	Catalog Number	- Suffix Front Mount	List	Base Mount	List	Safety Door Interlock	List
400	2	E NL-400-3-	-FS	+	-BS	+	-SS	+
630	2	E NL-600-3-	-FS	+	-BS	+	-SS	+
800	3	E NL-800-3-	-FS	+	-BS	+	-SS	+
1200	3	E NL-1200-3-	-FS	+	-BS	+	-SS	+

+ Contact factory for pricing

Standard Handle

Operator Handle Options

Handle Options

For different handle options, replace "B" in part # with:
"D" for 3 padlock red/yellow handle. Add $16 list
"BE" for 1 padlock red/yellow handle. Add $ 9 list
P/N Example:
E V3N-3B3-FS becomes E V3N-3BE-FS. $81 list

Operators Only	List
E B-*	$ 7
E BE-RG-*	$16
E D-RG-*	$23

**Select Switch size:*

Switch Size:	*
V2N	S1
V3N, VN32	S3
VN50, VN80	S4
VN125, VN200	S5

▲ SEE SERIES D SWITCHES for "ON-OFF" straight through wiring and ***LOWER COST***.

Example: E V2N-3B1-FS $57 List E VN200-3B5-FS $894
25 Amp E D1-3BE1-FM-SI $45 List **250 Amp** E D7-3D 5FM-RG $717

SERIES VN HEAVY DUTY OFF-ON CAM SWITCHES

OFF - ON SWITCH Open Type

25 Amp to 1200 Amp, 600 Volt
400 Amp to 1200 Amp, 690 Volt

4 Pole (0-1) 45º Switch Angle ▲ 600 Volt

Amps CSA/UL General Purpose	Amps IEC	No. Chambers	Catalog Number	- Suffix Front Mount	List	Base Mount	List	Safety Door Interlock	List
25	25	2	E V2N-4B1-	-FS	$70	-BS	$75	-SS	$90
35	32	2	E V3N-4B3-	-FS	$82	-BS	$88	-SS	$102
50	45	2	E VN32-4B3-	-FS	$150	-BS	$156	-SS	$172
60	63	2	E VN50-4B4-	-FS	$207	-BS	$215	-SS	$229
100	100	2	E VN80-4B4-	-FS	$270	-BS	$278	-SS	$297
100	150	2	EVN125-4B5-	-FS	$611	-BS	$671	-SS	$688
200	250	4	E VN200-4B5-	-FS	$1054	-BS	$1084	-SS	$1114

4 Pole (0-1) 400 Amp to 1200 Amp 690 Volt

Amps IEC	No. Chambers	Catalog Number	- Suffix Front Mount	List	Base Mount	List	Safety Door Interlock	List
400	2	E NL400-4-	-FS	+	-BS	+	-SS	+
630	2	E NL630-4-	-FS	+	-BS	+	-SS	+
800	4	E NL800-4-	-FS	+	-BS	+	-SS	+
1200	4	E NL1200-4-	-FS	+	-BS	+	-SS	+

6 Pole (0-1) 45º Switch Angle ▲ 600 Volt

Amps CSA/UL General Purpose	Amps IEC	No. Chambers	Catalog Number	- Suffix Front Mount	List	Base Mount	List	Safety Door Interlock	List
25	25	3	E V2N-6B1-	-FS	$133	-BS	$138	-SS	$153
35	32	3	E V3N-6B3-	-FS	$155	-BS	$160	-SS	$175
50	45	3	E VN32-6B3-	-FS	$194	-BS	$200	-SS	$216
60	63	3	E VN50-6B4-	-FS	$251	-BS	$259	-SS	$273
100	100	3	E VN80-6B4-	-FS	$382	-BS	$390	-SS	$409
100	150	3	EVN125-6B5-	-FS	$741	-BS	$801	-SS	$818
200	250	6	E VN200-6B5-	-FS	$1374	-BS	$1404	-SS	$1434

6 Pole (0-1) 400 Amp to 1200 Amp 690 Volt

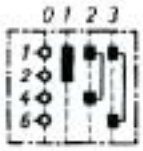
Amps IEC	No. Chambers	Catalog Number	- Suffix Front Mount	List	Base Mount	List	Safety Door Interlock	List
400	3	E NL400-6-	-FS	+	-BS	+	-SS	+
630	3	E NL630-6-	-FS	+	-BS	+	-SS	+
800	6	E NL800-6-	-FS	+	-BS	+	-SS	+
1200	6	E NL1200-6-	-FS	+	-BS	+	-SS	+

+ Contact factory for pricing

Ratings were requested from UL/CSA. Higher ratings are possible to match IEC ratings.
Name plate is "OFF-ON". Many other standard name plates are available at no extra cost. Check with factory.
For 25 Amp to 1200 Amp bypass cam switches *(see following pages)*

STEP SWITCH *with* "OFF" position
OPEN TYPE FRONT PANEL MOUNT

Typical 3 Step 0-1-2-3



Front Panel Mount

Base Mount Option*

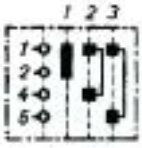
Circuit	No. Steps	No. Chambers	Amp*	Catalog No.	List
0-1-2	2	1	**25**	E V2N S02 B1-FS	$52
0-1-2-3	3	2	**25**	E V2N S03 B1-FS	$60
0-1-2-3-4	4	2	**25**	E V2N S04 B1-FS	$71
0-1-2-3-4-5	5	3	**25**	E V2N S05 B1-FS	$81
0-1-2-3-4-5-6	6	3	**25**	E V2N S06 B1-FS	$90
0-1-2-3-4-5-6-7	7	4	**25**	E V2N S07 B1-FS	$93
0-1-2-3-4-5-6-7-8	8	4	**25**	E V2N S08 B1-FS	$101

Amp*	Catalog No.	List
35	E V3N S02 B3-FS	$65
35	E V3N S03 B3-FS	$73
35	E V3N S04 B3-FS	$87
35	E V3N S05 B3-FS	$95
35	E V3N S06 B3-FS	$109
35	E V3N S07 B3-FS	$114
35	E V3N S08 B3-FS	$132

Switching Angle: 45º, 8 step is 30º. Switches are available to 12 steps and to 63 Amp. Multiple pole step switches are also available.

STEP SWITCH *without* "OFF" position
OPEN TYPE FRONT PANEL MOUNT

Typical 3 Step 0-1-2-3



Front Panel Mount

Base Mount Option*

Circuit	No. Steps	No. Chambers	Amp*	Catalog No.	List
1-2	2	1	**25**	E V2N S2 B1-FS	$51
1-2-3	3	2	**25**	E V2N S3 B1-FS	$60
1-2-3-4	4	2	**25**	E V2N S4 B1-FS	$70
1-2-3-4-5	5	3	**25**	E V2N S5 B1-FS	$81
1-2-3-4-5-6	6	3	**25**	E V2N S6 B1-FS	$87
1-2-3-4-5-6-7	7	4	**25**	E V2N S7 B1-FS	$94
1-2-3-4-5-6-7-8	8	4	**25**	E V2N S8 B1-FS	$97

Amp*	Catalog No.	List
35	E V3N S2 B3-FS	$65
35	E V3N S3 B3-FS	$73
35	E V3N S4 B3-FS	$83
35	E V3N S5 B3-FS	$95
35	E V3N S6 B3-FS	$101
35	E V3N S7 B3-FS	$114
35	E V3N S8 B3-FS	$125

ENCLOSED STEP SWITCHES

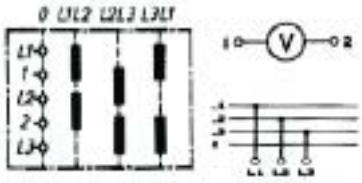
Both Metal and Non Metal Enclosed Switches are available from stock.
*Base Mount (BM) Option. Substitute BS for FS in catalog number. Add $5.00 list.

Stock
Single Hole Mount
For catalog number - change FS above to HS
Example: FV3U S2 B3-HS
Add $5.00 to list price

METER SWITCHES (Front Mount)

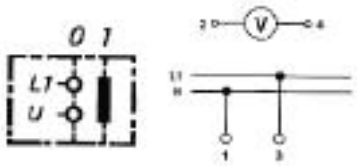
See Bulletin D1 for Series D1 Meter Selections

Voltmeter Switch 3 Phase
(line to line)



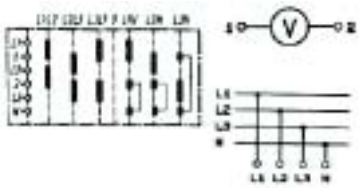
Catalog No.	List	No. Chambers
E D1-2V 1FM-SO	$48	2
E V2N 2V 1-FS	$58	2

Voltmeter Switch 1 Phase



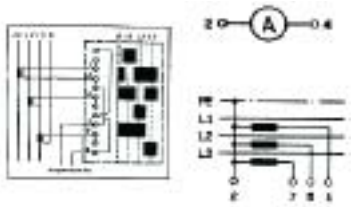
Catalog No.	List	No. Chambers
ED 1V 1FM-SO	$32	1
E V2N 1V1-FS (25 Amp)	$58	2

Voltmeter Switch 3 Phase
(line to line plus line to neutral)



Catalog No.	List	No. Chambers
E D1-3V 1FM-SO	$80	4
E V2N 3V 1-FS	$82	4

Ammeter Switch 3 Phase
(3 circuits with 3 current transformers)



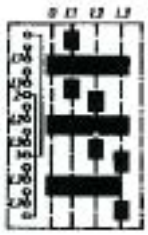
Catalog No.	List	No. Chambers
E D1-1MA 1FM-SO	$65	3

For Base Mount, substitute **"BS"** for FS in catalog number. Same price.

For Single Hole Mount, (22mm (7/8") substitute "HS" for FS in catalog numbers. Add $5.00 list.

To convert 22mm mount to Full Size, 30.5mm mount, add adapter ring:
P/N# ED-134353 $0.80 list

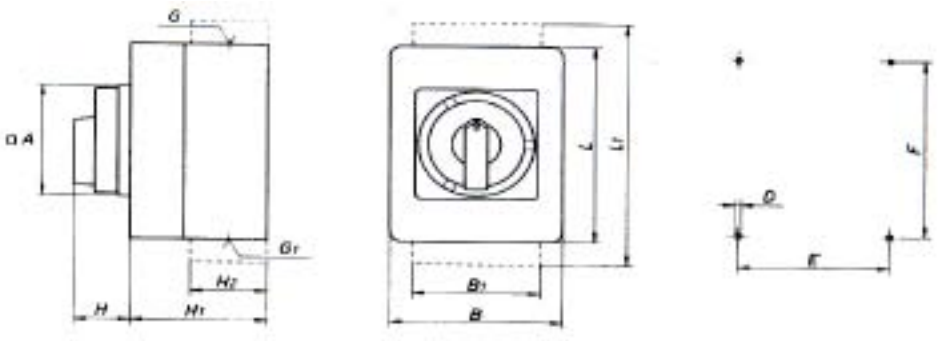
Ammeter Switch 3 Phase
(3 circuits with or without current transformers



Catalog No.	List	No. Chambers
E V2N-MT3-1FM-SI	$104	5

Other Meter Switches are also available, including combination 3 phase ammeter/voltmeter type.

SERIES D1 (Enclosed Type)



Enclosure Dimensions for sizes: D1, V2N, V3N

Enclosure/Type	Max Poles	B	L	HI	A	H	E	F	D	G & GI
G32 (Metal)	6 poles max	91mm 3.58”	97mm 3.82”	72mm 2.83”	43mm 1.69”	26mm 1.02”	79mm 3.11”	83mm 3.27”	5.5mm .22”	2 x 23mm 2 x 2.09” Hole Size
T24 (Non-Metal) Standard Compact	6 poles max	82mm 3.22”	82mm 3.22”	67mm 2.63”	65mm 2.56”	34mm 1.33”	68mm 2.67”	68mm 2.67”	4.5mm .17”	2 x PG16* 2 x 0.84” Hole Size
T25 (Non-Metal) Standard	8 poles max	82mm 3.22”	82mm 3.22”	93mm 3.66”	65mm 2.56”	34mm 1.33”	68mm 2.67”	68mm 2.67”	4.5mm .17”	2 x PG16* 2 x 0.84” Hole Size
T8/1 (Non-Metal)	6 poles max	91mm 3.58”	121mm 4.75”	75mm 2.94”	72mm 2.83”	34mm 1.33”	76mm 2.98”	106mm 4.16”	4.5mm .17”	2 x PG16* 2 x 0.84” Hole Size

Each D1, V2N, V3N chamber section contains 2 poles.

***accepts 7/8” cord grip**

LEGEND PLATE TYPE SI MARKING

Standard markings

Identification	Suffix▲
OFF ON	-N
HAND OFF AUTO	-K
FOR OFF REV	-I
UP OFF DOWN	-J
MANUAL AUTO	-L
HIGH OFF LOW	-P
NORMAL-OFF-BYPASS	-Q

Check with factory for additional standard markings.

▲Type Number of switch must be identified. (for VN Switch or for D switch)

Special Marking Legend add: $6.80 List

PLATE S

Silver with Engraved Black Letters

FACE SIZE	DIMENSIONS
1	1 7/8”x1 7/8” (48mm)
2	2 1/2”x2 1/2” (65mm)
3	2 7/8”x2 7/8” (72mm)
4	3.8” x 3.8” (96mm)
5	4.9” x 4.9” (125mm)

Face size 1 is standard S size on D1 and V2N switches.

Type S plate (silver)
Face Size 3 and 1 for VN

	Disconnect Inscription Plate		List Price			
	Fits above Type BE, BY, D, SI Operator/Plates	Catalog#	48 x 16mm (1.9”x0.6”)		65 x 16mm (2.5”x0.8”)	
Main Switch	**Brush Silver with black letters**	**ED-NP-**	**-S1**	**$5**	**-S2**	**$6**
	Yellow with black letters	ED-NP-	-Y1	$5	-Y2	$6
Main Switch	Black with white letters	ED-NP-	-B1	$5	-B2	$6

MAIN SWITCH

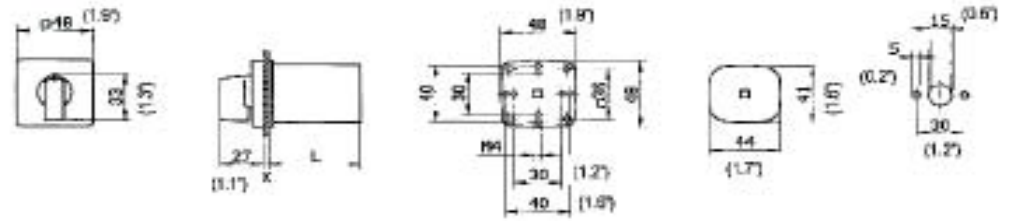
Standard marking add suffix: Main switch (-MS) or Emergency Off (-EO)

For special marking add $6 List
Example: #ED-NP-S1

OPEN TYPE V2N, V3N

mm inches

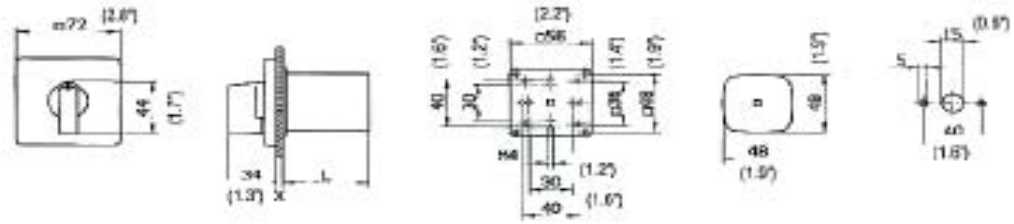
V2N



Front Mount (F)

Type/Type	X max.	Dim	Number of contact chambers										
			1	2	3	4	5	6	7	8	9	10	11
V2N	4	L	33	45	57	69	81	93	105	117	129	141	153
		L	(1.3)	(1.8)	(2.2)	(2.7)	(3.2)	(3.7)	(4.1)	(4.6)	(5.1)	(5.6)	(6.0)

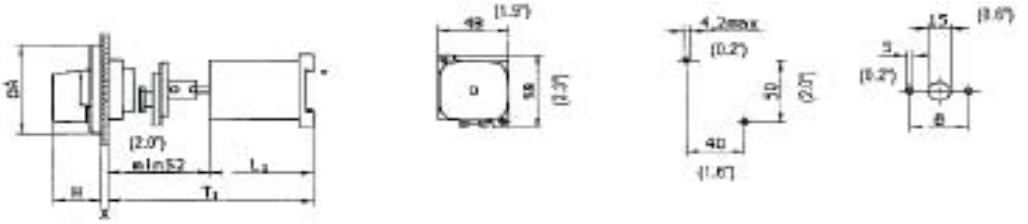
V3N



Front Mount (F)

Type/Type	X max.	Dim	Number of contact chambers										
			1	2	3	4	5	6	7	8	9	10	11
V3N	4	L	34	47	60	73	86	99	112	125	138	151	164
		L	(1.3)	(1.8)	(2.4)	(2.9)	(3.4)	(3.9)	(4.4)	(4.9)	(5.4)	(5.9)	(6.5)

V2N / V3N



With Safety Door Interlock (S)

A	H	B	Xmax	Dim	Number of contact chambers										
					1	2	3	4	5	6	7	8	9	10	11
Type V2N				L_1	39	47	60	73	86	99	112	125	138	151	164
48	27	30	4	L_1	(1.5)	(1.8)	(2.4)	(2.9)	(3.4)	(3.9)	(4.4)	(4.9)	(5.4)	(5.9)	(6.5)
(1.9)	(1.1)	(1.2)	(1.6)	T	100-106	112-118	124-130	136-142	148-154	160-166	172-178	184-190	196-202	208-214	220-226
				T	(3.9)	(4.4)	(4.9)	(5.4)	(5.8)	(6.3)	(6.8)	(7.2)	(7.7)	(8.2)	(8.7)

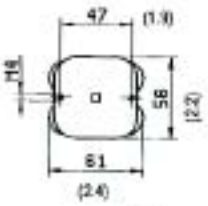
Type V3N				L_1	40	53	66	79	92	105	118	131	144	157	170
48	27	30	4	L_1	(1.6)	(2.1)	(2.6)	(3.1)	(3.6)	(4.1)	(4.6)	(5.2)	(5.7)	(6.2)	(6.7)
(1.9)	(1.1)	(1.2)	(1.6)	T	106-112	118-124	130-136	142-148	154-160	166-172	178-184	190-196	202-208	214-220	226-232
				T	(4.2)	(4.6)	(5.1)	(5.6)	(6.1)	(6.5)	(7.0)	(7.5)	(7.9)	(8.4)	(8.9)

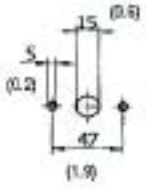
mm inches

FRONT MOUNT

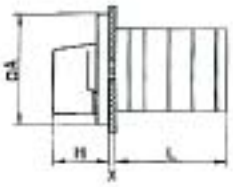
Insert **Front View** **Panel Drilling**

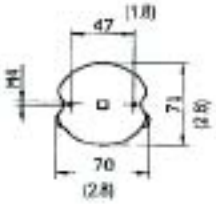
VN 32

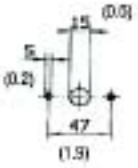




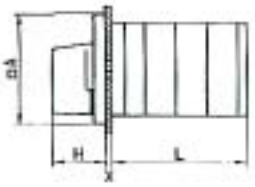
VN 50

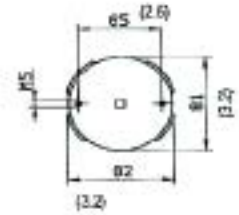


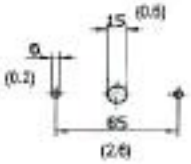




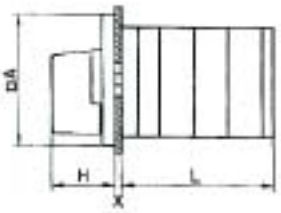
VN 80

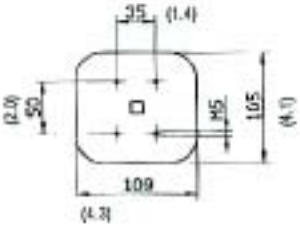


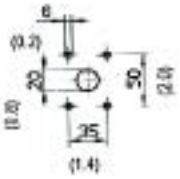




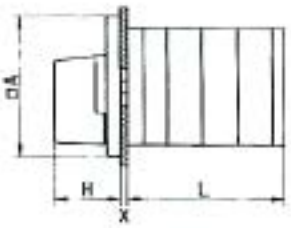
VN 125

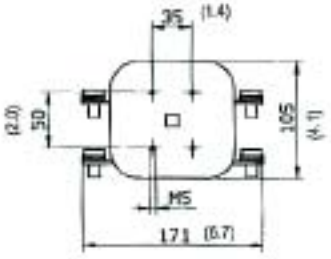


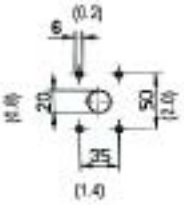




VN 200







					Number of contact chambers										
Type	A	H	X.max	Dim	1	2	3	4	5	6	7	8	9	10	11
VN32	72 (2.8)	34 (1.3)	4(.16)	L	44(1.7)	60(2.4)	76(3.0)	92(3.6)	108(4.3)	124(4.9)	140(4.9)	156(6.1)	172(6.8)	188(7.4)	204(8.0)
VN50	96 (3.8)	44 (1.7)	4(.16)	L	49(1.9)	68(2.7)	86(3.4)	105(4.1)	123(4.8)	142(5.6)	160(6.3)	179(7.0)	197(7.8)	216(8.6)	234(9.2)
VN80	96 (3.8)	44 (1.7)	4(.16)	L	57(2.2)	81(3.2)	105(4.2)	129(5.1)	153(6.0)	177(7.0)	201(7.9)	225(8.9)	249(9.8)	273(10.7)	297(11.7)
VN125	125 (4.9)	60 (2.4)	4(.16)	L	77(3.0)	108(4.3)	139(5.5)	170(6.7)	201(7.9)	232(9.1)	263(10.4)	294(9.8)	325(12.8)	356(14.0)	387(15.2)
VN200	125 (4.9)	60 (2.4)	4(.16)	L	77(3.0)	108(4.3)	139(5.5)	170(6.7)	201(7.9)	232(9.1)	263(10.4)	294(9.8)	325(12.8)	356(14.0)	387(15.2)

Request dimension sheets from factory for other styles.

Utilization categories for alternating current switches as defined in IEC 947 (EN 60947) regulations		Test Load on the Switch Current				
Utilization category	Examples of typical application	Normal operation make	break	Inrush Tests make	break	Cos
AC-21	Non inductive or slightly inductive loads, resistance furnace	I_e	I_e	1.5 I_e	1.5 I_e	0.95
AC-2	Slipping motor starting without reversing, without reverse current braking	2 I_e	2 I_e	4 I_e	4 I_e	0.65
AC-22	On-Off switching of inductive loads	I_e	I_e	3 I_e	3 I_e	0.65
	cos	0.8	0.8			
AC-3	Direct line starting of squirrel cage motors, switching off while running	2 I_e	2 I_e	10 I_e	8 I_e	(3)
AC-23	Switching of motors (Main Switch)	I_e	I_e	10 I_e	8 I_e	(3)
	cos	0.65	0.65			
AC-4	Direct line starting of squirrel cage motors (2)	6 I_e	6 I_e	12 I_e	10 I_e	(3)
AC-15	Control switching for switching magnetics devices contactors, valves, pull-type magnets	10 I_e	I_e	10 I_e	10 I_e	0.3

I_e = Rated operating current

(2) Inching (jogging) or energizing a motor for short periods of time to obtain small increments of movement. Plugging-stopping or reversing the motor rapidly by reversing motor primary connections while the motor is running.

(3) I_e ≤100A cos 0.45; I_e ≥ 100A cos 0.35

CATALOG NUMBER CODE VN SERIES

EXAMPLE:

E V2N - 3 B 3 F - R

- **E** — An Elektra Product
- **V2N** — Type and Size Switch
- **3** — 3 pole “ON-OFF” Type Circuit Example: “W” is reversing
- **B** — Type Operator: Handle **“B”** Black Knob
- **3** — Name Plate Face Size Size **1** to **5**
- **F** — **S**-Safety Door Interlock; **F** - Front Mount; **B** - Base Mount; **H** - Single Hole Mount
- **R** — **R**-Red Operator Handle; **D**-Black “D” Handle; **S**-Silver Black NP with “B” Knob

UL/CSA Rating

Switch Size			V2N	V3N	VN32	VN50	VN80	VN125	VN200
Canada/USA		V•	600	600	600	600	600	600	600
General Use	600V ac max. 3 phase	A	25	35	50	60	100	100	200
Motor 3 phase	240 V	hp	5	7.5	10	20	25	30	40
	480 V	hp	10	15	25	40	50	60	75
	600 V	hp	10	20	20	30	50	50	100
Single phase	120 V	hp	2	2	3	5	5	7.5	10
	240 V	hp	2	3	7.5	10	15	15	20

Note: Above UL/CSA ratings are as submitted to UL.

(1) **only CSA tested**

International Rating

Switch Size			V2N	V3N	VN32	VN50	VN80	VN125	VN200
Rated insulating voltage IEC 947 (111/3)		v•	690	690	690	690	690	690	690
Rated Impulse voltage IEC 947 (111/3)		KV	6	6	6	6	6	6	6
Thermal rated current open with max. wire cross section (without connections)	I_{th}	A	25	32	63	80	115	150	250
Connectable cross sections single resp. multi-strand		mm^2	0.75-4	1-6	2.5-10	2.5-16	4-35	16-50(1)	35-120(1)
Fine wire with core end bush (DIN 46 228)		mm^2	0.75-2.5	0.75-4	1.5-6	2.5-10	2.5-25	-	-
Terminal Screws			M4	M4	M5	M5	2xM4	M8	M10
Short-circuit protection, fusable cut out	gL or aM	A max.	25	35	63	80	125	160	250
Properties of main switches									
Requirements for isolators compiled with up to		v•	• 690	• 690	• 690	• 690	• 690	• 690	• 690
Clear indication of switching position									
Switching capacity under alternating voltage conditions									
AC-21									
Load break switches									
Rated operating current	I_e	A	25	32	50	63	115	150	250
Rated operating voltage	U_e	v•	690	690	690	690	690	690	690
AC-23	220...240V, 3•	kW	5.5	7.5	11	22	30	45	55
Motor switches (main switches)	380...440V, 3•	kW	11	15	22	30	55	75	90
	500V, 3•	kW	-	-	18.5	30	45	90	110
	660...690V(2) 3,•	kW	-	-	18.5	22	30	45	45
AC-3	220...240V, 3•	kW	4	7.5	7.5	11	22	30	37
Motor switches for operational switching	380...440V, 3•	kW	7.5	11	15	22	37	55	65
	500V, 3•	kW	7.5	11	18.5	30	45	75	90
	660...690V(2) 3,•	kW	11	15	18.5	22	30	45	45
AC-4	220...240V, 3•	kW	1.1	2.2	2.2	3	4	7.5	11
Motor switches inching counter current breaking	380...440V, 3•	kW	2.2	3	5.5	7.5	11	18.5	22
	500V, 3•	kW	2.2	3	5.5	7.5	15	22	30
	660...690V(2) 3,•	kW	3	4	5.5	7.5	7.5	15	15
AC-15 Control switches	Ie at 220-240/380-440/500V	A	6/4/-	9/6/-	16/8/7	-	-	-	-

(1) **with DIN cable lug**
(2) **Rated mains voltage DIN IEC 38**