

## SERIES 30 and 46

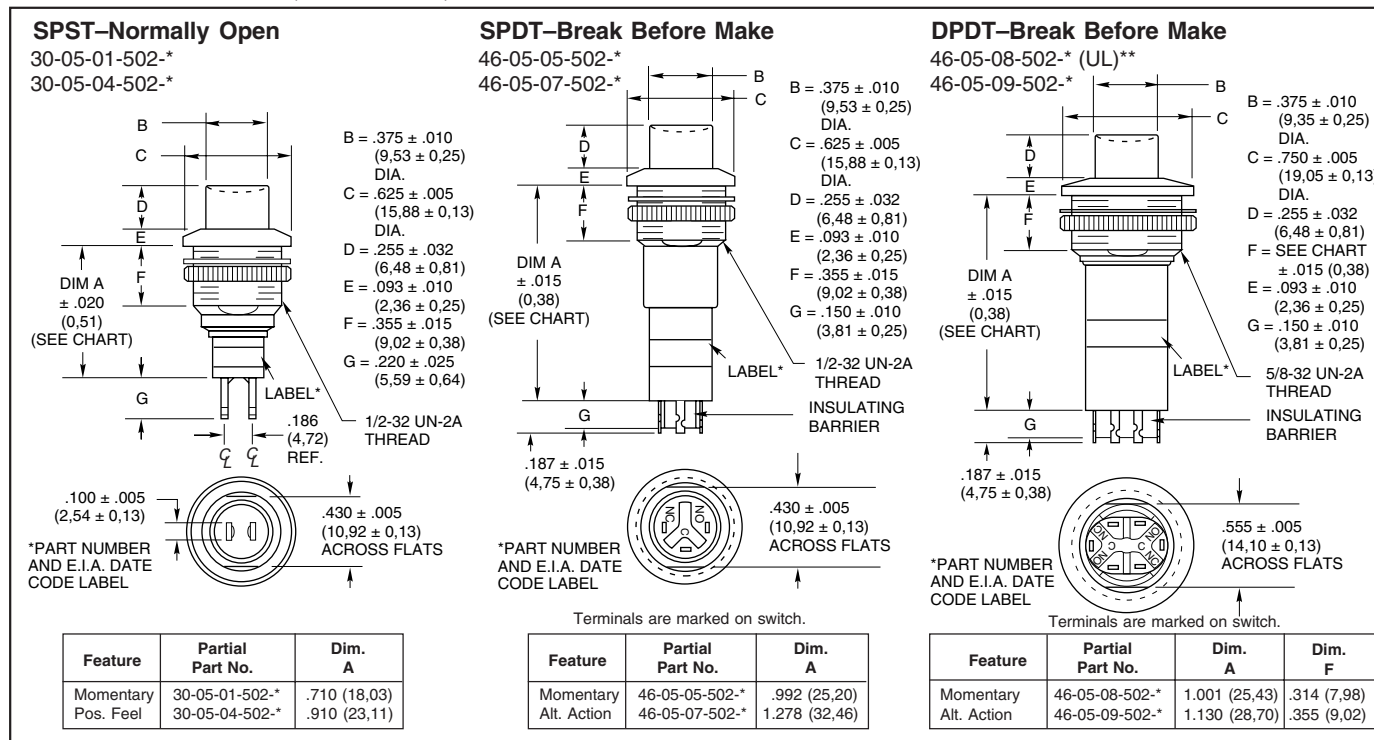
### Decorator Line

#### FEATURES

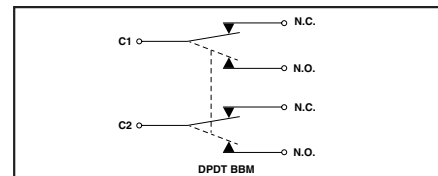
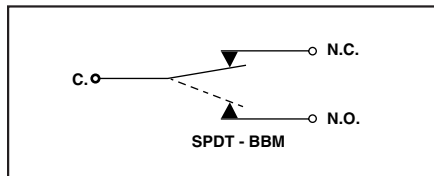
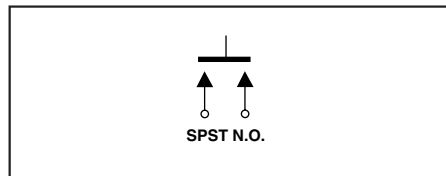
- Attractive Front Panel Bezels (6 choices)
- Space-Saving: Only 5/8" Diameter (SPST & SPDT) and 3/4" Diameter (DPDT) Round Bezels
- SPST with Option of Positive Feel
- SPDT, DPDT with Momentary Contact or Alternate Action
- Sturdy Metal Sleeve or Bushing and Nut Provide Secure Mounting
- UL Recognized Version



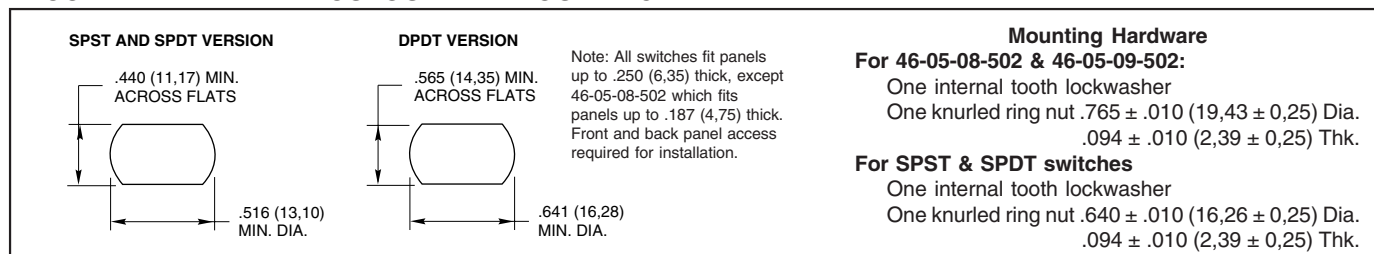
#### DIMENSIONS In Inches (and millimeters)



#### CIRCUITRY



#### RECOMMENDED PANEL CUTOUT AND MOUNTING HARDWARE



\*Partial part number; complete part number by adding a dash for button color: white -01; red -03; green -04; blue -05; yellow -06 or black -07, see Ordering Information.

\*\* Contact Grayhill for part number.

## SERIES 30 and 46 Decorator Line

### FEATURES

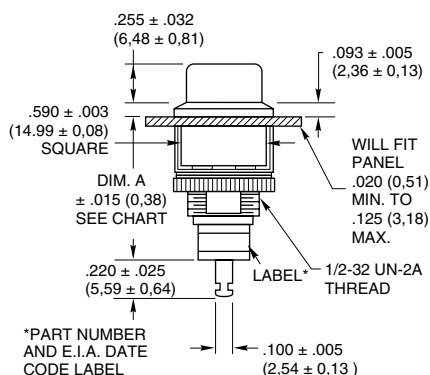
- Attractive Front Panel Bezels (6 choices)
- Space-Saving: Only 11/16" Square
- SPST with Option of Positive Feel
- SPDT, DPDT with Momentary Contact or Alternate Action
- Sturdy Metal Sleeve or Bushing and Nut Provide Secure Mounting



### DIMENSIONS In Inches (and millimeters)

#### SPST—Normally Open

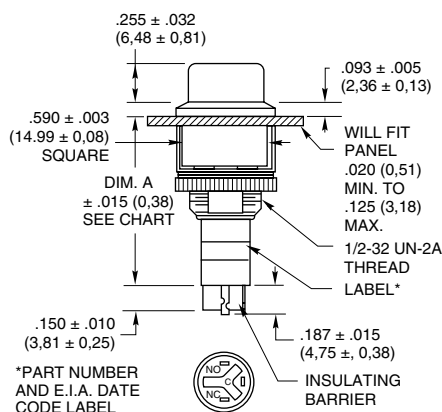
30-01-01-500-\*  
30-01-04-500-\*



| Feature   | Partial Part No. | Dim. A        |
|-----------|------------------|---------------|
| Momentary | 30-01-01-500-*   | .880 (22,35)  |
| Pos. Feel | 30-01-04-500-*   | 1.037 (26,34) |

#### SPDT—Break Before Make

46-01-05-500-\*  
46-01-07-500-\*

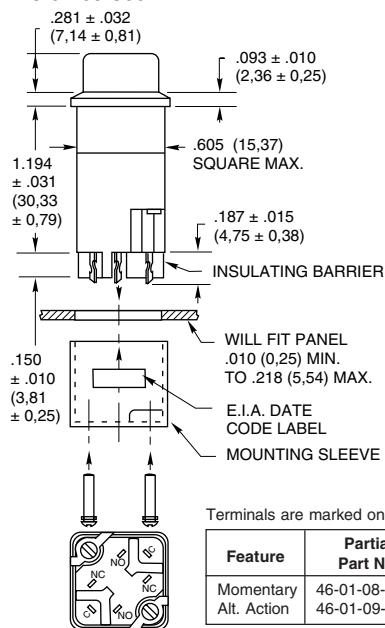


Terminals are marked on switch.

| Feature     | Partial Part No. | Dim. A        |
|-------------|------------------|---------------|
| Momentary   | 46-01-05-500-*   | 1.174 (29,82) |
| Alt. Action | 46-01-07-500-*   | 1.264 (32,11) |

#### DPDT—Break Before Make

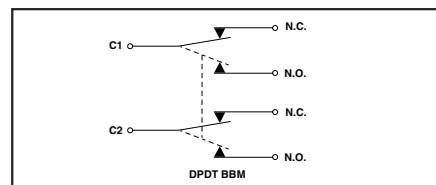
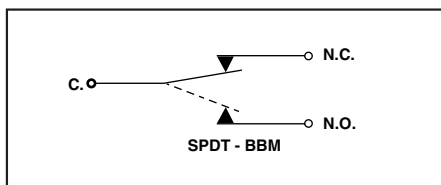
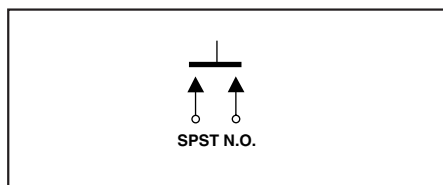
46-01-08-500-\*  
46-01-09-500-\*



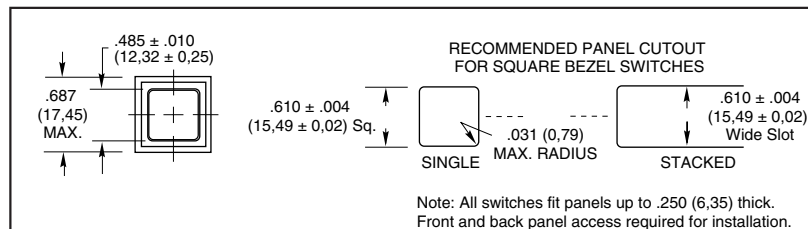
Terminals are marked on switch.

| Feature     | Partial Part No. |
|-------------|------------------|
| Momentary   | 46-01-08-500-*   |
| Alt. Action | 46-01-09-500-*   |

### CIRCUITRY



### FRONT VIEWS AND MOUNTING



#### Mounting Hardware

##### For 46-01-08-500 & 46-01-09-500

(See drawing above—mounting hardware shipped loose.)

##### For SPST & SPDT switches

One internal tooth lockwasher  
One knurled ring nut .640 ± .010 (16,26 ± 0,25) DIA.  
.094 ± .010 (2,39 ± 0,25) Thk.

\*Partial part number; complete part number by adding a dash for button color: white -01; red -03; green -04; blue -05; yellow -06 or black -07, see Ordering Information.

## SPECIFICATIONS

### Material and Finishes

**Lockwasher (Round Bezel):** Steel, zinc trivalent chromate-plated

**Behind Panel Plate (Square Bezel):** Steel, zinc trivalent chromate-plated

**Mounting Sleeve and Screws (46-01-08-500, 46-01-09-500 only):** Steel, zinc trivalent chromate-plated. **Base:** Phenolic per MIL-M-14, Type CFG

**Square Bezel:** ABS (SPST, SPDT), thermoset plastic (DPDT)

**Mounting Nut, Bushing, and Round Bezel:** Brass, tin zinc

**Button Cap:** ABS (UL version is PPS)

**Shorting Bar:** Series 30—Fine silver contact area

Series 46—Phosphor bronze, silver-plated

**Terminals:** Series 30—Fine silver contact area with silver-plated terminal ends

Series 46—Silver contact surface with tin/silver clad terminal ends

**Spring:** Tinned music wire

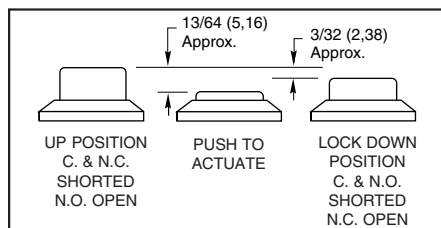
**Plunger:** Polyphenylene sulfide (PPS) for 30-01-01-500-X and 46-01-05-500-X. Nickel-plated brass for 46-01-07-500-X, 46-05-07-502-X, 46-01-09-500-X and 46-05-09-502-X. Zinc trivalent chromate-plated brass for 46-01-08-500-X. Polycarbonate for all others.

**Operating Temperature:** -40°C to +85°C

## ALTERNATE ACTION (PUSH-PUSH) OPERATING SEQUENCE

Part Number\* 46-05-07-502, 46-05-09-502, 46-01-07-500, 46-01-09-500

Alternate action (Push-Push) switches provide a maintained actuated position until the button is pushed again to release.



## STANDARD OPTIONS

Epoxy-sealed terminals and wire leads, see page E-35.

## ORDERING INFORMATION & OPERATING FEATURES

|                | Square Bezel   | Round Bezel    | Circuitry | Feature                    | Total Travel              | Bottoming Force | Actuating Force | Overtravel |
|----------------|----------------|----------------|-----------|----------------------------|---------------------------|-----------------|-----------------|------------|
| Butt Contact   | 30-01-01-500-* | 30-05-01-502-* | SPST—N.O. | Momentary                  | .080 ± .015 (2,03 ± 0,38) | —               | 10 ± 4 oz.      | —          |
|                | 30-01-04-500-* | 30-05-04-502-* | SPST—N.O. | Positive Feel & Overtravel | .156 ± .015 (3,96 ± 0,38) | —               | 18 ± 4 oz.      | .046 Min.  |
| Wiping Contact | 46-01-05-500-* | 46-05-05-502-* | SPDT      | Momentary                  | .180 min. (4,57)          | 1.1 ± .25 Lbs.  | —               | —          |
|                | 46-01-07-500-* | 46-05-07-502-* | SPDT      | Alternate Action           | .210 ± .015 (5,33 ± 0,38) | 1.5 ± .25 Lbs.  | —               | —          |
|                | 46-01-08-500-* | 46-05-08-502-* | DPDT      | Momentary                  | .180 min. (4,57)          | 1.6 ± .5 Lbs.   | —               | —          |
|                | 46-01-09-500-* | 46-05-09-502-* | DPDT      | Alternate Action           | .210 ± .015 (5,33 ± 0,38) | 1.8 ± .5 Lbs.   | —               | —          |

\*Partial part number; complete the part number by adding a dash for button color: white -01; red -03; green -04; blue -05; yellow -06 or black -07.

**Available from your local Grayhill Distributor.**  
For prices and discounts, contact a local Sales Office, an authorized local Distributor or Grayhill.

## RATINGS

| Electrical Ratings            | Series 30                                                                                                                                               | Series 46                       |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>Contacts</b>               | Butt type                                                                                                                                               | Wiping type                     |
| <b>Rating at 115 Vac Res.</b> | 1 Amp                                                                                                                                                   | 0.25 Amp                        |
| <b>Rating at 220 Vac Res.</b> | 0.5 Amp                                                                                                                                                 | 0.125 Amp                       |
| <b>Circuitry</b>              | SPST—N.O. (Standard);<br>SPST—N.O. (w/Overtravel),<br>SPST—N.O. (w/Positive Feel)                                                                       | SPDT, DPDT<br>Break Before Make |
| <b>Life Expectancy</b>        | SPST—N.O. (Standard):<br>1,000,000 operations<br>SPST—N.O. (w/Positive Feel):<br>200,000 operations;<br>SPST—N.O. (w/Overtravel):<br>500,000 operations | 250,000<br>operations           |
| <b>Contact Resistance</b>     | 25 milliohms or less on a new switch                                                                                                                    |                                 |
| <b>Voltage Breakdown</b>      | 1000 Vac between mutually insulated parts                                                                                                               |                                 |
| <b>Insulation Resistance</b>  | 1000 megohms minimum                                                                                                                                    |                                 |
| <b>Operating Temperature</b>  | -40°C to +85°C                                                                                                                                          |                                 |

## LEGENDS

All button caps can be printed in epoxy ink. Any type style or design can be used to produce the legend. If News Gothic Condensed style is used, limits can be approximated from the chart below; actual limits depend on specific legend.

There is a per-button impression charge. A nominal set up charge per legend applies to orders of 1 to 99 pieces. (Non-standard legends are subject to a one time tooling charge. Contact Grayhill for more specifics.)

| Grayhill Type Identification No. | Character Height (Typ.) | Sample Style and Sizes | Square Button Character and Line Limitation |            | Round Button Character and Line Limitation |     |
|----------------------------------|-------------------------|------------------------|---------------------------------------------|------------|--------------------------------------------|-----|
| 4GH088                           | .083 (2,1)              | ABCDEFGHIJ             | 6 Char.<br>2 Lines                          | TAB LOCATE | 3 Char.<br>1 Line                          | OFF |
| 1GH125                           | .138 (3,5)              | ABCDEFGHIJ             | 5 Char.<br>1 Lines                          | INDEX      | 3 Char.<br>1 Line                          | TAB |
| 3GH187                           | .207 (5,3)              | ABCDEF                 | 3 Char.<br>1 Line                           | OFF        | 2 Char.<br>1 Line                          | 15  |
| 2GH250                           | .276 (7,0)              | ABCD                   | 2 Char.<br>1 Line                           | 15         | N/A                                        | N/A |