

Manual Starters and Switches

Manual starters Class 2510

Manual switches Class 2510

Reversing drum switches Class 2601



2510 FG 2P



2510 KG 1A



2510 TBG 1



2601 AG2



2510 KO 2



2510 MBA 1

Manual starters Class 2510

Type F fractional motor power starters provide overload protection as well as manual "On-Off" control for small motors in a variety of industrial and commercial installations. Typical applications include fans, conveyors, pumps and small machine tools.

They are available in single- or 2-pole versions. Both single- and 2-pole versions are suitable for use with single-phase \sim motors rated up to 1 hp. 2-pole starters may also be used with \equiv motors rated up to 0.75 hp.

Note: Manual starters include motor overload protection. After tripping, the overload relay must be reset before the motor can restart.

Single units Type F

- Basic starters.
- Starters with handle guard/lock-off.

Duplex units Type F

- One starter in duplex enclosure.
- Two starters in one enclosure.
- Starters and "AUTO-OFF-HAND" selector switch.

Manual switches Class 2510

Type K motor-starting switches provide manual "On-Off" control of single- or 3-phase \sim motors, where overload protection is not required or is provided separately. These devices are suitable for use with 3-phase \sim motors rated up to 20 hp. Compact construction and a 600 V rating make these switches suitable for a wide range of industrial and commercial uses. Typical applications include small machine tools, pumps, fans, conveyors and many other types of electrical machinery. They may also be used on non-motor loads such as resistance heaters.

Note: Manual switches do not include motor overload or low-voltage protection. Should the power fail, the contacts will remain closed, and upon re-energization, **the motor will restart immediately.**

Non-reversing Type K

- With toggle operator.
- With removable key.

Integral Horsepower non-reversing Types T and M

Types T and M integral motor power manual starters provide convenient "On-Off" operation of small single-phase, 3-phase or \equiv motors. Typical applications include small machine tools, pumps, fans and conveyors. They feature toggle or push button operators and reliable overload protection. Pilot lights and auxiliary contacts are available.

- Toggle (T) or push button (M) operators.
- Reliable overload protection.
- Pilot light and auxiliary contact available.

Reversing drum switches Class 2601

Reversing drum switches are designed to start and reverse motors by connecting them directly across-the-line. The devices may be used with squirrel-cage motors; single-phase \sim motors designed for reversing service; and series, shunt and compound \equiv motors. The applications should be such that across-the-line starting of the motors is not objectionable, unless other means is provided for limiting starting current and torque. Class 2601 drum switches are field convertible from maintained to pulsed operation.

The reversing drum switches are suited to manual reversing control applications, such as machine tools, woodworking machines and similar types of equipment. Examples include lathes, milling machines, planers, grinders, shapers and boring mills. Other possible applications include door operators, small hoists and conveyor belts.

Note: Reversing drum switches do not include motor overload or low-voltage protection. Should the power fail, the contacts will remain closed, and upon re-energization, **the motor will restart immediately;** however, if the drum switch is assembled for pulsed operation, the handle will stay in the selected position, and the handle position will determine the motor state.

Environment						
Class		2510/2601				
Type		F/K/T/M				
Conforming to standards	Enclosed unit	UL				
	Open unit	UL				
Product certifications		CSA				
Ambient air temperature around the device	Storage	°C	0...+ 40			
	Operation	°C	0...+ 40			
Electrical characteristics						
Class		2510				
Type		F				
Voltage rating		V	~ 277 maximum (single- or 2-pole); --- 230 maximum (2-pole only)			
Continuous current rating		A	16			
Maximum Horsepower						
115–230 V	~ Single-phase	Single-pole	hp/kW	1/0.75		
		2-pole	hp/kW	1/0.75		
	--- 2-pole only	hp/kW	0.75/0.55			
277 V	~ Single-phase	Single-pole	hp/kW	1/0.75		
		2-pole	hp/kW	1/0.75		
	--- 2-pole only	hp/kW	-			
Class		2510				
Type		K●●1/K●●3	K●●2/K●●4	K●●5	K●●6	
Number of poles		2	3	2	3	
Number of phases		Single phase	Three phase	Single phase	Three phase	
Voltage rating		V	~ 600 maximum; --- 230 maximum			
Continuous current rating		A	30 at 600 V maximum			
Maximum motor power						
~ rating	115 V	hp/kW	2/1.5	2/1.5	2/1.5	2/1.5
	230 V	hp/kW	2/1.5	7.5/5.6	3/2.2	7.5/5.6
	460 V	hp/kW	3/2.2	10/7.5	7.5/5.6	15/11.2
	575 V	hp/kW	3/2.2	10/7.5	10/7.5	20/14.9
--- rating	90 V	hp/kW	1/0.75	1/0.75	1/0.75	1/0.75
	115 V	hp/kW	2/1.5	2/1.5	2/1.5	2/1.5
	230 V	hp/kW	1.5/1.1	1.5/1.1	1.5/1.1	1.5/1.1
Class		2510				
Type		TB●●/MB●●	TC●●/MC●●	MC●● 2		
Size		Available in NEMA Sizes M-0, M-1 and M-1P				
Number of poles		~ : 2-pole single-phase; 3-pole 3-phase --- : 2-pole (without low voltage protection only)				
Voltage rating		V	~ 600 maximum; --- 250 maximum			
Terminals						
Power terminals	Type of lug	Screw clamp terminal	Screw clamp terminal	Box lug		
	Wire Size (min.-max.)	#14–#8	#14–#8	#14–#6		
Auxiliary interlock terminals	Type of lug	Screw clamp terminal	Screw clamp terminal	Screw clamp terminal		
	Wire Size (min.-max.)	#16–#12	#16–#12	#16–#12		
Class		2601				
Type		AG2/AG2 S2/BG1/BG1 S4				
Voltage rating		V	~ 600 maximum; --- 250 maximum			

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2601 AG2

Reversing drum switches

Voltage	Standard power ratings						Reference	Weight
	~ single-phase		~ 3-phase		=			
V	hp	kW	hp	kW	hp	kW	kg (lb)	
NEMA 1 general purpose enclosure								
115	1.5	1.1	–	–	0.25	0.185	2601 AG2	0.6 (1.32)
200/230	–	–	2	1.5	–	–		
230	2	1.5	–	–	0.25	0.185		
460/575	–	–	2	1.5	–	–		
115	1.5	1.1	–	–	2	1.5	2601 BG1	1.1 (2.38)
200/230	–	–	5	3.7	–	–		
230	3	2.2	–	–	2	1.5		
460/575	5	3.7	7.5	5.5	–	–		
NEMA 1 maintained and pulsed (1)								
115	1.5	1.1	–	–	0.25	0.185	2601 AG2 S2	0.6 (1.32)
200/230	–	–	2	1.5	–	–		
230	2	1.5	–	–	0.25	0.185		
460/575	–	–	2	1.5	–	–		
115	1.5	1.1	–	–	2	1.5	2601 BG1 S4	1.1 (2.38)
200/230	–	–	5	3.7	–	–		
230	3	2.2	–	–	2	1.5		
460/575	5	3.7	7.5	5.5	–	–		

Kits

Replacement contact kits (for manual starters, Types T and M Class 2510)

Type	NEMA Size	Series	Number of poles	Service bulletin	Reference	Weight kg (lb)
Replacement contact kits	M-0	A or B	2 or 3	312AS	9998 ML1	–
	M-1	A or B	2 or 3	312AS	9998 ML2	–
	M-1P	A or B	2	312AS	9998 ML2	–

Pilot light kits (for manual starters, Types F and K Class 2510)

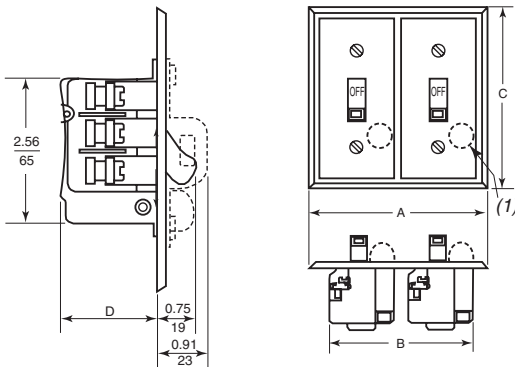
Type	For use on	Voltage	Pilot light	Reference	Weight kg (lb)
Pilot light kits	2510 FF/FG	~ 115–240 V	Red	9998 PL10	–
			Green	9998 PL10G	–
	2510 KF/KG (2)	~ 110–120 V	Red	9998 PL11	–
			Green	9998 PL11G	–
			Red	9998 PL12	–
			Green	9998 PL12G	–
			Red	9998 PL13	–
			Green	9998 PL13G	–
		~ 208–227 V	Red	9998 PL12	–
		~ 440–600 V	Red	9998 PL13	–
			Green	9998 PL13G	–

(1) Maintained-"Forward". Pulsed-"Reverse". Not field convertible.

(2) Lens cannot be replaced.

Dimensions are $\frac{\text{inch}}{\text{mm}}$

2510 FF 22/44/7●, 2510 FS 22/44/7● (General purpose flush mounting plate)



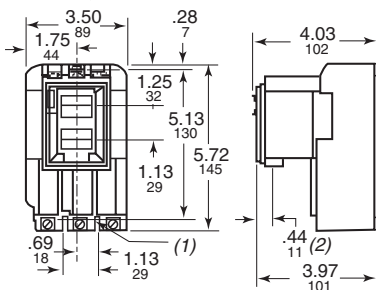
(2)	A	B	C	D
2510 FF 22/22P	133.4	95.3	133.4	36.5
2510 FS 22P	4.6	88.9	114.3	36.5
2510 FF 44P	133.4	95.3	133.4	36.5
2510 FS 44P	4.6	88.9	114.3	36.5
2510 FF 71/71P/72/72P	133.4	19.1	133.4	50.8
2510 FS 71P/72P	4.6	88.9	114.3	50.8
2510 FF 74P	133.4	95.3	133.4	50.8
2510 FS 74P	4.6	88.9	114.3	50.8

(2) Dimensions in mm (25.4 mm = 1 inch).

(1) Pilot light.

2510 T●O ●/M●O ● (Open)

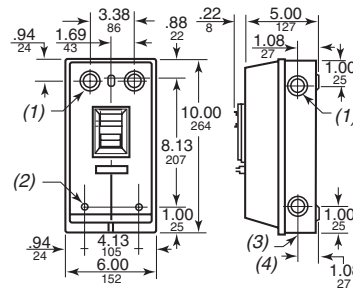
Sizes M-0, M-1 and M-1P



(1) 3 prov. for #10 mounting screws.
(2) Travel to reset.

2510 TCG 2/MCG 2 (NEMA 1)

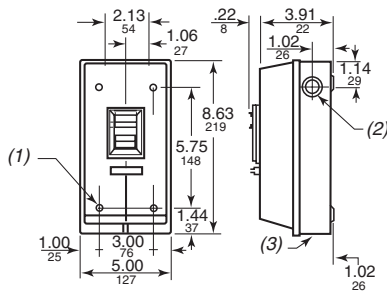
Size M-1P



(1) 3 x 0.22 diameter mounting holes.
(2) 6 x 0.50 - 0.75 knockouts
(3) 1 x 0.50 - 0.75 knockouts
(4) 2 x 0.75 - 1.00 knockouts Top and bottom.

2510 TBG ●/TCG ●/MBG ●/MCG ● (NEMA 1)

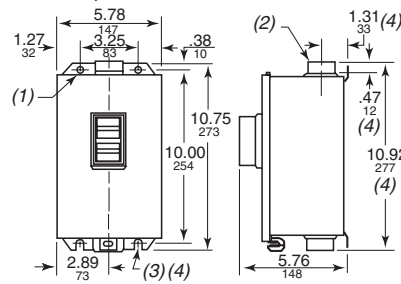
Sizes M-0 and M-1



(1) 4 x 0.22 diameter mounting holes.
(2) 0.50 - 0.75 knockouts Each side.
(3) 1 x 0.50 - 0.75 knockouts and 2 x 0.75 - 1.00 knockouts

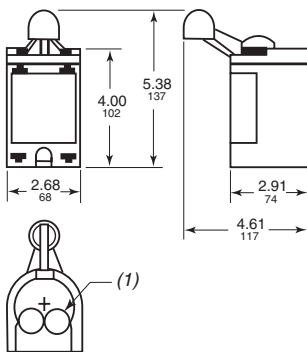
2510 M●A ● (NEMA 12)

Sizes M-0, M-1 and M-1P



(1) 2 x 0.31 diameter mounting holes.
(2) 0.75 conduit hub top and bottom.
(3) 2 x 0.31 wide slots.
(4) NEMA 4 only.

2601 AG2/AG2 S2/BG1/BG1 S4 (NEMA 1)



(1) 2 x 0.50" knockouts