INTRODUCTION
INSTRUMENT AND CONTROL SWITCHES

Choose the switch that best suits your application

Electroswitch offers a wide variety of Rotary Instrument and Control Switches designed specifically to satisfy the most stringent requirements of Substation Automation, Power Generation, Transmission, and Distribution systems. In fact, we offer the world's most complete, tested, and proven line of rotary switches available today.

The following is a quick description of each series. It is designed to help you select the one that is right for you.

INTERRUPTING CURRENT RATINGS

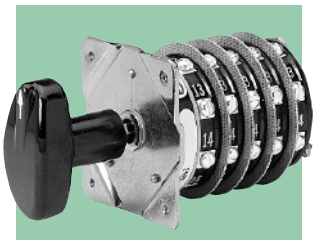
	120VAC	240VAC	600VAC	125VDC
Series 24	20A	15A	6A	3A
Series 31	10A	5A	3A	1A
Series 20	20A	20A	20A	3A
Series 101	15A	10A	8A	10A
Type W	50A	25A	5A	8A
Type W2	30A	20A	8A	5A

Series 24

The quality standard in the utility industry, the Series 24 features low resistance, double-wiping contacts with self-cleaning silver contacts for years of reliable service. They are available with up to ten decks (20 poles) and allow for between 2 and 8 positions. These switches are rated at 30 amps @ 600 volts.

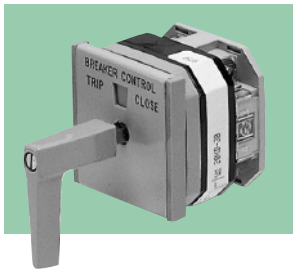
Series 24P
With Lighted Nameplate

All the same great features you've come to expect in our Series 24 Switches now available with built-in, cost-effective, long-life LED indicators. The industry standard – a better value than ever.



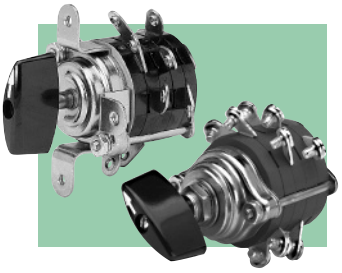
Series 31

The Series 31 features our low resistance, double-wiping contacts in a smaller package. They are available with up to ten decks (20 poles) and allow for between 2 and 8 positions, and can be ordered for either single or 4 hole mounting. Series 31 Switches are rated at 15 amps @ 600 volts.



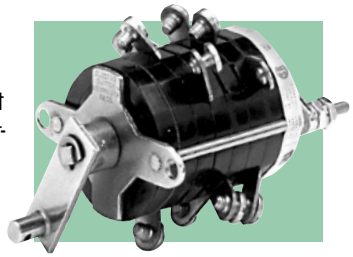
Series 20

The Series 20 Cam Switches have a very small footprint and are designed specifically to reduce the space required on a control panel. They can be mounted on 3" centers and are available in a standard configuration, modular plug-in design, or with a lighted front panel. These switches are available with up to 12 decks (24 poles) and between 2 and 12 positions. Series 20 Switches are rated at 24 amps @ 600 volts.



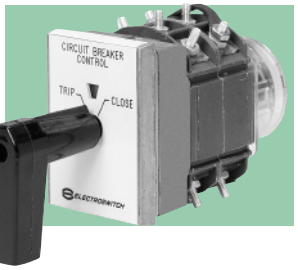
Series 101
Single or Four Hole Mount

Series 101 Switches are a snap-action design that are available for either AC or DC applications. These switches feature low resistance double-wiping contacts. Rated at 20 amps @ 600 volts.



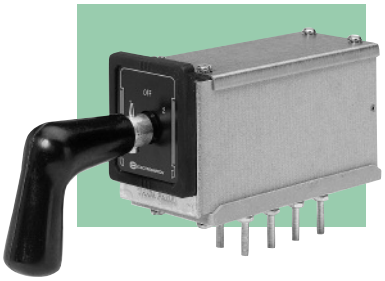
Series 102
Auxiliary

The Series 102 Auxiliary Switch is based on the contact mechanism of the 101 Snap-Action Switch modified to allow lever arm activation. Rated at 20 amps @ 600 volts.



Type W2

The Type W2 uses a contact roller, spring-actuated design that provides for momentary, maintained, or lateral contacting. These switches can be provided with up to eight decks (48 poles) and between 2 and 12 positions. Type W2 Switches are rated at 20 amps @ 600 volts.



Type W

Type W Switches are reliable, proven products still used in many time-tested applications. These switches are available with up to 10 poles and between 2 and 12 positions. Type W Switches are rated at 20 amps @ 600 volts.

Features

- Double-Sided, Double-Wiping, Knife-Type Rotary Contacts
- Silver Contact Surfaces for Long, Reliable Low Contact Resistance Life
- #8-32 Terminal Screws – Easy Installation of #12AWG Wire
- Standard Three Hole Panel Mount

Control Switch Special Features

- Spring Return to Normal (Vertical) Position Multi-Pole Contact Arrangements
- Mechanical Red/Green Target
- Slip Contacts for "Normal After" Applications
- Pull to Lock for Safety Lockout (see page 68)

Instrument Switch Special Features

- Make-Before-Break (Shorting) Contacts
- Common Input Tap Switch Arrangement – Sequentially Connected to Several Lines Using the Same Switching Deck
- Positive Positioning Detent Mechanism
- Pre-Wired Applications

Synchroscope Special Features

- Removable Oval Handles
- Keyed Arrangements

Electrical Specifications

Continuous Ratings 30A/600V

Interrupt Ratings 20A/120VAC • 15A/240VAC • 6A/600VAC • 3A/125VDC • 1A/250VDC

- Overload Current (50 operations) 95A/120VAC • 65A/240VAC • 35A/600VAC
- Making Ability for Circuit Breaker Coils 95A–125VDC
- Contacts Resistance .01ohms maximum

Mechanical Specifications

Sections	1 to 10 – Consult Factory For Additional Sections
Poles	1 to 20 – Consult Factory For Additional Poles
Positions	8; Adjustable Stops for 2–8 Position Rotation
Contacts	Break-Before-Make (Non-Shorting); Make-Before-Break (Shorting)
Action	45° Positive Detent or Momentary Indexing
Mounting	Panel Mount, 3 Hole Mounting, Hardware Supplied
Panel Thickness	3/16" Max. Standard – Others Available
Rotor Contacts	Silver Inlay Phosphor-bronze, Double-Wiping
Stationary Contacts	Silver Plated, with Integral Screw Type Terminals
Construction	Contacts Enclosed in Molded-phenolic Insulators

Approvals

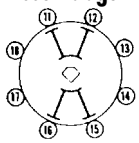
• UL: File No. E18174 • CSA • Class 1E Nuclear • CE

Note: The Series 24 Class 1E Utility products comply with the following Nuclear Standards: ANSI/IEEE C37.90, ANSI/IEEE C37.90.01, ANSI/IEEE C37.98, ANSI/IEEE C37.105, ANSI/IEEE 323, ANSI/IEEE 344, ANSI/ASME NQA-1.

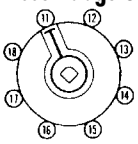
ORDERING INFORMATION -

(For generic switches fill out matrix below. For application specific switches see page 15.)
If you don't see the switch you need, please consult the factory.

Assemblage 2



Assemblage 3



Note 1: Nominal torques, weights, and depth behind panel are listed below.

Note 2: Assemblages are shown with handle in 0° position (12 o'clock).

Model No. **24** ☐ ☐☐ ☐ – ☐

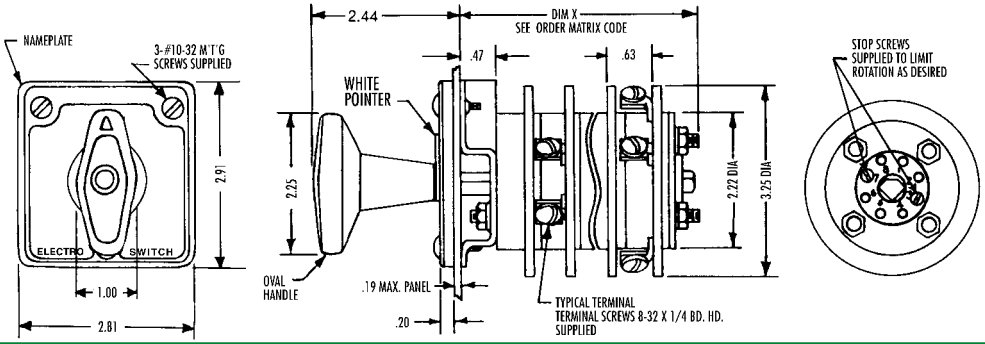
Series

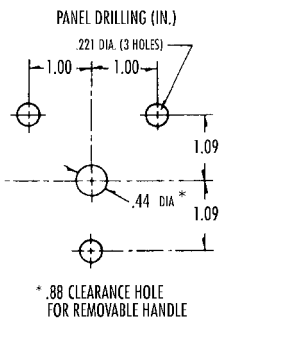
Assemblage
2 = Assemblage 2
3 = Assemblage 3

Handle Type
B = Oval Shank
C = Round Knurled
D = Pistol Grip
E = Removable Oval

Shorting
Blank = No
S = Yes

Matrix Code	No. of Sections	Weight (lbs.)	Torque (lb./in)	Depth Behind Panel
01 =	1	1.1	8	2.41
02 =	2	1.2	9	2.78
03 =	3	1.3	10	3.53
04 =	4	1.4	11	4.28
05 =	5	1.5	12	4.66
06 =	6	1.6	13	5.41
07 =	7	1.7	14	6.16
08 =	8	1.8	15	6.53
09 =	9	1.9	16	7.41
10 =	10	2.0	17	8.03





SERIES 24
"Smart" Lighted Nameplate

NEW PRODUCT

Series 24 Lighted Nameplates

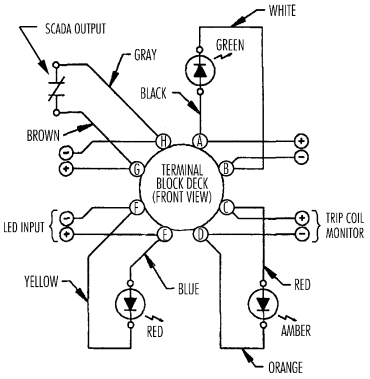
The Series 24 family of Manual and Remotely Operated Switches are Now Available with Built-In, Cost-Effective, Long-Life LED Indicators. The Series 24 Switch, the Utility Industry Standard for Quality and Reliability is Now a Better Value Than Ever!

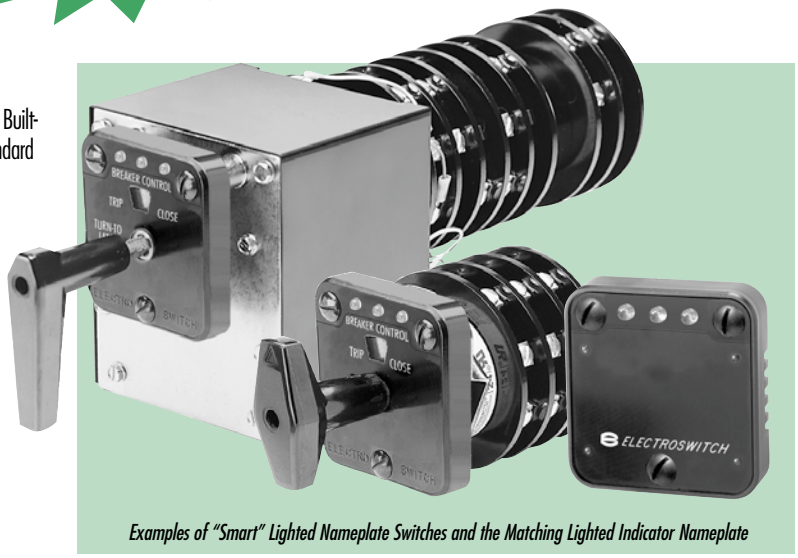
Benefits

- Saves Panel Space
- Reduces Purchase and Installation Cost
- Easy to Use… No Special Operator Training
- Provides Local and Remote (SCADA) Annunciation of Breaker Trip Coil Failure

Features

- Can be used on ALL Series 24 Switches
- Is Available with One, Two or Three Replaceable LEDs
- Flexible Circuitry lets LEDs be Wired to Indicate Any Desired Event
- Is Available With or Without a Mechanical Target
- 125VDC Unit Covers IEEE 48V/125V Ranges (38 to 140VDC)
- AC Unit Available
- Saves Panel Space by Fitting up to 3 LEDs into the Standard Series 24 Nameplate Footprint
- Allows Monitoring of Breaker Trip Coil with Local (Center LED) and SCADA Annunciation
- Model Available to Simultaneously Monitor Two Independent Isolated Trip Coils
- Uses Large LEDs that:
  - Are Brighter than the Typical Incandescent Bulb
  - Have an 11 Year Life (Typical)
  - Are Socket Mounted for Design Flexibility and Easy Front of Panel Field Replacement
  - Are More Rugged than Incandescent Bulbs
  - Are Available in Red, Green, Amber, Blue and White
  - Each LED Draws Less than 10mA when Lit





Examples of "Smart" Lighted Nameplate Switches and the Matching Lighted Indicator Nameplate

Approvals

• UL File No. E18174 • CSA • CE

Ordering Information

Part Numbers for the Series 24 Switches with Lighted Target Nameplate are fairly simple. Find the part number of the product you wish to order in the Electroswitch catalog, then simply add a two letter code after the second digit in its part number. The first letter of the code will always be " P " indicating a Lighted Target Nameplate. The second letter will change depending on the options as follows.

A = Single LED, Amber, 48/125VDC
B = Two LEDs, Green/Red, 48/125VDC
C = Three LEDs, Green/Amber/Red, 48/125VDC
D = Three LEDs, Green/Red/Red, 48/125VDC (Dual Trip Coil Monitor)
E = Single LED, Amber, 120VAC
F = Two LEDs, Green/Red, 120VAC
G = Three LEDs, Green/Amber/Red, 120VAC

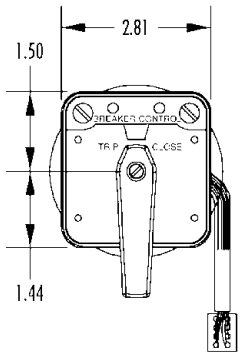
Consult factory for 24VDC, 250VDC, and special configurations.

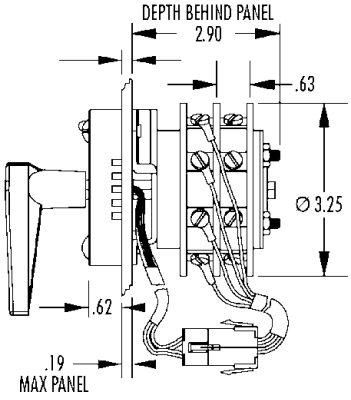
Example One:

A Series 24 Breaker Control Switch with circuit number 38 and a pistol grip handle is part number **2438D.** The same Breaker Control Switch with a Lighted Target Nameplate, three LEDs, and 120VAC LED voltage would become part number **24PG38D**.

Example Two:

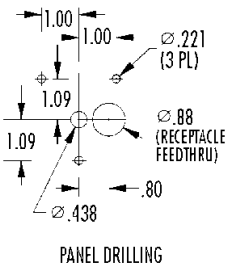
A Series 24 Control Switch Relay with standard circuit number 57, 48VDC relay operating voltage, and control circuit "C" is part number **8857CC**. The same Control Switch Relay with a Lighted Target Nameplate, Three LEDs, and 48/125VDC LED voltage would become part number **88PC57CC**.





Depth Behind Panel

Decks	Depth
1	3.06
2	3.43
3	4.18
4	4.93
5	5.31
6	6.06
7	6.81
8	7.18
9	8.06
10	8.68



PANEL DRILLING