

**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)

**SPST—Normally Open**  
30-05-01-502-\*  
30-05-04-502-\*

B = .375 ± .010 (9,53 ± 0,25) DIA.  
C = .625 ± .005 (15,88 ± 0,13) DIA.  
D = .255 ± .032 (6,48 ± 0,81) DIA.  
E = .093 ± .010 (2,36 ± 0,25) DIA.  
F = .355 ± .015 (9,02 ± 0,38) DIA.  
G = .220 ± .025 (5,59 ± 0,64) DIA.  
DIM A ± .020 (0,51) (SEE CHART)  
1/2-32 UN-2A THREAD  
.186 (4,72) REF.  
.100 ± .005 (2,54 ± 0,13)  
.430 ± .005 (10,92 ± 0,13) ACROSS FLATS

\*PART NUMBER AND E.I.A. DATE CODE LABEL

Feature	Partial Part No.	Dim. A
Momentary	30-05-01-502-*	.710 (18,03)
Pos. Feel	30-05-04-502-*	.910 (23,11)

**SPDT—Break Before Make**  
46-05-05-502-\*  
46-05-07-502-\*

B = .375 ± .010 (9,53 ± 0,25) DIA.  
C = .625 ± .005 (15,88 ± 0,13) DIA.  
D = .255 ± .032 (6,48 ± 0,81) DIA.  
E = .093 ± .010 (2,36 ± 0,25) DIA.  
F = .355 ± .015 (9,02 ± 0,38) DIA.  
G = .150 ± .010 (3,81 ± 0,25) DIA.  
DIM A ± .015 (0,38) (SEE CHART)  
1/2-32 UN-2A THREAD  
INSULATING BARRIER  
.187 ± .015 (4,75 ± 0,38)  
.430 ± .005 (10,92 ± 0,13) ACROSS FLATS

\*PART NUMBER AND E.I.A. DATE CODE LABEL

Terminals are marked on switch.

Feature	Partial Part No.	Dim. A
Momentary	46-05-05-502-*	.992 (25,20)
Alt. Action	46-05-07-502-*	1.278 (32,46)

**DPDT—Break Before Make**  
46-05-08-502-\* (UL)\*\*  
46-05-09-502-\*

B = .375 ± .010 (9,35 ± 0,25) DIA.  
C = .750 ± .005 (19,05 ± 0,13) DIA.  
D = .255 ± .032 (6,48 ± 0,81) DIA.  
F = SEE CHART ± .015 (0,38)  
E = .093 ± .010 (2,36 ± 0,25) DIA.  
G = .150 ± .010 (3,81 ± 0,25) DIA.  
DIM A ± .015 (0,38) (SEE CHART)  
5/8-32 UN-2A THREAD  
INSULATING BARRIER  
.187 ± .015 (4,75 ± 0,38)  
.555 ± .005 (14,10 ± 0,13) ACROSS FLATS

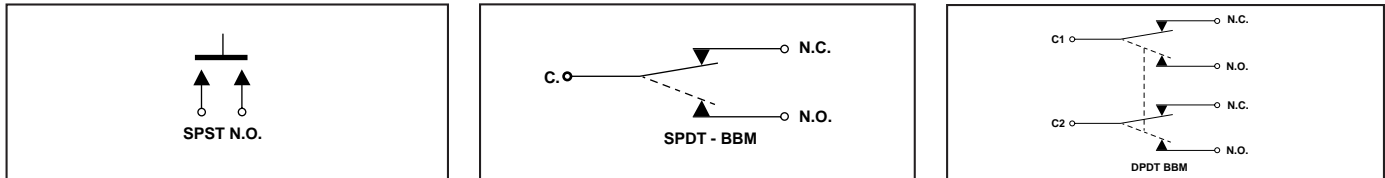
\*PART NUMBER AND E.I.A. DATE CODE LABEL

Terminals are marked on switch.

Feature	Partial Part No.	Dim. A	Dim. F
Momentary	46-05-08-502-*	1.001 (25,43)	.314 (7,98)
Alt. Action	46-05-09-502-*	1.130 (28,70)	.355 (9,02)

Pushbutton Switches

**CIRCUITRY**



**RECOMMENDED PANEL CUTOUT AND MOUNTING HARDWARE**

**SPST AND SPDT VERSION**

.440 (11,17) MIN. ACROSS FLATS  
.516 (13,10) MIN. DIA.

**DPDT VERSION**

.565 (14,35) MIN. ACROSS FLATS  
.641 (16,28) MIN. DIA.

**Mounting Hardware**

**For 46-05-08-502 & 46-05-09-502:**  
One internal tooth lockwasher  
One knurled ring nut .765 ± .010 (19,43 ± 0,25) Dia.  
.094 ± .010 (2,39 ± 0,25) Thk.

**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.  
\*\* Contact Grayhill for part number.

**SERIES 30 and 46**  
Decorator Line

**FEATURES**

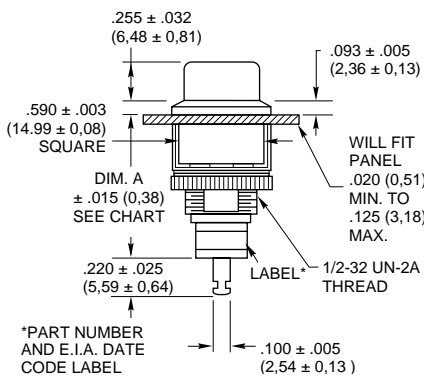
- Attractive Front Panel Bezels (6 choices)
- Space-Saving: Only 11/16" Square
- SPST with Option of Positive Feel
- SPDT, DPDT with Momentary Contact or Alternate Action
- Sturdy Metal Sleeve or Bushing and Nut Provide Secure Mounting



**DIMENSIONS** In Inches (and millimeters)

**SPST—Normally Open**

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

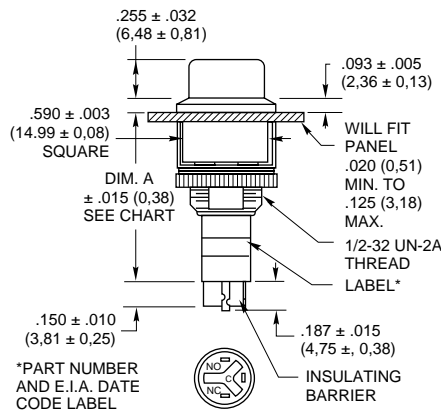


\*PART NUMBER AND E.I.A. DATE CODE LABEL

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-\*



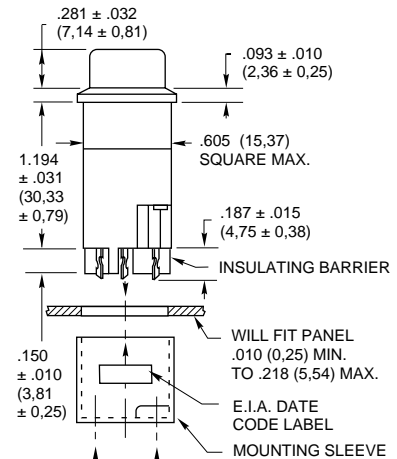
\*PART NUMBER AND E.I.A. DATE CODE LABEL

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**

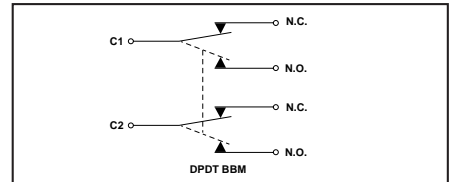
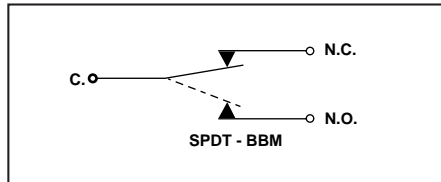
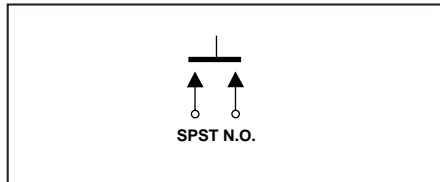
46-01-08-500-\*  
46-01-09-500-\*



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**

RECOMMENDED PANEL CUTOUT FOR SQUARE BEZEL SWITCHES

SINGLE      STACKED

Note: All switches fit panels up to .250 (6,35) thick. Front and back panel access required for installation.

**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.

Pushbutton Switches

**SPECIFICATIONS**

**Material and Finishes**

**Lockwasher (Round Bezel):** Steel, cadmium-plated

**Behind Panel Plate (Square Bezel):** Steel, cadmium-plated

**Mounting Sleeve and Screws (46-01-08-500, 46-01-09-500 only):** Steel, cadmium-plated.

**Base:** Phenolic per MIL-M-14, Type CFG

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

**Mounting Nut, Bushing, and Round Bezel:** Brass, cadmium-plated (Except bushing for Series 46, DPDT is aluminum)

**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 solder clad terminal ends

**Spring:** Tinned music wire

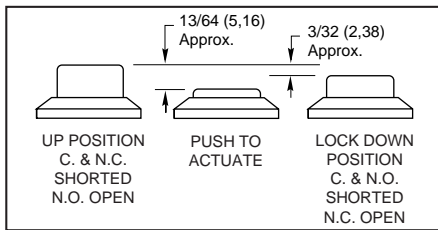
**Plunger:** Polyphenylene sulfide (PPS) for 30-01-01-500-X and 46-01-05-500-X. Nickel-plated brass for 46-01-07-500-X, 46-05-07-502-X, 46-01-09-500-X and 46-05-09-502-X. Cadmium-plated brass for 46-01-08-500-X. Polycarbonate for all others.

**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-34.

**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); SPST–N.O. (w/Overtravel), SPST–N.O. (w/Positive Feel)	SPDT, DPDT Break Before Make
<b>Life Expectancy</b>	SPST–N.O. (Standard): 1,000,000 operations SPST–N.O. (w/Positive Feel): 200,000 operations; SPST–N.O. (w/Overtravel): 500,000 operations	250,000 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	
			Character	Line	Character	Line
4GH088	.083 (2,1)	ABCDEFGHIJ	6 Char. 2 Lines	TAB LOCATE	3 Char. 1 Line	OFF
1GH125	.138 (3,5)	ABCDEFGHIJ	5 Char. 1 Lines	INDEX	3 Char. 1 Line	TAB
3GH187	.207 (5,3)	ABCDEF	3 Char. 1 Line	OFF	2 Char. 1 Line	15
2GH250	.276 (7,0)	ABCD	2 Char. 1 Line	15	N/A	N/A

**ORDERING INFORMATION & OPERATING FEATURES**

	Square Bezel	Round Bezel	Circuitry	Feature	Total Travel	Bottoming Force	Actuating Force	Overtravel
<b>Butt Contact</b>	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.
<b>Wiping Contact</b>	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.