

POWER TECH

Standard Type 210 Control Switches

For Electrically-controlled Apparatus



Standard Duty Control Switches

Standard 210 instrument and control switches are used in conjunction with circuit breakers, transformer tap changers, motor-operated rheostats, and many other types of electrically-controlled apparatus. The switches are available as either maintained or spring return contact types. They're designed for panel mounting and are furnished with a choice of handles.

Ratings

Standard 210 switches are rated for 20 ampere continuous duty with 600 volts insulation.

Circuit Voltage		Momentary Interrupting Amps	
		Inductive	Non-Inductive
ac	125	30	50
	250	15	25
	600	3	5
dc	125	4	8
	250	1	2
	600	0.2	0.5

When switches are required for special applications, please refer to the factory.

Operation

All Type 210 switches are made for partial or full 360 degree rotation, with 2 to 12 radial positions. The spring return switches are made for three positions, but they can be furnished for a maximum of seven positions - three from either side of the center position.



Standard type 210 switch for circuit breaker operation.

Positive Positioning Assured

Even under the most severe operating conditions, Type 210 rotary switches will give you reliable service. They feature a positive positioning device with a star-shaped position wheel, two roller arm assemblies and two tension springs. The peaks around the position wheel virtually eliminate any hang-up area. This, combined with the push-pull effect of the roller, makes in-between positioning impossible.

Dependability

Since there's no possibility of hangup, arcing and burning of contacts are reduced. Since it's impossible to overshoot or momentarily place a switch in an unsafe position, you save contact segments from undue wear. And the snap action of the positioning device gives the control board operator a definite feel of the control operation.

On circuit breaker control switches, there's a window in the position plate with a red and green flag indicator to show the last operation of the switch. A signal lamp circuit is available as an option. In the trip position, it can be opened by pulling the handle into the latch position. The lamp is not lighted when the handle is in this position, indicating that the circuit controlled by the breaker is not in use. The flag indicator and pull-out features aren't usually furnished on switches for voltage control, speed control or motor control.



Type 210 switch with 3 contacts per stage construction.

Long Life

Tests indicate that you can expect the new positioning feature to perform reliable for more than two million operations. To minimize corrosion, we've treated the roller arm assemblies and positioning wheels, and used stainless steel for the springs. We've also provided a self-cleaning wiping action to give you good contact under all conditions.

Movable segments with star-shaped holes are used to provide extremely accurate positioning. The holes engage a square insulated shaft which moves the segments. The shaft is machined to closer-than-normal clearances, and the corners are extra sharp. This eliminates any possibility of play between parts.

Safety

Extra-long creepage over insulation surface prevents a low-resistance leakage path or flashover due to condensation or dust on the insulator surface. We've used insulation of heavy linen base and industry-quality phenolic throughout the switch.

Accessibility

All contacts are readily accessible. Simply remove the snap-on cover from either side, top or rear. The cover, provided with the switch, eliminates the need for side plates. And the terminal arrangement permits wiring without removing the switch cover.

Flexibility

It's an easy matter to replace contacts or add stages for special applications. Each pair of stationary contact fingers is mounted on an individually-molded phenolic block.

Installation Ease

The switch can be mounted quickly on a panel, and secured with three mounting screws.

The Test of Time

Under the most extreme and adverse operating conditions, the Standard 210 switch has proved its reliability. Time and time again.

Components

Handles - Made of black molded composition, handles are available in oval, round and pistol-grip shapes. For a slightly higher price, you may choose colored handles in blue, brown, grey, green, red, white and yellow. Instrument switches are normally furnished with round handles. Voltage, motor and speed control switches come with oval handles, and circuit breaker control switches come with pistol-grip handles.

To prevent operation by unauthorized people or simultaneous operation of more than one switch controlling the same circuit, you may order removable handles with a key shaft. These handles can be used with all instrument switches, although ammeter, regulator, transfer and temperature indicator switches are not normally key operated.

Switches for synchronizing two machines require a removable handle for each machine.

Handles can be turned only in one direction. Removable handles are labeled and constructed so that they can be inserted only in the proper switch or switches - and then only in the "off" position.

Locks - A lock can be mounted directly above the position plate of the switch. The switch can be arranged to lock only in selected positions.

Position Plate - In addition to listed switches with proper titles and markings, position plates requiring special titles and markings can be supplied.

Face Dial Plate - The black position plate, with inscription, is held in slots of the face plate. In addition, the face plate serves as a holder for the flag indicator on control switches.

Shaft - A 3/8-inch square, cold-rolled steel shaft is insulated with a covering of linen-base phenolic tubing.

Cover - The black protective cover-

ing is made of laminated phenolic. This formed, snap-on cover is heat resistant and will retain its springiness. It is easily removed from the top, from either side, or by sliding off to the rear.

Contact Fingers - Heavy phosphor bronze contact fingers are silver plated for long wear. The contact pressure is about 12 ounces.

End Plates - Both end plates are 7/32-inch thick. They are made of die cast aluminum to prevent corrosion.



Type 210 switch with removable key handle.

Mill Duty Control Switches



Type 210 mill duty switch.

To stand up to the harsh demands of steel mills, chemical plants, petroleum refineries and other industrial applications, Siemens makes switches with mill-duty durability. These switches, requiring constant and hard usage, are designed for 1/8 to 2-inch thick panel mounting and are available with up to 14 stages (14 control circuits). If you need them, watertight and dust-tight enclosures can be furnished.

Ratings

Mill Duty switches are rated for 10 ampere continuous duty. Other ratings are identical to the standard 210 switches.

Accessibility

Snap-on covers are quickly removed for easy access. The terminal arrangement at the bottom of the switch permits wiring without removing the covers. All terminals are clearly marked to identify the connection from the wiring diagram. You can access the return spring from the rear of the switch, and replace it by removing the rear end plate.

Flexibility

Each pair of stationary contact fingers is mounted on an individually molded phenolic block. You can replace or inspect parts right at the installation.

Installation and Operation

The installation and dismantling procedures for mill duty switches, as well as the operating characteristics, are identical to standard 210 switches.

Construction

All parts subjected to wear have increased strength and are made of high-quality stainless steel or beryllium copper to extend the life of the switch. Generally, construction is similar to the standard 210 switches when 10 or less stages are used. When 11 or more stages are used, phenolic blocks are added to the top and secured with studs and bolts to add strength. Upper studs, lower studs and the shaft fit through the end plates, giving mill duty switches extreme rigidity.

Components

Handles - Switches are furnished with heavy duty handles of a molded black composition, unless otherwise specified. The handles are available in round, oval, pistol-grip or removable key types, and come in seven colors.

Covers - These slide off to the rear, or may be removed from the top or sides.

Contact Fingers - Made of stainless steel.

Contact Segments - Berylliumcopper contact segments are silverplated.

Spring - An extra heavy duty return spring with a nylon spacing collar is used. The spring is easily removed from the rear of the switch.

Bearings - Front and rear bearings are brass, set in die cast aluminum end plates.