

Separate Enclosures Replacement Parts Kits and Coils Modification Kits and Accessories

Class 9991/9998/9999



CONTENTS

Description	Page
Separate Enclosures	3
Approximate Dimensions	6
Magnetic Coils	10
Replacement Parts Kits	12
Accessories	17



SQUARE D
GROUPE SCHNEIDER

Separate Enclosures NEMA Type 3R, 4, 4x, and 12 – Class 9991

Separate enclosures can be used with open style devices for field assembly of enclosed controls. These enclosures, plus the open style components, will be equivalent to a factory-assembled device. Separate enclosures are to be used only with the equipment listed below:

- **NEMA Types 4 and 12** Class 9991 separate enclosures for Type S devices are supplied as standard with closing plates. See selection chart below for specific number of closing plates on various enclosures. For applications requiring enclosures without closing plates, consult Square D field office.
- **NEMA Type 3R** enclosures for field assembly of equipment for outdoor applications are provided with three closing plates, a reset mechanism and predrilled panel as standard. For conduit connection to the top of these enclosures, select watertight hubs from listing on Digest Page 3-9 in accordance with applicable code requirements. Square D's NEMA Type 12 enclosures can also be modified for outdoor use. For details, refer to NEMA Type 12 enclosure modification information on Page 5.
NOTE: Not for use in high-corrosive outdoor locations and/or sea coast environments.
- **NEMA Type 4X** enclosures for Type S devices Sizes 0-2 and 30-60 Ampere, are provided as standard without closing plates. Cover-mounted control units for NEMA Type 4X separate enclosures are available as a factory modification only.

When closing plates are removed from NEMA Types 4, 12 & 3R enclosure covers, the openings can be used for easy installation of Class 9001 Type K or Type SK cover-mounted control units.



Type SCW21
NEMA Type 4X
Enclosure



Type SCA11
NEMA Type 12 Enclosure



Type SCW11
NEMA Type 4
Enclosure



Type SCH2
NEMA Type 3R Enclosure

For Use With		Enclosure Classification						
		NEMA Size or Amp Rating	NEMA Type 4X Watertight, Dust-tight and Corrosion-Resistant Glass-Polyester	NEMA Type 4● Watertight and Dusttight Stainless Steel			NEMA Type 12 Dusttight and Driptight		NEMA Type 3R Rainproof, Sleet Resistant, Outdoor Use
Class	Types (All Pole Arrangements)		Type	Type	Number of Closing Plates	Type	Number of Closing Plates	Type
Manual Starters								
2510	MBO, MCO	MO M1 M1P	MW1▲	MW11	...	MA1	....	...
Magnetic Contactors								
8502★	SBO, SCO	0, 1	SCW20	SCW11	2	SCA11	2	SCH2
	SDO	2	SDW20	SDW11	2	SDA11	2	SDH1
	SEO	3	...	SEW11	3	SEA11	3	SEH1
	SFO	4	...	SFW11	3	SFA11	3	SFH1
Magnetic Starters								
8536	SBO, SCO	0, 1	SCW21	SCW11	2	SCA11	2	SCH2
	SDO	2	SDW21	SDW11	2	SDA11	2	SDH1
	SEO	3	...	SEW11‡	3	SEA11‡	3	SEH1
	SFO	4	...	SFW11‡	3	SFA11‡	3	SFH1
Lighting Contactors Non-Combination Electrically- and Mechanically-held								
8903★	LO, LXO	20 Amp	SDW20	SDW11	2	SDA11	2	SDH1
	SMO	30 Amp	SCW20■	SCW11	2	SCA11	2	SCH2
	SPO	60 Amp	SCW20■	SDW11	2	SDA11	2	SDH1
	SQO	100 Amp	...	SEW11‡	3	SEA11‡	3	SEH1
	SVO	200 Amp	...	...	...	...	...	SFH1
Reversing and Two-Speed Horizontally Arranged Contactors and Starters								
8702★	SBO, SCO	0, 1	...	SCW12	3	SCA12	3	...
8736	SDO	2	...	SDW12		SDA12		...
8810	SBO & SCO	0, 1	...	SCW13	3	SCA13	3	...

★ For contactors, replace reset assembly with proper closing plate; for NEMA Type 4 use Class 9001 Type K52, for NEMA Types 3R and 12 use Class 9001 Type K51. Class 9991 Types SCW20 and SDW20 are designed for contactors only, reset closing plates not required.
 ■ For electrically-held devices only.
 ‡ Enclosure suitable for starter with melting alloy overload and solid state overload relays only.
 ● The standard cabinet has a brushed finish. For electropolished finish, specify Form G16.
 ▲ Type MBO, Size MO only.



Separate Enclosures

Class 9991 – NEMA Type 1 and Flush Mounting

Flush Mounting Selection Table

Flush Mounting General Purpose separate enclosures for Type S Sizes 0-2, 30-60 Ampere are provided with knock-outs in the cover for field assembly of one Class 9999 push button or selector switch kit and one Class 9999 pilot light kit. (Refer to Class 9999 for selection.) For Type S Size 3, 100 Ampere, three closing plates are provided for installation of Class 9001 Type K oiltight control units. For enclosure dimensions, refer to Page 6.

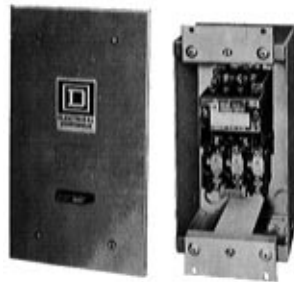
For Use With		NEMA Size or Amp Rating	Flush Mounting General Purpose (Components)			
			Flush Plates		Mounting Strap	Pull Box
Class	Types (All Pole Arrangements)		Standard	Stainless Steel●	Type	Type
			Type	Type		
2510	MBO & MCO	MO M1 M1P	MF1 MF2	(with pullbox and plaster adjustment) (without pullbox but with mounting strap)		
Magnetic Contactors						
8502★	SBO & SCO	0, 1	SCF11	SCF12	SCF2	SCF1
	SDO	2	SDF11	SDF12	SDF2	SDF1
	SEO	3	SEF11	(Enclosure Complete)		
Magnetic Starters						
8536	SBO & SCO	0, 1	SCF11	SCF12	SCF2	SCF1
	SDO	2	SDF11	SDF12	SDF2	SDF1
Lighting Contactors Non-Combination Electrically- and Mechanically-held						
8903★	LO, LXO	20 Amp	SDF13	...	SDF2	SDF1
	SMO 1-4	30 Amp	SCF11	...	SCF2	SCF1
	SMO 10-13	30 Amp	SCF13	...	SCF2	SCF1
	SPO 1-4	60 Amp	SDF11	...	SDF2	SDF1
	SPO 10-13	60 Amp	SDF13	...	SDF2	SDF1
	SQO 1-13	100 Amp	SEF11	(Enclosure Complete)		

★ For contactors, replace reset assembly with proper closing plate. For Flush Mounting use Class 9999 Type SG2 except for Class 9991 Type SDF11 which requires a Class 9001 Type K51 or K11 closing plate. Class 9991 Types SEF11 and LF1 are designed for contactors only, reset closing plates not required.

● The standard cabinet has a brushed finish. For electropolished finish, specify Form G16.



**Type SCG8
NEMA Type 1
Enclosure**



**Flush Mounting Starter With
Pull Box and Mounting Strap
Having Plaster Adjustment Feature**

NEMA Type 1 Selection Table

The **NEMA Type 1 General Purpose** separate enclosures listed below, when used with open style components, will be equivalent to a standard factory assembled control device.

For Use With			General Purpose NEMA Type 1 Enclosure Class 9991
Class	Type	Number of Poles	Type
8501	CO	All	UE1▲
	XO	2-12, 2-4 w/ Attachments	UE7
	XDO	2-8 wo/Attachments	
8502	SAO, SBO, SCO	2-4	SCG7
	SDO	2-4	SDG7
	SEO	2-4	SEG7
	SFO	2-4	SFG8
8536	SAO, SBO, SCO	2-4	SCG8
	SDO	2-4	SDG8
	SEO	2-4	SEG8♦
	SFO	2-4	SFG8♦
	SGO	3	SGG8♦
8702, 8736	SBO, SCO	All	SCG9●
	SDO	All	SDG9●
8903	LO, LXO	All	LXG1
	SMO	All	SCG7■
	SPO	All	SDG7■
	SQO	All	SFG8●
8910	DP	1-2	DPG1
	DPA12, 13, 22, 23, 32, 33, 42, 43	2-3	DPG1
	DPA14, 24, 34, 44, 52, 53	2-4	DPG2
	DPA62, 63	2-3	DPG3
	DPA72, 73, 92, 93, 122, 123	2-3	DPG4
	H, J, K, L & M	All	UE6
8922	ETBC20 & 36	All	SCG9●
	ETBC60	All	SDG9●
9050	AO (Single Head)	All	UE6
	BO, CO	All	BCG
	HO	All	UE6
9070	EO51, EO61, EO71, K750, K1000	—	SDG4
	EO2, EO3, EO4, EO15, EO16 EO18, EO19, T75, T100, T150, T200, T250, T300, T350, T500	—	LG1
	EO1, EO17, T50	—	UE7

- ▲ CP2 Discount Schedule, not CP1.
- ♦ Enclosure suitable for starter with melting alloy or solid state overload relays **only**.
- For horizontally-arranged Class 8702 contactors and Class 8922 breakers replace reset assembly with a Class 9001 Type K51 closing plate.
- For electrically-held contactors only.



Separate Enclosures NEMA Types 1, 4, and Oversize – Class 991



**Type SCW4
NEMA Type 4 Enclosure**

NEMA Types 1, 4 and Oversized

For Addition of Control Circuit Transformer

The Class 991 enclosures listed below will accept an open type Class 8502 or 8536, Type S, NEMA Size 0, 1, 1P, or 2 contactor or starter along with a fused-control circuit transformer (Form F4T) to allow field assembly of enclosed controllers. In the cover of the Class 991 Type SCG1 enclosure, knock-outs are provided for field addition of Class 9999 cover-mounted control units. All other Class 8502 & 8536 enclosures include a panel with space and drilling for an open-type device and a fused-control circuit transformer. In addition, three closing plates are included in each cover for easy installation of Class 9001 Type K or SK control units.

Oversized enclosures for open type Class 8903 Type L & LX 20 Ampere and Type S 30 and 60 Ampere electrically and mechanically held lighting contactors include a panel with space and drilling for an open-type contactor and fused-control circuit transformer (Form F4T) and/or an auxiliary relay for use with single pole pilot devices (Form R6). When an auxiliary relay is required, use a Class 8501 Type XO11 relay. Three closing plates are provided as standard for easy installation of Class 9001 Type K or SK control units. Note: A Class 991 Type SCG1 NEMA Type 1 separate enclosure can also be used for Class 8903 Type SMO30 Ampere electrically-held lighting contactor if Form F4T (control transformer) with or without cover control units is required.



**Type SCG1
with Starter, Transformer
and Fuse Block Installed**

For Use With				Class 991 Enclosure			Recommended Class 9070 [▼] Transformer Selection					Fuse Block
Class	Type	NEMA Size or Amp Rating	No. of Poles	General Purpose NEMA Type 1	Watertight and Dusttight Stainless Steel NEMA Type 4 [◆]	Dusttight and Driptight Industrial Use NEMA Type 12 [‡]	Standard		Extra Capacity			
				Type	Type	Type	Type	VA	100 VA Type	150 VA Type	300 VA Type	
Magnetic Contactors and Starters												
* 8502 & 8536	SBO & SCO	0 & 1	1-3 4-5	SCG1	SCW4	SCA4	T50	50 VA	T100▲	T150▲	...	Class 9999 Type SFR4
							T100▲	100 VA	...	T150▲	...	
	SDO	2	2-5	SDG4	SDW4	SDA4	T100	100 VA	...	T150	T300	
Lighting Contactors Non-Combination												
8903	LO, LXO	20A	All	SDG3	SDW3	SDA3	T50	50 VA	Class 9999 Type SFR4
							T50	50 VA	T100▲	T150▲	...	
	SMO	30A	1-3 4-5				T100▲	100 VA	...	T150▲	...	
	SPO	60A	2-5				T100	100 VA	...	T150	T300	

▲ For mounting in SCG1 enclosure a Class 991 Type S1 adapter bracket is also required.
[‡] NEMA Type 12 modified for outdoor use (see below).
[▼] For price list and complete description, see the Class 9070 section. NOTE: Class 991 Type SCG1 enclosure is provided with a Class 9999 Type SF4 fuse block as standard.
* For contactors (Class 8502), a separate closing plate is provided with each enclosure to replace the reset mechanism with the exception of Class 991 Type SCG1 which requires a separate reset closing plate Class 9999 Type SG2.
● The standard cabinet has a brushed finish. For electropolished finish, specify Form G16.



**Type SCA4
NEMA Type 12 Enclosure**

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.

Control Unit Selection Table

Class 9999 Type	Control Function	Kit Contents	
		Class & Type	Description
SA3	Start-Stop Pushbutton	1-9001 KR1B 1-9001 KR1R 1-9001 KN201 1-9001 KN202 2-9001 KA1	Start Operator Stop Operator "Start" Legend Plate "Stop" Legend Plate Contact Block
SC8	Hand-Off-Auto Selector Switch	1-9001 KS43B 1-9001 KN260 1-9001 KA1	Selector Operator Switch "Hand-Off-Auto" Legend Plate Contact Block
SP28R	Pilot Light (120 V)	1-9001 KP1R31	Red Pilot Light

Class 9001 Type K oiltight/watertight control units can be easily installed in NEMA Types 4, 12, and oversized NEMA Type 1 separate enclosures provided with closing plates. When installing control units simply remove the closing plates and install the proper Class 9001 Type K components. Convenient control unit kits complete with assembled and pre-wired operators for quick installation are available as Class 9999 user modification kits. See table to the left for contents of each control unit kit. Class 9001 Type SK NEMA Type 4X corrosion resistant control units may be used as an alternate.



Separate Enclosures

Class 9991 – Approximate Dimensions

NEMA Type 1 – General Purpose Enclosures (Standard)

Class 9991 Type	For Use With				Dimensions (inches/millimeters) (See Figure 1)														Weight (Lbs)
	Class	Type	Size	No. of Poles	Fig. No.	Mounting Screws	A	B	C	D	E	F	G	H	I	J	K	L	
LXG1	8903	LO, LXO	20 Amp	2-12	1	...	7.81 198	12.69 322	6.03 153	...	1.09 28	10.50 267	1.09 28	1.09 28	5.63 143	5.75 146	1.09 28	5.63 143	8
SCG7	8903	SMO (E.H.)	30 Amp	All	1	(3)#10	6.00 152	10.00 254	5.28 134	3.00 76	0.88 22	8.13 206	1.00 25	0.94 24	4.13 105	5.00 127	...	...	4
	8502	SBO SCO	0 1	All															
SCG8	8536	SAO	00	2-3	1	(3)#10	6.00 152	10.00 254	5.28 134	3.00 76	0.88 22	8.13 206	1.00 25	0.94 24	4.13 105	5.00 127	...	...	4
DPG2	8910	DP	...	...	1	(4)1/4"	7.81 198	12.69 322	6.03 153	...	1.09 28	10.50 267	1.09 28	1.09 28	5.63 143	5.75 146	1.09 28	5.63 143	8
SDG7	8903	SPO (E.H.)	60 Amp	2-12	1	(4)1/4"	7.81 198	12.69 322	6.03 153	...	1.09 28	10.50 267	1.09 28	1.09 28	5.63 143	5.75 146	1.09 28	5.63 143	8
SDG8	8536	SDO	2	All	1	(4)1/4"	7.81 198	12.69 322	6.31 160	...	1.09 28	10.50 267	1.09 28	1.09 28	5.63 143	5.75 146	1.09 28	5.63 143	8
DPG3	8910	DPA	...	...	1	(4)3/8"	11.44 286	21.81 554	8.00 203	...	1.53 39	18.75 476	1.53 39	1.53 39	8.38 213	7.75 197	1.53 39	8.38 213	23
SEG7	8502	SEO	3	All	1	(4)3/8"	11.44 286	21.81 554	8.38 213	...	1.53 39	18.75 476	1.53 39	1.53 39	8.38 213	7.75 197	1.53 39	8.38 213	23
SEG8	8536	SEO	3	All	1	(4)3/8"	11.44 286	21.81 554	8.38 213	...	1.53 39	18.75 476	1.53 39	1.53 39	8.38 213	7.75 197	1.53 39	8.38 213	23
DPG4	8910	DPA	...	...	2	(4)7/16"	11.25 286	25.15 639	8.99 228	8.60 218	1.25 32	1.25 32	22.31 567	1.42 36	0.44 11	...	...	...	34
SFG8	8502	SFO	4	All	2	(4)7/16"	11.25 286	25.15 639	8.99 228	8.60 218	1.25 32	1.25 32	22.31 567	1.42 36	0.44 11	...	...	...	34
	8536	SFO	4	All															
SCG9	8903	SQO (E.H. & M.H.)	100 Amp	All	2	(4)5/16"	11.88 302	11.88 302	7.41 188	9.75 248	1.06 27	1.06 27	9.75 248	1.06 27	0.31 8	...	...	...	16
	8702†	SBO, SCO	0 & 1	All															
SDG9	8922	ETBC20, ETBC36	...	...	2	(4)5/16"	14.88 378	14.13 359	7.56 192	12.75 324	1.06 27	1.06 27	12.00 305	1.06 27	0.31 8	...	...	...	24
SDG9	8702†	SCO	2	All	2	(4)5/16"	14.88 378	14.13 359	7.56 192	12.75 324	1.06 27	1.06 27	12.00 305	1.06 27	0.31 8	...	...	...	24
SDG9	8922	ETBC60	...	...	2	(4)5/16"	14.88 378	14.13 359	7.56 192	12.75 324	1.06 27	1.06 27	12.00 305	1.06 27	0.31 8	...	...	...	24

† Standard enclosure has space for a fused control transformer, Form F4T, on Sizes 0-2.

NEMA Type 1 – General Purpose Enclosures (Oversize)

Class 9991 Type	For Use With				Dimensions (inches/millimeters) (See Figure 2)												Weight (Lbs)
	Class	Type	Size	No. of Poles	Fig. No.	Mounting Screws	A	B	C	D	E	F	G	H	I		
SDG3	8903	LO, LXO SMO (M.H.) SPO (Form F4T)	20 Amp 30 Amp 60 Amp	All	2	(4)5/16"	14.88 378	14.13 359	7.56 192	12.75 324	1.06 27	1.06 27	12.00 305	1.06 27	0.31 8	15	
SDG4	8502	SDO (Form F4T)	2	All													
	8536	SDO (Form F4T)	2	All													
SDG4	9070	EO51, EO61, EO71, T750, T1000	2	(4)5/16"	14.88 378	14.13 359	7.56 192	12.75 324	1.06 27	1.06 27	12.00 305	1.06 27	0.31 8	21	
SCG1	8502	SBO, SCO (Form F4T)	0, 1	All	3	(4)9/32"	6.34 161	15.88 403	5.19 132	4.66 118	0.84 21	14.38 365	0.75 19	0.28 7	9	SCG1	
	8536	SBO, SCO (Form F4T)	0, 1	All													
	8903	SMO (E.H.) (Form F4T)	30 Amp	All													

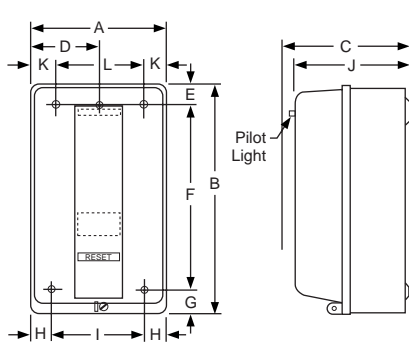


Figure 1

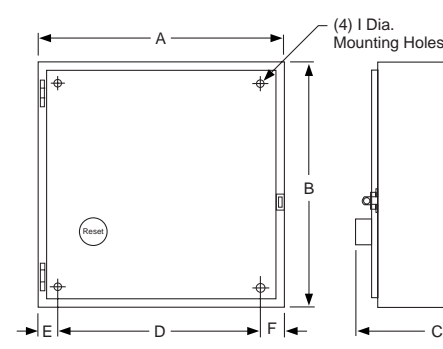


Figure 2

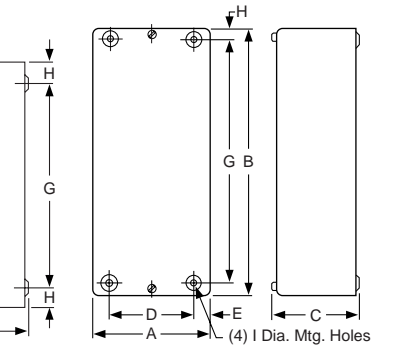


Figure 3

Separate Enclosures Approximate Dimensions— Class 9991

NEMA Type 1 – General Purpose Enclosures

Class 9991 Type	For Use With			Figure	Dimensions (inches/millimeters) (see Figure 4)										Weight (Lbs)
	Class	Type	Number of Poles		A	B	C	D	E	F	G	H	J	L	
UE1	8501	CO	All	4	3.63 92	5.28 134	3.31 84	1.88 48	3.63 92	1.06 27	1.50 38	1/4"*	1/2" - 3/4"		2
UE6	8910	H, J, K L & M	All		4.91 125	5.75 146	5.53 140	3.50 89	4.38 111	1.56 40	2.00 51	9/32"	1/2" - 3/4" 1" - 1 1/4"	1/2" - 3/4"	2
	9050	AO (Single Head) HO	All												
UE7	8501	XO	2-12, 2-4 w/ Attachments		4.87 125	7.79 196	7.53 191	3.50 89	6.38 162	1.31 33	1.88 48	#10	1/2" - 3/4"		4
	9070	EO1, EO17 T25, & T50	.....											
LG1	9070	EO2, EO3, EO4, EO15, EO16, EO18, EO19, K75, K100, K150, K200, K250, K300, K350, & K500	.....		7.53 191	9.78 248	5.91 150	6.13 155	8.38 213	1.31 33	1.88 48	9/32"	1/2" - 3/4" - 1"▲		10
BCG	9050	BO, CO	All	5.31 135	9.31 237	5.44 138	2.50 64	7.00 178	1.81 46	1.69 43	5/16"	1/2" - 3/4"		8 1/2	

* Class 9991 UE1 has only (3) -H diameter mounting holes; 2 in the bottom as shown and 1 centered at the top.

▲ Class 9991 LG1 has three knockouts, top and bottom.

NEMA Type 3R – Rainproof and Sleet-Resistant Enclosures

Class 9991 Type	For Use With				Dimensions (inches/millimeters) (see Figure 5)																K.O. X	K.O. Y	
	Class	Type	Size	No. of Poles	A	B	C	D1	D2	E	F	G1	G2	H1	H2	J	K	L	M	N			P
SCH2	8502 8536	SBO, SCO	0, 1	All	8.83 224	12.30 312	7.12 181	1.39 35	1.44 37	6.00 152	7.50 191	2.61 66	2.19 56	2.08 53	2.62 66	14.28 363	1.37 35	1.37 35	1.88 48	4.38 111	1.83 46	1/2 3/4	1/2 3/4
	8903	SMO	30 Amp																				
SDH1	8502 8536	SDO	2	All																			
	8903	LO LXO	20 Amp		9.83 250	16.30 414	6.62 219	1.39 35	1.44 37	7.00 178	11.50 292	2.61 66	2.19 56	2.08 53	2.62 66	16.78 426	1.31 33	1.75 44	2.13 54	4.88 124	1.83 46	1 1 1/4	1/2 3/4
	8903	SPO	60 Amp																				
SEH1	8502 8536	SEO	3	All	12.63 326	25.30 643	8.62 219	1.39 35	1.44 37	10.00 254	20.60 521	2.61 66	2.19 56	2.08 53	2.62 66	19.78 502	1.31 33	2.31 59	2.69 68	6.38 162	1.83 46	1 1 1/4	1/2 3/4
	8903	SQO	100 Amp																				
SFH1	8502 8536	SFO	4	All	12.63 326	40.30 1024	9.12 232	1.39 35	1.44 37	10.00 254	35.50 902	2.61 66	2.19 56	2.08 53	2.62 66	20.28 515	1.31 33	2.31 59	2.69 68	6.38 162	1.83 46	1 1 1/4	1/2 3/4
	8903	SVO	200 Amp		2-3																		

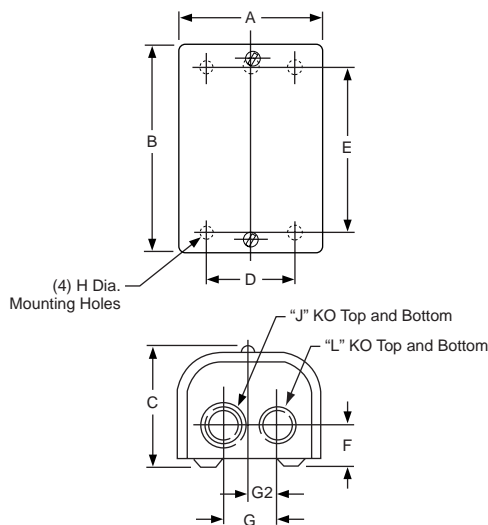


Figure 4

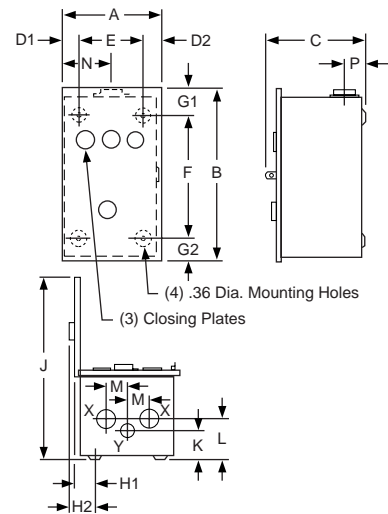


Figure 5

Dual Dimensions: INCHES
Millimeters



Separate Enclosures

Class 9991 – Approximate Dimensions

NEMA Type 4X – Watertight and Corrosion Resistant Enclosures

Class 9991 Type	For Use With				Dimensions (inches/millimeters) (see Figure 6)													Hub Dia.		Weight (Lbs)
	Class	Type	NEMA Size or Amp Rating	No. of Poles	A	B	C	D	E	F	G	H	I	J	K	L	Bot. Only W	Top & Bot. X		
SCW20	8903	SMO (E.H.)	30A	All	6.50 165	6.44 164	12.13 308	0.75 19	5.00 127	8.25 210	1.69 43	3.34 85	10.0 6 256	1.31 33	2.13 54	0.31 8	3/4"	1"	7	
	8502	SBO, SCO	0, 1	All																
SCW21	8536	SBO, SCO	0, 1	All																
SDW20	8903	LO, LXO	20A	All	8.50 216	7.06 179	13.88 352	0.75 19	7.00 178	10.5 0 267	1.69 43	3.91 99	11.9 4 303	1.63 41	2.38 60	0.31 8	3/4"	1 1/2"	13	
	8903	SPO (E.H.)	60A	All																
	8502	SDO	2	All																
SDW21	8536	SDO	2	All																

NEMA Type 4 – Watertight Enclosures (Standard)

Class 9991 Type	For Use With				Dimensions (inches/millimeters) (see Figure 6)													Hub Dia.		Weight (Lbs)
	Class	Type	Size	No. of Poles	A	B	C	D	E	F	G	H	I	J	K	L	Bot. Only W	Top & Bot. X		
SCW11	8903	SMO	30 A	All	6.38 162	7.13 181	13.19 335	1.56 40	3.25 83	12.00 305	0.59 15	1.88 48	11.78 299	1.63 41	2.31 59	0.31 8	3/4"	1"	12	
	8502	SBO, SCO	0, 1	All																
	8536	SBO, SCO	0, 1	All	6.38 162	7.81 198	13.19 335	1.56 40	3.25 83	12.00 305	0.59 15	1.88 48	11.78 299	1.63 41	2.31 59	0.31 8				
SDW11	8903	LO, LXO	20 A	All	8.13 206	7.88 200	16.19 411	1.56 40	5.00 127	15.00 381	1.09 28	1.94 49	14.75 375	2.00 51	2.63 67	0.31 8	3/4"	1 1/2"	18	
	8903	SPO	60 A	All																
	8502	SDO	2	All																
	8536	SDO	2	All																8.13 206	8.56 217	16.19 411	1.56 40	5.00 127	15.00 381	1.09 28	2.88 73	14.75 375	2.00 51	2.63 67	0.31 8
SEW11	8903	SGO	100 A	All	18.15 461	8.77 223	32.21 818	3.08 78	12.00 305	30.50 775	0.86 22	3.67 93	26.71 678	2.58 66	3.19 81	0.44 11	3/4"	2 1/2"	51	
	8502	SEO	3	All																
	8536	SEO	3	All	18.15 461	9.58 243	32.21 818	3.08 78	12.00 305	30.50 775	0.86 22	4.48 114	26.71 678	2.58 66	3.19 81	0.44 11				
SFW11	8536	SFO	4	All	18.15 461	8.77 223	32.21 818	3.08 78	12.00 305	30.50 775	0.86 22	3.67 93	26.71 678	2.58 66	3.19 81	0.44 11	3/4"	2 1/2"	51	
	8502	SFO	4	All																

NEMA Type 4 – Watertight Enclosures (Oversize)

Class 9991 Type	For Use With				Dimensions (inches/millimeters) (see Figure 7)													Hub Dia.		Weight (Lbs)
	Class	Type	Size	No. of Poles	A	B	C	D	E	F	G	H	I	J	K	L	Bot. Only W	Top & Bot. X		
SCW2	8702	SCO	1	All	12.63 321	7.81 198	14.69 373	2.56 65	7.50 191	13.50 343	.59 15	3.88 98	18.41 468	1.66 42	2.31 59	0.31 8	3/4"	1"	23	
	8736																			
SCW3	8810	SBO, SCO	0, 1	All	12.63 321	7.81 198	14.69 373	2.56 65	7.50 191	13.50 343	.59 15	3.88 98	18.41 468	1.66 42	2.31 59	0.31 8	3/4"	1"	19	
	8502																			
SCW4	8502	SBO, SCO (Form F4T)	0, 1	All	12.63 321	7.81 198	14.69 373	2.56 65	7.50 191	13.50 343	.59 15	3.88 98	18.41 468	1.66 42	2.31 59	0.31 8	3/4"	1"	24	
	8536																			
SDW2	8702	SDO	2	All	14.88 378	7.25 184	16.19 411	2.56 65	9.75 248	15.00 381	.38 10	3.88 98	20.88 530	1.72 44	2.63 67	0.31 8	3/4"	1 1/2"	25	
	8736																			
SDW3	8903	LO, LXO, SPO (Form F4T)	20 A, 30 A, 60 A	All	14.88 378	7.25 184	16.19 411	2.56 65	9.75 248	15.00 381	.38 10	3.88 98	20.88 530	1.72 44	2.63 67	0.31 8	3/4"	1 1/2"	29	
	8502																			
SDW4	8502	SDO (Form F4T)	2	All	14.88 378	7.25 184	16.19 411	2.56 65	9.75 248	15.00 381	.38 10	3.88 98	20.88 530	1.72 44	2.63 67	0.31 8	3/4"	1 1/2"	28	
	8536																			

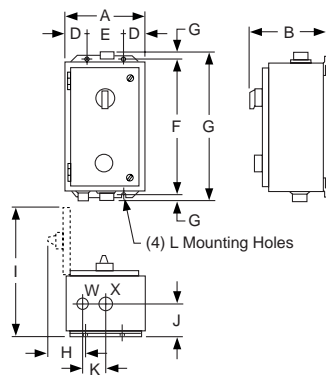


Figure 6

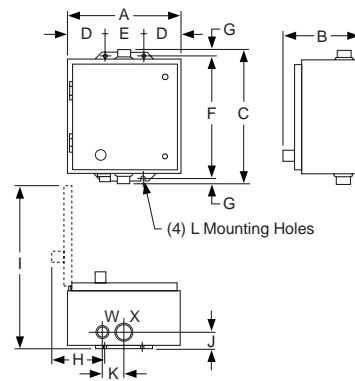


Figure 7

Dual Dimensions: INCHES
Millimeters



Separate Enclosures Approximate Dimensions— Class 9991

NEMA Type 12 – Dusttight and Driptight Enclosures (Standard)

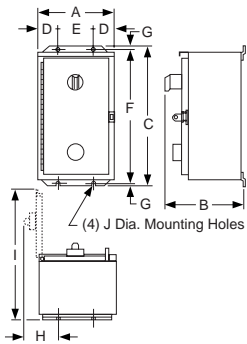


Figure 8

Class 9991 Type	For Use With			Dimensions (inches/millimeters) (see Figure 8)	No. of Poles	Dimensions (inches/millimeters)										Weight (Lbs)
	Class	Type	Size			A	B	C	D	E	F	G	H	I	J	
SCA11	8502	SBO, SCO	0, 1	All	6.38	8.53	12.75	1.56	3.25	12.00	0.38	3.56	12.50	0.31	10	
	8536	SBO, SCO	0, 1	All	162	217	324	40	83	305	10	90	318	8		
	8903	SMO	30 A	All												
SDA11	8502	SDO	2	All										15		
	8536	SDO	2	All	8.13	9.28	16.00	1.56	5.00	15.00	0.50	3.56	15.38		0.31	
	8903	LO, LXO	20 A	All	206	236	406	40	127	381	13	90	391		8	
SEA11	8903	SQO	100 A	All	18.15	9.24	31.50	3.08	12.0	30.50	0.50	3.67	26.71	0.44	51	
	8502	SEO	3	All	461	235	800	78	305	775	13	93	678	11		
	8536	SEO	3	All	18.15	9.58	31.50	3.08	12.0	30.50	0.50	4.48	26.71	0.44		
SFA11	8536	SFO	4	All	461	243	800	78	305	775	13	114	678	11	51	
	8502	SFO	4	All	18.15	9.24	31.50	3.08	12.0	30.50	3.50	3.67	26.71	0.44		

NEMA Type 12 – Dusttight and Driptight Enclosures (Oversized)

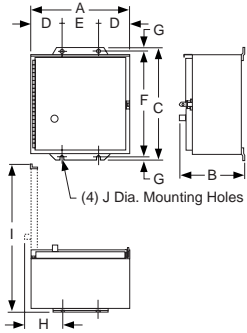


Figure 9

Class 9991 Type	For Use With			Dimensions (inches/millimeters) (see Figure 9)	No. of Poles	Dimensions (inches/millimeters)										Weight (Lbs)
	Class	Type	Size			A	B	C	D	E	F	G	H	I	J	
SCA2	8702	SCO	1	All											17	
	8736	SCO	1	All												
SCA3	8810	SBO, SCO	0, 1	All	11.88	7.75	13.5	2.56	6.75	12.75	0.38	3.66	18.13	0.31	18	
					302	197	343	65	171	324	10	93	460	8		
SCA4	8502	SBO, SCO	0, 1	All										19		
	8536	(Form F4T)														
SDA2	8702	SDO	2	All										24		
	8736	SDO	2	All												
SDA3	8903	LO, LXO	20 A	All	14.88	7.88	16.00	2.56	9.75	15.00	0.50	3.66	21.25	0.31	27	
		SMO, SPO	30 A		378	200	406	65	248	381	13	93	540	8		
SDA4	8502	SDO	2	All										27		
	8536	(Form F4T)														

Flush Mounting General Purpose Enclosures

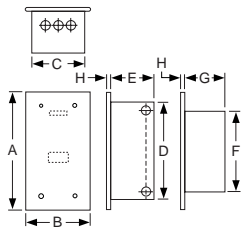


Figure 10

Class 9991 Type	For Use With			Dimensions (inches/millimeters) (see Figure 10)	No. of Poles	Dimensions (inches/millimeters)								Weight (Lbs)
	Class	Type	Size			A	B	C	D	E	F	G	H	
SDF13 (w/SDF1 & SDF2)	8903	LO, LXO	20 A	All	15.19	8.94	7.63	12.88	5.44	10.94	5.13	0.38	17	
					386	227	194	327	138	278	130	10		
SCF11 (w/SDF1 & SDF2)	8502	SBO, SCO	0, 1	All									10	
	8536	SBO, SCO	0, 1	All	13.44	7.19	5.88	11.13	4.75	9.19	4.50	0.38		
	8903	SMO (E.H.)	30 A	All	341	183	149	283	121	233	114	10		
SDF11 (w/SDF1 & SDF2)	8502	SDO	2	All									17	
	8536	SDO	2	All	15.19	8.94	7.63	12.88	5.44	10.94	5.13	0.38		
	8903	SPO (E.H.)	60 A	All	386	227	194	327	138	278	130	10		
SEF11	8502	SEO	3	All	31.00	16.75	14.25	26.25	8.00	0.18	48	
	8903	SQO	100 A	All	787	425	362	667	203			5		



Magnetic Coils

Class 9998

Replacement AC Magnet Coils for Magnetic Contactors and Starters
(Refer to Table 2 on Page 11 for listing of mechanically-held unlatch coils.)

Equipment To Be Serviced				Coil Prefix or Class and Type	Hz	SUFFIX NUMBER (Complete Coil Number Consists of Prefix or Class and Type Followed by Suffix Number)												Coil Volt-Amperes	
Device	Size	Type	Poles			24 Volts	110-115 Volts	120 Volts	208 Volts	220 Volts	240 Volts	277 Volts	380 Volts	440 Volts	480 Volts	550 Volts	600 Volts	In-rush	Sealed
Coils for Present Design Magnetic Contactors and Starters Classes 8502, 8536, 8538, 8539, 8606, 8630, 8640, 8647, 8650, 8651, 8702, 8736, 8739, 8810, 8811, 8812, and 8903	30 Amp	L	2-6	9998L	60 50	23 24	.... 44	44 45	50 52	◇ 53	53 54	55 56	.... 60	.... 62	62 63	65 66	150 140	30 30
			8-12	9998LH	60 50	23 24	.... 44	44 45	50 52	◇ 53	53 54	55 56	.... 62	.... 62	62 63	65 66	180 170	35 35
		LX (Unlatch)	2-4	9998L	60 50	23 24	.... 44	44 45	50 52	.... 53	53 54	55 56	.... 60	.... 62	62 63	65 66	150 140	.... ....
			6-12	9998LH	60 50	23 24	.... 44	44 45	50 52	.... 53	53 54	55 56	.... 62	.... 62	62 63	65 66	180 170	.... ....
	00	SA▲ (Series B)	All	9998SAC	60 50	23	◇ 45	45	52	◇ 54	54	55	59 62	◇ 62	62	65 65	165	33	
	00, 0, 1, 1P & 30 Amp	SA (Series A) SB, SC & SM	All	31041-400	60 50	20 22	◇ 42	42 43	48	◇ 51	51 53	52	56 57	◇ 60	60 61	62 64	245 232	27 26	
					2 & 60 Amp	SD & SP	2 & 3	31063-409	60 50	16 17	◇ 38	38 39	44	◇ 47	47 48	49	53 54	◇ 57	57 58	60 61	311 296	37 36
	4 & 5	31063-400	60 50	16 17			◇ 38	38 39	44	◇ 47	47 48	49	53 54	◇ 57	57 58	60 61	438 429	38 37	
			3 & 100 Amp	SE & SQ	2 & 3	31074-400	60 50	16 17	◇ 38	38 39	44	◇ 47	47 48	49	53 54	◇ 57	57 58	60 61	700 678
	4 & 5	31091-400			60 50 17	◇ 38	38 39	44	◇ 47	47 48	49	53 54	◇ 57	57 58	60 61	1185 1260	85 89	
			4 & 200 Amp	SF & SV	All	31091-400	60 50 38	38 39	44	◇ 47	47 48	49	53 54	◇ 57	57 58	60 61	1185 1260	85 89
	5 & 300 Amp	SG & SX	All	31096-400	60 50	.... 09	◇ 09	09 10	15	◇ 18	18	19	21 22	◇ 24	24	29 30	2970 2970	212 250
	6 & 7	SH & SJ	2-3	Coil Part Number 31104-400-50 (All System Voltages)													1780	48	
	400, 600 & 800 Amp	SY, SZ, SJ (Elect. Held)															1960	59	
		400, 600 & 800 Amp	SY, SZ, SJ (Mech. Held)	2-3	31104-418	60 50	◇ 09	09	15	◇ 18	18	19	◇ 24	24	29	29	1530 1250

For Obsolete Design Magnetic Contactors and Starters

Coils for OBSOLETE Design Magnetic Contactors and Starters Classes 8502 and 8535▼	00	A (Series B & C)	All	31012-400	60 50	23 25	42 43	43 46	49	◇	52 55	55	58 60	60 61	61 64	63 65	65 67	118 115	10.5 10
	00	SA (Series A)	All	31041-400	60 50	20 22	◇ 42	42 43	48	◇ 51	51 53	52	56 57	◇ 60	60 61	62 64	245 232	27 26	

◇ Use next higher voltage, 60 Hz coil.

▲ Use on Type S series B devices only.

* PH and PHD are Class 8501 relays.

▼ Includes reversing, two-speed and similar devices. Select coil based on NEMA size of basic starter or contactor.



Replacement AC Magnet Coils for Relays, Timers and Contactors

Equipment To Be Serviced			Coil Prefix or Class and Type	Hz	SUFFIX NUMBER (Complete Coil Number Consists of Prefix or Class and Type Followed by Suffix Number)												Coil Volt-Amperes		
Device	Type	Poles			24 Volts	110-115 Volts	120 Volts	208 Volts	220 Volts	240 Volts	277 Volts	380 Volts	440 Volts	480 Volts	550 Volts	600 Volts	In-rush	Sealed	
8501 & 8508 (Relays)	BH & BR	All	1861-S1	60 50	R22B R23B	R29B R30A	R30A R31A	R32B	R32B R33A	R33A R34A	R33B .....	..... R35B	R35B† R36A	R36A R37A	R36B R37A	R37A R38A	160 120	30 26
	DDO DEO	All	2959-S49	60 50	W24B W25B	W31A W31B	W31B W32B	W34A	W34A W34B	W34B W35B	W35A	W36B W37A	W36B W37B	W37B W38B	W37B W38B	W38B	62 52	12 11	
	DO-20 to DO-42	2-4	2959-S1	60 50	W26A W26B	W32B W33A	W33A W33B	W35B	W35B W36A	W36A W36B	W36B .....	..... W38B	W38B† W39A	W39A W39B	W39B W40A	W40A W40B	58 52	12 11
	DO-44 to DO-82	6 & 8	2959-S49	60 50	W24A W26A	W30B W31A	W31A W32A	W33B	W33B W34A	W34A W35A	W34B .....	..... .....	W36B W37A	W37A W38A	W37B W38A	W38A W39A	100 75	25 22
	G	All	31021-400	60 50	39 41	59 60	60 62	67	♦ 69	69 71	70 72	..... .....	..... .....	..... .....	..... .....	..... .....	100 90	13 13
	H	2-8	9998L	9998LH	60 50	23 24 44	44 45	50 52	♦ 53	53 54	55 56 60 62	62 63 65	65 66	150 140	30 30
					60 50	23 24 44	44 45	50 52	♦ 53	53 54	55 56 62	62 63 65	65 66	180 170	35 35
	X	All	9998-X★	60 50	23 24	..... 44	44	51 52	52 53	53	55 .....	..... .....	..... 62	62 .....	..... 65	65	148 143	23 25
	9050 (Timer)	A 1E, 1D, 5DE	All	2959-S1-	60 50	W26A W26B	W32B W33A	W33A W33B	W35B	W35B W36A	W36A W36B	W36B	W38B W39A	W39A W39B	W39B W40A	W40A W40B	62 52	12 11
		A All Others	All	2959-S49-	60 50	W25A W25B	W31B W32A	W32A W32B	W34A W34B	W34B W35A	W35A W35B	W35B W36A	W37B W38A	W38A W38B	W39A W39B	W39A W39B	74 68	17 17
B†, R		All	1861-S1	60 50	R22B R22C	R29B R30A	R30A R30B	R32B	R32B R33A	R33A R33C	..... .....	..... .....	R35B† R36A	R36A R36C	R36B R37A	R37A R37C	160 120	30 22
B▲		All	31017-400-	60 50	33 34	..... .....	54 55	61	61 63	63 64	65 .....	..... .....	70 72	72 73	73 75	75 76	165 155	27 27

Table 2 – Mechanically-held Unlatch Coils - Classes 8501, 8508 and 8903

NOTE: A latch coil is also used with mechanically-held devices. For selection of latch coils for Mechanically-held Contactors, refer to Table 1.

8501 (Relay)	HL■	2-8	9998L	60 50	23 24	..... 44	44 45	50 52	..... 53	53 54	55 56	..... 60	..... 62	62 63	..... 65	65 66	150 140	..........
	HXL■	8-12	9998LX	60 50	23 24	..... 44	44 45	50 52	..... 53	53 54	55 56	..... .....	..... 62	62 63	..... 65	65 66	150 140	..........
8508 (Relay)	A & P	All	2959-S13	60 50	W24B W25B	W31B W32A	W32A W33A	W34B	W34B W35A	W35A W36A	W35B .....	..... W37B	W37B† W38A	W38A W39A	W38B W39A	W39A W40A	39 28	15 11
	D & M1	All	2959-S13	60 50	W23B W24B	W30A W30B	W30B W31B	W33A W33B	W33A W33B	W33B W34B	..... .....	..... W36A	W36A W36B	W37A W37B	W37B .....	..... .....	39 34	12 10
8508 (Contactor)	C, D & E	All	1861-S1	60 50	R22B R23B	R29B R30A	R30A R31A	R32B	R32B R33A	R33A R34A	R33B .....	..... R35B	R35B R36A	R36A R37A	R36B R37A	R37A R38A	.......	.......
	LX	All	9998LX	60 50	23 .....	..... 44	44	51 .....	..... 53	53	55 .....	..... .....	..... 62	62 .....	..... 65	65	25.....	..........
8903 (Lighting Contactors)	SM, SP	All	2959-S13	60 50	W23B W24B	♦ W30B	W30B W31B	W33A	♦ W33B	W33B W34B	W34A .....	..... W36A	♦ W36B	W36B	♦ W37B	W37B	80.....	..........
	SQ, SV, SX, SY, SZ	All	31096-416	60 50	03	♦ 09	09	15	♦ 18	18	20 .....	..... 22	♦ 24	24	♦ 28	28	550.....	..........
	SJ	All	31123-403	60 50	03	♦ 09	09	15	♦ 18	18	20 .....	..... 22	♦ 24	24	♦ 28	28	2100.....	..........

Replacement DC Magnet Coils for Magnetic Contactors, Relays and Timers

Equipment To Be Serviced			Coil Prefix or Class and Type	SUFFIX NUMBER (Complete Coil Number Consists of Prefix or Class and Type Followed by Suffix Number)												Coil Burden Watts	
Class	Type	Poles		6 Volts	12 Volts	18 Volts	24 Volts	32 Volts	48 Volts	64 Volts	72 Volts	90 Volts	110 Volts	115/125 Volts	220 Volts		230/250 Volts
8501	XD	All	9998 XD	19B	28B	34	37	40	46	49	52	55	.....	58	.....	67	18
	XDL	.....	9998 XDL	19B	28B	34B	37B	40B	46B	49B	52B	55B	.....	58B	.....	67B	50
	XUD	All	9998 XUD	19	28	.....	37	.....	46	.....	.....	.....	.....	58①	.....	67▼	16
9050	C	.....	31018-400-	22	31	.....	40	.....	49	.....	.....	.....	.....	61	.....	70	14
	H	.....	4491S1	W21	W24	.....	W27	.....	W30	.....	.....	.....	.....	W34	.....	W37	14

- VA values for these coils are 120% of the values shown.
- † Series B (Double Pole) and Series D (Single Pole).
- † Replaces Series 31111-400-coil.
- ★ To order an unlatch coil add the letter "L" to the type number and the letter "B" to the suffix number. Example: For a 120 V 60 Hz unlatch coil order a Class 9998 Type XL-44B.
- ‡ Coils also rated 380 volts, 50 Hz.
- ▲ Series C (Double Pole) and Series E (Single Pole).
- ♦ Use next higher voltage, 60 Hz coil.
- Coil numbers include latch assemblies. Do not remove unlatch coil. Complete latch assembly must be replaced.
- ▼ Not dual rated. 125 Vdc or 250 Vdc only.



Replacement Parts Kits

Class 9998



Class 9998 replacement parts kits are available for servicing Square D relays, contactors, and starters as well as pressure, vacuum, and float switches. Each kit contains the necessary movable and stationary contacts, contact springs (when required—NEMA Size 3 and above do not include contact springs, and springs are not available), and additional hardware required to service the devices listed below. When servicing devices having more poles than contained in the corresponding kit, it may be necessary to order an additional kit.

Magnetic Contactor and Starter Contact Kits for Present Designs

Equipment To Be Serviced				
Class	Type	NEMA Size or Amp Rating	No. of Poles in Kit	Class 9998 Parts Kit Type No.
8502 8536 8538 8539 8547 8549 8606 8630 8640 8647 8702 8736 8738 8739 8810 8811 8812 8940	SA-, (Series B).....	00	3	SJ1
	SB.....	0	3	SL2 SL12
	SB-, SC-(Power Pole Adder).....	0 & 1	1	SL22
	SC.....	1 & 1P	3	SL3
		1	4	SL13
	SD.....	2	3	SL4
			4	SL14
	SD-(Power Pole Adder).....	2	1	SL24
	SE.....	3	2	SL6
			3	SL7
	SF.....	4	2	SL8
			3	SL9
	SG.....	5	2	SL10
			3	SL11
SH.....	6	2	SL25	
		3	SL26	
SJ.....	7	2	SL30	
		3	SL31	
8903	L (Series C) & LX (Series B).....	30 Amp	4	RA5B
	SM.....	30 Amp	3	SL3
			4	SL13
	SP.....	60 Amp	3	SL4
			4	SL14
	SQ.....	100 Amp	2	SL6
			3	SL7
	SV.....	200 Amp	2	SL15
			3	SL16
	SX.....	300 Amp	2	SL10
			3	SL11
	SY.....	400 Amp	2	SL25
			3	SL26
	SZ.....	600 Amp	2	SL32
		3	SL33	
SJ.....	800 Amp	2	SL30	
		3	SL31	

Magnetic Contactor and Starter Contact Kits for Obsolete Designs

Equipment To Be Serviced				
Class	Type	NEMA Size	No. of Poles in Kit	Class 9998 Parts Kit Type No.
8502 & 8536▼	SA-, (Series A).....	00	3	SL2
			4	SL12
8903	LL, L (Series A, B) & LX (Series A).....	20 Amp	4	RA5

▼ Includes reversing, two speed and similar devices. Select coil based on NEMA size of basic starter or contactor.

Class 8965 Replacement Contact Kits

Equipment To Be Serviced		Class 9998 Parts Kit Type No.
Type	Series	
DPR53	A	DRC5
DPR63	A	DRC6
RO1-RO6	All	RA88
RO10	All	RA10
RO11	All	RA11
RO12	All	RA12

Class 8910 Replacement Contact Kits

Device To Be Serviced	1-Pole Type No.	3-Pole Type No.
Type		
SYD138	—	SL27
SYD230	—	SL28
SYD368	—	SL29
DPA5	DRC5	—
DPA6	DRC6	—
DPA7	DRC7	—
DPA9	DRC9	—
DPA123	DRC12	—

Manual Starter Contact Kits

Equipment To Be Serviced			No. of Poles in Kit	Class 9998 Parts Kit Type No.
Class	Type	NEMA Size		
2510	M-, T-.....	M-0	3	ML1
Manual Starters		M-1 & M-1P	3	ML2

Relay Contact Kits

Equipment To Be Serviced				
Class	Type	NEMA Size	No. of Poles in Kit	Class 9998 Parts Kit Type No.
Magnetic Relays	ARO-, BH-, B-, R-(15 A, Relay).....	...	3	RA81♦
	ARO-, BH-, B-, R-.....	...	4	RA82♦
	†DO, 02, 20, 22; DDO & DEO 20, 22.....	...	..	RA84
	DO40, 42; DDO & DEO40, 42.....	...	..	RA85
	DO60, 80, 44, 62.....	...	..	RA86
	DO64, 82.....	...	..	RA87
	GO20, 11, 02 (10 A, 300 V Relay)*.....	...	..	GG2
	GO30, 21, 12, 03*.....	...	..	GG3
	GO40, 31, 22, 13, 04*.....	...	..	GG4
	GO60, 51, 42, 33, 24, 15, 06*.....	...	..	GG6
7001 7008 8501 8508 8990	GO80, 71, 62, 53, 44, 35, 26, 17, 08*.....	...	..	GG8
	GDO40, 31, 22, 13, 04*.....	...	..	GDG4
	GDO80, 71, 62, 53, 44, 35, 26, 17, 08*.....	...	..	GDG8
	H (Series D).....	...	3	RA6
	HX, HL, HXL & HD (Series C).....	...	4	RA7

♦ Each kit contains the springs for either 2 or 4-Pole or 6 or 8-Pole devices.

† For 8501 DO22, DDO22 or DEO22, order two RA84 kits.

* Kit for Type G, 300 volt, relays consists of 2 complete stationary contact block assemblies and one complete movable contact carrier assembly.

Replacement Control Transformers (150 VA) Class 8502, 8536 Type S Size 6

Voltage		Part Number
60 Hz	50 Hz	
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 (200 VA) Class 8502, 8536 Type S Size 7

Voltage		Part Number
60 Hz	50 Hz	
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

Contact Kits For Foot Switches

Class	Type	Class 9998 Parts Kit Type No.
9002	CG1	FS1
	CG2	FS2
	CG3	FS3



Replacement Parts Kits Starter Accessories – Class 9998



Class 9998 Type SO1

Contact Units for Melting Alloy Type Overload Relays

One normally-closed contact, Class 9998 Type SO1, is provided in each overload relay block on Type S starters Sizes 00-4 and Size 6. On the Type S Size 5, a normally-closed contact is provided with each of the three overload relay blocks. The Class 9998 Type SO1 contact unit listed below is provided as standard in each Class 9065 Type M melting alloy overload relay. Contact modules can be easily replaced and are identified in the table below. Isolated overload relay alarm circuit contacts are available as an optional feature. A pilot light or alarm bell can be wired in series with this contact to indicate that the overload relay has tripped. For further information on isolated alarm contacts, refer to Class 9999 Types SO4 and SO5.

Magnetic Starter			Description	Parts Kit Number
NEMA Size	Type	Series		
00-4 & 6	SA-SF SH	A & B	Standard N.C. contact unit	Class 9998 Type SO1‡
5	SG	A	Standard N.C. contact unit	31102-514-50
			N.C. and N.O. alarm (three point) contact unit	31102-514-51

‡ The Type SO1 is also the replacement contact unit for Class 9065 Type M melting alloy overload relays.



Overload Contact Unit
Part No. 31102-514-50

Class 9998 Type UB Universal Baseplate

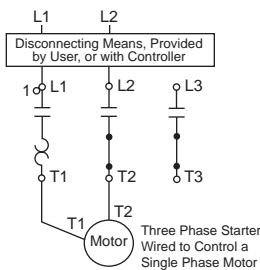
A universal baseplate may be used to retrofit a Square D Type “S” NEMA starter into an application which is currently using a competitive NEMA starter. The universal baseplate is a metal plate which attaches to the panel in the location of the starter to be replaced. The Type “S” starter then mounts to the baseplate. It is available for NEMA Sizes 00 through 4, and mounting screws are provided with each plate.

The universal baseplate adapter allows the Type “S” starter to replace the following competitive starters:

Competitor Starter	Type UB01 NEMA Size	Type UB02	Type UB03	Type UB04
Allen Bradley 509	0, 1	2	3	4
Allen Bradley 709	1	2	3	4
Cutler Hammer Freedom Series	00, 0, 1	2	3	4
Furnas ESP100	0, 1	2	3	4
Furnas INNOVA	0, 1	2	3	4
General Electric CR306	00, 0, 1	2	3	4

Melting Alloy Overload Relay Jumper Strap Kits

Jumper strap kits are for use on three-phase manual or magnetic starters with melting alloy overload relays only, where a three-phase starter is used to control a single-phase motor. These kits will include two jumper straps, a wiring diagram showing how to wire a three-phase starter to control a single-phase motor, and single-phase (one thermal unit) selection tables.



Melting Alloy Overload
Relay Jumper Strap Kits

Class	For Starter		Class 9998 Kit Type Number
	Size	Type	
ALL	00, 0, 1, 2 and M0 & M1	SA, SB, SC, SD and M & T (Manual)	SO31
	3,4	SE, SF	SO32
	5	SG	None Available



Replacement Parts Kits

Class 9998 – For 9012-9038 Devices, Selection

Replacement parts are generally available for Pump Control Products with 165 or later numerical date code: Example 172 (first quarter, 1972) or with current date code. Parts no longer available for devices manufactured prior to 1965.

Equipment To Be Serviced	Parts Kit Class 9998 Type
Actuator Assy. 9012 GB, GE, GH1, 21, 31, 41, 51; GL, GP, GS1; Specify Series	PC-177*
Actuator Assy. 9012 GB, GE, GH2, 22, 32, 42, 52; GL, GP, GS2; Specify Series	PC-178*
Gasket Kit containing all replaceable gaskets for all 9012 Open, NEMA Type 1, 4, 4X, 13	PC-184
Repl. Contact Kit 9013 GHG, GSG, GHR, GSR, GMG; 9036 GG, GR, GW; 9037 GG Series C All except Forms H & R, 9016 GVG, Form R	PC-205▲
Repl. Contact Kit 9013 GHG, GSG, GSR, GMG; 9036 GG, GR, GW; 9037 GG, GR, GW Series C Form H Only; 9016 GVG, Form H	PC-206▲
Repl. Contact Kit 9013 GHG, GSG, GHR, GSR, GMG; 9036 GR, GW Series C Form R Only; 9016 GVG	PC-207▲
Convolute Diaphragm Assy. 9013 GHG, GSG Series C	PC-208
Diaphragm Assy. 9013 GMG Series C	PC-209
Diaphragm Assy. 9016 GVG Series C	PC-210
Diaphragm Assy. 9013 GHW, GSW; GSW, GHR Series C	PC-211
Repl. Sw. Mechanism 9036 GR, GW All except Form H and R Series C	PC-213
Repl. Sw. Mechanism 9036 GR, GW (Form R Only) Series C	PC-214
Repl. Sw. Mechanism 9036 GR, GW (Form H Only) Series C	PC-215
Cover Gasket 9013 GHW, GSW; 9036, 9037 GW Only	PC-216
Repl. Sw. Mechanism 9037 GR, GW All except Form H Series C	PC-217
Repl. Sw. Mechanism 9037 GR, GW (Form H) Series C	PC-218
Complete Flange and Bellows Assy. 9037 GR, GW21 (Brass Bellows)	PC-219
Complete Flange and Bellows Assy. 9037 GR, GW22 (Brass Bellows)	PC-220

▲ * See Page 16.

Equipment To Be Serviced	Parts Kit Class 9998 Type
Complete Flange and Bellows Assy. 9037 GR, GW23 (Brass Bellows)	PC-221
Complete Flange and Bellows Assy. 9037 GR, GW21 Form A (Monel Bellows)	PC-222
Complete Flange and Bellows Assy. 9037 GR, GW22 Form A (Monel Bellows)	PC-223
Complete Flange and Bellows Assy. 9037 GR, GW23 Form A (Monel Bellows)	PC-224
Repl. Sw. Mechanism (Includes Case and Cover) 9037 GG All except Form H	PC-225
Repl. Sw. Mechanism (Includes Case and Cover) 9037 GG Form H Only	PC-226
Complete Flange and Bellows Assy. 9037 GG21 (Brass Bellows)	PC-227
Complete Flange and Bellows Assy. 9037 GG22 (Brass Bellows)	PC-228
Complete Flange and Bellows Assy. 9037 GG23 (Brass Bellows)	PC-229
Complete Flange and Bellows Assy. 9037 GG21 Form A (Monel Bellows)	PC-230
Complete Flange and Bellows Assy. 9037 GG 22 Form A (Monel Bellows)	PC-231
Complete Flange and Bellows Assy. 9037 GG 23 Form A (Monel Bellows)	PC-232
Repl. Diaphragm Assy. 9016 GAW-1, 21	PC-233
Replacement Contact Kit 9013 FHG2, 4, 9, 12, 14, 19, 42, 44, 49 FSG; OBS. 9013 HHG, HSG; 9036 FG-1; 9037 CG, FG, HG-1, HFG	PC-241#▲
Replacement Contact Kit 9013 FHG22, 24, 29, 32, 34, 39, 52, 54, 59; 9013 FYG; 9035 DG30, DW30; 9036 DG, DR, DW; 9037 DG, EG, ER, EW, HG, HR, HW30 thru 39; 9038 All Types (2 Kits Required); OBS. 9013 HHG-Y, HSG-Y; HSW-Y; 9037 HEG, HSG-3, 4	PC-242▲

Order Information Required – Class and Type Number of kit.



Replacement Parts Kits For 9012-9038 Devices, Selection – Class 9998

Equipment To Be Serviced	Parts Kit Class 9998 Type
Repl. Diaphragm Kit All 9013 GHG, GSG, .050 Diaphragm	PC-252‡
Diaphragm Assy. 9012 GA, GD, GN, GR1, 21 Series C Only	PC-265*
Diaphragm Assy. 9012 GA, GD, GG, GK, GN, GR 2, 3, 22, 52 Series C Only	PC-266*
Diaphragm Assy. 9012 GA, GD, GG, GK, GN, GR4, 24, 54 Series C Only	PC-267*
Actuator Assembly 9012 GA, GD, GG, GK, GN, GR 5, 25, 55 Series C Only	PC-268*
Actuator Assembly 9012 GA, GD, GG, GK, GN, GR 6, 26, 36, 46, 56 Series C Only	PC-269*
Piston Assembly 9012 GC, GF, GJ, GQ, GT1, 21, 31, 41, 51 Series C Only	PC-270*
Piston Assembly 9012 GC, GF, GJ, GQ, GT2, 22, 32, 42, 52 Series C Only	PC-271*
Piston Assembly 9012 GC, GF, GQ, GT3, 23, 33, 43, 53 Series C Only	PC-272*
Piston Assembly 9012 GC, GF, GQ, GT4, 24, 34, 44, 54 Series C Only	PC-273*
Buna N Quad Ring Seal Tube Repl. Kit for Series C devices: 9037 HG/HW/HR3 thru 12; 9038 CG/CW/CR1 thru 6	PC-282‡
Repl. Sw. Mechanism 9036 DR-1, DW-1 Series B	PC-285‡
Repl. Sw. Mechanism 9036 DR1, DW1 Form C Series B	PC-286‡
Repl. Sw. Mechanism 9036 DR1, DW1 Form R Series B	PC-287‡
Repl. Contact Kit 9013 FRG, HRG (2 Pole)	PC-288‡
Repl. Contact Kit 9013 FRG, HRG (1 Pole)	PC-289‡
Repl. Contact Kit 9013 FRG Form H; 9035 DG11	PC-290‡
Diaphragm Assy. 9016 GAW2, 22	PC-295*
Snap Switch w/Terminal Block 9016 GAW1, 2	PC-296‡

‡ ◊ * See Page 16.

Order Information Required – Class and Type Number of Kit.

Equipment To Be Serviced	Parts Kit Class 9998 Type
Snap Switch w/Terminal Block 9016 GAW21, 22	PC-297‡
Repl. Diaphragm Assy. 9016 GAR1, 21	PC-301‡
Cover Assy. 9012, 9016 NEMA Type 4, 4X, 13 Enclosure Series C Only	PC-302◊
Repl. Pilot Light 9012, 9016 G Forms G1, G2, G5, G6, G17, G18 Series C Only; 120 V	PC-303
Repl. Pilot Light 9012, 9016 G Forms G11, G12, G15, G16, G19, G20; 240 Volt Series C Only	PC-304
Repl. Pilot Light 9012, 9016 G Forms G7, G8, G9, G10, G21, G22; 24 Volts DC Series C Only	PC-305
Pilot Light Conversion Kit 9012, 9016 G Forms G17, G18; 120 Volt Series C Only	PC-306◊
Pilot Light Conversion Kit 9012, 9016 G Forms G19, G20; 240 Volt Series C Only	PC-307◊
Pilot Light Conversion Kit 9012, 9016 G, Forms G21, G22; 24 Volt DC Series C Only	PC-308◊
Switch Mechanism 9012 GAR-1 Series C Only	PC-309‡
Switch Mechanism 9012 GAR2, 4, 5, 6 Series C Only	PC-310‡
Switch Mechanism 9012 GBR1, 2, 3 Series C Only	PC-311‡
Switch Mechanism 9012 GCR1, 2, 3, 4 Series C Only	PC-312‡
SPDT Snap Switch 9012 GA, GB, GC, GD, GE, GF, GG, GH, GJ Single Pole; except Forms E2, E3, E4, H3, Series C Only	PC-313*
DPDT Snap Switch 9012 GA, GB, GC, GD, GE, GF, GG, GH, GJ Double Pole; except Forms E2, E3, H6, H7 Series C Only	PC-314*
Snap Switch Assy. 9016 GAW1, 2; GAR1	PC-315‡
Snap Switch Assy. 9016 GAW21, 22; GAR21	PC-316‡
Cover Assy. 9016 GAW1, 2, 21, 22	PC-317◊
Repl. Sw. Mechanism 9035 DG-10	PC-318‡
Repl. Sw. Mechanism 9035 DG-11	PC-319‡
Switch Mechanism 9012 GAR21 Series C Only	PC-320‡
Switch Mechanism 9012 GAR22, 24, 25, 26; Series C Only	PC-321‡



Replacement Parts Kits Class 9998 – For 9012-9038 Devices, Selection

Equipment To Be Serviced	Parts Kit Class 9998 Type
Switch Mechanism 9012 GBR21, 22, 23; Series C Only	PC-322
Switch Mechanism 9012 GCR21, 22, 23, 24; Series C Only	PC-323
Switch Mechanism 9012 GDR1; Series C Only	PC-324
Switch Mechanism 9012 GDR2, 4, 5, 6; Series C Only	PC-325
Switch Mechanism 9012 GER1, 2, 3; Series C Only	PC-326
Switch Mechanism 9012 GFR1, 2, 3, 4; Series C Only	PC-327
Switch Mechanism 9012 GDR21; Series C Only	PC-328
Switch Mechanism 9012 GDR22, 24, 25, 26; Series C Only	PC-329
▲ Contacts are 2-Pole; diaphragm fits Pressure Switch only. ‡ These kits also contain replacement diaphragm for pressure switch. ◇ Give complete CLASS, TYPE, FORM information to be stamped on replacement cover. * If one of these Form designations appears on the pressure switch nameplate, the 9998 PC number must be COMPLETED with that same FORM suffix from the tables below and the Form price added to the kit price.	

Equipment To Be Serviced	Parts Kit Class 9998 Type
Switch Mechanism 9012 GER21, 22, 23; Series C Only	PC-330
Switch Mechanism 9012 GFR21, 22, 23, 24; Series C Only	PC-331
Fluorocarbon Polymer such as VITON® Quad Ring Seal Tube Repl. Kit for Series C devices: 9037 HG/HW/HR3 thru 12; 9038 CG/CW/CR1 thru 6	PC-333
Repl. Sw. Mechanism 9035 DR10, DW10, DR30, DW30	PC-334
Repl. Sw. Mechanism 9035 DR11, DW11, DR31, DW31	PC-335
Repl. Nitrile Rubber such as Buna N Seal Kit for Series A devices: 9037 HG/HW/HR30 thru 39; 9038 CG/CW/CR31 thru 36	PC-337
Repl. Fluorocarbon Polymer such as VITON Seal Kit for Series A devices with Form Z19 or Z20: 9037 HG/HW/HR30 thru 39; 9038 CG/CW/CR31 thru 36	PC-338
Repl. Fluorocarbon Polymer such as VITON Seal Kit for Series C 9038D and 9038J	PC-341
9013F Plastic Flange (1/4" NPTF) 6 long screws, diaphragm and warning label	PC-342

Factory Order Modifications for Kits Used on Class 9012 - 9013 Devices.

Form	Applies To:
E2	PC313, 314
H3	PC313
01	PC177 thru 179 PC265 thru 269
Q1	PC177 thru 179 PC268, 269 PC265 thru 267
Q3	PC177 thru 178 PC268, 269 PC266, 267

Form	Applies To:
Q4	PC177 thru 178 PC268, 269 PC265 thru 267
Q5	PC270 thru 273
Q13	PC177 thru 179 PC266 thru 269
Q14	PC177 thru 179 PC266 thru 269 PC265, 295
Z	PC265 thru 269
Z16	PC265 thru 269
Z18	PC177, 178 PC265 thru 273

Order Information Required – Class and Type Number of kit.



Accessories Cover-Mounted Control Units– Class 9999

Class 9999 push button, selector switch and pilot light cover mounted control unit kits can be easily field installed in a NEMA Type 1, 3R, 4 or 12 Type S contactor or starter enclosure cover. Knockouts or removable closing plates are furnished with many enclosure covers for convenient field installation of control units. Kits are supplied with leads and clearly illustrated instructions. The Class 9999 cover-mounted control unit kits are identical to the units which are factory installed.

For Use With					NEMA Type 1 Kit Description						NEMA Types 3R, 4 & 12 Kit Description◇		
Class	Type	NEMA Size or Amp Rating	No. of Poles	Voltage	Red Pilot Light▲		Push Button		Selector Switch		Red Pilot Light▲	Push Button	Selector Switch
					With Control Transformer (Form F4T)	Standard	Start-Stop	On-Off	Hand-Off-Auto	On-Off	120V 60 Hz	Start-Stop or On-Off	Hand-Off-Auto
					Type	Type	Type	Type	Type	Type	Type	Type	Type
8502 & 8536	SA, SB & SC	00, 0, 1 & 1P	All	6-600 Volts 50-60 Hz	SP2R	SP2R	SA2	SA10	SC2	SC22	SP28R●	SA3★	SC8
	SD	2	All		SP13R	SP3R							
	SE	3	2-3		SP4R	SP4R							
	SF	4	4-5		SP28R●	SP5R							
	SG-SJ	5-7	All		SP28R●	SP15R							
8538 8539 8702 8736	SB & SC	0 & 1	All		SP12R	SP12R	SA2	SA10	SC2	SC22			
	SD	2	All		SP13R	SP13R							
	SE	3	All		SP14R	SP14R							
	SF	4	All		SP15R	SP15R							
	SG-SJ	5-7	All		SP28R●	SP28R●							
8903 (Electrically Held)	LX★	20 Amp	All		SP28R●	—	LXPB▼	LXS▼			
	SM	30 Amp	All		SP2R	SP2R	SA2★	SA10★	SC2	SC22			
	SP	60 Amp	All		SP13R	SP3R							
	SQ	100 Amp	2-3		SP28R●	SP14R							
			4-5		SP28R●	SP15R							
	SJ, SV, SX SY, SZ	200-800 Amp	All	SP28R●	SP28R●	SA3★	SA3★	SC8				

- ★ Also requires N.O. auxiliary contact for holding circuit contact when used on Class 8903 electrically held lighting contactors.
- ▲ For green lens ONLY order Class 9999 Type SPG1, except for Class 9999 Type SP28R order Class 9001 Type G31.
- The coil voltage must be the same as the pilot light rating. Kit contains one (1) Class 9001 Type KP1R31120V, 60 Hz red pilot light control unit. For other voltages, refer to Class 9001 Type KP.
- ◇ User made openings are required in order to field install these modification kits on standard 8502, 8536 Type S Sizes 0-2, and 8903 Sizes 30-60 Amp NEMA Types 4 and 12 enclosures.
- ▼ To mount control unit in a NEMA Type 1 enclosure, a Class 9999 Type BLX bracket is also required.
- * For Class 8903 Type LX NEMA Types 3R, 4 and 12 control unit kits, refer to the Class 8903 Digest section.

NEMA Type 1 Enclosure Closing Plates



**Class 9999 Type SP2R
Pilot Light Kit**

For Use With			Description	Type
Class	Type	NEMA Size or Amp. Rating		
8502, 8536, 8903	SA-SE or SM-SP	00-3 or 30-60 Amp	For Pilot Light or Reset - Slip-on Cover NEMA Type 1 Enclosure For Push Button or Selector Switch - Slip-on Cover NEMA Type 1 Enclosure	SG2 SG3
8538 & 8539	SB-SF	0-4	For Push Button or Selector Switch - Hinged Cover NEMA Type 1 Enclosure For Pilot Light - Hinged Cover NEMA Type 1 Enclosure	SG1 SG2



**Class 9999 Type SA2
Push Button Kit**



**Class 9999 Type SC2 Selector
Switch Kit**



**Class 9999 Type SA3
Push Button Kit**



Accessories

Class 9999 – Auxiliary Contacts



External
Single-Circuit
Auxiliary Contact

Auxiliary Contacts for Manual and Magnetic Contactors and Starters

Internal Contacts

Class 9999 Type SX11 internal contact kit is a replacement unit for the N.O. holding circuit contact supplied as standard on Type S Sizes 00-2 three-phase starters and contactors. The Class 9999 Type X12 is a replacement unit for the N.C. electrical contact which is furnished as standard on Type S, Sizes 00-2 mechanically-interlocked devices (e.g. Class 8736 reversing starters). Internal contacts are also used on Class 2510 Types M & T manual starters. The internal contacts can be used for other applications as long as the electrical rating is not exceeded. See table below for electrical ratings.

External Contacts

Class 9999 Type SX6 external auxiliary contact is supplied as standard for the N.O. holding circuit contact on Type S Sizes 3-7 starters and contactors. Additional auxiliary contacts can be added to Type S contactors, starters and lighting contactors. These contacts mount on either side of the basic contactor and are available with convertible or non-convertible contacts. The contacts of the convertible version can be changed from N.O. to N.C. or vice versa in the field. The non-convertible version has fixed contacts, either N.O. or N.C.

To determine the number of auxiliary contacts which can be added to each Type S contactor or starter, refer to the Class 8536 or Class 8736 section.

See table below for electrical ratings.

Maximum Ratings for Type S Auxiliary Contacts and Timers

Class 9999 Type	Contact Ratings				Class 9999 Type	Contact Ratings			
	Volts AC	AC Only (35% Power Factor)		Continuous		Volts AC	AC Only (35% Power Factor)		Continuous
		Make	Break				Make	Break	
SX11, SX12	120 or Less	30 Amps	3 Amps	3 Amps	SX6-SX10	120 or Less	60 Amps	6 Amps	10 Amps
SK3, SK4	120-600	3600 VA	360 VA	3 Amps	SX13-SX17	120-600	7200 VA	720 VA	10 Amps



Internal
Auxiliary
Contact

Class 8910 and 8911 Definite Purpose Contactors and Starters – Auxiliary Contacts

Device To Be Serviced	Auxiliary Contact Kit	
Class 8910 or 8911 Type	Contact Arrangement	Class 9999 Type
DPA* DPS	1 N.O.	D10
	1 N.C.	D01
	1 N.O./1 N.C.	D11
	2 N.O.	D20
H, J, K, L, or M	1 N.O.	R20
	1 N.C.	R21
N, P, or Q	1 N.O.	R37
	1 N.C.	R38

* Type DPA122 and DPA123 use same auxiliary contacts as Type SA-SJ above.
(Example: Class 9999 Type SX6).

For Use With		Kit Description	Ordering Information Class 9999 Type
Type	NEMA Size		
SA-SJ	00-7	External Field Convertible 1-N.O. Contact 1-N.C. Contact 1-N.O. and 1-N.C. Isolated Contacts 1-N.O. Overlapping Contact 1-N.C. Overlapping Contact	SX6 SX7 SX8 SX9‡ SX10‡
SA-SJ	00-7	External Non-Convertible 1-N.O. Contact 1-N.C. Contact 1-N.O. & 1 N.C. Isolated Contacts 1-N.O. Overlapping Contact 1-N.C. Overlapping Contact	SX13 SX14 SX15 SX16‡ SX17‡
SA-SD	00-2	Internal Non-Convertible 1-N.O. Contact 1-N.C. Contact	SX11▲ SX12▲

‡ Types SX9 and SX10 or Types SX16 and SX17 must be used together and mounted on the same side of the contactor. They are suitable for applications where it is necessary for a normally open contact to overlap a normally closed contact.

▲ Types SX11 and SX12 not applicable on NEMA Sizes 3 or larger. Internal contacts can also be used on Class 2510 Types M and T manual starters.

Class 8965 Reversing/Hoist Contactors – Auxiliary Contacts

Device To Be Serviced	Auxiliary Contact Kit		
Class 8965 Type	Contact Arrangement	Type of Connector	Class 9999 Type
DPR	1 N.O.	Screw/Q. C.	D10
	1 N.C.		D01
	1 N.O./1 N.C.		D11
	2 N.O.		D20
JO4 or JO7	1 N.O.	Screw	R30
JO5 or JO7	1 N.C.		R31
JO6 or JO7	1 N.O./1 N.C.	Slip-on	R32
RO2 & RG2 RO10 Form X1 RO11 Form X1	1 N.O. each side		R10
RO3 & RG3 RO10 Form X2 RO11 Form X2	1 N.C. each side		R11
RO5 & RG5 RO12 Form X1 RO13 Form X1	1 N.O. each side		Screw	R12
RO6 & RG6 RO12 Form X2 RO13 Form X2	1 N.C. each side	R13	
SO, TO, UO, VO, VSO or VTO	1 N.O.	Screw	R20
	1 N.C.		R21
	1 N.O.	Slip-on	R22
	1 N.C.		R23



Isolated Auxiliary Contacts for Motor Logic Overload Relays

Overload Relay auxiliary contacts are available factory installed or in kit form for field installation on Motor Logic Overload Relays. These contacts may be used for isolated alarm contact applications.

For Use With		Description	Class 9999 Parts Kit
Type	NEMA Size		
8536 SA-SJ	00 _B through 7	N.O. or N.C. Auxiliary Contact (Field Convertible)	AC04
9065 SS, SR, SF, ST	00 _B through 7		

DIN Adapter

The DIN adapter provides a method to mount the Motor Logic overload relay to a 35 mm DIN rail.

For Use With		Description	Class 9999 Parts Kit
Type	NEMA Size		
9065 SS or SF	00 _B , 00 _C , 0, and 1	DIN Adapter	DA01

Lug-Lug/Lug-Extender Kits

A Class 9999 LL0 Lug-Lug Kit can be field installed on separately mounted overload relays. The standard NEMA Size 00_B, 00_C, 0, and 1 Class 9065 Type SS and SF Overload Relays are supplied without lugs. A Class 9999 LB0 Lug-Extender Kit is designed for NEMA Size 00_B, 00_C, 0, and 1 Retrofit Starter Applications. This kit allows the lugs to be in the same location as the Class 9065 Melting Alloy Overload Relay, eliminating the need for additional wire length.

For Use With		Description	Class 9999 Parts Kit
Type	NEMA Size		
9065 SS or SF	00 _B , 00 _C , 0, and 1	Lug-Lug Kit for separate mounting	9999 LL0
9065 SS or SF	00 _B , 00 _C , 0, and 1	Lug-Extender Kit for retrofitting existing NEMA Type "S" starters	9999 LB0

Remote Reset Module

The Remote Reset Module can be easily field installed on solid state overload relays. This module will allow the overload relay to be reset from a remote location.

For Use With		Description	Class 9999 Parts Kit
Type	NEMA Size		
8536 SA-SJ	00 _B through 7	Remote Reset Module	RR04●
9065 SS, SR, SF, ST	00 _B through 7		
8536 SE-SF	3 and 4	Top Mounting Bracket	RB34▲●
9065 SS, SR, SF, ST	3 and 4		

- ▲ To be used to mount the remote reset module on the top of the overload relay.
- 120 Vac power required.

4 – 20 ma DC Communication Module

This module provides 4 - 20 mADC output proportional to the percentage of current flowing to the motor, according to the trip current adjustment setting. This feature works only on 9065 SF and ST overload relays.

For Use With		Voltage	Description	Class 9999 Parts Kit
Type	NEMA Size			
9065 SF, ST	00 _B through 7	120 Vac	4-20 mADC Output	AO01
9065 SF, ST	0 through 4	24 Vdc	4-20 mADC Output	AO02



Accessories Class 9999



**Class 9999 Type
SB6 Single
Power Pole
Adder**



**Class 9999 Type
SB9 Double
Power Pole
Adder**



**Class 9999 Type SK3
Timer Attachment**



**Class 9999 Type SF4
Fuse Kit**



**Class 9999 Type ST1
Transient Suppression Module**

Control Circuit Fuse Holder

The control circuit fuse holder is designed to be used on Type S contactors and starters, Sizes 00-7, when either one or two control circuit fuses 600 volts maximum are required. The Type SF3 and SF4 fuse holders will accept standard 600 V Bussmann Type KTK or equivalent fuses ($1\frac{13}{32}$ " x $1\frac{1}{2}$ "); 6 Amperes maximum. The SFR3 and SFR4 will accept Class CC 600 V Bussmann Type KTK-R or equivalent fuses only.

Description▲	Class 9999 Type
Single-fuse Unit	SF3
Single-fuse Unit for Class CC Fuse	SFR3
Two-fuse Unit	SF4
Two-fuse Unit for Class CC Fuses	SFR4

▲ Fuses not included.

Power Pole Adders

One single- or double-circuit power pole kit may be field added to a basic 2- or 3-Pole Type S contactor or starter Sizes 0, 1 and 2 or 30-60 Ampere lighting contactors. See table below for selection. The ratings for these power pole adders correspond to the NEMA contact ratings found on Page 12-21 in Digest 171. A two- or three-pole contactor or starter will accept only one single- or double-circuit unit. A power pole cannot be used on four- or five-pole devices or devices which are mechanically-interlocked.

For adding a power pole to a Size 2 or 60 Ampere device, a coil change is required. Select a 4 and 5 pole coil from the coil selection table on Page 10 or specify Form Y118 as noted in the footnote below. When adding Sizes 0-2 power pole kits to a Size 3-7 or 100-800 Ampere device, an adapter bracket (9999 SBT1) is required.

The Class 9999 Types SB6 thru SB15 power pole kits are suitable for copper wire only. Types SB21 through 25 are supplied with lugs suitable for copper and aluminum wire.

For Use With		Power Pole Adder Kit	
Type	Size	Description	Class 9999 Type
SB, SC & SM	0, 1 & 30 Amp	One normally-open power pole adder	SB6
SD	2		SB11*
SP	60 Amp		SB21*
SB, SC & SM	0, 1 & 30 Amp	One normally-closed power pole adder	SB7
SD	2		SB12*
SP	60 Amp		SB22*
SB, SC & SM	0, 1 & 30 Amp	One normally-open and one normally-closed power pole adder	SB8
SD	2		SB13*
SP	60 Amp		SB23*
SB, SC & SM	0, 1 & 30 Amp	Two normally-open power pole adders	SB9
SD	2		SB14*
SP	60 Amp		SB24*
SB, SC & SM	0, 1 & 30 Amp	Two normally-closed power pole adders	SB10
SD	2		SB15*
SP	60 Amp		SB25*
SE-SJ & SQ-SZ & SJ	3-7 & 100-800 Amp	Adapter Bracket	SBT1

* To order a Size 2 or 60 Amp power pole kit complete with a new starter coil, specify Form Y118, voltage and frequency (e.g. Class 9999 Type SB11 Form Y118, 120 volts, 60 cycles.)

Timer Attachments

A mechanically-operated pneumatic timer can be added to Type S Sizes 0-7 contactors and starters, and 30-800 Ampere lighting contactors. The timer is available with either on-delay or off-delay and is field convertible. The timing period is adjustable from 0.2 seconds to 1 minute. The snap switch is a single-pole, double-throw with double-break contacts (1 N.O. & 1 N.C.) that must be used on circuits of the same polarity. Timer attachments will not fit in standard NEMA Sizes 0-2 starter enclosures. A larger hinged-cover enclosure is required. For NEMA Sizes 3-7, standard enclosures provide adequate mounting space.

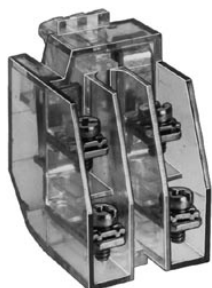
Kit Description	Class 9999 Type
Mechanically-operated pneumatic timer, time-delay after de-energization (off delay)	SK3
Mechanically-operated pneumatic timer, time-delay after energization (on delay)	SK4

Transient Suppression Module

The transient suppression module is designed to be used where the transient voltage, generated when opening the coil circuit, interferes with the proper operation of nearby integrated or solid state control circuits. The module consists of an RC circuit and is designed to suppress the coil voltage transients to approximately 200% of peak coil supply voltage. The module is wired across the coil for Type S, Sizes 00-5 and is designed for coil voltages of 120 volts only.

Description	Class 9999 Type
For Sizes 00-2	ST1
For Sizes 3-5	ST2





Type SO4

Isolated Alarm Contacts for Melting Alloy Overload Relays

Isolated overload relay alarm contacts are available factory installed or in kit form for field installation in Type S, NEMA Size 00-6* starters and Class 9065 Types M and S melting alloy overload relays. Type S, NEMA Size 7, utilizes a solid state overload which has isolated alarm contacts as a standard feature. The alarm contacts will allow the starter to be used in applications which require isolated contacts, such as inputs to a computer.

Class 9999 Types SO4 and SO5 modules are interchangeable with the standard module (Class 9998 Type SO1) and may be installed on starters already in service. The case is made of clear plastic (polycarbonate) to allow for visual inspection of contacts.

Contact Unit for Melting Alloy Type Overload Relays

Magnetic Starter		Description	Class 9999 Parts Kit Type No.
NEMA Size	Type		
00-6*	SA-SH	N.O. Isolated Alarm Contact Plus Standard N.C. Overload Contact	SO4
		N.C. Isolated Alarm Contact Plus Standard N.C. Overload Contact	SO5

* Isolated alarm contacts cannot be added in the field to the Type S Size 5 starter. Current transformers and a Size 1 overload block must be used. For factory installation specify **Form Y342**.



Class 8903 With Compression Lugs installed

Compression Lugs

A Class 9999 Type AL hardware kit is required to install VERSA-CRIMP® compression lugs on Class 8903 Type S, 100-800 Ampere, lighting contactors. The lugs are suitable for both copper and aluminum wire.

One VCEL lug is required for each line or load terminal. Each Class 9999 Type AL hardware kit includes mounting hardware for 3 terminals, line or load side.

EXAMPLE: To install compression lugs on a 300 Ampere 3 pole device, line and load sides, order size (6) VCEL-060-12H1 lugs and two (2) Class 9999 Type AL11 hardware kits.

For Use With		VERSA-CRIMP® Catalog Number	Wire Range Min.-Max.		Hardware Kit Class 9999 Type
Rating	Class 8903 Type				
100 Amp	SQ	VCEL-021-14S1	8-1/0	Al/Cu	None Required
200 Amp	SV	VCEL-022-516H1	1-2/0	Al/Cu	2-Pole AL13
		VCEL-024-516H1	2/0-4/0	Al/Cu	3-Pole AL14
		VCEL-030-516H1	4-300	MCM Al/Cu	4-Pole AL15
300 Amp	SX	VCEL-050-12H1	2/0-500	MCM Al/Cu	AL11
		VCEL-060-12H1	400-600 400-500	MCM Al MCM Cu	
		VCEL-075-12H1	500-750 500	MCM Al MCM Cu	
400 Amp or 600 Amp	SY or SZ	VCEL-060-12H2*	400-600 400-500	MCM Al MCM Cu	AL12
		VCEL-075-12H2*	500-750 500	MCM Al MCM Cu	
800 Amp	SJ	Compression lugs for these devices are available only as a factory modification. Order: Form Y1574 . Specify wire size up to 750 MCM Al or 500 MCM Cu and number of terminals.			

* One or two lugs may be mounted on each terminal.



Tie Point Terminal Block

Solid Neutral

The Class 9999 Type SN kit can be used on Class 8903 Type S lighting contactors and other controllers where field addition of a solid neutral is required. Each kit has lugs suitable for both copper and aluminum wire, and mounts with two screws.

Number of Lugs	Wire Capacity Per Lug (Cu/Al)	Class 9999 Type
4	#14-2/0	SN1
3	(1) #4-600 MCM or (2) #1/0-250 MCM	SN2
3 (Dual)	(2) #2-600 MCM	SN3
2 (Dual)	(2) #6-350 MCM	SN4

Tie Point Terminal Block

The tie point terminal block provides easy wiring of a H-O-A selector switch or Start-Stop push buttons with separate control. The T7 terminal block requires no panel space. It simply snaps on Type S Sizes 00-4 contactors and starters by two tabs and is secured to the left hand coil terminal.

Magnetic Contactor or Starter		Class 9999 Type Number
NEMA Size	Type	
00-4	SA-SF	T7



Accessories

Class 9999 – Mechanical Interlocks



Type SM1

Mechanical Interlock

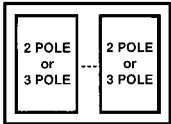
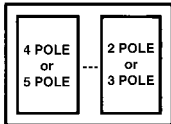
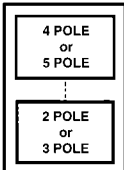
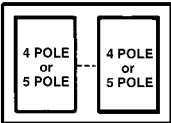
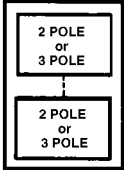
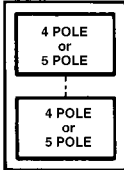
General: Type S contactors or starters can be mechanically-interlocked so that only one device will be energized at a time. The mechanical interlock is an interference (non-jamming) type, locking at the beginning of the stroke of any starter or contactor.

Type S Sizes 00, 0, 1 and 2 – The mechanical interlock is mounted on the underside of the reversing baseplate. Two pins extend from the mechanical interlock through openings in the baseplate and engage the contact carrier of each contactor. Two styles of mechanical interlocks are used: one version for three-pole contactors, a different version for four- or five-pole contactors. **When adding a power pole to the left-hand side of an existing Size 0, 1, or 2 three-pole reversing contactor, a new mechanical interlock must also be installed. When added to the right-hand side only, the power pole will not be mechanically-interlocked with the left-hand contactor.**

Type S Sizes 3 and 4 – The mechanical interlock is separate from the mounting pan on Sizes 3 and 4. Cams on the mechanical interlocks are operated by the contact carrier of each contactor. The mechanical interlock is attached to the underside of the two contactor baseplates on Sizes 3 and 4.

Mechanical Interlock for Two Contactors

The following mechanical interlock kits can be used to interlock 2-5 pole contactors. Mechanical interlocks for horizontal and vertical arrangement are listed in various pole arrangements.

			Contactor NEMA Size	Class 9999 Type
 <p>Horizontal Type SM1 for Size 00-1 Type SM6 for Size 2 Type SM12 for Sizes 3 & 4</p>	 <p>Horizontal *Type SM2 for Size 0 or 1 Type SM7 for Size 2 Type SM12 for Sizes 3 & 4</p>	 <p>Horizontal * Type SM2 for Size 0 or 1 Type SM10 for Size 2 Type SM11 for Size 3 Type SM13 for Size 4</p>	00, 0, 1	SM1
			0, 1	SM2
			0, 1	SM3
			0, 1	SM4
			0, 1	SM5
 <p>Horizontal Type SM3 for Size 0 or 1 Type SM8 for Size 2 Type SM12 for Sizes 3 & 4</p>	 <p>Vertical Type SM4 for Size 0 or 1 Type SM9 for Size 2 Type SM11 for Size 3 Type SM13 for Size 4</p>	 <p>Vertical Type SM5 for Size 0 or 1 Type SM11 for Size 3 Type SM13 for Size 4</p>	2	SM6
			2	SM7
			2	SM8
			2	SM9
			2	SM10
			3	SM11
			3, 4	SM12
4	SM13			
* The Type SM2 interlock is factory assembled for horizontal mounting but can easily be converted to vertical mounting. Conversion instructions are included.				



Overload Relay
Mounting Bracket

Overload Relay Mounting Bracket

Mechanical interlock Types SM1 through SM10 for Sizes 00-2 devices use overload relay mounting brackets to support the overload relay portion of the starter.



Type SM12

Kit Description	Class 9999 Type
Bracket for one overload relay used with horizontal mechanical interlocks, Types SM1 through SM10.	SO11
Bracket for two overload relays used with vertical mechanical interlocks, Types SM2, SM4, SM5, SM9 and SM10.	SO12



Accessories

Fuse Block Replacement Parts Kits – Class 9422/9999



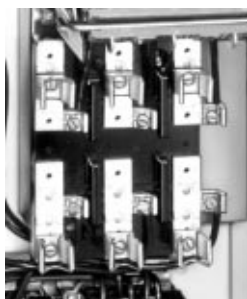
**Class 9422 TC33
Fuse Block**

Class 9422 Replacement Fuse Clip Kits

Class 8538 (Series D and newer), Class 8738 (Series E and newer), and Class 8903 (Series C and newer) Type S non-fusible combination starters and lighting contactors (sizes 0 – 2, 30 to 60 Amperes) can be converted to the fusible type by installing a Class 9422 Fuse Clip Kit. Both fusible and non-fusible combination devices have the same size enclosure in NEMA Types 1, 4, and 12 construction, which permits this conversion. The 9422 Fuse Clip Kits contain line & load fuse clips, load base, and fuse pullers.

Device Used On Size or Ampere Rating	Disconnect Ampere Rating	NEMA Class H, K, J, R Fuses		Class & Type	Class R Fuse Clip Kits
		Fuse Clip Ratings-Amperes			
		250 V Max.	600 V Max.		
0, 1 & 30 Amp	30	0 – 30	—	9422TC30●	RFK03★
0, 1 & 30 Amp	30	31 – 60	0 – 30	9422TC33●	RFK06★
2 & 60 Amp	60	31 – 60	0 – 30	9422TC33	RFK06★
2 & 60 Amp	60	—	31 – 60	9422TD63	RFK06H★

- When using with a 9422 FTCN or FTFCF disconnect switch in 8538 or 8738 combination starters, remove and discard metal base plate.
- ★ No Class Number required.



**Class 9999 Type S2
Interchangeable Fuse Clips**

Class 9999 Replacement Fuse Block Kit and Mounting Brackets for 8538 Pre-Series D and 8738 Pre-Series E Fuse Blocks

Note that the fuse clips ARE NOT included with the fuse block and should be ordered separately using the table shown below.

Kit Description (Fuse Clips Not Included)	Size	Class 9999 Type
Fuse block kit to convert disconnect switch in Class 8538, 8738 and 8903 combination starters and contactors from non-fusible to fusible. Does not include fuse clips.	0, 1 & 30 Amp 2 & 60 Amp	SF1■ SF2■
Two mounting brackets plus hardware for elevating power fuse block in Class 8538 Size 0 and 1 fusible combination starters and 8903, 30 Amp contactor.	.....	SF11■

- Cannot be used in 8538 Series D and newer or 8738 Series E and newer for Class 8538 pre-Series D and 8738 pre-Series E

Class 9999 Replacement Fuse Clip Kits

Device Used On Size or Ampere Rating	Disconnect Ampere Rating	NEMA Class H Fuses			NEMA Class R Fuses			NEMA Class J Fuses	
		Fuse Clip Ratings-Amperes		Type	Fuse Clip Ratings-Amperes		Type	Fuse Clip Rating Amperes	Type
		250 V Max.	600 V Max.		250 V Max.	600 V Max.		600 V Max.	
0, 1 & 30 Amp	30	0-30	....	S1	0-30	....	SR1	....	...
0, 1 & 30 Amp	30	....	0-30	S2	....	0-30	SR2	0-30	SJ2
	30	31-60	0-30	S2	31-60	0-30	SR2	0-30	SJ2
2 & 60 Amp	60	31-60	0-30	S2	31-60	0-30	SR2	0-30	SJ2
2 & 60 Amp	60	....	31-60	S3	....	31-60	SR3	31-60	SJ3
3 & 100 Amp	100	61-100	61-100	S4♦	61-100	61-100	SR4*	61-100	SJ4
3 & 100 Amp	100	101-200	....	S5♦	101-200	....	SR4*	101-200	SJ5
4 & 200 Amp	200	101-200	101-200	S5♦	101-200	101-200	SR4*	101-200	SJ5
5 & 300 Amp	400	....	....	....	201-400	201-400	SR5*	....	...
6 & 400, 600 Amp	600	....	....	....	401-600	401-600	SR5*	....	...

- * Fuse clips are not provided in the Type SR4 and SR5 kits. On new installations Class 9999 Type S fuse clips must also be purchased. Three non-removable pins are supplied and can be installed only in the latest production devices which have a hole in the lower fuse clips.
- ♦ Cannot be used in Series B or newer 8538s.



Class 9999 Type TC10

Class 9999 Auxiliary Contact Kits for Disconnect Switches and Circuit Breakers

Class	Type	SPDT	DPDT
		Type	Type
8538	SB▲, SC▲, SD▲ (Series B)	R6	R7
8538, 8738	SD (Series C)	R43	R44
8538, 8738	SB, SC (Series C)	R45	R46
9422	TC		
9422	TD	R43	R44
8538, 8738	SE, SF (Series A)		
9422	TF	R8	R9
8538, 8738	SE (Series B & C)		
9422	TE	R41	R42
8538, 8738	SF (Series B & C)	R39	R40
8538, 8738	SG	R35	R36

▲ Class 8538 type numbers ending in suffix "S8".

Class	Type	SPDT	DPDT
		Type	Type
8539, 8739	SB, SC, SD, SE, SF, SG■		
9422	RN, RP, RR, RT	R26	R27
9421	FN, FP, FR, FT	R18	R19
9421	LF, LK, LL, LM, LN, LP, LR, LT	R47	R48
9422	TCF, TCN, TDF, TDN, TEF, TEN	TC10	TC20
9422	BTCF, BTCN, BTDF, BTDN, BTEF, BTEN	TC11	TC21
8538	SBA, SCA, SBG, SCG (Series D)	TC11	TC21
8538	SBAS8, SCAS8, SBGS8, SCGS8 (Series D)	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 auxiliary contacts are available for GJL circuit breaker.

▲ Class 8538 type numbers ending in suffix "S8".

For additional information on Class 9422, reference Catalog # 9420CT9701 or D-FAX™ # 1501.



Square D Company
8001 Highway 64 East
Knightdale, NC 27545 USA
(919) 266-3671

ISO-FLEX, Square D and  are registered trademarks of Square D Company.
VERSA-CRIMP is a registered trademark of Hubbell Incorporated.
VITON is a registered trademark of E.I. DuPont.

Catalog No. 9999CT9701 May 98 © 1998 Square D All Rights Reserved.