

# Reduced Voltage Starters

## Controlled starting for low in-rush and smooth operation



Sprecher + Schuh reduced voltage starters are designed for starting squirrel cage induction motors where the starting current of a motor is likely to exceed local power company restrictions, interfere with plant operations or where the load may be damaged by high starting torques.

### Starting with the best

All Sprecher + Schuh reduced voltage starters feature our CAT7 and CAT9 line of motor starters. These compact starters offer intermediate sizes to better match specific motor requirements. This equates to generous wiring space and less wasted horsepower capacity. Our advanced CEP7 solid state overload relays are used with starters. See Section B in this catalog for a full description of these excellent motor protection relays.

### Choosing the right reduced voltage method

**Autotransformer Starter** – At starting, three autotransformers (one for each phase) are automatically connected in series with the motor. The voltage at the motor is reduced to either 50%, 65% or 80% depending on which voltage tap was selected. After a timed interval, a contactor connects the motor across-the-

line and shorts out the autotransformers. Factory standard autotransformers are rated for “medium duty” as defined by NEMA.

**Part Winding Starter** – This type of starting requires that the motor winding be in two equal parts, and that at least six terminal leads be provided on the motor. At starting, the controller is arranged to connect one section of the winding to the supply lines. After a timed interval, a second contactor connects the other section of the motor winding to the supply lines, in parallel with the first.

**Wye-Delta Starter** – This type of starting requires a special wye-delta motor. Both ends of the motor’s three windings are brought out so they are accessible for reconnecting from wye to delta. At starting, the controller connects the motor in the wye configuration. After a timed interval, a second contactor connects the motor in a delta configuration.

The reference chart below compares all three reduced voltage starting methods and contrasts them with across-the-line starting.

**Reduced Voltage Comparison Table**

Type of Starter	Starting Characteristics			Advantages	Disadvantages
	Voltage @ Motor	Line Current	Starting Torque		
Across-The-Line	100%	100%	100%	<ul style="list-style-type: none"> <li>Least expensive.</li> <li>Simple to maintain.</li> <li>Highest starting torque.</li> <li>Readily available.</li> <li>Lowest installation cost.</li> </ul>	<ul style="list-style-type: none"> <li>High starting inrush may exceed limits of local utility or electrical system.</li> <li>Starting torque may be too high for the application.</li> <li>Limited to smaller horsepower motors.</li> </ul>
Autotransformer	80% 65% 50%	64% 42% 25%	64% 42% 25%	<ul style="list-style-type: none"> <li>Provides highest torque per ampere of line current.</li> <li>Three different taps on transformer permit adjustment of starting voltage.</li> <li>Suitable for long starting periods.</li> <li>Closed transition starting.</li> <li>Uses standard motor..</li> </ul>	<ul style="list-style-type: none"> <li>In lower horsepower, is the most expensive design.</li> <li>Low power factor.</li> <li>Large physical size.</li> <li>High installation cost.</li> </ul>
Part Winding	100%	65%	42%	<ul style="list-style-type: none"> <li>Least expensive of all reduced voltage starters.</li> <li>Closed transition starting.</li> <li>Small physical size.</li> <li>Most dual voltage motors can be used.</li> <li>Simple design.</li> <li>Low installation cost.</li> </ul>	<ul style="list-style-type: none"> <li>Poor torque efficiency</li> <li>Unsuited for high inertia, long starting loads.</li> <li>Motor may not accelerate during start period.</li> <li>Requires special motor design for voltages higher than 230 volts.</li> </ul>
Wye-Delta	100%	33%	33%	<ul style="list-style-type: none"> <li>Suitable for high inertia, long acceleration loads.</li> <li>High torque efficiency.</li> <li>Ideal for especially stringent inrush restrictions.</li> <li>Ideal for frequent starts.</li> </ul>	<ul style="list-style-type: none"> <li>Requires special motor design.</li> <li>Low starting torque.</li> <li>Open transition (closed available).</li> <li>Complex design.</li> </ul>

### Autotransformer 10 HP to 125 HP (Closed Transition - Type 1 General Purpose Enclosure) ④

Maximum H.P.	3 Ø Volts	Without Short Circuit Protection	D I M	MCCB Amps	With Thermal Magnetic Circuit Breaker (MCCB)	D I M	Fuse Clip Amps	With Fusible Disconnect ②⑤	D I M
		Catalog No.			Catalog No.			Catalog No.	
		CAAT			CAAT			CAAT	
10	200	BA7-37-*◆-G0	F	50	BA7-37-*◆-TB50G0	S	60	BA7-37-*◆-JF62G0	S
	230	BB7-37-*◆-G0	F	50	BB7-37-*◆-TB50G0	S	60	BB7-37-*◆-JF62G0	S
15	200	CA7-60-*◆-G0	F	100	CA7-60-*◆-TB100G0	S	100	CA7-60-*◆-JF63G0	S
	230	CB7-43-*◆-G0	F	80	CB7-43-*◆-TB80G0	S	100	CB7-43-*◆-JF63G0	S
20	200	DA7-72-*◆-G0	F	125	DA7-72-*◆-TB125G0	S	100	DA7-72-*◆-JF63G0	S
	230	DB7-60-*◆-G0	F	100	DB7-60-*◆-TB100G0	S	100	DB7-60-*◆-JF63G0	S
25	200	EA7-85-*◆-G0	F	125	EA7-85-*◆-TB125G0	S	200	EA7-85-*◆-JF64G0	S
	230	EB7-72-*◆-G0	F	125	EB7-72-*◆-TB125G0	S	100	EB7-72-*◆-JF63G0	S
	460	EC7-37-*◆-G0	F	50	EC7-37-*◆-TB50G0	S	60	EC7-37-*◆-JF62G0	S
30	200	FA7-97-*◆-G0	F	175	FA7-97-*◆-TB175G0 ⑥	S	200	FA7-97-*◆-JF64G0	I
	230	FB7-85-*◆-G0	F	125	FB7-85-*◆-TB125G0	S	200	FB7-85-*◆-JF64G0	S
	460	FC7-43-*◆-G0	F	70	FC7-43-*◆-TB70G0	S	60	FC7-43-*◆-JF62G0	S
	575	FD7-37-*◆-G0	F	50	FD7-37-*◆-TBH50G0	S	60	FD7-37-*◆-JF62G0	S
40	200	GA9-146-*◆-G0 ⑦	H	225	GA9-146-*◆-TB225G0 ⑦	J	200	GA9-146-*◆-JF64G0 ⑦	J
	230	GB9-116-*◆-G0 ⑦	H	200	GB9-116-*◆-TB200G0 ⑦	J	200	GB9-116-*◆-JF64G0 ⑦	J
	460	GC7-60-*◆-G0	F	100	GC7-60-*◆-TB100G0	S	100	GC7-60-*◆-JF63G0	S
	575	GD7-60-*◆-G0	F	80	GD7-60-*◆-TBH80G0	S	60	GD7-60-*◆-JF62G0	S
50	200	HA9-190-*◆-G0 ⑦	I	300	HA9-190-*◆-TB300G0 ⑦	J	400	HA9-190-*◆-JF65G0 ⑦	K3
	230	HB9-146-*◆-G0 ⑦	I	250	HB9-146-*◆-TB250G0 ⑦	J	200	HB9-146-*◆-JF64G0 ⑦	J
	460	HC7-72-*◆-G0	F	125	HC7-72-*◆-TB125G0	S	100	HC7-72-*◆-JF63G0	S
	575	HD7-60-*◆-G0	F	100	HD7-60-*◆-TBH100G0	S	100	HD7-60-*◆-JF63G0	S
60	200	JA9-205-*◆-G0 ⑦	J	350	JA9-205-*◆-TB350G0 ⑦	J	400	JA9-205-*◆-JF65G0 ⑦	K3
	230	JB9-190-*◆-G0 ⑦	I	300	JB9-190-*◆-TB300G0 ⑦	J	400	JB9-190-*◆-JF65G0 ⑦	K3
	460	JC7-85-*◆-G0	F	125	JC7-85-*◆-TB125G0	S	200	JC7-85-*◆-JF64G0	S
	575	JD7-72-*◆-G0	F	125	JD7-72-*◆-TBH125G0	S	100	JD7-72-*◆-JF63G0	S
75	200	KA9-265-*◆-G0 ⑦	J	400	KA9-265-*◆-TB400G0 ⑦	K2	400	KA9-265-*◆-JF65G0 ⑦	K2
	230	KB9-205-*◆-G0 ⑦	J	350	KB9-205-*◆-TB350G0 ⑦	K2	400	KB9-205-*◆-JF65G0 ⑦	K2
	460	KC7-97-*◆-G0	F	175	KC7-97-*◆-TB175G0 ⑥	S	200	KC7-97-*◆-JF64G0	I
	575	KD7-97-*◆-G0	F	150	KD7-97-*◆-TBH150G0 ⑥	S	200	KD7-97-*◆-JF64G0	I
100	200	LA9-305-*◆-G0 ⑦	J2	500	LA9-305-*◆-TB500G0 ⑦	K2	600	LA9-305-*◆-JF66G0 ⑦	K2
	230	LB9-265-*◆-G0 ⑦	J	450	LB9-265-*◆-TB450G0 ⑦	K2	400	LB9-265-*◆-JF65G0 ⑦	K2
	460	LC9-146-*◆-G0 ⑦	I	225	LC9-146-*◆-TBH225G0 ⑦	J	200	LC9-146-*◆-JF64G0 ⑦	J
	575	LD9-116-*◆-G0 ⑦	H	200	LD9-116-*◆-TBH200G0 ⑦	J	200	LD9-116-*◆-JF64G0 ⑦	J
125	200	MA9-370-*◆-G0 ⑦	J2	700	MA9-370-*◆-TB700G0 ⑦	K2	600	MA9-370-*◆-JF66G0 ⑦	K2
	230	MB9-305-*◆-G0 ⑦	J2	600	MB9-305-*◆-TB600G0 ⑦	K2	600	MB9-305-*◆-JF66G0 ⑦	K2
	460	MC9-190-*◆-G0 ⑦	I	300	MC9-190-*◆-TB300G0 ⑦	J	400	MC9-190-*◆-JF65G0 ⑦	K3
	575	MD9-146-*◆-G0 ⑦	I	225	MD9-146-*◆-TBH225G0 ⑦	J	200	MD9-146-*◆-JF64G0 ⑦	J

Larger Horsepower Continued On Next Page →

**NOTE:** Catalog numbers and enclosure dimensions reflect contactors with AC coils. For DC coils, select Coil Code from the DC Coil Code table on page C104 and follow the instructions for modifying catalog numbers.

### Ordering Instructions

Specify Catalog Number	
Replace (*) with Coil Code	See page C104
Replace (◆) with O/L Relay	See pages C105-C106
Factory Modifications available	See pages C107-C111

- ① Dimensional information starts on page C122.
- ② For Non-fusible Disconnect applications, replace the "JF" characters with "JU".  
Example: CAATHC7-72-\*◆-JF63G0 becomes CAATHC7-72-\*◆-JU63G0.
- ③ Fuse clips sized for use with "J"-type fuses.
- ④ Other enclosures available. Contact your Sprecher + Schuh Representative.
- ⑤ A Red and Yellow Handle may be selected instead of the standard Gray and Black handle. Change "JF" to "LF" in catalog number.
- ⑥ The short circuit and kAIC is relegated to the contactor's 10kA. Contact your Sprecher + Schuh representative for a higher kAIC.
- ⑦ CAT9-116...CAT9-370 starters are available with "EI" option for PLC interface. Change catalog number to include "-EI". For example: CAATGB9-116-\*◆-G0 becomes CAATGB9-116-EI-\*◆-G0. See page C104 for price adder.

**Autotransformer 150 HP to 1000 HP (Closed Transition - Type 1 General Purpose Enclosure) ④**

Maximum H.P.	3 Ø Volts	Without Short Circuit Protection		MCCB Amps	With Thermal Magnetic Circuit Breaker (MCCB)		Fuse Clip Amps	With Fusible Disconnect ②③	
		Catalog No.	D I M ①		Catalog No.	D I M ①		Catalog No.	D I M ①
		CAAT			CAAT			CAAT	
150	200	NA9-460-EI-♦-G0	J2	800	NA9-460-EI-♦-TB800G0	R/F	800	NA9-460-EI-♦-JF67G0	~
	230	NB9-370-♦-G0 ④	J2	700	NB9-370-♦-TB700G0 ④	K2	600	NB9-370-♦-JF66G0 ④	K2
	460	NC9-205-♦-G0 ④	I	350	NC9-205-♦-TB350G0 ④	J	400	NC9-205-♦-JF65G0 ④	K3
	575	ND9-190-♦-G0 ④	I	300	ND9-190-♦-TB300G0 ④	J	400	ND9-190-♦-JF65G0 ④	K3
200	230	OB9-460-EI-♦-G0	~	1000	OB9-460-EI-♦-TB1000G0	~	800	OB9-460-EI-♦-JF67G0	~
	460	OC9-265-♦-G0 ④	J	450	OC9-265-♦-TB450G0 ④	K2	400	OC9-265-♦-JF65G0 ④	K2
	575	OD9-205-♦-G0 ④	J	350	OD9-205-♦-TB450G0 ④	K2	400	OD9-205-♦-JF65G0 ④	K3
250	230	PB9-580-EI-♦-G0	~		Refer to Factory	~		Refer to Factory	~
	460	PC9-305-♦-G0 ④	J2	600	PC9-305-♦-TB600G0 ④	K2	600	PC9-305-♦-JF66G0 ④	K2
	575	PD9-265-♦-G0 ④	J	450	PD9-265-♦-TB450G0 ④	K2	400	PD9-265-♦-JF65G0 ④	K2
300	230	QB9-750-EI-♦-G0	~		Refer to Factory	~		Refer to Factory	~
	460	QC9-370-♦-G0 ④	J2	700	QC9-370-♦-TB700G0 ④	K2	600	QC9-370-♦-JF66G0 ④	K2
	575	QD9-305-♦-G0 ④	J2	600	QD9-305-♦-TB600G0 ④	K2	600	QD9-305-♦-JF66G0 ④	K2
350	230	Refer to Factory	~		Refer to Factory	~		Refer to Factory	~
	460	RC9-400-EI-♦-G0	J2	800	RC9-400-EI-♦-TB800G0	RF	800	RC9-400-EI-♦-JF67G0	~
	575	RD9-370-♦-G0 ④	J2	600	RD9-370-♦-TB600G0 ④	K2	600	RD9-370-♦-JF66G0 ④	K2
400	230	Refer to Factory	~		Refer to Factory	~		Refer to Factory	~
	460	SC9-460-EI-♦-G0	~	1000	SC9-460-EI-♦-TB1000G0	~	800	SC9-460-EI-♦-JF67G0	~
	575	SD9-400-EI-♦-G0	J2	700	SD9-400-EI-♦-TB700G0	K2	600	SD9-400-EI-♦-JF66G0	~
450	230	Refer to Factory	~		Refer to Factory	~		Refer to Factory	~
	460	TC9-580-EI-♦-G0	~		Refer to Factory	~			~
	575	TD9-460-EI-♦-G0	~	800	TD9-460-EI-♦-TB800G0	~			~
500	460	UC9-580-EI-♦-G0	~		Refer to Factory	~			~
	575	UD9-460-EI-♦-G0	~	900	Refer to Factory	~			~
600	460	UC9-750-EI-♦-G0	~		Refer to Factory	~			~
	575	UD9-580-EI-♦-G0	~			~		~	

Larger sizes available. Contact your Sprecher + Schuh representative.

**NOTE:** Catalog numbers and enclosure dimensions reflect contactors with AC coils. For DC coils, select Coil Code from the DC Coil Code table on page C104 and follow the instructions for modifying catalog numbers.

**Ordering Instructions**

Specify Catalog Number	
Replace (*) with Coil Code	See page C104 See pages C105-C106 See pages C107-C111
Replace (♦) with O/L Relay	
Factory Modifications available	

- ① Dimensional information starts on page C122.
- ② For Non-fusible Disconnect applications, replace the "JF" characters with "JU". Example: CAATNC9-205-EI-♦-JF65G0 becomes CAATNC9-205-EI-♦-JU65G0.
- ③ Fuse clips sized for use with "J"-type fuses up to 600A. Power fuses not supplied.
- ④ Other enclosures available. Contact your Sprecher + Schuh Representative.
- ⑤ A Red and Yellow Handle may be selected instead of the standard Gray and Black handle. Change "JF" to "LF" in catalog number.
- ⑥ CAT9-116...CAT9-370 starters are available with "EI" option for PLC interface. Change catalog number to include "-EI". For example: CAATND9-190-♦-G0 becomes CAATND9-190-EI-♦-G0. See page C104 for price adder.

**Reduced Voltage Starters**

#### Part Winding (Two Step)

Maximum Horsepower Three Phase				Type 1 General Purpose	D I M Type 12 [Type 3R Ⓣ] Industrial Dusttight	D I M Type 4 Watertight	D I M Type 4X Watertight Corrosion Resist Non-metallic	D I M	
200V	230V	460V	575V	Catalog No.	Ⓣ Catalog No.	Ⓣ Catalog No.	Ⓣ Catalog No.	Ⓣ	
				CAPWT	CAPWT	CAPWT	CAPWT		
10	15	30	30	7-30-*◆-G0	M	7-30-*◆-D0	M	7-30-*◆-C0	U1
15	~	40	40	7-37-*◆-G0	M	7-37-*◆-D0	M	7-37-*◆-C0	U1
20	20	50	50	7-43-*◆-G0	M	7-43-*◆-D0	M	7-43-*◆-C0	U1
25	25	60	60	7-55-*◆-G0	M	7-55-*◆-D0	M	7-55-*◆-C0	U1
25	30	60	75	7-60-*◆-G0	C	7-60-*◆-D0	O	7-60-*◆-C0	V1
30	40	75	100	7-72-*◆-G0	C	7-72-*◆-D0	O	7-72-*◆-C0	V1
40	50	100	125	7-85-*◆-G0	C	7-85-*◆-D0	O	7-85-*◆-C0	V1
50	50	100	150	7-97-*◆-G0	C	7-97-*◆-D0	O	7-97-*◆-C0	V1
60	60	100	150	9-116-*◆-G0 Ⓣ	E2	9-116-*◆-D0 Ⓣ	R2	9-116-*◆-C0 Ⓣ	W2
60	75	150	200	9-146-*◆-G0 Ⓣ	G	9-146-*◆-D0 Ⓣ	T	9-146-*◆-C0 Ⓣ	A2
75	75	200	200	9-190-*◆-G0 Ⓣ	H	9-190-*◆-D0 Ⓣ	H	9-190-*◆-C0 Ⓣ	Y1
75	100	200	300	9-205-*◆-G0 Ⓣ	H	9-205-*◆-D0 Ⓣ	H	9-205-*◆-C0 Ⓣ	Y1
100	150	300	350	9-265-*◆-G0 Ⓣ	J	9-265-*◆-D0 Ⓣ	J	9-265-*◆-C0 Ⓣ	Z1
150	200	350	450	9-305-*◆-G0 Ⓣ	J	9-305-*◆-D0 Ⓣ	J	9-305-*◆-C0 Ⓣ	Z1

Larger sizes available. Contact your Sprecher + Schuh representative.

**NOTE:** Catalog numbers and enclosure dimensions reflect contactors with AC coils. For DC coils, select Coil Code from the DC Coil Code table on page C104 and follow the instructions for modifying catalog numbers.

#### Combination Part Winding Starter Options Availability Ⓣ

Circuit Breaker or Disconnect Switch	Enclosure Type	Price (Add to base Part Winding starter list price)					
		7-30	7-37 7-43 7-55	7-60 7-72 7-85 7-97	9-116 (-EI) 9-146 (-EI)	9-190(-EI) 9-205(-EI) 9-265(-EI)	9-305(-EI)
Thermal Magnetic Circuit Breaker	Type 1	✓	✓	✓	✓	✓	Refer to Factory
	Type 12/3R/4/4X	✓	✓	✓	✓	✓	
Non Fusible Disconnect	Type 1	✓	✓	✓	✓	✓	
	Type 12/3R/4/4X	✓	✓	✓	✓	✓	
Fusible Disconnect - 30 Amp	Type 1	✓	~	~	~	~	
	Type 12/3R/4/4X	✓	~	~	~	~	
Fusible Disconnect - 60 Amp	Type 1	✓	✓	~	~	~	
	Type 12/3R/4/4X	✓	✓	~	~	~	
Fusible Disconnect - 100 Amp	Type 1	~	✓	✓	~	~	
	Type 12/3R/4/4X	~	✓	✓	~	~	
Fusible Disconnect - 200 Amp	Type 1	~	~	✓	✓	~	
	Type 12/3R/4/4X	~	~	✓	✓	~	
Fusible Disconnect - 400 Amp	Type 1	~	~	~	✓	✓	
	Type 12/3R/4/4X	~	~	~	✓	✓	
Fusible Disconnect - 600 Amp	Type 1	~	~	~	~	✓	
	Type 12/3R/4/4X	~	~	~	~	✓	

#### Ordering Instructions

Specify Catalog Number	
Replace (*) with Coil Code	See page C104
Multiply Motor FLA by 50%,	
Replace (◆) with O/L Relay	See pages C105-C106
Factory Modifications available	See pages C107-C111

- Ⓣ Dimensional information starts on page C122.
- Ⓣ For Type 3R outdoor applications, replace "D" in catalog number with an "R". Price remains the same, dimensions may change. Example: CAPWT7-30-\*◆-D0 becomes CAPWT7-30-\*◆-R0.
- Ⓣ Refer to pages C4-C5 for information on modifying standard Part Winding catalog number to combination type or contact Sprecher + Schuh Technical Support.
- Ⓣ CAT9-116...CAT9-370 starters are available with "EI" option for PLC interface. Change catalog number to include "-EI". For example: CAATND9-190-\*◆-G0 becomes CAATND9-190-EI-\*◆-G0. See page C104 for price adder.

**Wye Delta (Open Transition, 3-Contactor ⓐ)**

Maximum Horsepower Three Phase				Type 1 General Purpose	D I M	Type 12 [Type 3R ⓐ] Industrial Dusttight	D I M	Type 4 Watertight	D I M	Type 4X Watertight Corrosion Resistant Non-metallic	D I M
200V	230V	460V	575V	Catalog No.	①	Catalog No.	①	Catalog No.	①	Catalog No.	①
				CAYT		CAYT		CAYT		CAYT	
10	15	30	30	7-30-*◆-GO	C	7-30-*◆-DO	O	7-30-*◆-WO	O	7-30-*◆-CO	V1
15	20	40	40	7-37-*◆-GO	C	7-37-*◆-DO	O	7-37-*◆-WO	O	7-37-*◆-CO	V1
20	25	50	50	7-43-*◆-GO	C	7-43-*◆-DO	O	7-43-*◆-WO	O	7-43-*◆-CO	V1
25	30	60	60	7-55-*◆-GO	C	7-55-*◆-DO	O	7-55-*◆-WO	O	7-55-*◆-CO	V1
30	40	75	75	7-60-*◆-GO	D	7-60-*◆-DO	Q	7-60-*◆-WO	Q	7-60-*◆-CO	W1
40	50	100	100	7-72-*◆-GO	F	7-72-*◆-DO	T	7-72-*◆-WO	T	7-72-*◆-CO	X1
50	60	125	125	7-85-*◆-GO	F	7-85-*◆-DO	T	7-85-*◆-WO	T	7-85-*◆-CO	X1
60	60	150	150	9-116-*◆-GO	G	9-116-*◆-DO	T	9-116-*◆-WO	T	9-116-*◆-CO	A2
75	75	150	200	9-146-*◆-GO	G	9-146-*◆-DO	T	9-146-*◆-WO	T	9-146-*◆-CO	A2
75	100	200	250	9-190-*◆-GO	H	9-190-*◆-DO	H	9-190-*◆-WO	H	9-190-*◆-CO	Y1
100	125	250	300	9-205-*◆-GO	I	9-205-*◆-DO	I	9-205-*◆-WO	J	9-205-*◆-CO	Z1
150	150	350	450	9-265-*◆-GO	J	9-265-*◆-DO	J	9-265-*◆-WO	J	9-265-*◆-CO	Z1
150	200	450	500	9-305-*◆-GO	J	9-305-*◆-DO	J	9-305-*◆-WO	J	9-305-*◆-CO	Z1
200	250	500	600	9-370-*◆-GO	J	9-370-*◆-DO	J	9-370-*◆-WO	J	9-370-*◆-CO	Z1
250	250	600	700	9-400-EI-*◆-GO	~	9-400-EI-*◆-DO	~	9-400-EI-*◆-WO	~	9-400-EI-*◆-CO	~
300	350	700	800	9-460-EI-*◆-GO	~	9-460-EI-*◆-DO	~	9-460-EI-*◆-WO	~	9-460-EI-*◆-CO	~
350	450	800	1000	9-580-EI-*◆-GO	~	9-580-EI-*◆-DO	~	9-580-EI-*◆-WO	~	9-580-EI-*◆-CO	~
450	500	1000	1250	9-750-EI-*◆-GO	~	9-750-EI-*◆-DO	~	9-750-EI-*◆-WO	~	9-750-EI-*◆-CO	~
600	700	1250	1750	9-860-EI-*◆-GO	~	9-860-EI-*◆-DO	~	9-860-EI-*◆-WO	~	9-860-EI-*◆-CO	~
600	700	1500	1750	9-1060-EI-*◆-GO	~	9-1060-EI-*◆-DO	~	9-1060-EI-*◆-WO	~	9-1060-EI-*◆-CO	~

Larger sizes available. Contact your Sprecher + Schuh representative.

**Combination Wye Delta Starter Options Availability ⓑ**

Circuit Breaker or Disconnect Switch	Enclosure Type	Price (Add to base Part Winding starter list price)						
		7-30	7-37 7-43 7-55	7-60 7-72 7-85	9-116 (-EI) 9-146 (-EI)	9-190(-EI) 9-205(-EI) 9-265(-EI)	9-305(-EI) 9-370(-EI) 9-400-EI	9-580-EI 9-750-EI 9-860-EI 9-1060-EI
Thermal Magnetic Circuit Breaker	Type 1	✓	✓	✓	✓	✓	✓	Refer to Factory
	Type 12/3R/4/4X	✓	✓	✓	✓	✓	✓	
Non Fusible Disconnect	Type 1	✓	✓	✓	✓	✓	✓	
	Type 12/3R/4/4X	✓	✓	✓	✓	✓	✓	
Fusible Disconnect - 30 Amp	Type 1	✓	~	~	~	~	~	
	Type 12/3R/4/4X	✓	~	~	~	~	~	
Fusible Disconnect - 60 Amp	Type 1	✓	✓	~	~	~	~	
	Type 12/3R/4/4X	✓	✓	~	~	~	~	
Fusible Disconnect - 100 Amp	Type 1	~	✓	✓	~	~	~	
	Type 12/3R/4/4X	~	✓	✓	~	~	~	
Fusible Disconnect - 200 Amp	Type 1	~	~	✓	✓	~	~	
	Type 12/3R/4/4X	~	~	✓	✓	~	~	
Fusible Disconnect - 400 Amp	Type 1	~	~	~	✓	✓	~	
	Type 12/3R/4/4X	~	~	~	✓	✓	~	
Fusible Disconnect - 600 Amp	Type 1	~	~	~	~	✓	✓	
	Type 12/3R/4/4X	~	~	~	~	✓	✓	

**Ordering Instructions**

Specify Catalog Number	
Replace (*) with Coil Code	See page C104
Replace ◆ with O/L Relay	See pages C105-C106
Factory Modifications available	See pages C107-C111

- ① Dimensional information starts on page C122.
- ② For Type 3R outdoor applications, replace "D" in catalog number with an "R". Dimensions may change. For example number CAYT7-30-\*◆-DO becomes CAYT7-30-\*◆-RO. Price remains the same.
- ③ Refer to pages C4-C5 for information on modifying standard Wye Delta catalog number to combination type or contact Sprecher + Schuh Technical Support. Price changes may apply. Contact Technical Support.
- ④ For closed transition Wye Delta applications, please contact factory.

Reduced Voltage Starters