SERIES 09, 42, 44, 50, 51
Isolated Position



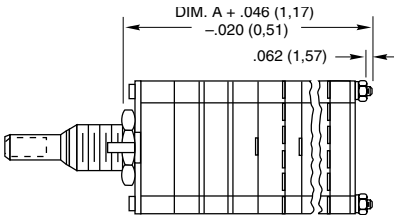
FEATURES
- Protected Switch Positions For Safety, Calibration, or Stand-by
- Choice of Push- or Pull-To-Turn
- 1/2" Diameter, 200 mA and 1" Diameter, 1 Amp Switch
- 10,000 Cycles of Operation

DESCRIPTION
An isolated position is one which cannot be reached by the normal rotation. An additional action is required by the operator. It could be either Push-To-Turn, or Pull-To-Turn. After the switch is rotated to the isolated position, releasing the shaft locks the switch in that position. Push or pull again to rotate the switch again.

Use isolated positions to protect a switch position from indiscriminate rotation. Such safety positions might include “calibrate”, “off” and/or “stand-by”.

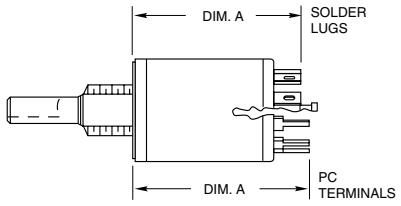
DIMENSIONS

Series 09



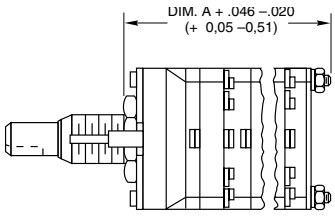
	Dimension A
1 Deck	1.228 (31,19)
2 Decks	1.496 (38,0)
3 Decks	1.764 (44,81)
4 Decks	2.032 (51,61)

Series 50 & 51



	Dimension A
Solder Lug	.893 ± .025 (22,68 ± 0,64)
PC Style	.897 ± .025 (22,78 ± 0,64)

Series 42 & 44



	Dimension A
1 Deck	1.371 (34,82)
2 Decks	1.717 (43,61)
3 Decks	2.063 (52,40)
4 Decks	2.409 (61,19)

Grayhill part number and date code marked on label.
Customer number marked on request.

EXTERNAL DIFFERENCES
The isolated position mechanism increases the depth of the Series 50 and 51 by 0.217" (5,51 mm). All other dimensions remain unchanged. In Series 9, 42 and 44, it has the appearance of an additional deck section without terminals, located directly behind the detent system.

SPECIFICATIONS
Electrical Ratings
The switching elements, and therefore ratings, are the same in an isolated position switch as in a conventional rotary switch. Mechanical life is also the same.

Additional Characteristics
Shaft Movement or Vertical Travel:

Series 09	.062 ± .020 (1,57 ± 0,51)
Series 42 & 44	.070 ± .020 (1,78 ± 0,51)
Series 50 & 51	.080 ± .020 (2,03 ± 0,51)

Push or Pull Force Required:

Series 09	1.75 ± .5 lbs
Series 42 & 44	2 ± .5 lbs
Series 50 & 51	2 ± .5 lbs

Stops: Single pole per deck switches with the maximum number of positions are supplied with stops only on request: 12 positions in 30° throw, 10 in 36°, and 8 in 45°.
Stop Strength: Approximately 7.5 pound-inches for the isolated position stop.

Materials and Finishes
Materials and finishes for the isolation mechanism are listed here.

Series 50 and 51
Housing: Zinc casting, tin/zinc-plated
Shaft: 303 stainless steel
Stop Pin and Stop Post: 303 stainless steel
Spring: Tinned music wire

Series 09
Housing: Phenolic for style A; Diallyl, for M
Shaft: 303 stainless steel, electro-polished
Stop Pin and Stop Post: 303 stainless steel
Spring: Tinned music wire

Series 42 and 44
Housing: Diallyl per MIL-M-14
Shaft: 303 stainless steel
Lock Plate: 302 stainless steel
Lock Arm: 316 stainless steel
Lock Post: Brass, tin/zinc-plated
Compression Spring: Tinned music wire

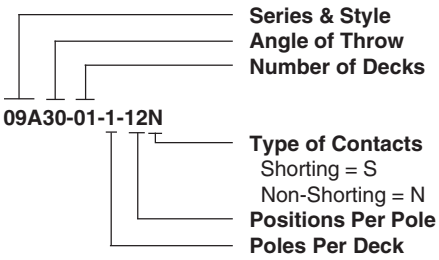
CHOICES AND LIMITATIONS

Standard Style	Military Style**	Style Description	Angle Of Throw	No. Of Decks	Poles Per Deck	Positions Per Pole	Shorting Or Non-Shorting
09A	09M	Solder Lug	30°	01 to 04 01 to 04 01 to 04 01 to 04 01 to 04 01 to 03	1 2 3 4 5 6	02 to 12 02 to 06 02 to 04 02 or 03 02 02	N or S N or S N or S N or S N or S N or S
42A 42S — —	42M — 42H 42HS	Solder Lug Sealed 125° Temperature Rating 125° Temp Rating, Sealed	36°	01 to 04 01 to 04	1 2	02 to 10 02 to 05	N or S N or S
44A 44S — —	44M — 44H 44HS	Solder Lug Sealed 125° Temperature Rating 125° Temp Rating, Sealed	30°	01 to 04 01 to 04 01 to 04 01 to 04 01 to 04 01 to 04	1 2 3 4 5 6	02 to 12 02 to 06 02 to 04 02 or 03 02 02	N or S N or S N or S N or S N or S N or S
			45°	01 to 04 01 to 03 01 or 02 01 or 02	1 2 3 4	02 to 08 02 to 04 02 02	N or S N or S N or S N
-- -- -- --	50C 50CP 50M* 50MP*	Solder Lug PC Mount Solder Lug, Sealed Sealed, PC	36°	01	1 2	02 to 10 02 to 05	N or S N or S
-- -- -- --	51C 51CP 51M* 51MP*	Solder Lug PC Mount Solder Lug, Sealed PC Mount, Sealed	30°	01	1 2 3 4	02 to 12 02 to 06 02 or 03 02 or 03	N or S N or S N or S N or S

*(Pull-to-Turn only) **For specifics on military qualified products, see Standard Switch Pages.

CONVENTIONAL NUMBERS

Start by creating a conventional switch number in the manner which follows:



Note: No stop arrangement suffix is needed. See Describing Stops.

DESCRIBING POSITIONS

The Grayhill system for isolating positions lets you choose the positions to be isolated. Grayhill inserts isolation posts next to the positions to be isolated. Consider a continuous rotation switch of the Series 09A with a 30° angle of throw. The terminals are listed here from 1 through 12 with a space between each to indicate where isolation posts might be inserted.

12 1 2 3 4 5 6 7 8 9 10 11 12

Let's isolate position 1 and position 2 from all other positions and from each other. We indicate isolation posts as shown here:

12P1P2P3 4 5 6 7 8 9 10 11 12

To isolate just position 1, describe like this:

12P1P2 3 4 5 6 7 8 9 10 11 12

To isolate positions 1 and 2 from all other positions, but not from each other, do this:

12P1 2P3 4 5 6 7 8 9 10 11 12

DESCRIBING STOPS

When a 1-pole switch has less than the maximum number of positions, consider also the stop system. Following is the arrangement for a 6 position switch with the position 1 isolated.

STOP 1P2 3 4 5 6 STOP

The word “STOP” indicates the conventional switch stops, which limit rotation to positions 1 through 6. To isolate position 1 we insert only one isolation post–between terminals 1 and 2. The stop system already prevents rotation beyond terminal 1.

In multi-pole switches, the stop system and isolation system described for the first pole, automatically affects the other poles. In the example above, isolating position #1 on the first pole isolates the first position (terminal #7) of the second pole. See Standard Switch Pages for a 2 pole circuit diagram for a 30° throw switch.

ORDERING INFORMATION

Indicate this as a SPECIAL switch to ensure that no error is made when the order is entered. Sample part number:

SPECIAL
09A30-04-1-12N
PULL 12P1P2P3 4 5 6 7 8 9 10 11 12

This sample part number orders a Series 9 standard style, four deck, one pole per deck, twelve positions per pole rotary switch with non-shorting contacts and isolation posts between positions 12 and 1, between 1 and 2, and between 2 and 3.

This lengthy order number is required to prevent any possible confusion in ordering the switch. When we receive your order, we will assign a special “short form” part number to facilitate future identification of this special switch. This number is sequentially assigned as the need arises, and is non-descriptive. A typical “short form” special part number might be 09YY12345. Contact Grayhill for price.

Not available through Distributors.