

# Manual Control

## Fractional HP Switches, Class MMS, MRS

### General

#### Class MMS, MRS

Class MMS and MRS motor starting switches provide manual “ON-OFF” control of single or three phase AC motors where overload protection is not required or is provided separately. Compact construction and a 600 volt 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 can also be used on non-motor loads such as resistance heating applications.

#### Continuous Current Rating

**MMS & MRS:** 30 amperes at 250 volts max, 26.4 amperes at 277 volts, 20 amperes at 600 volts max, 30 amperes resistive at 600 volts max.

#### Two Speed—Class MRS

Two speed manual switches may be used with separate winding three phase or single phase AC motors where overload protection is not required or is provided separately. Two switches are employed to give “ON-OFF” control in each speed.

#### Reversing—Class MRS

Reversing manual switches provide a compact means of starting, stopping and reversing AC motors where overload protection is not required or is provided separately. They are suitable for use with three phase squirrel cage motors and for single phase motors which can be reversed by reconnecting motor leads. Two switches are used, one to connect the motor forward rotation and one for reverse.

#### Enclosures

Class MMS, MRS, NEMA Type 1 surface mounting enclosures are sheet steel with a thermo-plastic wrap-around cover for convenience in wiring. The NEMA Type 1 enclosure is also available in an oversized version which allows more wiring space. A zinc alloy die casting is used for NEMA Type 4 enclosures.

#### Pilot Lights

Red or green neon pilot light units are available for flush mounting plates, NEMA Type 1 enclosures, and NEMA Type 4 enclosures. Pilot lights may be either factory or field installed. (For switches that contain a pilot light, a Red light is standard. For a Green pilot light add “G” to the end of the catalog number.)

#### Terminals

Binding head screw type terminals are suitable for #10 or smaller copper wire, and are accessible from the front. All terminals are clearly marked.

#### Mounting

Open types without a pilot light fit standard single gang switch boxes, and can be used with any cover plate having a standard toggle cutout. Single-unit flush mounting types, including those with pilot lights, are suitable for wall mounting in a standard switch box or for machine cavity mounting without a box.

#### Operation

Available with toggle handle or with removable key type operator to discourage unauthorized operation.



Class MMS Switch in a NEMA Type 1 Enclosure

#### Emergency Off Actuator

A toggle operator extender is available for Class MMS, MRS, NEMA Type 1 surface mounted units. The extender has a red vinyl button that provides a fast and easy method for locating and switching the device’s toggle operator into the OFF position. The Emergency Off Actuator is available in kit form only for field installation.

#### Handle Guard/Lock-Off

An optional handle guard on Class MMS, MRS, NEMA Type 1 enclosed switches prevents accidental operation of the toggle operator and also allows the toggle operator to be padlocked in either the “ON” or “OFF” position. This handle guard is available in kit form for field installation on NEMA Type 1 surface and flush mounting enclosures. Standard NEMA Type 4 metallic enclosures include provisions for padlocking the device in the OFF position.



**Ordering Information**

- ▶ Heater Elements not Required.
- ▶ Field Modification Kits see page 9/98.
- ▶ Dimensions see page 9/131.
- ▶ Wiring Diagrams see page 9/165.

Device		No of Poles	Motor Type AC	Maximum HP			DC Ratings		
				115V	230V	450-575V	90V	115V	230V
Class MMS	2	Single Phase	2	2	3	1	2	1 1/2	
	3		3-Phase	2	7 1/2	10	1	2	1 1/2
Class MRS Reversing	2	Single Phase	2	2	3	1	2	1 1/2	
	3		3-Phase	2	7 1/2	10	1	2	1 1/2
Class MMS Two Speed	2	Single Phase	2	2	3	1	2	1 1/2	
	3		3-Phase, Constant or Variable Torque	2	7 1/2	10	1	2	1 1/2
	3	3-Phase, Constant Horsepower	2	7 1/2	10	1	2	1 1/2	

### Switch—Class MMS, Single Phase and 3-Phase

Type of Operator	No of Poles	Switch Features <sup>④</sup>	General Purpose Flush Mounting Open Switch with Flush Plate (No Enclosure Provided)				NEMA Type 1 General Purpose Enclosure Surface Mounting				NEMA Type 3R, 4 & 12 Watertight, Dust-tight Metallic Enclosures with Clear Cover	NEMA Type 4 <sup>⑤</sup> Watertight, Dust-tight Metallic Enclosure	NEMA Type 7 & 9 <sup>⑥</sup> Class I Groups B, C & D & Class II Groups E, F, G Enclosures					
			Open Type		Gray Flush Plate	Standard Stainless Steel Flush Plate	Jumbo Stainless Steel Flush Plate	Standard		Oversized								
			Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
Toggle	2	Standard	MMSK01	MMSKF1	MMSKS1	—	—	MMSKG1	MMSKGJ1	MMSKWN1	MMSKW1	MMSKR1						
		Red Pilot Light 115V AC	MMSK01A <sup>③</sup>	MMSKF1A	MMSKS1A	MMSKSJ1A	MMSKG1A	MMSKGJ1A			MMSKW1A	—	—					
		Red Pilot Light 230V AC	MMSK01B <sup>③</sup>	MMSKF1B	MMSKS1B	MMSKSJ1B	MMSKG1B	MMSKGJ1B			MMSKW1B	—	—					
	3	Standard	MMSK02	MMSKF2	MMSKS2	—	—	MMSKG2	MMSKGJ2	MMSKWN2	MMSKW2	MMSKR2						
		Red Pilot Light 208-240V AC	MMSK02B <sup>③</sup>	MMSKF2B	MMSKS2B	MMSKSJ2B	MMSKG2B	MMSKGJ2B			MMSKW2B	—	—					
		Red Pilot Light 440-600V AC	MMSK02C <sup>③</sup>	MMSKF2C	MMSKS2C	MMSKSJ2C	MMSKG2C	MMSKGJ2C			MMSKW2C	—	—					
Key	2	Standard	MMSK03	MMSKF3	MMSKS3	—	—	MMSKG3	MMSKGJ3	MMSKWN3	—	—	—	—				
		Red Pilot Light 115V AC	MMSK03A	MMSKF3A	MMSKS3A	MMSKSJ3A	MMSKG3A	MMSKGJ3A			—	—	—	—				
		Red Pilot Light 230V AC	MMSK03B	MMSKF3B	MMSKS3B	MMSKSJ3B	MMSKG3B	MMSKGJ3B			—	—	—	—				
	3	Standard	MMSK04	MMSKF4	MMSKS4	—	—	MMSKG4	MMSKGJ4	MMSKWN4	—	—	—	—				
		Red Pilot Light 208-240V AC	MMSK04B	MMSKF4B	MMSKS4B	MMSKSJ4B	MMSKG4B	MMSKGJ4B			—	—	—	—				
		Red Pilot Light 440-600V AC	MMSK04C	MMSKF4C	MMSKS4C	MMSKSJ4C	MMSKG4C	MMSKGJ4C			—	—	—	—				

### Reversing Switch—Class MRS, Single Phase and 3-Phase

Type of Operator	Number of Poles	Suitable Motor Types	Switch Features <sup>④</sup> (Including Mechanical Interlock)	General Purpose Flush Mounting Open Switch with Flush Plate (No Enclosure Provided)		NEMA Type 1 General Purpose Enclosure Surface Mounting		Replacement Switch Class MRS	
				Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
Toggle	2	Single Phase 3-Lead Repulsion-Induction	Standard	MRSKF11		MRSKG11		MRSK01T	
			Red Pilot Device—115V AC	MRSKF11A		MRSKG11A		MRSK01AT	
			Red Pilot Device—230V AC	MRSKF11B		MRSKG11B		MRSK01BT	
	3	3-Phase; Also Single Phase Capacitor, Split Phase, or 4-Lead Repulsion-Induction	Standard	MRSKF22		MRSKG22		MRSK02T	
			Red Pilot Light—110-120V AC	MRSKF22A		MRSKG22A		MRSK02AT	
			Red Pilot Light—208-220V AC	MRSKF22B		MRSKG22B		MRSK02BT	
		Red Pilot Light—440-600V AC	MRSKF22C		MRSKG22C		MRSK02CT		

### Two Speed Switch—Class MMS, Single Phase and 3-Phase

Type of Operator	Number of Poles	Suitable Motor Types	Switch Features <sup>④</sup> (Including Mechanical Interlock)	General Purpose Flush Mounting Open Switch with Flush Plate (No Enclosure Provided)		NEMA Type 1 General Purpose Enclosure Surface Mounting		Replacement Switch Class MRS	
				Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
Toggle	2	Single Phase Two Winding (3-Lead)	Standard	MMSKF11		MMSKG11		MRSK01T	
			(2) Red Pilot Devices—115V AC	MMSKF11A		MMSKG11A		MRSK01AT	
			(2) Red Pilot Devices—230V AC	MMSKF11B		MMSKG11B		MRSK01BT	
	3	3-Phase Separate Winding (Wye-Connected)	Standard	MMSKF22		MMSKG22		MRSK02T	
			(2) Red Pilot Lights—208-240V AC	MMSKF22B		MMSKG22B		MRSK02BT	
			(2) Red Pilot Lights—440-600V AC	MMSKF22C		MMSKG22C		MRSK02CT	

① Manual switches do not include overloads.

② Furnished with (1) 3/4" NPT outlet in bottom (reversible for top feed). In order to obtain a 3/4" NPT outlet in top and bottom, add suffix letter "H" to type number with List Price adder.

③ Do not use as replacement interiors for NEMA Type 4 metallic enclosures. For replacement unit, order Type MMSK01 or MMSK02 and separate pilot light kit.

④ For switches that contain a pilot light, a Red light is standard. For a Green pilot light add "G" to the end of the catalog number.