

Selection Information



Class	2510, 2511, 2512	T02, T36	8502 & 8702	8536 & 8736	8538 & 8738
		NEMA Style, Full Voltage Non-Reversing and Full Voltage Reversing			
Type of Product	Manual Starters and Switches, Non-Reversing, Reversing and Two Speed	TeSys™ N Contactors and Starters	AC Magnetic Contactors	AC Magnetic Starters	Combination Magnetic Starters with Disconnect Switch
Page	page 16-4	page 16-14	8502: page 16-29 8702: page 16-60	8536: page 16-33 8736: page 16-62	8538: page 16-47 8738: page 16-67
NEMA Sizes	M-0 M-1 M-1P	00–7	00–7	00–7	8538: 0–6 8738: 0–5
Load Voltage	Type F: 277 Vac Types K & M: 600 Vac	600 Vac Max.	600 Vac Max.	600 Vac Max.	600 Vac Max.
Current Ratings (Continuous)	Type F: 16 A Types K & M: 30 A	9–810 A	9–810 A	9–810 A	8538: 18–540 A 8738: 18–270 A
Horsepower Ratings (Maximum)	Type F: 1 Type K: 20 Type M: 10	600	0.5–600	0.5–600	8538: 0.5–400 8738: 0.5–200
Overload Relay	Type F: Melting Alloy Type K: N/A Type M: Melting Alloy	Contactors: N/A Starters: Bimetallic (Size 00-2) or Solid-State	N/A	Melting Alloy Bimetallic (Size 00–2) Solid State	Melting Alloy Bimetallic (Size 0–2) Solid State
Enclosure Types	1, Flush Mount, 3R, 4, 4X, 7 & 9 and Open	Open	1, 3R, 4, 4X, 12/3R, 7 & 9 and Open	1, 3R, 4, 4X, 12/3R, 7 & 9 and Open	1, 4, 4X, 12/3R
Approvals	UL File E42243 NLRV UR File E42243 NLRV2 CSA File LR 25490	Contactors: UL File E164862 NLDX CSA LR43364 Class 3211-24 Starters: UL File E152395 NKJH CSA LR60905 Class 3211-24	UL File E78351 NLDX CSA 60905 Class 3211-04	UL File E78351 NLDX CSA 60905 Class 3211-04	UL File E152395 NKJH7 CSA LR584 Class 3211 04

Fractional Horsepower Manual Starters with Melting Alloy Type Thermal Overload Relay

Table 16.1: Single-Unit Types—Class 2510—Rated 16 A—Thermal Units (see Thermal Unit Selection, page 16-132)

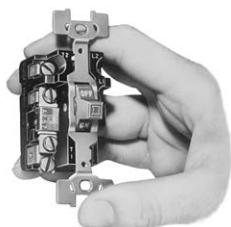
Type of Operator	No. of Poles	Features	NEMA 1 General Purpose Enclosure Surface Mounting		General Purpose Flush Mounting (Without Pull Box)			NEMA Type 4 ^[1] Enclosure Watertight and Dusttight	NEMA Types 3R, 7 & 9 Enclosure Hazardous Locations Div. 1 & 2 Class I Groups B, C, & D, & Class II Groups E, F, & G	Open Type	Number of Thermal Units Required
			Standard	Oversized	Gray Flush Plate	Standard Stainless Steel Flush Plate	Jumbo Stainless Steel Flush Plate				
			Type	Type	Type	Type	Type	Type	Type		
Basic Starter—Class 2510											
Toggle	1	Standard	FG1	FGJ1	FF1	FS1	—	—	—	FO1	1
		With Red Pilot Light ^[2]	FG1P	FGJ1P	FF1P	FS1P	FSJ1P	—	—	FO1P	1
	2	Standard	FG2	FGJ2	FF2	FS2	—	—	—	FO2	1
		With Red Pilot Light ^[2]	FG2P	FGJ2P	FF2P	FS2P	FSJ2P	—	—	FO2P	1
Key	1	Standard	FG3	FGJ3	FF3	FS3	—	—	—	FO3	1
		With Red Pilot Light ^[2]	FG3P	FGJ3P	FF3P	FS3P	FSJ3P	—	—	FO3P	1
	2	Standard	FG4	FGJ4	FF4	FS4	—	—	—	FO4	1
		With Red Pilot Light ^[2]	FG4P	FGJ4P	FF4P	FS4P	FSJ4P	—	—	FO4P	1
Starter with Handle Guard/Lock-Off—Class 2510											
Toggle	1	Standard	FG5	FGJ5	Order basic starter plus separate handle guard kit.			FW1	FR1	^[3] ^[4]	1
		With Red Pilot Light ^[2]	FG5P	FGJ5P				FW1P	—	^[3] ^[4]	1
	2	Standard	FG6	FGJ6				FW2	FR2	^[3] ^[4]	1
		With Red Pilot Light ^[2]	FG6P	FGJ6P				FW2P	—	^[3] ^[4]	1

Table 16.2: Duplex Units—Class 2510

Type of Operator	No. of Poles	Features	NEMA 1 General Purpose Enclosure Surface Mounting	General Purpose Flush Mounting (Without Pull Box)			Number of Thermal Units Required
			Type	Gray Flush Plate for Wall or Cavity Mounting	Stainless Steel Flush Plate for Wall or Cavity Mounting	Replacement Starter Class 2510	
One Starter in Duplex Enclosure—Class 2510							
Toggle	2	Standard	FG02	—	—	—	1
		With Red Pilot Light [2]	FG02P	—	—	—	
Key	2	With Red Pilot Light [2]	FG04P	—	—	—	1
Two Starters in One Enclosure—Class 2510							
Toggle	2 Each Str.	Standard	FG22	FF22	—	—	2
		With Red Pilot Light on Each[2]	FG22P	FF22P	FS22P	—	
Key	2 Each Str.	With Red Pilot Light on Each[2]	FG44P	FF44P	FS44P	—	2
Starter and Auto-Off-Hand SPDT Selector Switch (AC Only)—Class 2510							
Toggle	1	Standard	FG71	FF71	—	—	1
		With Red Pilot Light [2]	FG71P	FF71P	FS71P	—	
	2	Standard	FG72	FF72	—	—	1
		With Red Pilot Light[2]	FG72P	FF72P	FS72P	—	
Key	2	With Red Pilot Light[2]	FG74P	FF74P	FS74P	—	1
Two Speed Starters (AC Only)—Class 2512						Replacement Starter—Class 2510	
Toggle	1	With Mechanical Interlock:					2
		Standard	FG11	FF11	—	FO1T	
		With 2 Red Pilot Lights [2]	FG11P	FF11P	—	FO1PT	
		With High-Off-Low Selector Switch:					
	2	With 2 Red Pilot Lights [2]	—	—	FS101P	FO1PT	2
		With Mechanical Interlock:					
		Standard	FG22	FF22	—	FO2T	
		With 2 Red Pilot Lights [2]	FG22P	FF22P	—	FO2PT	
		With High-Off-Low Selector Switch:					
		With 2 Red Pilot Lights [2]	—	—	FS202P	FO2PT	



Type FG2P



Type FO2

Table 16.3: Horsepower Ratings, Type F (continuous current rating: 16 A)

Volts	Maximum Horsepower		
	AC Single Phase		DC 2-Pole Only
	1-Pole	2-Pole	
115	1	1	3/4
230	1	2	3/4
277	1	1	—

Table 16.4: Approvals—2510 Type F and K

Agency	Enclosed	Open
UL	UL Listed File: E42243, CCN: NLRV	UL Component Recognized File: E42243, CCN: NLRV2
CSA	CSA Certified File: LR25490, Class: 3211-05	

Table 16.5: How to Order

To Order Specify:	Catalog Number
• Class Number	Class Type
• Type Number	2510 FG1

[1] Furnished with one 3/4" pipe tap in the bottom (reversible for top feed). For a 3/4" pipe tap in the top and bottom, add the suffix H to the Type.

[2] For a green pilot light, add the letter G to the catalog number (i.e. 2510FG2PG).

[3] For a replacement starter, order the Open type above.

[4] When replacing a starter equipped with a pilot light in NEMA 4 enclosure, retain the pilot light mounting bracket from the original device.

Manual Switches, Type K

Table 16.6: Non-Reversing—Class 2510

Operator Style	No. of Poles	Features	NEMA 1 General Purpose Enclosure Surface Mounting		General Purpose Flush Mounting (Without Pull Box)			NEMA 4 Enclosure ^[5] Watertight and Dusttight	NEMA 3R, 7 & 9 Enclosures ^[5] Hazardous Locations Div. 1 & 2 Class I Groups B, C, & D, & Class II Groups E, F, and G	Open Style
			Standard	Oversized	Gray Flush Plate	Standard Stainless Steel Flush Plate	Jumbo Stainless Steel Flush Plate			
			Type	Type	Type	Type	Type	Type	Type	Type
Toggle	2	Standard	KG1	KGJ1	KF1	KS1	—	KW1	KR1	KO1
		With Pilot Light ^[6]	115 Vac 230 Vac	KG1A KG1B	KGJ1A KGJ1B	KF1A KF1B	KS1A KS1B	KSJ1A KSJ1B	KW1A KW1B	— KO1A ^[7] KO1B ^[7]
		Standard	KG2	KGJ2	KF2	KS2	—	KW2	KR2	KO2
	3	With Pilot Light ^[6]	208–277 Vac 440–600 Vac	KG2B KG2C	KGJ2B KGJ2C	KF2B KF2C	KS2B KS2C	KSJ2B KSJ2C	KW2B KW2C	— KO2B ^[7] KO2C ^[7]
		Standard	KG5	KGJ5	—	—	—	KW5	—	KO5
		With Pilot Light ^[6]	115 Vac 230 Vac	KG5A KG5B	— —	— —	— —	KW5A KW5B	— —	KO5A ^[7] KO5B ^[7]
	2	Standard	KG6	KGJ6	—	—	—	KW6	—	KO6
		With Pilot Light ^[6]	208–277 Vac 440–600 Vac	KG6B KG6C	— —	— —	— —	KW6B KW6C	— —	KO6B ^[7] KO6C ^[7]
		Standard	KG3	KGJ3	KF3	KS3	—	—	—	KO3
	3	With Pilot Light ^[6]	115 Vac 230 Vac	KG3A KG3B	KGJ3A KGJ3B	KF3A KF3B	KS3A KS3B	KSJ3A KSJ3B	— —	KO3A KO3B
		Standard	KG4	KGJ4	KF4	KS4	—	—	—	KO4
		With Pilot Light ^[6]	208–277 Vac 440–600 Vac	KG4B KG4C	KGJ4B KGJ4C	KF4B KF4C	KS4B KS4C	KSJ4B KSJ4C	— —	KO4B KO4C

Table 16.7: Reversing—Class 2511

Operator Style	No. of Poles	Suitable for Motor Types	Features (Including Mechanical Interlock)	NEMA 1 General Purpose Enclosure Surface Mounting	With Flush Plate for Cavity Mounting (Without Pull Box)	Replacement Switch Class 2510
				Type	Type	Type
Toggle	2	1 Ø 3-Lead Repulsion-Induction	Standard	KG11	KF11	KO1T
			With Pilot Light ^[6]	115 Vac 230 Vac	KF11A KF11B	KO1AT KO1BT
			Standard	KG22	KF22	KO2T
	3	3 Ø; Also 1 Ø Capacitor, Split Ø, or 4-Lead Repulsion-Induction	With Pilot Light ^[6]	110–120 Vac 208–220 Vac 440–600 Vac	KF22A KF22B KF22C	KO2AT KO2BT KO2CT
			Standard	KG22A	KF22A	KO2AT
			With Pilot Light ^[6]	208–220 Vac 440–600 Vac	KF22B KF22C	KO2BT KO2CT
			Standard	KG22B	KF22B	KO2BT
			With Pilot Light ^[6]	440–600 Vac	KF22C	KO2CT

Table 16.8: Two Speed—Class 2512

Operator Style	No. of Poles	Suitable for Motor Types	Features (Including Mechanical Interlock)	NEMA 1 General Purpose Enclosure Surface Mounting	With Flush Plate for Cavity Mounting (Without Pull Box)	Replacement Switch Class 2510
				Type	Type	Type
Toggle	2	1 Ø Two Winding (3-Lead)	Standard	KG11	KF11	KO1T
			With 2 Pilot Lights ^[6]	115 Vac 230 Vac	KF11A KF11B	KO1AT KO1BT
			Standard	KG22	KF22	KO2T
	3	3 Ø Separate Winding (Wye-Connected)	With 2 Pilot Lights ^[6]	208–240 Vac 440–600 Vac	KF22A KF22B KF22C	KO2AT KO2BT KO2CT
			Standard	KG22A	KF22A	KO2AT
			With 2 Pilot Lights ^[6]	440–600 Vac	KF22C	KO2CT

Table 16.9: Class 2511 and 2512 Horsepower Ratings Type K

Device	No. of Poles	Motor Type AC	Maximum Hp			Maximum DC Hp (breaking 2 poles)		
			115 V	230 V	460–575 V	90 V	115 V	230 V
Class 2511	2	1 Ø	2	2	3	1	2	1-1/2
	3	3Ø	2	7-1/2	10			
	2	1 Ø	2	2	3			
Class 2512	3	3 Ø, Constant or Variable Torque	2	7-1/2	10			
	3	3 Ø, Constant Hp	2	7-1/2	10			
Continuous current rating			30 A at 600 Vac maximum			30 A at 24 Vdc maximum		

Table 16.10: Class 2510 Horsepower Ratings

Class 2510	No. of Poles	Motor Type AC	Maximum Hp				Maximum DC Hp (breaking 2 poles)		
			115 V	230 V	460 V	575 V	90 V	115 V	230 V
KO1 KO3	2	Single Ø	2	2	3	3	1	2	1-1/2
KO2 KO4	3	Three Ø	2	7-1/2	10	10			
KO5	2	Single Ø	2	3	7-1/2	10			
KO6	3	Three Ø	2	7-1/2	15	20			
Continuous current rating			30 A at 600 Vac maximum				30 A at 24 Vdc maximum		

Table 16.11: How to Order

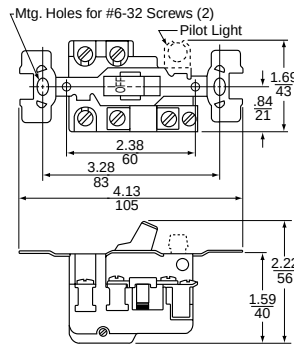
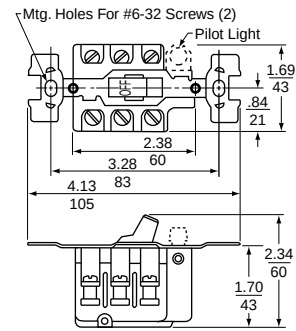
To Order Specify:		Catalog Number	
• Class Number	2510	Class	Type
		2510	KO2

^[5] Furnished with one 3/4" pipe tap in the bottom (reversible for top feed). For a 3/4" pipe tap in the top and bottom, add the suffix **H** to the Type.

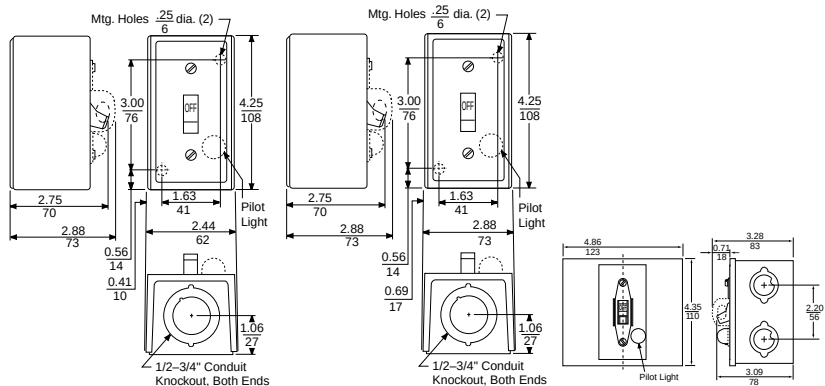
^[6] For a green pilot light, add the letter **G** to the catalog number (i.e. 2510FG2PG).

^[7] When replacing a starter equipped with a pilot light in NEMA 4 enclosure, retain the pilot light mounting bracket from the original device.

Open Type

Types FO1, 1P, 2
Fractional Hp StarterTypes KO1, 1A, 1B, 2, 2B, 2C
Types KO5, 5A, 5B, 6, 6B, 6C
Motor Starting Switch

NEMA 1 General Purpose Enclosure (Surface Mount)

Standard
(Class 2510 Types FG & KG, Single
Unit)Oversized
(Class 2510 Types FGJ & KGJ,
Single Unit)Jumbo
(Class 9991 Type KE2, see)

NEMA 1 General Purpose Enclosure (Flush Mount)

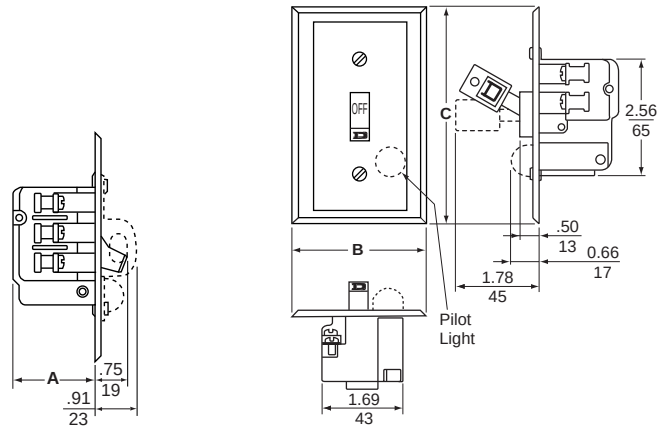


Table 16.12: General Purpose Enclosure (Flush Mount)

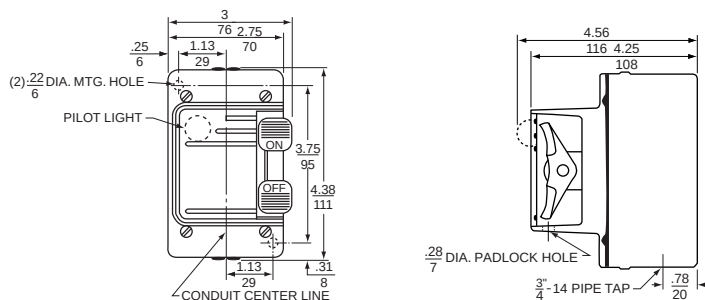
Device	Type of Operator	Class 2510 Type	Dimensions		
			A	B	C
Fractional Hp Starter	Toggle	FF1, 1P, 2, 2P, FS1, 1P, 2, 2P	1.44	2.75	4.5
		FSJ1P, 2P	1.44	3.5	5.25
	Key	FF3, 3P, 4, 4P, FS3, 3P, 4, 4P	1.44	2.75	4.5
Motor Starting Switch	Toggle	KSJ1A, 1B, 2B, 2C	1.75	2.75	4.5
		KSJ1A, 1B, 2B, 2C	1.75	3.5	5.25
	Key	KF3, 3A, 3B, 4, 4B, 4C	1.75	2.75	4.5
		KSJ3A, 3B, 4B, 4C	1.75	2.75	4.5
		KSJ3A, 3B, 4B, 4C	1.75	3.5	5.25

NOTE: These dimensions are for reference only.
If you need precise measurements, contact the
Customer Care Center at 1-888-778-2733.

Table 16.13: NEMA 4 Watertight Die-Cast Zinc Enclosure

Device	Class	Type
Fractional Hp Starter	2510	FW1, 1P, 2, 2P
Motor Starting Switch	2510	KW1, 1A, 1B, 2, 2B, 2C

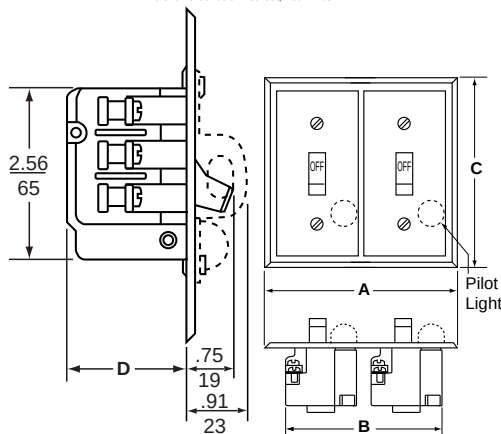
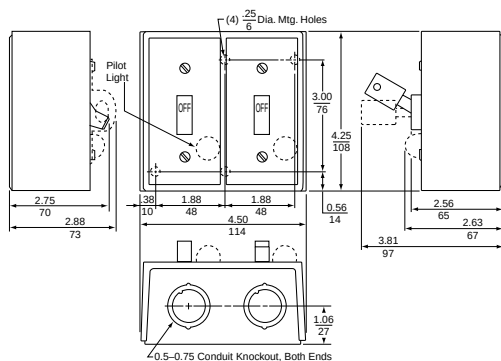
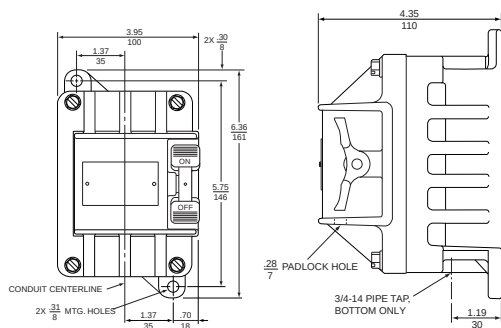
NEMA 4 Watertight Die-Cast Zinc Enclosure



NEMA 3R, 7, and 9 Aluminum Enclosure for Hazardous Locations

Table 16.14: NEMA 3R, 7, and 9 Aluminum Enclosure for Hazardous Locations

Device	Class	Type
Fractional Hp Starter	2510	FR1, 2
Motor Starting Switch	2510	KR1, 2



Dimensions for Duplex Devices

NOTE: These dimensions are for reference only. If you need precise measurements, contact the Customer Care Center at 1-888-778-2733.

Table 16.15: NEMA 1 General Purpose Surface Mount Enclosure for Duplex Devices

Device	Type of Operator	Class	Type
One Starter	Toggle	2510	FGO2, 02P
	Key	2510	FGO4P
Two Starters	Toggle	2510	FG22, 22P
	Key	2510	FG44P
One Starter and One Selector Switch ^[8]	Toggle	2510	FG71, 71P, 72, 72P
	Key	2510	FG74P
Reversing Switch ^[9]	Toggle	2511	KG11, 11A, 11B, 22, 22A, 22B, 22C
Two-Speed Starter	Toggle	2512	FG11, 11P, 22, 22P
Two-Speed Switch	Toggle	2512	KG11, 11A, 11B, 22, 22B, 22C

Table 16.16: General Purpose Flush Mounting Plate for Duplex Devices

Device	Type of Operator	Class	Type	Dimensions ^[10]			
				A	B	C	D
Two Starters	Toggle	2510	FF22, 22P	5.25	3.75	5.25	1.44
			FS22P	4.56	3.5	4.5	1.44
	Key	2510	FF44P	5.25	3.75	5.25	1.44
			FS44P	4.56	3.5	4.5	1.44
One Starter and One Selector Switch ^[11]	Toggle	2510	FF71, 71P, 72, 72P	5.25	0.75	5.25	2
			FS71P, 72P	4.56	3.5	4.5	2
	Key	2510	FF74P	5.25	3.75	5.25	2
			FS74P	4.56	3.5	4.5	2
Reversing Switch	Toggle	2511	KF11, 11A, 11B, KF22, 22A, KF22B, 22C	5.25	3.75	5.25	1.75
Two-Speed Starter	Toggle	2512	FF11, 11P, 22, 22P	5.25	3.75	5.25	1.44
Two-Speed Switch	Toggle	2512	KF11, 11A, 11B, KF22, 22B, 22C	5.25	3.75	5.25	1.75

^[8] Selector switch is on the left and increases the overall depth to 3.5 in.

^[9] Only one pilot light (located on right) is used on Class 2511 switches.

^[10] Dimensions include factory wired power connections.

^[11] Selector Switch is on left, extends 1-5/8" from mounting surface.

Integral Horsepower



Types M and T integral horsepower manual starters provide convenient On-Off operation of small single phase, polyphase or DC motors. Typical applications include small machine tools, pumps, fans and conveyors.

- Push button (M) or toggle (T) operators
- Reliable overload protection
- Pilot light and auxiliary contact available

Table 16.17: Integral Horsepower Manual Starters (see [Thermal Unit Selection, page 16-132](#))

Non-Reversing, Class 2510, Max. Voltage: 600 Vac												
No. of Poles	NEMA Size	Ratings			NEMA 1 Surface Mounting		NEMA 4/4X Watertight and Dusttight Enclosure Brushed Stainless Steel	NEMA 4/4X Watertight, Dusttight and Corrosion-Resistant Glass-Polyester Enclosure	NEMA 7 & 9 For Hazardous Locations Class I—Groups C, D Class II—Groups E, F & G	NEMA 12 Dusttight and Driptight Industrial Use Enclosure	Open Type	
		Motor Voltage	Max. Hp		Square P.B. Operator	Toggle Operator					Square P.B. Operator	Toggle Operator
			Poly-Phase	Single Phase								
2-Pole	M-0	115 230	—	1 2	MBG1	TBG1	MBW11 ^[13]	MBW1 ^[13]	MBR1 ^[13]	MBA1 ^[13]	MBO1	TBO1
	M-1	115 230	—	2 3	MCG1	TCG1	MCW11	MCW1	MCR1	MCA1	MCO1	TCO1
	M-1P	115 230	—	3 5	MCG2	TCG2	MCW12	MCW2	MCR2	MCA2	MCO2	TCO2
3-Pole	M-0	200-230 380-575	— 3 5	— —	MBG2	TBG2	MBW12 ^[13]	MBW2 ^[13]	MBR2 ^[13]	MBA2 ^[13]	MBO2	TBO2
	M-1	200-230 380-575	— 7.5 10	— —	MCG3	TCG3	MCW13	MCW3	MCR3	MCA3	MCO3	TCO3
DC 2-Pole	M-0	115 230	1 hp DC 1.5 hp DC		MBG4	TBG4	MBW14	MBW4	—	MBA4	MBO4	TBO4
	M-1	115 230	1.5 hp DC 2 hp DC		MCG5	TCG5	MCW15	MCW5	MCR5	MCA5	MCO5	TCO5



All Except NEMA 7 and 9
File E42243
CCN NLRV
NEMA 7 and 9 Only
File E58760
CCN NPXZ



All Except NEMA 7 and 9
File LR60905
Class 3211-05
NEMA 7 and 9 Only
File LR26817
Class 3218-04

Table 16.18: How to Order

To Order Specify:	Catalog Number	
	Class	Type
• Class Number	2510	MCA1
• Type Number		

[12] NEMA 7 & 9 enclosures are cast iron. NEMA 7 & 9 cast aluminum enclosures are also available; to order, replace the **R** in the catalog number with a **T**. For additional information, contact the Customer Care Center.

[13] Approved for group motor installations per NEC 430-53(c).

Reversing and Two Speed

Class 2511 reversing and Class 2512 two-speed manual starters consist of two mechanically interlocked Class 2510 Types M or T manual starters.

Table 16.19: Reversing Class 2511

Class	Description	Number of Poles	NEMA Size	Ratings		NEMA 1 Surface Mounting		Open Type	
				Motor Voltage	Maximum Hp	Square P.B. Operator	Toggle Operator	Square P.B. Operator	Toggle Operator
2511	Standard	3-Pole	M-0	200-230	3	MBG1	TBG1	MBO1	TBO1
				380-575	5				
			M-1	200-230	7-1/2	MCG1	TCG1	MCO1	TCO1
				380-575	10				

Table 16.20: Two Speed, Class 2512 (Wye-Connected Separate Winding Motors Only)

Class	Description	Number of Poles	NEMA Size	Ratings			NEMA 1 Surface Mounting		Open Type	
				Motor Voltage	Constant Hp	Constant Torque or Variable Torque	Square P.B. Operator	Toggle Operator	Square P.B. Operator	Toggle Operator
2512	Standard	3-Pole	M-0	200-230	2	3	MBG1	TBG1	MBO1	TBO1
				380-575	3	5				
			M-1	200-230	5	7-1/2	MCG1	TCG1	MCO1	TCO1
				380-575	7-1/2	10				

Thermal Units

Starters will not operate without properly installed thermal units and device reset. Thermal unit must be installed so that markings face the front of starter.

Application Data

Size—Available in NEMA Sizes M-0, M-1, and M-1P.

Poles—Two poles single phase; three poles polyphase; 2 poles DC.

Voltage—600 Vac max.; 250 Vdc max.

Overload Relays—Melting alloy thermal overload relays have provisions for one Type B thermal unit for single phase starters and three Type B thermal units for three phase starters. **All thermal units must be installed and the device reset before the starter contacts will operate.** After overload relays have tripped, allow one or two minutes for the alloy to solidify before resetting.

Operator—Available with a push button or toggle operator in open and NEMA 1 versions. NEMA 4/4X (stainless) and 12 versions utilize a direct acting push button only. NEMA 4/4X (polyester) and 7/9 versions utilize an external toggle to actuate a push button device inside.

Maintenance of Equipment

For proper performance, all equipment should be periodically inspected and maintained. Replacement contacts and interlocks are available in kit form to facilitate servicing and stocking. In addition, the service bulletin contains an exploded view of the device with components clearly marked for easy identification by description and part number.

Mechanism Lock Off—Both open devices and starters in NEMA 1 surface and flush mounting, and NEMA 4, 4X, 7 & 9, and 12 enclosures can be locked in the Off or Stop position.

The NEMA 1 surface mounting, 4, 4X, 7 & 9, and 12 enclosures can also be locked closed to prevent unauthorized entry.

Table 16.21: Terminal information and Replacement Contact Kits

NEMA Size	Power Terminals		Auxiliary Interlock Terminals		Number of Poles	Service Bulletin	Replacement Contact Kit	
	Type of Lug	Wire Size (Solid or Stranded Copper Wire) Min.-Max.	Type of Lug	Wire Size (Solid or Stranded Copper Wire) Min.-Max.			Class	Type
M-0	Pressure Wire	14–8	Pressure Wire	16–12	2 or 3	312AS	9998	ML1
M-1	Pressure Wire	14–8	Pressure Wire	16–12	2 or 3	312AS	9998	ML2
M-1P	Box Lug	14–6	Pressure Wire	16–12	2	312AS	9998	ML2

Accessories and Modification Kits

One auxiliary contact, either N.O. or N.C. can easily be added internally to any open or enclosed Type M or T manual starter. It occupies the space provided in either the upper right hand or left hand corners of the device. These contacts are for AC loads only. For electrical ratings, refer to [page 16-127](#), Class 9999 Types SX11 or SX12.

A unique red **pilot light** assembly that clips into place is available **factory installed** on NEMA 1, 4, 4X, 12 and flush enclosures or as a **field modification kit** on the NEMA 1 surface or flush mounting enclosures. See [page 16-11](#). The color cap assembly snaps into a knockout in the enclosure cover on the NEMA 1 enclosures. Pilot light kits are available for use on Various voltages (110-600 V). Pilot light assemblies are not available for NEMA 7 and 9 enclosures.

Approximate Dimensions



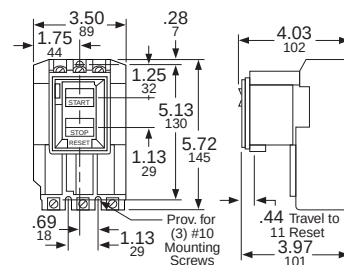
NEMA 1
General Purpose Surface Mounting



NEMA 12
Dusttight and Driptight
Industrial Use



NEMA 4/4X
Watertight and Dusttight
Stainless Steel



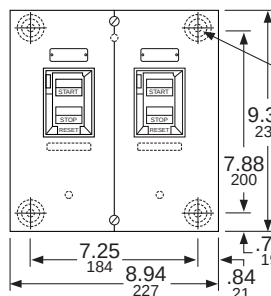
Class 2510 Type M
Sizes M-0, M-1 and M-1P, Open Style
Approximate Shipping Weight: 3 lb



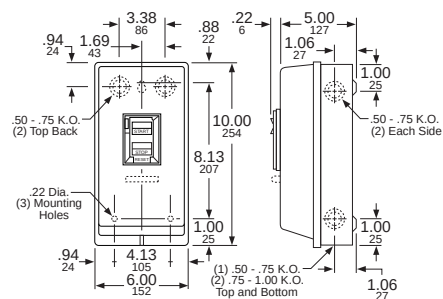
NEMA 4/4X
Watertight, Dusttight
and Corrosion Resistant
Glass Polyester



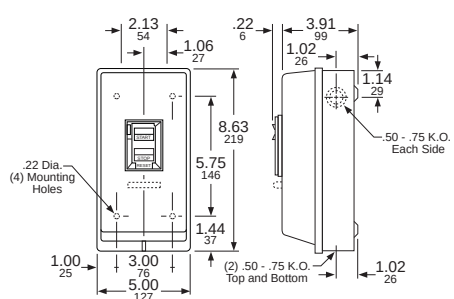
NEMA 7 & 9
Hazardous Locations
Cast Iron



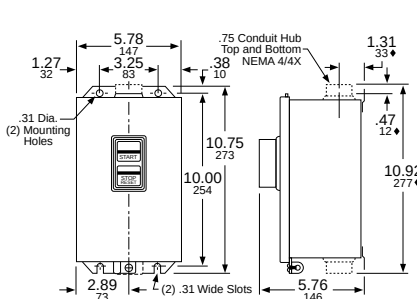
Classes 2511, 2512, Types M & T
Sizes M-0 and M-1 NEMA 1
General Purpose Enclosure
Approximate Shipping Weight: 9 lb



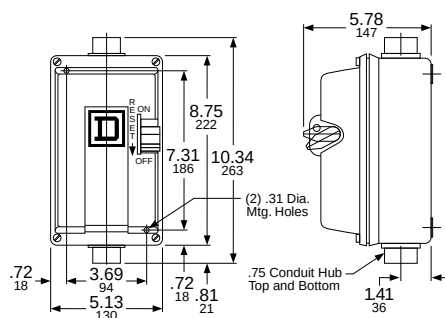
Class 2510 Type M & T Size M-1P
NEMA 1 General Purpose Enclosure
Approximate Shipping Weight: 5 lb



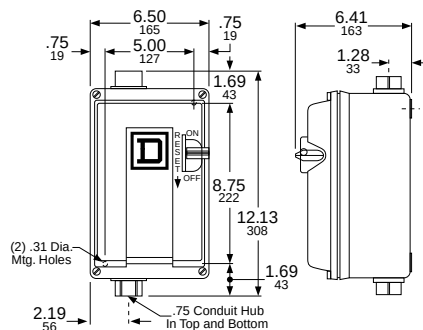
Class 2510 Types M & T Sizes M-0 and M-1
NEMA 1 General Purpose Enclosure
Approximate Shipping Weight: 5 lb



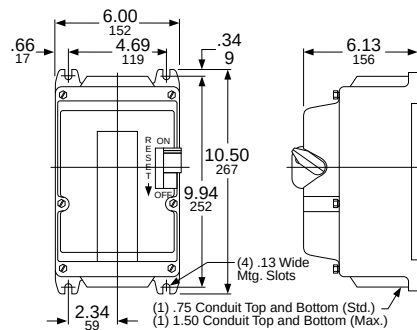
Class 2510 Type M Sizes M-0, M-1 and M-1P
NEMA 4/4X Watertight Stainless Steel Enclosure
NEMA 12 Dusttight Industrial Use Enclosure
Approximate Shipping Weight: 9 lb



Class 2510 Type M Size M-0 (AC-DC)
and Size M-1 (DC) NEMA 4/4X
Watertight Corrosion-Resistant
Glass Polyester Enclosure
Approximate Shipping Weight—6 lb



Class 2510 Type M Sizes M-1 and M-1P (AC)
NEMA 4/4X Watertight Corrosion-Resistant
Glass Polyester Enclosure
Approximate Shipping Weight—6 lb



Class 2510 Type M Sizes M-0, M-1 and M-1P
NEMA 7 & 9 Hazardous Location
Cast Iron Enclosure
Approximate Shipping Weight—18 lb

Table 16.22: P11 Pilot Light Voltage Codes

Voltage	Code
120 V	V02
200/208 V	V08
230 V	V03
460 V	V06
575 V	V07

**Table 16.24: Accessories—Class 2510
Types F and K**

Description	Class & Type
Handle Guard Kit with Padlock Provision [18]	2510FL1
Emergency Off Actuator	2510PB1
Additional Key for Key Operated Devices	2510FK1

Table 16.26: Replacement Nameplates—Class 2510 Types F and K

Description	Application	Nameplate Marking	Nameplate Type Number—Class 2510			
			For Type K Switch		For Type F Starter (includes Reset Indication)	
			Without Pilot Light	With Pilot Light	Without Pilot Light	With Pilot Light
1-3/4" x 2-13/16" Nameplate with Embossed Mounting Holes for #6 Oval Head Screws	Standard commercial switch box cover or flush plate, including Square D stainless steel plates	(Blank)	FN1	—	FN2	—
		(Special marking—specify the marking desired)	FN5	—	FN6	—
1-29/32" x 3-27/32" Flat Nameplate with Mounting Holes for #6 Pan Head Screws	Square D NEMA 1 surface mounted enclosure or gray flush plate	(Blank)	FN10	FN20	FN30	FN40
		High	FN11	FN21	FN31	FN41
		Low	FN12	FN22	FN32	FN42
		Forward	FN13	—	—	—
		Reverse	FN14	FN24	—	—
		(Special marking—specify the marking desired)	FN15	FN25	FN35	FN45

Accessories, Modifications, and Replacement Parts

Table 16.23: Modifications (Types M & T only)

Description	Factory Modifications (Forms)	Field Modification Kits, Class & Type
Red Pilot Light [14]	P11[15]	9999MP1 (110–120 V) 9999MP2 (208–240 V) 9999MP3 (440–600 V)
Auxiliary Contacts [16]	X1 (1 N.O.)	9999SX11 (N.O.)
	X2 (1 N.C.)	9999SX12 (N.C.)
Jumper Straps [17]	N/A	9998SO31
Contactor only	Y76	N/A

Table 16.25: Pilot Light Kits—Class 2510 Types F and K

Application	Voltage	Red Pilot Light	Green Pilot Light
		Class & Type	Class & Type
Type KF, KG, KW [19]	110–120 Vac	9999PL11	9999PL11G
	208–277 Vac	9999PL12	9999PL12G
	440–600 Vac	9999PL13	9999PL13G
Type FF, FG, FW [19]	115–240 Vac/dc	9999PL10	9999PL10G

Contact Kits

See page 16-124 for Class 9998 Replacement Contact Kits.

Table 16.27: Replacement Part Kits

Enclosure	Product Description	Kit Catalog No.
Replacement Toggle Kits		
NEMA 4	Type FW and KW	9998HW1
NEMA 7 & 9	Type FR and KR	9998HR2
Replacement Handle Kits		
NEMA 12	Type MBA, MCA (Ser. A & B)	9998HWA1
	Type MBA, MCA (Ser. C)	31085-381-50
NEMA 4/4X (Stainless)	Type MBW, MCW (Ser. A & B)	9998HWA1
	Type MBW, MCW (Ser. C)	31085-381-50
NEMA 4/4X (Polyester)	Type MBW (Size 0)	9998HWA1
	Type MCW (Size 1)	9998HR3
NEMA 7 and 9	Type MBR, MCR	9998HR3
Description		Kit Catalog No.
Internal Lever		9998IL1

Table 16.28: How to Order

To Order Specify:	Catalog Number	
• Class Number	Class	Type
• Type Number	9991	KE1

Table 16.29: Enclosures

For use with Class 2510 Type	Enclosure	Catalog No.
F and K	NEMA 1 Standard	9991EN1
M: Sizes M-0 & M-1		9991MG1
M: Size M-1P		9991MG2
MBO and MCO	NEMA 1 Flush Mount (with pull box and plaster adjustment)	9991MF1
	NEMA 1 Flush Mount (without pullbox but with mounting strap)	9991MF2
	NEMA 4X (Polyester)	9991MW1
	NEMA 4 (Stainless Steel)	9991MW11
FO1, FO1P, FO2, FO2P, FO3, FO3P, FO4, FO4P	NEMA 1 Oversized	9991FE1
KO1, KO1A, KO1B, KO2, KO2B, KO2C, KO3, KO3A, KO3B, KO4, KO4B, KO4C, KO5, KO5A, KO5B, KO6, KO6B, KO6C	NEMA 1 Oversized	9991KE1
	NEMA 1 Jumbo	9991KE2
	NEMA 3R	9991KE3

[14] May only be field-added to NEMA 1 enclosures. For green pilot light, order 9999SPG1 additionally.

[15] Form P11 pilot lights require a voltage code. Refer to Table 16.22. Catalog number example: 2510MBG1V02P11.

[16] For proper operation, only one auxiliary contact kit per device may be added.

[17] Used to control a single phase motor utilizing a three phase starter.

[18] Standard on Type K devices.

[19] The lens cannot be replaced. The pilot light kits for NEMA 4 enclosed units are for replacement only.