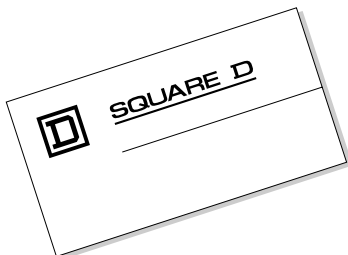


Combination Starters

Class 8538/8539, 8738/8739



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SQUARE D
GROUPE SCHNEIDER

General Information

Class 8538 and 8539 Type S combination starters combine the requirements of motor overload and short circuit protection into one package. These starters are manufactured in accordance with NEMA standards and are UL Listed (although some FORM numbers may not be listed – contact your local Square D representative for information). Class 8538 and 8539 combination starters are designed to operate at 600 Vac maximum, 50 to 60 Hz – and are supplied with melting alloy overload relays as standard.

Type 2 Coordination

Square D is one of the leaders in North America and Europe in providing starters that are verified by UL to comply with IEC 947-4-1 and Type 2 coordination. This means that the components of a motor branch circuit protective device (fuses and circuit breaker), contactor, and overload relay will be suitable for further use following a short circuit fault (even though contact welding is recognized but can be easily broken) allowing for replacement of components during normal scheduled maintenance.

Square D starters and specified fuses have been tested by UL and CSA (at 100,000 Amps fault current) for operation at 600 volts AC. Class 8538 Type S Combination Starters, NEMA size 0 through 5, with fusible disconnect switches have tested to Type 2 performance criteria.

Class 8538 Disconnect Switch Type



Class 8538 combination starters can be supplied with either a fusible or non-fusible disconnect switch. Class 8538 combination starters are available in NEMA Sizes 0-6.

The fusible disconnect switch type combination starter design utilizes a flange operated visible blade switch. Interchangeable fuse clips, straight through wiring, space for a fused control transformer with additional capacity, and provisions for adding a disconnect switch electrical interlock are key features of the combination starters.

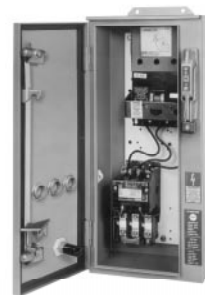
The fusible disconnect switch type can be supplied with Class R fuse clips increasing the short-circuit rating to 100,000A.

Size 0-2 non-fusible combination starters can be converted to a fusible type. See Catalog 999CT9701 for fuse block kits and fuse clips.

Class 8539 MAG-GARD® Motor Circuit Protector or Thermal Magnetic Circuit Breaker

Class 8539 combination starters can be supplied with either a MAG-GARD® motor circuit protector (MCP) or a thermal magnetic circuit breaker. Class 8539 combination starters are available in NEMA Sizes 0-7.

The circuit breakers in Class 8539 combination starters can be supplied with a factory installed auxiliary switch for remote indication of an open and/or tripped or closed breaker. For one auxiliary switch, specify **Form Y74**. For two auxiliary switches, specify **Form Y75**. The switches are supplied with normally open and normally closed circuits with a common connection. Contacts must be used on the same polarity and are rated 15 Amps at 240 Volts AC.



An alarm switch can be factory supplied only, specify **Form Y742**. The alarm switch only operates when the breaker is tripped. It is used to actuate bell alarms and warning lights. The alarm switch consists of a normally open single pole single throw switch. The contacts are rated 4 Amps at 240 Volts AC.

Enclosures – Class 8538 and 8539 combination starters are available in the following enclosures:

NEMA Type 1 General Purpose

NEMA Type 4 & 4X Watertight and Dusttight Stainless Steel

NEMA Type 4X Watertight, Dusttight, and Corrosion Resistant Glass-Polyester

NEMA Type 7 & 9 Bolted and Spin-Top® for Hazardous Locations (Class 8539 only).

NEMA Type 12 Dusttight and Driptight for Industrial Use

The NEMA Type 4 & 4X stainless steel enclosure (Sizes 0 - 5) has a brushed finish. Sizes 6 & 7 are painted sheet steel enclosures and are rated NEMA Type 4 only. For an electropolished finish, specify **Form G16** and add 15% to the price of the standard device. Hubs are supplied as standard on NEMA Type 4 & 4X enclosures.

Hubs are supplied as standard on NEMA Type 4X enclosures.

NEMA Type 12 enclosures may be field modified for outdoor applications. Specify **Form G26** for NEMA Type 3R (no additional charge). See Catalog 9999CT9701 for additional information. Also, NEMA Type 12 devices are available UL Listed for use in Class II, Division 2, Group G and Class III, Divisions 1 and 2 locations. Request **Form G21** (no additional charge).

Oversized Enclosures – Class 8538 disconnect switch type and Class 8539 MAG-GARD® MCP (Sizes 0-2) are available in NEMA Type 1, 4 & 4X and 12 enclosures. The oversized enclosures provide additional panel

space for customer installation of control transformers, fuse blocks, terminal blocks, relays, and other auxiliary equipment. These enclosures have three Class 9001 Type “K” holes as standard for installation of push buttons, pilot lights, and other cover mounted control units.

Coil Voltages – AC coils are available for application on 50-60 Hz. NEMA Sizes 00 - 5 are supplied with coils that are designed to operate satisfactorily on line voltages of 85% - 110% of rated voltage. NEMA Size 6 and 7 contactors are supplied with a DC coil operated by a solid state rectifier circuit that is powered by an AC source and is designed to operate satisfactorily on line voltages of 90-110% of rated voltage.

Please note that Voltage Codes have been added to the Type designations in order to improve customer service. It is necessary to include the Voltage Code when ordering combination starters. Also, 120 Volt polyphase combination starters will be wired for separate control.

Auxiliary Contacts – Additional auxiliary contacts may be added to Type S starters. Refer to Page 14 for maximum number of auxiliary units and Form designations for factory installed auxiliary contacts. See Catalog 9999CT9701 for auxiliary contact kits for field installation.

Type S Accessories – Additional accessories such as fuse blocks, fuse clip kits, disconnect switch and circuit breaker interlocks, and cover mounted control stations are available for field modifications, see Catalog 9999CT9701. For factory modifications (Forms), see Pages 30-34.



Combination Starters – NEMA Rated Class 8538 – Fusible Disconnect Switch Type

3-POLE POLYPHASE - 600 VOLTS AC MAXIMUM - 50-60 HERTZ

Devices require 3 thermal units. See catalog 9065CT9701 for selection information. For Class J fuse clip, use Form Y91 (no additional charge).



Fusible Full Voltage Type, with Melting Alloy Overload Relays

Ratings				Fuse Clip Size Amps	NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0-5)†	NEMA Type 4X Watertight, Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Type 12/3R [▲] Dusttight and Driptight Industrial Use Enclosure		
Motor Voltage (Starter Voltage)	Max. HP Poly-phase	Coil Voltage *	NEMA Size		Type	Type	Type	With External Reset	Without External Reset	
200 (208)	3	208-60	0	30	SBG12V08	SBW12V08	SBW22V08	SBA22V08	SBA12V08	
	5		30	SCG12V08	SCW12V08	SCW22V08	SCA22V08	SCA12V08		
	7½		60	1	60	SCG13V08	SCW13V08	SCW23V08	SCA23V08	SCA13V08
	10		60	2	60	SDG12V08	SDW12V08	SDW22V08	SDA22V08	SDA12V08
	20		100	3	100	SEG15V08	SEW15V08	SEW25V08	SEA25V08	SEA15V08
	25		200	3	200	SEG12V08	SEW12V08	SEA22V08	SEA12V08
	40		200	4	200	SFG15V08	SFW15V08	SFA25V08	SFA15V08
	75		400	5	400	SGG15V08	SGW15V08	SGA25V08	SGA15V08
	150		600	6	600	SHG13V08	SHW13V08	SHA23V08	SHA13V08
	3		240-60 220-50	0	30	SBG12V03	SBW12V03	SBW22V03	SBA22V03	SBA12V03
5	30	SCG12V03		SCW12V03	SCW22V03	SCA22V03	SCA12V03			
7½	60	1		60	SCG13V03	SCW13V03	SCW23V03	SCA23V03	SCA13V03	
15	60	2		60	SDG12V03	SDW12V03	SDW22V03	SDA22V03	SDA12V03	
25	100	3		100	SEG15V03	SEW15V03	SEW25V03	SEA25V03	SEA15V03	
30	200	3		200	SEG12V03	SEW12V03	.....	SEA22V03	SEA12V03
50	200	4		200	SFG15V03	SFW15V03	.....	SFA25V03	SFA15V03
100	400	5		400	SGG15V03	SGW15V03	.....	SGA25V03	SGA15V03
200	600	6		600	SHG13V03	SHW13V03	.....	SHA23V03	SHA13V03
5	460 (480)	0		30	SBG13V06	SBW13V06	SBW23V06	SBA23V06	SBA13V06	
10		30	SCG14V06	SCW14V06	SCW24V06	SCA24V06	SCA14V06			
15		30	SDG16V06	SDW16V06	SDW26V06	SDA26V06	SDA16V06			
25		60	2	60	SDG14V06	SDW14V06	SDW24V06	SDA24V06	SDA14V06	
50		100	3	100	SEG13V06	SEW13V06	SEW23V06	SEA23V06	SEA13V06	
100		200	4	200	SFG13V06	SFW13V06	.....	SFA23V06	SFA13V06
200		400	5	400	SGG13V06	SGW13V06	.....	SGA23V06	SGA13V06
400		600	6	600	SHG12V06	SHW12V06	.....	SHA22V06	SHA12V06
5		575 (600)	0	30	SBG13V07	SBW13V07	SBW23V07	SBA23V07	SBA13V07	
10			30	SCG14V07	SCW14V07	SCW24V07	SCA24V07	SCA14V07		
15	30		SDG16V07	SDW16V07	SDW26V07	SDA26V07	SDA16V07			
25	60		2	60	SDG14V07	SDW14V07	SDW24V07	SDA24V07	SDA14V07	
50	100		3	100	SEG13V07	SEW13V07	SEW23V07	SEA23V07	SEA13V07	
100	200		4	200	SFG13V07	SFW13V07	.....	SFA23V07	SFA13V07
200	400		5	400	SGG13V07	SGW13V07	.....	SGA23V07	SGA13V07
400	600		6	600	SHG12V07	SHW12V07	.....	SHA22V07	SHA12V07

* Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes shown on Page 4.

▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.

NOTE: Some control transformers may require the use of oversized enclosures. Refer to control transformer selection table on Page 35.

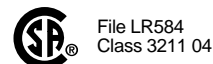
Fusible Disconnect Switch Type (Class H Fuse Clips), Single Phase

Motor Voltage	Max. HP	Coil Voltage	NEMA Size	Fuse Clips Size (Amps)	NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304)	NEMA Type 4X Watertight, Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Type 12/3R [▲] Dusttight and Driptight Industrial Use Enclosure	
					Type	Type	Type	With External Reset	Without External Reset
120	1	120	0	30	SBG12S2V02	SBW12S2V02	SBW22S2V02	SBA22S2V02	SBA12S2V02
	2		30	SCG12S2V02	SCW12S2V02	SCW22S2V02	SCA22S2V02	SCA12S2V02	
	3		60	SDG12S2V02	SDW12S2V02	SDW22S2V02	SDA22S2V02	SDA12S2V02	
230	2	230	0	30	SBG12S2V03	SBW12S2V03	SBW22S2V03	SBA22S2V03	SBA12S2V03
	3		30	SCG12S2V03	SCW12S2V03	SCW22S2V03	SCA22S2V03	SCA12S2V03	
	7½		60	SDG12S2V03	SDW12S2V03	SDW22S2V03	SDA22S2V03	SDA12S2V03	

▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.



Explosion proof unit



Note that not all units are or explosion proof – consult factory.



Combination Starters – NEMA Rated Non-Fusible Disconnect Switch Type – Class 8538

3-POLE POLYPHASE – 600 VOLTS AC MAXIMUM – 50-60 HZ

Devices require 3 thermal units. See Catalog 9065CT9701 for selection information.

Non-Fusible Full Voltage Type, Non-Reversing, with Melting Alloy Overload Relays

Ratings				NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0-5)♦	NEMA Type 4X Watertight, Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Type 12/3R▲ Dusttight and Driptight Industrial Enclosure	
Motor Voltage (Starter Voltage)	Max. HP Poly- phase	Coil Voltage*	NEMA Size	Type	Type	Type	With External Reset	Without External Reset
200 (208)	3	208-60	0	SBG11V08	SBW11V08	SBW21V08	SBA21V08	SBA11V08
	7½		1	SCG11V08	SCW11V08	SCW21V08	SCA21V08	SCA11V08
	10		2	SDG11V08	SDW11V08	SDW21V08	SDA21V08	SDA11V08
	25		3	SEG11V08	SEW11V08	SEW21V08	SEA21V08	SEA11V08
	40		4	SFG11V08	SFW11V08	.....	SFA21V08	SFA11V08
	75		5	SGG11V08	SGW11V08	.....	SGA21V08	SGA11V08
150	6	SHG11V08	SHW11V08	.....	SHA21V08	SHA11V08		
230 (240)	3	240-60 220-50	0	SBG11V03	SBW11V03	SBW21V03	SBA21V03	SBA11V03
	7½		1	SCG11V03	SCW11V03	SCW21V03	SCA21V03	SCA11V03
	15		2	SDG11V03	SDW11V03	SDW21V03	SDA21V03	SDA11V03
	30		3	SEG11V03	SEW11V03	SEW21V03	SEA21V03	SEA11V03
	50		4	SFG11V03	SFW11V03	.....	SFA21V03	SFA11V03
	100		5	SGG11V03	SGW11V03	.....	SGA21V03	SGA11V03
200	6	SHG11V03	SHW11V03	.....	SHA21V03	SHA11V03		
460 (480)	5	480-60 440-50	0	SBG11V06	SBW11V06	SBW21V06	SBA21V06	SBA11V06
	10		1	SCG11V06	SCW11V06	SCW21V06	SCA21V06	SCA11V06
	25		2	SDG11V06	SDW11V06	SDW21V06	SDA21V06	SDA11V06
	50		3	SEG11V06	SEW11V06	SEW21V06	SEA21V06	SEA11V06
	100		4	SFG11V06	SFW11V06	.....	SFA21V06	SFA11V06
	200		5	SGG11V06	SGW11V06	.....	SGA21V06	SGA11V06
400	6	SHG11V06	SHW11V06	.....	SHA21V06	SHA11V06		
575 (600)	5	600-60 550-50	0	SBG11V07	SBW11V07	SBW21V07	SBA21V07	SBA11V07
	10		1	SCG11V07	SCW11V07	SCW21V07	SCA21V07	SCA11V07
	25		2	SDG11V07	SDW11V07	SDW21V07	SDA21V07	SDA11V07
	50		3	SEG11V07	SEW11V07	SEW21V07	SEA21V07	SEA11V07
	100		4	SFG11V07	SFW11V07	.....	SFA21V07	SFA11V07
	200		5	SGG11V07	SGW11V07	.....	SGA21V07	SGA11V07
400	6	SHG11V07	SHW11V07	.....	SHA21V07	SHA11V07		

Non-Fusible Disconnect Switch Type, Single Phase

Motor Voltage	Max. HP	Coil Voltage	NEMA Size	Fuse Clips Size (Amps)	NEMA Type 1 General Purpose Enclosures	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304)	NEMA Type 4X Watertight, Dusttight and Corrosion Resistant Polyester Enclosure†	NEMA Type 12/3R▲ Dusttight and Driptight Industrial Enclosure	
					Type	Type	Type	With External Reset	Without External Reset
120	1	120	0	N/A	SBG11S2V02	SBW11S2V02	SBW21S2V02	SBA21S2V02	SBA11S2V02
	2		N/A	SCG11S2V02	SCW11S2V02	SCW21S2V02	SCA21S2V02	SCA11S2V02	
	3		N/A	SDG11S2V02	SDW11S2V02	SDW21S2V02	SDA21S2V02	SDA11S2V02	
230	2	230	0	N/A	SBG11S2V03	SBW11S2V03	SBW21S2V03	SBA21S2V03	SBA11S2V03
	3		N/A	SCG11S2V03	SCW11S2V03	SCW21S2V03	SCA21S2V03	SCA11S2V03	
	7½		N/A	SDG11S2V03	SDW11S2V03	SDW21S2V03	SDA21S2V03	SDA11S2V03	

▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.
* Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes shown below.
♦ NEMA Size 6 starters are NEMA Type 4 painted sheet steel enclosure.

NOTE: Some control transformers may require the use of oversized enclosures. Refer to control transformer selection table on Page 35.

Coil Voltage Codes

Voltage	Code
60 Hz	
24†▲	V01
120†	V02
208	V08
240	V03
480	V06
600	V07
Specify	V99
50 Hz	
110	V01
220	V03
440	V06
550	V07
Specify	V99

▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, Form S (separate control) must be specified.

† These voltage codes must include Form S (supplied at No Charge). When specifying Form S, please supply motor voltage when ordering.

Combination Starters – NEMA Rated Class 8538 – Fusible Disconnect Switch Type with Class R Fuse Clips

3-POLE POLYPHASE – 600 VOLTS AC MAXIMUM – 50-60 HZ

Devices require 3 thermal units. See Catalog 9065CT9701 for selection information.

Fusible (with Class R Fuse Clips) Full Voltage Type, Non-Reversing, with Melting Alloy Overload Relays — (100,000 AIC Rated)

RATINGS					NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0-5)♦	NEMA Type 4X Watertight, Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Type 12/3R▲ Dusttight and Driptight Industrial Enclosure	
Motor Voltage (Starter Voltage)	Max. HP Poly-phase	Coil Voltage *	NEMA Size	Fuse Clip Size Amps	Type	Type	Type	With External Reset	Without External Reset
								Type	Type
200 (208)	3	208-60	0	30	SBG32V08	SBW32V08	SBW42V08	SBA42V08	SBA32V08
	5		1	30	SCG32V08	SCW32V08	SCW42V08	SCA42V08	SCA32V08
	7½		1	60	SCG33V08	SCW33V08	SCW43V08	SCA43V08	SCA33V08
	10		2	60	SDG32V08	SDW32V08	SDW42V08	SDA42V08	SDA32V08
	20		3	100	SEG35V08	SEW35V08	SEW45V08	SEA45V08	SEA35V08
	25		3	200	SEG32V08	SEW32V08	.....	SEA42V08	SEA32V08
	40		4	200	SFG35V08	SFW35V08	.....	SFA45V08	SFA35V08
75	5	400	SGG35V08	SGW35V08	.....	SGA45V08	SGA35V08		
150	6	600	SHG33V08	SHW33V08	.....	SHA43V08	SHA33V08		
230 (240)	3	240-60 220-50	0	30	SBG32V03	SBW32V03	SBW42V03	SBA42V03	SBA32V03
	5		1	30	SCG32V03	SCW32V03	SCW42V03	SCA42V03	SCA32V03
	7½		1	60	SCG33V03	SCW33V03	SCW43V03	SCA43V03	SCA33V03
	15		2	60	SDG32V03	SDW32V03	SDW42V03	SDA42V03	SDA32V03
	25		3	100	SEG35V03	SEW35V03	SEW45V03	SEA45V03	SEA35V03
	30		3	200	SEG32V03	SEW32V03	.....	SEA42V03	SEA32V03
	50		4	200	SFG35V03	SFW35V03	.....	SFA45V03	SFA35V03
100	5	400	SGG35V03	SGW35V03	.....	SGA45V03	SGA35V03		
200	6	600	SHG33V03	SHW33V03	.....	SHA43V03	SHA33V03		
460 (480)	5	480-60 440-50	0	30	SBG33V06	SBW33V06	SBW43V06	SBA43V06	SBA33V06
	10		1	30	SCG34V06	SCW34V06	SCW44V06	SCA44V06	SCA34V06
	15		2	30	SDG36V06	SDW36V06	SDW46V06	SDA46V06	SDA36V06
	25		2	60	SDG34V06	SDW34V06	SDW44V06	SDA44V06	SDA34V06
	50		3	100	SEG33V06	SEW33V06	SEW43V06	SEA43V06	SEA33V06
	100		4	200	SFG33V06	SFW33V06	.....	SFA43V06	SFA33V06
	200		5	400	SGG33V06	SGW33V06	.....	SGA43V06	SGA33V06
400	6	600	SHG32V06	SHW32V06	.....	SHA42V06	SHA32V06		
575 (600)	5	600-60 550-50	0	30	SBG33V07	SBW33V07	SBW43V07	SBA43V07	SBA33V07
	10		1	30	SCG34V07	SCW34V07	SCW44V07	SCA44V07	SCA34V07
	15		2	30	SDG36V07	SDW36V07	SDW46V07	SDA46V07	SDA36V07
	25		2	60	SDG34V07	SDW34V07	SDW44V07	SDA44V07	SDA34V07
	50		3	100	SEG33V07	SEW33V07	SEW43V07	SEA43V07	SEA33V07
	100		4	200	SFG33V07	SFW33V07	.....	SFA43V07	SFA33V07
	200		5	400	SGG33V07	SGW33V07	.....	SGA43V07	SGA33V07
400	6	600	SHG32V07	SHW32V07	.....	SHA42V07	SHA32V07		

▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.

* Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes shown below.

♦ NEMA Size 6 starters are NEMA Type 4 painted sheet steel enclosures.

NOTE: Some control transformers may require the use of oversized enclosures. Refer to the control transformer selection table on Page 35.

Coil Voltage Codes

Voltage	Code
60 Hz	50 Hz
24†▲	...
120†	110
208	...
240	220
480	440
600	550
Specify	Specify
	V01
	V02
	V08
	V03
	V06
	V07
	V99

▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, **Form S** (separate control) must be specified.

† These voltage codes must include **Form S** (supplied at No Charge). When specifying **Form S**, please supply motor voltage when ordering.



Combination Starters — NEMA Rated Disconnect Switch Type in Oversized Enclosure, NEMA Size 0–2★ – Class 8538

3-POLE POLYPHASE – 600 VOLTS AC MAXIMUM – 50-60 HZ

Full Voltage Type With Melting Alloy Overload Relays

Devices require 3 thermal units. See Catalog 9065CT9701 for selection information.

Class 8538 Non-Fusible Disconnect Switch Type

Ratings					NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304)	NEMA Type 12/3R▲ Dusttight and Driptight Industrial Use Enclosure	
Motor Voltage (Starter Voltage)	Max. HP Polyphase	Coil Voltage *	NEMA Size	Fuse Clip Size Amps	Type	Type	With External Reset Type	Without External Reset Type
200 (208)	3	208-60	0	N/A	SBG11S8V08	SBW11S8V08	SBA21S8V08	SBA11S8V08
	7½		1	N/A	SCG11S8V08	SCW11S8V08	SCA21S8V08	SCA11S8V08
	10		2	N/A	SDG11S8V08	SDW11S8V08	SDA21S8V08	SDA11S8V08
230 (240)	3	240-60 220-50	0	N/A	SBG11S8V03	SBW11S8V03	SBA21S8V03	SBA11S8V03
	7½		1	N/A	SCG11S8V03	SCW11S8V03	SCA21S8V03	SCA11S8V03
	15		2	N/A	SDG11S8V03	SDW11S8V03	SDA21S8V03	SDA11S8V03
460 (480)	5	480-60 440-50	0	N/A	SBG11S8V06	SBW11S8V06	SBA21S8V06	SBA11S8V06
	10		1	N/A	SCG11S8V06	SCW11S8V06	SCA21S8V06	SCA11S8V06
	25		2	N/A	SDG11S8V06	SDW11S8V06	SDA21S8V06	SDA11S8V06
575 (600)	5	600-60 550-50	0	N/A	SBG11S8V07	SBW11S8V07	SBA21S8V07	SBA11S8V07
	10		1	N/A	SCG11S8V07	SCW11S8V07	SCA21S8V07	SCA11S8V07
	25		2	N/A	SDG11S8V07	SDW11S8V07	SDA21S8V07	SDA11S8V07

Class 8538 Fusible Disconnect Switch Type

200 (208)	3	208-60	0	30	SBG12S8V08	SBW12S8V08	SBA22S8V08	SBA12S8V08
	5		1	30	SCG12S8V08	SCW12S8V08	SCA22S8V08	SCA12S8V08
	7½		1	60	SCG13S8V08	SCW13S8V08	SCA23S8V08	SCA13S8V08
	10		2	60	SDG12S8V08	SDW12S8V08	SDA22S8V08	SDA12S8V08
230 (240)	3	240-60 220-50	0	30	SBG12S8V03	SBW12S8V03	SBA22S8V03	SBA12S8V03
	5		1	30	SCG12S8V03	SCW12S8V03	SCA22S8V03	SCA12S8V03
	7½		1	60	SCG13S8V03	SCW13S8V03	SCA23S8V03	SCA13S8V03
	15		2	60	SDG12S8V03	SDW12S8V03	SDA22S8V03	SDA12S8V03
460 (480)	5	480-60 440-50	0	30	SBG13S8V06	SBW13S8V06	SBA23S8V06	SBA13S8V06
	10		1	30	SCG14S8V06	SCW14S8V06	SCA24S8V06	SCA14S8V06
	15		2	30	SDG16S8V06	SDW16S8V06	SDA26S8V06	SDA16S8V06
	25		2	60	SDG14S8V06	SDW14S8V06	SDA24S8V06	SDA14S8V06
575 (600)	5	600-60 550-50	0	30	SBG13S8V07	SBW13S8V07	SBA23S8V07	SBA13S8V07
	10		1	30	SCG14S8V07	SCW14S8V07	SCA24S8V07	SCA14S8V07
	15		2	30	SDG16S8V07	SDW16S8V07	SDA26S8V07	SDA16S8V07
	25		2	60	SDG14S8V07	SDW14S8V07	SDA24S8V07	SDA14S8V07

Class 8538 Fusible Disconnect Switch Type with Class R Fuse Clips

200 (208)	3	208-60	0	30	SBG32S8V08	SBW32S8V08	SBA42S8V08	SBA32S8V08
	5		1	30	SCG32S8V08	SCW32S8V08	SCA42S8V08	SCA32S8V08
	7½		1	60	SCG33S8V08	SCW33S8V08	SCA43S8V08	SCA33S8V08
	10		2	60	SDG32S8V08	SDW32S8V08	SDA42S8V08	SDA32S8V08
230 (240)	3	240-60 220-50	0	30	SBG32S8V03	SBW32S8V03	SBA42S8V03	SBA32S8V03
	5		1	30	SCG32S8V03	SCW32S8V03	SCA42S8V03	SCA32S8V03
	7½		1	60	SCG33S8V03	SCW33S8V03	SCA43S8V03	SCA33S8V03
	15		2	60	SDG32S8V03	SDW32S8V03	SDA42S8V03	SDA32S8V03
460 (480)	5	480-60 440-50	0	30	SBG33S8V06	SBW33S8V06	SBA43S8V06	SBA33S8V06
	10		1	30	SCG34S8V06	SCW34S8V06	SCA44S8V06	SCA34S8V06
	15		2	30	SDG36S8V06	SDW36S8V06	SDA46S8V06	SDA36S8V06
	25		2	60	SDG34S8V06	SDW34S8V06	SDA44S8V06	SDA34S8V06
575 (600)	5	600-60 550-50	0	30	SBG33S8V07	SBW33S8V07	SBA43S8V07	SBA33S8V07
	10		1	30	SCG34S8V07	SCW34S8V07	SCA44S8V07	SCA34S8V07
	15		2	30	SDG36S8V07	SDW36S8V07	SDA46S8V07	SDA36S8V07
	25		2	60	SDG34S8V07	SDW34S8V07	SDA44S8V07	SDA34S8V07

▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.
★ For NEMA Size 3-5 starters in oversized NEMA Type 1, 4 or 12 enclosures, price and order standard starter with **Form G28**.
* Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes shown below.

NOTE: Some control transformers may require the use of oversized enclosures. Refer to the control transformer selection table on Page 35.

Class 8538 Fusible Disconnect Switch Type for Horizontal Mounting

Ratings					NEMA Type 12/3R▲ Dusttight and Driptight Industrial Use Enclosure	
Motor Voltage (Starter Voltage)	Max. HP Polyphase	Coil Voltage*	NEMA Size	Fuse Clip Size Amps	With External Reset Type	Without External Reset Type
200 (208)	2 7½	208-60	1	30	SCA22S1V08	SCA12S1V08
				60	SCA23S1V08	SCA13S1V08
230 (240)	2 7½	240-60 220-50	1	30	SCA22S1V03	SCA12S1V03
				60	SCA23S1V03	SCA13S1V03
460 (480)	10	480-60 440-50	1	30	SCA24S1V06	SCA14S1V06
575 (600)	10	600-60 550-50	1	30	SCA24S1V07	SCA14S1V07

* Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table or additional standard voltage codes shown on Page 31.

Coil Voltage Codes

Voltage	Code
60 Hz	
24†▲	V01
120†	V02
208†	V08
240	V03
480	V06
600	V07
Specify	V99
50 Hz	
110	V01
220	V03
440	V06
550	V07
Specify	V99

▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, **Form S** (separate control) must be specified.
† These voltage codes must include **Form S** (supplied at No Charge). When specifying **Form S**, supply motor voltage when ordering.



Combination Starters – NEMA Rated Class 8539 – MAG-GARD® in Oversized Enclosure, NEMA Size 0–2★

3-POLE POLYPHASE – 600 VOLTS AC MAXIMUM – 50-60 HZ

Devices require 3 thermal units. See Catalog 9065CT9701 for selection information.

Full Voltage Type, Non-Reversing with Melting Alloy Overload Relays

Ratings					NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304)	NEMA Type 12/3R▲ Dusttight and Driptight Industrial Use Enclosure	
Motor Voltage Starter Voltage)	HP Range Polyphase	Coil Voltage *	NEMA Size	Circuit Breaker (See Page 5-14 for Breaker Adjustment Range)			Type	Type	With External Reset	Without External Reset
200 (208)	1/4-1/2 1/2-1 1 1/2-3	208-60	0	GJL36003-M01	SBG41S8V08	SBW41S8V08	SBA51S8V08	SBA41S8V08
				GJL36007-M02	SBG42S8V08	SBW42S8V08	SBA52S8V08	SBA42S8V08
				GJL36015-M03	SBG43S8V08	SBW43S8V08	SBA53S8V08	SBA43S8V08
	1/4-1/2 1/2-1 1 1/2-3 5 7 1/2	208-60	1	GJL36003-M01	SCG41S8V08	SCW41S8V08	SCA51S8V08	SCA41S8V08
				GJL36007-M02	SCG42S8V08	SCW42S8V08	SCA52S8V08	SCA42S8V08
				GJL36015-M03	SCG43S8V08	SCW43S8V08	SCA53S8V08	SCA43S8V08
1 1/2-3 5 7 1/2-10	208-60	2	GJL36015-M03	SDG41S8V08	SDW41S8V08	SDA51S8V08	SDA41S8V08	
			GJL36030-M04	SDG42S8V08	SDW42S8V08	SDA52S8V08	SDA42S8V08	
			GJL36050-M05	SDG43S8V08	SDW43S8V08	SDA53S8V08	SDA43S8V08	
230 (240)	1/4-1/2 1/2-1 1 1/2-3 5-7 1/2	240-60 220-50	0	GJL36003-M01	SBG41S8V03	SBW41S8V03	SBA51S8V03	SBA41S8V03
				GJL36007-M02	SBG42S8V03	SBW42S8V03	SBA52S8V03	SBA42S8V03
				GJL36015-M03	SBG43S8V03	SBW43S8V03	SBA53S8V03	SBA43S8V03
	1/4-1/2 1/2-1 1 1/2-3 5-7 1/2	240-60 220-50	1	GJL36003-M01	SCG41S8V03	SCW41S8V03	SCA51S8V03	SCA41S8V03
				GJL36007-M02	SCG42S8V03	SCW42S8V03	SCA52S8V03	SCA42S8V03
				GJL36015-M03	SCG43S8V03	SCW43S8V03	SCA53S8V03	SCA43S8V03
1 1/2-3 5-7 1/2 10 15	240-60 220-50	2	GJL36015-M03	SDG41S8V03	SDW41S8V03	SDA51S8V03	SDA41S8V03	
			GJL36030-M04	SDG42S8V03	SDW42S8V03	SDA52S8V03	SDA42S8V03	
			GJL36050-M05	SDG43S8V03	SDW43S8V03	SDA53S8V03	SDA43S8V03	
460 (480)	1/4-1 1 1/2-3 5-7 1/2 10	480-60 440-50	0	GJL36003-M01	SBG41S8V06	SBW41S8V06	SBA51S8V06	SBA41S8V06
				GJL36007-M02	SBG42S8V06	SBW42S8V06	SBA52S8V06	SBA42S8V06
				GJL36015-M03	SBG43S8V06	SBW43S8V06	SBA53S8V06	SBA43S8V06
	1/4-1 1 1/2-3 5-7 1/2 10	480-60 440-50	1	GJL36003-M01	SCG41S8V06	SCW41S8V06	SCA51S8V06	SCA41S8V06
				GJL36007-M02	SCG42S8V06	SCW42S8V06	SCA52S8V06	SCA42S8V06
				GJL36015-M03	SCG43S8V06	SCW43S8V06	SCA53S8V06	SCA43S8V06
5-7 1/2 10-15 20-25	480-60 440-50	2	GJL36015-M03	SDG41S8V06	SDW41S8V06	SDA51S8V06	SDA41S8V06	
			GJL36030-M04	SDG42S8V06	SDW42S8V06	SDA52S8V06	SDA42S8V06	
			GJL36050-M05	SDG43S8V06	SDW43S8V06	SDA53S8V06	SDA43S8V06	
575 (600)	1/4-1 1 1/2-3 5	600-60 550-50	0	GJL36003-M01	SBG41S8V07	SBW41S8V07	SBA51S8V07	SBA41S8V07
				GJL36007-M02	SBG42S8V07	SBW42S8V07	SBA52S8V07	SBA42S8V07
				GJL36015-M03	SBG43S8V07	SBW43S8V07	SBA53S8V07	SBA43S8V07
	1/4-1 1 1/2-3 5-10	600-60 550-50	1	GJL36003-M01	SCG41S8V07	SCW41S8V07	SCA51S8V07	SCA41S8V07
				GJL36007-M02	SCG42S8V07	SCW42S8V07	SCA52S8V07	SCA42S8V07
				GJL36015-M03	SCG43S8V07	SCW43S8V07	SCA53S8V07	SCA43S8V07
5-10 15-20 25	600-60 550-50	2	GJL36015-M03	SDG41S8V07	SDW41S8V07	SDA51S8V07	SDA41S8V07	
			GJL36030-M04	SDG42S8V07	SDW42S8V07	SDA52S8V07	SDA42S8V07	
			GJL36050-M05	SDG43S8V07	SDW43S8V07	SDA53S8V07	SDA43S8V07	

▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.
 ★ For NEMA Size 3-5 starters in oversized NEMA Type 1, 4 or 12 enclosures, price and order standard starter with **Form G28**.
 * Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes shown below.

NOTE: Some control transformers may require the use of oversized enclosures. Refer to control transformer selection table on Page 35.

Form Y534 may be used to substitute an FAL circuit breaker for a GJL circuit breaker (no additional charge).

Coil Voltage Codes

Voltage		Code
60 Hz	50 Hz	
24†▲	...	V01
120†	110	V02
208	...	V08
240	220	V03
480	440	V06
600	550	V07
Specify	Specify	V99

▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, **Form S** (separate control) must be specified.
 † These voltage codes must include **Form S** (supplied at No Charge). When specifying **Form S**, please supply motor voltage when ordering.

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Combination Starters – NEMA Rated MAG-GARD® Circuit Breaker – Class 8539

3-POLE POLYPHASE – 600 VOLTS AC MAXIMUM – 50-60 HZ

Devices require 3 thermal units (Sizes 00-6). See Catalog 9065CT9701 for selection information.

Full Voltage Type, Non-Reversing, with Melting Alloy Overload Relay

Ratings				NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0-5)†	NEMA Type 4X Watertight and Corrosion Resistant Polyester Enclosure	NEMA Types 7 & 9* For Hazardous Locations Class I, Groups C & D Class II, Groups E, F & G (Cast Aluminum)		NEMA Type 12/3R▲ Dusttight and Driptight Industrial Use Enclosure			
Motor Voltage (Starter Voltage)	HP Range Poly-phase	Coil Voltage *	NEMA Size	Circuit Breaker (See Page 5-14 for Breaker Adjustment Range)	Type	Type	Type	SPIN TOP® Type	Bolted Type	With External Reset Type	Without External Reset Type	
200 (208)	1/4-1/2 1/2-1 1 1/2-3	208-60	0	GJL36003-M01	SBG41V08	SBW41V08	SBW51V08	SBR41V08	SBT41V08	SBA51V08	SBA41V08	
				GJL36007-M02	SBG42V08	SBW42V08	SBW52V08	SBR42V08	SBT42V08	SBA52V08	SBA42V08	
				GJL36015-M03	SBG43V08	SBW43V08	SBW53V08	SBR43V08	SBT43V08	SBA53V08	SBA43V08	
	1/4-1/2 1/2-1 1 1/2-3 5 7 1/2	208-60	1	GJL36003-M01	SCG41V08	SCW41V08	SCW51V08	SCR41V08	SCT41V08	SCA51V08	SCA41V08	
				GJL36007-M02	SCG42V08	SCW42V08	SCW52V08	SCR42V08	SCT42V08	SCA52V08	SCA42V08	
				GJL36015-M03	SCG43V08	SCW43V08	SCW53V08	SCR43V08	SCT43V08	SCA53V08	SCA43V08	
				GJL36030-M04	SCG44V08	SCW44V08	SCW54V08	SCR44V08	SCT44V08	SCA54V08	SCA44V08	
				GJL36050-M05	SCG45V08	SCW45V08	SCW55V08	SCR45V08	SCT45V08	SCA55V08	SCA45V08	
				GJL36015-M03	SDG41V08	SDW41V08	SDW51V08	SDR41V08	SDT41V08	SDA51V08	SDA41V08	
	1 1/2-3 5 7 1/2-10	208-60	2	GJL36030-M04	SDG42V08	SDW42V08	SDW52V08	SDR42V08	SDT42V08	SDA52V08	SDA42V08	
				GJL36050-M05	SDG43V08	SDW43V08	SDW53V08	SDR43V08	SDT43V08	SDA53V08	SDA43V08	
				GJL36015-M03	SEW42V08	SEW42V08	SEW52V08	SER42V08	SET42V08	SEA52V08	SEA42V08	
	15-25	208-60	3	FAL36100-18M	SEW42V08	SEW42V08	SEW52V08	SER42V08	SET42V08	SEA52V08	SEA42V08	
				30 40	4	KAL36250-25M	SFG42V08	SFW42V08	SFW52V08	SFR42V08	SFT42V08	SFA52V08	SFA42V08
	KAL36250-26M	SFG43V08	SFW43V08			SFW53V08	SFR43V08	SFT43V08	SFA53V08	SFA43V08		
	50 60 75	208-60	5	KAL36250-30M	SGG42V08	SGW42V08	....	SGR42V08	SGT42V08	SGA52V08	SGA42V08
				LAL36400-32M	SGG44V08	SGW44V08	....	SGR44V08	SGT44V08	SGA54V08	SGA44V08
				LAL36400-33M	SGG45V08	SGW45V08	....	SGR45V08	SGT45V08	SGA55V08	SGA45V08
	100 125 150	208-60	6	LAL36400-36M	SHG43V08	SHW43V08	....	....	....	SHA53V08	SHA43V08
				MAL36600-40M	SHG44V08	SHW44V08	....	....	....	SHA54V08	SHA44V08
				MAL36600-42M	SHG45V08	SHW45V08	....	....	....	SHA55V08	SHA45V08
	230 (240)	1/4-1/2 1/2-1 1 1/2-3	240-60	0	GJL36003-M01	SBG41V03	SBW41V03	SBW51V03	SBR41V03	SBT41V03	SBA51V03	SBA41V03
					GJL36007-M02	SBG42V03	SBW42V03	SBW52V03	SBR42V03	SBT42V03	SBA52V03	SBA42V03
					GJL36015-M03	SBG43V03	SBW43V03	SBW53V03	SBR43V03	SBT43V03	SBA53V03	SBA43V03
1/4-1/2 1/2-1 1 1/2-3 5-7 1/2		240-60	1	GJL36003-M01	SCG41V03	SCW41V03	SCW51V03	SCR41V03	SCT41V03	SCA51V03	SCA41V03	
				GJL36007-M02	SCG42V03	SCW42V03	SCW52V03	SCR42V03	SCT42V03	SCA52V03	SCA42V03	
				GJL36015-M03	SCG43V03	SCW43V03	SCW53V03	SCR43V03	SCT43V03	SCA53V03	SCA43V03	
				GJL36030-M04	SCG44V03	SCW44V03	SCW54V03	SCR44V03	SCT44V03	SCA54V03	SCA44V03	
				GJL36015-M03	SDG41V03	SDW41V03	SDW51V03	SDR41V03	SDT41V03	SDA51V03	SDA41V03	
				GJL36030-M04	SDG42V03	SDW42V03	SDW52V03	SDR42V03	SDT42V03	SDA52V03	SDA42V03	
1 1/2-3 5-7 1/2 10 15		240-60	2	GJL36050-M05	SDG43V03	SDW43V03	SDW53V03	SDR43V03	SDT43V03	SDA53V03	SDA43V03	
				FAL36100-18M	SDG44V03	SDW44V03	SDW54V03	SDR44V03	SDT44V03	SDA54V03	SDA44V03	
				15-30	3	FAL36100-18M	SEG42V03	SEW42V03	SEW52V03	SER42V03	SET42V03	SEA52V03	SEA42V03
40 50		4	KAL36250-26M			SFG43V03	SFW43V03	SFW53V03	SFR43V03	SFT43V03	SFA53V03	SFA43V03
			KAL36250-29M	SFG44V03	SFW44V03	SFW54V03	SFR44V03	SFT44V03	SFA54V03	SFA44V03		
60 75 100		240-60	5	KAL36250-31M	SGG43V03	SGW43V03	....	SGR43V03	SGT43V03	SGA53V03	SGA43V03
				LAL36400-32M	SGG44V03	SGW44V03	....	SGR44V03	SGT44V03	SGA54V03	SGA44V03
				LAL36400-35M	SGG46V03	SGW46V03	....	SGR46V03	SGT46V03	SGA56V03	SGA46V03
125-150 200		240-60	6	MAL36600-40M	SHG44V03	SHW44V03	....	....	....	SHA54V03	SHA44V03
				MAL36600-44M	SHG46V03	SHW46V03	....	....	....	SHA56V03	SHA46V03
250 300		240-60	7	MAL36800-45M	SJG42V03	SJW42V03	....	....	....	SJA52V03	....
				MAL361000-47M	SJG43V03	SJW43V03	....	....	....	SJA53V03	....

Standard unit



Explosion proof unit



Note that not all units have an explosion proof rating. Consult factory.

- ◆ NEMA Size 6 & 7 starters are NEMA Type 4 painted sheet steel enclosures.
- ★ NEMA Types 7 and 9 Bolted are not UL Listed.
- ▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.
- * Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes shown below.

NOTE: Some control transformers may require the use of oversized enclosures. Refer to control transformer selection table on Page 35.

Form Y534 may be used to substitute an FAL circuit breaker for a GJL circuit breaker (no additional charge).

Coil Voltage Codes

Voltage	Code
60 Hz	
24†▲	V01
120†	V02
208	V08
240	V03
480	V06
600	V07
Specify	V99
50 Hz	
...	V01
110	V02
...	V08
220	V03
440	V06
550	V07
Specify	V99

- ▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, Form S (separate control) must be specified.
- † These voltage codes must include Form S (supplied at No Charge). When specifying Form S, please supply motor voltage when ordering.

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Combination Starters – NEMA Rated Class 8539 – MAG-GARD® Circuit Breaker

3-POLE POLYPHASE – 600 VOLTS AC MAXIMUM – 50-60 HZ

Devices require 3 thermal units (sizes 00-6). See Catalog 9065CT9701 for selection information.

Full Voltage Type, Non-Reversing, with Melting Alloy Overload Relays

Ratings				NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0-5)†	NEMA Type 4X Watertight Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Types 7 & 9* For Hazardous Locations Class I, Groups C & D Class II, Groups E, F & G (Cast Aluminum)		NEMA Type 12/3R▲ Dusttight and Driptight Industrial Use Enclosure		
Motor Voltage (Starter Voltage)	HP Range Poly-phase	Coil Voltage *	NEMA Size	Circuit Breaker (See Page 5-14 for Breaker Adjustment Range)	Type	Type	Type	SPIN TOP® Type	Bolted Type	With External Reset	Without External Reset
					Type	Type	Type	Type	Type	Type	
460 (480)	1/4-1 1-1/2-3 5		0	GJL36003-M01	SBG41V06	SBW41V06	SBW51V06	SBR41V06	SBT41V06	SBA51V06	SBA41V06
				GJL36007-M02	SBG42V06	SBW42V06	SBW52V06	SBR42V06	SBT42V06	SBA52V06	SBA42V06
				GJL36015-M03	SBG43V06	SBW43V06	SBW53V06	SBR43V06	SBT43V06	SBA53V06	SBA43V06
	1/4-1 1-1/2-3 5-7-1/2 10		1	GJL36003-M01	SCG41V06	SCW41V06	SCW51V06	SCR41V06	SCT41V06	SCA51V06	SCA41V06
				GJL36007-M02	SCG42V06	SCW42V06	SCW52V06	SCR42V06	SCT42V06	SCA52V06	SCA42V06
				GJL36015-M03	SCG43V06	SCW43V06	SCW53V06	SCR43V06	SCT43V06	SCA53V06	SCA43V06
	5-7-1/2 10-15 20-25		2	GJL36015-M03	SDG41V06	SDW41V06	SDW51V06	SDR41V06	SDT41V06	SDA51V06	SDA41V06
				GJL36030-M04	SDG42V06	SDW42V06	SDW52V06	SDR42V06	SDT42V06	SDA52V06	SDA42V06
				GJL36050-M05	SDG43V06	SDW43V06	SDW53V06	SDR43V06	SDT43V06	SDA53V06	SDA43V06
	20-25 30-50	480-60 440-50	3	GJL36050-M05	SEG41V06	SEW41V06	SEW51V06	SER41V06	SET41V06	SEA51V06	SEA41V06
				FAL36100-18M	SEG42V06	SEW42V06	SEW52V06	SER42V06	SET42V06	SEA52V06	SEA42V06
	60-75 100		4	KAL36250-25M	SFG42V06	SFW42V06	SFW52V06	SFR42V06	SFT42V06	SFA52V06	SFA42V06
				KAL36250-29M	SFG44V06	SFW44V06	SFW54V06	SFR44V06	SFT44V06	SFA54V06	SFA44V06
	125 150 200		5	KAL36250-31M	SGG43V06	SGW43V06	....	SGR43V06	SGT43V06	SGA53V06	SGA43V06
LAL36400-32M				SGG44V06	SGW44V06	....	SGR44V06	SGT44V06	SGA54V06	SGA44V06	
350 400		6	LAL36400-36M	SHG43V06	SHW43V06	....	....	....	SHA53V06	SHA43V06	
			MAL36600-40M	SHG44V06	SHW44V06	....	....	....	SHA54V06	SHA44V06	
500 600		7	MAL36600-42M	SHG45V06	SHW45V06	....	....	....	SHA55V06	SHA45V06	
			MAL36600-44M	SHG46V06	SHW46V06	....	....	....	SHA56V06	SHA46V06	
575 (600)	1/4-1 1-1/2-3 5		0	GJL36003-M01	SBG41V07	SBW41V07	SBW51V07	SBR41V07	SBT41V07	SBA51V07	SBA41V07
				GJL36007-M02	SBG42V07	SBW42V07	SBW52V07	SBR42V07	SBT42V07	SBA52V07	SBA42V07
				GJL36015-M03	SBG43V07	SBW43V07	SBW53V07	SBR43V07	SBT43V07	SBA53V07	SBA43V07
	1/4-1 1-1/2-3 5-10		1	GJL36003-M01	SCG41V07	SCW41V07	SCW51V07	SCR41V07	SCT41V07	SCA51V07	SCA41V07
				GJL36007-M02	SCG42V07	SCW42V07	SCW52V07	SCR42V07	SCT42V07	SCA52V07	SCA42V07
				GJL36015-M03	SCG43V07	SCW43V07	SCW53V07	SCR43V07	SCT43V07	SCA53V07	SCA43V07
	5-10 15-20 25		2	GJL36015-M03	SDG41V07	SDW41V07	SDW51V07	SDR41V07	SDT41V07	SDA51V07	SDA41V07
				GJL36030-M04	SDG42V07	SDW42V07	SDW52V07	SDR42V07	SDT42V07	SDA52V07	SDA42V07
				GJL36050-M05	SDG43V07	SDW43V07	SDW53V07	SDR43V07	SDT43V07	SDA53V07	SDA43V07
	25-30 40-50	600-60 550-50	3	GJL36050-M05	SEG41V07	SEW41V07	SEW51V07	SER41V07	SET41V07	SEA51V07	SEA41V07
				FAL36100-18M	SEG42V07	SEW42V07	SEW52V07	SER42V07	SET42V07	SEA52V07	SEA42V07
	60-100		4	KAL36250-25M	SFG42V07	SFW42V07	SFW52V07	SFR42V07	SFT42V07	SFA52V07	SFA42V07
				KAL36250-29M	SFG44V07	SFW44V07	SFW54V07	SFR44V07	SFT44V07	SFA54V07	SFA44V07
	125 150 200		5	KAL36250-30M	SGG41V07	SGW41V07	....	SGR41V07	SGT41V07	SGA51V07	SGA41V07
LAL36400-32M				SGG42V07	SGW42V07	....	SGR42V07	SGT42V07	SGA52V07	SGA42V07	
250 300 350-400		6	LAL36400-35M	SHG42V07	SHW42V07	....	....	....	SHA52V07	SHA42V07	
			LAL36400-36M	SHG43V07	SHW43V07	....	....	....	SHA53V07	SHA43V07	
500 600		7	MAL36600-40M	SHG44V07	SHW44V07	....	....	....	SHA54V07	SHA44V07	
			MAL36800-44M	SJG41V07	SJW41V07	....	....	....	SJA51V07	....
				MAL36800-45M	SJG42V07	SJW42V07	....	....	SJA52V07	....

† NEMA Size 6 & 7 starters are NEMA Type 4 painted sheet steel enclosures.
 * NEMA Type 7 & 9 Bolted are not UL Listed.
 ▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.
 * Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes below.

NOTE: Some control transformers may require the use of oversized enclosures. Refer to control transformer selection table on Page 35.
 Form Y534 may be used to substitute an FAL circuit breaker for a GJL circuit breaker (no additional charge).

Coil Voltage Codes

Voltage	50 Hz	Code
60 Hz		
24†▲	...	V01
120†	110	V02
208	...	V08
240	220	V03
480	440	V06
600	550	V07
Specify	Specify	V99

▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, Form S (separate control) must be specified.
 † These voltage codes must include Form S (supplied at No Charge). When specifying Form S, please supply motor voltage when ordering.



Combination Starters – NEMA Rated Thermal Magnetic Circuit Breaker – Class 8539

3-POLE POLYPHASE – 600 VOLTS AC MAXIMUM – 50-60 HZ

Devices require 3 thermal units (sizes 0-6). See Catalog 9065CT9701 for selection information.

Full Voltage Type, Non-Reversing, with Melting Alloy Overload Relays

Ratings						NEMA Type 1 General Purpose	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0-5)†	NEMA Type 4X Watertight Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Types 7 & 9* For Hazardous Locations Class I, Groups C & D Class II, Groups E, F & G (Cast Aluminum)		NEMA Type 12/3R* Dusttight and Driptight Industrial Use Enclosure		
Motor Voltage (Starter Voltage)	Max. HP Poly-phase	Coil Voltage *	NEMA Size	Circuit Breaker		Type	Type	Type	SPIN TOP® Type	Bolted Type	With External Reset Type	Without External Reset Type	
				Type	Ampere Rating								
200 (208)	2 3	208-60	0	FAL●	15 20	SBG1V08 SBG3V08	SBW1V08 SBW3V08	SBW11V08 SBW13V08	SBR1V08 SBR3V08	SBT1V08 SBT3V08	SBA11V08 SBA13V08	SBA1V08 SBA3V08	
	5 7½			1	FAL●	35 50	SCG5V08 SCG2V08	SCW5V08 SCW2V08	SCW15V08 SCW12V08	SCR5V08 SCR2V08	SCT5V08 SCT2V08	SCA15V08 SCA12V08	SCA5V08 SCA2V08
	10				FAL●	60	SDG1V08	SDW1V08	SDW11V08	SDR1V08	SDT1V08	SDA11V08	SDA1V08
	15 20 25		3	FAL	90	SEG3V08	SEW3V08	SEW13V08	SER3V08	SET3V08	SEA13V08	SEA3V08	
	30 40			FAL	100	SEG1V08	SEW1V08	SEW11V08	SER1V08	SET1V08	SEA11V08	SEA1V08	
	50 60 75			KAL	110	SEG5V08	SEW5V08	SEW15V08	SER5V08	SET5V08	SEA15V08	SEA5V08	
	100 125 150		208-60	4	KAL	125 200	SFG3V08 SFG4V08	SFW3V08 SFW4V08	SFW13V08 SFW14V08	SFR3V08 SFR4V08	SFT3V08 SFT4V08	SFA13V08 SFA14V08	SFA3V08 SFA4V08
					5	LAL	200 250 300	SGG6V08 SGG1V08 SGG4V08	SGW6V08 SGW1V08 SGW4V08	SGR6V08 SGR1V08 SGR4V08	SGT6V08 SGT1V08 SGT4V08	SGA16V08 SGA11V08 SGA14V08	SGA6V08 SGA1V08 SGA4V08
				6		MAL	450 600 600	SHG4V08 SHG3V08 SHG5V08	SHW4V08 SHW3V08 SHW5V08	SHA14V08 SHA13V08 SHA15V08	SHA4V08 SHA3V08 SHA5V08
					230 (240)	2 3	240-60 220-50	FAL●	15 20	SBG1V03 SBG3V03	SBW1V03 SBW3V03	SBW11V03 SBW13V03	SBR1V03 SBR3V03	SBT1V03 SBT3V03	SBA11V03 SBA13V03	SBA1V03 SBA3V03
5 7½	1	FAL●	30 45	SCG1V03 SCG6V03	SCW1V03 SCW6V03	SCW11V03 SCW16V03		SCR1V03 SCR6V03	SCT1V03 SCT6V03	SCA11V03 SCA16V03	SCA1V03 SCA6V03		
10 15		2	FAL●	60 80	SDG1V03 SDG7V03	SDW1V03 SDW7V03		SDW11V03 SDW17V03	SDR1V03 SDR7V03	SDT1V03 SDT7V03	SDA11V03 SDA17V03	SDA1V03 SDA7V03	
20 25 30	3		FAL	90	SEG3V03	SEW3V03		SEW13V03	SER3V03	SET3V03	SEA13V03	SEA3V03	
40 50		FAL	100	SEG1V03	SEW1V03	SEW11V03		SER1V03	SET1V03	SEA11V03	SEA1V03		
60 75 100	KAL	110	SEG5V03	SEW5V03	SEW15V03	SER5V03		SET5V03	SEA15V03	SEA5V03			
125 150 200 250 300	240-60 220-50	4	KAL	150 200	SFG1V03 SFG4V03	SFW1V03 SFW4V03		SFW11V03 SFW14V03	SFR1V03 SFR4V03	SFT1V03 SFT4V03	SFA11V03 SFA14V03	SFA1V03 SFA4V03	
			5	LAL	225 250 350	SGG3V03 SGG1V03 SGG2V03		SGW3V03 SGW1V03 SGW2V03	SGR3V03 SGR1V03 SGR2V03	SGT3V03 SGT1V03 SGT2V03	SGA13V03 SGA11V03 SGA12V03	SGA3V03 SGA1V03 SGA2V03
		6		MAL	450 600 800	SHG4V03 SHG3V03 SHG7V03		SHW4V03 SHW3V03 SHW7V03	SHA14V03 SHA13V03 SHA17V03	SHA4V03 SHA3V03 SHA7V03
			7	MAL	900 1000	SJG2V03 SJG3V03		SJW2V03 SJW3V03	SJA12V03 SJA13V03

‡ NEMA Size 6 & 7 starters are NEMA Type 4 painted sheet steel enclosures.
 ★ NEMA Type 7 & 9 bolted are not UL Listed.
 ▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.
 * Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes below.
 ● Rated 250 Volts Max.

NOTE: Some control transformers may require the use of oversized enclosures. Refer to control transformer selection table on Page 35.

Coil Voltage Codes

Voltage	Code
60 Hz	
24†▲	V01
120†	V02
208	V08
240	V03
480	V06
600	V07
Specify	V99
50 Hz	
...	V01
110	V02
...	V08
220	V03
440	V06
550	V07
Specify	V99

▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, **Form S** (separate control) must be specified.
 † These voltage codes must include **Form S** (supplied at No Charge). When specifying **Form S**, please supply motor voltage when ordering.

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 Factory Modifications (Forms).....Page 30
 Type S Accessories (Class 9999).....Catalog 9999CT9701

Combination Starters – NEMA Rated Class 8539 – Thermal Magnetic Circuit Breaker

3-POLE POLYPHASE – 600 VOLTS AC MAXIMUM – 50-60 HZ

Devices require 3 thermal units (sizes 00-6). See Catalog 9065CT9701 for selection information.

Line Voltage Type, Non-Reversing, with Melting Alloy Overload Relays

Ratings					NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0-5)‡	NEMA Type 4X Watertight and Corrosion Resistant Polyester Enclosure	NEMA Types 7 & 9★ For Hazardous Locations Class I, Groups C & D Class II, Groups E, F & G (Cast Aluminum)	NEMA Type 12/3R▲ Dusttight and Driptight Industrial Use Enclosure			
Motor Voltage (Starter Voltage)	Max. HP Poly- phase	Coil Voltage *	NEMA Size	Circuit Breaker		Type	Type	Type	SPIN TOP® Type	Bolted Type	With External Reset	Without External Reset
				Type	Ampere Rating						Type	Type
460 (480)	5	480-60 440-50	0	FAL	15	SBG2V06	SBW2V06	SBW12V06	SBR2V06	SBT2V06	SBA12V06	SBA2V06
	7½ 10				20	SCG3V06	SCW3V06	SCW13V06	SCR3V06	SCT3V06	SCA13V06	SCA3V06
	15 20 25		2	FAL	40	SDG3V06	SDW3V06	SDW13V06	SDR3V06	SDT3V06	SDA13V06	SDA3V06
					60	SDG4V06	SDW4V06	SDW14V06	SDR4V06	SDT4V06	SDA14V06	SDA4V06
	30 40 50		3	FAL	80	SEG6V06	SEW6V06	SEW16V06	SER6V06	SET6V06	SEA6V06	SEA3V06
					90	SEG3V06	SEW3V06	SEW13V06	SER3V06	SET3V06	SEA3V06	SEA3V06
	60 75 100		4	KAL	110	SFG5V06	SFW5V06	SFW15V06	SFR5V06	SFT5V06	SFA5V06	SFA5V06
					125	SFG3V06	SFW3V06	SFW13V06	SFR3V06	SFT3V06	SFA3V06	SFA3V06
	125 150 200		5	LAL	200	SFG4V06	SFW4V06	SFW14V06	SFR4V06	SFT4V06	SFA4V06	SFA4V06
					225	SGG3V06	SGW3V06	SGW13V06	SGR3V06	SGT3V06	SGA3V06	SGA3V06
	250 300 350 400		6	MAL	250	SGG1V06	SGW1V06	SGW11V06	SGR1V06	SGT1V06	SGA11V06	SGA2V06
					350	SHG4V06	SHW4V06	SHW14V06	SHR4V06	SHD4V06	SHA4V06	SHA4V06
	500 600		7	MAL	600	SHG3V06	SHW3V06	SHW13V06	SHR3V06	SHD3V06	SHA3V06	SHA3V06
					800	SHG5V06	SHW5V06	SHW15V06	SHR5V06	SHD5V06	SHA5V06	SHA5V06
575 (600)	5	600-60 550-50	0	FAL	15	SBG2V07	SBW2V07	SBW12V07	SBR2V07	SBT2V07	SBA12V07	SBA2V07
	7½ 10				20	SCG8V07	SCW8V07	SCW18V07	SCR8V07	SCT8V07	SCA18V07	SCA8V07
	15 20 25		2	FAL	35	SDG8V07	SDW8V07	SDW18V07	SDR8V07	SDT8V07	SDA18V07	SDA8V07
					45	SDG9V07	SDW9V07	SDW19V07	SDR9V07	SDT9V07	SDA19V07	SDA9V07
	30 40 50		3	FAL	60	SEG4V07	SEW4V07	SEW14V07	SER4V07	SET4V07	SEA4V07	SEA4V07
					80	SEG6V07	SEW6V07	SEW16V07	SER6V07	SET6V07	SEA6V07	SEA6V07
	60 75 100		4	KAL	90	SEG3V07	SEW3V07	SEW13V07	SER3V07	SET3V07	SEA3V07	SEA3V07
					100	SFG6V07	SFW6V07	SFW16V07	SFR6V07	SFT6V07	SFA6V07	SFA6V07
	125 150 200		5	KAL	110	SFG5V07	SFW5V07	SFW15V07	SFR5V07	SFT5V07	SFA5V07	SFA5V07
					150	SFG1V07	SFW1V07	SFW11V07	SFR1V07	SFT1V07	SFA11V07	SFA1V07
	250 300 350 400		6	MAL	200	SGG7V07	SGW7V07	SGW17V07	SGR7V07	SGT7V07	SGA17V07	SGA7V07
					200	SGG6V07	SGW6V07	SGW16V07	SGR6V07	SGT6V07	SGA16V07	SGA6V07
	500 600		7	MAL	250	SGG1V07	SGW1V07	SGW11V07	SGR1V07	SGT1V07	SGA11V07	SGA1V07
					350	SHG6V07	SHW6V07	SHW16V07	SHR6V07	SHD6V07	SHA6V07	SHA6V07
500 600	7	MAL	450	SHG4V07	SHW4V07	SHW14V07	SHR4V07	SHD4V07	SHA4V07	SHA4V07		
			500	SHG2V07	SHW2V07	SHW12V07	SHR2V07	SHD2V07	SHA2V07	SHA2V07		
500 600	7	MAL	600	SHG3V07	SHW3V07	SHW13V07	SHR3V07	SHD3V07	SHA3V07	SHA3V07		
			800	SJG1V07	SJW1V07	SJW11V07	SJR1V07	SJT1V07	SJA11V07	SJA1V07		
500 600	7	MAL	900	SJG2V07	SJW2V07	SJW12V07	SJR2V07	SJT2V07	SJA12V07	SJA2V07		

‡ NEMA Size 6 & 7 starters are NEMA Type 4 painted sheet steel enclosures.

★ NEMA Type 7 & 9 bolted are not UL Listed.

▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.

* Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes below.

NOTE: Some control transformers may require the use of oversized enclosures. Refer to control transformer selection table on Page 35.

Thermal Magnetic Circuit Breaker Type, Single Phase

Motor Voltage	Max. HP	Coil Voltage	NEMA Size	Circuit Breaker (Type)	Ampere Rating	NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0-5)‡	NEMA Type 4X Watertight, Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Type 12/3R▲ Dusttight and Driptight Industrial Use Enclosure	
						Type	Type	Type	With External Reset	Without External Reset
120	1	120	0	FAL12030	30	SBG1S2V02	SBW1S2V02	SBW31S2V02	SBA21S2V02	SBA1S2V02
	2			FAL12050	50	SCG1S2V02	SCW1S2V02	SCW31S2V02	SCA21S2V02	SCA1S2V02
	3			FAL12070	70	SDG1S2V02	SDW1S2V02	SDW31S2V02	SDA21S2V02	SDA1S2V02
230	2	230	0	FAL22025	25	SBG1S2V03	SBW1S2V03	SBW31S2V03	SBA21S2V03	SBA1S2V03
	3			FAL22035	35	SCG1S2V03	SCW1S2V03	SCW31S2V03	SCA21S2V03	SCA1S2V03
	7½			FAL22080	80	SDG1S2V03	SDW1S2V03	SDW31S2V03	SDA21S2V03	SDA1S2V03



Full Voltage Contactors and Starters – NEMA Rated

Application Data for Selection

NEMA Size	Load Volts		Maximum HP Rating– Nonplugging and Nonjogging Duty		Maximum HP Rating– Plugging and Jogging Duty †		Continuous Current Rating, Amperes– 600 Volt Max.	Service– Limit Current Rating, Amperes *	Tungsten and Infrared Lamp Load, Amperes– 250 Volts Max. ★	Resistance Heating Loads, KW – other than Infrared Lamp Loads ‡		KVA Rating for Switching Transformer Primaries At 50 or 60 Cycles				3 PH Rating for Switching Capacitors •			
			Single Phase	Poly-Phase	Single Phase	Poly-Phase				Single Phase	Poly-Phase	Single Phase	Poly-Phase	Single Phase	Poly-Phase		Single Phase	Poly-Phase	KVAR
00	115	1/2	9	11	5	
	200	...	1/2	9	11	5	
	230	1	1/2	9	11	5	
	380	...	1/2	9	11	
	460	...	2	9	11	
575	...	2	9	11	
0	115	1	...	1/2	...	11/2	18	21	10	0.6	...	0.3	...	0.9	
	200	...	3	11/2	18	21	10	1.8	...	0.6	...	1.0	
	230	2	3	...	1	11/2	18	21	10	...	...	1.2	2.1	0.6	...	...	...
	380	...	5	...	...	11/2	18	21	...	...	...	...	...	...	...	...	...
	460	...	5	...	...	2	18	21	...	...	2.4	4.2	1.2	...	2.1	...	...
575	...	5	...	...	2	18	21	...	...	3.0	5.2	1.5	...	2.6	...	...	...
1	115	2	...	1	...	3	27	32	15	3	5	1.2	...	0.6	...	1.8	...		
	200	...	...	...	...	3	27	32	15	...	9.1	...	3.6	...	2.1	...	...
	230	3	7 1/2	...	2	3	27	32	15	6	10	2.4	4.3	1.2	...	...	...
	380	...	10	...	...	5	27	32	...	...	16.5	...	...	...	...	...	...
	460	...	10	...	...	5	27	32	...	12	20	4.9	8.5	2.5	...	4.3	...
575	...	10	...	...	5	27	32	...	15	25	6.2	11.0	3.1	...	5.3	...	...
1P	115	3	...	1 1/2	...	...	36	42	24	...	...	...	...	...	...	...	...
	230	5	...	...	3	...	36	42	24	...	...	...	...	...	...	...	...
2	115	3	...	2	...	7 1/2	45	52	30	5	8.5	2.1	...	1.0	...	3.1	...		
	200	...	10	...	...	7 1/2	45	52	30	...	15.4	...	6.3	...	...	...	...
	230	...	15	...	5	10	45	52	30	10	17	4.1	7.2	2.1	...	3.6	8		
	380	...	25	...	...	15	45	52	...	...	28	...	...	...	...	...	...
	460	...	25	...	...	15	45	52	...	20	34	8.3	14	4.2	...	7.2	16
575	...	25	...	...	15	45	52	...	25	43	10.0	18	5.2	...	8.9	20	
3	115	...	...	...	...	...	90	104	60	10	17	4.1	...	2.0	...	...	...
	200	...	25	...	...	15	90	104	60	...	31	...	12	...	6.1	...	...
	230	...	30	...	...	20	90	104	60	20	34	8.1	14	4.1	...	7.0	27
	380	...	50	...	...	30	90	104	...	...	56	...	...	...	...	...	...
	460	...	50	...	...	30	90	104	...	40	68	16	28	8.1	...	14	53
575	...	50	...	...	30	90	104	...	50	86	20	35	10	...	18	67	
4	200	...	40	...	...	25	135	156	120	...	45	...	20	...	10	...	...
	230	...	50	...	...	30	135	156	120	30	52	14	23	6.8	...	12	40
	380	...	75	...	...	50	135	156	...	...	86.7	...	...	...	...	...	...
	460	...	100	...	...	60	135	156	...	60	105	27	47	14	...	23	80
	575	...	100	...	...	60	135	156	...	75	130	34	59	17	...	29	100
5	200	...	75	...	...	60	270	311	240	...	91	...	41	...	20	...	...
	230	...	100	...	...	75	270	311	240	60	105	27	47	14	...	24	80
	380	...	150	...	...	125	270	311	...	...	173	...	...	...	...	...	...
	460	...	200	...	...	150	270	311	...	120	210	54	94	27	...	47	160
	575	...	200	...	...	150	270	311	...	150	260	68	117	34	...	59	200
6▲	200	...	150	...	...	125	540	621	480	...	182	...	81	...	41	...	...
	230	...	200	...	...	150	540	621	480	120	210	54	94	27	...	47	160
	380	...	300	...	...	250	540	621	...	...	342	...	...	...	...	...	...
	460	...	400	...	...	300	540	621	...	240	415	108	188	54	...	94	320
	575	...	400	...	...	300	540	621	...	300	515	135	234	68	...	117	400
7▲	230	...	300	...	...	810	932	...	...	180	315	...	...	...	...	...	240
	460	...	600	...	...	810	932	...	...	360	625	...	...	...	...	...	480
	575	...	600	...	...	810	932	...	...	450	775	...	...	...	...	...	600

Tables and footnotes are taken from NEMA Standards.

† Ratings shown are for applications requiring repeated interruptions of stalled motor current or repeated closing of high transient currents encountered in rapid motor reversal, involving more than five openings or closings per minute and more than ten in a ten-minute period, such as plug-stop, plug-reverse or jogging duty. Ratings apply to single speed and multi-speed controllers.

* Per NEMA Standards ICS 2-1993 clause 4, the service-limit current represents the maximum rms current, in Amperes, which the controller may be expected to carry for protracted periods in normal service. At service-limit current ratings, temperature rises may exceed those obtained by testing the controller at its continuous current rating. The ultimate trip current of over-current (overload) relays or other motor protective devices shall not exceed the service-limit current ratings of the controller.

★ FLUORESCENT LAMP LOADS – 300 VOLTS AND LESS – The characteristics of fluorescent lamps are such that it is not necessary to derate Class 8502 contactors below their normal continuous current rating. Class 8903 contactors may also be used with fluorescent lamp loads. For controlling tungsten and infrared lamp loads, and resistance heating loads, Class 8903 ac lighting contactors are recommended. These contactors are specifically designed for such loads and are applied at their full rating as listed in the Class 8903 Section.

‡ Ratings apply to contactors which are employed to switch the load at the utilization voltage of the heat producing element with a duty which requires continuous operation of not more than five openings per minute. Class 8903 Types L and S lighting contactors are rated for resistance heating loads.

• When discharged, a capacitor has essentially zero impedance. For repetitive switching by a contactor, sufficient impedance should be connected in series to limit inrush current to not more than 6 times the contactor rated continuous current. In many installations, the impedance of connecting conductors may be sufficient for this purpose. When switching to connect additional banks, the banks already on the line may be charged and can supply additional available short-circuit current which should be considered when selecting the impedance to limit the current.

The ratings for capacitor switching above assume the following maximum available fault currents:

NEMA Size 2-3: 5,000 A RMS Sym.

NEMA Size 4-5: 10,000 A RMS Sym.

NEMA Size 6: 18,000 A RMS Sym.

NEMA Size 7: 30,000 A RMS Sym.

If available fault current is greater than these values, connect sufficient impedance in series as noted in the previous paragraph.

▲ For NEMA Size 6 and 7, the operation rate is as follows: Continuous operation rate is 3 operations per minute maximum; Jogging or Plugging Duty operation rate is 15 operations per minute for a maximum of three minutes.

The motor ratings in the above table are NEMA standard ratings and apply only when the code letter of the motor is the same as or occurs earlier in the alphabet than is shown in the table below.

Motors having code letters occurring later in the alphabet may require a larger controller. Consult local Square D field office.

Motor HP Rating	Maximum Allowable Motor Code Letter
1 1/2-2	L
3-5	K
7 1/2 and above	H

Full Voltage Contactors and Starters – NEMA Rated Application Data

Power Contact Ratings: All contactors and starters are rated in accordance with NEMA standards. The ratings shown in the selection tables are for normal service. For complete data on power contact ratings, refer to Page 12.

Short Circuit Protection: According to the National Electrical Code branch circuit overcurrent protection must be provided for each contactor or starter. For starters refer to instructions furnished with the thermal unit selection table. For contactors (Class 8502 or 8702) provide branch circuit overcurrent protection in accordance with the National Electrical Code, except do not exceed the maximum protective device ratings in table below.

NEMA Size	Maximum Voltage	Class K5, RK5 or RK1 Fuse (Ampere)	Class J or T Fuse (Ampere)	Inverse-Time Circuit Breaker (Ampere)
00	600	10	15	15
	250	12	15	15
0	600	20	30	20
	250	25	30	35
1	600	30	60	40
	250	40	60	60
2	600	60	100	80
	250	60	100	90
3	600	100	200	125
	250	125	200	150
4	600	200	400	225
5	600	400	600	400
6	600	600	1200*	800
7	600	600	1600*	1200

* Class L Fuse only

Capacitor Switching: The kilovar ratings of enclosed, three phase contactors used as switches for capacitor loads, when only one load appears on the secondary of a distribution system are shown in the table on Page 12.

Coil Burden▲

NEMA Size	No. of Poles	Inrush VA		Sealed VA		Sealed Watts	
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
00	2-3	....	165	....	33	....	6
0 & 1	1-5	232	245	26	27	7.7	7.8
2	2 & 3	296	311	36	37	12	14
	4 & 5	429	438	37	38	12	14
3	2-3	676	700	47	46	15	14
	4-5	1260	1185	89	85	23.4	22
4	2-5	2970	2970	250	212	42	39
6‡	2-3	1495	1780	56	48	27	32
7‡	2-3	....	1960	....	59	....	36

▲ Mean values.

‡ Size 6 and 7 have a DC coil. The values shown are for the AC input to the DC power supply that provides power to the coil.

Ambient temperature (operating temperature): 0°C - 40°C (32°F - 104°F)

Maintenance of Equipment: Class 9998 Repair Parts Kits are available for all Class 8502 contactors and Class 8536 starters. Service bulletins with a complete list of replaceable parts are supplied with all enclosed devices. Separate bulletins can be ordered and are listed along with the appropriate contact parts kit.

Device	NEMA Type	Type	Series	No. of Poles	Instruction Bulletin	Service Bulletin	Replacement Contacts Class 9998 Type
00	SA	A	A	2-3	30072-013-08	362AS	SL2
		B		2-3		556AS	SJ1
0	SB	A&B	A&B	1-3	30072-013-09	277AS	SL2
				4		277AS & 250AS	(1)SL12 & (1)SL22
				5		277AS & 250AS	or (1)SL2 & (2)SL22
1	SC	A&B	A&B	1-3	30072-013-10	278AS	SL3
				4		278AS & 250AS	(1)SL13 & (1)SL22
				5		278AS & 250AS	or (1)SL3 & (2)SL22
1P	SC	A	A	2	30072-013-10	278AS	SL3
2	SD	A	A	2-3	30072-013-11	279AS	SL4
				4		279AS & 293AS	(1)SL14 & (1)SL24
				5		279AS & 293AS	or (1)SL4 & (2)SL24
3	SE	A	A	2	30072-013-01	305AS	SL6
				3	30072-013-01	305AS	SL7
				4	30072-013-03	326AS	(2)SL6
				5	30072-013-03	326AS	(1)SL6 & (1)SL7
4	SF	A	A	2	30072-013-02	306AS	SL8
				3	30072-013-02	306AS	SL9
				4	30072-013-03	326AS	(2)SL8
				5	30072-013-03	326AS	(1)SL8 & (1)SL9
5	SG	A	A	2	30072-013-18	328AS	SL10
				3	30072-013-18	328AS	SL11
6	SH	A	A	2	342AS	342AS	SL25
				3	342AS	342AS	SL26
7	SJ	A	A	2	397AS	397AS	SL30
				3	397AS	397AS	SL31

Terminals

NEMA Size	Type	Power Terminals		Control Terminals	
		Type of Lug	Wire Sizes* Min.-Max.	Type of Lug	Wire Sizes* Min.-Max.
00, 0 & 1	SA, SB & SC	Pressure Wire	#14-#8	Pressure Wire	#16-#12
2	SD	Box Lug	#14-#4	Pressure Wire	#16-#12
3	SE	Box Lug	#14-1/0	Pressure Wire	#16-#12
4	SF	Box Lug	#8-250 kcmil	Pressure Wire	#16-#12
5	SG	Box Lug	#4-500 kcmil	Pressure Wire	#16-#12
6	SH	Parallel Groove	One or two 250-500 kcmil per phase	Pressure Wire	#16-#12
7	SJ	Parallel Groove	One to four 250-500 kcmil per phase	Pressure Wire	#16-#12

* Solid or stranded copper wire. One wire per connector.

Coil temperature: Not more than 85°C rise in 40°C ambient (125°C max.).



Full Voltage Contactors & Starters – NEMA Rated Application Data

Auxiliary Units

Auxiliary contacts, power poles, and timer attachments can be added by the factory or in the field on all Type S starters and contactors. The table below shows the maximum number of auxiliary units (**in addition to the holding circuit contact**) that can be added to a given size starter or contactor. In addition, it is possible to add a second internal contact on NEMA Size 0, 1, and 2 contactors and starters.

NEMA Size	Type	No. of Poles of Basic Contactor	Maximum Number of External Auxiliary Units (In addition to holding circuit contact)
00	SA	2-3	4 single circuit auxiliary contacts (N.O. or N.C.) if second internal auxiliary contact is not used.
0, 1 and 2	SB SC SD	1, 2 or 3	4 single circuit auxiliary contacts (N.O. or N.C.)
			3 single circuit auxiliary contacts (N.O. or N.C.) plus 1 attached timer (ON or OFF delay).
			2 single circuit auxiliary contacts (N.O. or N.C.) plus 1 power pole adder (1 or 2 poles, N.O. or N.C.)
		4 or 5	1 attached timer (ON or OFF delay) plus 1 power pole adder (1 or 2 poles, N.O. or N.C.) plus 1 auxiliary contact.
3, 4 & 5	SE SF SG	2-5 (Size 3 & 4)	4 single circuit auxiliary contacts (N.O. or N.C.)
			2 single circuit (Sizes 3 & 4) or 3 single circuit (Size 5) auxiliary contacts plus 1 attached timer (ON or OFF delay).
		2-3 (Size 5)	2 single circuit auxiliary contacts (N.O. or N.C.) plus 1 NEMA Size 0-1 or Size 2 power pole adder (1 or 2 poles, N.O. or N.C.)
			4 single circuit auxiliary contacts (N.O. or N.C.)
6 and 7	SH SJ	2-3	3 single circuit auxiliary contacts (N.O. or N.C.) plus 1 attached timer (ON or OFF delay).
			2 single circuit auxiliary contacts (N.O. or N.C.) plus 1 NEMA Size 0-1 or Size 2 power pole adder (1 or 2 poles, N.O. or N.C.)
			4 single circuit auxiliary contacts (N.O. or N.C.)

Factory Installed Auxiliary Contacts

The table below lists the Form designations for factory installed electrical contacts. See Factory Modifications (Forms) section for pricing.

See Class 9999 for field modification kits.

Form Number Of Additional Auxiliary Contacts

When ordering factory installed auxiliary contacts, the Form designations listed should be used.

Number of N.O. Contacts	Number of N.C. Contacts	Form Number
0	1	X01
0	2	X02
0	3	X03
0	4	X04
1	0	X10
1	1	X11
1	2	X12
1	3	X13
2	0	X20
2	1	X21
2	2	X22
3	0	X30
3	1	X31
4	0	X40

Control Circuit Transformers

Class 9070 Type T control transformers are normally used when it is necessary to provide a lower voltage to the control circuit. This transformer with fused protection may be ordered from the factory by specifying Form F4T. The addition of a transformer often requires the use of a larger enclosure (refer to dimensions on Page 17–19). The table below shows the transformer selection for given sized starters and contactors with or without auxiliary units.

NEMA Size	Type	No. of Poles	Auxiliary Units	Transformer Class 9070 Type
0 & 1	SB SC	1-3	With max. of 2 auxiliary contacts	T50
			With timer and maximum of 1 auxiliary contact	
			With 3 or 4 auxiliary contacts With timer and 2 or 3 auxiliary contacts	T100
0 & 1	SB SC	4 & 5	With or without auxiliary contacts or timer	T100
0 & 1 Mechanically Interlocked Devices	SB SC	1-5	With or without attachments	T100
2	SD	2-5	With or without attachments	T100
3	SE	2-3	With or without attachments	T150
3	SE	4 & 5	With or without attachments	T300
4	SF	2-5	With or without attachments	T300
5	SG	2-3	Any	T500
6, 7	SH, SJ	2-3	Any	‡

‡ A Class 9070 transformer is an integral part of the Size 6 and Size 7 control circuit providing 120 volt control circuit voltage as standard.

Power Poles

Single or double circuit power pole adders may be factory or field installed on 2 and 3 pole Type S contactors and starters. The table below lists the Form designation for factory installed power pole adders. Only one power pole adder may be installed per contactor. See Factory Modifications (Forms) section for pricing.


See Class 9999 for field modification kits.

Type	NEMA Size	Class 9999 Type	Form Designation
1 N.O.	0, 1	SB6	Y428
	2	SB11	Y436
1 N.C.	0, 1	SB7	Y429
	2	SB12	Y437
1 N.O., 1 N.C.	0, 1	SB8	Y435
	2	SB13	Y440
2 N.O.	0, 1	SB9	Y430
	2	SB14	Y438
2 N.C.	0, 1	SB10	Y434
	2	SB15	Y439

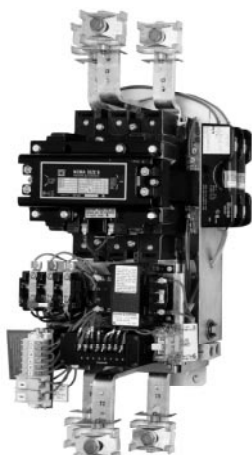
 File E78360
CCN NITW2

Transformers

 File E61239
CCN XPTQ

 File LR37055
Class 5411 06

Full Voltage Contactors and Starters – NEMA Rated Application Data



NEMA Size 6 Starter
8536 SH

NEMA Size 6 Type SH and NEMA Size 7 Type SJ contactors and starters have a DC coil operated by a solid state rectifier circuit mounted on the device and powered from an ac source. The NEMA Sizes 6 and 7 are equipped as standard with a fused control circuit transformer (Form F4T) rated 240/480-120 volts 60 Hz, 220/440-110 volts 50 Hz. The purpose of this transformer is to provide an isolated 120 volts 60 Hz, 110 volts 50 Hz, supply for the control circuit. NEMA Sizes 6 and 7 may be ordered for other system voltages by specifying the voltage and frequency desired.

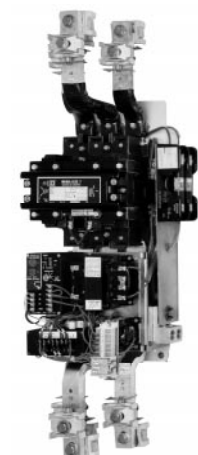
Operation Rates – Continuous operation rate: 3 operations/minute maximum. Jogging or Plugging Duty: 15 operations/minute - 3 minutes maximum.

Field conversion for other system voltages is accomplished by one of the following methods, NOT BY THE USUAL PRACTICE OF CHANGING THE COIL:

1. If the factory wiring is indicated as being for 480 volts 60 Hertz, 440 volts 50 Hertz, conversion to 240 volts 60 Hertz, 220 volts 50 Hertz, can be accomplished by reconnecting the control transformer as illustrated on instruction sheet supplied with the controller. This is the same method that would be used on Class 9070 control circuit transformers.

Conversion to any other voltage requires replacement of the control transformer. For other system voltages: i.e. 208, 277, 380, 600 volts, a new transformer with single voltage primary must be selected from table at right. Control transformer connections are illustrated on the instruction sheet supplied with the controller.

2. If the factory wiring is indicated as being for any voltage other than 480 volts 60 Hertz, 440 volts 50 Hertz, conversion to any other voltage requires replacement of the control transformer. Refer to table at right.
3. In Square D combination starters, the standard transformer supplied may be used to power a maximum of five Class 9001 Type K illuminated operators powered with transformer type light modules. When extra capacity to power control relays or other inductive loads is required, a second transformer must be added. Extra capacity can be purchased as Form F4T with additions in 100 VA increments.
4. Standard controllers are wired for common control and are not convertible for operation of the control circuit from a separate source of supply voltage. Controllers designated Form S have special wiring designed for separate control. They are furnished with an isolating transformer, usually having a 120 volt primary and 120 volt secondary, that must not be bypassed. Form S controllers are not convertible for operation on common control.



NEMA Size 7 Starter
8536 SJ

The tables below give the replacement transformers for Type S NEMA Sizes 6 and 7 contactors and starters. To change voltages on these devices, coils are not changed, instead transformers with the desired voltage are changed.

Replacement Control Transformers (150VA) For Type S Size 6

Voltage		Class 9070 Type
60 Hertz	50 Hertz	
240/480-120	220/440-110	31104-512-50
208-120	.....	31104-512-52
277-120	.....	31104-512-53
.....	380-110	31104-512-54
600-120	550-110	31104-512-51
120-120	110-110	31104-512-55
240-120	220-110	31104-512-56

Replacement Control Transformers (200VA) For Type S Size 7

Voltage		Class 9070 Type
60 Hertz	50 Hertz	
240/480-120	220/440-110	31123-501-50
208-120	.....	31123-501-52
277-120	.....	31123-501-53
.....	380-110	31123-501-54
600-120	550-110	31123-501-51
120-120	110-110	31123-501-55
240-120	220-110	31123-501-56

Auxiliary Contacts: A N.O. holding circuit contact and a N.C. auxiliary contact are provided as standard. The holding circuit contact may or may not be required for either 3-wire or 2-wire control. NEMA Sizes 6 and 7 have an additional N.C. auxiliary contact which is wired in the coil control circuit. **DO NOT USE THIS N.C. CONTACT FOR ANY OTHER PURPOSE.**



Combination Starters – NEMA Rated

Application Data – Class 8538, 8539

Class 8539 – UL Listed Short Circuit Ratings

MAG-GARD® Motor Circuit Protector Type			
NEMA Size	Voltage	Enclosure	Available Amperes RMS Symmetrical
0 & 1, 2 Size 3 Type SE*41 & SE*51 Only (GJL)	0-480	Standard† and Oversize	100,000
0 & 1 (FAL)	0-480	Standard† and Oversize	22,000
0 & 1 (FAL)	481-600	Standard† and Oversize	10,000
0 & 1, 2 Size 3 Type SE*41 & SE*51 Only (GJL)	481-600	Standard† and Oversize	10,000
0-2 with Current Limiting Module	600	Oversize	100,000
0-3 with Current Limiting Module	600	Standard†	100,000
0-3	600	NEMA 7 & 9	5,000*
2	600	Oversize	22,000
2-6	600	Standard†	22,000
4 & 5	600	NEMA 7 & 9	10,000
7	0-480	Standard†	30,000
7	481-600	Standard†	22,000

† Standard enclosure includes non-oversize NEMA Types 1, 4 & 4X Stainless, and 12.
● Consult factory for higher withstand ratings.

Table 1: MAG-GARD Trip Range

Suffix No.	Range Amps	Suffix No.	Range Amps	Suffix No.	Range Amps	Suffix No.	Range Amps
M01	9-33	11M	8-28	25M	625-1250	33M	1500-3000
M02	21-77	12M	18-70	26M	750-1500	35M	1750-3500
M03	45-165	13M	50-180	29M	875-1750	36M	2000-4000
M04	90-330	15M	100-350	30M	1000-2000	40M	2500-5000
M05	150-550	16M	150-580	31M	1125-2250	42M	3000-6000
M06	225-825	18M	300-1100	32M	1250-2500	44M	3500-7000

The MAG-GARD adjustable trip range is determined by the suffix of the circuit breaker catalog number. Table 1 indicates the trip range which corresponds to a given suffix number. The MAG-GARD Motor Circuit Protector should be adjusted to a level just above Locked-Rotor Current of the motor. This setting will provide optimum overcurrent protection for the motor. For more information on MAG-GARD instantaneous trip circuit breakers, refer to the MAG-GARD circuit breaker section of this Catalog.

Terminals

NEMA Size	Type	Line Terminals on Disconnect		Power Terminals On Magnetic Starter			Control Terminals On Magnetic Starter			
		Type of Lug	Wire Size Min.-Max.		Type of Lug	Wire Size Min.-Max.	Wires Per Terminal	Type of Lug	Wire Size Min.-Max.	Wires Per Terminal
			Switch	Circuit Breaker						
0 & 1	SB & SC	Box Lug	#14-1/0 Cu/Al	#14-#4 Cu▼ #12-#4 Al or #14-#1/0 Cu #12-#1/0 Al #14-#1 Cu/#8-#1/0 Al (GJL Breaker)	Pressure Wire	#14-#8 Cu	1 or 2	Pressure Wire	#16-#12 Cu	2
2	SD	Box Lug	#14-1/0 Cu/Al	#14-#1/0 Cu or #12-#1/0 Al #14-#1 Cu/#8-#1/0 Al (GJL Breaker)	Box Lug	#14-#4 Cu	1	Pressure Wire	#16-#12 Cu	2
3	SE	Box Lug	#14-1/0 Cu/Al	#14-#2 Cu #10-#2 Al (FA Breaker) #4-300 MCM Cu/Al (KA Brkr) #14-#1 Cu/#8-#1/0 Al (GJL Breaker)	Box Lug	#14-#0 Cu	1	Pressure Wire	#16-#12 Cu	2
4	SF	Box Lug	#6-300 MCM Cu/Al	#14-#1/0 Cu #12-#1/0 Al (FA Breaker) #4-300 MCM Cu/Al (KA Brkr)	Box Lug	#8-250 MCM Cu	1	Pressure Wire	#16-#12 Cu	2
5	SG	Box Lug	One #4-500 MCM Cu	#4-300 MCM Cu/AL (KA Breaker) (1)#1-600 MCM or (2)#1-250 MCM Cu/Al (LA Brkr)	Box Lug	#4-500 MCM Cu	1	Pressure Wire	#16-#12 Cu	2
6	SH	Box Lug	....	(1)#1-600 MCM or (2)#1-250 MCM Cu/Al (LA Breaker) (3)#3/0-500 MCM Cu/Al (MA Brkr)	Parallel Groove	250-500 MCM Cu●	1 or 2	Pressure Wire	#16-#12 Cu▲	2
7	SJ	Box Lug	....	(3)#3/0-500 MCM Cu/Al	Parallel Groove	250-500 MCM Cu	1-4	Pressure Wire	#16-#12 Cu	2

● Order Class 9999 Type SAL-16 parts kit to convert power terminals to accept sizes 1/0-300 MCM wire.
▲ Terminal block range limited to #16-#14.
▼ Use on FAL circuit breakers rated 25 Amps or less.

Class 8539 – UL Listed Short Circuit Ratings

Thermal Magnetic Circuit Breaker Type			
NEMA Size	Voltage	Enclosure	Available Amperes RMS Symmetrical
0-3	600	Standard†	5,000
4 & 5	600	Standard†	10,000
6	600	Standard†	18,000
7	0-480	Standard†	30,000
7	481-600	Standard†	22,000

† Standard enclosure includes non-oversize NEMA Types 1, 4 & 4X Stainless, and 12.

Table 2: Motor Code Letter Table

Horsepower	Motor Code Letters
½ or less	A-L
¾ — 1½	A-K
2 — 3	A-J
5 — 25	A-H
30 — 125	A-G
150 or more	A-F

The combination starter selection tables on Pages 7 — 9 are suitable for motors with Locked-Rotor Current letters per NEC Table 430-7(b) as listed in Table 2. For other motors a special thermal magnetic circuit breaker with adjustable magnetic trip settings for the specific motor is required. When ordering for these special applications, specify the motor horsepower, voltage, frequency, full load current and code letter (or locked rotor current) to assure proper protection.

Combination Starters — NEMA Rated Approximate Dimensions, Shipping Weights – Class 8538, 8539

NEMA Type 1 Enclosure – Figure 1

NEMA Size	Class	Type	Dimensions in Inches*														Top & Bottom		Sides	Wt. (Lbs.)		
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	W		X	Y
0-1	8538 & 8539	SBG SCG	9 1/2	22 1/2	8 1 1/2	6 3/8	20 1/2	142 1/2	1 13/16	1 11/16	3	2 5/16	1 1/16	3/4	2 3/16	1 1/4	7/8	...	1/2-3/4	1/2-3/4	1/2	38
2	8538 & 8539	SDG	10 1/2	26	9 1 9/32	7 3/8	24	162 29/32	2 1/8	2	4	2 5/16	1 1/16	3/4	2 3/16	1 1/4	7/8	...	1-1 1/4	1/2-3/4	1/2	54

* Above dimensions include space for control circuit transformers.

NEMA Type 1 Enclosure – Figure 2

NEMA Size	Class	Type	Dimensions in Inches*														Top & Bottom		Sides	Wt. (Lbs.)		
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	W		X	Y
3	8538 & 8539	SEG	15 1/4	42	10 1 9/32	9 1/4	3	222 3/32	41	1/2	...	2 53/64	3 17/32	5	2 1 1/16	5 3/8	1 9/32	2 9/32	1-1 1/4 2-2 1/2	1/2-3/4	1/2	102
4	8538	SFG	16	52 1/2	10 1 7/32	10	3	232 1/32	51 1/2	1/2	...	2 53/64	3 17/32	5	2 1 1/16	5 3/8	1 9/32	2 9/32	2 1/2	1/2-3/4	1/2	163
	8539	SFG	16	52 1/2	10 1 7/32	10	3	232 1/32	51 1/2	1/2	...	2 53/64	3 17/32	5	2 1 1/16	5 3/8	1 9/32	2 9/32	2 1/2	1/2-3/4	1/2	163
5	8538	SGG	20	78	15 1/2	12	4	291 3/32	77	1/2	...	3 33/64	4 39/64	9 1/4	3 3/16	...	...	...	1/2-3/4†	3	...	450
	8539	SGG	20	66	13 23/32	12	4	291 3/32	65	1/2	...	3 33/64	4 39/64	5	3 3/16	...	...	...	1/2-3/4†	3	...	420
6	8538 & 8539	SHG	36	90	21 1/32	...	...	41 3/8	...	...	...	...	...	5	...	...	...	...	...	...	...	...

† Left side only

▲ Size 6 enclosures are floor mounting.

* Above dimensions include space for control circuit transformers.

■ Class 8538 Size 3 devices with 200 Amp fuse clips use dimensions for Class 8538 Size 4.

NEMA Type 12 Enclosure – Figure 3

NEMA Size	Class	Type	Dimensions in Inches*										Wt. (Lbs.)
			A	B	C	D	E	F	G	H	I	J	
0-1	8538 & 8539	SBA SCA	9 1/2	8 1 1/2	24	3 1/4	2 1/2	4 1/2	23 1/2	1 9/32	4 7/16	14 9/16	40
2	8538 & 8539	SDA	10 1/2	9 1 9/32	27 3/4	3 1/4	2 1/2	5 1/2	27	3/8	4 1/8	16 9/16	55
3	8538 & 8539	SEA	15 1/4	10 1 9/32	42	5	3	9 1/4	41	1/2	5 1/16	22 5/16	111
		8538	SFA	16	10 1 7/32	52 1/2	5	3	10	5 1 1/2	1/2	4 3/16	22 31/32	170
4	8539	SFA	16	10 1 7/32	52 1/2	5	3	10	5 1 1/2	1/2	5 3/16	22 31/32	170
		8538	SGA	20	13 23/32	78	9 1/4	4	12	77	1/2	7 25/32	29 13/32
5	8539	SGA	20	13 23/32	66	5	4	12	65	1/2	7 25/32	27 13/32	440
6	8538 & 8539	SHA	36	17	90	5	...	...	...	...	...	47 3/8	...

▲ Size 6 enclosures are floor mounting.

* Above dimensions include space for control circuit transformers.

■ Class 8538 Size 3 devices with 200 Amp fuse clips use dimensions for Class 8538 Size 4.

NOTE: Illustrations may not represent the actual enclosure, they are intended for dimensional information only.

NEMA Type 12 Enclosures Modified for Outdoor Applications (not to be used in salt air or corrosive environments)

Field Modifications for NEMA Type 3 dusttight, raintight and sleet resistant outdoor applications are as follows: Watertight conduit hubs or equivalent provision for watertight connection at the conduit entrance shall be used.

Field Modifications for NEMA Type 3R rainproof and sleet resistant outdoor applications are as follows:

1. Watertight conduit hubs or equivalent provision for watertight connection at the conduit entrance, when the conduit enters at a level higher than the lowest live part, shall be used.
2. Drain holes of 1/8 inch diameter shall be added to the bottom of the enclosure.

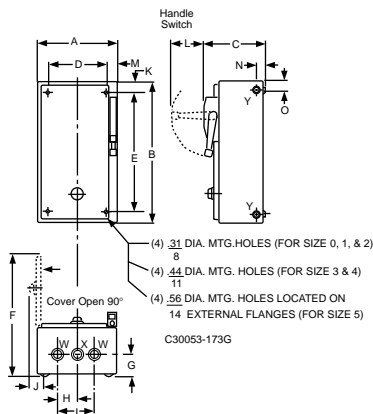


Figure 1
NEMA Type 1 Enclosure

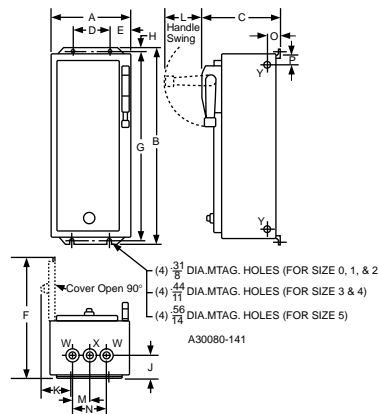


Figure 2
NEMA Type 1 Enclosure

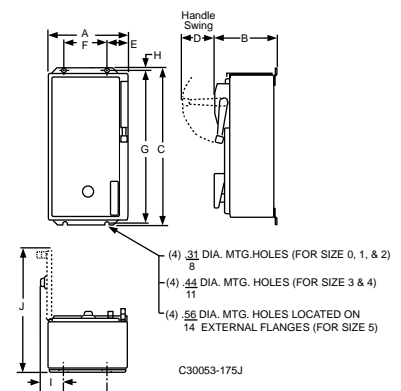


Figure 3
NEMA Type 12 Enclosure



Combination Starters — NEMA Rated

Approximate Dimensions, Shipping Weights

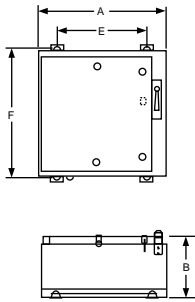


Figure 1

NEMA 4X
Polyester Enclosure

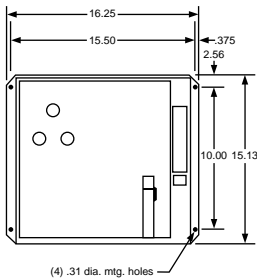


Figure 2

Class 8538 — Horizontal Type
NEMA Type 12

NEMA Type 4X Polyester Enclosure

NEMA Size	Class	Dimensions (in inches)* — see Figure 1					
		Type	A	B	C	E	F
0, 1	8538	SBW	13.72	11.4	26.94	6.25	25.75
		SCW SDW					
0, 1, & 2	8539	SBW	25.25	11.4	27.00	17.88	25.75
		SCW SDW					
3 - 4	8538, 8738 8539, 8739	SEW SFW●	26.31	11.4	33.50	18.50	32.25

* Dimensions also for Form F4T (standard control transformer) and Form F4T10 (50 VA additional capacity). Other control transformers may require the use of oversized enclosures. Refer to the control transformer selection table on Page 35.
● 8539 Size 4 only.

Information on Hubs

Hubs are supplied with each NEMA Type 4X combination starter as shown in the table below. Note that hubs are only installed in stainless steel enclosures; they are not installed in polyester enclosures.

NEMA Size	Quantity	Hub Size
0 & 1	1	0.75"
	2	1.00"
2	1	0.75"
	2	1.50"
3 & 4	1	0.75"
	2	2.50"

NEMA Type 4 & 4X Stainless Enclosures — Figure 4

NEMA Size	Class	Type	Dimensions in Inches*											Bottom W	Top & Bot. X	Wt. (Lbs.)	
			A	B	C	D	E	F	G	H	I	J	K				L
0-1	8538 & 8539	SBW SCW	9½	8½	24½	3¼	2½	4½	23½	19½	3½	1¾	2¾	14¾	¾ Hub	1 Hub	40
2	8538 & 8539	SDW	10½	9½	27¾	3¼	2½	5½	27	19½	3	2	2¾	16½	¾ Hub	1½ Hub	55
3●	8538 & 8539	SEW	15¼	10½	42	5	3¾	10¼	40½	19½	3	2¾	3¾	22¾	¾ Hub	2½ Hub	111
4	8538	SFW	16	10½	52½	5	3¾	11	51	19½	3	2¾	3¾	22½	¾ Hub	2½ Hub	158
	8539	SFW	16	10½	52½	3¼	2½	11	51	19½	3	2¾	3¾	22½	¾ Hub	2½ Hub	120
5	8538	SGW	20	13¾	78	9¼	4	12	77	9½	4½	3	3½	29¾	¾ Hub	3½ Hub	...
	8539	SGW	20	13¾	66	5	4	12	65	9½	4½	3	3½	29¾	¾ Hub	3½ Hub	440
6▲	8538 & 8539	SHW	36	17	90	...	...	...	...	...	...	...	...	47¾	...	...	...

* Dimensions also for Form F4T (standard control transformer), Form F4T11 (100 VA extra capacity) and Form F4T12 (200 VA extra capacity).
▲ Size 6 enclosures are floor mounting.
● Class 8538 Size 3 devices with 200 Amp fuse clips use dimensions for Class 8538 Size 4.

NEMA Type 1, 4, 4X Stainless, 12 Oversize Enclosure — Figure 3

NEMA Size	NEMA Type Encl.	Dimensions in Inches					Mounting	
		Wide A	High B	Deep C	Handle L	D	E	
0-2	1	15	28¾	9½	3¼	11½	26¼	
	4	15	30½	9½	3¼	10	29¾	
	12	15	31	10¾	3¼	9	30¼	

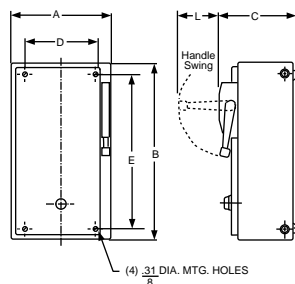


Figure 3

Class 8538 and 8539
In Oversize Enclosures —
NEMA Type 1, 4 & 4X
Stainless, 12

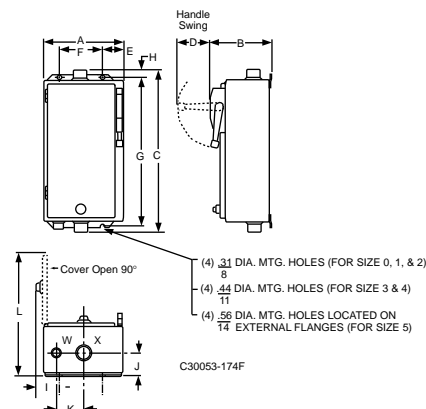


Figure 4

Class 8538 and 8539
Stainless Steel Enclosure
NEMA Type 4 & 4X

Combination Starters — NEMA Rated Approximate Dimensions, Shipping Weights

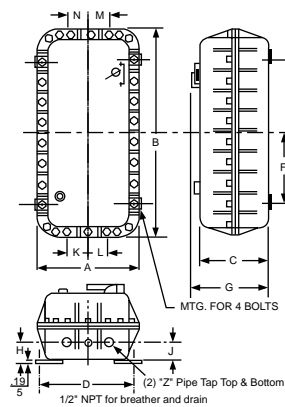
Class 8539 – NEMA Type 7 & 9 Bolted Enclosure – Figure 1★

NEMA Size	Type	Dimensions in Inches												Wt. (Lbs.)
		A	B	C	D	E	F	G	H, J	K, L, M, N	P	Z		
0-2	SBT SCT SDT	14¼	27½	9½	12¼	19¼	9½	11	2¾	3½	1½	1½	1½	115
3-4	SET SFT	18½	31½	10	16¼	19¼	9½	12½	2¾	3¾	2½	2½	180	
5	SGT	24½	45½	13¾	22½	27½	13¾	15½	3⅞	4	4	4	500	

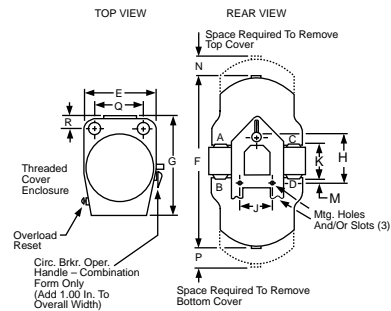
★ NOTE – Bolted enclosure comes equipped with 3 closing plates in the door.

Class 8539 – NEMA Type 7 & 9 SPIN TOP® Enclosure – Figure 2

NEMA Size	Type	Dimensions in Inches														Wt. (Lbs.)
		E	F	G	H	J	K	L	M	N	P	Q	R	S	T	
0-1	SBR SCR	10⅝	26	15¼	8	4¾	5¾	1½	1⅞	7½	11	7⅞	2⅞	–	–	70
2	SDR	13⅞	30½	19¼	8	4¾	5¼	1½	1⅞	7	18	9¾	2¾	–	–	115
3-4	SER SFR	13¾	39½	20¼	8	4¾	7½	2½	–	10½	23	8¾	3	–	–	140
5	SGR	19	53½	27¾	–	–	11¼	4	⅞	16	20⅝	11¾	4⅞	12	6½	290



**Figure 3: Class 8539
NEMA Type 7 and 9 Bolted Enclosure**



**Figure 4: Class 8539
NEMA Type 7 and 9 SPIN TOP® Enclosure**



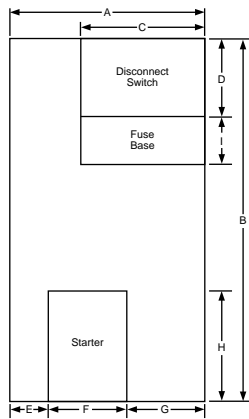
Combination Starters — NEMA Rated Panel Layout Drawings – Class 8538, 8539

Standard NEMA Type 1, 4 & 4X Stainless, 12

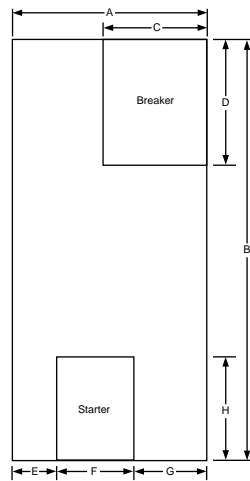
The following table is provided to identify open panel space on standard NEMA Type 1, 4 & 4X stainless steel and 12 combination starters. Space and mounting holes are provided in all combination starters (except NEMA Type 7 & 9 SPIN TOP®) for the field addition of a control transformer – see Page 35 for control transformer selection.

Class	NEMA Size	Dimensions in Inches								
		A	B	C	D	E	F	G	H	I
8538	0, 1	6.9	18.5	6.9	6.5	0	3.5	3.4	6.9	4.0
8539				6.5	7.9					—
8538	2	7.9	22.0	7.5	7.0	3.1	4.8	0	7.7	6.0
8539				6.5	8.4					—
8538	3	12.0	29.5	9.0	7.7	0	5.6	6.4	12.9	5.3
8539				FAL: 6.5 KAL: 6.8	FAL: 8.5 KAL: 10.5					—
8538	4	13.0	39.0	11.0	11.5	0	7.0	6.0	13.0	9.0
8539				6.8	12.5					—
8538	5*	17.3	59.0	13.5	25.0	0	10.8	6.5	20.5	—
8539				KAL: 6.8 LAL: 9.0	KAL: 23.0 LAL: 24.5					—
8538	6	32.0	82.0	32.0	40.0	0	13.0	19.0	35.0	—
8539				LAL: 9.0 MAL: 12.5	LAL: 25.5 MAL: 40.5					—

* Size 5 combination starter does not contain a full size panel. No usable panel space is available.



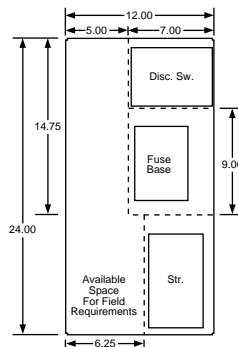
Class 8538



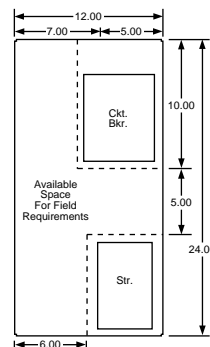
Class 8539

Oversize Enclosures, NEMA Type 1, 4 & 4X Stainless, 12

Combination starters in oversized enclosures provide additional panel space for field addition of control relays, timing relays, terminal blocks or other auxiliary equipment. Disconnect type devices offer over 130 square inches of available panel space. Circuit breaker type devices offer over 180 square inches of available panel space.



Class 8538



Class 8539

Reversing Combination Starters — NEMA Rated Class 8738, 8739

General – Class 8738 and 8739 Type S reversing combination starters combine the requirements of motor overload and short circuit protection into one convenient package. Type S reversing combination starters are manufactured in accordance with NEMA standards, are UL Listed, and CSA certified. ● Class 8738 and 8739 reversing combination starters are designed to operate at 600 Volts AC, 50-60 Hz. Type S reversing combination starters are supplied with melting alloy overload relays as standard.

Enclosures – Class 8738 and 8739 reversing combination starters are available in the following enclosures:

- NEMA Type 1 General Purpose
- NEMA Type 4X Watertight, Dusttight, and Corrosion Resistant Glass-Polyester
- NEMA Type 7 & 9 Bolted and Spin-Top® for Hazardous Locations (Class 8739 only)
- NEMA Type 4 & 4X Watertight and Dusttight
- NEMA Type 12 Dusttight and Driptight for Industrial Use

The NEMA Type 4 & 4X stainless steel enclosure (Sizes 0 - 5) has a brushed finish. Size 6 & 7 are sheet steel enclosures and are rated NEMA Type 4 only. For an electropolished finish, specify **Form G16** and add 15% to the price of the standard device. Hubs are supplied as standard on NEMA Type 4 & 4X enclosures.

The NEMA Type 4X glass-polyester enclosed devices are UL Listed. Hubs are supplied as standard on NEMA Type 4X enclosures.

NEMA Type 12 enclosures may be field modified for outdoor applications with **Form G26**. Contact your local Square D Field Sales Office for additional information.

Also, NEMA Type 12 devices are available UL Listed for use in Class II, Division 2, Group G and Class III, Divisions 1 and 2 locations. Request **Form G21**, no additional charge.

Coil Voltages – AC coils are available for application on 50/60 Hz. NEMA Sizes 00 - 5 are supplied with coils that are designed to operate satisfactorily on line voltages of 85%-110% of rated voltage. NEMA Size 6 and 7 contactors are supplied with a DC coil operated by a solid state rectifier circuit that is powered by an AC source.

Please note that Voltage Codes have been added to the Type designations in order to improve customer service. It is necessary to include the Voltage Code when ordering combination starters. Also, 120 Volt Polyphase combination starters will be wired for **separate control**.

Auxiliary Contacts – Additional auxiliary contacts may be added to Type S starters. See Page 14 for maximum number of auxiliary units and Form designations for factory installed auxiliary contacts. See Catalog 9999CT9701 for auxiliary contact kits for field installation.

Type S Accessories – Additional accessories such as fuse blocks, fuse clip kits, disconnect switch and circuit breaker interlocks, and cover mounted control stations are available for field modifications. For factory modifications (Forms), see Pages 30-34. For field modification kits, see Catalog 9999CT9701.

3-Pole Polyphase - 600 Volts AC Maximum - 50-60 Hz

Thermal Units - Devices require 3 thermal units, see Catalog 9065CT9701 for selection information.

Class 8738 Full Voltage Type, Reversing With Melting Alloy Overload Relays

Ratings			NEMA Type 1 General Purpose Enclosure		NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304)		NEMA Type 4X* Watertight, Dusttight and Corrosion Resistant Polyester Enclosure		NEMA Type 12 Dusttight and Driptight Industrial Use Enclosure	
Motor Voltage (Starter Voltage)	Max. HP Polyphase	Coil Voltage*	NEMA Size	Fuse Clip Size Amps	Type	Type	Type	Type	With External Reset	Without External Reset
200 (208)	3	208-60	0	30	SBG12V08	SBW12V08	SBW22V08	SBA22V08	SBA22V08	SBA12V08
	5		1	30	SCG12V08	SCW12V08	SCW22V08	SCA22V08	SCA12V08	
	7½			60	SCG13V08	SCW13V08	SCW23V08	SCA23V08	SCA13V08	
	10		2	60	SDG12V08	SDW12V08	SDW22V08	SDA22V08	SDA12V08	
	20		3	100	SEG15V08	SEW15V08	....	SEA25V08	SEA15V08
	40		4	200	SFG15V08	SFW15V08	....	SFA25V08	SFA15V08
	75		5	400	SGG15V08	SGW15V08	....	SGA25V08	SGA15V08
230 (240)	3	240-60 220-50	0	30	SBG12V03	SBW12V03	SBW22V03	SBA22V03	SBA12V03	
	5		1	30	SCG12V03	SCW12V03	SCW22V03	SCA22V03	SCA12V03	
	7½			60	SCG13V03	SCW13V03	SCW23V03	SCA23V03	SCA13V03	
	15		2	60	SDG12V03	SDW12V03	SDW22V03	SDA22V03	SDA12V03	
	25		3	100	SEG15V03	SEW15V03	....	SEA25V03	SEA15V03
	50		4	200	SFG15V03	SFW15V03	....	SFA25V03	SFA15V03
	100		5	400	SGG15V03	SGW15V03	....	SGA25V03	SGA15V03
460 (480)	5	480-60 440-50	0	30	SBG13V06	SBW13V06	SBW23V06	SBA23V06	SBA13V06	
	10		1	30	SCG14V06	SCW14V06	SCW24V06	SCA24V06	SCA14V06	
	15			30	SDG16V06	SDW16V06	SDW26V06	SDA26V06	SDA16V06	
	25		2	60	SDG14V06	SDW14V06	SDW24V06	SDA24V06	SDA14V06	
	50		3	100	SEG13V06	SEW13V06	....	SEA23V06	SEA13V06
	100		4	200	SFG13V06	SFW13V06	....	SFA23V06	SFA13V06
	200		5	400	SGG13V06	SGW13V06	....	SGA23V06	SGA13V06
575 (600)	5	600-60 550-50	0	30	SBG13V07	SBW13V07	SBW23V07	SBA23V07	SBA13V07	
	10		1	30	SCG14V07	SCW14V07	SCW24V07	SCA24V07	SCA14V07	
	15			30	SDG16V07	SDW16V07	SDW26V07	SDA26V07	SDA16V07	
	25		2	60	SDG14V07	SDW14V07	SDW24V07	SDA24V07	SDA14V07	
	50		3	100	SEG13V07	SEW13V07	....	SEA23V07	SEA13V07
	100		4	200	SFG13V07	SFW13V07	....	SFA23V07	SFA13V07
	200		5	400	SGG13V07	SGW13V07	....	SGA23V07	SGA13V07

Coil Voltage Codes

60 Hz	50 Hz	Code
24†▲	...	V01
120†	110	V02
208	...	V08
240	220	V03
480	440	V06
600	550	V07
Specify	Specify	V99

▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, **Form S** (separate control) must be specified.

† These voltage codes must include **Form S** (supplied at No Charge).

Standard unit



File E152395
CCN NKJH, NKJH7



File LR584
Class 3211 04

Explosion proof unit



File E10214
CCN NOTH

Note that not all units are explosion proof. Consult factory.

● Most Square D combination starters are pending CSA approval. Please have your Square D representative contact the factory.
* Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes below and insert as shown in the How To Order block.
★ NEMA Type 4x polyester devices are not UL Listed.



Reversing Combination Starters – NEMA Rated Non-Fusible and Fusible Disconnect Switch Type – Class 8738

3-Pole Polyphase – 600 Volts AC Maximum – 50-60 Hz

Devices require 3 thermal units. See Catalog 9065CT9701 for selection information.

Non-Fusible Disconnect Switch Type – Full-Voltage Type Reversing with Melting Alloy Overload Relays

Ratings					NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304)	NEMA Type 4X Watertight, Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Type 12/3R▲ Dusttight and Driptight Industrial Use Enclosure	
Motor Voltage (Starter Voltage)	Max. HP Poly- Phase	Coil Voltage *	NEMA Size	Fuse Clip Size Amps	Type	Type	Type	With External Reset	Without External Reset
200 (208)	3	208-60	0	None	SBG11V08	SBW11V08	SBW21V08	SBA21V08	SBA11V08
	7½		1	None	SCG11V08	SCW11V08	SCW21V08	SCA21V08	SCA11V08
	10		2	None	SDG11V08	SDW11V08	SDW21V08	SDA21V08	SDA11V08
	25		3	None	SEG11V08	SEW11V08	....	SEA21V08	SEA11V08
	40		4	None	SFG11V08	SFW11V08	....	SFA21V08	SFA11V08
	75		5	None	SGG11V08	SGW11V08	....	SGA21V08	SGA11V08
230 (240)	3	240-60 220-50	0	None	SBG11V03	SBW11V03	SBW21V03	SBA21V03	SBA11V03
	7½		1	None	SCG11V03	SCW11V03	SCW21V03	SCA21V03	SCA11V03
	15		2	None	SDG11V03	SDW11V03	SDW21V03	SDA21V03	SDA11V03
	30		3	None	SEG11V03	SEW11V03	....	SEA21V03	SEA11V03
	50		4	None	SFG11V03	SFW11V03	....	SFA21V03	SFA11V03
	100		5	None	SGG11V03	SGW11V03	....	SGA21V03	SGA11V03
460 (480)	5	480-60 440-50	0	None	SBG11V06	SBW11V06	SBW21V06	SBA21V06	SBA11V06
	10		1	None	SCG11V06	SCW11V06	SCW21V06	SCA21V06	SCA11V06
	25		2	None	SDG11V06	SDW11V06	SDW21V06	SDA21V06	SDA11V06
	50		3	None	SEG11V06	SEW11V06	....	SEA21V06	SEA11V06
	100		4	None	SFG11V06	SFW11V06	....	SFA21V06	SFA11V06
	200		5	None	SGG11V06	SGW11V06	....	SGA21V06	SGA11V06
575 (600)	5	600-60 550-50	0	None	SBG11V07	SBW11V07	SBW21V07	SBA21V07	SBA11V07
	10		1	None	SCG11V07	SCW11V07	SCW21V07	SCA21V07	SCA11V07
	25		2	None	SDG11V07	SDW11V07	SDW21V07	SDA21V07	SDA11V07
	50		3	None	SEG11V07	SEW11V07	....	SEA21V07	SEA11V07
	100		4	None	SFG11V07	SFW11V07	....	SFA21V07	SFA11V07
	200		5	None	SGG11V07	SGW11V07	....	SGA21V07	SGA11V07

▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.
* Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes shown on Page 31.

Fusible Disconnect Switch Type With Class R Fuse Clips — 100,000 AIC Rating★

Ratings					NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304)	NEMA Type 4X Watertight, Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Type 12/3R▲ Dusttight and Driptight Industrial Use Enclosure	
Motor Voltage (Starter Voltage)	Max. HP Poly- Phase	Coil Voltage *	NEMA Size	Fuse Clip Size Amps	Type	Type	Type	With External Reset	Without External Reset
200 (208)	3	208-60	0	30	SBG32V08	SBW32V08	SBW42V08	SBA42V08	SBA32V08
	5		1	30	SCG32V08	SCW32V08	SCW42V08	SCA42V08	SCA32V08
	7½		60	SCG33V08	SCW33V08	SCW43V08	SCA43V08	SCA33V08	
	10		2	60	SDG32V08	SDW32V08	SDW42V08	SDA42V08	SDA32V08
	20		3	100	SEG35V08	SEW35V08	....	SEA45V08	SEA35V08
	40		4	200	SFG35V08	SFW35V08	....	SFA45V08	SFA35V08
230 (240)	75	5	400	SGG35V08	SGW35V08	....	SGA45V08	SGA35V08	
	3	240-60 220-50	0	30	SBG32V03	SBW32V03	SBW42V03	SBA42V03	SBA32V03
	5		1	30	SCG32V03	SCW32V03	SCW42V03	SCA42V03	SCA32V03
	7½		60	SCG33V03	SCW33V03	SCW43V03	SCA43V03	SCA33V03	
	15		2	60	SDG32V03	SDW32V03	SDW42V03	SDA42V03	SDA32V03
	25		3	100	SEG35V03	SEW35V03	....	SEA45V03	SEA35V03
50	4		200	SFG35V03	SFW35V03	....	SFA45V03	SFA35V03	
460 (480)	100	5	400	SGG35V03	SGW35V03	....	SGA45V03	SGA35V03	
	5	480-60 440-50	0	30	SBG33V06	SBW33V06	SBW43V06	SBA43V06	SBA33V06
	10		1	30	SCG34V06	SCW34V06	SCW44V06	SCA44V06	SCA34V06
	15		2	30	SDG36V06	SDW36V06	SDW46V06	SDA46V06	SDA36V06
	25		60	SDG34V06	SDW34V06	SDW44V06	SDA44V06	SDA34V06	
	50		3	100	SEG33V06	SEW33V06	....	SEA43V06	SEA33V06
100	4		200	SFG33V06	SFW33V06	....	SFA43V06	SFA33V06	
575 (600)	200	5	400	SGG33V06	SGW33V06	....	SGA43V06	SGA33V06	
	5	600-60 550-50	0	30	SBG33V07	SBW33V07	SBW43V07	SBA43V07	SBA33V07
	10		1	30	SCG34V07	SCW34V07	SCW44V07	SCA44V07	SCA34V07
	15		2	30	SDG36V07	SDW36V07	SDW46V07	SDA46V07	SDA36V07
	25		60	SDG34V07	SDW34V07	SDW44V07	SDA44V07	SDA34V07	
	50		3	100	SEG33V07	SEW33V07	....	SEA43V07	SEA33V07
100	4		200	SFG33V07	SFW33V07	....	SFA43V07	SFA33V07	
575 (600)	200	5	400	SGG33V07	SGW33V07	....	SGA43V07	SGA33V07	

★ For Class J fuse clips, use **Form Y91** (no additional charge).
▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.
* Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes shown on Page 31.

Reversing Combination Starters – NEMA Rated Class 8739 – MAG-GARD® Circuit Breaker

3-Pole Polyphase – 600 Volts AC Maximum – 50-60 Hz

Devices require 3 thermal units. See Catalog 9065CT9701 for selection information.

Full-Voltage Type, Reversing with Melting Alloy Overload Relays

Ratings				NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0-5)†	NEMA Type 4X Watertight Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Type 7 & 9* For Hazardous Locations Class I, Groups C & D Class II, Groups E, F & G		NEMA Type 12/3RA Dusttight and Driptight Industrial Use Enclosure																																																																																																																																																																																																																																																																																																											
Motor Voltage (Starter Voltage)	HP Range Poly-phase	Coil Voltage *	NEMA Size	Circuit Breaker (See Page 1-48 for Breaker Adjustment Range)	Type	Type	Type	SPIN TOP® Type	Bolted Type	With External Reset Type	Without External Reset Type																																																																																																																																																																																																																																																																																																									
					<table border="1"> <tr> <td rowspan="18">200 (208)</td> <td rowspan="3">1/4-1/2 1/2-1 1 1/2-3</td> <td rowspan="3">208-60</td> <td rowspan="3">0</td> <td>GJL36003-M01</td> <td>SBG41V08</td> <td>SBW41V08</td> <td>SBW51V08</td> <td>SBR41V08</td> <td>SBT41V08</td> <td>SBA51V08</td> <td>SBA41V08</td> </tr> <tr> <td>GJL36007-M02</td> <td>SBG42V08</td> <td>SBW42V08</td> <td>SBW52V08</td> <td>SBR42V08</td> <td>SBT42V08</td> <td>SBA52V08</td> <td>SBA42V08</td> </tr> <tr> <td>GJL36015-M03</td> <td>SBG43V08</td> <td>SBW43V08</td> <td>SBW53V08</td> <td>SBR43V08</td> <td>SBT43V08</td> <td>SBA53V08</td> <td>SBA43V08</td> </tr> <tr> <td rowspan="3">1/4-1/2 1/2-1 1 1/2-3 5 7 1/2</td> <td rowspan="3">1</td> <td>GJL36003-M01</td> <td>SCG41V08</td> <td>SCW41V08</td> <td>SCW51V08</td> <td>SCR41V08</td> <td>SCT41V08</td> <td>SCA51V08</td> <td>SCA41V08</td> </tr> <tr> <td>GJL36007-M02</td> <td>SCG42V08</td> <td>SCW42V08</td> <td>SCW52V08</td> <td>SCR42V08</td> <td>SCT42V08</td> <td>SCA52V08</td> <td>SCA42V08</td> </tr> <tr> <td>GJL36015-M03</td> <td>SCG43V08</td> <td>SCW43V08</td> <td>SCW53V08</td> <td>SCR43V08</td> <td>SCT43V08</td> <td>SCA53V08</td> <td>SCA43V08</td> </tr> <tr> <td rowspan="3">1 1/2-3 5 7 1/2-10</td> <td rowspan="3">2</td> <td>GJL36015-M03</td> <td>SDG41V08</td> <td>SDW41V08</td> <td>SDW51V08</td> <td>SDR41V08</td> <td>SDT41V08</td> <td>SDA51V08</td> <td>SDA41V08</td> </tr> <tr> <td>GJL36030-M04</td> <td>SDG42V08</td> <td>SDW42V08</td> <td>SDW52V08</td> <td>SDR42V08</td> <td>SDT42V08</td> <td>SDA52V08</td> <td>SDA42V08</td> </tr> <tr> <td>GJL36050-M05</td> <td>SDG43V08</td> <td>SDW43V08</td> <td>SDW53V08</td> <td>SDR43V08</td> <td>SDT43V08</td> <td>SDA53V08</td> <td>SDA43V08</td> </tr> <tr> <td rowspan="3">15-25</td> <td rowspan="3">3</td> <td>FAL36100-18M</td> <td>SEG42V08</td> <td>SEW42V08</td> <td>SEW52V08</td> <td>....</td> <td>SET42V08</td> <td>SEA52V08</td> <td>SEA42V08</td> </tr> <tr> <td rowspan="2">KAL36250-25M KAL36250-26M</td> <td rowspan="2">4</td> <td>SFG42V08</td> <td>SFW42V08</td> <td>SFW52V08</td> <td>....</td> <td>SFT42V08</td> <td>SFA52V08</td> <td>SFA42V08</td> </tr> <tr> <td>SFG43V08</td> <td>SFW43V08</td> <td>SFW53V08</td> <td>....</td> <td>SFT43V08</td> <td>SFA53V08</td> <td>SFA43V08</td> </tr> <tr> <td rowspan="3">50 60 75</td> <td rowspan="3">5</td> <td>KAL36250-30M</td> <td>SGG42V08</td> <td>SGW42V08</td> <td>....</td> <td>....</td> <td>SGA52V08</td> <td>SGA42V08</td> </tr> <tr> <td>LAL36400-32M</td> <td>SGG44V08</td> <td>SGW44V08</td> <td>....</td> <td>....</td> <td>SGA54V08</td> <td>SGA44V08</td> </tr> <tr> <td>LAL36400-33M</td> <td>SGG45V08</td> <td>SGW45V08</td> <td>....</td> <td>....</td> <td>SGA55V08</td> <td>SGA45V08</td> </tr> <tr> <td rowspan="3">100 125 150</td> <td rowspan="3">6</td> <td>LAL36400-36M</td> <td>SHG43V08</td> <td>SHW43V08</td> <td>....</td> <td>....</td> <td>SHA53V08</td> <td>SHA43V08</td> </tr> <tr> <td>MAL36600-40M</td> <td>SHG44V08</td> <td>SHW44V08</td> <td>....</td> <td>....</td> <td>SHA54V08</td> <td>SHA44V08</td> </tr> <tr> <td>MAL36600-42M</td> <td>SHG45V08</td> <td>SHW45V08</td> <td>....</td> <td>....</td> <td>SHA55V08</td> <td>SHA45V08</td> </tr> <tr> <td rowspan="18">230 (240)</td> <td rowspan="3">1/4-1/2 1/2-1 1 1/2-3</td> <td rowspan="3">240-60</td> <td rowspan="3">0</td> <td>GJL36003-M01</td> <td>SBG41V03</td> <td>SBW41V03</td> <td>SBW51V03</td> <td>SBR41V03</td> <td>SBT41V03</td> <td>SBA51V03</td> <td>SBA41V03</td> </tr> <tr> <td>GJL36007-M02</td> <td>SBG42V03</td> <td>SBW42V03</td> <td>SBW52V03</td> <td>SBR42V03</td> <td>SBT42V03</td> <td>SBA52V03</td> <td>SBA42V03</td> </tr> <tr> <td>GJL36015-M03</td> <td>SBG43V03</td> <td>SBW43V03</td> <td>SBW53V03</td> <td>SBR43V03</td> <td>SBT43V03</td> <td>SBA53V03</td> <td>SBA43V03</td> </tr> <tr> <td rowspan="3">1/4-1/2 1/2-1 1 1/2-3 5-7 1/2</td> <td rowspan="3">1</td> <td>GJL36003-M01</td> <td>SCG41V03</td> <td>SCW41V03</td> <td>SCW51V03</td> <td>SCR41V03</td> <td>SCT41V03</td> <td>SCA51V03</td> <td>SCA41V03</td> </tr> <tr> <td>GJL36007-M02</td> <td>SCG42V03</td> <td>SCW42V03</td> <td>SCW52V03</td> <td>SCR42V03</td> <td>SCT42V03</td> <td>SCA52V03</td> <td>SCA42V03</td> </tr> <tr> <td>GJL36015-M03</td> <td>SCG43V03</td> <td>SCW43V03</td> <td>SCW53V03</td> <td>SCR43V03</td> <td>SCT43V03</td> <td>SCA53V03</td> <td>SCA43V03</td> </tr> <tr> <td rowspan="3">5-7 1/2 10 15</td> <td rowspan="3">2</td> <td>GJL36015-M03</td> <td>SDG41V03</td> <td>SDW41V03</td> <td>SDW51V03</td> <td>SDR41V03</td> <td>SDT41V03</td> <td>SDA51V03</td> <td>SDA41V03</td> </tr> <tr> <td>GJL36030-M04</td> <td>SDG42V03</td> <td>SDW42V03</td> <td>SDW52V03</td> <td>SDR42V03</td> <td>SDT42V03</td> <td>SDA52V03</td> <td>SDA42V03</td> </tr> <tr> <td>GJL36050-M05</td> <td>SDG43V03</td> <td>SDW43V03</td> <td>SDW53V03</td> <td>SDR43V03</td> <td>SDT43V03</td> <td>SDA53V03</td> <td>SDA43V03</td> </tr> <tr> <td rowspan="3">15-30</td> <td rowspan="3">3</td> <td>FAL36100-18M</td> <td>SEG42V03</td> <td>SEW42V03</td> <td>SEW52V03</td> <td>....</td> <td>SET42V03</td> <td>SEA52V03</td> <td>SEA42V03</td> </tr> <tr> <td rowspan="2">KAL36250-26M KAL36250-29M</td> <td rowspan="2">4</td> <td>SFG43V03</td> <td>SFW43V03</td> <td>SFW53V03</td> <td>....</td> <td>SFT43V03</td> <td>SFA53V03</td> <td>SFA43V03</td> </tr> <tr> <td>SFG44V03</td> <td>SFW44V03</td> <td>SFW54V03</td> <td>....</td> <td>SFT44V03</td> <td>SFA54V03</td> <td>SFA44V03</td> </tr> <tr> <td rowspan="3">60 75 100</td> <td rowspan="3">5</td> <td>KAL36250-31M</td> <td>SGG43V03</td> <td>SGW43V03</td> <td>....</td> <td>....</td> <td>SGA53V03</td> <td>SGA43V03</td> </tr> <tr> <td>LAL36400-32M</td> <td>SGG44V03</td> <td>SGW44V03</td> <td>....</td> <td>....</td> <td>SGA54V03</td> <td>SGA44V03</td> </tr> <tr> <td>LAL36400-35M</td> <td>SGG46V03</td> <td>SGW46V03</td> <td>....</td> <td>....</td> <td>SGA56V03</td> <td>SGA46V03</td> </tr> <tr> <td rowspan="2">125-150 200</td> <td rowspan="2">6</td> <td>MAL36600-40M</td> <td>SHG44V03</td> <td>SHW44V03</td> <td>....</td> <td>....</td> <td>SHA54V03</td> <td>SHA44V03</td> </tr> <tr> <td>MAL36600-44M</td> <td>SHG46V03</td> <td>SHW46V03</td> <td>....</td> <td>....</td> <td>SHA56V03</td> <td>SHA46V03</td> </tr> </table>												200 (208)	1/4-1/2 1/2-1 1 1/2-3	208-60	0	GJL36003-M01	SBG41V08	SBW41V08	SBW51V08	SBR41V08	SBT41V08	SBA51V08	SBA41V08	GJL36007-M02	SBG42V08	SBW42V08	SBW52V08	SBR42V08	SBT42V08	SBA52V08	SBA42V08	GJL36015-M03	SBG43V08	SBW43V08	SBW53V08	SBR43V08	SBT43V08	SBA53V08	SBA43V08	1/4-1/2 1/2-1 1 1/2-3 5 7 1/2	1	GJL36003-M01	SCG41V08	SCW41V08	SCW51V08	SCR41V08	SCT41V08	SCA51V08	SCA41V08	GJL36007-M02	SCG42V08	SCW42V08	SCW52V08	SCR42V08	SCT42V08	SCA52V08	SCA42V08	GJL36015-M03	SCG43V08	SCW43V08	SCW53V08	SCR43V08	SCT43V08	SCA53V08	SCA43V08	1 1/2-3 5 7 1/2-10	2	GJL36015-M03	SDG41V08	SDW41V08	SDW51V08	SDR41V08	SDT41V08	SDA51V08	SDA41V08	GJL36030-M04	SDG42V08	SDW42V08	SDW52V08	SDR42V08	SDT42V08	SDA52V08	SDA42V08	GJL36050-M05	SDG43V08	SDW43V08	SDW53V08	SDR43V08	SDT43V08	SDA53V08	SDA43V08	15-25	3	FAL36100-18M	SEG42V08	SEW42V08	SEW52V08	SET42V08	SEA52V08	SEA42V08	KAL36250-25M KAL36250-26M	4	SFG42V08	SFW42V08	SFW52V08	SFT42V08	SFA52V08	SFA42V08	SFG43V08	SFW43V08	SFW53V08	SFT43V08	SFA53V08	SFA43V08	50 60 75	5	KAL36250-30M	SGG42V08	SGW42V08	SGA52V08	SGA42V08	LAL36400-32M	SGG44V08	SGW44V08	SGA54V08	SGA44V08	LAL36400-33M	SGG45V08	SGW45V08	SGA55V08	SGA45V08	100 125 150	6	LAL36400-36M	SHG43V08	SHW43V08	SHA53V08	SHA43V08	MAL36600-40M	SHG44V08	SHW44V08	SHA54V08	SHA44V08	MAL36600-42M	SHG45V08	SHW45V08	SHA55V08	SHA45V08	230 (240)	1/4-1/2 1/2-1 1 1/2-3	240-60	0	GJL36003-M01	SBG41V03	SBW41V03	SBW51V03	SBR41V03	SBT41V03	SBA51V03	SBA41V03	GJL36007-M02	SBG42V03	SBW42V03	SBW52V03	SBR42V03	SBT42V03	SBA52V03	SBA42V03	GJL36015-M03	SBG43V03	SBW43V03	SBW53V03	SBR43V03	SBT43V03	SBA53V03	SBA43V03	1/4-1/2 1/2-1 1 1/2-3 5-7 1/2	1	GJL36003-M01	SCG41V03	SCW41V03	SCW51V03	SCR41V03	SCT41V03	SCA51V03	SCA41V03	GJL36007-M02	SCG42V03	SCW42V03	SCW52V03	SCR42V03	SCT42V03	SCA52V03	SCA42V03	GJL36015-M03	SCG43V03	SCW43V03	SCW53V03	SCR43V03	SCT43V03	SCA53V03	SCA43V03	5-7 1/2 10 15	2	GJL36015-M03	SDG41V03	SDW41V03	SDW51V03	SDR41V03	SDT41V03	SDA51V03	SDA41V03	GJL36030-M04	SDG42V03	SDW42V03	SDW52V03	SDR42V03	SDT42V03	SDA52V03	SDA42V03	GJL36050-M05	SDG43V03	SDW43V03	SDW53V03	SDR43V03	SDT43V03	SDA53V03	SDA43V03	15-30	3	FAL36100-18M	SEG42V03	SEW42V03	SEW52V03	SET42V03	SEA52V03	SEA42V03	KAL36250-26M KAL36250-29M	4	SFG43V03	SFW43V03	SFW53V03	SFT43V03	SFA53V03	SFA43V03	SFG44V03	SFW44V03	SFW54V03	SFT44V03	SFA54V03	SFA44V03	60 75 100	5	KAL36250-31M	SGG43V03	SGW43V03	SGA53V03	SGA43V03	LAL36400-32M	SGG44V03	SGW44V03	SGA54V03	SGA44V03	LAL36400-35M	SGG46V03	SGW46V03	SGA56V03	SGA46V03	125-150 200	6	MAL36600-40M	SHG44V03	SHW44V03	SHA54V03	SHA44V03	MAL36600-44M	SHG46V03
200 (208)	1/4-1/2 1/2-1 1 1/2-3	208-60	0	GJL36003-M01	SBG41V08	SBW41V08	SBW51V08	SBR41V08	SBT41V08	SBA51V08	SBA41V08																																																																																																																																																																																																																																																																																																									
				GJL36007-M02	SBG42V08	SBW42V08	SBW52V08	SBR42V08	SBT42V08	SBA52V08	SBA42V08																																																																																																																																																																																																																																																																																																									
				GJL36015-M03	SBG43V08	SBW43V08	SBW53V08	SBR43V08	SBT43V08	SBA53V08	SBA43V08																																																																																																																																																																																																																																																																																																									
	1/4-1/2 1/2-1 1 1/2-3 5 7 1/2	1	GJL36003-M01	SCG41V08	SCW41V08	SCW51V08	SCR41V08	SCT41V08	SCA51V08	SCA41V08																																																																																																																																																																																																																																																																																																										
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	1 1/2-3 5 7 1/2-10	2	GJL36015-M03	SDG41V08	SDW41V08	SDW51V08	SDR41V08	SDT41V08	SDA51V08	SDA41V08																																																																																																																																																																																																																																																																																																										
			GJL36030-M04	SDG42V08	SDW42V08	SDW52V08	SDR42V08	SDT42V08	SDA52V08	SDA42V08																																																																																																																																																																																																																																																																																																										
			GJL36050-M05	SDG43V08	SDW43V08	SDW53V08	SDR43V08	SDT43V08	SDA53V08	SDA43V08																																																																																																																																																																																																																																																																																																										
	15-25	3	FAL36100-18M	SEG42V08	SEW42V08	SEW52V08	SET42V08	SEA52V08	SEA42V08																																																																																																																																																																																																																																																																																																										
			KAL36250-25M KAL36250-26M	4	SFG42V08	SFW42V08	SFW52V08	SFT42V08	SFA52V08	SFA42V08																																																																																																																																																																																																																																																																																																									
					SFG43V08	SFW43V08	SFW53V08	SFT43V08	SFA53V08	SFA43V08																																																																																																																																																																																																																																																																																																									
	50 60 75	5	KAL36250-30M	SGG42V08	SGW42V08	SGA52V08	SGA42V08																																																																																																																																																																																																																																																																																																											
			LAL36400-32M	SGG44V08	SGW44V08	SGA54V08	SGA44V08																																																																																																																																																																																																																																																																																																											
			LAL36400-33M	SGG45V08	SGW45V08	SGA55V08	SGA45V08																																																																																																																																																																																																																																																																																																											
	100 125 150	6	LAL36400-36M	SHG43V08	SHW43V08	SHA53V08	SHA43V08																																																																																																																																																																																																																																																																																																											
			MAL36600-40M	SHG44V08	SHW44V08	SHA54V08	SHA44V08																																																																																																																																																																																																																																																																																																											
			MAL36600-42M	SHG45V08	SHW45V08	SHA55V08	SHA45V08																																																																																																																																																																																																																																																																																																											
230 (240)	1/4-1/2 1/2-1 1 1/2-3	240-60	0	GJL36003-M01	SBG41V03	SBW41V03	SBW51V03	SBR41V03	SBT41V03	SBA51V03	SBA41V03																																																																																																																																																																																																																																																																																																									
				GJL36007-M02	SBG42V03	SBW42V03	SBW52V03	SBR42V03	SBT42V03	SBA52V03	SBA42V03																																																																																																																																																																																																																																																																																																									
				GJL36015-M03	SBG43V03	SBW43V03	SBW53V03	SBR43V03	SBT43V03	SBA53V03	SBA43V03																																																																																																																																																																																																																																																																																																									
	1/4-1/2 1/2-1 1 1/2-3 5-7 1/2	1	GJL36003-M01	SCG41V03	SCW41V03	SCW51V03	SCR41V03	SCT41V03	SCA51V03	SCA41V03																																																																																																																																																																																																																																																																																																										
			GJL36007-M02	SCG42V03	SCW42V03	SCW52V03	SCR42V03	SCT42V03	SCA52V03	SCA42V03																																																																																																																																																																																																																																																																																																										
			GJL36015-M03	SCG43V03	SCW43V03	SCW53V03	SCR43V03	SCT43V03	SCA53V03	SCA43V03																																																																																																																																																																																																																																																																																																										
	5-7 1/2 10 15	2	GJL36015-M03	SDG41V03	SDW41V03	SDW51V03	SDR41V03	SDT41V03	SDA51V03	SDA41V03																																																																																																																																																																																																																																																																																																										
			GJL36030-M04	SDG42V03	SDW42V03	SDW52V03	SDR42V03	SDT42V03	SDA52V03	SDA42V03																																																																																																																																																																																																																																																																																																										
			GJL36050-M05	SDG43V03	SDW43V03	SDW53V03	SDR43V03	SDT43V03	SDA53V03	SDA43V03																																																																																																																																																																																																																																																																																																										
	15-30	3	FAL36100-18M	SEG42V03	SEW42V03	SEW52V03	SET42V03	SEA52V03	SEA42V03																																																																																																																																																																																																																																																																																																										
			KAL36250-26M KAL36250-29M	4	SFG43V03	SFW43V03	SFW53V03	SFT43V03	SFA53V03	SFA43V03																																																																																																																																																																																																																																																																																																									
					SFG44V03	SFW44V03	SFW54V03	SFT44V03	SFA54V03	SFA44V03																																																																																																																																																																																																																																																																																																									
	60 75 100	5	KAL36250-31M	SGG43V03	SGW43V03	SGA53V03	SGA43V03																																																																																																																																																																																																																																																																																																											
			LAL36400-32M	SGG44V03	SGW44V03	SGA54V03	SGA44V03																																																																																																																																																																																																																																																																																																											
			LAL36400-35M	SGG46V03	SGW46V03	SGA56V03	SGA46V03																																																																																																																																																																																																																																																																																																											
	125-150 200	6	MAL36600-40M	SHG44V03	SHW44V03	SHA54V03	SHA44V03																																																																																																																																																																																																																																																																																																											
			MAL36600-44M	SHG46V03	SHW46V03	SHA56V03	SHA46V03																																																																																																																																																																																																																																																																																																											

‡ NEMA Size 6 starters are NEMA Type 4 painted sheet steel enclosures.
 ★ NEMA Type 7 & 9 Bolted are not UL Listed.
 ▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.
 * Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes below.
 Form Y534 may be used to substitute an FAL circuit breaker for a GJL circuit breaker (no additional charge).

Coil Voltage Codes

Voltage		Code
60 Hz	50 Hz	
24†▲	..	V01
120†	110	V02
208	..	V08
240	220	V03
480	440	V06
600	550	V07
Specify	Specify	V99

▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, Form S (separate control) must be specified.
 † These voltage codes must include Form S (supplied at No Charge).

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Type S Accessories (Class 9999)	Catalog 9999CT9701



Reversing Combination Starters – NEMA Rated MAG-GARD® Circuit Breaker – Class 8739

3-Pole Polyphase – 600 Volts AC Maximum – 50-60 Hz

Devices require 3 thermal units. See Catalog 9065CT9701 for selection information.

Full-Voltage Type, Reversing with Melting Alloy Overload Relays

Ratings					NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0-5)†	NEMA Type 4X Watertight Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Type 7 & 9* For Hazardous Locations Class I, Groups C & D Class II, Groups E, F & G		NEMA Type 12/3RA Dusttight and Driptight Industrial Use Enclosure		
Motor Voltage (Starter Voltage)	HP Range Poly-phase	Coil Voltage *	NEMA Size	Circuit Breaker (See Page 1-48 for Breaker Adjustment Range)	Type	Type	Type	SPIN TOP® Type	Bolted Type	With External Reset Type	Without External Reset Type	
460 (480)	1/4-1 1 1/2-3 5	480-60 440-50	0	GJL36003-M01	SBG41V06	SBW41V06	SBW51V06	SBR41V06	SBT41V06	SBA51V06	SBA41V06	
				GJL36007-M02	SBG42V06	SBW42V06	SBW52V06	SBR42V06	SBT42V06	SBA52V06	SBA42V06	
				GJL36015-M03	SBG43V06	SBW43V06	SBW53V06	SBR43V06	SBT43V06	SBA53V06	SBA43V06	
	1		GJL36003-M01	SCG41V06	SCW41V06	SCW51V06	SCR41V06	SCT41V06	SCA51V06	SCA41V06		
			GJL36007-M02	SCG42V06	SCW42V06	SCW52V06	SCR42V06	SCT42V06	SCA52V06	SCA42V06		
			GJL36015-M03	SCG43V06	SCW43V06	SCW53V06	SCR43V06	SCT43V06	SCA53V06	SCA43V06		
	2	GJL36015-M03	SDG41V06	SDW41V06	SDW51V06	SDR41V06	SDT41V06	SDA51V06	SDA41V06			
		GJL36030-M04	SDG42V06	SDW42V06	SDW52V06	SDR42V06	SDT42V06	SDA52V06	SDA42V06			
		GJL36050-M05	SDG43V06	SDW43V06	SDW53V06	SDR43V06	SDT43V06	SDA53V06	SDA43V06			
	3	GJL36050-M05	SEG41V06	SEW41V06	SEW51V06	....	SET41V06	SEA51V06	SEA41V06		
		FAL36100-18M	SEG42V06	SEW42V06	SEW52V06	....	SET42V06	SEA52V06	SEA42V06		
		60-75 100	KAL36250-25M KAL36250-29M	SFG42V06 SFG44V06	SFW42V06 SFW44V06	SFW52V06 SFW54V06	SFT42V06 SFT44V06	SFA52V06 SFA54V06	SFA42V06 SFA44V06		
	5	125 150 200	KAL36250-31M LAL36400-32M LAL36400-35M	SGG43V06 SGG44V06 SGG46V06	SGW43V06 SGW44V06 SGW46V06	.... .... ....	.... .... ....	SGA53V06 SGA54V06 SGA56V06	SGA43V06 SGA44V06 SGA46V06	
		6	250 300 350 400	LAL36400-36M MAL36600-40M MAL36600-42M MAL36600-44M	SHG43V06 SHG44V06 SHG45V06 SHG46V06	SHW43V06 SHW44V06 SHW45V06 SHW46V06	SHA53V06 SHA54V06 SHA55V06 SHA56V06	SHA43V06 SHA44V06 SHA45V06 SHA46V06		
			575 (600)	600-60 550-50	0	GJL36003-M01	SBG41V07	SBW41V07	SBW51V07	SBR41V07	SBT41V07	SBA51V07	SBA41V07
	GJL36007-M02					SBG42V07	SBW42V07	SBW52V07	SBR42V07	SBT42V07	SBA52V07	SBA42V07
	GJL36015-M03	SBG43V07				SBW43V07	SBW53V07	SBR43V07	SBT43V07	SBA53V07	SBA43V07	
	1	GJL36003-M01			SCG41V07	SCW41V07	SCW51V07	SCR41V07	SCT41V07	SCA51V07	SCA41V07	
		GJL36007-M02			SCG42V07	SCW42V07	SCW52V07	SCR42V07	SCT42V07	SCA52V07	SCA42V07	
		GJL36015-M03			SCG43V07	SCW43V07	SCW53V07	SCR43V07	SCT43V07	SCA53V07	SCA43V07	
	2	GJL36015-M03	SDG41V07	SDW41V07	SDW51V07	SDR41V07	SDT41V07	SDA51V07	SDA41V07			
		GJL36030-M04	SDG42V07	SDW42V07	SDW52V07	SDR42V07	SDT42V07	SDA52V07	SDA42V07			
		GJL36050-M05	SDG43V07	SDW43V07	SDW53V07	SDR43V07	SDT43V07	SDA53V07	SDA43V07			
	3	GJL36050-M05	SEG41V07	SEW41V07	SEW51V07	....	SET41V07	SEA51V07	SEA41V07		
FAL36100-18M		SEG42V07	SEW42V07	SEW52V07	....	SET42V07	SEA52V07	SEA42V07			
60-100		KAL36250-25M	SFG42V07	SFW42V07	SFW52V07	....	SFT42V07	SFA52V07	SFA42V07		
5	125 150 200	KAL36250-29M KAL36250-30M LAL36400-32M	SGG41V07 SGG42V07 SGG44V07	SGW41V07 SGW42V07 SGW44V07	.... .... ....	.... .... ....	SGA51V07 SGA52V07 SGA54V07	SGA41V07 SGA42V07 SGA44V07		
	6	250 300 350-400	LAL36400-35M LAL36400-36M MAL36600-40M	SHG42V07 SHG43V07 SHG44V07	SHW42V07 SHW43V07 SHW44V07	.... .... ....	.... .... ....	SHA52V07 SHA53V07 SHA54V07	SHA42V07 SHA43V07 SHA44V07	

‡ NEMA Size 6 starters are NEMA Type 4 painted sheet steel enclosures.

* NEMA Type 7 & 9 Bolted are not UL Listed.

▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.

* Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes below.

Form Y534 may be used to substitute an FAL circuit breaker for a GJL circuit breaker (no additional charge).

Coil Voltage Codes

Voltage		Code
60 Hz	50 Hz	
24†▲	...	V01
120†	110	V02
208	...	V08
240	220	V03
480	440	V06
600	550	V07
Specify	Specify	V99

▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, Form S (separate control) must be specified.

† These voltage codes must include Form S (supplied at No Charge).

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Type S Accessories (Class 9999) Catalog 9999CT9701

Reversing Combination Starters – NEMA Rated Class 8739 – Thermal Magnetic Circuit Breaker

3-Pole Polyphase – 600 Volts AC Maximum – 50-60 Hz

Devices require 3 thermal units. See Catalog 9065CT9701 for selection information.

Full-Voltage Type, Reversing with Melting Alloy Overload Relays

Ratings					NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0-5)†	NEMA Type 4X Watertight Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Type 7 & 9* For Hazardous Locations Class I, Groups C & D Class II, Groups E, F & G	NEMA Type 12/3R▲ Dusttight and Driptight Industrial Use Enclosure			
Motor Voltage (Starter Voltage)	Max. HP Poly-phase	Coil Voltage *	NEMA Size	Circuit Breaker		Type	Type	Type	SPIN TOP® Type	Bolted Type	With External Reset	Without External Reset
				Type	Ampere Rating						Type	Type
200 (208)	2 3	208-60	0	FAL♦	15	SBG1V08	SBW1V08	SBW11V08	SBR1V08	SBT1V08	SBA11V08	SBA1V08
	20				SBG3V08	SBW3V08	SBW13V08	SBR3V08	SBT3V08	SBA13V08	SBA3V08	
	25				SCG5V08	SCW5V08	SCW15V08	SCR5V08	SCT5V08	SCA15V08	SCA5V08	
	5 7½		1	FAL♦	50	SCG2V08	SCW2V08	SCW12V08	SCR2V08	SCT2V08	SCA12V08	SCA2V08
	10				SDG1V08	SDW1V08	SDW11V08	SDR1V08	SDT1V08	SDA11V08	SDA1V08	
	15				SEG3V08	SEW3V08	SEW13V08	SET3V08	SEA13V08	SEA3V08		
	20		3	FAL	100	SEG1V08	SEW1V08	SEW11V08	SET1V08	SEA12V08	SEA1V08	
	25				SEG5V08	SEW5V08	SEW15V08	SET5V08	SEA15V08	SEA5V08		
	30				KAL	SFG3V08	SFW3V08	SFW13V08	SFT3V08	SFA13V08	SFA3V08	
	40		4	KAL	200	SFG4V08	SFW4V08	SFW14V08	SFT4V08	SFA14V08	SFA4V08	
	50				SGG6V08	SGW6V08	SGW16V08	SGA16V08	SGA6V08			
	75				SGG1V08	SGW1V08	SGW11V08	SGA11V08	SGA1V08			
100	5	LAL	250	SGG4V08	SGW4V08	SGW14V08	SGA14V08	SGA4V08				
125			SHG4V08	SHW4V08	SHW14V08	SHA14V08	SHA4V08					
150			SHG3V08	SHW3V08	SHW13V08	SHA13V08	SHA3V08					
150	6	MAL	600	SHG5V08	SHW5V08	SHW15V08	SHA15V08	SHA5V08				
125			SBG1V03	SBW1V03	SBW11V03	SBR1V03	SBT1V03	SBA11V03	SBA1V03			
200			SBG3V03	SBW3V03	SBW13V03	SBR3V03	SBT3V03	SBA13V03	SBA3V03			
230 (240)	2 3	240-60 220-50	0	FAL♦	15	SBG1V03	SBW1V03	SBW11V03	SBR1V03	SBT1V03	SBA11V03	SBA1V03
	20				SBG3V03	SBW3V03	SBW13V03	SBR3V03	SBT3V03	SBA13V03	SBA3V03	
	25				SCG1V03	SCW1V03	SCW11V03	SCR1V03	SCT1V03	SCA11V03	SCA1V03	
	5 7½		1	FAL♦	45	SCG6V03	SCW6V03	SCW16V03	SCR6V03	SCT6V03	SCA16V03	SCA6V03
	10				SDG1V03	SDW1V03	SDW11V03	SDR1V03	SDT1V03	SDA11V03	SDA1V03	
	15				SDG7V03	SDW7V03	SDW17V03	SDR7V03	SDT7V03	SDA17V03	SDA7V03	
	20		3	FAL	90	SEG3V03	SEW3V03	SEW13V03	SET3V03	SEA13V03	SEA3V03	
	25				SEG1V03	SEW1V03	SEW11V03	SET1V03	SEA11V03	SEA1V03		
	30				SEG5V03	SEW5V03	SEW15V03	SET5V03	SEA15V03	SEA5V03		
	40		4	KAL	150	SFG1V03	SFW1V03	SFW11V03	SFT1V03	SFA11V03	SFA1V03	
	50				SFG4V03	SFW4V03	SFW14V03	SFT4V03	SFA14V03	SFA4V03		
	60				SGG3V03	SGW3V03	SGW13V03	SGA13V03	SGA3V03			
75	5	LAL	250	SGG1V03	SGW1V03	SGW11V03	SGA11V03	SGA1V03				
100			SGG2V03	SGW2V03	SGW12V03	SGA12V03	SGA2V03					
125			SHG4V03	SHW4V03	SHW14V03	SHA14V03	SHA4V03					
150	6	MAL	600	SHG3V03	SHW3V03	SHW13V03	SHA13V03	SHA3V03				
200			SHG7V03	SHW7V03	SHW17V03	SHA17V03	SHA7V03					

‡ NEMA Size 6 starters are NEMA Type 4 painted sheet steel enclosures.
 ★ NEMA Type 7 & 9 Bolted are not UL Listed.
 ▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.
 * Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes shown below.
 ♦ Rated 250 volts max.

Coil Voltage Codes

Voltage	50 Hz	Code
60 Hz		
24†▲	...	V01
120†	110	V02
208	...	V08
240	220	V03
480	440	V06
600	550	V07
Specify	Specify	V99

▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, **Form S** (separate control) must be specified.
 † These voltage codes must include **Form S** (supplied at No Charge).

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 Factory Modifications (Forms) Page 30
 Type S Accessories (Class 9999) Catalog 9999CT9701



Reversing Combination Starters – NEMA Rated Thermal Magnetic Circuit Breaker – Class 8739

3-Pole Polyphase – 600 Volts AC Maximum – 50-60 Hz

Devices require 3 thermal units. See Catalog 9065CT9701 for selection information.

Full-Voltage Type, Reversing with Melting Alloy Overload Relays

Ratings						NEMA Type 1 General Purpose Enclosure	NEMA Type 4 & 4X Watertight and Dusttight Enclosure Stainless Steel (304) (Sizes 0 - 5)†	NEMA Type 4X Watertight Dusttight and Corrosion Resistant Polyester Enclosure	NEMA Type 7 & 9* For Hazardous Locations Class I, Groups C & D Class II, Groups E, F & G		NEMA Type 12/3R▲ Dusttight and Driptight Industrial Use Enclosure		
Motor Voltage (Starter Voltage)	Max. HP Poly- phase	Coil Voltage *	NEMA Size	Circuit Breaker		Type	Type	Type	SPIN TOP® Type	Bolted Type	With External Reset	Without External Reset	
				Type	Ampere Rating						Type	Type	
460 (480)	5	480-60 440-50	0	FAL	15	SBG2V06	SBW2V06	SBW12V06	SBR2V06	SBT2V06	SBA12V06	SBA2V06	
	7½ 10			1	FAL	20 25	SCG3V06 SCG7V06	SCW3V06 SCW7V06	SCW13V06 SCW17V06	SCR3V06 SCR7V06	SCT3V06 SCT7V06	SCA13V06 SCA17V06	SCA3V06 SCA7V06
	15 20 25		2	FAL	40 60 70	SDG3V06 SDG4V06 SDG5V06	SDW3V06 SDW4V06 SDW5V06	SDW13V06 SDW14V06 SDW15V06	SDR3V06 SDR4V06 SDR5V06	SDT3V06 SDT4V06 SDT5V06	SDA13V06 SDA14V06 SDA15V06	SDA3V06 SDA4V06 SDA5V06	
	30 40 50			3	FAL	80 90 100	SEG6V06 SEG3V06 SEG1V06	SEW6V06 SEW3V06 SEW1V06	SEW16V06 SEW13V06 SEW11V06	.... .... ....	SET6V06 SET3V06 SET1V06	SEA16V06 SEA13V06 SEA11V06	SEA6V06 SEA3V06 SEA1V06
	60 75 100		4		KAL	110 125 200	SFG5V06 SFG3V06 SFG4V06	SFW5V06 SFW3V06 SFW4V06	SFW15V06 SFW13V06 SFW14V06	.... .... ....	SFT5V06 SFT3V06 SFT4V06	SFA15V06 SFA13V06 SFA14V06	SFA5V06 SFA3V06 SFA4V06
	125 150 200			5	LAL	225 250 350	SGG3V06 SGG1V06 SGG2V06	SGW3V06 SGW1V06 SGW2V06	.... .... ....	.... .... ....	.... .... ....	SGA13V06 SGA11V06 SGA12V06	SGA3V06 SGA1V06 SGA2V06
	250 300 350 400	6	MAL		450 600 600 800	SHG4V06 SHG3V06 SHG5V06 SHG7V06	SHW4V06 SHW3V06 SHW5V06 SHW7V06	.... .... .... ....	.... .... .... ....	.... .... .... ....	SHA14V06 SHA13V06 SHA15V06 SHA17V06	SHA4V06 SHA3V06 SHA5V06 SHA7V06	
	575 (600)		5	600-60 550-50	0	FAL	15	SBG2V07	SBW2V07	SBW12V07	SBR2V07	SBT2V07	SBA12V07	SBA2V07
		7½ 10	1			FAL	15 20	SCG8V07 SCG3V07	SCW8V07 SCW3V07	SCW18V07 SCW13V07	SCR8V07 SCR3V07	SCT8V07 SCT3V07	SCA18V07 SCA13V07	SCA8V07 SCA3V07
		15 20 25	2		FAL	35 45 60	SDG8V07 SDG9V07 SDG4V07	SDW8V07 SDW9V07 SDW4V07	SDW18V07 SDW19V07 SDW14V07	SDR8V07 SDR9V07 SDR4V07	SDT8V07 SDT9V07 SDT4V07	SDA18V07 SDA19V07 SDA14V07	SDA8V07 SDA9V07 SDA4V07
		30 40 50			3	FAL	60 80 90	SEG4V07 SEG6V07 SEG3V07	SEW4V07 SEW6V07 SEW3V07	SEW14V07 SEW16V07 SEW13V07	SET4V07 SET6V07 SET3V07	SEA14V07 SEA16V07 SEA13V07	SEA4V07 SEA6V07 SEA3V07
		60 75 100	4			FAL KAL KAL	100 110 150	SFG6V07 SFG5V07 SFG1V07	SFW6V07 SFW5V07 SFW1V07	SFW16V07 SFW15V07 SFW11V07	SFT6V07 SFT5V07 SFT1V07	SFA16V07 SFA15V07 SFA11V07	SFA6V07 SFA5V07 SFA1V07
		125 150 200			5	LAL LAL LAL	200 200 250	SGG7V07 SGG6V07 SGG1V07	SGW7V07 SGW6V07 SGW1V07	SGA17V07 SGA16V07 SGA11V07	SGA7V07 SGA6V07 SGA1V07
		250 300 350 400	6	MAL		350 400 500 600	SHG6V07 SHG4V07 SHG2V07 SHG3V07	SHW6V07 SHW4V07 SHW2V07 SHW3V07	.... .... .... ....	.... .... .... ....	.... .... .... ....	SHA16V07 SHA14V07 SHA12V07 SHA13V07	SHA6V07 SHA4V07 SHA2V07 SHA3V07

‡ NEMA Size 6 starters are NEMA Type 4 painted sheet steel enclosures.
 * NEMA Type 7 & 9 Bolted are not UL Listed.
 ▲ NEMA Type 12 enclosures may be field modified for outdoor non-corrosive and non-service-entrance-rated applications; see Page 17 for more information.
 * Coil voltage code must be specified to order this product. Refer to standard coil voltage codes listed in selection table above or additional standard voltage codes shown below.

Coil Voltage Codes

Voltage		Code
60 Hz	50 Hz	
24†▲	...	V01
120†	110	V02
208	...	V08
240	220	V03
480	440	V06
600	550	V07
Specify	Specify	V99

▲ 24V coils are not available on Sizes 4-7. On Sizes 00-3, where 24V coils are available, **Form S** (separate control) must be specified.
 † These voltage codes must include **Form S** (supplied at No Charge).

Reversing Combination Starters — NEMA Rated Application Data – Class 8738, 8739

Control Circuit Transformers

Space and drilling are provided in all combination starters, in NEMA Types 1, 4 & 4X stainless and 12 enclosures, for the field addition (or factory installation) of a Class 9070 transformer. For standard control transformer selection in reversing combination starters, see table below. For primary fusing of the control circuit, use of the Class 9999 Type SF4 fuse holder kit is suggested. This kit can be either panel mounted or side mounted on the Type S starter.

Transformer Selection

NEMA Size	Starter Type	Standard Capacity (Form F4T)	50 VA Additional Capacity (Form F4T10)	100 VA Additional Capacity (Form F4T11)	200 VA Additional Capacity (Form F4T12)
		Class 9070 Type	Class 9070 Type	Class 9070 Type	Class 9070 Type
0-2	SB-SD	T100	T300	T300	T300
3	SE	T150	T300	T300	T500
4	SF	T300	T500	T500	T500
5	SG	T300	T500	T500	T500
6	SH	E03S2 is standard	E03S2 and T50	E03S2 and T100	E03S2 and T200

Class 8738 Application Data

NEMA Size	Fuse Clip Type	Enclosure	Amps Interrupting Capability Rating (AIC)
0-3	Standard	Standard*	5,000
0-3	Class R	Standard*	100,000
4-5	Standard	Standard*	10,000
4-5	Class R	Standard*	100,000

* Standard enclosure includes: NEMA Types 1, 4 & 4X stainless, and 12/3R.

Class 8739 Application Data

MAG-GARD® Motor Circuit Protector Type			
NEMA Size	Voltage	Enclosure	Amps Interrupting Capability Rating (AIC)
0 & 1, 2 (GJL)	0 – 480	Standard*	100,000
0 & 1 (FAL)	0 – 480	Standard*	22,000
0, 1, 2, & 3 (GJL)	481 – 600	Standard*	10,000
0 & 1	481 – 600	Standard*	10,000
2 – 6	600	Standard*	22,000
Thermal Magnetic Circuit Breaker Type			
0-3	600	Standard*	5,000
4 & 5	600	Standard*	10,000
6	600	Standard*	18,000

* Standard enclosure includes: NEMA Types 1, 4 & 4X stainless, and 12.

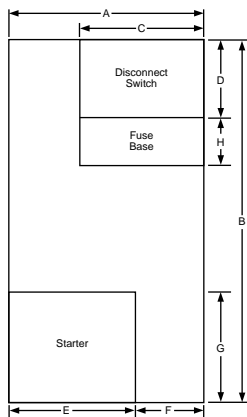
Panel Layout Drawings

NEMA Type 1, 4 & 4X Stainless 6, 12

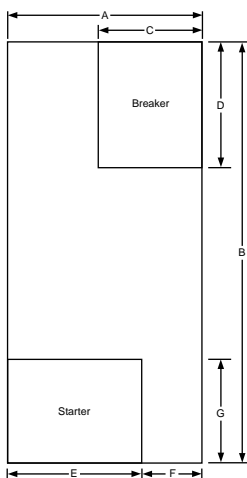
Class	NEMA Size	Dimensions in Inches							
		A	B	C	D	E	F	G	H
8738	0, 1	10¾	19	6.9	6½		3½	9	4
8739				6½	7.9	7¼			
8738	2	12	24	7½	7.0	7¾	4¼	9½/32	6
8739				7	8.8				
8738	3	15½	32½	9	7.7	15½	0	14	5½/16
8739				8¼	8½				
8738	4	18	39	11½	20½	18	0	17	
8739		15½	32½	9¼	10½	15	0	15	
8738	5*	27	59	26	25.0	21	6	21	
8739		27	58	KAL: 6.8 LAL: 9	KAL: 23 LAL: 24½	21	6	21	
8739	6	32	82	LAL: 9 MAL: 12½	LAL: 26 MAL: 27½	22½	9½	36	

* Size 5 combination starter does not contain a full size panel. No usable panel space is available.

Panel Layout



Class 8738



Class 8739



Reversing Combination Starters – NEMA Rated Class 8738, 8739 – Approximate Dimensions

NEMA Type 1 Enclosure (Size 0 - 2)

NEMA Size	Class	Type	Dimensions (in inches)* – see Figure 1														Top & Bottom		Sides	Wt. (Lbs.)		
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	W		X	Y
0-1	8738 & 8739	SBG SCG	13¾	23	8 ¹¹ / ₃₂	10 ⁵ / ₁₆	21	18 ²⁹ / ₃₂	17 ⁸ / ₁₆	17 ⁸ / ₁₆	3¾	2 ⁵ / ₁₆	1 ¹ / ₁₆	3¼	2 ³ / ₁₆	1¼	7 ⁸ / ₁₆	...	1½-¾-1	1½-¾-1	½	49
2	8738 & 8739	SDG	15	28¾	9 ¹⁹ / ₃₂	11 ⁵ / ₁₆	26¼	21 ¹⁵ / ₃₂	2 ³ / ₁₆	2	4	2 ⁹ / ₁₆	1¼	3¼	2 ³ / ₁₆	1¼	2 ⁹ / ₃₂	...	1-1¼	1-1¼	½	80

NEMA Type 1 Enclosure (Size 3 - 6)

NEMA Size	Class	Type	Dimensions (in inches)* – see Figure 2														Top & Bottom		Sides	Wt. (Lbs.)			
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	W		X	Y	
3	8738 & 8739	SEG	18½	44	10 ¹⁹ / ₃₂	12½	3	25 ³¹ / ₃₂	43½	¼	...	2 ¹³ / ₁₆	3½	5	2 ¹¹ / ₁₆	5 ³ / ₈	17 ³ / ₃₂	2 ⁹ / ₃₂	1-1¼	2-2¼	½-¾	½	245
4	8738	SFG	21	51½	10 ¹⁷ / ₃₂	15	3	30 ²³ / ₃₂	51	¼	...	2 ¹³ / ₁₆	3½	5	2 ¹¹ / ₁₆	5 ³ / ₈	17 ³ / ₃₂	2 ⁹ / ₃₂	2½	½-¾	½	...	
	8739	SFG	18½	44	10 ¹⁹ / ₃₂	12½	3	25 ³¹ / ₃₂	43½	¼	...	2 ¹³ / ₁₆	3½	5	2 ¹¹ / ₁₆	5 ³ / ₈	17 ³ / ₃₂	2 ⁹ / ₃₂	1-1¼	2-2¼	½-¾	½	...
5	8738	SGG	30	77	15½	22	4	39 ¹³ / ₃₂	76	½	...	3½	6 ⁹ / ₃₂	9¼	3 ³ / ₁₆	...	...	...	½-¾	3	...	...
	8739	SGG	30	65	13 ²³ / ₃₂	22	4	39 ¹³ / ₃₂	64	½	...	3½	6 ⁹ / ₃₂	5	3 ³ / ₁₆	...	...	...	½-¾	3	...	...
6	8738 & 8739	SHG	36	90	17½	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

NEMA Type 12 Enclosure

NEMA Size	Class	Type	Dimensions (in inches)* – see Figure 3										Wt. (Lbs.)
			A	B	C	D	E	F	G	H	I	J	
0-1	8738 & 8739	SBA SCA	13¾	10 ³ / ₃₂	24¾	3¼	2½	8¾	24	¾	3¾	20 ⁹ / ₁₆	52
2	8738 & 8739	SDA	15	10 ³¹ / ₃₂	31	3¼	3	9	30¼	¾	3¾	23 ⁷ / ₁₆	95
3	8738 & 8739	SEA	18½	10 ¹⁹ / ₃₂	45	5	3	12½	44	½	3¾	25 ¹⁹ / ₃₂	255
4	8738	SFA	21	10 ¹⁹ / ₃₂	52½	5	3	15	51½	½	3¾	30 ¹¹ / ₃₂	...
	8739	SFA	18½	10 ¹⁹ / ₃₂	45	3¼	3	12½	44	½	3¾	25 ¹⁹ / ₃₂	...
5	8738	SGA	30	15½	78	9¼	4	22	77	½	7½	39 ¹³ / ₃₂	...
	8739	SGA	30	15½	66	...	4	22	65	½	7½	37 ⁸ / ₁₆	...
6▲	8739	SHA	36	17½	90	...	...	...	...	...	...	...	...

▲ Size 6 enclosures are floor mounting.

NEMA Type 4X Polyester Enclosure

NEMA Size	Class	Dimensions (in inches)* – see Figure 4					
		Type	A	B	C	E	F
0-2	8738 & 8739	SBW SCW SDW	25.25	11.4	27.00	17.88	25.75
3-4	8739	SEW SFW	26.31	11.4	33.50	18.50	32.25

◆ See Page 12-69 for important information on hubs for NEMA Type 4X enclosures.

* The dimensions shown in all tables above are also for **Form F4T** (standard control transformer), **Form F4T11** (100 VA extra-capacity), and **Form F4T12** (200 VA extra-capacity).

NOTE: Illustrations may not represent the actual enclosure; they are intended for dimensional information only.

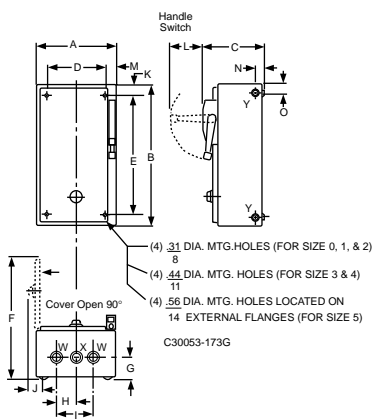


Figure 1:

NEMA Type 1 Enclosure (Sizes 0 - 2)

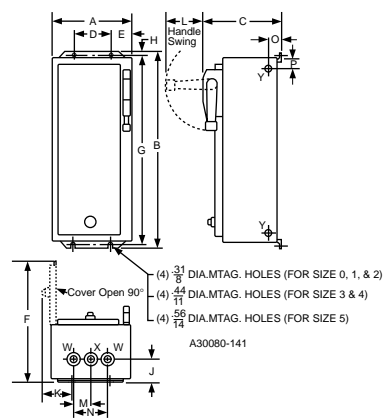


Figure 2:

NEMA Type 1 Enclosure (Sizes 3 - 6)

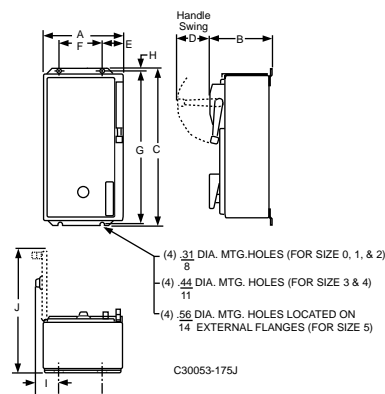


Figure 3:

NEMA Type 12 Enclosure

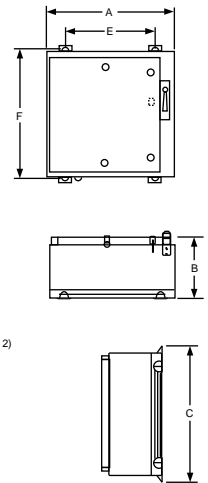


Figure 4:

NEMA Type 4X Polyester Enclosure



Reversing Combination Starters Approximate Dimensions – Class 8738, 8739

NEMA Type 4 & 4X Stainless Enclosure

NEMA Size	Class	Type	Dimensions (in inches)* – see Figure 1													Bottom W	Top & Bot. X	Wt. (Lbs.)
			A	B	C	D	E	F	G	H	I	J	K	L				
0-1	8738 & 8739	SBW SCW	13 ³ / ₄	8 ¹ / ₃₂	25 ³ / ₁₆	3 ¹ / ₄	2 ¹ / ₂	8 ³ / ₄	24	1 ⁹ / ₃₂	3	1 ⁵ / ₈	2 ⁵ / ₁₆	18 ¹ / ₃₂	¾ Hub	1 Hub	52	
2	8738 & 8739	SDW	15	9 ¹⁹ / ₃₂	30 ¹ / ₃₂	3 ¹ / ₄	2 ¹ / ₂	10	29 ³ / ₄	5 ⁵ / ₈	3	2	2 ⁵ / ₈	21 ¹ / ₃₂	¾ Hub	1½ Hub	95	
3	8738 & 8739	SEW	18 ¹ / ₂	10 ⁹ / ₁₆	45 ³ / ₁₆	5	3	12 ¹ / ₂	44	1 ⁹ / ₃₂	3 ¹ / ₂	2 ⁵ / ₈	3 ³ / ₁₆	25 ¹ / ₂	¾ Hub	2½ Hub	255	
4	8738	SFW	21	10 ¹ / ₃₂	52 ¹ / ₁₆	5	3	15	51 ¹ / ₂	1 ⁹ / ₃₂	3 ¹ / ₂	2 ⁵ / ₈	3 ³ / ₁₆	30 ¹ / ₄	¾ Hub	2½ Hub	...	
	8739	SFW	18 ¹ / ₂	10 ⁹ / ₁₆	45 ³ / ₁₆	5	3	12 ¹ / ₂	44	1 ⁹ / ₃₂	3 ¹ / ₂	2 ⁵ / ₈	3 ³ / ₁₆	25 ¹ / ₂	¾ Hub	2½ Hub	...	
5	8738	SGW	30	15 ¹ / ₂	78 ³ / ₃₂	9 ¹ / ₄	4	22	77	9 ¹ / ₁₆	6 ³ / ₃₂	3	3 ¹ / ₂	39 ¹ / ₃₂	¾ Hub	3½ Hub	...	
	8739	SGW	30	13 ⁵ / ₆₄	66 ³ / ₃₂	5	4	22	65	9 ¹ / ₁₆	6 ³ / ₃₂	3	3 ¹ / ₂	37 ⁷ / ₈	¾ Hub	3½ Hub	...	
6	8739	SHW	36	17 ¹ / ₃₂	98	...	...	...	...	...	...	...	...	...	...	...	...

* Above dimensions also for Form F4T (standard control transformer), Form F4T11 (100 VA extra capacity) and Form F4T12 (200 VA extra capacity).

Class 8739 – NEMA Type 7 & 9 Bolted Enclosure*

NEMA Size	Type	Dimensions (in inches) – see Figure 2											Wt. (Lbs.)
		G	H	J	K	L	N	P	Q, R	S, T, U, V	Z		
0-1	SBT SCT	14 ¹ / ₄	27 ⁵ / ₈	9 ¹ / ₂	12 ¹ / ₄	19 ¹ / ₄	9 ⁵ / ₈	11	2 ⁵ / ₈	3 ¹ / ₈	1½	115	
2	SDT	18 ¹ / ₂	31 ⁵ / ₈	10	16 ¹ / ₄	19 ¹ / ₄	9 ⁵ / ₈	12 ⁵ / ₈	2 ⁵ / ₈	3 ³ / ₄	2½	180	
3-4	SET SFT	24 ¹ / ₂	45 ⁵ / ₈	13 ³ / ₄	22 ¹ / ₂	27 ¹ / ₂	13 ³ / ₄	15 ⁵ / ₈	3 ¹ / ₁₆	4	4	500	

* Note: Enclosure has 3 door mounted Closing Plates.

Class 8739 - NEMA Type 7 & 9 SPIN TOP® Enclosure

NEMA Size	Type	Dimensions (in inches) – see Figure 3											Wt. (Lbs.)	
		E	F	G	H	J	K	L	M	N	P	Q		R
0-1	SBR, SCR	13 ⁷ / ₈	45 ¹ / ₄	19 ¹ / ₄	8	4 ³ / ₄	5 ¹ / ₄	1½	1 ¹ / ₁₆	7	18	9 ⁵ / ₈	2 ³ / ₄	120
2	SDR	13 ³ / ₈	52 ¹ / ₂	20 ¹ / ₄	8	4 ³ / ₄	7 ¹ / ₂	2½	-	7 ³ / ₄	23	8 ⁵ / ₈	3	130

Information on Hubs

Hubs are supplied with each NEMA Type 4X combination starter as shown in the table below. Note that hubs are only installed in stainless steel enclosures; they are not installed in polyester enclosures.

NEMA Size	Quantity	Hub Size
0 & 1	1	0.75"
	2	1.00"
2	1	0.75"
	2	1.50"
3 & 4	1	0.75"
	2	2.50"

NOTE: Illustrations may not represent the actual enclosure; they are intended for dimensional information only.

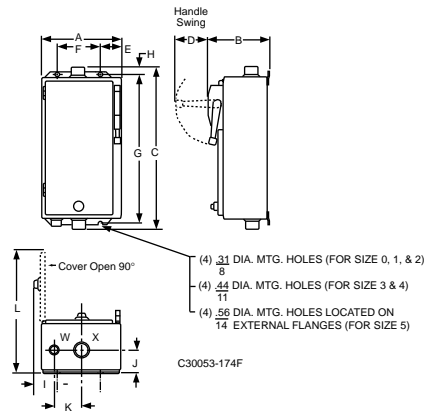


Figure 1:
NEMA Type 4 & 4X Stainless Enclosure

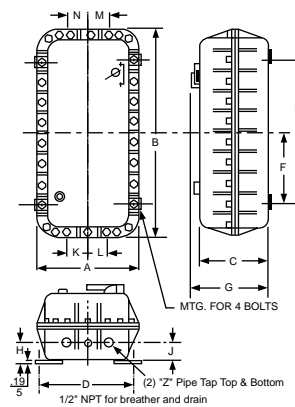


Figure 2:
NEMA Type 7 & 9 Bolted Enclosure

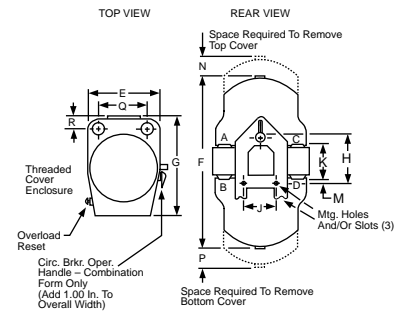


Figure 3:
NEMA Type 7 & 9 SPIN TOP® Enclosure



Factory Modifications (Forms) For Full Voltage Contactors and Starters

Factory installed modifications are available for the classes of control equipment listed in the respective tables. Prices shown are **additions** to standard equipment prices and are **not** to be used as separate selling prices. Kits are also available for many field modifications and normal parts replacement on most control items. Refer to Classes 9998 and 9999 for complete listings.

Standard equipment dimensions and enclosure construction may not apply when certain special features are added. Such cases should be referred to the factory with complete description when accurate dimensions are required. **Note:** If UL label is required, consult local Square D Field Sales Office. Some forms are **not** UL Listed.

Full Voltage Starters

	Factory Modifications	Enclosure Type	Form Letters
PILOT DEVICES IN COVER Full Voltage Non-Reversing Controllers Only Classes 8538 8539	Push Buttons ★		
	"Start-Stop"	1 3R, 4, 4X, 12 7 & 9	A A A
	"Start-Stop" (maintained contact)Ⓢ	1, 3R, 4, 4X■, 12	A16
	"Start-Stop" push button and "Hand-Off-Auto" selector switch	1, 3R, 4, 4X■, 12	AC
	"On-Off"	1 3R, 4, 4X■, 12	A3 A3
	Single Oiltight Pushbutton (specify marking)	1, 3R, 4, 4X■, 12	A11
	Selector Switches		
	"Hand-Off-Auto"	1 3R, 4, 4X, 12 7 & 9	C C C
	"On-Off"	1 3R, 4, 4X■, 12 7 & 9	C6 C6 C6
	Key Operated Selector Switch (specify marking and Key withdrawal position/code)	1, 3R, 4, 12	C33
	NON-STANDARD markings for Pilot Devices	1, 3R, 4, 12	G12▼
	Addition of padlock attachment to Class 9001 operators	1, 3R, 4, 12	G122
	Pilot Lights (specify color/type) ▲		
	Without Operating Interlock: Per light Per light Push-to-test (each)	1, 3R, 4, 4X, 12 7 & 9♦ 1, 3R, 4, 4X■, 12	P▲ P▲ P▲
With Operating Interlock: Add price of each interlock per light	1, 3R, 4, 4X■, 12	X*	
PILOT DEVICES IN COVER Full Voltage Reversing and Multi-Speed Controllers Only Classes 8738 8739	Push Buttons ★		
	"Forward-Reverse-Stop"	1, 4, 4X■, 12	A1
	"High-Low-Stop"	1, 4, 12	A2
	"Fast-Off-Slow"	1, 4, 12	A9
	"High-Low" push button and "Hand-Off-Auto" selector	1, 4, 12	A10C
	Single Oiltight Pushbutton (specify marking)	1, 4, 4X■, 12	A11
	Selector Switches		
	"Hand-Off-Auto"	1, 4, 4X■, 12 7 & 9	C C
	"On-Off"	1, 4, 4X■ 7 & 9	C6 C6
	"High-Off-Low"	1, 4, 12	C7
	"Forward-Off-Reverse"	1, 4, 4X■, 7, 9, 12	C14
	"High-Low" and "Hand-Off-Auto"	1, 4, 12	CC17
	"Slow-Fast"	1, 4, 4X■, 12	C19
	"Forward-Reverse"	1, 4, 4X■, 12	C20
	"High-Low-Off-Auto"	1, 4, 12	C25
	NON-STANDARD markings for Pilot Devices	Any	G12▼
	Pilot Lights (specify color/type)▲		
	One Pilot Light: one light with two electrical interlocks. Two Pilot Lights: each light is wired in parallel, no interlocks used		
	Without Operating Interlock: Per light Per light Push-to-test (each)	1, 4, 4X■, 12 7 & 9♦ 1, 4, 4X■, 12	P▲ P▲ P▲
With Operating Interlock: Add price of each interlock per light	1, 4, 4X■, 12	X*	

- ★ All push buttons are momentary contact unless specified otherwise.
- This adder, used with a NEMA Type 4X enclosure, applies to Classes 8538, 8539, 8738, 8739.
- ▲ Indicate pilot light color as Form P1 (red) or Form P2 (green), etc. as shown in the table below. Unless otherwise requested, standard practice is to wire red pilot light to indicate device is energized. No additional auxiliary contact is required. Also, standard practice is to wire green pilot light to indicate device is de-energized. An additional normally-closed auxiliary contact is required. A wiring diagram must be supplied for other pilot light colors and/or arrangements.
- ♦ Pilot lights available at 120 to 600 volt only.
- ▼ Specify marking and/or Class 9001 Type KN or Type SKN legend plate required.
- † Specify appropriate Class 9001 Type K or SK operator required.
- * To determine the maximum number of auxiliary contacts which can be added to each Type S device and for the appropriate "X Form", refer to the tables in the Class 8736 section on Page 12-81 (for reversing or two-speed devices).

Standard Pilot Light Form	Push -to-Test Pilot Light Form	LED Pilot Light	Color
P1	P21	P51	Red
P2	P22	P52	Green
P3	P23	—	Amber
P4	P24	—	Clear
—	P25	P55	Yellow

Factory Modifications (Forms) For Full Voltage Contactors and Starters

Full Voltage Controllers Only

Classes 8538, 8539, 8738 and 8739

Factory Modifications		Enclosure Type	Form Letters
	Separate Control Circuit — (specify voltage and frequency)	Any	S★
	Fused Control Circuit (without control transformer)		
	One fuse	1, 3R, 4, 4X, 12	F
	Two fuses	1, 3R, 4, 4X, 7, 9, 12	F4
	Control Circuit Transformers■		
	Standard capacity (50 or 60 Hz)		
	NOTE: All orders requesting Form FT will be supplied as Form F4T.		
	FUSES		
	Primary Secondary		
CONTROL	2 0	1, 4, 4X, 12	F4T0
CIRCUIT	2 0	7 & 9	F4T0
	1 1†	1, 4, 4X, 12	FF1T
FULL	2 1	1, 4, 4X, 12	FF4T
VOLTAGE	2 1	7 & 9	FF4T
AND	1 2†	1, 4, 4X, 12	F1F10T
MULTI-	2 2	1, 4, 4X, 12	F4F10T
SPEED	1 2		
CON-	2 2		
TROLLERS	2 2		
ONLY	Additional Capacity (50 or 60 Hz)		
CLASSES	Two fuses in primary		
8538	100 VA additional capacity	1, 4, 4X, 12	F4T110
8539	100 VA additional capacity	7 & 9	F4T110
8738	200 VA additional capacity	1, 4, 4X, 12	F4T120
8739	Two fuses in primary and one fuse in secondary		
	100 VA additional capacity	1, 4, 4X, 12	FF4T11
	100 VA additional capacity	7 & 9	FF4T11
	200 VA additional capacity	1, 4, 4X, 12	FF4T12
	300 VA additional capacity	1, 4, 4X, 12	FF4T13
	400 VA additional capacity	1, 4, 4X, 12	FF4T14
	500 VA additional capacity	1, 4, 4X, 12	FF4T15
	Substitute non-standard single primary, and/or single secondary voltage rating on control transformer■	Any	T1▼
	Substitute dual-voltage magnet coil.	Any	Y5†

★ All combination style devices such as 8538, 8539, 8738, 8739, that use Form S should also use Form Y74 (auxiliary contact installed on disconnect switch) per NEC Article 430-74.

■ Table at right.

▲ Single primary voltage must be specified.

▼ Must be used with another form of F4T. (Ex. Standard capacity transformer required, 208-24V. Order as Form F4TT1, 208-24V.)

† Not available on Size 2 or Size 3 devices with 4 or 5 poles.

* Not available on this Size. Select appropriate transformer with secondary fuse protection.

□ Not available with 24V secondary on Size 3. Select appropriate transformer with secondary fuse protection. See Table at right for 24V secondary restrictions.

○ Not available with 24V secondary. Select appropriate transformer with secondary fuse protection. See Table at right for 24V secondary restrictions.

‡ Single phase with one leg grounded or grounded B phase applications ONLY.

■ Selection of Control Circuit Transformers

The standard primary/secondary voltages for control circuit transformers are indicated in the following table.

AC-OPERATED DEVICES With Control Transformers

Voltage	Code
60Hz (Primary-Secondary)	
120-12▲	V88
120-24▲	V89
208-120	V84
240-24▲	V82
240-120	V80
277-120	V85
480-24▲	V83
480-120	V81
480-240	V87
600-120	V86
Specify	V99

▲ 12V coils are not available on Sizes 3-7. 24V coils are not available on Sizes 4-7.

To order, select the desired device with the appropriate transformer form designation. Then convert the previously selected voltage code (V_) to reflect the desired primary/secondary voltage for the transformer. The secondary voltage should equal the previously selected coil voltage of the device.

Example:

You have previously selected a Class 8536SDG1V02S. V02S means that you need a coil voltage of 120-60/110-50 wired for separate control. You would like to add form FF4T with the transformer voltages being 48 volt primary, 120 volt secondary with Solid State Overload Relay Protection Class 20 Trip Class (H20).

The new and complete class, type, voltage code and form number will be:

Class	Type	Voltage Code	Form*
8536	SDG1	V81	FF4TH20

* Form numbers should always be shown in alphabetical order.

Marine Control

Class	Factory Modification	Enclosure Type	Form
8538	Modification of standard device for use as marine control per UL508	12/3R	M10
8539		4/4X (S.S. only)	
8738	Modification of standard device for use as marine control like Form 10 standards in addition to IEEE45.	12/3R	M11
8739		4/4X (S.S. only)	



Factory Modifications (Forms) For Full Voltage Contactors and Starters

Full Voltage Controllers Only

CLASSES 8538, 8539, 8738 and 8739

Factory Modifications		Enclosure Type	Form Letters
OVERLOAD RELAYS	Non-Compensated Bimetallic Overload Relays		
	Single Phase:		
	Types SB-SD (Sizes 0-2)®	Any	B1
	Polyphase:		
	Two Element — For 2 Phase Only		
	Types SB-SD (Sizes 0-2)	Any	B1
	Three Element		
	Types SB-SD (Sizes 0-2)	Any	B2
	Types SE-SF (Sizes 3-4)	Any	B5
	Type SG (Size 5)	Any	B2Y500
	Type SH (Size 6)	Any	B2
	Ambient Compensated Bimetallic Overload Relays		
	Three Element		
	Types SB-SD (Sizes 0-2)	1, 4, 7, 9, 12	2B
	Types SE-SF (Sizes 3 & 4)	Any	Y59
	Type SG (Size 5)	Any	BY500
	Type SH (Size 6)	Any	B
	Overload Relays – General		
Substitute Class 9065 SSRO100			
For Standard Overload Protection	Any	B11	
Omit overload protection from combination starters. (Classes 8538, 8539, 8738, 8739 only)			
Do not use with MAG-GARD® Circuit Breakers.			
Deduct per starter	Any	Y76	
Modify Size 3 Type SE starters with melting alloy overload relays to accept Type FB quick trip or SB slow trip thermal units and Size 4 Type SF starters to accept Type FB quick trip thermal units. (Rejects Type CC standard trip thermal units.)	Any	Y81	
Substitute 9999 SO4 isolated alarm contact (N.O.) on melting alloy overload relay	Any	Y342	
Substitute 9999 SO5 isolated alarm contact (N.C.) on melting alloy overload relay	Any	Y344	

- ① Size 7 uses a solid state overload relay as standard. See Class 8536 for complete details.
- ② Single phase bimetallic overload relays for Type S Sizes 0-2 require two (2) thermal units per starter.
- ③ For Classes 8736, 8738 and 8739, Type SG, consult Local Square D Field Office.

Solid State Overload Relay Factory Modifications (Forms)

The solid state overload relay is available on NEMA Size 00-7.
For Class 8536, 8538, 8539, 8736, 8738, 8739 and 8810 devices.

Form Description

Type S Starter with Motor Logic
Solid State Overload Relay

- 1 - Motor Logic, Base Unit, Trip Class 10
- 2 - Motor Logic, Base Unit, Trip Class 20
- 3 - Motor Logic, Feature Base Unit
- 0 - No additional modifications
- 1 - N.O. Aux. Contact (Field Convertible to N.C.)

Special Overload/Contactor Size Combinations (Base Unit & Feature Base Units):
(Must Be Specified On Size 00 Starter Orders)

- Blank - Overload Matched to Starter Size (i.e. Size 1 contactor & 9-27A overload)
- 0 - A 6 – 18A overload on a starter size as indicated by the Starter Catalog Number
- 1 - A 9 – 27A overload on a starter size as indicated by the Starter Catalog Number
- 2 - A 15 – 45A overload on a starter size as indicated by the Starter Catalog Number
- 3 - A 30 – 90A overload on a starter size as indicated by the Starter Catalog Number
- 4 - A 45 – 135A overload on a starter size as indicated by the Starter Catalog Number
- 8 - A 1.5 – 4.5A overload on a starter size as indicated by the Starter Catalog Number (only offered on Feature Base Units)
- 9 - A 3 – 9A overload on a starter size as indicated by the Starter Catalog Number

SPECIAL NOTE FOR Class 8810 devices:
You MUST SPECIFY TWO SEPARATE FORM NUMBERS TO GET MOTOR LOGIC OVERLOADS ON TWO SPEED STARTERS. The first form number is for the low speed winding and the second is for the high speed winding.
EXAMPLE: Open Style, Size 4 Two Speed Starter with Motor Logic Overloads Required.
Single Winding, 460V, Constant Horsepower
High Speed FLA = 96A
Low Speed FLA = 27A (use Size 2 Overload)

Catalog Number to Order: 8810 SF01V02 form S H20 H202
Where: Form H20 is a Size 4 Contactor with a 45-135A Motor Logic Overload for the High Speed and form H202 is a 15-45A Motor Logic Overload on the low speed contactor.

Classes 8538, 8539, 8738 and 8739

Factory Modifications	Form
Motor Logic Solid State Overload	Base Unit, Trip Class 10 H10
	Base Unit, Trip Class 20 H20
	Feature Base Unit H30
Motor Logic Solid State Overload with Auxiliary Contact	Base Unit, Trip Class 10 H11
	Base Unit, Trip Class 20 H21
	Feature Base Unit H31

Special Starter Combinations with Motor Logic™ Overload Relay Protection

NEMA Contactor Size	Solid State Overload Relay Size							NEMA Contactor Size	Solid State Overload Relay Size						
	00B	00C	0	1	2	3	4		00B	00C	0	1	2	3	4
00	▲	Std.						2	▲	▲	▲	▲	Std.		
0	▲	▲	Std.					3	n/a	n/a	n/a	n/a	n/a	Std.	
1	▲	▲	▲	Std.				4	n/a	n/a	n/a	n/a	n/a	▲	Std.

▲ Possible factory starter combinations available.

Factory Modifications (Forms) For Full Voltage Contactors & Starters

Full Voltage Controllers Only

CLASSES 8538, 8539, 8738, 8739 and 8810			
Factory Modifications		Enclosure Type	Form Letters
POWER POLES	Addition of one NEMA Size 1, 30 Amp single pole N.O. unit	Any	Y428
	Addition of one NEMA Size 1, 30 Amp single pole N.C. unit	Any	Y429
	Addition of one NEMA Size 1, 30 Amp double pole N.O./N.O. unit	Any	Y430
	Addition of one NEMA Size 1, 30 Amp double pole N.C./N.C. unit	Any	Y434
	Addition of one NEMA Size 1, 30 Amp double pole N.O./N.C. unit	Any	Y435
	Addition of one NEMA Size 2 single pole N.O. unit	Any	Y436
	Addition of one NEMA Size 2 single pole N.C. unit.	Any	Y437
	Addition of one NEMA Size 2 double pole N.O./N.O. unit	Any	Y438
	Addition of one NEMA Size 2 double pole N.C./N.C. unit	Any	Y439
MISCELLANEOUS	Coil transient suppressor (120 Volt only). Per Coil	Any	Y145
	Addition of terminal blocks (specify wired or unwired). Wired, per terminal. Each	1, 4, 12	G50★
	Unwired, per terminal. Each	1, 4, 12	G50★

★ Addition of terminal block type 9080 CA or 9080 GR6 only. Number of circuits is same as ending of form number. (Ex.: G507 is 7 wire terminal block.)
 ■ When adding a power pole to a Size 2 device, it is necessary to also specify **Form Y118**.

MAG-GARD®

Circuit Breaker	Factory Modifications	Enclosure Type	Form Letters
8539 8739	Substitute FAL for GJL circuit breaker. (Note that the GJL breaker must be used with the SSOLR.)	1 4, 4X 12	Y534



Factory Modifications (Forms) For Full and Reduced Voltage Contactors & Starters

Full Voltage and Reduced Voltage Controllers*

CLASSES 8538, 8539, 8738 and 8739

Factory Modifications		Enclosure Type	Form Letters
Auxiliary Relays	Control relay (1 thru 4 poles) — specify pole arrangement, voltage and type required♦	1, 12 4, 4X*, 9	R17# R17#
	Pneumatic Timing Relay — specify Class 9050 Type A or B, “On” or “Off” delay and wiring instructions.		
	0.2 Sec. to 1.0 Min.	1, 12 4, 4X*, 7, 9	K K
	1.0 Min. to 3.0 Min.	1, 12 4, 4X*, 7, 9	K16 K16
	Solid State Timing Relay (specify timing range) and timer (120V control req'd.)	1, 4, 4X, 7, 9, 12	K1
	Pneumatic Timing Attachment — 0.2 sec. to 1.0 min.		
	Addition of Class 9999 Type SK3 (off delay) attachment	1, 4, 4X*, 12	K36
	Addition of Class 9999 Type SK4 (on delay) attachment.	1, 4, 4X*, 12	K35
	Motor driven timing relay♦▼	1, 4, 12	K5
	Phase Failure and Reverse Phase Relay▼	1, 4, 12	Y444
Undervoltage Relay▼	1, 4, 12	Y447	
Overvoltage Relay▼	1, 4, 12	Y448	
Under and Overvoltage Relay▼▲	1, 4, 12	Y449	
Meters And Metering■	Ammeter in cover (includes current transformer if req'd.)	1, 12	G91
	Ammeter and switch with two current transformers	1, 12	G92
	Ammeter and switch with three current transformers	1, 12	G93
	Voltmeter mounted	1, 12	G94
	Voltmeter and switch mounted	1, 12	G95
	Elapsed time meter	1, 12	G97
	Operation counter	1, 12	G99
	Wattmeter	1, 12	G911
Varmeter	1, 12	G913	
Power factor meter	1, 12	G914	
Auxiliary Contacts	Additional starter (contactor) auxiliary contacts (Specify number of additional normally open or closed contacts required per contactor.) Each	Any	X†
	Auxiliary contacts installed on disconnect switch or circuit breaker operating mechanism. SPDT	1, 4, 4X, 12	Y74
	DPDT (Note: Above contacts do not switch with automatic tripping of circuit breaker. If such operation is required, consult your local Square D field office.)	1, 4, 4X, 12	Y75
Enclosures	Space heater with N.C. auxiliary contact	1, 4, 4X, 12	G51
	Function identification plate, with marking as specified	Any	G11
	Convenience receptacle (2-wire) mounted in side of enclosure	1, 12	Y31
	Drain and breather installed	7 & 9	Y41
	Cover gaskets added to NEMA Type 1 enclosures: For Classes 8538 and 8539	1	Y47
For Classes 8738 and 8739	1	Y47	
For other full voltage controllers	1	Y47	
For reduced voltage controllers	1	Y47	

- ♦ If controller has a control transformer, price that transformer with additional capacity for the relay provided.
- * This adder, used with a NEMA Type 4X enclosure, applies only to Classes 8538, 8539, 8738, 8739 and 8810 non-reversing.
- ▼ Specify control and line voltage.
- Motor HP and voltage required when placing order. Meters will be panel mounted in NEMA Type 12 enclosures.
- † To determine the maximum number of auxiliary contacts which can be added to each Type S device and for the appropriate “X Form”, refer to the tables in the Class 8536 section on Page 12-29 (for non-reversing single-speed devices) or the Class 8736 section on Page 12-81 (for reversing or two-speed devices). For Class 8600 Reduced Voltage controllers, consult local Square D Field Office.
- ‡ Addition of control relay one (1) thru eight (8) poles. Number of poles is same as ending of form number. (Ex: R174 = 4 pole relay).
- * NEMA Type 7 & 9 enclosures not available with Class 8600 devices.
- ▲ For single phase applications only.

Selection of Control Circuit Transformers

The standard primary/secondary voltages for control circuit transformers are indicated in the following table.

Voltage	Code
60 Hz (Primary-Secondary)	
120-12	V88
120-24	V89
208-120	V84
240-24	V82
240-120	V80
277-120	V85
480-24	V83
480-120	V81
480-240	V87
600-120	V86
Specify	V99

To order, select the desired device with the appropriate transformer form designation. Then convert the previously selected voltage code (V__) to reflect the desired primary/secondary voltage for the transformer. The secondary voltage should equal the previously selected coil voltage of the device. (24Vac coils for NEMA Sizes 4-7 are not available).

Example:

You have previously selected a Class 8606SDG1V02S. V02S means that you need a coil voltage of 120-60/110-50 wired for separate control. You would like to add **Form FF4T** with the transformer voltages being 480 volt primary, 120 volt secondary.

The new and complete class, type, voltage code and form number will be:

Class	Type	Voltage Code	Form*
8606	SDG1	V81	FF4T

* Form numbers should always be shown in alphabetical order.

Combination Starters – NEMA Rated Class 8538, 8539, 8738 and 8739 – Accessories



An electrical interlock may also be factory installed in either a disconnect switch or circuit breaker combination starter. Specify **Form Y74** for single pole, or **Form Y75** for two pole interlocks. For pricing see factory modifications (FORMs).

INTERLOCKS AND CONTROL TRANSFORMERS

A one or two pole electrical interlock can be added to the disconnect switch or circuit breaker. Thus if a separate control circuit is used, the magnetic starter can be de-energized when the disconnect is switched to the OFF position. See Table 1 for proper interlock selection. For electrical ratings of disconnect and circuit breaker interlocks, see Table 2 below.

Table 1: Disconnect Switch and Breaker Interlocks

Class	Type	Class 9999	
		SPDT Type	DPDT Type
8538	SB†, SC†, SD† (Series B)	R6	R7
	SD (Series C)	R43	R44
	SB, SC (Series C)	R45	R46
8538 & 8738	SE, SF (Series A)	R8	R9
	SE (Series B & C)	R41	R42
	SF (Series B & C)	R39	R40
	SG	R35	R36
8539, 8739	SB, SC, SD, SE, SF, SG▲	R26	R27
8538	SBA, SCA, SBG, SCG (Series D)	TC11	TC21
8538	SBAS8, SCAS8, SBGS8, SCGS8 (Series D)	TC10	TC20
8738	SBAS8, SCAS8, SBGS8, SCGS8 (Series E)	TC10	TC20
8738	SBA, SCA, SBG, SCG (Series E)	TC11	TC21
8538	SDA, SDA†, SDG, SDG† (Series D)	TC10	TC20
8738	SDA, SDG (Series E)	TC10	TC20
8538, 8738	SEA, SEG (Series D)	TC10	TC20

▲ No interlocks available for the GJL circuit breaker.
† Class 8538 type numbers ending in suffix "S8".

Table 2: Disconnect Switch and Breaker Interlock Electrical Ratings

Class 9999 Type R6, 8, 26, 35, 39, 41, 43, 45, TC10, & TC11				Class 9999 Type R7, 9, 27, 36, 40, 42, 44, 46 & TC 20, 21					
AC – 50 or 60 Hz				AC – 50 or 60 Hz					
Volts	Maximum Current			Volts	Maximum Current				
	Make Amps	Break Amps	Continuous Carrying Current Amps		Make Amps	VA	Break Amps	VA	Continuous Carrying Current Amps
120	40	15	15	120	30	3450	3	345	10
240	20	10	15	240	15	3450	1.5	345	10
480	10	8	15	480	7.5	3450	.75	345	10
600	8	6	15	600	6	3450	.6	345	10

Table 3: Control Transformer Selection (8538 and 8539 only)

NEMA Size	Starter Type	Standard Capacity (Form F4T)	50 VA Additional Capacity (Form F4T10)	100 VA Additional Capacity (Form F4T11)	200 VA Additional Capacity (Form F4T12)
		Class 9070 Type	Class 9070 Type	Class 9070 Type	Class 9070 Type
0 & 1	SB & SC	T50	T100	T150	T300♦
2	SD	T100	T150	T300●	T300●
3	SE	T150	T150	T300	T500
4	SF	T300	T300	T500	T500
5	SG	T50 and 8501XO20	T100 and 8501XO20	T150 and 8501XO20	T300 and 8501XO20
6	SH	EO3S2 is standard	EO3S2 and T50	EO3S2 and T100	EO3S2 and T200
7	SJ	EO19S2 is standard	EO19S2 and T50	EO19S2 and T100	EO3S2 and T200

- ♦ Requires oversized enclosure. (Size 2 reversing enclosure.)
- Available in standard enclosure with MAG-GARD® circuit breaker and non-fusible disconnect switch. Requires oversized enclosure with thermal-magnetic circuit breakers and fusible disconnect switches. (Size 2 reversing enclosure.)

Transformer

 File E61239
CCN XPTQ
Above 250 VA also
XPTQ7

 File LR37055
Class 5411 06

Internal Auxiliary Switch – Circuit breakers can be supplied with a factory installed auxiliary switch for remote indication of an open and/or tripped or a closed breaker. One (specify **Form Y741**) or two (specify **Form Y751**) auxiliary switches can be supplied. The switches are supplied with normally open and normally closed circuits with a common connection. Contacts must be used on the same polarity and are rated 15 Amps at 240 volts AC. The auxiliary switches are located internally and are furnished with 19-20 inch long leads.

Alarm Switch – The alarm switch only operates when the breaker is tripped. It is used to actuate bell alarms and warning lights. The alarm switch is factory installed only (specify **Form Y742**) and consists of a single pole single throw switch which is normally open except when the breaker is tripped. The contacts are rated 4 Amps at 240 volts AC. This switch is located in the breaker and is supplied with 19-20 inch long leads.


Transformer Selection – Space and drilling are provided in all disconnect switch and circuit breaker combination starters in NEMA Type 1, 4 & 4X stainless and polyester, 12 and 7 & 9 bolted enclosures for the field addition (or factory installation) of a Class 9070 control circuit transformer and Class 9999 Type SFR4 fuse holder. This kit can be either panel mounted or side mounted on the Type S starter. For standard control transformer selection in combination starters, see Table 3. Consult field office for transformer additions to NEMA Type 7 & 9 SPIN-TOP® enclosures.

Fuse Block Mounting Brackets – The standard capacity transformer, Class 9070 Type T50, for the Size 0 and 1 starters mounts to the right of the magnetic starter.


Standards – Most combination starters and forms are UL Listed in file E152395, Category NKJH. Many combination starters have or are pending CSA Approval for File CR 584.

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