



Combination Starters Reversing

CONTENTS

Description	Class	Pages
Disconnect Switch Type	8738	2-3
MAG-GARD Circuit Breaker Type	8739	4-5
Current Limiting Module	8739	5
Thermal Magnetic Circuit Breaker Type	8739	6-7
Outline Dimensions	8738/39	8

**SQUARE D COMPANY**

AC REVERSING COMBINATION STARTERS

FUSIBLE DISCONNECT SWITCH TYPE

JANUARY, 1982

UL LISTED

LINE VOLTAGE TYPE, REVERSING WITH THREE MELTING ALLOY OVERLOAD RELAYS

3 POLE — 600 VOLTS MAX. — 50-60 HERTZ

Ratings				General Purpose Enclosure NEMA Type 1		Watertight and Dusttight Enclosure Stainless Steel NEMA Type 4		Watertight, Dusttight and Corrosion Resistant Enclosure NEMA Type 4X		Dusttight and Driptight Industrial Use Enclosure NEMA Type 120		
Motor Voltage (Starter Voltage)	Max. HP Poly-phase	NEMA Size	Fuse Clip Size Amps.	Type	Price*	Type	Price*	Type	Price*	With External Reset	Without External Reset	Price*
200 (208)	3	0	30	SBG-12	\$ 608.	SBW-12	\$1096.	SBW-22	\$1260.	SBA-22	SBA-12	\$ 744.
	5	1	30	SCG-12	648.	SCW-12	1136.	SCW-22	1306.	SCA-22	SCA-12	784.
	7½	1	60	SCG-13	656.	SCW-13	1144.	SCW-23	1316.	SCA-23	SCA-13	792.
	10	2	60	SDG-12	1080.	SDW-12	1824.	SDW-22	2006.	SDA-22	SDA-12	1256.
	20	3	100	SEG-15	1784.	SEW-15	3088.	.....	.....	SEA-25	SEA-15	2016.
	40	4	200	SFG-15	3764.	SFW-15	5412.	.....	.....	SFA-25	SFA-15	4400.
230 (240)	75	5	400	SGG-15	7358.	SGW-15	11566.	.....	.....	SGA-25	SGA-15	8870.
	3	0	30	SBG-12	608.	SBW-12	1096.	SBW-22	1260.	SBA-22	SBA-12	744.
	5	1	30	SCG-12	648.	SCW-12	1136.	SCW-22	1306.	SCA-22	SCA-12	784.
	7½	1	60	SCG-13	656.	SCW-13	1144.	SCW-23	1316.	SCA-23	SCA-13	792.
	15	2	60	SDG-12	1080.	SDW-12	1824.	SDW-22	2006.	SDA-22	SDA-12	1256.
	25	3	100	SEG-15	1784.	SEW-15	3088.	.....	.....	SEA-25	SEA-15	2016.
460-575 (480-600)	50	4	200	SFG-15	3764.	SFW-15	5412.	.....	.....	SFA-25	SFA-15	4400.
	100	5	400	SGG-15	7358.	SGW-15	11566.	.....	.....	SGA-25	SGA-15	8870.
	5	0	30	SBG-13	616.	SBW-13	1104.	SBW-23	1270.	SBA-23	SBA-13	752.
	10	1	30	SCG-14	656.	SCW-14	1144.	SCW-24	1316.	SCA-24	SCA-14	792.
	15	2	30	SDG-16	1084.	SDW-16	1828.	SDW-26	2010.	SDA-26	SDA-16	1260.
	25	3	60	SDG-14	1092.	SDW-14	1836.	SDW-24	2020.	SDA-24	SDA-14	1268.
	50	3	100	SEG-13	1808.	SEW-13	3112.	.....	.....	SEA-23	SEA-13	2040.
	100	4	200	SFG-13	3780.	SFW-13	5428.	.....	.....	SFA-23	SFA-13	4416.
	200	5	400	SGG-13	7358.	SGW-13	11566.	.....	.....	SGA-23	SGA-13	8870.

NON-FUSIBLE DISCONNECT SWITCH TYPE

LINE VOLTAGE TYPE, REVERSING WITH THREE MELTING ALLOY OVERLOAD RELAYS

3 POLE — 600 VOLTS MAX. — 50-60 HERTZ

200 (208)	3	0	None	SBG-11	\$ 596.	SBW-11	\$1084.	SBW-21	\$1246.	SBA-21	SBA-11	\$ 732.
	7½	1	None	SCG-11	636.	SCW-11	1124.	SCW-21	1292.	SCA-21	SCA-11	772.
	10	2	None	SDG-11	1064.	SDW-11	1808.	SDW-21	1988.	SDA-21	SDA-11	1240.
	25	3	None	SEG-11	1764.	SEW-11	3068.	.....	.....	SEA-21	SEA-11	1996.
	40	4	None	SFG-11	3696.	SFW-11	5344.	.....	.....	SFA-21	SFA-11	4332.
	75	5	None	SGG-11	7214.	SGW-11	11422.	.....	.....	SGA-21	SGA-11	8726.
230 (240)	3	0	None	SBG-11	596.	SBW-11	1084.	SBW-21	1246.	SBA-21	SBA-11	732.
	7½	1	None	SCG-11	636.	SCW-11	1124.	SCW-21	1292.	SCA-21	SCA-11	772.
	15	2	None	SDG-11	1064.	SDW-11	1808.	SDW-21	1988.	SDA-21	SDA-11	1240.
	30	3	None	SEG-11	1764.	SEW-11	3068.	.....	.....	SEA-21	SEA-11	1996.
	50	4	None	SFG-11	3696.	SFW-11	5344.	.....	.....	SFA-21	SFA-11	4332.
	100	5	None	SGG-11	7214.	SGW-11	11422.	.....	.....	SGA-21	SGA-11	8726.
460-575 (480-600)	5	0	None	SBG-11	596.	SBW-11	1084.	SBW-21	1246.	SBA-21	SBA-11	732.
	10	1	None	SCG-11	636.	SCW-11	1124.	SCW-21	1292.	SCA-21	SCA-11	772.
	25	2	None	SDG-11	1064.	SDW-11	1808.	SDW-21	1988.	SDA-21	SDA-11	1240.
	50	3	None	SEG-11	1764.	SEW-11	3068.	.....	.....	SEA-21	SEA-11	1996.
	100	4	None	SFG-11	3696.	SFW-11	5344.	.....	.....	SFA-21	SFA-11	4332.
	200	5	None	SGG-11	7214.	SGW-11	11422.	.....	.....	SGA-21	SGA-11	8726.

* Prices do not include thermal units.

● NEMA Type 12 enclosures may be field modified for outdoor applications.

▲ NEMA Type 4X hubs are included with each starter at no additional cost.

HAZARDOUS LOCATIONS

NEMA Type 12 devices are available U.L. Listed for use in Class II, Division 2, Group G and Class III, Divisions 1 and 2 locations. Request Form G2-1. No additional charge.

ORDERING INFORMATION REQUIRED

1. Class and type number.
2. Horsepower, voltage, phase, frequency and full load current of motor.
3. Control voltage and frequency if different from line voltage.

THERMAL UNITS

Thermal units should be ordered separately. Standard trip thermal units are priced at \$6.00 each.

UL LISTED SHORT CIRCUIT WITHSTAND RATINGS‡

NEMA Size	Available Amperes RMS Symmetrical
0-2	5,000

Class 8738 Non-Fusible Disconnect Switch Type UL Listed. Short circuit withstand rating not applicable.
‡ NEMA Type 4X devices are not UL Listed.



AC REVERSING COMBINATION STARTERS

FUSIBLE DISCONNECT SWITCH TYPE WITH CLASS R FUSE CLIPS

CLASS
8738
UL LISTED
FOR 100,000A ‡
LINE VOLTAGE TYPE, REVERSING WITH THREE MELTING ALLOY OVERLOAD RELAYS
3 POLE — 600 VOLTS MAX. — 50-60 HERTZ

Ratings				General Purpose Enclosure NEMA Type 1		Watertight and Dusttight Enclosure Stainless Steel NEMA Type 4		Watertight, Dusttight and Corrosion Resistant Enclosure NEMA Type 4X▲		Dusttight and Driptight Industrial Use Enclosure NEMA Type 12C‡		
Motor Voltage (Starter Voltage)	Max. HP Poly-phase	NEMA Size	Fuse Clip Size Amps.	Type	Price*	Type	Price*	Type	Price*	Type	Type	Price*
200 (208)	3	0	30	SBG-32	\$ 614.	SBW-32	\$1102.	SBW-42	\$1266.	SBA-42	SBA-32	\$ 750.
	5	1	30	SCG-32	654.	SCW-32	1142.	SCW-42	1314.	SCA-42	SCA-32	790.
	7½	1	60	SCG-33	662.	SCW-33	1148.	SCW-43	1320.	SCA-43	SCA-33	798.
	10	2	60	SDG-32	1086.	SDW-32	1830.	SDW-42	2014.	SDA-42	SDA-32	1262.
	20	3	100	SEG-35	1796.	SEW-35	3100.	.....	.....	SEA-45	SEA-35	2028.
	40	4	200	SFG-35	3776.	SFW-35	5424.	.....	.....	SFA-45	SFA-35	4412.
230 (240)	75	5	400	SGG-35	7386.	SGW-35	11566.	.....	.....	SGA-45	SGA-35	8898.
	3	0	30	SBG-32	614.	SBW-32	1102.	SBW-42	1266.	SBA-42	SBA-32	750.
	5	1	30	SCG-32	654.	SCW-32	1142.	SCW-42	1314.	SCA-42	SCA-32	790.
	7½	1	60	SCG-33	662.	SCW-33	1148.	SCW-43	1320.	SCA-43	SCA-33	798.
	15	2	60	SDG-32	1086.	SDW-32	1830.	SDW-42	2014.	SDA-42	SDA-32	1262.
	25	3	100	SEG-35	1796.	SEW-35	3100.	.....	.....	SEA-45	SEA-35	2028.
460-575 (480-600)	50	4	200	SFG-35	3776.	SFW-35	5424.	.....	.....	SFA-45	SFA-35	4412.
	100	5	400	SGG-35	7386.	SGW-35	11566.	.....	.....	SGA-45	SGA-35	8898.
	5	0	30	SBG-33	622.	SBW-33	1110.	SBW-43	1276.	SBA-43	SBA-33	758.
	10	1	30	SCG-34	662.	SCW-34	1150.	SCW-44	1322.	SCA-44	SCA-34	798.
	15	2	30	SDG-36	1090.	SDW-36	1834.	SDW-46	2018.	SDA-46	SDA-36	1266.
	25	3	60	SDG-34	1098.	SDW-34	1842.	SDW-44	2086.	SDA-44	SDA-34	1274.
	50	3	100	SEG-33	1820.	SEW-33	3124.	.....	.....	SEA-43	SEA-33	2052.
	100	4	200	SFG-33	3792.	SFW-33	5460.	.....	.....	SFA-43	SFA-33	4428.
	200	5	400	SGG-33	7386.	SGW-33	11566.	.....	.....	SGA-43	SGA-33	8898.

* Prices do not include thermal units.

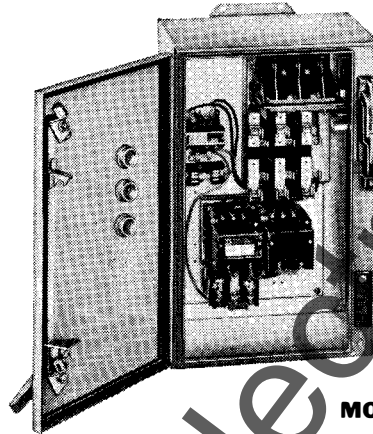
● NEMA Type 12 enclosures may be field modified for outdoor applications.

▲ NEMA Type 4X hubs are included with each starter at no additional cost.

‡ Available amperes RMS symmetrical. NEMA sizes 0-2 only. NEMA Type 4X devices are not UL Listed.

‡ HAZARDOUS LOCATIONS

NEMA Type devices are available U.L. Listed for use in Class II, Division 2, Group G and Class III, Divisions 1 and 2 locations. Request Form G2-1. No additional charge.



Reversing Combination Starter,
Showing Interchangeable Fuse Clips
and Transformer

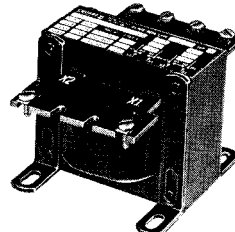
AC REVERSING COMBINATION STARTERS

DISCONNECT SWITCH AND CIRCUIT BREAKER TYPE

CLASS
8738
8739

MODIFICATIONS — CONTROL CIRCUIT TRANSFORMER

Space and drilling are provided in all combination starters, in NEMA Types 1, 4 and 12 enclosures, for the field addition (or factory installation) of a Class 9070 transformer. Space and drilling are also provided for the Class 9080 Type PF-1 control circuit fuse block. Consult field office for transformer additions to NEMA Type 4X enclosures.



Class 9070 Type EO
Control Circuit
Transformer

TRANSFORMER SELECTION

NEMA Size	Starter Type	Standard Capacity (Form FT)	100 VA Additional Capacity (Form FT-11)	200 VA Additional Capacity (Form FT-12)
		Class 9070 Type	Class 9070 Type	Class 9070 Type
0-2	SB-SD	EO-2	EO-4	EO-4
3	SE	EO-3	EO-4	EO-51
4	SF	EO-4	EO-51	EO-51
5	SG	EO-1 and 8501 Relay	EO-3 and 8501 Relay	EO-4 and 8501 Relay

MODIFICATIONS — COVER MOUNTED CONTROL UNITS

NEMA Types 1, 4 and 12 Enclosures — Three punched holes are provided in the cover to accept factory or field installation of Class 9001 Type K control units. These holes are covered with Class 9001 closing plates. When installing

Class 9001 Type K control units in NEMA Type 4 enclosures, Class 9001 Type KU water-tight caps must be used. For further details and pricing of these units, see the Class 9001 Section.



SQUARE D COMPANY

D1A DISCOUNT

AC REVERSING COMBINATION STARTERS
MAG-GARD® MOTOR CIRCUIT PROTECTOR TYPE

JANUARY, 1982

NOTE: The type number selections are listed for motors with typical locked rotor inrush characteristics. For selection restrictions refer to the "motor code letter" table below.

UL LISTED*
FOR 22,000
OR 100,000A

LINE VOLTAGE TYPE, REVERSING WITH THREE MELTING ALLOY OVERLOAD RELAYS

3 POLE, 600 VOLTS AC MAXIMUM — 50-60 HERTZ

Ratings				General Purpose Enclosure NEMA Type 1		Watertight and Dusttight Enclosure Stainless Steel (Sizes 0-5) NEMA Type 4		Watertight Dusttight and Corrosion Resistant Enclosure NEMA Type 4X		For Hazardous Locations — SPIN TOP® Enclosure Class I Group C & D Class II Groups E, F & G NEMA Type 7 & 9		Dusttight and Driptight Industrial Use Enclosure NEMA Type 12		
Motor Voltage (Starter Voltage)	H.P. Range Poly-phase	NEMA Size	Catalog Number (See Below for Breaker Adjustment Range)	Type	Price*	Type	Price*	Type	Price*	Type	Price*	Type	Type	Price*
200 (208)	1/4-1/2 1/2-1 1 1/2-3	0	FAL36003-11M FAL36007-12M FAL36015-13M	SBG-41 SBG-42 SBG-43	\$ 716.	SBW-41 SBW-42 SBW-43	\$ 1204.	SBW-51 SBW-52 SBW-53	1384.	SBR-41 SBR-42 SBR-43	\$ 1486.	SBA-51 SBA-52 SBA-53	SBA-41 SBA-42 SBA-43	\$ 852.
	1/4-1/2 1/2-1 1 1/2-3 5 7 1/2	1	FAL36003-11M FAL36007-11M FAL36015-13M FAL36030-15M FAL36050-16M	SCG-41 SCG-42 SCG-43 SCG-44 SCG-45	764.	SCW-41 SCW-42 SCW-43 SCW-44 SCW-45	1252.	SCW-51 SCW-52 SCW-53 SCW-54 SCW-55	1440.	SCR-41 SCR-42 SCR-43 SCR-44 SCR-45	1540.	SCA-51 SCA-52 SCA-53 SCA-54 SCA-55	SCA-41 SCA-42 SCA-43 SCA-44 SCA-45	900.
	1 1/2-3 5 7 1/2-10	2	FAL36015-13M FAL36030-15M FAL36050-16M	SDG-41 SDG-42 SDG-43	1220.	SDW-41 SDW-42 SDW-43	1964.	SDW-51 SDW-52 SDW-53	2160.	SDR-41 SDR-42 SDR-43	2288.	SDA-51 SDA-52 SDA-53	SDA-41 SDA-42 SDA-43	1396.
	15-25	3	FAL36100-18M	SEG-42	1824.	SEW-42	3128.	SEW-52	3440.	...	...	SEA-52	SEA-42	2056.
	30 40	4	KAL36225-25M KAL36225-26M	SFG-42 SFG-43	4132.	SFW-42 SFW-43	5780.	SFW-52 SFW-53	6358.	...	...	SFA-52 SFA-53	SFA-42 SFA-43	4768.
	50 60 75	5	KAL36225-30M LAL36400-32M LAL36400-33M	SGG-42 SGG-44 SGG-45	8370.	SGW-42 SGW-44 SGW-45	12578.	...	...	...	...	SGA-52 SGA-54 SGA-55	SGA-42 SGA-44 SGA-45	9882.
	100 125 150	6	LAL36400-36M MAL36600-40M MAL36600-42M	SHG-43 SHG-44 SHG-45	18050.	SHW-43 SHW-44 SHW-45	20050.	...	...	...	...	SHA-53 SHA-54 SHA-55	SHA-43 SHA-44 SHA-45	19130.
	1/4-1/2 1/2-1 1 1/2-3	0	FAL36003-11M FAL36007-12M FAL36015-13M	SBG-41 SBG-42 SBG-43	716.	SBW-41 SBW-42 SBW-43	1204.	SBW-51 SBW-52 SBW-53	1384.	SBR-41 SBR-42 SBR-43	1486.	SBA-51 SBA-52 SBA-53	SBA-41 SBA-42 SBA-43	852.
	1/4-1/2 1/2-1 1 1/2-3 5-7 1/2	1	FAL36003-11M FAL36007-12M FAL36015-13M FAL36030-15M	SCG-41 SCG-42 SCG-43 SCG-44	764.	SCW-41 SCW-42 SCW-43 SCW-44	1252.	SCW-51 SCW-52 SCW-53 SCW-54	1440.	SCR-41 SCR-42 SCR-43 SCR-44	1540.	SCA-51 SCA-52 SCA-53 SCA-54	SCA-41 SCA-42 SCA-43 SCA-44	900.
	1 1/2-3 5-7 1/2 10 15	2	FAL36015-13M FAL36030-15M FAL36050-16M FAL36100-18M	SDG-41 SDG-42 SDG-43 SDG-44	1220.	SDW-41 SDW-42 SDW-43 SDW-44	1964.	SDW-51 SDW-52 SDW-53 SDW-54	2160.	SDR-41 SDR-42 SDR-43 SDR-44	2288.	SDA-51 SDA-52 SDA-53 SDA-54	SDA-41 SDA-42 SDA-43 SDA-44	1396.
230 (240)	15-30	3	FAL36100-18M	SEG-42	1824.	SEW-42	3128.	SEW-52	3440.	...	...	SEA-52	SEA-42	2056.
	40 50	4	KAL36225-26M KAL36225-29M	SFG-43 SFG-44	4132.	SFW-43 SFW-44	5780.	SFW-53 SFW-54	6358.	...	...	SFA-53 SFA-54	SFA-43 SFA-44	4768.
	60 75 100	5	KAL36225-31M LAL36400-32M LAL36400-35M	SGG-43 SGG-44 SGG-45	8370.	SGW-43 SGW-44 SGW-46	12578.	...	...	...	...	SGA-53 SGA-54 SGA-56	SGA-43 SGA-44 SGA-46	9882.
	125-150 200	6	MAL36600-40M MAL36600-44M	SHG-44 SHG-46	18050.	SHW-44 SHW-46	20050.	...	...	...	...	SHA-54 SHA-56	SHA-44 SHA-46	19130.

* Prices do not include thermal units.

⊙ NEMA Type 12 enclosures may be field modified for outdoor applications.

▲ NEMA Type 4X hubs are included with each starter at no additional cost.

MAG-GARD TRIP RANGE

Suffix Number	Range Amps.	Suffix Number	Range Amps.	Suffix Number	Range Amps.
11M	8-28	25M	625-1250	33M	1500-3000
12M	18-70	26M	750-1500	35M	1750-3500
13M	50-180	29M	875-1750	36M	2000-4000
15M	100-350	30M	1000-2000	40M	2500-5000
16M	150-580	31M	1125-2250	42M	3000-6000
18M	300-1100	32M	1250-2500	44M	3500-7000

THERMAL UNITS

Thermal units should be ordered separately. Standard trip thermal units are priced at \$6.00 each.

FIELD MODIFICATION KITS — Refer to Class 9999 Section.

MAG-GARD is a Registered Trademark of Square D Company.

SPIN TOP is a Registered Trademark of Square D Company.

⚡ HAZARDOUS LOCATIONS

NEMA Type 12 devices are available U.L. Listed for use in Class II, Division 2, Group G and Class III, Divisions 1 and 2 locations. Request Form G2-1. No additional charge.

⚡ UL LISTED SHORT CIRCUIT WITHSTAND RATINGS*

NEMA Size	Voltage	Available Amperes RMS Symmetrical
0 & 1	0-480	22,000
0 & 1	481-600	10,000
2-6	600	22,000
0-3 (with CLM)	600	100,000

* NEMA Type 4X and NEMA Types 7 and 9 are not UL Listed.

MOTOR CODE LETTER TABLE

Horsepower	Motor Code Letters
1/2 or less	A-L
3/4 — 1 1/2	A-K
2 — 3	A-J
5 — 25	A-H
30 — 125	A-G
150 or more	A-F

For other motors a special thermal trip circuit breaker with magnetic trip settings for the specific motor is required. When ordering combination starters for these special applications, specify the complete motor horsepower, voltage, frequency, full load current and **code letter** (or locked rotor current) to assure proper selection. This special circuit breaker will be listed as Form Y53-8.



AC REVERSING COMBINATION STARTERS

MAG-GARD® MOTOR CIRCUIT PROTECTOR TYPE

**UL LISTED*
FOR 22,000
OR 100,000A**

NOTE: The type number selections are listed for motors with typical locked rotor inrush characteristics. For selection restrictions refer to the "motor code letter" table on page 4.

CLASS
8739

LINE VOLTAGE TYPE, REVERSING WITH THREE MELTING ALLOY OVERLOAD RELAYS

3 POLE, 600 VOLTS MAX., 50-60 HERTZ

Ratings				General Purpose Enclosure NEMA Type 1		Watertight and Dusttight Enclosure Stainless Steel (Sizes 0-5) NEMA Type 4		Watertight, Dusttight and Corrosion Resistant Enclosure NEMA Type 4X▲		For Hazardous Locations — SPIN TOP® Enclosure Class I Group C & D Class II Groups E, F & G NEMA Type 7 & 9		Dusttight and Driptight, Industrial Use Enclosure NEMA Type 12◊		Price *
Motor Voltage (Starter Voltage)	H.P. Range Poly-phase	NEMA Size	Catalog Number (Refer to Page 242 for Breaker Adjustment Range)	Type	Price *	Type	Price *	Type	Price *	Type	Price *	Type	Type	
460 (480)	1/4-1 1/2-3 5	0	FAL36003-11M FAL36007-12M FAL36015-13M	SBG-41 SBG-42 SBG-43	\$ 716.	SBW-41 SBW-42 SBW-43	\$ 1204.	SBW-51 SBW-52 SBW-53	\$1384.	SBR-41 SBR-42 SBR-43	\$1486.	SBA-51 SBA-52 SBA-53	SBA-41 SBA-42 SBA-43	\$ 852.
	1/4-1 1/2-3 5-7 1/2 10	1	FAL36003-11M FAL36007-12M FAL36015-13M FAL36030-15M	SCG-41 SCG-42 SCG-43 SCG-44	764.	SCW-41 SCW-42 SCW-43 SCW-44	1252.	SCW-51 SCW-52 SCW-53 SCW-54	1440.	SCR-41 SCR-42 SCR-43 SCR-44	1540.	SCA-51 SCA-52 SCA-53 SCA-54	SCA-41 SCA-42 SCA-43 SCA-44	900.
	5-7 1/2 10-15 20-25	2	FAL36015-13M FAL36030-15M FAL36050-16M	SDG-41 SDG-42 SDG-43	1220.	SDW-41 SDW-42 SDW-43	1964.	SDW-51 SDW-52 SDW-53	2160.	SDR-41 SDR-42 SDR-43	2288.	SDA-51 SDA-52 SDA-53	SDA-41 SDA-42 SDA-43	1396.
	20-25 30-50	3	FAL36050-16M FAL36100-18M	SEG-41 SEG-42	1824.	SEW-41 SEW-42	3128.	SEW-51 SEW-52	3440.	....	....	SEA-51 SEA-52	SEA-41 SEA-42	2056.
	60-75 100	4	KAL36225-25M KAL36225-29M	SFG-42 SFG-44	4132.	SFW-42 SFW-44	5780.	SFW-52 SFW-54	6358.	....	....	SFA-52 SFA-54	SFA-42 SFA-44	4768.
	125 150 200	5	KAL36225-31M LAL36400-32M LAL36400-35M	SGG-43 SGG-44 SGG-46	8370.	SGW-43 SGW-44 SGW-46	12578.	....	....	....	....	SGA-53 SGA-54 SGA-56	SGA-43 SGA-44 SGA-46	9882.
	250 300 350 400	6	LAL36400-36M MAL36600-40M MAL36600-42M MAL36600-44M	SHG-43 SHG-44 SHG-45 SHG-46	18050.	SHW-43 SHW-44 SHW-45 SHW-46	20050.	....	....	....	....	SHA-53 SHA-54 SHA-55 SHA-56	SHA-43 SHA-44 SHA-45 SHA-46	19130.
	1/4-1 1/2-3 5	0	FAL36003-11M FAL36007-12M FAL36015-13M	SBG-41 SBG-42 SBG-43	716.	SBW-41 SBW-42 SBW-43	1204.	SBW-51 SBW-52 SBW-53	1384.	SBR-41 SBR-42 SBR-43	1486.	SBA-51 SBA-52 SBA-53	SBA-41 SBA-42 SBA-43	852.
	1/4-1 1/2-3 5-10	1	FAL36003-11M FAL36007-12M FAL36015-13M	SCG-41 SCG-42 SCG-43	764.	SCW-41 SCW-42 SCW-43	1252.	SCW-51 SCW-52 SCW-53	1440.	SCR-41 SCR-42 SCR-43	1540.	SCA-51 SCA-52 SCA-53	SCA-41 SCA-42 SCA-43	900.
	5-10 15-20 25	2	FAL36015-13M FAL36030-15M FAL36050-16M	SDG-41 SDG-42 SDG-43	1220.	SDW-41 SDW-42 SDW-43	1964.	SDW-51 SDW-52 SDW-53	2160.	SDR-41 SDR-42 SDR-43	2288.	SDA-51 SDA-52 SDA-53	SDA-41 SDA-42 SDA-43	1396.
575 (600)	25-30 40-50	3	FAL36050-16M FAL36100-18M	SEG-41 SEG-42	1824.	SEW-41 SEW-42	3128.	SEW-51 SEW-52	3440.	....	....	SEA-51 SEA-52	SEA-41 SEA-42	2056.
	60-100	4	KAL36225-25M	SFG-42	4132.	SFW-42	5780.	SFW-52	6358.	....	....	SFA-52	SFA-42	4768.
	125 150 200	5	KAL36225-29M KAL36225-30M LAL36400-32M	SGG-41 SGG-42 SGG-44	8370.	SGW-41 SGW-42 SGW-44	12578.	....	....	....	....	SGA-51 SGA-52 SGA-54	SGA-41 SGA-42 SGA-44	9882.
	250 300 350-400	6	LAL36400-35M LAL36400-36M MAL36600-40M	SHG-42 SHG-43 SHG-44	18050.	SHW-42 SHW-43 SHW-44	20050.	....	....	....	....	SHA-52 SHA-53 SHA-54	SHA-42 SHA-43 SHA-44	19130.

* Prices do not include thermal units.

◊ NEMA Type 12 enclosures may be field modified for outdoor applications.

▲ NEMA Type 4X hubs are included with each starter at no additional cost.

HAZARDOUS LOCATIONS

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 G2-1. No additional charge.

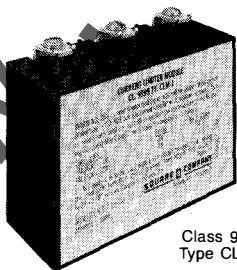
Classes 8539 and 8739 combination starters NEMA Sizes 0-3, NEMA Types 1, 4 and 12 with a factory added Current Limiting Module (CLM) are UL Listed for use on systems having an available fault current of 100,000 amperes RMS symmetrical.

The CLM is designed for use with FA frame MAG-GARD® circuit breakers. There are three types of modules:

Class 9999 Type CLM-1 for 3 and 7 amp MAG-GARD® circuit breakers

Class 9999 Type CLM-2 for 15 and 30 amp MAG-GARD® circuit breakers

Class 9999 Type CLM-3 for 50 and 100 amp MAG-GARD® circuit breakers



Class 9999
Type CLM-1

Each type module has a rejection feature. (For example: A CLM-3 cannot be installed in place of a CLM-1 or CLM-2.) The CLM installation does not require an oversized or non-standard enclosure.

The addition of a CLM to an existing non-Form Y126-1 Mag-Gard® combination starter will increase the controller's fault withstandability level. The device will not be UL Listed at the higher level, however.

ORDERING INFORMATION

A combination starter with the CLM is selected by:

1. Selecting a NEMA Size 0-3, NEMA Type 1, 4, or 12 Mag-Gard® combination starter based on voltage and motor horsepower from the 8539 or 8739 tables.
2. Requesting Form Y126-1. Adder is \$120. D1A.

Replacement CLM's are available as follows:

Class and Type	MAG-GARD® Circuit Breaker Size	Price and Discount
9999 CLM-1	3 or 7 amperes	\$92. D1B
9999 CLM-2	15 or 30 amperes	\$92. D1B
9999 CLM-3	50 or 100 amperes	\$92. D1B

UL LISTED SHORT CIRCUIT WITHSTAND RATINGS†

NEMA Size	Voltage	Available Amperes RMS Symmetrical
0 & 1	0-480	22,000
0 & 1	481-600	10,000
2-6	600	22,000
0-3 (with CLM)	600	100,000

† NEMA Type 4X and NEMA Types 7 and 9 are not UL Listed.

AC REVERSING COMBINATION STARTERS — THERMAL MAGNETIC CIRCUIT BREAKER TYPE

JANUARY, 1982

LINE VOLTAGE TYPE, REVERSING — WITH THREE MELTING ALLOY OVERLOAD RELAYS

3 POLE, 600 VOLTS AC MAXIMUM — 50-60 HERTZ

Ratings					General Purpose Enclosure NEMA Type 1		Watertight and Dusttight Enclosure Stainless Steel (Sizes 0-5) NEMA Type 4		Watertight Dusttight and Corrosion Resistant Enclosure NEMA Type 4X△		For Hazardous Locations SPIN TOP® Enclosure Class I Groups C & D Class II Groups E, F & G NEMA Types 7 and 9		Dusttight and Driptight Industrial Use Enclosure NEMA Type 120+		
Motor Voltage (Starter Voltage)	Max. H.P. Poly-phase	NEMA Size	Circuit Breakers		Type	Price	Type	Price	Type	Price	Type	Price	Type	Type	Price
			Type	Ampere Rating										With External Reset	Without External Reset
200 (208)	2 3	0	FAL▲	15 20	SBG-1 SBG-3	\$ 624.	SBW-1 SBW-3	\$1112.	SBW-11 SBW-13	\$1280.	SBR-1 SBR-3	\$1386.	SBA-11 SBA-13	SBA-1 SBA-3	\$ 760.
	5 7½	1	FAL▲	35 50	SCG-5 SCG-2	672.	SCW-5 SCW-2	1160.	SCW-15 SCW-12	1336.	SCR-5 SCR-2	1438.	SCA-15 SCA-12	SCA-5 SCA-2	808.
	10	2	FAL▲	60	SDG-1	1128.	SDW-1	1872.	SDW-11	2060.	SDR-1	2186.	SDA-11	SDA-1	1304.
	15 20 25	3	FAL FAL KAL	90 100 110	SEG-3 SEG-1 SEG-5	1824.	SEW-3 SEW-1 SEW-5	3128.	SEW-13 SEW-11 SEW-15	3440.	.....	.....	SEA-13 SEA-11 SEA-15	SEA-3 SEA-1 SEA-5	2056.
	30 40	4	KAL	125 175	SFG-3 SFG-4	4132.	SFW-3 SFW-4	5780.	SFW-13 SFW-14	6358.	.....	.....	SFA-13 SFA-14	SFA-3 SFA-4	4768.
	50 60 75	5	LAL LAL LAL	200 250 300	SGG-6 SGG-1 SGG-4	8370.	SGW-6 SGW-1 SGW-4	12578.	.....	.....	.....	.....	SGA-16 SGA-11 SGA-14	SGA-6 SGA-1 SGA-4	9882.
	100 125 150	6	MAL MAL MAL	450 600 700	SHG-4 SHG-3 SHG-5	18050.	SHW-4 SHW-3 SHW-5	20050.	.....	.....	.....	.....	SHA-14 SHA-13 SHA-15	SHA-4 SHA-3 SHA-5	19130.
230 (240)	2 3	0	FAL▲	15 20	SBG-1 SBG-3	624.	SBW-1 SBW-3	1112.	SBW-11 SBW-13	1280.	SBR-1 SBR-3	1386.	SBA-11 SBA-13	SBA-1 SBA-3	760.
	5 7½	1	FAL▲	30 45	SCG-1 SCG-6	672.	SCW-1 SCW-6	1160.	SCW-11 SCW-16	1336.	SCR-1 SCR-6	1438.	SCA-11 SCA-16	SCA-1 SCA-6	808.
	10 15	2	FAL▲	60 80	SDG-1 SDG-7	1128.	SDW-1 SDW-7	1872.	SDW-11 SDW-17	2060.	SDR-1 SDR-7	2186.	SDA-11 SDA-17	SDA-1 SDA-7	1304.
	20 25 30	3	FAL FAL KAL	90 100 110	SEG-3 SEG-1 SEG-5	1824.	SEW-3 SEW-1 SEW-5	3128.	SEW-13 SEW-11 SEW-15	3440.	.....	.....	SEA-13 SEA-11 SEA-15	SEA-3 SEA-1 SEA-5	2056.
	40 50	4	KAL	150 175	SFG-1 SFG-4	4132.	SFW-1 SFW-4	5780.	SFW-11 SFW-14	6358.	.....	.....	SFA-11 SFA-14	SFA-1 SFA-4	4768.
	60 75 100	5	LAL LAL LAL	225 250 350	SGG-3 SGG-1 SGG-2	8370.	SGW-3 SGW-1 SGW-2	12578.	.....	.....	.....	.....	SGA-13 SGA-11 SGA-12	SGA-3 SGA-1 SGA-2	9882.
	125 150 200	6	MAL	450 600 800	SHG-4 SHG-3 SHG-7	18050.	SHW-4 SHW-3 SHW-7	20050.	.....	.....	.....	.....	SHA-14 SHA-13 SHA-17	SHA-4 SHA-3 SHA-7	19130.

*Prices do not include thermal units.

●NEMA Type 12 enclosures may be field modified for outdoor applications.

△NEMA Type 4X hubs are included with each starter at no additional cost.

▲Rated 250 Volts Max.

HAZARDOUS LOCATIONS

NEMA Type 12 devices are available U.L. Listed for use in Class II, Division 2, Group G and Class III, Divisions 1 and 2 locations. Request Form G2-1. No additional charge.

ORDERING INFORMATION REQUIRED

1. Class and type number.
2. Horsepower, voltage, phase, frequency and full load current of motor.
3. Control voltage and frequency if different from line voltage.

THERMAL UNITS

Thermal units should be ordered separately. For selection see "Overload and Short Circuit Protection." All devices listed above require three thermal units.



AC REVERSING COMBINATION STARTERS — THERMAL MAGNETIC CIRCUIT BREAKER TYPE

CLASS
8739

LINE VOLTAGE TYPE, REVERSING — WITH THREE MELTING ALLOY OVERLOAD RELAYS

3 POLE, 600 VOLTS AC MAXIMUM — 50-60 HERTZ

Ratings					General Purpose Enclosure NEMA Type 1		Watertight and Dusttight Enclosure Stainless Steel (Sizes 0-5) NEMA Type 4		Watertight Dusttight and Corrosion Resistant Enclosure NEMA Type 4XΔ		For Hazardous Locations SPIN TOP® Enclosure Class I Groups C & D Class II Groups E, F & G NEMA Types 7 and 9		Dusttight and Driptight, Industrial Use Enclosure NEMA Type 12⊕		
Motor Voltage (Starter Voltage)	Max. H.P. Poly-phase	NEMA Size	Circuit Breakers												
			Type	Ampere Rating											
Type	* Price	Type	* Price	Type	* Price	Type	* Price	Type	* Price	Type	* Price	Type	* Price	Type	* Price
460 (480)	5	0	FAL	15	SBG-2	\$ 716.	SBW-2	\$1204.	SBW-12	\$1384.	SBR-2	\$1486.	SBA-12	SBA-2	\$ 852.
	7½ 10	1	FAL	20 25	SCG-3 SCG-7	764.	SCW-3 SCW-7	1252.	SCW-13 SCW-17	1440.	SCR-3 SCR-7	1540.	SCA-13 SCA-17	SCA-3 SCA-7	900.
	15 20 25	2	FAL	40 60 70	SDG-3 SDG-4 SDG-5	1220.	SDW-3 SDW-4 SDW-5	1964.	SDW-13 SDW-14 SDW-15	2160.	SDR-3 SDR-4 SDR-5	2288.	SDA-13 SDA-14 SDA-15	SDA-3 SDA-4 SDA-5	1396.
	30 40 50	3	FAL	80 90 100	SEG-6 SEG-3 SEG-1	1824.	SEW-6 SEW-3 SEW-1	3128.	SEW-16 SEW-13 SEW-11	3440.	....	....	SEA-16 SEA-13 SEA-11	SEA-6 SEA-3 SEA-1	2056.
	60 75 100	4	KAL	110 125 175	SFG-5 SFG-3 SFG-4	4132.	SFW-5 SFW-3 SFW-4	5780.	SFW-16 SFW-13 SFW-14	6358.	....	....	SFA-15 SFA-13 SFA-14	SFA-5 SFA-3 SFA-4	4768.
	125 150 200	5	LAL	225 250 350	SGG-3 SGG-1 SGG-2	8370.	SGW-3 SGW-1 SGW-2	12578.	....	....	....	....	SGA-13 SGA-11 SGA-12	SGA-3 SGA-1 SGA-2	9882.
	250 300 350 400	6	MAL	450 600 700 800	SHG-4 SHG-3 SHG-5 SHG-7	18050.	SHW-4 SHW-3 SHW-5 SHW-7	20050.	....	....	....	....	SHA-14 SHA-13 SHA-15 SHA-17	SHA-4 SHA-3 SHA-5 SHA-7	19130.
	575 (600)	5	0	FAL	15	SBG-2	716.	SBW-2	1204.	SBW-12	1384.	SBR-2	1486.	SBA-12	SBA-2
7½ 10		1	FAL	20 25	SCG-8 SCG-3	764.	SCW-8 SCW-3	1252.	SCW-18 SCW-13	1440.	SCR-8 SCR-3	1540.	SCA-18 SCA-13	SCA-8 SCA-3	900.
15 20 25		2	FAL	35 45 60	SDG-8 SDG-9 SDG-4	1220.	SDW-8 SDW-9 SDW-4	1964.	SDW-18 SDW-19 SDW-14	2160.	SDR-8 SDR-9 SDR-4	2288.	SDA-18 SDA-19 SDA-14	SDA-8 SDA-9 SDA-4	1396.
30 40 50		3	FAL	60 80 90	SEG-4 SEG-6 SEG-3	1824.	SEW-4 SEW-6 SEW-3	3128.	SEW-14 SEW-16 SEW-13	3440.	....	....	SEA-14 SEA-16 SEA-13	SEA-4 SEA-6 SEA-3	2056.
60 75 100		4	FAL KAL KAL	100 110 150	SFG-6 SFG-5 SFG-1	4132.	SFW-6 SFW-5 SFW-1	5780.	SFW-16 SFW-15 SFW-11	6358.	....	....	SFA-16 SFA-15 SFA-11	SFA-6 SFA-5 SFA-1	4768.
125 150 200		5	KAL LAL LAL	175 200 250	SGG-7 SGG-6 SGG-1	8370.	SGW-7 SGW-6 SGW-1	12578.	....	....	....	....	SGA-17 SGA-16 SGA-11	SGA-7 SGA-6 SGA-1	9882.
250 300 350 400		6	MAL	350 450 500 600	SHG-6 SHG-4 SHG-2 SHG-3	18050.	SHW-6 SHW-4 SHW-2 SHW-3	20050.	....	....	....	....	SHA-16 SHA-14 SHA-12 SHA-13	SHA-6 SHA-4 SHA-2 SHA-3	19130.

*Prices do not include thermal units.

⊙NEMA Type 12 enclosures may be field modified for outdoor applications.

△NEMA Type 4X hubs are included with each starter at no additional cost.

HAZARDOUS LOCATIONS

NEMA Type 12 devices are available U.L. Listed for use in Class II, Division 2, Group G and Class III, Divisions 1 and 2 locations. Request Form G2-1. No additional charge.



AC REVERSING COMBINATION STARTERS

DISCONNECT SWITCH or CIRCUIT BREAKER TYPE

JANUARY, 1982

APPROXIMATE DIMENSIONS AND SHIPPING WEIGHTS

NEMA 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	W	X	Y	
0-1	8738 & 8739	SBG SCG	13 $\frac{3}{8}$	22 $\frac{1}{8}$	8 $\frac{1}{2}$	10 $\frac{5}{8}$	20	18 $\frac{2}{3}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$	3 $\frac{3}{4}$	2 $\frac{5}{16}$	1 $\frac{1}{16}$	3 $\frac{7}{8}$	2 $\frac{3}{16}$	1 $\frac{1}{4}$	$\frac{7}{8}$	1 $\frac{1}{2}$ -3 $\frac{1}{4}$ -1	1 $\frac{1}{2}$ -3 $\frac{1}{4}$ -1	1 $\frac{1}{2}$	49
2	8738 & 8739	SDG	15 $\frac{5}{16}$	28 $\frac{2}{3}$	9 $\frac{1}{2}$	11 $\frac{5}{8}$	26 $\frac{1}{4}$	21 $\frac{1}{2}$	2 $\frac{3}{16}$	2	4	2 $\frac{3}{16}$	1 $\frac{1}{16}$	3 $\frac{7}{8}$	2 $\frac{3}{16}$	1 $\frac{1}{2}$	2 $\frac{3}{16}$	1-1 $\frac{1}{4}$	1 $\frac{1}{2}$ -3 $\frac{1}{4}$	1 $\frac{1}{2}$	80
3	8738 & 8739	SEG	18 $\frac{1}{2}$	36 $\frac{2}{3}$	10 $\frac{1}{2}$	15 $\frac{1}{8}$	34	25 $\frac{1}{2}$	2 $\frac{2}{3}$	2 $\frac{1}{16}$	5 $\frac{3}{8}$	2 $\frac{3}{16}$	1 $\frac{1}{2}$	4 $\frac{2}{3}$	2 $\frac{3}{16}$	1 $\frac{1}{2}$	2 $\frac{3}{16}$	1-1 $\frac{1}{4}$ 2-2 $\frac{1}{2}$	1 $\frac{1}{2}$ -3 $\frac{1}{4}$	1 $\frac{1}{2}$	245
4	8738	SFG	21 $\frac{2}{3}$	42 $\frac{2}{3}$	12 $\frac{1}{2}$	18 $\frac{3}{8}$	40 $\frac{1}{4}$	30 $\frac{2}{3}$	2 $\frac{2}{3}$	2 $\frac{1}{16}$	5 $\frac{3}{8}$	2 $\frac{3}{16}$	1 $\frac{1}{2}$	4 $\frac{2}{3}$	2 $\frac{3}{16}$	1 $\frac{1}{2}$	2 $\frac{3}{16}$	1-1 $\frac{1}{4}$ 2-2 $\frac{1}{2}$	1 $\frac{1}{2}$ -3 $\frac{1}{4}$	1 $\frac{1}{2}$	...
	8739	SFG	18 $\frac{1}{2}$	36 $\frac{2}{3}$	10 $\frac{1}{2}$	15 $\frac{1}{8}$	34	25 $\frac{1}{2}$	2 $\frac{2}{3}$	2 $\frac{1}{16}$	5 $\frac{3}{8}$	2 $\frac{3}{16}$	1 $\frac{1}{2}$	3 $\frac{7}{8}$	2 $\frac{3}{16}$	1 $\frac{1}{2}$	2 $\frac{3}{16}$	1-1 $\frac{1}{4}$ 2-2 $\frac{1}{2}$	1 $\frac{1}{2}$ -3 $\frac{1}{4}$	1 $\frac{1}{2}$	...
5	8738	SGG	30 $\frac{1}{4}$	67	15 $\frac{1}{2}$	15	66	39 $\frac{1}{2}$	3 $\frac{3}{16}$	3 $\frac{3}{16}$	...	6 $\frac{3}{16}$	1 $\frac{1}{2}$	9 $\frac{7}{16}$	7 $\frac{5}{8}$	...	...	3 $\frac{1}{4}$ †	3	...	...
	8739	SGG	30 $\frac{1}{4}$	55	11 $\frac{2}{3}$	15	54	27 $\frac{1}{2}$	3 $\frac{3}{16}$	3 $\frac{3}{16}$	...	6 $\frac{3}{16}$	1 $\frac{1}{2}$	9 $\frac{7}{16}$	7 $\frac{5}{8}$	...	...	3 $\frac{1}{4}$ †	3	...	...
6▲	8739	SHG	36	80	21 $\frac{1}{2}$	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

† Left side only.

NEMA 4 ENCLOSURE — FIGURE 2

NEMA Size	Class	Type	DIMENSIONS IN INCHES*												Bottom	Top & Bot	Wt. (Lbs.)
			A	B	C	D	E	F	G	H	I	J	K	L	W	X	
0-1	8738 & 8739	SBW SCW	13 $\frac{3}{8}$	8 $\frac{1}{2}$	24 $\frac{1}{8}$	3 $\frac{7}{8}$	4 $\frac{1}{16}$	4 $\frac{1}{4}$	23	19 $\frac{3}{32}$	6 $\frac{3}{32}$	1 $\frac{5}{8}$	2 $\frac{5}{16}$	18 $\frac{7}{32}$	$\frac{3}{4}$ Hub	1 Hub	52
2	8738 & 8739	SDW	15 $\frac{1}{8}$	9 $\frac{1}{2}$	30 $\frac{1}{16}$	3 $\frac{7}{8}$	5 $\frac{1}{16}$	4 $\frac{1}{4}$	29 $\frac{3}{4}$	$\frac{5}{8}$	6 $\frac{2}{32}$	2	2 $\frac{5}{8}$	21 $\frac{1}{32}$	$\frac{3}{4}$ Hub	1 $\frac{1}{2}$ Hub	95
3	8738 & 8739	SEW	18 $\frac{1}{8}$	10 $\frac{1}{16}$	39 $\frac{3}{16}$	4 $\frac{2}{32}$	4 $\frac{1}{16}$	9	38	19 $\frac{3}{32}$	6 $\frac{3}{32}$	2 $\frac{9}{16}$	3 $\frac{3}{16}$	25 $\frac{1}{2}$	$\frac{3}{4}$ Hub	2 $\frac{1}{2}$ Hub	255
4	8738	SFW	21 $\frac{1}{8}$	12 $\frac{1}{16}$	45 $\frac{1}{16}$	4 $\frac{2}{32}$	6 $\frac{7}{16}$	9	44 $\frac{1}{4}$	19 $\frac{3}{32}$	7 $\frac{2}{32}$	2 $\frac{9}{16}$	3 $\frac{1}{16}$	30 $\frac{1}{4}$	$\frac{3}{4}$ Hub	2 $\frac{1}{2}$ Hub	...
	8739	SFW	18 $\frac{1}{8}$	10 $\frac{1}{16}$	39 $\frac{3}{16}$	3 $\frac{7}{16}$	4 $\frac{1}{16}$	9	38	19 $\frac{3}{32}$	6 $\frac{3}{32}$	2 $\frac{9}{16}$	3 $\frac{1}{16}$	25 $\frac{1}{2}$	$\frac{3}{4}$ Hub	2 $\frac{1}{2}$ Hub	...
5	8738	SGW	30 $\frac{1}{4}$	15 $\frac{1}{2}$	67 $\frac{3}{32}$	9 $\frac{7}{32}$	7 $\frac{5}{8}$	15	66	$\frac{9}{16}$	11 $\frac{9}{32}$	3	3 $\frac{1}{2}$	39 $\frac{1}{32}$	$\frac{3}{4}$ Hub	3 $\frac{1}{2}$ Hub	...
	8739	SGW	30 $\frac{1}{4}$	12 $\frac{1}{32}$	55 $\frac{3}{32}$	4 $\frac{2}{32}$	7 $\frac{5}{8}$	15	54	$\frac{9}{16}$	11 $\frac{9}{32}$	3	3 $\frac{1}{2}$	37 $\frac{2}{32}$	$\frac{3}{4}$ Hub	3 $\frac{1}{2}$ Hub	...
6▲	8739	SHW	36	21 $\frac{1}{32}$	88												

NEMA 4X ENCLOSURE - REFER TO FIGURE 2

NEMA Size	Class	Type	Dimensions in Inches*										Wt. (Lbs.)
			A	B	C	D	E	F	G	H	I	J	
0-2	8738-8739	SBW SCW SDW	15.41	11.60	28.00	4.75	1.77	11.88	27.25	.38	2.33	20.62	65 65 70
3-4	8739	SEW SFW	25.41	11.60	28.00	4.75	1.83	21.75	27.25	.38	2.39	30.62	110 120

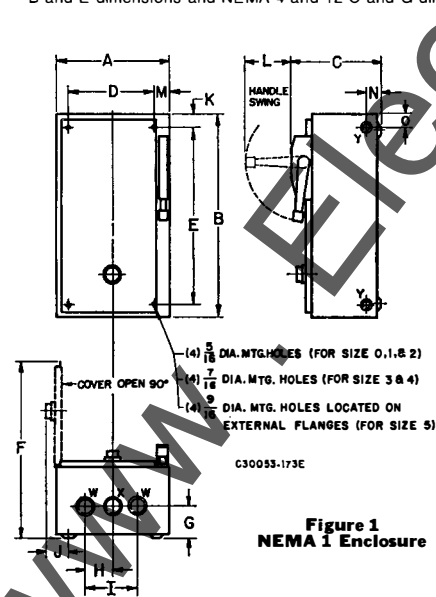
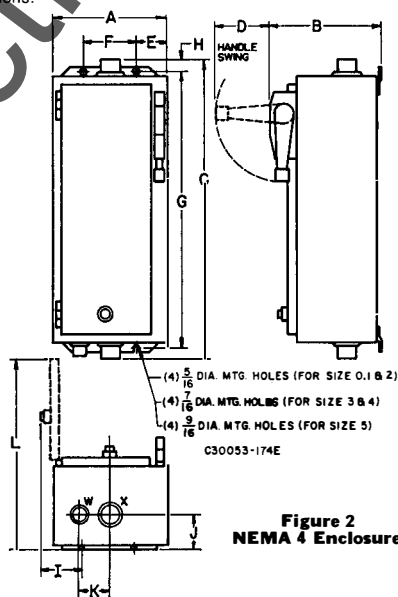
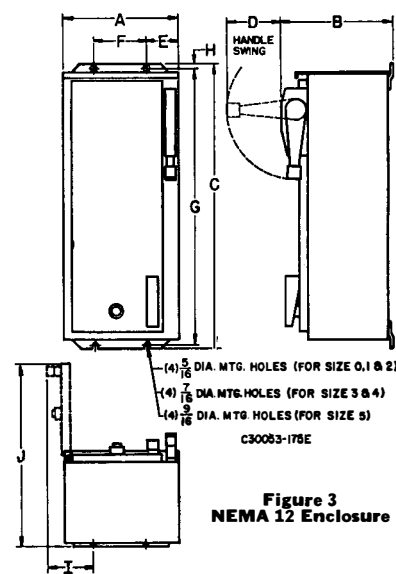
NEMA 12 ENCLOSURE — FIGURE 3

NEMA Size	Class	Type	DIMENSIONS IN INCHES*										Wt. (Lbs.)
			A	B	C	D	E	F	G	H	I	J	
0-1	8738 & 8739	SBA SCA	13 $\frac{3}{8}$	10 $\frac{3}{2}$	23 $\frac{3}{4}$	3 $\frac{7}{8}$	4 $\frac{1}{16}$	4 $\frac{1}{4}$	23	9 $\frac{5}{8}$	6 $\frac{1}{2}$	20 $\frac{3}{16}$	52
2	8738 & 8739	SDA	15 $\frac{5}{16}$	10 $\frac{3}{16}$	30 $\frac{1}{2}$	3 $\frac{7}{8}$	5 $\frac{1}{16}$	4 $\frac{1}{4}$	29 $\frac{3}{4}$	9 $\frac{5}{8}$	7 $\frac{1}{16}$	23 $\frac{3}{16}$	95
3	8738 & 8739	SEA	18 $\frac{1}{2}$	10 $\frac{1}{2}$	39	4 $\frac{2}{32}$	4 $\frac{2}{32}$	9	38	1 $\frac{1}{2}$	6 $\frac{1}{16}$	25 $\frac{1}{32}$	255
4	8738	SFA	21 $\frac{2}{3}$	12 $\frac{3}{2}$	45 $\frac{1}{4}$	4 $\frac{2}{32}$	6 $\frac{1}{32}$	9	44 $\frac{1}{4}$	1 $\frac{1}{2}$	8 $\frac{1}{16}$	30 $\frac{1}{32}$	...
	8739	SFA	18 $\frac{1}{2}$	10 $\frac{1}{2}$	39	3 $\frac{7}{16}$	4 $\frac{2}{32}$	9	38	1 $\frac{1}{2}$	6 $\frac{1}{16}$	25 $\frac{1}{32}$	...
5	8738	SGA	30 $\frac{1}{4}$	15 $\frac{1}{2}$	67	9 $\frac{7}{32}$	7 $\frac{5}{8}$	15	66	1 $\frac{1}{2}$	11 $\frac{9}{32}$	39 $\frac{1}{32}$	...
	8739	SGA	30 $\frac{1}{4}$	12 $\frac{1}{32}$	55	4 $\frac{2}{32}$	7 $\frac{5}{8}$	15	54	1 $\frac{1}{2}$	11 $\frac{9}{32}$	37 $\frac{2}{32}$	...
6▲	8739	SHA	36	21 $\frac{1}{2}$	80	...	...	...	...	...	...	...	...

▲ Size 6 enclosures are floor mounting.

* Above dimensions also for Form FT (standard control transformer). Form FT11 (100 VA extra capacity) and Form FT12 (200 VA extra capacity).

■ Dimension in table for 8738 Series A and 8739 Series A and C only. For 8738 Series B & C and 8739 Series D devices (manufactured only after January 1, 1982) add 1" to NEMA 1 B and E dimensions and NEMA 4 and 12 C and G dimensions.

**Figure 1
NEMA 1 Enclosure****Figure 2
NEMA 4 Enclosure****Figure 3
NEMA 12 Enclosure**



JUNE, 1961

AC REVERSING COMBINATION STARTERS

APPLICATION

With minor exceptions, the National Electric Code requires a disconnect means for every motor. The Class 8738 and Class 8739 devices consist of a Class 8736 reversing magnetic starter and a disconnect means, all in a common enclosure. Class 8738 starters include a disconnect switch, either fusible or non-fusible, while Class 8739 starters include a thermal-magnetic trip circuit breaker.

A single enclosure has many advantages over separate starters and disconnects. The single device takes up less mounting space and makes a neat as well as compact electrical installation. Installation and wiring costs are less, because wiring between the disconnect and starter is made at the factory, and only a single device need be mounted. Should it be necessary to relocate the machine, the cost of moving and relocating a single control is far less than the cost of moving a separate disconnect and starter.

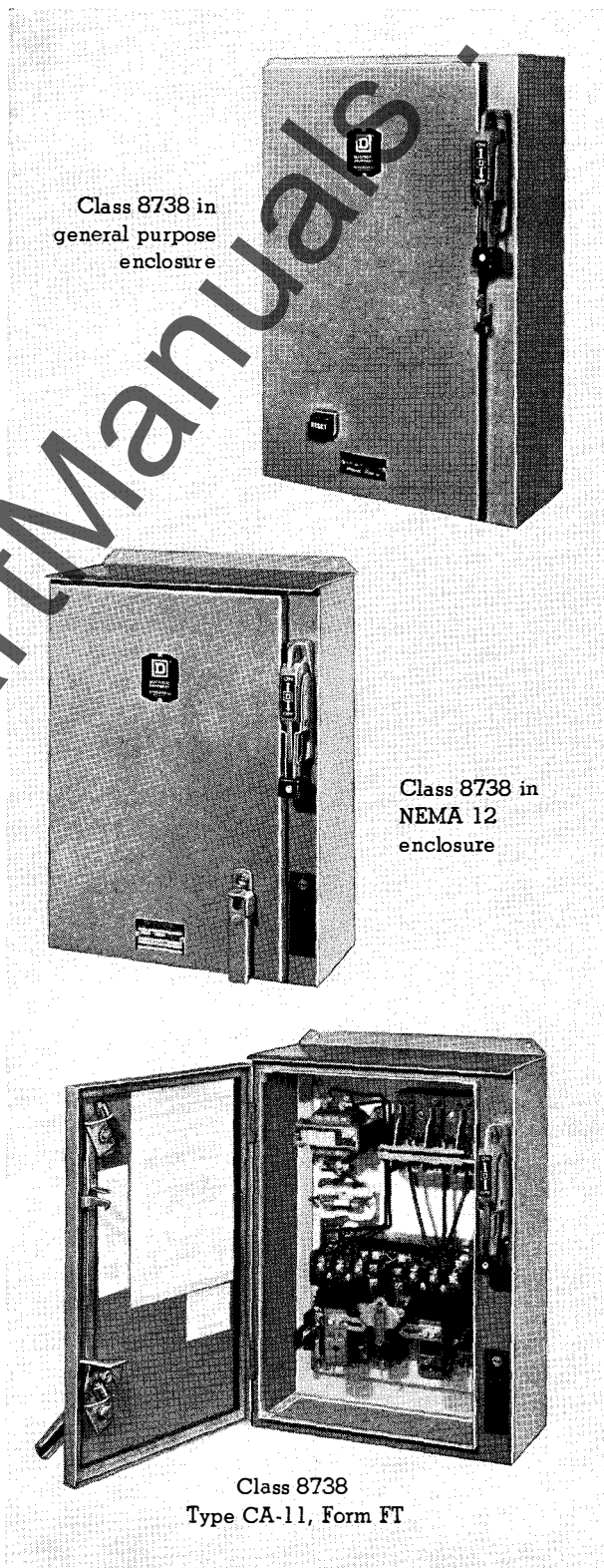
A combination starter provides greater safety for the operator because the cover of the enclosure is interlocked with the external operating handle of the disconnect means. The door cannot be opened with the disconnect means closed. With the disconnect means open, there is easy access to all parts with no hazard involved, inasmuch as there are no parts connected to the power line. This safety feature cannot be obtained with separately enclosed devices. In addition, the cabinet is provided with a means for padlocking the disconnect in the "Off" position.

MAGNETIC STARTERS

The magnetic starters used in these combination starters are Class 8736 magnetic starters described in the Class 8736 Descriptive Sheets of the Motor Control Catalog. All the features, ratings, and operation which apply to Class 8736 starters also apply to Class 8738 and to Class 8739 combination starters. The standard features will not be repeated here.

CLASS 8738 DISCONNECT OPERATING MECHANISM

In addition to the economy of mounting and ease of installation, combination starters are inherently safer, because of the interlocking between the disconnect and the enclosure cover, making it necessary to open the disconnect before the enclosure door can be opened. Depending on the—starter size, and enclosure type, several different operating mechanisms may be used.





AC REVERSING COMBINATION STARTERS

JUNE, 1961

A Side Operating Mechanism is used on Class 8738 starters of all sizes in NEMA 4 enclosures. The side operating handle can be locked in the "Off" position to prevent unauthorized operation. When the handle is thrown to the "On" position, an interlock prevents the enclosure door from being opened.

A Flange Mounted Operating Mechanism is used on Class 8738 combination starters of all sizes in NEMA 1 and 12 enclosures. This is a completely new mechanism featuring increased safety for both maintenance and operating personnel. The same disconnect switch operating mechanism is used on both the NEMA 1 and 12 enclosures. The NEMA 12 enclosure also has a new door closing mechanism. The features of this new design are given in the following paragraphs.

FEATURES OF FLANGE MOUNTED OPERATING MECHANISM

(Used on Class 8738 NEMA 1 and 12 enclosures)

Disconnect Handle does not Separate from the Disconnect Switch Proper when the Door is Opened. This eliminates the possible hazard of false indication of the disconnect switch position should the door be left ajar. The disconnect handle is always in control of the disconnect switch with the door open or closed.

Disconnect can be locked in the "Off" Position with the Door Open or Closed with from One to Three Padlocks. The door can be opened with the disconnect locked "Off" but the disconnect cannot be forced closed under any condition. Electrical maintenance personnel can work on the electrical equipment, yet other maintenance personnel are safe with the disconnect locked off. Safe maintenance is thus a key feature of this design. Rugged construction eliminates breakage of the operating mechanism assembly.

For Application Which Requires the Disconnect be Locked in the "ON" Position a hole can easily be drilled in the upper flange of the disconnect handle pivot housing. The drilled hole allows insertion of a padlock. This feature is particularly important in air conditioning, refrigeration and chemical process applications where the starter must continue to run.

Up and Down Movement of the Operating Handle is a Normal Movement for all Personnel. All guess work about the position of the disconnect is eliminated. A color coded knob on the operating handle also tells at a glance the switch position. In the "ON" position with the handle up, the knob on the handle shows red and in the "OFF" position with the handle down, the knob shows black. A clearly marked "ON-OFF" nameplate is provided with arrows showing the direction of handle movement and position.

The Enclosure Door Cannot be opened with the Switch in the "ON" Position unless a By-pass is Operated.

With the disconnect in the "ON" position, a by-pass must be operated with a screw driver to open the door. This feature alerts personnel to the fact that the switch is "ON". With the switch in the "OFF" position only the door latch need be raised to gain entry to the NEMA 1 enclosure. The NEMA 12 enclosed devices have a special door closing mechanism which will be explained in a later paragraph.

The Disconnect Cannot be Operated with the Door Open unless the Cover Interlock is Deliberately Voided.

Personnel thus cannot accidentally turn on the switch with the door open. Simply pulling down on the operating handle turns the switch "OFF" with the door open or closed.

FEATURES OF DOOR CLOSING MECHANISM

(Used on Class 8738 NEMA 12 enclosures only)

The door closing mechanism used on the new design allows easy opening and closing of the enclosure door and yet provides the dust-tight seal required for the NEMA 12 design.

The Door Closing Mechanism Allows Opening of the Door only after use of a Screwdriver. This feature discourages unauthorized personnel from entering the enclosure. With the disconnect in the "OFF" position, the slotted screw in the door handle must be turned counter-clockwise with a screwdriver while turning the handle and opening the door. The door can be opened with the switch padlocked in the "OFF" position. A nameplate with instructions on how to open or close the door with the switch in the "OFF" position is on the flange of the enclosure. If desired, this nameplate can be removed to further discourage unauthorized entry.

No Tool is Required to Close and Seal the Door. Closing is accomplished by pushing the door closed and turning the door handle. No cover bolts need be secured to seal the door. Rollers are used on the top and bottom of the door sealing bar providing an almost friction-free sealing mechanism which permits the use of extremely high sealing pressure without undue force on the handle. Extra heavy construction insures a tight seal even after extremely long and rough service. Slamming the door regardless of the door handle position does no damage to the door closing mechanism.

The Door Must be Completely Closed before the Disconnect Switch can be Thrown to "ON" Position. Sealing of the door is insured as the disconnect cannot be turned "ON" with the door just partially latched — it must be sealed by turning the door handle to the vertical position. Thus, the dust-tight and oil-tight feature required with the purchase of a NEMA 12 industrial use enclosure is always insured.



JUNE, 1961

A. C. REVERSING COMBINATION STARTERS

INTERCHANGEABLE FUSE CLIPS

(Used on Class 8738 NEMA 1 and 12 Enclosures)

The Spacing of Fuse Clips can be Changed on all fusible type starters (both NEMA 1 and NEMA 12 enclosures) from 250 volt fuse spacing to 600 volt fuse spacing or vice-versa and the size of the fuse clips can be changed with one of the Class 9999 Type S fuse clip kits. The kits contain six fuse clips and mounting screws required for such conversion. The fuse clip block is clearly marked with the ampere and voltage rating for the various fuse clip locations. The fusible starter horsepower ratings can thus be changed affording greater flexibility with a minimum of time and stocking of parts.

OTHER FEATURES

(Class 8738 NEMA 1 and NEMA 12 Enclosures)

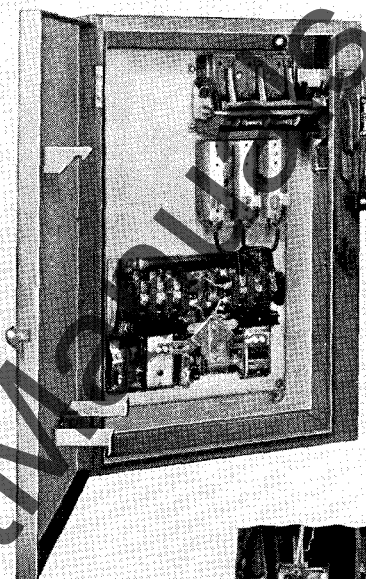
The Enclosure Door can be Padlocked Closed. A simple door latch on the NEMA 1 enclosure allows padlocking the enclosure door independent of the disconnect operating mechanism. The NEMA 12 enclosure door can be padlocked closed by slipping the lock through the door opening handle.

Class 9999 Push Button and Selector Switch Kits can be Added in the Field in the Cover of the General Purpose Enclosure. Class 9001 Type T oil-tight push button, selector switch and pilot light units can be added in the field (or factory installed) in the cover of the NEMA 12 industrial use enclosure door.

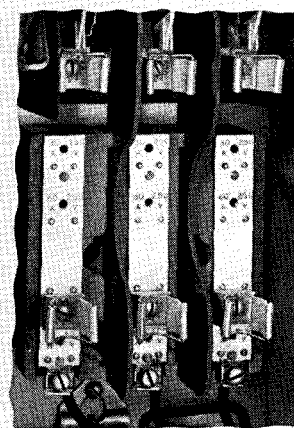
Straight Through Wiring Provided. The three line terminals are located at the top of the enclosure and the three load terminals are at the bottom. The T₂ terminal is provided at the bottom of the enclosure by a terminal block located adjacent to the right hand overload relay. Generous wiring space at the top, bottom and sides of the enclosure is provided.

The Third Overload Relay can easily be Added. Field installation of the third overload relay with a Class 9065 overload relay can easily be accomplished. The T₂ terminal block can easily be removed and the third overload relay substituted.

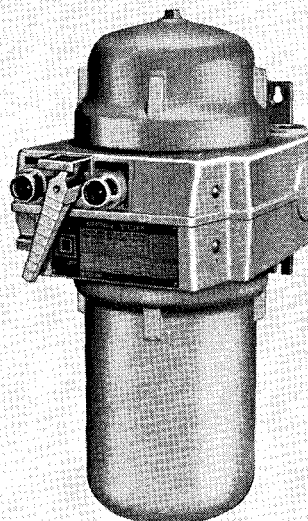
A Disconnect Switch Interlock can be Provided for Either Factory or Field Installation. Either a single or double pole disconnect switch interlock is available and can easily be added in the field with a Class 9999 interlock kit. Thus if a separate control circuit is used, the starter can be de-energized when the switch is thrown to the "OFF" position.



Class 8738
Size 1
general
purpose
enclosure



Interchangeable
fuse clips

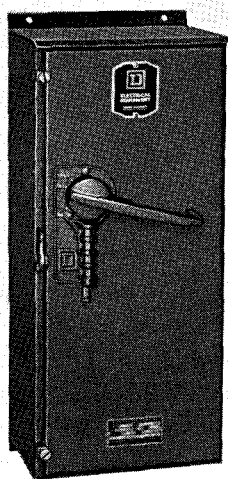


Class 8739
Size 1 in
NEMA 7-9
spin top
enclosure



A. C. REVERSING COMBINATION STARTERS

JUNE, 1961



Class 8739
circuit breaker
type in
NEMA 12
enclosure

CLASS 8739 BREAKER OPERATING MECHANISM

All size Class 8739 starters in NEMA 1 and NEMA 12 enclosures have a front operating mechanism with the following outstanding safety features:

1. The disconnect means may be padlocked in the "Off" position by as many as four padlocks. When locked, the door cannot be opened, nor can the disconnect means be closed.
2. Operation of the disconnect means, with the door open, is discouraged, due to the design of the operating mechanism.
3. The operating handle is self-aligning. If the door is open and the disconnect means be moved to the "On" position, when the door is closed the external handle will indicate the true disconnect position.
4. The enclosure door may be padlocked independently of the operating mechanism.

Class 8739 starters in NEMA 4 enclosures are provided with a front operated circuit breaker mechanism which enables the breaker to be locked in either the "On" or the "Off" position. This mechanism, while similar to that provided on the NEMA 1 and NEMA 12 enclosures, does not have all of the features of enclosure cover interlocking due to the construction of the NEMA 4 enclosure.

NEMA 7-9 Spin Top enclosures are designed with a front operating mechanism located in the collar section. The oper-

ating handle can be locked in either the "On" or "Off" position. These devices are listed and pictured on Class 8739 Price Sheet, Pages 5 and 6.

CLASSES 8738-8739 ENCLOSURES

NEMA 1 — General Purpose Enclosures are intended to prevent accidental contact with live parts and are suitable for general indoor use under normal atmospheric conditions. They are constructed of heavy gauge sheet steel and have hinged covers and sturdy latches, with provisions for padlocking. They are finished inside in baked aluminum and outside in baked standard gray enamel.

NEMA 4 — Water-tight Enclosures are of heavy gauge sheet steel with a corrosion resisting finish. Covers are hinged by means of swing bolts, and especially treated gaskets are compressed by those bolts to prevent the entrance of water between the cover and case. The case has arc welded seams and uses threaded conduit entrances.

NEMA 12 — Dust-tight Enclosures are of sheet steel, provided with cover gaskets to exclude dust. They meet the requirements for NEMA 5 and for NEMA 12 enclosures, as specified in NEMA Standards. Dust-tight enclosures are suitable for use in steel mills and similar locations where non-hazardous dusts are present.

Spin Top (Class 8739 only) — NEMA Type 7-9 — Class I, Groups C and D and Class II, Groups E, F, and G. These enclosures are built in accordance with the requirements of Underwriters' specifications for Class I, Groups C and D, and Class II, Groups E, F, and G, hazardous locations, covered by Article 500 of the National Electrical Code. They are of a three section design consisting of a center collar section plus an upper and lower tank. Each is an individual casting of high density aluminum alloy, thereby obtaining maximum strength and minimum weight.

Threaded joints between the collar section and the tanks provide a flame-tight seal. Acme threads are used to minimize the possibility of stripped threads and positively prevent cross-threading. The arrangement of external threads on the collar section and internal threads on the tanks plus a drip ring on the collar section prevents water from entering at the threads. These threaded joints are also dust-tight and weatherproof without the use of gaskets. Threaded joints are factory lubricated with a silicone grease to permit tank removal at temperatures as low as -70° F. This grease also prevents thread corrosion.

SEPTEMBER, 1963

Supersedes 8738 Dimension Sheet
Page 1, Dated August, 1961



CLASSES **8738**

8739

Dimension
Sheet

PAGE 1

AC REVERSING COMBINATION STARTERS CLASS 8738 — FUSIBLE OR NON-FUSIBLE DISCONNECT SWITCH TYPE CLASS 8739 — WITH CIRCUIT BREAKER

Approximate Dimensions — Not for Construction

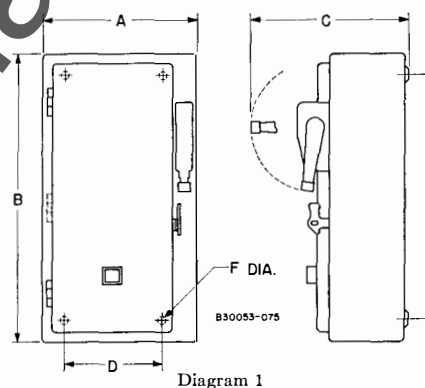
Class 8738 — NEMA 1 Enclosure †

Class 8738 Fusible and Non-Fusible	Diagram 1						Weight
	A	B	C	D	E	F	
Size 0 or 1 Str. — Non-Fusible.....	14 $\frac{1}{8}$	19 $\frac{1}{8}$	12 $\frac{3}{16}$	10 $\frac{7}{8}$	17	$\frac{5}{16}$	51
Size 0 or 1 Str. — Fusible.....	14 $\frac{1}{8}$	22 $\frac{1}{8}$	12 $\frac{3}{16}$	10 $\frac{7}{8}$	20	$\frac{5}{16}$	55
Size 2 Str. — Non-Fusible.....	16 $\frac{5}{32}$	24 $\frac{5}{32}$	13	12 $\frac{3}{8}$	21 $\frac{1}{2}$	$\frac{7}{16}$	105
Size 2 Str. — Fusible.....	16 $\frac{5}{32}$	28 $\frac{5}{32}$	13	12 $\frac{5}{8}$	25 $\frac{1}{2}$	$\frac{7}{16}$	115
Size 3 Str. — Non-Fusible.....	20 $\frac{11}{16}$	27 $\frac{3}{16}$	16 $\frac{9}{32}$	16 $\frac{3}{4}$	24 $\frac{1}{2}$	$\frac{7}{16}$	.....
Size 3 Str. — Fusible.....	20 $\frac{11}{16}$	34 $\frac{3}{16}$	16 $\frac{9}{32}$	16 $\frac{3}{4}$	31 $\frac{1}{2}$	$\frac{7}{16}$	.....
Size 4 Str. — Non-Fusible.....	22 $\frac{11}{16}$	32 $\frac{3}{16}$	18 $\frac{3}{32}$	18 $\frac{3}{4}$	29 $\frac{1}{2}$	$\frac{7}{16}$	.....
Size 4 Str. — Fusible.....	22 $\frac{11}{16}$	43 $\frac{3}{16}$	18 $\frac{3}{32}$	18 $\frac{3}{4}$	40 $\frac{1}{2}$	$\frac{7}{16}$	.....

†Standard enclosures have space for Form FT and FT-1 with 100 VA extra capacity.

Class 8739 — NEMA 1 Enclosure

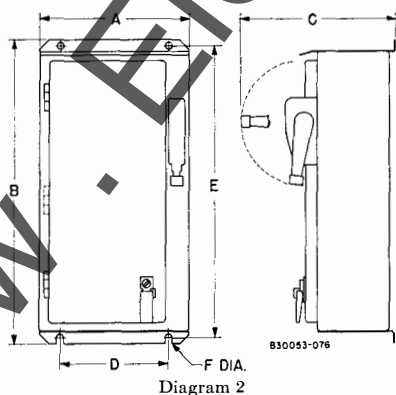
Class 8739	Diagram 1							Weight
	A	B	C	D	E	F		
Size 0 or 1 Str. Form FT or FT-1 (400 VA additional capacity)	14 $\frac{1}{8}$	19 $\frac{1}{8}$	12 $\frac{3}{16}$	10 $\frac{7}{8}$	17	$\frac{5}{16}$		48
Size 2 Str. Form FT or FT-1 (200 VA additional capacity)	16 $\frac{5}{16}$	24 $\frac{5}{16}$	13	12 $\frac{3}{8}$	21 $\frac{1}{2}$	$\frac{7}{16}$		80
Size 3 Str. (Also Form FT or FT-1, 100 VA additional capacity)	20 $\frac{7}{16}$	34 $\frac{3}{16}$	14 $\frac{17}{32}$	16 $\frac{7}{8}$	31 $\frac{1}{2}$	$\frac{7}{16}$		.....
Size 4 Str. (Also Form FT or FT-1, 100 VA additional capacity)	20 $\frac{7}{16}$	34 $\frac{3}{16}$	14 $\frac{17}{32}$	16 $\frac{7}{8}$	31 $\frac{1}{2}$	$\frac{7}{16}$		.....



Class 8738 — NEMA 12 Enclosure †

Class 8738 Fusible and Non-Fusible	Diagram 2						Weight
	A	B	C	D	E	F	
Size 0 or 1 Str. — Non-Fusible.....	14 $\frac{1}{8}$	20 $\frac{3}{4}$	12 $\frac{3}{16}$	12	20	$\frac{5}{16}$	54
Size 0 or 1 Str. — Fusible.....	14 $\frac{1}{8}$	23 $\frac{3}{4}$	12 $\frac{3}{16}$	12	23	$\frac{5}{16}$	60
Size 2 Str. — Non-Fusible.....	16 $\frac{5}{32}$	26 $\frac{15}{32}$	12 $\frac{15}{16}$	13	25 $\frac{3}{8}$	$\frac{7}{16}$	116
Size 2 Str. — Fusible.....	16 $\frac{5}{32}$	30 $\frac{15}{32}$	12 $\frac{15}{16}$	13	29 $\frac{3}{8}$	$\frac{7}{16}$	125
Size 3 Str. — Non-Fusible.....	20 $\frac{11}{16}$	29 $\frac{7}{16}$	16 $\frac{1}{2}$	17 $\frac{1}{2}$	28 $\frac{3}{8}$	$\frac{7}{16}$	.....
Size 3 Str. — Fusible.....	20 $\frac{11}{16}$	36 $\frac{7}{16}$	16 $\frac{1}{2}$	17 $\frac{1}{2}$	35 $\frac{3}{8}$	$\frac{7}{16}$	.....
Size 4 Str. — Non-Fusible.....	22 $\frac{11}{16}$	34 $\frac{7}{16}$	18 $\frac{3}{32}$	19 $\frac{1}{2}$	33 $\frac{3}{8}$	$\frac{7}{16}$	.....
Size 4 Str. — Fusible.....	22 $\frac{11}{16}$	45 $\frac{7}{16}$	18 $\frac{3}{32}$	19 $\frac{1}{2}$	44 $\frac{3}{8}$	$\frac{7}{16}$	.....

†Standard enclosures have space for Form FT and FT-1 with 100 VA extra capacity.



Class 8739 — NEMA 12 Enclosure

Class 8739	Diagram 2							Weight
	A	B	C	D	E	F		
Size 0 or 1 Str. Form FT or FT-1 (400 VA additional capacity)	14 $\frac{1}{8}$	20 $\frac{3}{4}$	12 $\frac{3}{16}$	12	20	$\frac{5}{16}$		55
Size 2 Str. Form FT or FT-1 (200 VA additional capacity)	16 $\frac{5}{16}$	26 $\frac{15}{32}$	13	13	25 $\frac{3}{8}$	$\frac{7}{16}$		90
Size 3 Str. (Also Form FT or FT-1, 100 VA additional capacity)	20 $\frac{7}{16}$	36 $\frac{7}{16}$	14 $\frac{15}{32}$	17 $\frac{1}{4}$	35 $\frac{3}{8}$	$\frac{7}{16}$		.....
Size 4 Str. (Also Form FT or FT-1 100 VA additional capacity)	20 $\frac{7}{16}$	36 $\frac{7}{16}$	14 $\frac{15}{32}$	17 $\frac{1}{4}$	35 $\frac{3}{8}$	$\frac{7}{16}$		.....

All Dimensions are in Inches. All Weights are Approximate Shipping Weights in Pounds and are for Starters Without Form FT.

SQUARE D COMPANY

Dimensions Subject to Change Without Notice.

www.ElectricalPartManuals.com