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USAVAC - LOW VOLTAGE

AC Vacuum Contactors

A

- UL listed to 1500V
- CSA Certified to 1500V
- CE
- Three Ratings
- One Small Size

CV Series
NEMA Size 4 V200
IEC 200A



600V NEMA Size 4 135A

600Volt Nema Size 4 135A Contactor 3 Pole Nema ICS-2 UL508 CSA 22.2

Rating Nema Size 4	Maximum Horsepower KW Rating 3 Phase HP/KW				Open Type
600V	200V	230V	460V	575V	Catalog #
HP/KW	40/30	50/37	100/75	100/75	CV77U030406-*

660Volt 200AMP Contactor 3 Pole IEC 947-4-1 UL508 CSA 22.2

Rating 200A	Maximum Horsepower/KW Rating 3 Phase HP/KW								Open Type
1000V	200/208V	220/240V	380/400V	415/440V	460V	500V	575/600V	660-690V	Catalog #
HP/KW	50/37	75/59	100/75	125/95	150/110	190/140	200/150	250/185	CV77U032006-*

1500Volt 200AMP Contactor 3 Pole IEC 947-4-1 (1000V) UL508 (1500V) CSA 22.2 (1500V)

Rating 200A Nema V200	Maximum Horsepower/KW Rating 3 Phase HP/KW							Open Type
1500V	200/208V	220/240V	400V	460V	575/600V	1000V	1500V	Catalog #
HP/KW	50/37	75/59	125/95	150/110	175/130	300/225	500/370	CV77U031615

Options Discount (Schedule JC11) Field Kits

Description	Catalog #
Lug Kit #6 to 250mcm 3 Per Kit	KVC4-2
Aux. Contact Kit 2N/O 2N/C 10A 600VAC	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-457211A
Coil 110/120V 50/60 HZ	A77-460915A-1
Coil 220/240V 50/60 HZ	A77-460915A-2
Coil 380/415V 50/60 HZ	A77-460915A-3
Coil 440/480V 50/60 HZ	A77-460915A-4
Coil 125V DC	A77-460915A-5
Coil 250V DC	A77-460915A-6
Control PAK 110/120 50/60 HZ	A77-460916A-1
Control PAK 220/240 50/60 HZ	A77-460916A-2
Control PAK 380-415V 50/60 HZ	A77-460916A-3
440-480V 50/60 HZ	
Aux. Contact Kit 2N/O 1N/C +1 N/C	AKStd. Late Break

Ordering Information

* Coil Table

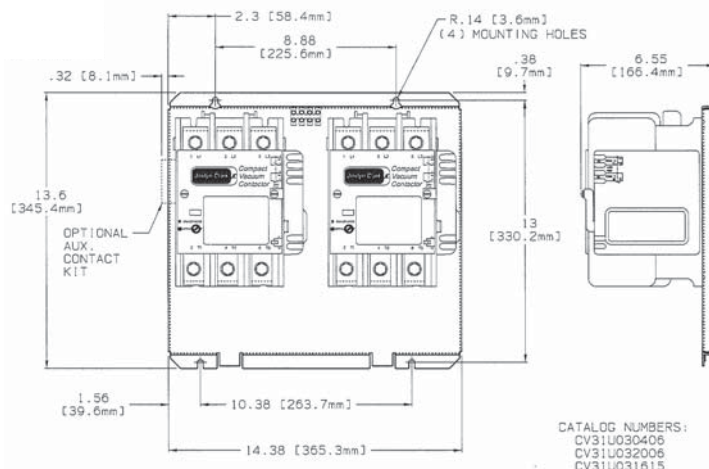
- Use complete catalog number when ordering.
- Replace the (*) with the suffix from the coil table.
- Engineering Data page A7.
- Renewal Parts page A2.

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

USAVAC - LOW VOLTAGE

AC Mechanical Interlocked Vacuum Contactors Unwired

- UL listed to 1500V
- CSA Certified to 1500V
- CE
- NEMA Size 4 & V 200 1500V
- IEC 200A
- Three Ratings
- One Small Size
- Use for Reversers, Reduced Voltage Auto Transformer, Wye-Delta, 2 speed single winding, or 2 speed 2 winding applications



3 Pole Nema Rated ICS-2 UL508 CSA 22.2 Size 4 Mechanically Interlocked Pair Unwired 600V 135A Contactor

Rating Nema Size 4	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200V	230V	460V	575V	Catalog #
HP/KW	40/30	50/37	100/75	100/75	CV31U030406-*43

3 Pole IEC947-4-1 UL508 CSA 22.2 Mechanically Interlocked Pair Unwired 660V 200A

Rating 200A	Maximum Horsepower/KW Rating 3 Phase					Open Type
1000V	200/208V	220/240V	380/415V	460V	575/660V	Catalog #
HP/KW	50/37	75/59	100/75	150/110	200/150	CV31U032006-*43

3 Pole Nema Rated ICS-29 IEC947.4.1 (1000V) UL508 1500V CSA 22.2 Mechanically Interlocked Pair Unwired 1500V 200A Contactor

Rating 200A Nema V200	Maximum Horsepower/KW Rating 3 Phase							Open Type
1500V	200/208V	220/240V	380/415V	460V	575/660V	1000V	1500V	Catalog #
HP/KW	50/37	80/59	100/75	150/110	200/150	300/225	500/370	CV31U031615-*43

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-457211A
Coil 110/120V 50/60 HZ	A77-460915A-1
Coil 220/240V 50/60 HZ	A77-460915A-2
Coil 380/415V 50/60 HZ	A77-460915A-3
Coil 440/480V 50/60 HZ	A77-460915A-4
Coil 125V DC	A77-460915A-5
Coil 250V DC	A77-460915A-6
Control PAK 110/120 50/60 HZ	A77-460916A-1
Control PAK 220/240 50/60 HZ	A77-460916A-2
Control PAK 380-415V 50/60 HZ 440-480V 50/60 HZ	A77-460916A-3
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

Options Discount (Schedule JC11)

Description	Catalog #
Lug Kit #6 to 250mcm 3 Per Kit	KVC4-2
Aux. Contact Kit 2N/O 2N/C 10A 600V ac	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5V dc	AK3

Plug Stop Jogging Duty

Nema Size	200V	230V	400V	460V	575V
4	25HP	30HP	50HP	60HP	—
V200	40HP	60HP	75HP	100HP	125HP

Ordering Information

* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A7.
- Renewal Parts page A3.

Voltage Suffix
120 AC -76
240 AC -26
380 AC -38
460 AC -46
125V DC -125
250V DC -250

USAVAC - LOW VOLTAGE

AC Reversing Vacuum Contactors Wired

A

3 Pole Nema Rated ICS-2 UL508 CSA 22.2 Size 4
Mechanically Interlocked Pair Wired 600V

135A Contactor

Rating Nema Size 4	Maximum Horsepower/KW Rating 3 Phase HP/KW					Open Type
600V	200V	230V	460V	575V		Catalog #
HP/KW	40/30	50/37	100/75	100/75		CV31U030406-*

- UL listed to 1500V
- CSA Certified to 1500V
- CE
- Three Ratings
- One Small Size
- CV Series Nema Size 4 & V200
- IEC 200A

3 Pole IEC947-4-1 UL508 CSA 22.2

Mechanically Interlocked Pair Wired 660V

200A

Rating 200A	Maximum Horsepower/KW Rating 3 Phase					Open Type
1000V	200/208V	220/240V	380/415V	460V	575/660V	Catalog #
HP/KW	50/37	75/59	100/75	150/110	200/150	CV31U032006-*

WIRED CONTACTORS

3 Pole Nema Rated ICS-29 IEC947 4.1 (1000V) UL508 1500V CSA 22.2
Mechanically Interlocked Pair Wired 1500V

200A Contactor

Rating 200A Nema V200	Maximum Horsepower/KW Rating 3 Phase							Open Type
1500V	200/208V	220/240V	380/415V	460V	575/660V	1000V	1500V	Catalog #
HP/KW	50/37	80/59	100/75	150/110	200/150	300/225	500/370	CV31U034616-*

NOT AVAILABLE,
SEE PAGE A4 FOR

MECHANICALLY INTERLOCKED UNITS OR CALL FACTORY

Options Discount (Schedule JC11)

Description	Catalog #
Lug Kit #6 to 250mm ² Per Kit	KVC4-2
Aux. Contact Kit 2N/O 2N/C 10A 600V ac	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5V dc	AK3

Plug Stop Jogging Duty

Nema Size	200V	230V	400V	460V	575V
4	25HP	30HP	50HP	60HP	—
V200	40HP	60HP	75HP	100HP	125HP

Ordering Information

* Coil Table

- Use complete catalog number when ordering.
- Replace the (*) with the suffix from the coil table.
- Engineering Data page A7.
- Renewal Parts page A4.

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

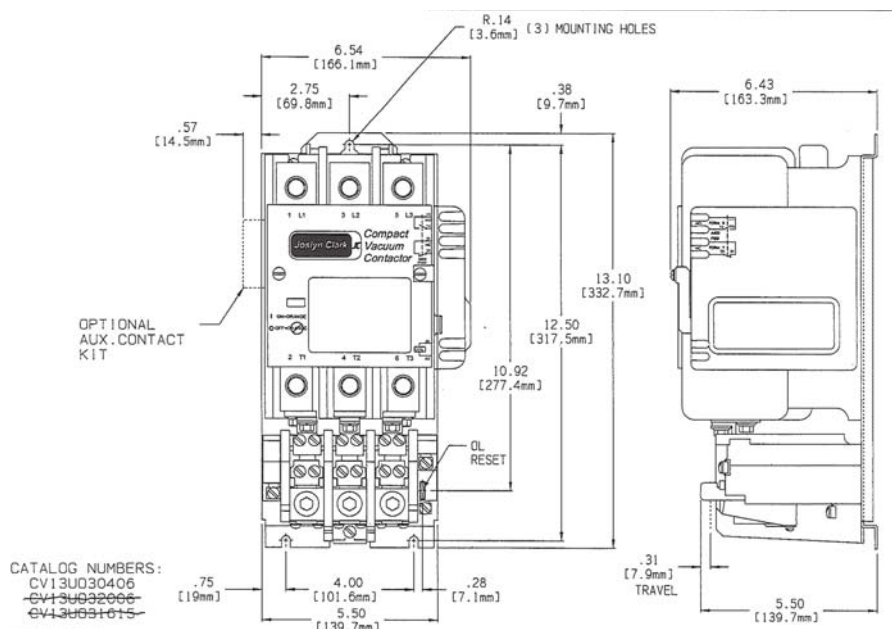
Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-457211A
Coil 110/120V 50/60 HZ	A77-460915A-1
Coil 220/240V 50/60 HZ	A77-460915A-2
Coil 380/415V 50/60 HZ	A77-460915A-3
Coil 440/480V 50/60 HZ	A77-460915A-4
Coil 125V DC	A77-460915A-5
Coil 250V DC	A77-460915A-6
Control PAK 110/120 50/60 HZ	A77-460916A-1
Control PAK 220/240 50/60 HZ	A77-460916A-2
Control PAK 380-415V 50/60 HZ 440-480V 50/60 HZ	A77-460916A-3
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

USAVAC LOW VOLTAGE

AC Vacuum Starters

A



CV Series
NEMA Size 4 V200A
IEC 200A

- UL listed to 1500V
- CSA Certified to 1500V
- CE
- Three Ratings
- One Small Size

600VOLT NEMA SIZE 4 135A STARTER 3 POLE NEMA ICS-2 UL508 CSA 22.2

Rating Nema Size 4	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200V	230V	460V	575V	Catalog #
HP/KW	40/30	50/37	100/75	100/75	CV13U030406-*

660Volt 200AMP Starter 3 Pole IEC 947-4-1 UL508 CSA 22.2

Rating 200A	Maximum Horsepower/KW Rating 3 Phase HP/KW								Open Type
660V	200/208V	220/240V	380/400V	415/440V	460V	500V	575/600V	660-690V	Catalog #
HP/KW	50/37	75/59	100/75	125/95	150/110	190/140	200/150	250/185	CV13U032006-*

1500Volt 200 AMP Starter 3 Pole IEC 947-4-1 (1000V) UL508 (1500V) CSA 22.2 (1500V)

Rating 200A Nema V200	Maximum Horsepower/KW Rating 3 Phase HP/KW							Open Type
1500V	200/208V	220/240V	400V	460V	575/600V	1000V	1500V	Catalog #
HP/KW	50/37	75/59	125/95	150/110	175/130	300/225	500/370	CV13U031615-*

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-457211A
Coil 110/120V 50/60 HZ	A77-460915A-1
Coil 220/240V 50/60 HZ	A77-460915A-2
Coil 380/415V 50/60 HZ	A77-460915A-3
Coil 440/480V 50/60 HZ	A77-460915A-4
Coil 125V DC	A77-460915A-5
Coil 250V DC	A77-460915A-6
Control PAK 110/120 50/60 HZ	A77-460916A-1
Control PAK 220/240 50/60 HZ	A77-460916A-2
Control PAK 380-415V 50/60 HZ 440-480V 50/60 HZ	A77-460916A-3
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

Options Discount (Schedule JC11) Field Kits

Description	Catalog #
Lug Kit #6 to 250mcm 3 Per Kit	KVC4-2
Aux. Contact Kit 2N/O 2N/C 10A 600VA	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Ordering Information

* Coil Table

- Use complete catalog number when ordering.
Replace the (*) with the suffix from the coil table.
- Engineering Data page A7.
- Renewal Parts page A5.

Voltage	Suffix
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	250

USAVAC - LOW VOLTAGE

AC Reversing Vacuum Starters

A

CV Series
NEMA Size 4
IEC 200A

- UL listed to 1500V
- CSA Certified to 1500V
- CE
- Three Ratings
- One Small Size
- CV Series Nema Size 4 & V200
- IEC 200A

3 Pole Nema Rated ICS-2 UL508 CSA 22.2 Size 4
Mechanically Interlocked Pair Wired 600V

135A Starter

Rating Nema Size 4	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200V	230V	460V	575V	Catalog #
HP/KW	40/30	50/37	100/75	100/75	CV30U030406-*

3 Pole IEC947-4-1 UL508 CSA 22.2

Mechanically Interlocked Pair Wired 660V

200A Starter

Rating 200A	Maximum Horsepower/KW Rating 3 Phase					Open Type
1000V	200/208V	220/240V	380/415V	460V	575/660V	Catalog #
HP/KW	50/37	75/59	100/75	150/110	200/150	CV30U031615*

3 Pole Nema Rated ICS-29 IEC947-4-1 1000V UL508 1500V CSA 22.2

Mechanically Interlocked Pair Wired 600V

200A Starter

Rating 200A Nema V200	Maximum Horsepower/KW Rating 3 Phase							Open Type
1500V	200/208V	220/240V	380/415V	460V	575/660V	1000V	575V	Catalog #
HP/KW	50/37	80/59	100/75	150/110	200/150	300/225	500/370	CV30U031615-*

Options Discount (Schedule JC11)

Description	Catalog #
Lug Kit #6 to 250mcm 3 Per Kit	KVC4-2
Aux. Contact Kit 2N/O 2N/C 10A 600V ac	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5V dc	AK3

Plug Stop Jogging Duty

Nema Size	200V	230V	400V	460V	575V
4	25HP	30HP	50HP	60HP	—
V200	40HP	60HP	75HP	100HP	125HP

Ordering Information

* Coil Table

- Use complete catalog number when ordering.
- Replace the (*) with the suffix from the coil table.
- Engineering Data page A7.
- Renewal Parts page A6.

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-457211A
Coil 110/120V 50/60	A77-460915A-1
Coil 220/240V 50/60	A77-460915A-2
Coil 380/415V 50/60	A77-460915A-3
Coil 440/480V 50/60	A77-460915A-4
Coil 125V DC	A77-460915A-5
Coil 250V DC	A77-460915A-6
Control PAK 110/120 50/60 HZ	A77-460916A-1
Control PAK 220/240 50/60 HZ	A77-460916A-2
Control PAK 380-415V 50/60 HZ 440-480V 50/60 HZ	A77-460916A-3
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

USAVAC - LOW VOLTAGE AC VACUUM CONTACTORS & STARTERS

Engineering Data

A

Description	NEMA Size 4 600V	200 Amp 1000V	200 Amp 1500V
Cat #	CV 77U030406-*	CV 77U032006-*	CV 77U031615-*
Standard	NEMA 1CS-2	IEC 947-4-1	NEMA 1CS9-2 1500V
	UL508 CSA22.2	UL508 CSA22.2	IEC 947-4-1 1000V UL508 CSA22.2 1500V
Power Ratings Enclosed			
Insul. & Operating Volt	600 Volts	1000 Volts	1500 Volts
Rated Oper. AC1	135Amps	200 Amps	200 Amps
Rated Oper. AC3	100 HP 460/575V	250 HP 185KW-660V	500 HP 370KW-1500V
Rated Oper. AC4	60 HP 460/575V	175 HP-130KW-660V	315 HP-235KW-1500V
Rated Frequency	50 - 400 Hz		
Making Current	2000 Amps		
Breaking Current	1600 Amps		
Dielectric Strength	6Kv - 1 Min. Interrupter		
Interrupting Current	2.2 KA		
Short Time Current 1 Sec.	5000 A		
Short Time Current 10 Sec	1600 A		
Mechanical Life	1.2 X 10 ⁶		
Elect. Life AC3 Duty	1 X 10 ⁶		
Switching Frequency	600 / Hour (1 Every 6 Sec)		
Withstand Current	10KA50MSec		
Chop Current Max	0.9 A		
Operating Range	-15% + 10% - at Range Voltage		
Inrush Power VA	1200VA 20 ms Duration		
Holding Power VA	12 VA		
Opening Time MS	120ms		
Closing Time MS	20-40ms		
Pick-Up Voltage	80% Cold 85% Hot or less		
Drop-Out Voltage	70% or less		
Recommended CPT	400VA Machine Tool Transformer 5% Regulation at 20%pf		
Applications Ratings			
Mounting Installation	All Planes (Contactor only)		
Altitude	6600 ft. 2000 Meters		
Ambient Storage	-65°F (-54°C) +160°F (71°C)		
Operating	-40°F (-40°C) +122°F (50°C)		
Vibration / Shock	40Hz - 2G. / 30G.		
Weight	13 lbs. 5.9Kg.		

Motor HP/KW AC3		
Voltage	135A	200A
208	40/30	50/37
220/240	50/37	75/59
380/400	----	100/75
415/440	----	125/93
460	100/75	150/110
500	----	190/140
575/600	100/75	200/150
660/690	----	250/185
1000	----	300/225
1500	----	500/370
Three Phase Transformer Load KVA		
Voltage	135A	200A
208	54	72
220/240	57	55
380/400	99	135
415/440	108	152
460/500	119	173
575/600	130	207
660	171	225
1000	260	346
1500	390	519
Three Phase Capacitor Load KVAR		
Voltage	135A	200A
208	40	54
220/240	43	62
380/400	74	104
415/440	81	114
460	90	127
575/600	115	156
1000	195	260
1500	292	390

Options

- Lug Kit 2/0 250mcm (3 per kit) Cat.# KVC4-2

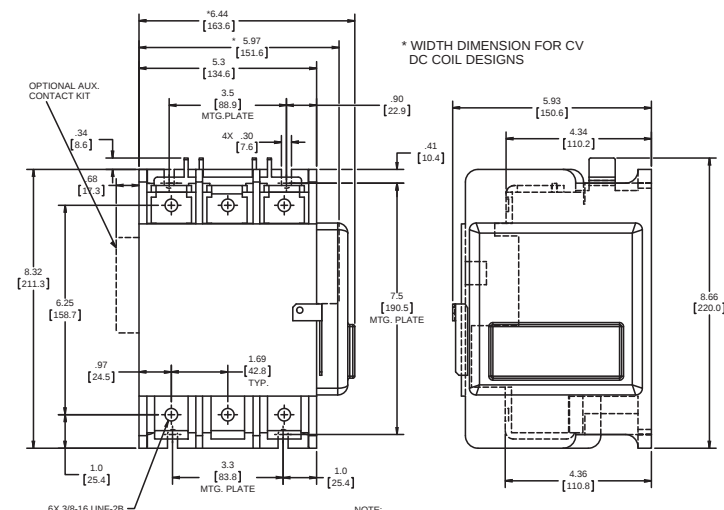
Auxiliary Contact Kits

- 2NO. 2NC 600V. 10A ac. Cat.# AK1
- 2NO. 2NC 5V.10mA dc. Cat.# AK3

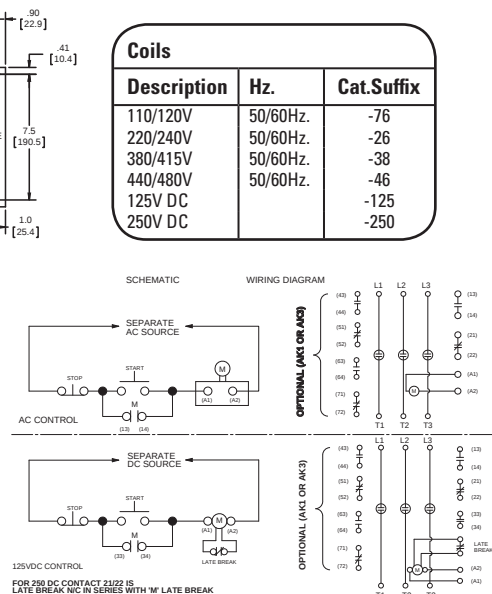
Only 1 Kit can be added for total of 3 N/O 3 N/C contacts (1 N/O 1N/C is standard).

Coils

Description	Hz.	Cat.Suffix
110/120V	50/60Hz.	-76
220/240V	50/60Hz.	-26
380/415V	50/60Hz.	-38
440/480V	50/60Hz.	-46
125V DC		-125
250V DC		-250



For 250V dc contact 21/22 is Late Break N/C in series with 'm' late break



USAVAC - LOW VOLTAGE

AC Vacuum Contactors

A

CV Series
NEMA Size 5
IEC 400A

- UL listed to 1500V
- CSA Certified to 1500V
- CE
- Three Ratings
- One Small Size



600V NEMA Size 5 270A



1000V 400A

600Volt Nema Size 5 270A Contactor 3 Pole Nema ICS-2 UL508 CSA 22.2

Rating Nema Size 5	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200V	230V	460V	575V	Catalog #
HP/KW	75/56	100/75	200/150	200/150	CV77U030506-*

1000Volt 400AMP Contactor 3 Pole IEC 947-4-1 UL508 CSA 22.2

Rating 400A	Maximum Horsepower/KW Rating 3 Phase HP/KW							Open Type
1000V	200/208V	220/240V	380/415V	460V	575/600V	660-690V		Catalog #
HP/KW	100/75	150/112	250/187	300/220	400/300	450/336		CV77U034A06-*

1500V 400AMP Contactor 3 Pole IEC 947-4-1 (1000V) UL508 (1500V) CSA 22.2 (1500V)

Rating 400A	Maximum Horsepower/KW Rating 3 Phase HP/KW								Open Type
1500V	200/208V	220/240V	415/440V	460V	575/600V	660-690V	1000V	1500V	Catalog #
HP/KW	100/75	150/112	250/187	300/220	400/300	500/370	700/520	850/650	CV77U034A15-*
Nema V320	100/70	125/95	200/150	300/220	300/220	-	500/370	900/670	CV77U033V15-*

Options (Discount Schedule JC11) Field Kits

Description	Catalog #
Lug Kit 3 Per Kit #4-500 mcm	KVC5-1
Lug Kit 3 Per Kit (2) #6-300 mcm	KVC5-2
Aux Contact Kit 2N/O 2N/C 10A 600VAC	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Ordering Information

* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A13.
- Renewal Parts page A8.

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

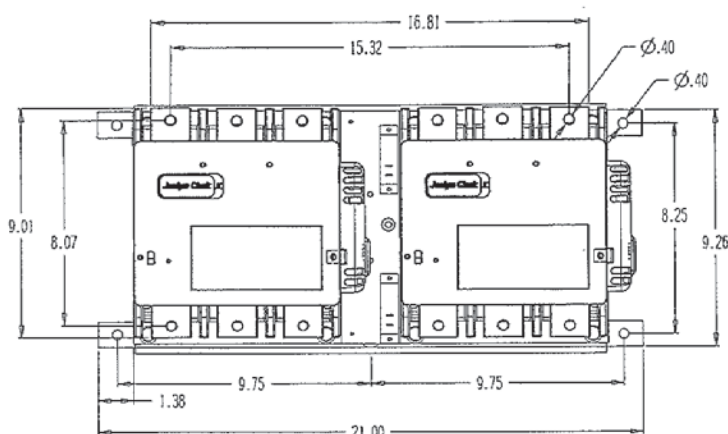
Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-460880A-1
Coil 110/120V 50/60 HZ	A77-460930A-1
Coil 220/240V 50/60 HZ	A77-460930A-2
Coil 380/415V 50/60 HZ	A77-460930A-3
Coil 440/480V 50/60 HZ	A77-460930A-4
Coil 125V DC	A77-460930A-5
Coil 250V DC	A77-460930A-6
Control PAK 110/120 50/60 HZ	A77-460916A-4
Control PAK 220/240 50/60 HZ	A77-460916A-5
Control PAK 380-415V 50/60 HZ	A77-460916A-6
440-480V 50/60 HZ	
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

USAVAC - LOW VOLTAGE

AC Mechanically Interlocked Vacuum Contactors Unwired

- UL listed to 1500V
- CSA Certified to 1500V
- CE
- NEMA Size 5 & V320
- IEC 400A
- Three Ratings
- One Small Size
- Use for Reversers, Reduced Voltage Auto Transformer Starters, Wye-Delta, 2 speed single winding, starter applications



600Volt Nema Size 5 270A Mechanically Interlocked Pair Unwired 3 Pole Nema ICS-2 UL508 CSA 22.2

Rating Nema Size 5	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200V	230V	460V	575V	Catalog #
HP/KW	75/56	100/75	200/150	200/150	CV31U030506-*43

1000Volt 400AMP Mechanically Interlocked Pair Unwired 3 Pole IEC 947-4-1 UL508 CSA 22.2

Rating 400A	Maximum Horsepower/KW Rating 3 Phase HP/KW						Open Type
1000V	200/208V	220/240V	380/415V	460V	575/600V	660-690V	Catalog #
HP/KW	100/75	150/112	250/187	300/220	400/300	450/336	CV31U034A06-*43

1500V 400AMP Mechanically Interlocked Pair Unwired 3 Pole IEC 947-4-1 (1000V) UL508 (1500V) CSA 22.2 (1500V)

Rating 400A	Maximum Horsepower/KW Rating 3 Phase HP/KW								Open Type
1500V	200/208V	220/240V	415/440V	460V	575/600V	660-690V	1000V	1500V	Catalog #
HP/KW	100/75	150/112	250/187	300/220	400/300	500/370	700/520	850/650	CV31U034A15-*43
Nema V320	100/70	125/95	200/150	300/220	300/220	-	500/370	900/670	CV31U03V15-*43

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-460880A-1
Coil 110/120V 50/60 HZ	A77-460930A-1
Coil 220/240V 50/60 HZ	A77-460930A-2
Coil 380/415V 50/60 HZ	A77-460930A-3
Coil 440/480V 50/60 HZ	A77-460930A-4
Coil 125V DC	A77-460930A-5
Coil 250V DC	A77-460930A-6
Control PAK 110/120 50/60 HZ	A77-460916A-4
Control PAK 220/240 50/60 HZ	A77-460916A-5
Control PAK 380-415V 50/60 HZ 440-480V 50/60 HZ	A77-460916A-6
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

Options (Discount Schedule JC11) Field Kits

Description	Catalog #
Lug Kit 3 Per Kit #4-500 mcm	KVC5-1
Lug Kit 3 Per Kit (2) #6-300 mcm	KVC5-2
Aux Contact Kit 2N/O 2N/C 10A 600VAC	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Plug Stop Jogging Duty

Nema Size	200V	230V	400V	460V	575V
5	50HP	60HP	100HP	120HP	-
V320	75HP	100HP	150HP	175HP	200HP

Ordering Information

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A13.
- Renewal Parts page A9.

* Coil Table

Voltage Suffix
120 AC -76
240 AC -26
380 AC -38
460 AC -46
125V DC -125
250V DC -250

USAVAC - LOW VOLTAGE

AC Mechanically Interlocked Vacuum Contactors Wired

A

- CE
- NEMA Size 5 & V320
- IEC 400A
- Three Ratings
- One Small Size
- Use for Reversers, Reduced Voltage Auto Transformer Starters, Wye-Delta, 2 speed single winding, starter applications

600Volt Nema Size 5 270A Contactor Mechanically Interlocked Pair
Wired 3 Pole Nema ICS-2 UL508 CSA 22.2

Rating Nema Size 5	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200V	230V	460V	575V	Catalog #
HP/KW	75/56	100/75	200/150	200/150	CV31U030506-*

1000Volt 400AMP Contactor Mechanically Interlocked Pair Wired
3 Pole IEC 947-4-1 UL508 CSA 22.2

Rating 400A	Maximum Horsepower/KW Rating 3 Phase HP/KW						Open Type
1000V	200/208V	220/240V	380/415V	460V	575/600V	660-690V	Catalog #
HP/KW	100/75	150/112	250/187	300/220	400/300	450/336	CV31U034A06-*

1500V 400AMP Contactor Mechanically Interlocked Pair Wired
3 Pole IEC 947-4-1 (1000V) UL508 (1500V) CSA 22.2 (1500V)

Rating 400A	Maximum Horsepower/KW Rating 3 Phase HP/KW								Open Type
1500V	200/208V	220/240V	415/440V	460V	575/600V	660-690	V1000V	1500V	Catalog #
HP/KW	100/75	150/112	250/187	300/220	400/300	450/336	800/520	800/520	CV31U034A06-*
Nema V320	100/75	125/95	200/150	300/220	300/220	-	500/336	500/336	CV31U034A06-*

Options (Discount Schedule JC11) Field Kits

Description	Catalog #
Lug Kit 3 Per Kit #4-500 mcm	KVC5-1
Lug Kit 3 Per Kit (2) #6-300 mcm	KVC5-2
Aux Contact Kit 2N/O 2N/C 10A 600VAC	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Plug Stop Jogging Duty

Nema Size	575V	200V	230V	400V	460V
5	50HP	60HP	100HP	120HP	-
V320	75HP	100HP	150HP	175HP	200HP

Ordering Information

- Use complete catalog number when ordering.
- Replace the (*) with the suffix from the coil table.
- Engineering Data page A13.
- Renewal Parts page A8.

* Coil Table

Voltage	Suffix
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-460880A-1
Coil 110/120V 50/60 HZ	A77-460930A-1
Coil 220/240V 50/60 HZ	A77-460930A-2
Coil 380/415V 50/60 HZ	A77-460930A-3
Coil 440/480V 50/60 HZ	A77-460930A-4
Coil 125V DC	A77-460930A-5
Coil 250V DC	A77-460930A-6
Control PAK 110/120 50/60 HZ	A77-460916A-4
Control PAK 220/240 50/60 HZ	A77-460916A-5
Control PAK 380-415V 50/60 HZ 440-480V 50/60 HZ	A77-460916A-6
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

USAVAC - LOW VOLTAGE

AC Vacuum Starters

CV Series
NEMA Size 5 V320
IEC 400A

- UL listed to 1500V
- CSA Certified to 1500V
- CE
- Three Ratings
- One Small Size



600V NEMA Size 5 270A

600Volt Nema Size 5 270A Starter 3 Pole Nema ICS-2 UL508 CSA 22.2

Rating Nema Size 5	Maximum Horsepower/KW Rating 3 Phase HP/ KW				Open Type
600V	200/208V	230V	460V	575V	Catalog #
HP/KW	75/56	100/75	200/150	200/150	CV13U030506-*

1000Volt 400AMP Starter 3 Pole IEC 947-4-1 UL508 CSA 22.2

Rating 400A	Maximum Horsepower/KW Rating 3 Phase HP/KW						Open Type
1000V	200/208V	220/240V	400V	460V	575/600V	660-690V	Catalog #
HP/KW	100/75	150/112	250/187	300/220	400/300	450/336	CV13U034A06-*

1500V 400AMP Starter 3 Pole IEC 947-4-1 (1000V) UL508 (1500V) CSA 22.2 (1500V)

Rating 400A	Maximum Horsepower/KW Rating 3 Phase HP/KW								Open Type
1500V	200/208V	220/240V	380/415V	460V	575/600V	660-690V	1000V	1500V	Catalog #
HP/KW	100/75	150/112	250/187	300/220	400/300	500/370	700/520	850/650	CV13U034A15-*
Nema V320	100/75	150/112	250/187	300/220	300/220	-	500/370	900/670	CV13U033V15-*

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-460880A-1
Coil 110/120V 50/60 HZ	A77-460930A-1
Coil 220/240V 50/60 HZ	A77-460930A-2
Coil 380/415V 50/60 HZ	A77-460930A-3
Coil 440/480V 50/60 HZ	A77-460930A-4
Coil 125V DC	A77-460930A-5
Coil 250V DC	A77-460930A-6
Control PAK 110/120 50/60 HZ	A77-460916A-4
Control PAK 220/240 50/60 HZ	A77-460916A-5
Control PAK 380-415V 50/60 HZ 440-480V 50/60 HZ	A77-460916A-6
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

Options (Discount Schedule JC11) Field Kits

Description	Catalog #
Lug Kit 3 Per Kit #4-500 mcm	KVC5-1
Lug Kit 3 Per Kit (2) #6-300 mcm	KVC5-2
Aux Contact Kit 2N/O 2N/C 10A 600VAC	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Ordering Information

* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A13.
- Renewal Parts page A11

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

USAVAC - LOW VOLTAGE

AC Vacuum Reversing Starters

3 Pole Nema ICS-2 UL508 CSA 22.2 Size 5 Reversing Starter 600V 270 AMP

Rating Nema Size 5	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200V	230V	460V	575V	Catalog #
HP/KW	75/56	100/75	200/150	200/150	CV30U030506-*

- NEMA Size 5 & V 320
- IEC 400A
- Three Ratings
- One Small Size
- Use for Reversers, Reduced Voltage Auto Transformer Starters, Wye-Delta, 2 speed single winding, starter applications

3 Pole IEC 947-4-4 UL508 CSA 22.2 Reversing Starter 660V 400 AMP

Rating 400A	Maximum Horsepower/KW Rating 3 Phase HP/KW						Open Type
1000V	200/208V	220/240V	380/415V	460V	575/600V	660-690V	Catalog #
HP/KW	100/75	150/112	250/187	300/220	400/300	450/336	CV30U034A06-*

WIRED CONTACTORS

3 Pole IEC 947-4-1 (1000V) UL508 (1500V) CSA 22.2 (1500V) 400A

Rating 400A Nema V320	Maximum Horsepower/KW Rating 3 Phase HP/KW								Open Type
1500V	200/208V	220/240V	415/440V	460V	575/600V	660-690V	1000V	1500V	Catalog #
HP/KW	100/75	150/112	250/187	300/220	400/300	500/370	700/520	850/650	CV30U034A15-*
Nema V320	100/70	125/95	200/150	300/220	400/300	500/370	700/520	850/670	CV30U033V15-*

MECHANICALLY INTERLOCKED

Options (Discount Schedule JC11) Field Kits

Description	Catalog #
Lug Kit 3 Per Kit #4-500 inch	KVCS-1
Lug Kit 3 Per Kit (2) #6-600 inch	KVCS-2
Aux Contact Kit 2N/O 2N/C 10A 600VAC	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Plug Stop Jogging Duty

Nema Size	200V	230V	400V	460V	575V
5	50HP	60HP	100HP	120HP	—
V320	75HP	100HP	150HP	175HP	200HP

Ordering Information

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A13.
- Renewal Parts page A12.

* Coil Table

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-460880A-1
Coil 110/120V 50/60 HZ	A77-460930A-1
Coil 220/240V 50/60 HZ	A77-460930A-2
Coil 380/415V 50/60 HZ	A77-460930A-3
Coil 440/480V 50/60 HZ	A77-460930A-4
Coil 125V DC	A77-460930A-5
Coil 250V DC	A77-460930A-6
Control PAK 110/120 50/60 HZ	A77-460916A-4
Control PAK 220/240 50/60 HZ	A77-460916A-5
Control PAK 380-415V 50/60 HZ	A77-460916A-6
440-480V 50/60 HZ	
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

Engineering Data

USAVAC - LOW VOLTAGE

AC Vacuum Contactors

A

CV Series
NEMA Size 6
NEMA V600
IEC 600A

- UL listed to 1500V
- CSA Certified to 1500V
- CE
- Three Ratings
- One Small Size



600V NEMA Size 6 540A



1000V 600A

600Volt Nema Size 6 540A Contactor 3 Pole Nema ICS-2 UL508 CSA 22.2

Rating Nema Size 6	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200/208V	250V	460V	575V	Catalog #
HP/KW	150/112	200/150	400/300	400/300	CV77U030606-*

1000Volt 600AMP Contactor 3 Pole IEC 947-4-1 UL508 CSA 22.2

Rating 600A 1000V	Maximum Horsepower/KW Rating 3 Phase HP/KW						Open Type
1000V	200/208V	220/240V	400V	460V	575/600V	660-690V	Catalog #
HP/KW	200/150	200/150	250/187	400/300	600/450	650/485	CV77U036A06-*

1500V 600AMP Contactor 3 Pole IEC 947-4-1 (1000V) UL508 (1500V) CSA 22.2 (1500V)

Rating 600A Nema V600	Maximum Horsepower/KW Rating 3 Phase HP/KW								Open Type
1500V	200/208V	220/240V	400V	460V	575/600V	660-690V	1000V	1500V	Catalog #
HP/KW	200/150	200/150	250/187	400/300	600/450	650/485	1000/750	1200/900	CV77U036A15-*
Nema V600	200/150	200/150	375/280	500/350	600/470	-	1100/820	1600/1200	CV77U036V15-*

Options (Discount Schedule JC11) Field Kits

Description	Catalog #
Wire Size (2) #2-600 mcm 3 lugs per kit	KVC6-2
Aux Contact Kit 2N/O 2N/C 10A 600VAC	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Ordering Information

* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A19.
- Renewal Parts page A14.

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

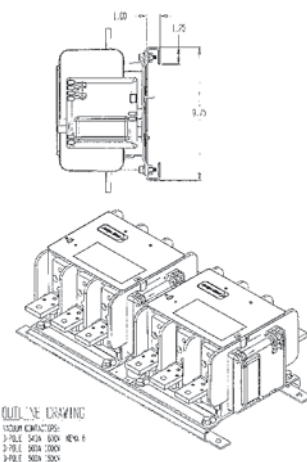
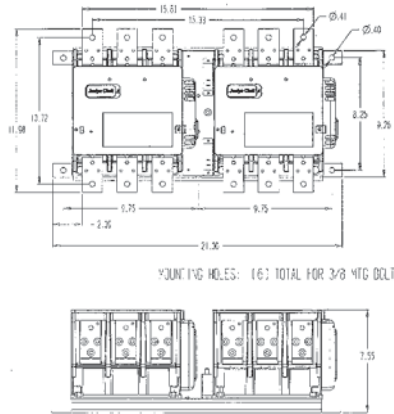
Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-460880A-2
Coil 110/120V 50/60 HZ	A77-460930A-1
Coil 220/240V 50/60 HZ	A77-460930A-2
Coil 380/415V 50/60 HZ	A77-460930A-3
Coil 440/480V 50/60 HZ	A77-460930A-4
Coil 125V DC	A77-460930A-7
Coil 250V DC	A77-460930A-8
Control PAK 110/120 50/60 HZ	A77-460916A-4
Control PAK 220/240 50/60 HZ	A77-460916A-5
Control PAK 380-415V 50/60 HZ	A77-460916A-6
440-480V 50/60 HZ	
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

USAVAC - LOW VOLTAGE

AC Mechanically Interlocked Vacuum Contactors Unwired

- CE
- NEMA Size 6 & V600
- IEC 600A
- Three Ratings
- One Small Size
- Use for Reversing, Reduced Voltage Auto Transformer, Wye-Delta, 2 speed single winding, or 2 speed 2 winding applications



3 Pole Nema Rated ICS-2 UL508 CSA 22.2 Mechanically Interlocked Pair Unwired 600V Size 6 540 AMP

Rating Nema Size 6	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200/208V	250V	460V	575V	Catalog #
HP/KW	150/112	200/150	400/300	400/300	CV31U030606-*43

3 Pole IEC 947-4-1 UL508 CSA 22.2 Mechanically Interlocked Pair Unwired 1000 Volt 600 AMP

Rating 600A 1000V	Maximum Horsepower/KW Rating 3 Phase HP/KW						Open Type
1000V	200/208V	220/240V	400V	460V	575/600V	660-690V	Catalog #
HP/KW	200/150	200/150	250/187	400/300	600/450	650/485	CV31U036A06-*43

3 Pole IEC 947-4-1 (1000V) UL508 (1500V) CSA 22.2 (1500V) Mechanically Interlocked Pair Unwired 1.5 KV 600AMP

Rating 600A Nema V600	Maximum Horsepower/KW Rating 3 Phase HP/KW								Open Type
1500V	200/208V	220/240V	400V	460V	575/600V	660-690V	1000V	1500V	Catalog #
HP/KW	200/150	200/150	250/187	400/300	600/450	650/485	1000/750	1200/900	CV31U036A15-*43
Nema V600	200/150	200/150	375/280	500/350	600/470	-	1100/820	1600/1200	CV31U036V15-*43

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-460880A-2
Coil 110/120V 50/60 HZ	A77-460930A-1
Coil 220/240V 50/60 HZ	A77-460930A-2
Coil 380/415V 50/60 HZ	A77-460930A-3
Coil 440/480V 50/60 HZ	A77-460930A-4
Coil 125V DC	A77-460930A-7
Coil 250V DC	A77-460930A-8
Control PAK 110/120 50/60 HZ	A77-460916A-4
Control PAK 220/240 50/60 HZ	A77-460916A-5
Control PAK 380-415V 50/60 HZ	A77-460916A-6
440-480V 50/60 HZ	
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

Options (Discount Schedule JC11) Field Kits

Description	Catalog #
Wire Size (2) #2-600 mcm 3 lugs per kit	KVC6-2
Aux Contact Kit 2N/O 2N/C 10A 600VAC	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Plug Stop Jogging Duty

Nema Size	200V	230V	400V	460V	575V
6	100HP	120HP	200HP	240HP	-
V600	150HP	150HP	300HP	375HP	450HP

Ordering Information

* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A19.
- Renewal Parts page A15.

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

USAVAC - LOW VOLTAGE

AC Mechanically Interlocked Vacuum Contactors Wired

A

CV Series
NEMA Size 6
IEC 600A

- Three Ratings
- One Small Size
- Use for Reversing, Reduced Voltage Auto Transformer, Wye-Delta, 2 speed single winding, or 2 speed two winding applications

3 Pole Nema Rated ICS-2 UL508 CSA 22.2
Mechanically Interlocked Pair Wired 600V Size 6 540 AMP

Rating Nema Size 6	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200/208V	250V	460V	575V	Catalog #
HP/KW	150/112	200/150	400/300	400/300	CV31U030606-*

3 Pole IEC 947-4-1 UL508 CSA 22.2 Mechanically Interlocked Pair Wired
1000 Volt 600 AMP

Rating 600A V600	Maximum Horsepower/KW Rating 3 Phase HP/KW						Open Type
1000V	200/208V	220/240V	400V	460V	575/600V	660-690V	Catalog #
HP/KW	200/150	200/150	250/187	400/300	600/450	650/485	CV31U030606-*

3 Pole IEC 947-4-1 (1000V) UL508 CSA 22.2 (1500V)
Mechanically Interlocked Pair Wired 1.5 KV 600 AMP

Rating 600A Nema 1000V	Maximum Horsepower/KW Rating 3 Phase HP/KW								Open Type
1500V	200/208V	220/240V	400V	460V	575/600V	660-690V	1000V	1500V	Catalog #
HP/KW	200/150	200/150	250/187	400/300	600/450	650/485	1000/750	1500/900	CV31U030615-*
Nema V600	200/150	200/150	375/280	500/350	600/470	-	1100/820	1600/1200	CV31U036V15-*

Options (Discount Schedule JC11) Field Kits

Description	Catalog #
Wire Size (2) #2-600 mcm 3 lugs per	KVC6-2
Aux Contact Kit 2N/O 2N/C 10A 600VAC	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Plug Stop Jogging Duty

Nema Size	200V	230V	400V	460V	575V
6	100HP	120HP	200HP	240HP	-
V600	150HP	150HP	300HP	375HP	450HP

Ordering Information

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A19.
- Renewal Parts page A16.

* Coil Table

Voltage	Suffix
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-460880A-2
Coil 110/120V 50/60 HZ	A77-460930A-1
Coil 220/240V 50/60 HZ	A77-460930A-2
Coil 380/415V 50/60 HZ	A77-460930A-3
Coil 440/480V 50/60 HZ	A77-460930A-4
Coil 125V DC	A77-460930A-7
Coil 250V DC	A77-460930A-8
Control PAK 110/120 50/60 HZ	A77-460916A-4
Control PAK 220/240 50/60 HZ	A77-460916A-5
Control PAK 380-415V 50/60 HZ 440-480V 50/60 HZ	A77-460916A-6
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

CV Series
NEMA Size 6
IEC 600A

- Three Ratings
- One Small Size

600Volt Nema Size 6 540A Starter 3 Pole Nema ICS-2 UL508 CSA 22.2

Rating Nema Size 6	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200/208V	2500V	460V	575V	Catalog #
HP/KW	150/112	200/150	400/300	400/300	CV13U030606-*



600V NEMA Size 5 270A

1000Volt 600AMP Contactor 3 Pole IEC 947-4-1 UL508 CSA 22.2

Rating 600A 1000V	Maximum Horsepower/KW Rating 3 Phase HP/KW						Open Type
1000V	200/208V	220/240V	400V	460V	575/600V	660-690V	Catalog #
HP/KW	200/150	200/150	250/187	400/300	600/450	650/485	CV13U036A06-*

1500 Volt 600 AMP Starter 3 Pole ICS 2-9 IEC 947-4-1 (1000V) UL508 (1500V) CSA 22.2 (1500V)

Rating 600A Nema V600	Maximum Horsepower/KW Rating 3 Phase HP/KW								Open Type
1500V	200/208V	220/240V	400V	460V	575/600V	660-690V	1000V	1500V	Catalog #
HP/KW	200/150	200/150	250/187	400/300	600/450	650-485	1000/750	1200/900	CV13U036A15-*
Nema V600	200/150	200/150	375/280	500/350	600/470		1100/820	1600/1200	CV13U036V15-*

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-460880A-2
Coil 110/120V 50/60 HZ	A77-460930A-1
Coil 220/240V 50/60 HZ	A77-460930A-2
Coil 380/415V 50/60 HZ	A77-460930A-3
Coil 440/480V 50/60 HZ	A77-460930A-4
Coil 125V DC	A77-460930A-7
Coil 250V DC	A77-460930A-8
Control PAK 110/120 50/60 HZ	A77-460916A-4
Control PAK 220/240 50/60 HZ	A77-460916A-5
Control PAK 380-415V 50/60 HZ 440-480V 50/60 HZ	A77-460916A-6
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

Options (Discount Schedule JC11) Field Kits

Description	Catalog #
Wire Size (2) #2-600 mcm 3 Lugs Per Kit	KVC6-2
Aux Contact Kit 2N/O 2N/C 10A 600VAC	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Ordering Information

* Coil Table

- Use complete catalog number when ordering.
Replace the (*) with the suffix from the coil table.
- Engineering Data page A19.
- Renewal Parts page A17.

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

USAVAC - LOW VOLTAGE

AC Reversing Starters

- Three Ratings
- One Small Size
- Use on Reversers Reduced Voltage Auto Transformers, Wye-Delta & 2 speed single or double winding starter applications.

CV Series
NEMA Size 6
IEC 600A

600Volt Nema Size 6 540A Starter 3 Pole Nema ICS-2 UL508 CSA 22.2

Rating Nema Size 6	Maximum Horsepower/KW Rating 3 Phase HP/KW				Open Type
600V	200/208V	250V	460V	575V	Catalog #
HP/KW	150/112	200/150	400/300	400/200	CV30U030606-*

1000Volt 600A Reversing Starter 3 Pole IEC 947-4-1 UL508 CSA 22.2

Rating 600A	Maximum Horsepower/KW Rating 3 Phase HP/KW							Open Type
660V	200/208V	220/240V	380/400V	415/440V	460V	575/600V	660-690V	Catalog #
HP/KW	200/150	200/150	250/187	400/300	400/300	600/450	650/485	CV30U036A0

1500 Volt 600 AMP Starter 3 Pole ICS-2 IEC 947-4-1 (1000V) UL508 (1500V) CSA 22.2 (1500V)

Rating 600A	Maximum Horsepower/KW Rating 3 Phase HP/KW							Open Type
1500V	200/208V	220/240V	400V	460V	575/600V	660-690V	1000V	Catalog #
HP/KW	200/150	200/150	375/280	400/300	600/450	650/485	1000/750	CV30U036A
Nema V600	200/150	200/150	375/280	500/350	600/470	-	1100/820	CV30U036V15-*

Options (Discount Schedule JC11) Field Kits

Description	Catalog #
Wire Size (2) #2-600 mcm 3 lugs per kit	KVC6-2
Aux Contact Kit 2N/O 2N/C 10A 600VAC	AK1
Aux. Contact Kit 2N/O 2N/C 10MA 5VDC	AK3

Plug Stop Jogging Duty

Nema Size	200V	230V	400V	460V	575V
6	100HP	120HP	200HP	240HP	-
V600	150HP	150HP	300HP	375HP	450HP

Ordering Information

* Coil Table

- Use complete catalog number when ordering.
- Replace the (*) with the suffix from the coil table.
- Engineering Data page A19.
- Renewal Parts page A18.

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

Replacement Parts (Discount Schedule JC80)

Description	Catalog #
Interrupter Phase Assembly	A77-460880A-2
Coil 110/120V 50/60 HZ	A77-460930A-1
Coil 220/240V 50/60 HZ	A77-460930A-2
Coil 380/415V 50/60 HZ	A77-460930A-3
Coil 440/480V 50/60 HZ	A77-460930A-4
Coil 125V DC	A77-460930A-7
Coil 250V DC	A77-460930A-8
Control PAK 110/120 50/60 HZ	A77-460916A-4
Control PAK 220/240 50/60 HZ	A77-460916A-5
Control PAK 380-415V 50/60 HZ	A77-460916A-6
440-480V 50/60 HZ	
Aux. Contact Kit 2N/O 1N/C +1 N/C Late Break	AK Std.

Engineering Data

Power Rating

Coils		
Description	Hz.	Cat.Suffix
110/120V	50/60Hz.	-76
220/240V	50/60Hz.	-26
380/415V	50/60Hz.	-38
440/480V	50/60Hz.	-46
125V DC		-125
250V DC		-250

Dimensions



USAVAC - LOW VOLTAGE

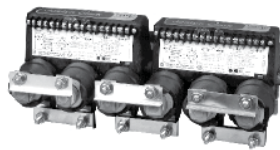
AC Vacuum Contactors

A

- UL Listed to 1500V ⁵
- CSA Certified to 1500V ⁵
- UL/CSA recognized to 3600V ⁶
- Electrically Held AC or DC Coils



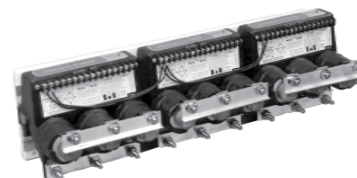
3 Pole, 320A, 1500V



3 Pole, 600A, 1500V



3 Pole, 700A, 600V



3 Pole, 1000A, 1500V

Contactors 200V-1500V - Bulletin 7707

Ampere Rating	Maximum Horsepower Ratings - 3 Phase							Size	Open Type Catalog No.
	200/208V	230V	380V	460V	575V	1000V	1500V		
3 Pole									
160 ³	50	60	100	125	150	300	420	4	VC77U03415 -*
320 ³	100	125	200	250	300	600	830	5	VC77U03515 -*
600 ¹	200	200	375	500	575	1200	1600	6	VC77U03615 -*
700 ⁶	225	300	500	550	700	-----	-----	---	VC77U037A06 -*
1000 ^{1,2}	-----	-----	-----	-----	-----	-----	-----		SVC77U031015 -*
2 Pole									
160		-----	-----	-----	-----	-----	-----	4	VC77U02415 -*
320		-----	-----	-----	-----	-----	-----	5	VC77U02515 -*
600 ¹		-----	-----	-----	-----	-----	-----	6	VC77U02615 -*
1000 ¹		-----	-----	-----	-----	-----	-----		SVC77U021015 -*

Contactors 1501V-3600V - Bulletin 7707

Ampere Rating	Maximum Horsepower Ratings - 3 Phase		Open Type Catalog No.
	2300V	3300V	
3 Pole			
160 ⁴	600	1	VC77U03436 -*
320 ⁴	1250	1	VC77U03536 -*
600 ¹⁻³	2400	1	VC77U03636 -*
1000 ¹⁻³	-----	----	SVC77U031036
2 Pole			
160	-----	----	VC77U02436 -*
320	-----	----	SVC77U021036 -*

Notes:

1. Two 320 ampere contactors connected in parallel for 600A, three in parallel for 1000A.
2. Motor applications limited to 1000 ampere continuous and LRC 6KA maximum.
3. Terminal boots provided on center phase.
4. Terminal boots provided on all phases.
5. 160, 320, 600A 3 pole contactors UL listed and CSA certified.
6. UR recognition 600V

- Mechanically Interlocked Contactors on page A22 and A23 should be used if short circuit current can flow when switching between two or more contactors.
- For KW Rating Multiply HP Ratings by .746 (example: 100HP x .746 = 75KW)

Ordering Information

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A30.
- Renewal Parts page A36.

* Coil Table

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

USAVAC - LOW & MEDIUM VOLTAGE

AC Latched Vacuum Contactors

A



3 Pole, 320A, 1500V



3 Pole, 600A, 1500V



3 Pole, 700A, 600V

- UL Listed to 1500V ³
- CSA Certified to 1500V ³
- UL/CSA to 3600V ⁴
- Mechanically Latched AC & DC Close And Trip Coils

Contactors 200V-1500V - Bulletin 7707

Ampere Rating	Maximum Horsepower Ratings - 3 Phase							Size	Type Catalog No.
	200/208V	230V	380V	460V	575V	1000V	1500V		
3 Pole									
160 ¹	50	60	100	125	150	300	420	4	VCL77U03415 -*
320 ¹	100	125	200	250	300	600	830	5	VCL77U03515 -*
600 ¹	200	200	375	500	575	1200	1600	6	VCL77U03615 -*
700 ⁴	225	300	500	550	700	-----	-----		VCL77U037A06 -*
2 Pole									
160		-----	-----	-----	-----	-----	-----	4	VCL77U02415 -*
320		-----	-----	-----	-----	-----	-----	5	VCL77U02515 -*

Contactors 1501V-3600V - Bulletin 7707

Ampere Rating	Maximum Horsepower Ratings - 3 Phase		Open Type Catalog No.
	2300V	3300V	
3 Pole			
160 ²	600	960	VCL77U03436 -*
320 ²	1250	1920	VCL77U03536 -*
2 Pole			
160	-----	-----	VCL77U02436 -*
320	-----	-----	VCL77U02536 -*

Notes:

1. Terminal boots provided on center phase.
2. Terminal boots provided on all phases.
3. 160, 320A 3 pole contactors UL listed and CSA certified.
4. UR recognition 600V

- Mechanically Interlocked Contactors on page A22 and A23 should be used if short circuit current can flow when switching between two or more contactors.
- For KW Rating Multiply HP Ratings by .746 (example: 100HP x .746 = 75KW)

Ordering Information

* Coil Table

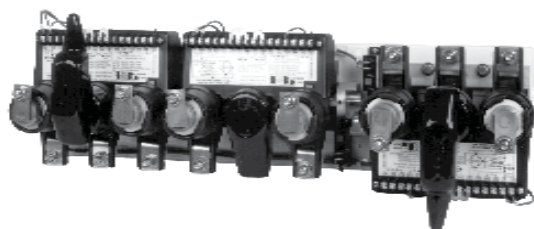
- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A30.
- Modification Data page A37.
- Renewal Parts page A36.

Voltage Suffix	
120 AC	-76
240 AC	-26
380 AC	-38
460 AC	-46
125V DC	-125
250V DC	-250

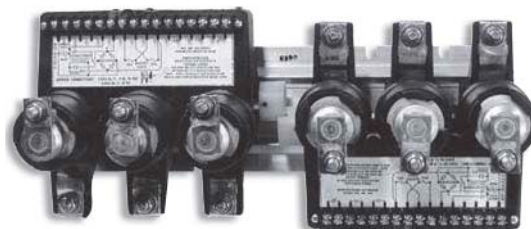
USAVAC - LOW & MEDIUM VOLTAGE

AC Mechanically Interlocked Vacuum Contactors Unwired

A



One 3 Pole, One 5 Pole, 320A Contactor



Two 3 Pole, 320A Contactors

USAVAC Vacuum Contactors mechanically interlocked suitable for use in reversing, Wye-Delta, reduced voltage auto transformer, and 2 speed single or two winding starters.

Mechanically Interlocked Unwired, 200V-1500V - Bulletin 7707

Ampere Rating	Maximum Horsepower Ratings - 3 Phase							Size	Open Type Catalog No.
	200/208V	230V	380V	460V	575V	1000V	1500V		
3 Pole - 3 Pole									
160 ³	50	60	100	125	150	300	420	160/160	VC31U03415 -* - 43 ²
320 ³	100	125	200	250	300	600	850	320/320	VC31U03515 -* - 43 ²
600	200	200	375	500	575	1200	1600	600/600	VC31U03615 -* - 43 ²
320 ³	100	125	200	250	300	600	850	320/160	VC82U03515 -* - 43 ²
600	200	200	375	500	575	1200	1600	600/320	VC82U03615 -* - 43 ²
5 Pole - 5 Pole ¹									
160 ³	50	60	100	125	150	300	420	160/160	VC50U04C215 -* - 43 ²
320 ³	100	120	200	250	300	600	830	320/320	VC50U05C215 -* - 43 ²

For KW Rating Multiply HP Ratings by .746 (example: 100HP x .746 = 75KW)

Mechanically Interlocked Unwired, 1501V-3600V - Bulletin 7707

Ampere Rating	Maximum Horsepower Ratings - 3 Phase		Open Type Catalog No.
	2300V	3300V	
3 Pole - 3 Pole			
160 ⁴	600	960	VC31U03436 -* - 43 ²
320 ⁴	1250	1920	VC31U03536 -* - 43 ²
600 ³	2400	3700	VC31U03636 -* - 43 ²
3 Pole - 5 Pole ¹			
160 ⁴	600	960	VC50U04C236 -* - 43 ²
320 ⁴	1250	1920	VC50U05C236 -* - 43 ²

Notes:

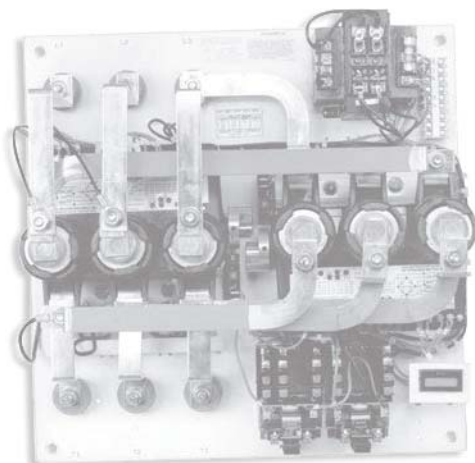
1. To be used for 2 speed single winding applications only.
2. Modification 43 in the catalog number suffix means power wiring between contactors not included.
3. Terminal boots provided on center phase.
4. Terminal boots provided on all phases.

Ordering Information

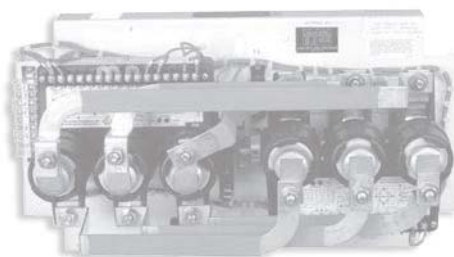
* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A30.
- Modification Data page A37.
- Renewal Parts page A36.

Voltage Suffix	
120 AC	-76
240 AC	-26



250 HP 460V Jog Duty Reverser with M.O.V. Suppressors



300 HP 575V Reverser

WIRED CONTACTORS NOT AVAILABLE,

3 Pole AC Reversing Contactors, 200V-1500V - Bulletin 6031

Ampere Rating	Maximum Horsepower Ratings - 3 Phase							Size	Open Type 1500V Standard Duty Catalog No.	Open Type 600V ¹ Jogging Duty Catalog No.
	200/208V	230V	380V	460V	575V	1000V	1500V			
160	50	60	100	125	150	300	420	4	VC31U03415 - *	VJ31U03406 - *
320	100	125	200	250	300	600	850	5	VC31U02515 - *	VJ31U03506 - *
600	200	300	375	500	575	1200	1500	6	VC31U01615 - *	VJ31U03606 - *

SEE PAGE A22 FOR MECHANICALLY INTERLOCKED UNITS OR CALL FACTORY

3 Pole AC Reversing Contactors, 1501V-3600V - Bulletin 6031

Ampere Rating ²	Maximum Horsepower Ratings - 3 Phase		Open Type 3600V Standard Duty Catalog No.
	2300V	3300V	
160	600	960	VC31U03436 - *
320	1250	1920	VC31U03536 - *

Notes:

1. To be used when application involves plugging & inching (e.g. crane control). M.O.V. suppressor included on power circuit. For other voltages consult factory.
2. Terminal boots provided on center phase.

For KW Rating Multiply HP Ratings by .746 (example: 100HP x .746 = 75KW)

Ordering Information

* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A30.
- Renewal Parts page A36.

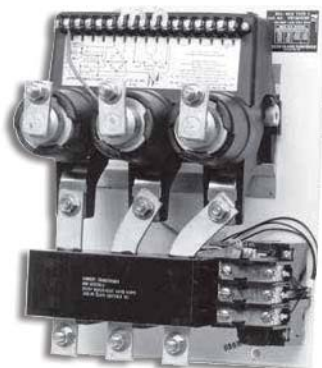
Voltage Suffix	
120 AC	-76
240 AC	-26

USAVAC - LOW & MEDIUM VOLTAGE

AC Starters

A

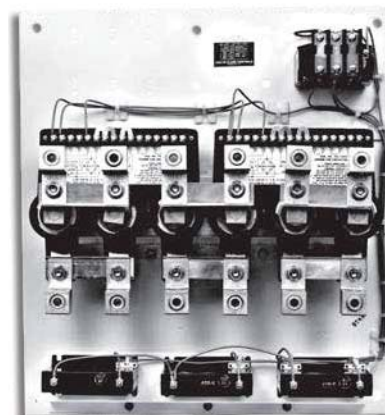
- UL listed to 1500V
- CSA Certified to 1500V



Open Type
250HP 460V
850 HP 1500V



250 HP, 460V Non Combination
Starter in Type 1 Enclosure



Open Type
500HP 460V
1600 HP 1500V

3 Pole AC Vacuum Starters, 200V-1500V - Bulletin 6013

Ampere Rating	Maximum Horsepower Ratings - 3 Phase							Size	NEMA Type 12 ¹ Catalog No.	NEMA Type 1 ¹ Catalog No.	Open Type ¹ Catalog No.
	200/208V	230V	380V	460V	575V	1000V	1500V				
135	40	50	75	100	125	-----	-----	4	VS13TA3406-*	VS13AA3406-*	VS13U03406-*
160	50	60	100	125	150	300	420	4	VS13TA3E15-*	VS13AA3E15-*	VS13U03E15-*
320	100	125	200	250	300	600	850	5	VS13TA3515-*	VS13AA3515-*	VS13U03515-*
600 ²	200	200	375	500	575	1200	1600	6	VS13TA3615-*	VS13AA3615-*	VS13U03615-*

- For NEMA 3R use NEMA 12 and change 5th character in catalog number to "R".
- For Latched Starters refer to Note (6) on page "A5" for Ordering Information.
- For KW Rating Multiply HP Ratings by .746 (example: 100HP x .746 = 75KW)

3 Pole AC Reversing Contactors, 1501V-3600V - Bulletin 6031

Ampere Rating	Maximum Horsepower Ratings - 3 Phase		Open Type ¹ Catalog No.
	2300V	3300V	
160 ⁴	600	960	VS13U03436 - *
320 ⁴	1250	1920	VS13U03536 - *
600 ^{2,3}	2400	3700	VS13U03636 - *

Notes:

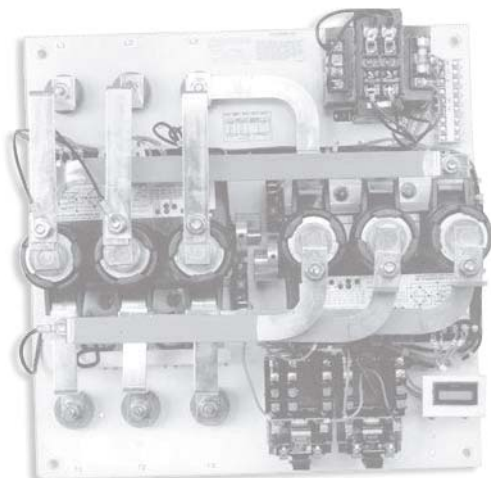
1. Three overload heaters are required see page A35
2. Two 320 ampere contactors connected in parallel for 600A.
3. Terminal boots provided on center phase.
4. Terminal boots provided on all phases.

Ordering Information

* Coil Table

- Use complete catalog number when ordering.
Replace the (*) with the suffix from the coil table.
- Engineering Data page A30.
- Modification Data page A37.
- Renewal Parts page A36.

Voltage Suffix	
120 AC	-76
240 AC	-26



460V 250 HP Reversing Starter Suitable for Crane Control

WIRED CONTACTORS
NOT AVAILABLE,
SEE PAGE A22 FOR
MECHANICALLY INTERLOCKED
UNITS OR CALL FACTORY

3 Pole Wired Reversing Starter, 200V-1500V - Bulletin 6730

Ampere Rating	Maximum Horsepower Ratings - 3 Phase								Open Type 1500V ¹ Standard Duty Catalog No.	Open Type 600V ^{1,2} Jogging Duty Catalog No.
	200/208V	230V	380V	460V	480V	575V	600V	1500V	VS30U03E06 - *	VJ30U03406 - *
135	40	50	60	100	125	150	300	420	VS30U03E15 - *	VJ30U03E06 - *
160	50	60	100	125	150	300	420	4	VS30U03E15 - *	VJ30U03E06 - *
320	100	125	200	250	300	600	850	5	VS30U03E15 - *	VJ30U03E06 - *
600	200	250	375	500	600	1200	1600	6	VS30U03E15 - *	VJ30U03E06 - *

3 Pole Wired Reversing Starter, 1501V-3600V - Bulletin 6000

Ampere Rating ³	Maximum Horsepower Ratings - 3 Phase		Open Type 3600V ¹ Standard Duty Catalog No. E
	2300V	3300V	
160	600	960	VS30U03E36 - *
320	1250	1920	VS30U03E36 - *

For KW Rating Multiply HP Ratings by .746 (example: 100HP x .746 = 75KW)

Notes:

1. Three overload heaters are required. See Page A35
2. To be used when application involves plugging & inching (e.g. crane control). Includes M.O.V. suppressors on power circuit. For other voltages consult factory.
3. Terminal boots provided on center phase.

Ordering Information

* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A30.
- Modification Data page A37.
- Renewal Parts page A36.

Voltage Suffix	
120 AC	-76
240 AC	-26

USAVAC - LOW VOLTAGE

AC Combination Starters

A

CV Series



300 HP 460V Starter in
Type 12 Enclosure



400 HP 600V Starter in
Type 3 Enclosure

NEMA 1 & 12 Combination Starters 200V-575V - Bulletin 6018/6020

Ampere Rating	Maximum Horsepower Ratings - 3 Phase					Size	NEMA Type 1 & 12 Flange Operator Catalog No.
	200/208V	230V	380V	460V	575V		
Non-Fusible							
135	40	50	75	100	125	4	CV18TA340610 -*
200	50	80	135	150	200	--	CV18TA32A610 -*
270	100	100	200	200	200	5	CV18TA35610 -*
400	160	160	270	300	400	--	CV18TA34A610 -*
600	180	250	300	500	500	6	CV18TA360610 -*
Fusible							
135	40	50	75	100	125	4	CV18TA340692 -*
200	50	80	100	125	150	4	CV18TA3E0692 -*
270	100	100	200	200	200	5	CV18TA35694 -*
400	160	160	270	300	400	--	CV18TA34A697 -*
600	180	250	300	500	500	6	CV18TA360698 -*
MCP							
135	40	50	75	100	125	4	CV20TA340678 -*
200	50	80	135	150	200	--	CV20TA3E0678 -*
270	100	100	200	200	200	5	CV20TA350679 -*
400	160	160	270	300	400	--	CV20TA34A681 -*
600	180	250	300	500	500	6	CV20TA360681 -*

- For NEMA 3R use NEMA 12 and change 5th character of catalog number to "R".

For KW Rating Multiply HP Ratings by .746 (example: 100HP x .746 = 75KW)

Ordering Information

* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A30.
- Modification Data page A37.
- Renewal Parts page A36.

Voltage Suffix	
120 AC	-76
240 AC	-26

Notes:

- Three overload heaters are required.

USAVAC - LOW VOLTAGE

AC Combination Starters

VS Series



250 HP 460V Starter in
Type 12 Enclosure



300 HP 600V Starter in
Type 3 Enclosure

A

NEMA 1 & 12 Combination Starters 200V-575V - Bulletin 6018/6020

Ampere Rating	Maximum Horsepower Ratings - 3 Phase					Size	NEMA Type 1 & 12 ^{1,2} Flange Operator Catalog No.
	200/208V	230V	380V	460V	575V		
Non-Fusible							
135	40	50	75	100	125	4	VS18TA340610 -*
160 ²	50	60	100	125	150	4	VS18TA3E0610 -*
320 ²	100	100	200	250	300	5	VS18TA350610 -*
600	180	250	300	500	500	6	VS18TA36A610 -*
Fusible							
135	40	50	75	100	125	4	VS18TA340692 -*
160 ²	50	60	100	125	150	4	VS18TA3E0692 -*
320 ²	100	100	200	250	300	5	VS18TA350694 -*
600	180	250	300	500	500	6	VS18TA360697 -*
700	225	300	500	550	700	--	VS18TA370698 -*
MCP							
135	40	50	75	100	125	4	VS20TA340678 -*
160	50	60	100	150	150	4	VS20TA3E0678 -*
320	100	100	200	200	300	5	VS20TA350679 -*
600	180	250	300	300	500	6	VS20TA360680 -*
700	225	300	500	500	700	--	VS20TA370681 -*

For NEMA 3R use NEMA 12 and change 5th character of catalog number to "R".

For KW Rating Multiply HP Ratings by .746 (example: 100HP x .746 = 75KW)

Notes:

1. Three overload heaters are required.
2. Terminal boots provided on center phase.

Ordering Information

* Coil Table

- Use complete catalog number when ordering.
Replace the (*) with the suffix from the coil table.
- Engineering Data page A30.
- Modification Data page A37.
- Renewal Parts page A36.

Voltage Suffix	
120 AC	-76
240 AC	-26

USAVAC - LOW VOLTAGE

AC Reduced Voltage Starters

A

Reduced Voltage - 600 Volts Rated
Type CV & VS Auto Transformer Closed Transition

Designed for automatic starting of squirrel cage motors when the starting current must be reduced. Closed transition auto transformer starters provide the highest possible starting torque per ampere of line current.

Auto transformers are 3-coil type, with voltage taps at 50%, 65% and 80% rated in accordance with NEMA Standards ICS-214.21 for medium-duty starting service.



250HP, 460V R.V.A.T. Starter in NEMA 12 Enclosure

Vacuum Starters NEMA 1 & 12 Enclosed

Ampere Rating	Maximum Horsepower Ratings - 3 Phase		Size	NEMA 1 & 12, 230V ¹	NEMA 1 & 12, 460V ¹
	230V	460V		Industrial - Dust tight Catalog No.	Industrial - Dust tight Catalog No.
Non Combination - Bulletin 6082					
135	50	100	4	CV82TA4JB -*	CV82TA4ME -*
160 ²	60	125	4	VS82TAEKB -*	VS82TAENE -*
200	75	150	--	CV82TA2ALB -*	CV82TA2APE -*
320 ²	100	250	5	VS82TA5MB -*	VS82TA5RE -*
400	150	300	--	CV82TA4APB -*	CV82TA4ASE -*
600	200	500	6	CV82TA6QB -*	CV82TA6VE -*
Fusible Combination - Bulletin 6083					
135	50	100	4	CV83TA4JB -*	CV83TA4ME -*
160 ²	60	125	4	VS83TAEKB -*	VS83TAENE -*
200	75	150	--	CV83TA2ALB -*	CV83TA2APE -*
320 ²	100	250	5	VS83TA5MB -*	VS83TA5RE -*
400	150	300	--	CV83TA4APB -*	CV83TA4ASE -*
600	200	500	6	CV83TA6QB -*	CV83TA6VE -*
MCP Combination - Bulletin 6084					
135	50	100	4	CV84TA4JB -*	CV84TA4ME -*
160 ²	60	125	4	VS84TAEKB -*	VS84TAENE -*
200	75	150	--	CV84TA2ALB -*	CV84TA2APE -*
320 ²	100	250	5	VS84TA5MB -*	VS84TA5RE -*
400	175	350	--	CV84TA4APB -*	CV84TA4ASE -*
600	200	500	6	CV84TA6QB -*	CV84TA6VE -*

Notes:

1. Includes starter complete with 3 N.O. & 2 N.C. interlocks and three phase overload relays less heaters.
2. Terminal boots provided on center phase.
3. For NEMA 3R change the T in the catalog number to an R.

Ordering Information

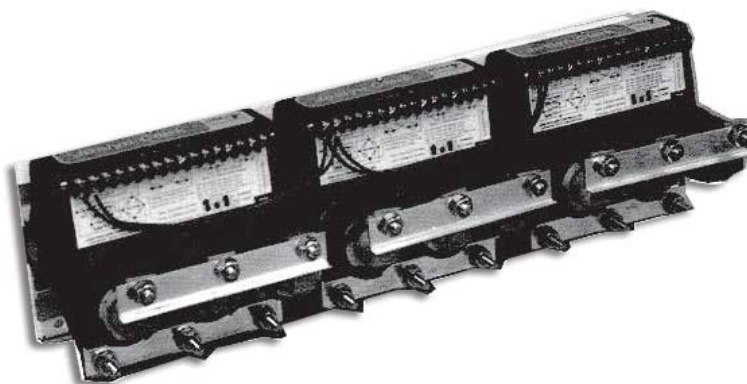
* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A30.
- Modification Data page A37.
- Renewal Parts page A36.

Voltage Suffix	
120 AC	-76
240 AC	-26

Special Purpose Contactors

A



3 Pole Three Phase 1000A 3600V

The following controls are for high current applications such as electric arc and induction furnace.

Special Purpose Vacuum Contactors

Ampere Rating	1500V Open Type Catalog No.	3600V Open Type Catalog No.
1 Pole, Single Phase		
450	SVC77U014515 -*	SVC77U014536 -*
1000	SVC77U011015 -*	SVC77U011036 -*
1500	SVC77U011515 -*	SVC77U011536 -*
2500	SVC77U012515 -*	SVC77U012536 -*
2 Pole, Single Phase		
450	SVC77U024515 -*	¹ SVC77U024536 -*
1000	SVC77U021015 -*	¹ SVC77U021036 -*
1500	SVC77U021515 -*	¹ SVC77U021536 -*
3 Pole, Three Phase		
1000	SVC77U031015 -*	² SVC77U031036 -*

Notes:

1. Insulation boots provided on 1 pole.
2. Terminal boots provided on all phases.

Ordering Information

* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A30.
- Renewal Parts page A36.

Voltage Suffix	
120 AC	-76
240 AC	-26

USAVAC - LOW & MEDIUM VOLTAGE CONTACTORS & STARTERS

Engineering Data

Vacuum Contactor & Starter Ratings 200V-3600V

		160A	320A	600A	1000A
Catalog No. 3 Pole	1.5KV	VC77U03415	VC77U03515	VC77U03615	SVC77U031015
	3.6KV	VC77U03436	VC77U03536	VC77U03636	SVC77U031036
Power Ratings					
Rated Insulating and Operational Voltage		1500/3600 ¹			
Rated Operational Current		160	320	600	1000
Rated Frequency		50/400Hz ¹			
Making Current		1600	3200	6000	6000
Breaking Current		1600	3200	6000	6000
Dielectric Strength/BIL.		6KV-1 min. / 45KV. 1.2 X 50 Micro/Sec.			
Interrupting Current		4400	5000	6000	6000
Withstand Current		30KA-3Hz			
Short Time	1 Sec.	5000	7000	9000	11000
Current -	2 Sec.	3000	5000	7000	9000
Mechanical Life		2 x 10 ⁶			
Electrical Life at Rated Current - AC3 Duty		1 x 10 ⁶			
Switching Frequency		600/hr every 6 seconds			
Chop Current		.55A			
Max.		.9A			
Control Ratings					
Description		160/320A	600A	1000A	
Rated Control Voltage		120/240V 50/400Hz			
Allowable Fluctuation		+10% of rated -25% voltage			
Closing Power VA/Duration		950VA/17MS	1900VA/17MS	2850VA/17MS	
Holding Power		9VA	18VA	27VA	
Opening Time Ave.		90 MS at 60Hz			
Closing Time Ave.		17 MS at 60Hz			
Pick up Voltage		90V			
Drop Out Voltage		70% or less			
Recommended Control Transformer		When Required 250VA	When Required 500VA	When Required 750VA	
Application Conditions					
Installation		All Planes contactor only			
Altitude without Derating		Up to 6600 ft. (2000m)			
Ambient	Storage	-65°F (-54°C) +160°F (71°C)			
	Operating	-40°F (-40°C) +135°F (57°C)			
Vibration/Shock		40Hz - 2G/30G			
Weight 160/320A		12lbs. (5.45kg.)	24lbs. (11kg.)	36lbs. (16.36kg.)	
Dimensions		8 7/8" x 7 7/8 x 8 1/4" 225 x 189 x 200mm	17 7/8" x 7 7/8 x 8 1/4" 450x189x200mm	26 5/8" x 7 7/8 x 8 1/4"	

Technical Specifications

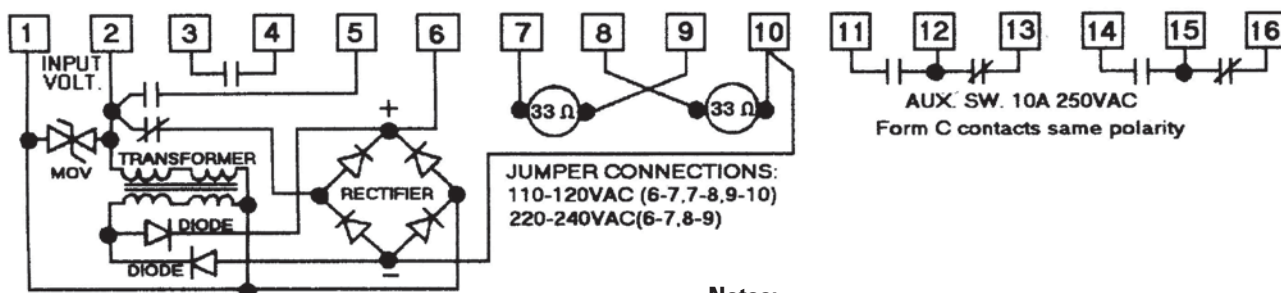
Open Type
USAVAC Starter Size 5

Accessories & Options:

1. Mechanical Interlocked contactors available, pages A22/23.
2. Vacuum starters in combination and non-combination forms are available in NEMA 1, 3, and 12 enclosures on, pages A24, 26 & 27
3. Terminal Lug Kits, page A36.
4. Suppressor Kits, page A36.

For KW Rating Multiply HP Ratings by .746 (example: 100HP x .746 = 75KW)

Volts	Motor HP			
	160A	320A	600A	1000A ²
230	60	125	200	-----
460	125	250	500	-----
1000	300	600	1200	-----
1500	420	850	1600	-----
2300	600	1250	2400	-----
3300	960	1920	3700	-----
Transformer Load KVA				
Volts	160A	320A	600A	1000A
230	66	133	250	415
460	127	255	500	746
1000	277	554	1000	1730
1500	415	850	1500	2600
2300	665	1330	2500	4150
3300	910	1820	3400	5700
Capacitor Load KVAR				
Volts	160A	320A	600A	1000A
230	50	100	180	310
460	95	190	360	595
1000	205	415	750	1300
1500	310	620	1125	1450
2300	500	1000	1875	3110
3300	700	1365	2550	4275



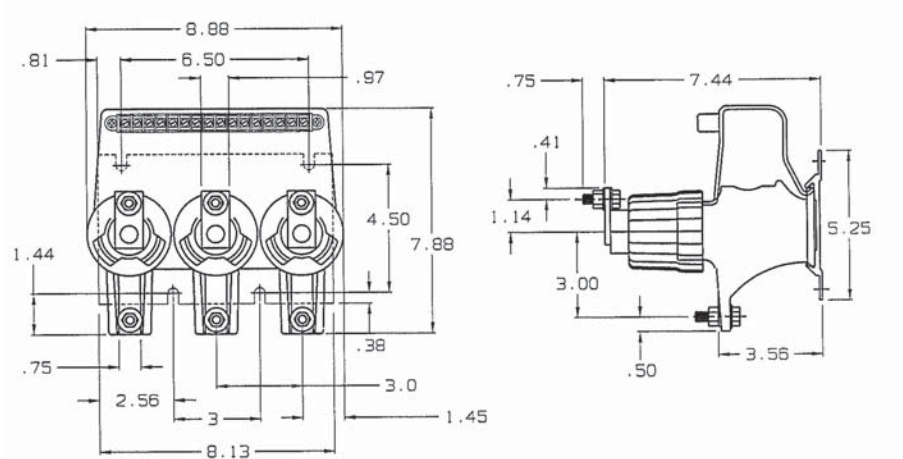
Notes:

1. 3600V model has a B.I.L. rating of 45KV and an interrupt rating of 4000A.
2. Motor applications ratings are limited to 1000A continuous with maximum LRC of 6000 ampere.

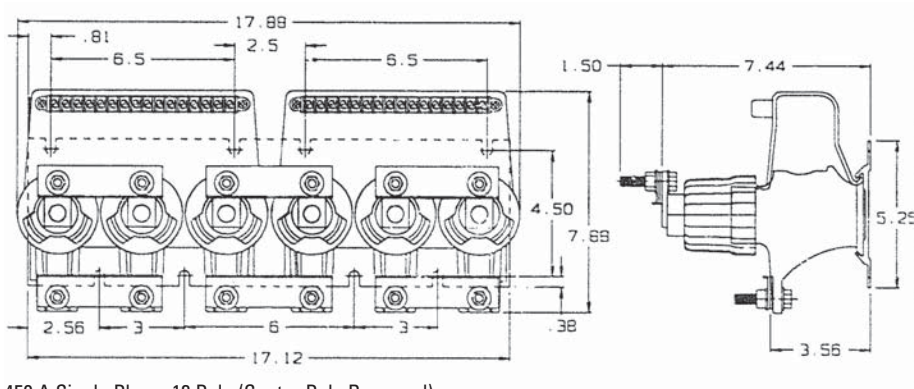
USAVAC - LOW & MEDIUM VOLTAGE

Dimensions

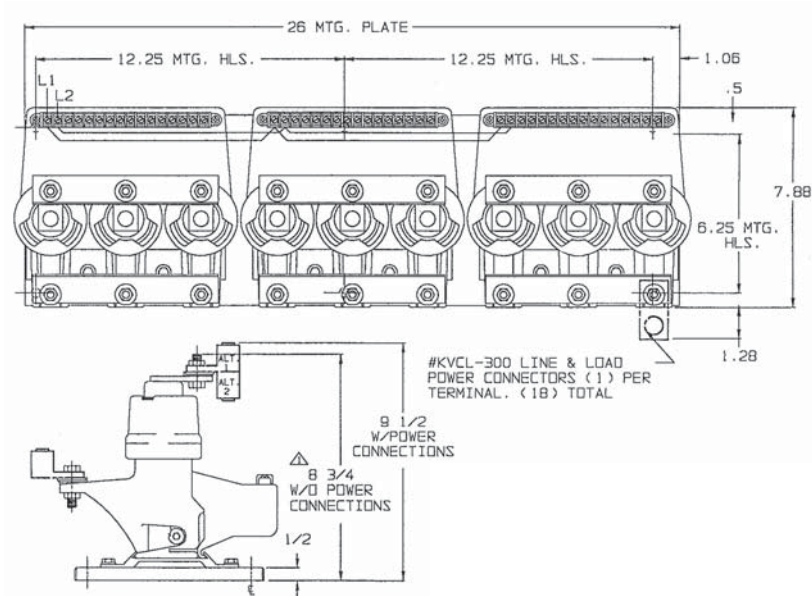
A



160-320 A 2-3 Pole 1.5 KV (As Shown)
450 A Single Phase 1 Pole (Center Pole Removed)
1000 A Single Phase 1 Pole (All 3 Paralleled)



450 A Single Phase 12 Pole (Center Pole Removed)
600 A Three Phase 1.5 KV (As Shown)
1000 A single Phase 2 Pole (2X3 Pole Paralleled)
1500 A Single Phase 1 Pole (All 6 Paralleled)

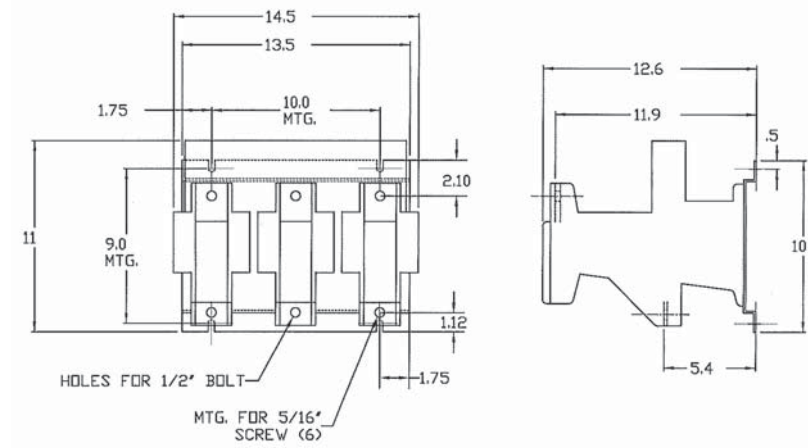


1000 A Three Phase 1.5 KV (As Shown)
1500 A Single Phase 2 Pole (Center Pole Removed) 2X4 Pole Paralleled
2500 A Single Phase 1 Pole (All 9 Paralleled)

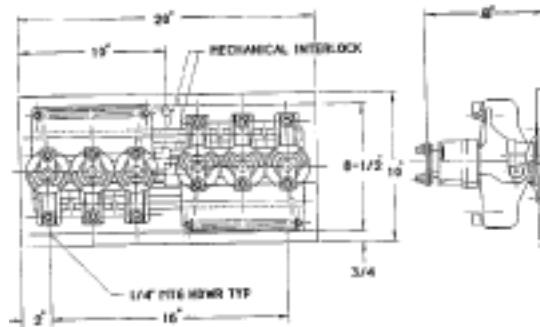
USAVAC - LOW VOLTAGE

Dimensions

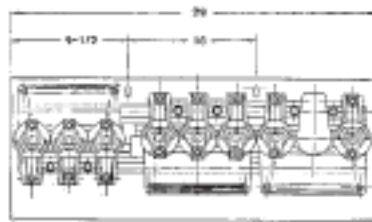
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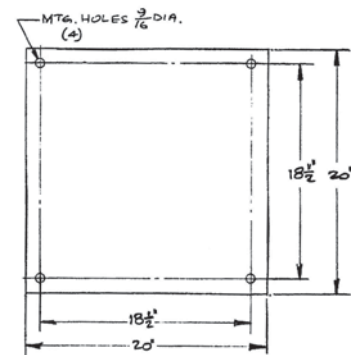
700 Amp
600V
3 Phase



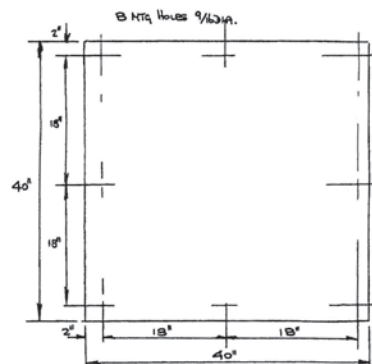
Mechanically Interlocked 160/320A Contactors



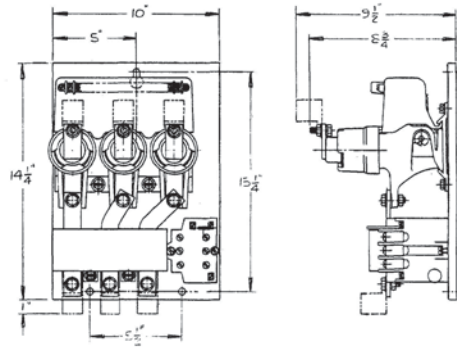
Mechanically Interlocked Contactors
3 Pole/5 Pole 160-320A



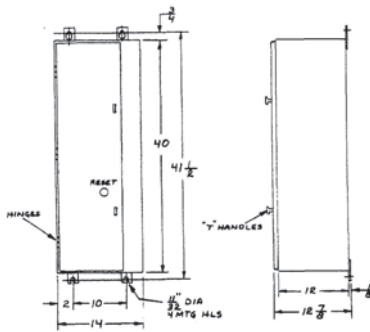
Open, Reverser, Standard or Jogging Duty
160-320A



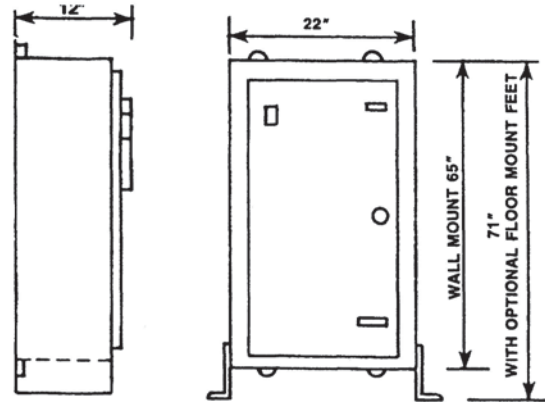
Open Type, Reverser Standard, or Jogging Duty 600A



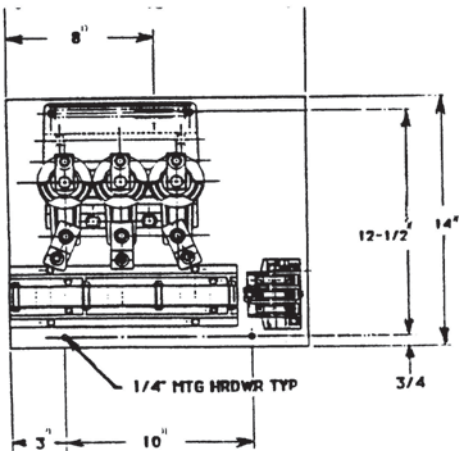
Open Starter 160/320A 1.5 KV



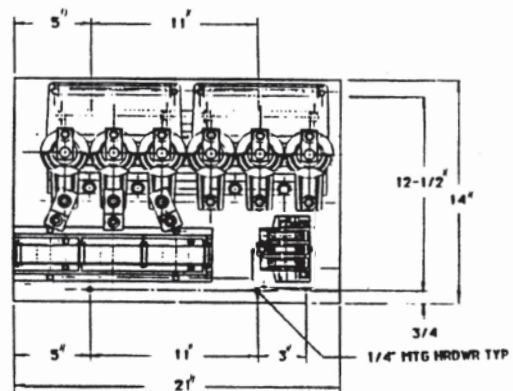
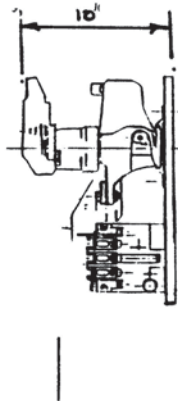
NEMA 1, 12 Non Combination Starter
160/320A



NEMA 1, 12 Combination Starter Fusible & Non Fusible
600 V- 135, 160, 320 AMP.



Open Starter 3.3 KV, 160-320A

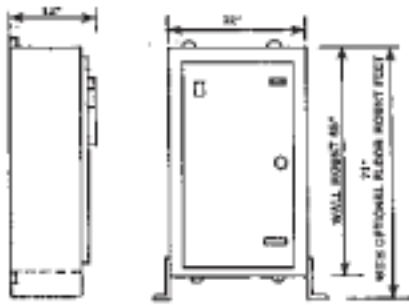


Open Starter 1.5/3.3 KV, 600A

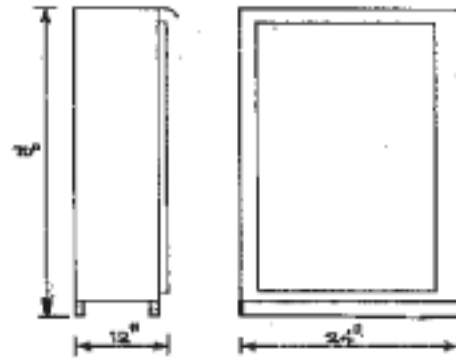
USAVAC - LOW VOLTAGE

Dimensions

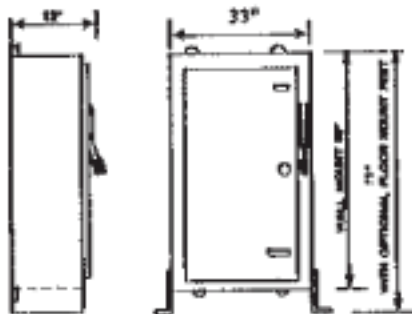
A



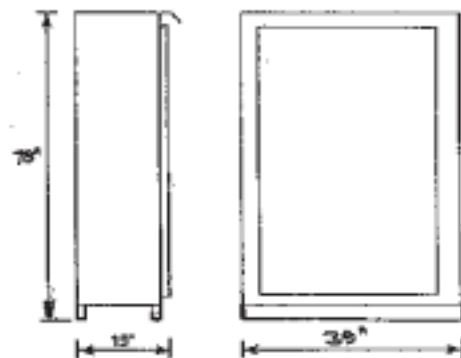
1.5 KV NEMA 1, 12 Standard Width
160-320A Fusible Combination Starters



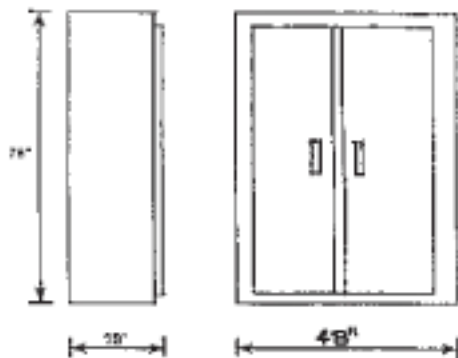
1.5 KV NEMA 1, 12, 600A
Fusible Combination Starters



1.5 KV NEMA 3 Extra Wide
160-320A Fusible Combination Starters



RVAT Starter 135-160-320A
230V-460V Combination Starter



RVAT Starter 600A 230/460V
Combination Starters

USAVAC - LOW & MEDIUM VOLTAGE

Overload Heaters

Heater Selection

Select heaters based on motor nameplate full-load current. Tables are for continuous rated motors. Full-load current for a given horsepower motor will vary from one manufacturer to another and will depend on RPM of motor.

Type of Protection

Heaters selected directly from the tables provide a maximum of 125% protection at 40°C ambient, is suitable for motors with a 1.15 service factor with a 40°C rise or less and with motor and controller at the same temperature. For motors with 1.0 service factor or with a temperature rise greater than 40°C without service factor rating, use one size smaller heaters than in table. The ultimate trip of the heater is approximately 125% of the minimum current shown in the tables in a 40°C ambient. The overload relay provides protection in accordance with UL Class 20. For further data refer to Controlog section B.

Ambient Correction

Not necessary when overload relay is ambient compensated as identified by green reset rod. For control at an ambient constantly less than the motor ambient, correct by decreasing the nameplate motor full-load current by 8% per 10°C difference in ambient.

For control at an ambient constantly greater than the motor ambient, correct by increasing the nameplate motor full-load current by 8% per 10°C difference in ambient.

Branch Circuit Protection

Branch circuit protection should be provided per USA National Electric Code or the Canadian Electrical Code. Current rating of the protective device must not exceed the maximum value listed in the table.

Automatic Reset

Automatic reset operation should not be used with two-wire control.

A

HEATER APPLICATION TABLE FOR 3 PHASE MOTORS		
Bul. 6013, 6030, & 6050 Type CV-200 Standard or Ambient Compensated Overload Relay for use with 400/5 Current Transformer		
HEATER CAT. NO.	MIN.	MAX.
2421	87.0	96.5
2422	96.6	104.9
2423	105.0	117.7
2424	117.8	131.1
2425	131.2	137.5
2426	137.6	152.9
2427	153.0	171.4
2429	171.5	185.5
2430	185.6	200.0

CV 4 HEATER APPLICATION TABLE					
NON-REVERSING, REVERSING AND MULTI-SPEED, WITH STANDARD OR AMBIENT COMPENSATED OVERLOAD RELAY					
ENCL. STANDARD TYPE OPEN OR ENCL. AMBIENT COMP. TYPE	HEATER CATALOG NUMBER		PROTECTIVE DEVICE MAXIMUM FUSE	INVERSE TIME BREAKERS CONT. AMPS.	STARTER SIZE
MOTOR CONTINUOUS AMPERE RATING	MIN.	MAX.			
28.6	31.6	2525	125	70	3
31.7	35.2	2526	125	70	
35.3	39.1	2527	150	70	
39.2	42.3	2528	150	70	
42.4	46.4	2529	175	100	
46.5	50.8	2530	200	100	
50.9	57.3	2531	225	100	
57.4	63.7	2532	250	100	
63.8	70.7	2533	250	100	
70.8	77.3	2534	300	125	
77.4	83.1	2535	300	150	4
83.2	90.0	2536	300	150	
83.2	90.9	2536	350	150	
91.0	97.6	2537	350	150	
97.7	106.0	2538	400	150	
106.1	115.4	2539	450	200	
115.5	123.9	2540	450	200	
124.0	135.0	2541	450	200	

HEATER APPLICATION TABLE FOR 3 PHASE MOTORS			
Bul. 6013, 6030, & 6050 Type CV5, CV6, CV400 & CV600. Standard or Ambient Compensated Overload Relay for use with 500/5 Current Transformer			
HEATER CAT. NO.	MIN.	MAX.	STARTER SIZE
2425	198.0	215.0	400A
2426	215.1	237.0	
2427	237.1	267.0	
2429	267.1	270.0	
2429	267.1	289.0	
2430	289.1	324.0	
2431	324.1	351.0	
2432	351.1	390.0	
2433	390.1	400.0	
2433	390.1	425.0	
2434	425.1	487.0	600A
2435	487.1	540.0	
2435	487.1	548.0	
2436	548.1	600.0	

HEATER APPLICATION TABLE FOR 3 PHASE MOTORS		
BUL. 6013 TYPE VS SIZE 4 STANDARD OR AMBIENT COMPENSATED OVERLOAD RELAY		
MOTOR CONTINUOUS AMPERE RATING	HEATER CATALOG NUMBER	
MIN. MAX.		
29.2	32.3	2525
32.4	36.0	2526
36.1	39.9	2527
40.0	43.4	2528
43.5	47.6	2529
47.7	52.4	2530
52.5	59.2	2531
59.3	66.0	2532
66.1	73.3	2533
73.4	80.4	2534
80.5	87.9	2535
88.0	95.0	2536
95.1	102.7	2537
102.8	111.9	2538
112.0	122.9	2539
123.0	133.9	2540
134.0	145.0*	2541*

HEATER APPLICATION TABLE FOR 3 PHASE MOTORS			
Bul. 6013, 6030, & 6050 Type VS Size 4, E, and 5 Standard or Ambient Compensated Overload Relay for use with 400/5 Current Transformer			
MAX.	MIN.	600 A.	STARTER SIZE
44.9	49.6	2413	4
49.6	56.0	2414	
56.1	61.6	2415	
61.7	68.0	2416	
68.1	76.7	2417	
76.8	81.5	2418	
81.6	89.4	2419	
89.5	94.1	2420	
94.2	105.9	2421	
106.0	119.9	2422	
120.0	134.4	2423	5
134.5	135.0	2424	
135.1	156.9	2424	
157.0	160.0	2425	
160.1	170.9	2425	
171.0	188.9	2426	
189.0	211.9	2427	
212.0	229.9	2429	
230.0	256.9	2430	
257.0	280.9	2431	
281.0	304.0	2432	
304.0	320.0	2433	

HEATER APPLICATION TABLE FOR 3 PHASE MOTORS				
Type VS Size 6 Standard or Ambient Compensated Overload Relay For use with 400/5 Current Transformer				
HEATER CATALOG NUMBER	MOTOR AMPERE RATING		INVERSE TIME CIRCUIT BREAKER MAGNETIC TRIP SETTING	
	MAX.	MIN.	600 A.	800 A.
2421	106.0	95.2	LOW	LOW
2422	121.0	106.1	LOW	LOW
2423	136.0	121.1	LOW	LOW
2424	158.0	136.1	LOW	LOW
2425	172.0	158.1	LOW	LOW
2426	190.0	172.1	LOW	LOW
2427	214.0	190.1	LOW	LOW
2429	231.0	214.1	LOW	LOW
2430	259.0	231.1	LOW	LOW
2431	281.0	259.1	2	LOW
2432	312.0	281.1	3	LOW
2433	340.0	312.1	3	LOW
2434	390.0	340.1	4	2
2435	438.0	390.1	6	3
2436	484.0	438.1	7	3
2437	520.0	484.1	HIGH	4
2438	590.0	520.1	HIGH	6
2439	600.0	590.1	HIGH	6

USAVAC - VACUUM CONTROL

Accessories / Parts

A

Low Voltage Contactors 200V - 3.6Kv

Description	Rating	Catalog Number
Accessories - Discount Schedule JC11		
Terminal Boots	Line Side (1 Per Kit)	KVC-UB1
	Load Side (1 Per Kit)	KVC-UL1
Parts - Discount Schedule JC80		
Phase Assembly Fig. 1	160 ampere (1 Per Kit)	A77-354115A-1
	320 ampere (1 Per Kit)	A77-354115A-2
	600 ampere	A77-354115A-2
	1000 ampere	A77-354115A-2
Control Module Fig. 2	120/240V, 50/60Hz (1 Per Kit)	A77-354117A
	125V DC (1 Per Kit)	A77-452580A-2
	250V DC (1 Per Kit)	A77-452580A-4



Fig. 1



Fig. 2

Notes:

When ordering for 600A Rating, Qty. (2) of a 320A Phase Assembly are required Per Pole.

When ordering for a 1000A Rating, Qty. (3) of a 320A Phase Assembly are required Per Pole.

Medium Voltage Contactors 2.3 - 7.2Kv

Description	Rating	Catalog Number
Accessories - Discount Schedule JC19		
Auxiliary Contacts	2N.O. & 2 N.C. Auxiliary Block	A77-358002
Parts - Discount Schedule JC80		
Phase Assembly (Half Shell) Fig. 3	200 ampere (1 Per Kit)	A77-356249A-1
	400 ampere (1 Per Kit)	A77-356249A-2
	600 ampere (1 Per Kit)	A77-356249A-3
	700 ampere	A77-356249A-5
	1200 ampere	A77-356249A-4
Phase Assembly	Complete 3 Phase Assembly	A77-359473A-1
	Complete 1 Pole Assembly	A77-359473A-2
Control Module Fig. 4	120V, 50/60Hz (1 Per Kit)	A77-356277A-1
	240V, 50/60Hz (1 Per Kit)	A77-356277A-2
	380/460V, 50/60Hz	A77-356277A-4
	125V DC (1 Per Kit)	A77-452563A-2
	250V DC (1 Per Kit)	A77-452563A-4



Fig. 3

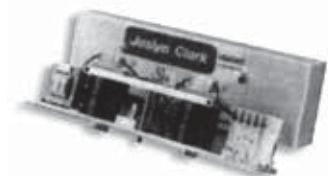


Fig. 4

Modifications For Combination and Non-Combination Controllers

Description	Change Cat. No. Character Indicated To:	Typical Catalog Number
Cover Controls		
Push Buttons & Selector Switches Hand-Off-Auto Selector Switch	B	 V S18 A A 50690 - 76-(-)
Start-Stop Push Buttons	C	
2 or 3 Position Selector Switch - SPDT	B	
Forward-Reverse-Stop Push Buttons	C	
High-Low-Stop Push Buttons Fast-Slow-Stop Push Buttons	C	
Pilot Lights With Electrical Interlock: Standard Transformer Type, Red Lens	13	
Push-to-Test Transformer Type, Red Lens	14	
Modification 14. Lens color below. Example: Order 15 = Std. Transformer with interlock & color lens	13+15	
Green		
Blue	13+16	
White	13+17	
Yellow	13+18	
Amber	13+19	
Clear	13+20	
Auxiliary Relays		
Extra 2 N, 0 & 2 N.C. Aux. Contacts	21	
Time Relay ON Delay	22	
Time Relay OFF Delay	23	
Time Relay ON Delay & Instantaneous	24	
Time Relay OFF Delay & Instantaneous	25	
Time Relay ON Delay & OFF Delay	26	

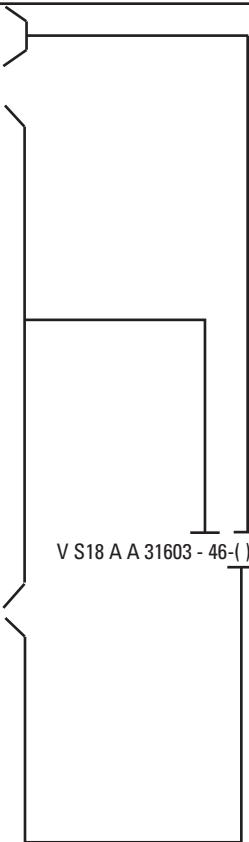
Ordering Example:

VS18TA350694-76 with the following modifications:	VS18TA350694-76
1 - Hand-Off-Auto Selector Switch	B
1 - Transformer operated Red Pilot with Interlock	13
1 - Transformer operated Green Pilot Light with Interlock	13 + 15

USAVAC - LOW VOLTAGE VACUUM CONTROL

Modifications

Modifications

Description	Change Cat. No. Character Indicated To:	Typical Catalog Number
Overload Relay		
777 Electronic Motor Management Relay 970	27	
RM 2000 motor Monitor for use with 777	27A	
Power Circuit		
Standard Capacity - Primary Volts/Hertz:		
220-240/60 or 220/50	-T26	
440-480/60 or 440/50	-T46	
550-600/60 or 550/50	-T56	
200-208/60	-T86	
380/50	-T35	
220/25	-T22	
440/25	-T42	
100 Watts Extra - Primary Volts/Hertz:		
220-240/60 or 220/50	-C26	
440-480/60 or 440/50	-C46	
550-600/60 or 550/50	-C56	
200-208/60	-C86	
380/50	-C35	
220/25	-C22	
440/25	-C42	
Fused Primary (Includes 2 Fuses)	30	
Control Circuit Separate	31	
Fused Control Circuit, 2 fuses included	32	
3 Phase Voltage Monitor Relay, Phase loss, Phase reversal	33A	
Digital Power Meter	* Digital Power Meter: All functions included in Mod. 35A 35A	
* Ammeter 3 Phase		
* Voltmeter 3 Phase		
* Power (KW) Wattmeter		
* Energy (KWH) KWH Meter		
* PF Meter		
* Frequency Meter		
* Reactive Power (KVAR)		
Contactors MI 320/160A 3 Phase	See page A22	
Contactors MI 600/320A 3 Phase	See page A22	

Ordering & Pricing Example:

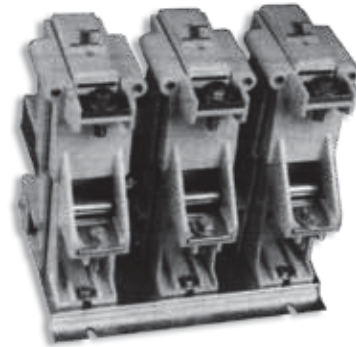
VS18TA350694-76 with the following modifications: VS18TA350694-76

1 - 3 Phase Voltage Monitor Relay (Phase loss, Phase reversal) 33A
Complete Cat# VS18TA350694-76-33A

USAVAC - MEDIUM VOLTAGE

AC Vacuum Contactors

- UL Recognition ¹
- CSA Certified ¹
- Electrically Held AC or DC Closing Coils



A

3 Pole Vacuum Contactors - Bulletin 7707

Ampere Rating	Maximum Horsepower Ratings		Open Type Catalog No.
	8pf Ind. or Syn. Motor	1.0 pf Syn. Motor	
2500 Volts			
200	900	1000	MVC77U032A25 -*
400	1750	2000	MVC77U034A25 -*
600	2250	2500	MVC77U036A25 -*
800	2750	-----	SVC77U038A25 -*
1200	-----	-----	SVC77U031225 -*
4160 Volts			
200	1500	1750	MVC77U032A50 -*
400	3000	3500	MVC77U034A50 -*
600	4500	4750	MVC77U036A50 -*
800	5500	-----	SVC77U038A50 -*
1200	-----	-----	SVC77U031250 -*
6600 Volts			
200	2500	2750	MVC77U032A72 -*
400	5000	5250	MVC77U034A72 -*
600	6750	7000	MVC77U036A72 -*
800	8000	-----	SVC77U038A72 -*
1200	-----	-----	SVC77U031272 -*

Ratings Include 2.5, 5.0, 7.2KV,
200, 400, 600, 800 and 1200 Ampere

Notes:

1. UL recognized 5KV 500A 7.2KV 400A
CSA Certified 5KV 400A

Mechanically Interlocked Contactors on Page A41 should be used if short circuit current can flow when switching between two or more contactors.

Ordering Information

* Coil Table

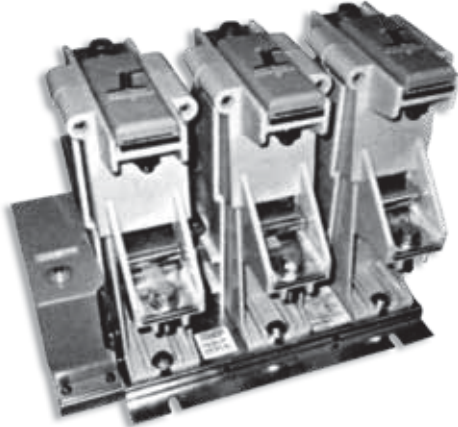
- Use complete catalog number when ordering.
Replace the (*) with the suffix from the coil table.
- Engineering Data page A43.
- Renewal Parts page A36.

Voltage Suffix	
120 AC	-76
240 AC	-26
125V DC	-125
250V DC	-250

USAVAC - MEDIUM VOLTAGE

AC Vacuum Contactors

A



Ratings Include 2.5, 5.0, 7.2KV,
200, 400, 600 Ampere

- UL Recognition ¹
- CSA Certified 5KV 400A ¹With Separate Mechanically Latched Close and Trip Coils

3 Pole Vacuum Contactors - Bulletin 7707

Ampere Rating	Maximum Horsepower Ratings		Open Type Catalog No.
	.8pf Ind. or Syn. Motor	1.0 pf Syn. Motor	
2500 Volts			
200	900	900	MVCL77U032A25 -*
400	1750	1750	MVCL77U034A25 -*
600	2250	2250	MVCL77U036A25 -*
1200			MVCL77U0312A25 -*
4160 Volts			
200	200	1500	MVCL77U032A50 -*
400	400	3000	MVCL77U034A50 -*
600	600	4500	MVCL77U036A50 -*
1200			MVCL77U031250 -*
6600 Volts			
200	200	2500	MVCL77U032A72 -*
400	400	5000	MVCL77U034A72 -*
600	600	6750	MVCL77U036A72 -*
1200			MVCL77U031272 -*

Notes:

1. UL recognized 5KV 500A 7.2KV 400A
CSA Certified 5KV 400A

Mechanically Interlocked Contactors on Page A41 should be used if short circuit current can flow when switching between two or more contactors.

Ordering Information

* Coil Table

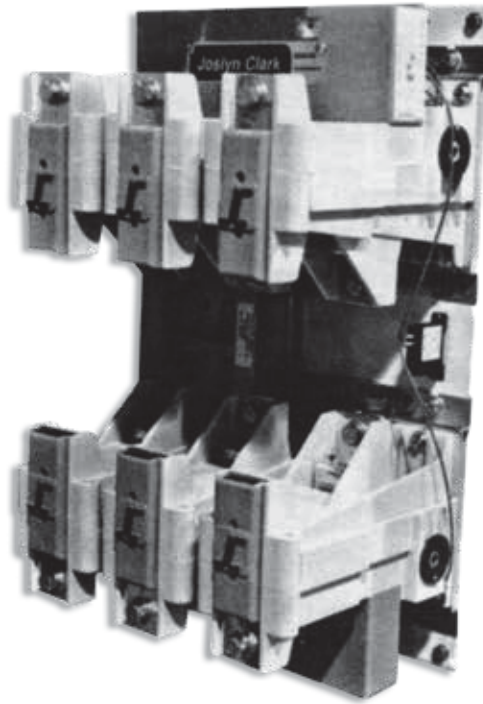
- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A43.
- Renewal Parts page A36.

Voltage Suffix	
120 AC	-76
240 AC	-26
125V DC	-125
250V DC	-250

USAVAC - MEDIUM VOLTAGE

Mechanically Interlocked Contactor

A



3 Pole - 3 Pole Mechanically Interlocked - Bulletin 6031

Ampere Rating	Maximum Horsepower Ratings		Open Type Catalog No.
	.8pf Ind. or Syn. Motor	1.0 pf Syn. Motor	
2500 Volts			
200	900	1000	MVC31U032A25 -*
400	1795	2000	MVC31U034A25 -*
600	2250	2500	MVC31U036A25 -*
4160 Volts			
200	1500	1750	MVC31U032A50 -*
400	3000	3500	MVC31U034A50 -*
600	4500	4750	MVC31U036A50 -*
6600 Volts			
200	2500	2750	MVC31U032A72 -*
400	5000	5250	MVC31U034A72 -*
600	6750	7000	MVC31U036A72 -*

Ordering Information

* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A43.
- Renewal Parts page A36.

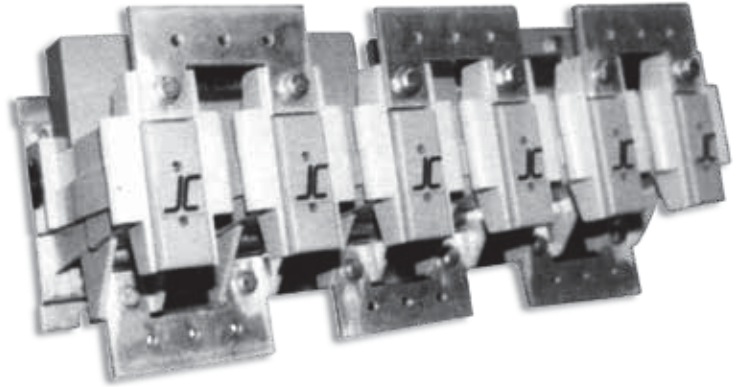
Voltage Suffix	
120 AC	76
240 AC	26

USAVAC - MEDIUM VOLTAGE

AC Vacuum Contactors

A

Special Purpose Contactors
3000A Single Phase
1200A Three Phase



The following controls are for high current applications such as electric arc and induction furnaces.

Special Purpose Vacuum Contactors - Bulletin 7707

Ampere Rating	Open Type, 2500V Catalog No.	Open Type, 5000V Catalog No.	Open Type, 7200V Catalog No.
1 Pole, Single Phase			
1000	SVC77U011025 -*	SVC77U011050 -*	SVC77U011072 -*
1500	SVC77U011525 -*	SVC77U011550 -*	SVC77U011572 -*
2000	SVC77U012025 -*	SVC77U012050 -*	SVC77U012072 -*
3000	SVC77U013025 -*	SVC77U013050 -*	SVC77U013072 -*
2 Pole, Single Phase			
200	SVC77U022A25 -*	SVC77U022A50 -*	SVC77U022A72 -*
400	SVC77U024A25 -*	SVC77U024A50 -*	SVC77U024A72 -*
600	SVC77U026A25 -*	SVC77U026A50 -*	SVC77U026A72 -*
1000	SVC77U021025 -*	SVC77U021050 -*	SVC77U021072 -*
1500	SVC77U021525 -*	SVC77U021550 -*	SVC77U021572 -*
3 Pole, Three Phase			
800	SVC77U038A25 -*	SVC77U038A50 -*	SVC77U038A72 -*
1200	SVC77U031225 -*	SVC77U031250 -*	SVC77U031272 -*

Ordering Information

* Coil Table

- Use complete catalog number when ordering. Replace the (*) with the suffix from the coil table.
- Engineering Data page A43.
- Renewal Parts page A36.

Voltage Suffix	
120 AC	76
240 AC	26

Vacuum Contactor & Starter Ratings

Standard - NEMA ICS 2-324, UL 347, CSA 22.2, IEC 470, BS 775

Description		200A	400A	600	1200
Catalog Number & 2.5KV		MVC77U032A25	MVC77U031A25	MVC77U036A25	SVC77U031225
Rated Voltage 5.0KV		MVC77U032A50	MVC77U034A50	MVC77U036A50	SVC77U031250
7.2KV		MVC77U032A72	MVC77U034A72	MVC77U036A72	SVC77U031272

Power Ratings					
Operational Rated Current		200A	400A	600A	800/1200A
Operational Rated Frequency HZ		50/60	50/60	50/60	50/60
E1 Interrupt Rating	2.5KV	20 MVA Equivalent to 4.62 KA			-----
MVA & KA Values	5.0KV	40 MVA Equivalent to 4.62 KA			-----
Contactor Only	7.2KV	60 MVA Equivalent to 4.81 KA			-----
E2 Fuse Coordination	Rating	400 MVA 45.7 KA RMS			-----
MVA & KA	5.0KV	38R max. fuse size			
Withstand KA	5.0KV	57.8 KA - Peak, 38R - Fuse			-----
Short Time Current	1 Sec. KA	6	7	9	12
	5 Sec. KA	4	5	6	9
	15 Sec. KA	2	2.6	3	6
Switching Frequency		300/Hr			
Elec. Life at Rated Current		.6 x 10 ⁶	.40 x 10 ⁶	.250 x 10 ⁶	.250 x 10 ⁶
Mechanical Life		.75 x 10 ⁶			
Dielectric Strength		20KV 1 min.			
Impulse withstand B.I.L.		1.2 x 50 us 60KV			
Chopping Current Max.		.9A			
Control Ratings AC&DC					
Rated Control Voltage		120/240V 50/60Hz AC or 125/250V DC			
Allowable Fluctuation		+10-15%			+10-20%
Closing Power VA/Duration		650VA/45MS			1300VA/45MS
Holding Power		7VA AC .47A DC			14VA AC .924A DC
Opening Time Ave.		90 MS at 60Hz			
Closing Time Ave.		40 MS at 60 Hz			
Pick up Voltage	Min.	102V or less			
Drop Out Voltage	Ave.	70% or less			
Recommended Control Trans.		(AC Only)	300VA	600VA	
Application Conditions					
Standard	Current	Continuous AC/DC 10A/5A			
Auxiliary	Voltage	600V Max. - 48V Min. NEMA A600 (AC) P600 (DC)			
Contact	AC	Make/Break 7200VA/720VA			
Ratings	DC	Make/Break 125/250V 138VA 300/600V 138VA			
Additional	Current	Continuous AC/DC 10A/2.5A			
Auxiliary Contact	Voltage	600V Max. - 48 Min. NEMA A600 (AC) Q300 (DC)			
Relay Ratings	AC	Make/Break 7200VA/720VA			
	DC	Make/Break 125/250V/69VA			
Weight		48 lbs.			96 lbs.

Technical Specifications

CSA 5KV. 400A

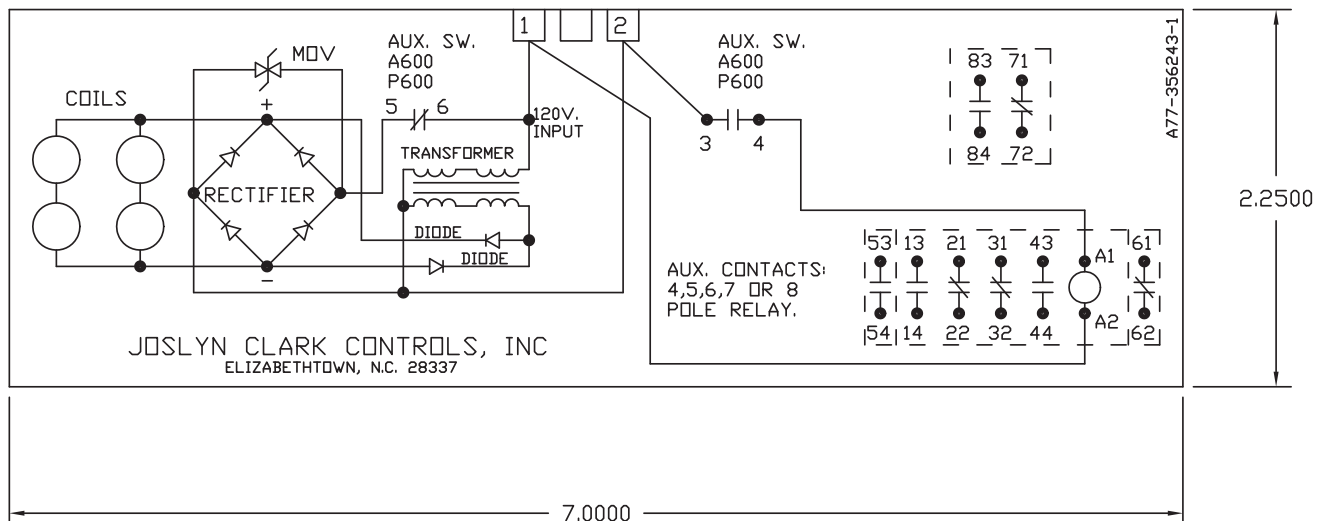
UL Recognized 5KV 500A 7.2KV 400A

Power Application Ratings

Voltage KV		2.5	3.3	4.16	6.6
Motor Type	Current	Motor HP			
.8 P.F. Ind. or Syn Motor	200A	900	1250	1500	2500
1.0 P.F. Syn Motor	200A	1000	1500	1750	2750
.8 P.F. Ind. or Syn Motor	400A	1750	2250	3500	5000
1.0 P.F. Syn Motor	400A	2000	2500	3500	5250
.8 P.F. Ind. or Syn Motor	600A	2250	3250	4500	6750
1.0 P.F. Syn Motor	600A	2250	3500	4750	7000
.8 P.F. Ind. or Syn Motor	800A	2750	4000	5500	8000
Transformer Load KVA					
Three Phase Transformer	200A	750	1000	1500	2000
	400A	1500	2000	3000	4000
	600A	2500	3000	4250	6000
	800A	2750	3750	5250	7500
	1200A	4100	5000	7000	10000
Capacitor Load KVAR					
Three Phase Capacitor	200A	550	750	1050	1500
	400A	1125	1500	2250	3000
	600A	1650	2250	3375	4500
	800A	2200	2900	4500	5000
	1200A	2750	3750	5625	7500

Accessories & Options:

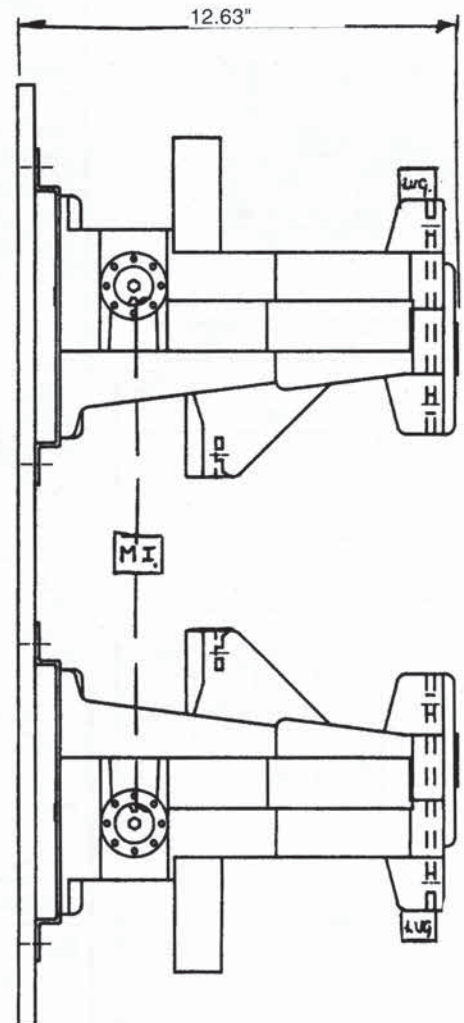
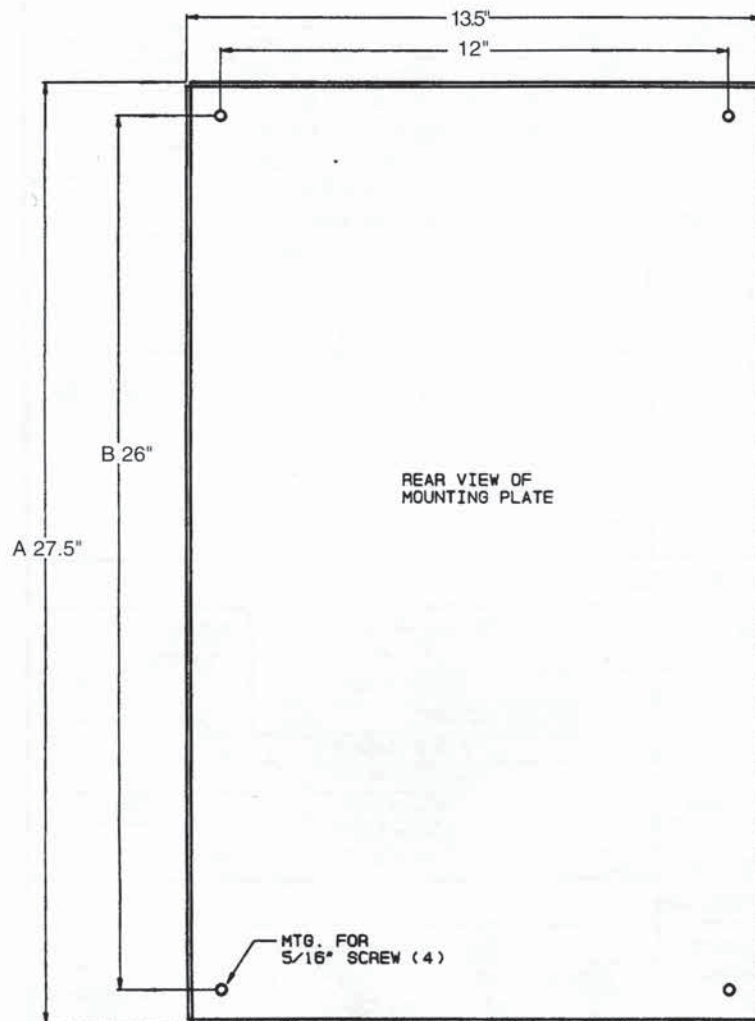
1. 2, 4, & 5 Pole contactors, consult factory.
2. Mechanically interlocked contactors available.
3. Medium voltage starters available in non-drawout designs in NEMA 12 & 3 enclosures, consult factory.
4. Terminal Lug Kits available.



USAVAC - MEDIUM VOLTAGE

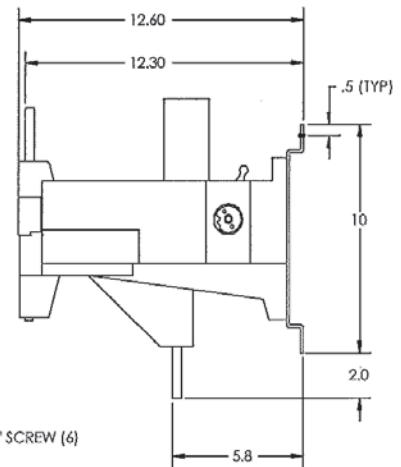
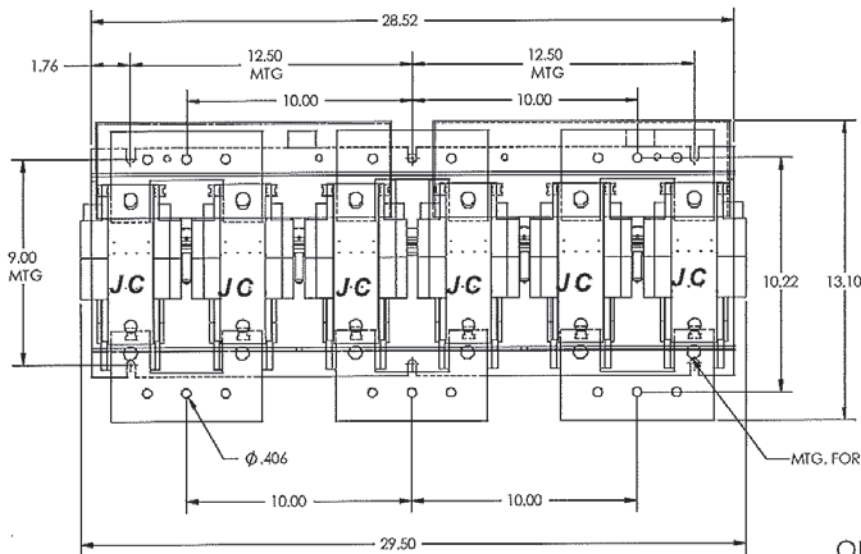
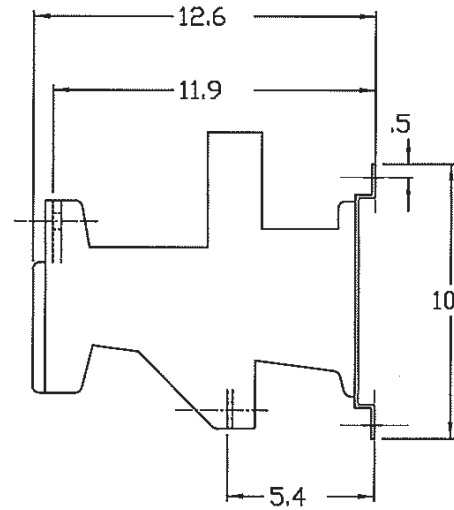
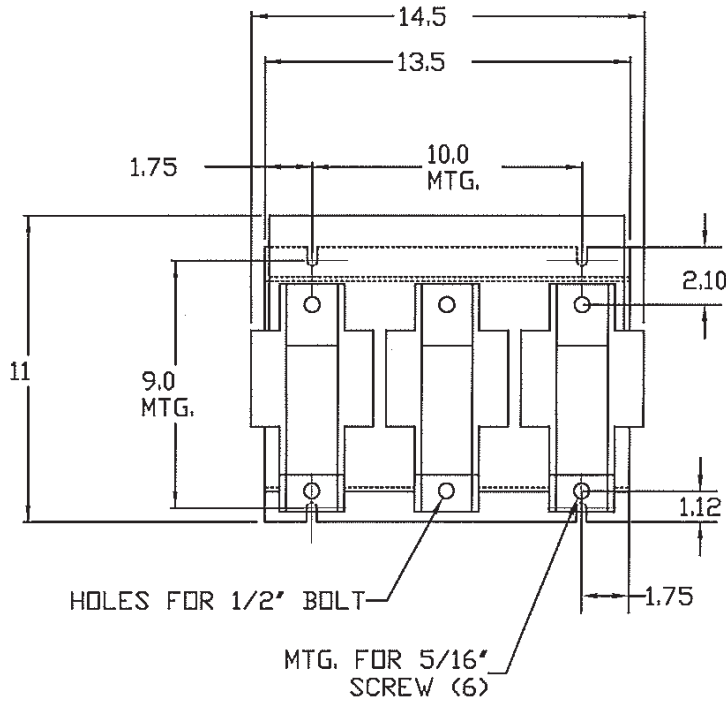
Dimensions

A



- 1 2.5/5.0/7.2 KV 200, 400A
2.5/5.0/7.2 KV 1200A 3 Phase
2.5/5.0/7.2 KV 1000, 1500A 2 Pole
2.5/5.0/7.2 KV 2000, 3000A 1 Pole

- 2 600 AMP
A = 32"
B = 30.5"



OUTLINE DRAWING

3 POLE CONTACTOR
800 & 1200 AMP - 2.5, 5.0 & 7.2 KV
1400 AMP - 600 V

USAVAC - MEDIUM VOLTAGE

Controllers

A

- UL 347 LISTED
- CSA 2-22 APPROVED
- FULL VOLTAGE
- NON REVERSING - REVERSING

Ampere Rating	Maximum HP Ratings	NEMA 12 Catalog No.
2300V VACUUM STARTERS With Fused Load Break Disconnect		
160*	100	MVS18TA31A25A-T236
160*	200	MVS18TA31A25B-T236
160*	400	MVS18TA31A25C-T236
200	900	MVS18TA32A25D-T236
200	1000	MVS18TA32A25E-T236
320*	1250	MVS18TA33A25F-T236
400	1500	MVS18TA35A25G-T236
600#	1750	MVS18TA36A25H-T236
600#	2000	MVS18TA36A25J-T236
600#	2250	MVS18TA36A25K-T236

Ampere Rating	Maximum HP Ratings	NEMA 12 Catalog No.
4160V VACUUM STARTERS With Fused Load Break Disconnect		
200	100	MVS18TA32A50A-T416
200	200	MVS18TA32A50B-T416
200	400	MVS18TA32A50C-T416
200	900	MVS18TA32A50D-T416
200	1000	MVS18TA32A50E-T416
200	1250	MVS18TA32A50F-T416
200	1500	MVS18TA32A50G-T416
400	1750	MVS18TA34A50H-T416
400	2000	MVS18TA34A50J-T416
400	2250	MVS18TA34A50K-T416
400	2500	MVS18TA34A50L-T416
400	3000	MVS18TA34A50M-T416
600#	3500	MVS18TA36A50N-T416
600#	4000	MVS18TA36A50P-T416
600#	4500	MVS18TA36A50R-T416

Ampere Rating	Maximum HP Ratings	NEMA 12 Catalog No.
6600V VACUUM STARTERS With Fused Load Break Disconnect		
200	100	MVS18TA32A72A-T666
200	200	MVS18TA32A72B-T666
200	400	MVS18TA32A72C-T666
200	900	MVS18TA32A72D-T666
200	1000	MVS18TA32A72E-T666
200	1250	MVS18TA32A72F-T666
200	1500	MVS18TA32A72G-T666
200	1750	MVS18TA32A72H-T666
200	2000	MVS18TA32A72J-T666
200	2250	MVS18TA32A72K-T666
200	2500	MVS18TA32A72L-T666
400	3000	MVS18TA34A72M-T666
400	3500	MVS18TA34A72N-T666
400	4000	MVS18TA34A72P-T666
400	4500	MVS18TA34A72R-T666
400	5000	MVS18TA34A72S-T666
600#	6000	MVS18TA36A72T-T666
600#	6750	MVS18TA36A72V-T666

Notes:

For Reversing Applications and change 4th and 5th digit of cat # from 18 to 38.
 For Inching or Plugging Duty Refer to Factory.
 For Latched Contactors change "MVS" to "MVSL" - - & specify Trip Coil Voltage.
 * These Starters have 45KV BIL Rating if 60KV Required use 200A or 400A Rated Starters.
 For NEMA 3R Rating Change 5th Digit from "T" to "R"



Free Standing, Single High Compact Vacuum Starter in NEMA 12 Enclosures. Designed to comply with NEMA1CS2-324 Class E 2 controller.

Features Offered:

- Fault Make, Load break visible blade disconnect switch with automatic grounding arm.
- Grounded metal isolation between LV and Medium Voltage Compartments.
- Maintenance free Joslyn Clark Vacuum Contactors.
- Suitably rated current limiting power fuses with striker pins and 3 phase trip bar.
- C.P.T. provided with 2 primary and 1 secondary fuses, 120V secondary.

Ordering Information

- Engineering Data page A43.
- Modification Data page A49 & 50
- Renewal Parts page A36.

Free standing, single high compact feeder capacitor. Feeder controller to comply with NEMA1CS2-324.

- Fault Make, Load break visible blade disconnect switch with automatic grounding arm.
- Grounded metal isolation between LV and Medium Voltage Compartments.
- Maintenance free Joslyn Clark Vacuum Contactors.
- Suitably rated current limiting power fuses with striker pins and 3 phase trip bar.
- C.P.T. provided with 2 primary and 1 secondary fuses, 120V secondary.



Ampere Rating	KVA Ratings	KVAR Rating	Catalog No.
2300V VACUUM STARTERS With Fused Load Break Disconnect			
200 AMP	750	550	MVF18TA32A25-T236
400 AMP	1500	1125	MVF18TA34A25-T236
600 AMP	2500	1650	MVF18TA36A25-T236
800 AMP	2750	2200	MVF18TA38A25-T236
1200 AMP	4100	2750	MVF18TA312A25-T236

Ampere Rating	KVA Ratings	KVAR Rating	Catalog No.
4160V VACUUM STARTERS With Fused Load Break Disconnect			
200 AMP	1500	1050	MVF18TA32A50-T416
400 AMP	3000	2250	MVF18TA34A50-T416
600 AMP	4250	3375	MVF18TA36A50-T416
800 AMP	5250	4500	MVF18TA38A50-T416
1200 AMP	700	5625	MVF18TA312A50-T416

Ampere Rating	KVA Ratings	KVAR Rating	Catalog No.
7200V VACUUM STARTERS With Fused Load Break Disconnect			
200 AMP	2000	1500	MVF18TA32A72-T666
400 AMP	4000	3000	MVF18TA34A72-T666
600 AMP	6000	4500	MVF18TA36A72-T666
800 AMP	7500	5000	MVF18TA38A72-T666

- Transformer ratings assume 100% continuous rating for operation at overload ratings Consult Factory
- For latched contactors change "MVF" to "MVFL" add to specify trip coil voltage.

USAVAC - MEDIUM VOLTAGE

Controllers

NON REVERSING CLOSED TRANSITION

UL 347 LISTED

CSA 2-22 APPROVED

A

Designed for automatic starting of Squirrel Cage Motors when the starting current or torque must be reduced. Joslyn Clark Reduced Voltage Auto Transformer Starters incorporate equipment exactly as the full voltage starters, with the additional following equipment

- 1- Free Standing Cubicle Containing:
 - 1- 3 Pole Starting Vacuum Contactor
 - 1- 3 Pole Shorting Vacuum Contactor
 - 1- Set of Mechanical Interlocks
 - 1- 3-Coil Auto -Transformer with 50-65-80% taps.
 - 1- Incomplete Sequence Timer



2300V RVAT Starters With Fused Motor Load Break Disconnect				
Max HP	Cat # NEMA 12		Max HP	Cat # NEMA 12
*100	MVS83TA31A25A-T236		*1250	MVS83TA33A25F-T236
*200	MVS83TA31A25B-T236		1500	MVS83TA34A25G-T236
*400	MVS83TA31A25C-T236		1750	MVS83TA36A25H-T236
*900	MVS83TA33A25D-T236		2000	MVS83TA36A25J-T236
*1000	MVS83TA33A25E-T236		2250	MVS83TA36A25K-T236
4160V RVAT Starters With Fused Motor Load Break Disconnect				
100	MVS83TA32A50A-T416		2000	MVS83TA34A50J-T416
200	MVS83TA32A50B-T416		2250	MVS83TA34A50K-T416
400	MVS83TA32A50C-T416		2500	MVS83TA34A50L-T416
900	MVS83TA32A50D-T416		3000	MVS83TA34A50M-T416
1000	MVS83TA32A50E-T416		3500	MVS83TA36A50N-T416
1250	MVS83TA32A50F-T416		4000	MVS83TA36A50P-T416
1500	MVS83TA32A50G-T416		4500	MVS83TA36A50R-T416
1750	MVS83TA34A50H-T416			
6600V RVAT Starter With Fused Motor Load Break Disconnect				
1000	MVS83TA32A72E-T666		4000	MVS83TA34A72P-T666
1500	MVS83TA32A72G-T666		5000	MVS83TA34A72S-T666
2000	MVS83TA32A72J-T666		6000	MVS83TA36A72T-T666
2500	MVS83TA32A72L-T666		6750	MVS83TA36A72V-T666
3000	MVS83TA34A72M-T666			

Notes:

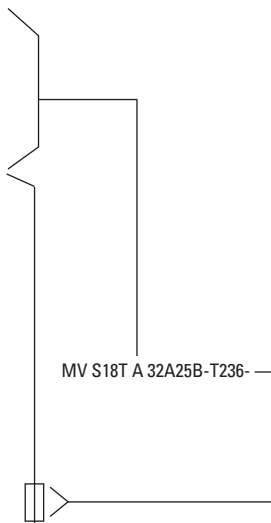
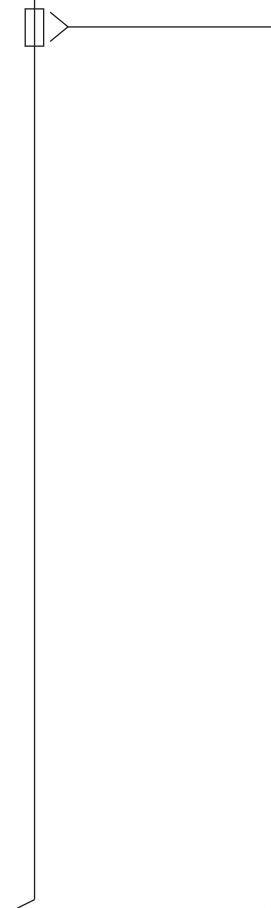
- For NEMA 3R Replace 6th cat. # digit 'T' with 'R'
- * These Starters have 45KV BIL Rating for, 60KV Rating
- For reversing application change the 83 to 86.
- For inching or plugging duty refer to Factory.

USAVAC - MEDIUM VOLTAGE

Controller Modifications

Modifications For Combination USAVAC Medium Voltage Controllers

A

Description	Enclosed Type NEMA 1, 3R, 12	Change Cat. No. Character Indicated To:	Typical Catalog Number	
Cover Controls				
Push Buttons & Selector Switches Hand-Off-Auto Selector Switch		B		
Start-Stop Push Buttons		C		
2 or 3 Position Selector Switch - SPDT		B		
Forward-Reverse-Stop Push Buttons		C		
Pilot Lights With Electrical Interlock: Standard Transformer Type, Red Lens		13		
Push-to-Test Transformer Type, Red Lens		14		
Modification 11-14. Lens color below. Example: Order 11 + 15 = Std. Transformer with interlock & color lens				
Example	Green	13+15		
Pilot Light Red Lens -13	Blue	13+16		
Pilot Light Green Lens -(13 + 15)	White	13+17		
	Yellow	13+18		
	Amber	13+19		
	Clear	13+20		
Auxiliary Relays				
Extra 2 N, 0 & 2 N.C. Aux. Contacts		21		
Time Relay ON Delay		22		
Time Relay OFF Delay		23		
Time Relay ON Delay & Instantaneous		24		
Time Relay OFF Delay & Instantaneous		25		
Time Relay ON Delay & OFF Delay		26		
Overload Relays				
7777 Electronic Motor Management Relay • (Includes Ground Fault Protection) No RTD Protected		27		
• RM 2000 Motor Monitor (for use with 777 Relay) Option 27		27A		
• 369+ Motor Management Relay Current Only		31A		
• 369+ Motor Management Relay Current & Voltage		31B		
• 469 + Motor Management Relay Drawout Case		30		
• PQM Power Quality Meter		29		
• Transformer Feeder Relay 745		62		
Includes C/TS & P/T's				
Incoming & Auxiliary Cubicle Options				
18" Cable Pull Section		54		
24" Cable Pull Section (use with option #29)		55		
400A Incoming Section Unit Unfused		56		
400A Incoming Section Unit Fused		57		
600A Incoming Section Unit Unfused		58		
600A Incoming Section Unit Fused		59		
1200A Incoming Section Unit Unfused		60		
1200A Incoming Section Unit Fused		61		

USAVAC - MEDIUM VOLTAGE

Controller Modifications

A

Description	Change Cat. No. Character Indicated To:	Typical Catalog Number
No Overload Relay	28	MV S18T A 32A25-T236-
Overload Relay with N.O & N.C Contact	28A	
Fused for Separate Control	32	
Voltage Monitor Relay	33	
3 Phase Voltage Monitor Relay, Phase loss, Phase Reversal	33A	
Ammeter and Current Transformer	34	
Ammeter, Switch and 3 Current Trans.	35	
Voltmeter	36	
Voltmeter and Switch	37	
Elapsed Time Meter	38	
Wattmeter	39	
Watthour Meter	40	
Operations Counter 8 digit	41	
Space Heater	42	
Mechanically Interlocked Contactors	43	
Zero Sequence Ground Fault Relay	44	
Lightning Protector	45	
Lightning Surge Protector		
Overhead Bus 800A/Cubicle (24" Length)	47	
Overhead Bus 1200A/Cubicle (24" Length)	48	
Surge Capacitor	46	
Overhead Bus 1600A/Cubicle (24" Length)	49	
* A ground Bus is included in busbar		
Overhead Bus 800A (36" Length) 30 or 36	50	
Overhead Bus 1200A (36" Length) 30 or 36	51	
Overhead Bus 1600A (36" Length) 30 or 36	52	
Digital Power Meter (DPM) is available but not UL approved	35A	

DPM includes

Ammeter 3 Phase
Voltmeter 3 Phase
Power (kw) Wattmeter
Energy (KWH) Meter
PF Meter
Frequency Meter
Reactive Meter (KVAR)

Ordering Example:

MVS18TA32A25B-T236 with the following modifications

1 - 3 Phase Voltage Monitor Relay, Phase loss, Phase reversal.....33A
1- Operations Counter 8 Digit.....41
Digital Power Meter35A
1-777 Electronic Motor Management Relay.....27
1-Rm 2000 Motor Monitor27A

Complete Cat. # is MVS18TA32A25B-T236-33A-41-27-27A

Ordering Example:

MVS18TA32A25A-T236 with the following modifications:

1 - Hand-Off-Auto Selector SwitchB
1- Transformer operated Red Pilot with Interlock13
1- Transformer operated Green Pilot with Interlock (13 + 15)

Complete Cat. # is MVS18TB32A25A-T236-13-(13+15)