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Sensing and Control
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Sensing and Control
Honeywell Inc.
11 West Spring Street
Freeport, IL 61032



Manual Switches

Miniature Toggle Switches



11TW Standard toggle lever
15/32" bushing



1TW Standard unsealed toggle lever
1/4" bushing



12TW Pull-to-unlock toggle lever
15/32" bushing



2TW101 Standard sealed toggle lever
1/4" bushing

FEATURES

- Qualified to MIL-S-83731
- Save space and weight
- SPDT and DPDT circuitry
- Choice of 1/4" or 15/32" bushings
- 15/32" bushing has lever seal
- Pull-to-unlock option on 15/32" bushing
- UL recognized
- Temperature range: -85°F to +160°F (-65°C to +71°C)
- Sealed bushing versions

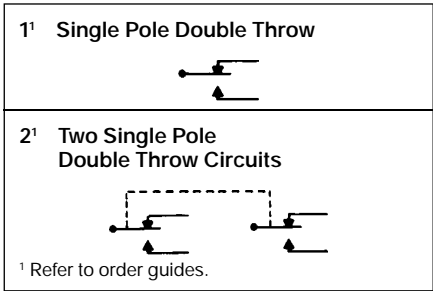
GENERAL INFORMATION

Molded-in terminals are plated for soldering. There is positive return on momentary versions. All switches come with a lock-washer, a keying washer, and two hex-nuts. Special "on-on-on" circuitries, similar to those shown for TL, are also available for TW.

ELECTRICAL RATINGS

Volts	Amperes		
	Resistive	Inductive	Lamp
30 VDC	5	2	1
115 VAC	5	2	1
UL Code 117	5 amps @ 125 VAC		

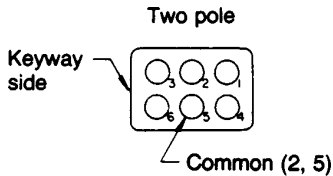
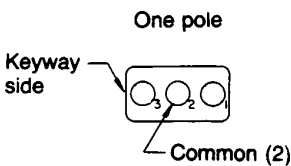
CIRCUITRY



TERMINAL CIRCUIT IDENTIFICATIONS

Terminal identifications are referred to in the Ordering Charts to indicate which circuits are made in each toggle position

(i.e., "1-2" reference indicates circuit closure through terminals 1 and 2).



Manual Switches

Miniature Toggle Switches

TW Series

TW 2-POSITION ORDER GUIDES

Switches with ¹⁵/₃₂" Bushings

No. Poles	Circuits Made With Toggle At:		Sealed Standard Toggle		Sealed Pull-to-Unlock Toggle**	
	Keyway Position	Opposite Keyway	Catalog Listing	Military No.	Add Suffix to Standard Listing	Military No.**
1	OFF	2-3 ON	11TW1-2	MS27718-22-1	D, F, G	MS27720-22-1
1	2-1 ON	2-3 ON	11TW1-3	MS27718-23-1	D, F, G	MS27720-23-1
1	2-1 ON*	2-3 ON	11TW1-8	MS27718-26-1	F	MS27720-26-1
2	OFF	2-3 & 5-6 ON	12TW1-2	MS27719-22-1	D, F, G	MS27721-22-1
2	2-1 & 5-4 ON	2-3 & 5-6 ON	12TW1-3	MS27719-23-1	D, F, G	MS27721-23-1
2	2-1 & 5-4 ON*	2-3 & 5-6 ON	12TW1-8	MS27719-26-1	F	MS27721-26-1

* These positions are momentary. All others are maintained.
 ** Also add appropriate suffix letter to the Military Number.

Switches with ¹/₄" Bushings

No. Poles	Circuits Made With Toggle At:		Unsealed Standard Toggle		Sealed Standard Toggle
	Keyway Position	Opposite Keyway	Catalog Listing	Military No.	Catalog Listing
1	OFF	2-3 ON	1TW1-2	MS27716-22-1	1TW101-2
1	2-1 ON	2-3 ON	1TW1-3	MS27716-23-1	1TW101-3
1	2-1 ON*	2-3 ON	1TW1-8	MS27716-26-1	1TW101-8
2	OFF	2-3 & 5-6 ON	2TW1-2	MS27717-22-1	2TW101-2
2	2-1 & 5-4 ON	2-3 & 5-6 ON	2TW1-3	MS27717-23-1	2TW101-3
2	2-1 & 5-4 ON*	2-3 & 5-6 ON	2TW1-8	MS27717-26-1	2TW101-8

* These positions are momentary. All others are maintained.

TW 3-POSITION ORDER GUIDES

Switches with ¹⁵/₃₂" Bushings

No. Poles	Circuits Made With Toggle At:			Sealed Standard Toggle		Sealed Pull-to-Unlock Toggle	
	Keyway Position	Center Position	Opposite Keyway	Catalog Listing	Military No.	Add Suffix to Standard Listing	Military No.**
1	2-1 ON	OFF	2-3 ON	11TW1-1	MS27718-21-1	ALL	MS27720-21-1
1	2-1 ON*	OFF	2-3 ON	11TW1-5	MS27718-31-1	E, F, K, L, M, N	MS27720-31-1
1	2-1 ON*	OFF	2-3 ON*	11TW1-7	MS27718-27-1	E, L, N	MS27720-27-1
2	2-1 & 5-4 ON	OFF	2-3 & 5-6 ON	12TW1-1	MS27719-21-1	ALL	MS27721-21-1
2	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON	12TW1-5	MS27719-31-1	E, F, K, L, M, N	MS27721-31-1
2	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON*	12TW1-7	MS27719-27-1	E, L, N	MS27721-27-1

* These positions only are momentary. All others are maintained.
 ** Also add appropriate suffix letter to the Military Number.

Switches with ¹/₄" Bushings

No. Poles	Circuits Made With Toggle At:			Unsealed Standard Toggle		Sealed Standard Toggle
	Keyway Position	Center Position	Opposite Keyway	Catalog Listing	Military No.	Catalog Listing
1	2-1 ON	OFF	2-3 ON	1TW1-1	MS27716-21-1	1TW101-1
1	2-1 ON*	OFF	2-3 ON	1TW1-5	MS27716-31-1	1TW101-5
1	2-1 ON*	OFF	2-3 ON*	1TW1-7	MS27716-27-1	1TW101-7
2	2-1 & 5-4 ON	OFF	2-3 & 5-6 ON	2TW1-1	MS27717-21-1	2TW101-1
2	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON	2TW1-5	MS27717-31-1	2TW101-5
2	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON*	2TW1-7	MS27717-27-1	2TW101-7














* These positions are momentary. All others are maintained.

Manual Switches

Miniature Toggle Switches (IWTS)

LOCKING CONFIGURATIONS

When ordering pull-to-unlock toggle listings, add the suffix letter shown in this chart to the standard toggle catalog listing and the Military Approval number.

A  Locked In Three Positions	B  Locked In Center and Extreme Position (Keyway Side)	D  Locked Out Of Center Position	E  Locked In Center Position	F  Locked In Extreme Position (Opposite Keyway)	G  Locked In Extreme Position (Keyway Side)	H  Locked Out Of Center And Extreme Position (Keyway Side)
J  Locked Out Of Center And Extreme Position (Opposite Keyway)	K  Locked In Center And Extreme Position (Opposite Keyway)	L  Locked Out Of Extreme Position (Keyway Side)	M  Locked Out Of And Into Extreme Position (Opposite Keyway)	N  Locked Out Of Extreme Position (Opposite Keyway)	P  Locked Out Of And Into Extreme Position (Keyway Side)	



WITH IWTS TERMINATION

- ¹⁵/₃₂" bushing has lever seal
- One or two pole circuitry
- Accepts #20 wire using M39029/1-101 contact pins
- Connections resist shock, vibration, and high pulling force

TW 2-POSITION ORDER GUIDE — IWTS TERMINATION

No. Poles	Circuits Made With Toggle At:		Standard Toggle	Pull-to-Unlock Toggle
	Keyway Position	Opposite Keyway	Catalog Listing	Add Suffix to Standard Listing
1	2-1 ON	2-3 ON	111TW1-3	D, F, G
1	2-1 ON*	2-3 ON	111TW1-8	F
2	2-1 & 5-4 ON	2-3 & 5-6 ON	112TW1-3	D, F, G
2	2-1 & 5-4 ON*	2-3 & 5-6 ON	112TW1-8	F

TW 3-POSITION ORDER GUIDE — IWTS TERMINATION

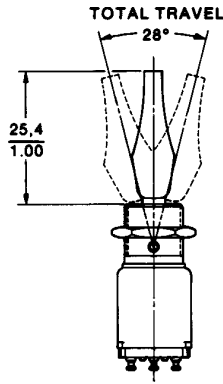
No. Poles	Circuits Made With Toggle At:			Standard Toggle	Pull-to-Unlock Toggle
	Keyway Position	Center Position	Opposite Keyway	Catalog Listing	Add Suffix to Standard Listing
1	2-1 ON	OFF	2-3 ON	111TW1-1	ALL
1	2-1 ON*	OFF	2-3 ON	111TW1-5	E, F, K, L, M, N
1	2-1 ON*	OFF	2-3 ON*	111TW1-7	E, L, N
2	2-1 & 5-4 ON	OFF	2-3 & 5-6 ON	112TW1-1	ALL
2	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON	112TW1-5	E, F, K, L, M, N
2	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON*	112TW1-7	E, L, N

* These positions only are momentary. All others are maintained.

Manuals

Manual Switches

Miniature Toggle Switches



WITH COLORED TAB LEVERS

- Available in seven colors
- Affords attractive front-of-panel appearance for graphic display and functional identify
- Levers made to withstand temperatures up to 160°F (71°C)
- Switches furnished with decorative knurled nut, a lockwasher, a keying washer, and a hex nut
- 15/32" bushing/sealed lever
- Available in IWTS termination versions

TW ORDER GUIDE

To order, combine the basic (function) listing from Table 1 with the desired lever color suffix from Table 2.

TABLE 1 — TOGGLE POSITION AND CONTACT ARRANGEMENT

Positions	No. Poles	Circuits Made With Toggle At:			Basic Listing Color Suffix See Table 2
		Keyway Position	Center Position	Opposite Keyway	
2	1	OFF	NONE	2-3 ON	11TW19-2— — — —
2	1	2-1 ON	NONE	2-3 ON	11TW19-3— — — —
2	1	2-1 ON*	NONE	2-3 ON	11TW19-8— — — —
2	2	OFF	NONE	2-3 & 5-6 ON	12TW19-2— — — —
2	2	2-1 & 5-4	NONE	2-3 & 5-6 ON	12TW19-3— — — —
2	2	2-1 & 5-4*	NONE	2-3 & 5-6 ON	12TW19-8— — — —
3	1	2-1 ON	OFF	2-3 ON	11TW19-1— — — —
3	1	2-1 ON*	OFF	2-3 ON	11TW19-5— — — —
3	1	2-1 ON*	OFF	2-3 ON*	11TW19-7— — — —
3	2	2-1 & 5-4 ON	OFF	2-3 & 5-6 ON	12TW19-1— — — —
3	2	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON	12TW19-5— — — —
3	2	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON*	12TW19-7— — — —

* These positions only are momentary. All others are maintained.

TABLE 2 — TAB LEVER COLORS

Tab Lever Color	White	Black	Blue	Red	Green	Orange	Light Gray
Color suffix	A001	A002	A003	A004	A005	A006	A007

TW SWITCHES WITH SPECIAL CIRCUITRIES ORDER GUIDE

All 2-pole 3-position TW switches are available with special "on-on-on" - 10, - 50, - 70 circuitry options as shown below.

2-Pole 3-Position Switches			Sealed Standard Toggle		Unsealed Std. Toggle	Sealed Tab Lever
Circuits Made With Toggle At:			15/32" bushing	1/4" bushing	1/4" bushing	15/32" bushing
Keyway Position	Center Position	Opposite Keyway	Catalog Listing	Catalog Listing	Catalog Listing	Catalog Listing
2-1 & 5-4 ON	2-1 & 5-6 ON	2-3 & 5-6 ON	12TW1-10	2TW101-10	2TW1-10	12TW19-10— — — —
2-1 & 5-4 ON*	2-1 & 5-6 ON	2-3 & 5-6 ON	12TW1-50	2TW101-50	2TW1-50	12TW19-50— — — —
2-1 & 5-4 ON*	2-1 & 5-6 ON	2-3 & 5-6 ON*	12TW1-70	2TW101-70	2TW1-70	12TW19-70— — — —

* These positions are momentary. All others are maintained.

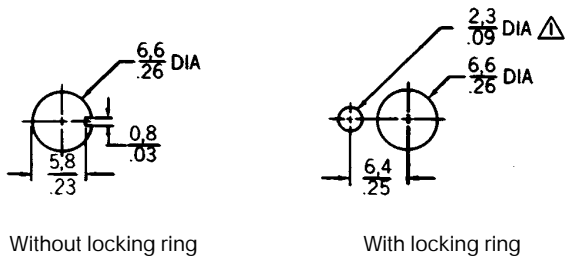
Manual Switches

Miniature Toggle Switches

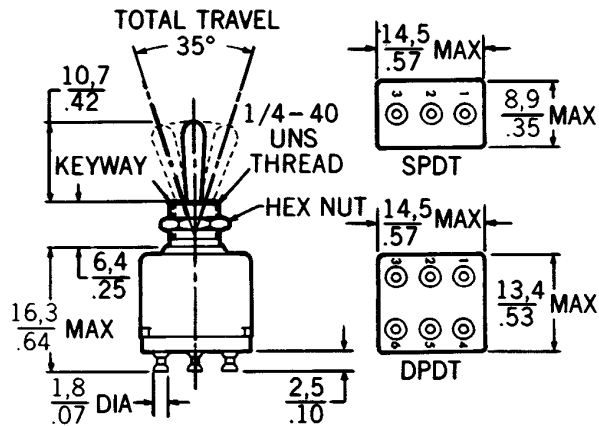
TW Series

MOUNTING DIMENSIONS (For reference only)

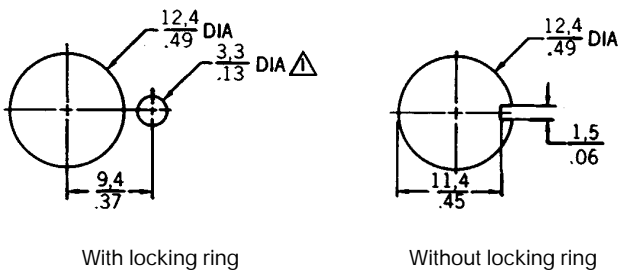
Mounting detail for 1/4" bushing switches



Dimensions for 1/4" bushing switches



Mounting detail for 15/32" bushing switches

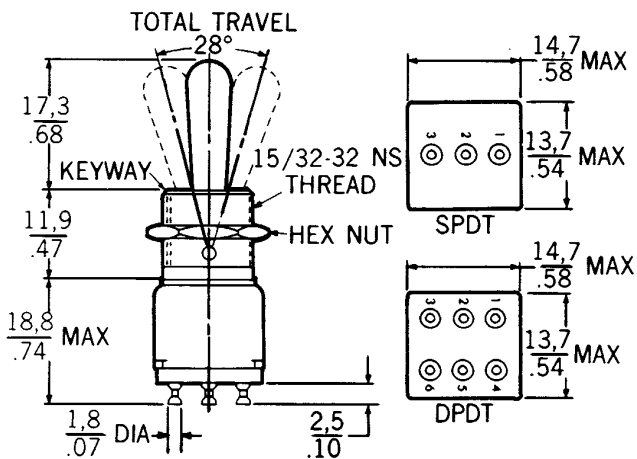


Note: \triangle 1,1/05 MIN. DEEP TO ACCOMMODATE LOCKING RING. FOR SWITCHES USING PANEL SEAL, DO NOT ALLOW THRU HOLE MOUNTING.

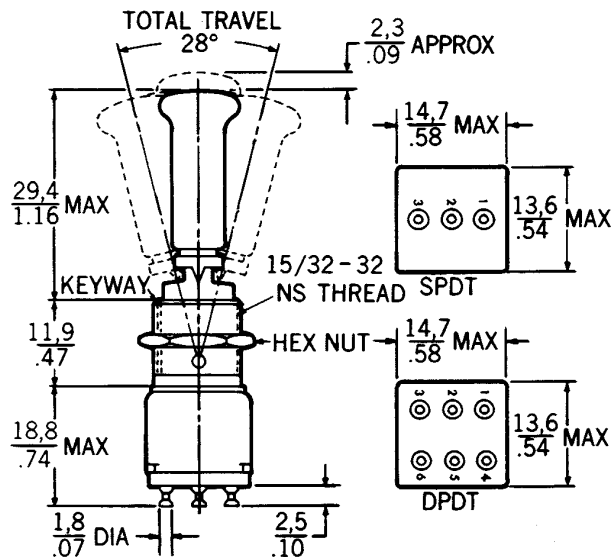
Key: 0,0 = mm
0.00 = inches

Dimensions for 15/32" switches

Standard toggle lever



Pull-to-unlock toggle lever



Manuals

Manual Switches

Toggle Switches



2-pole shown

FEATURES

- 2 or 3-position, momentary and maintained action
- 1 and 2-pole circuitry
- Rated up to 15 amps
- Lever-to-bushing seal
- Solder, screw, or quick-connect terminals
- UL recognized, CSA certified

Colored tab levers and special “on-on-on” circuitry can also be furnished.

TERMINAL CIRCUIT IDENTIFICATION

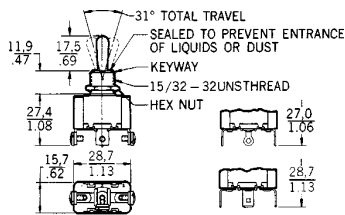
Terminal identifications in the order guides indicate which circuits are made in each position (i.e., 1-2 indicates circuit closure through terminals 1 and 2).

ELECTRICAL RATINGS

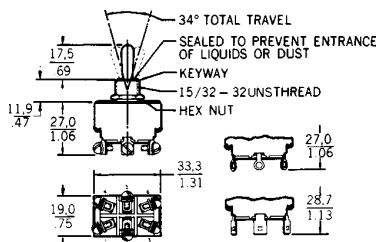
Rating Code	UL/CSA Rating
L192	10 Amps, 125, 250, 277 VAC ¼ HP, 125 VAC ½ HP, 250, 277 VAC 3 Amps, 125 VAC “L”
L191	15 Amps, 125, 250, 277 VAC ½ HP, 125 VAC 1 HP, 250, 277 VAC 5 Amps, 125 VAC (L)

MOUNTING DIMENSIONS

1-pole



2-pole



TS 2-POSITION ORDER GUIDE

No. Of Poles	Circuit(s) Made With Toggle At:		UL/CSA Rating Code	Screw Terminals	Solder Terminals	Quick-Connect Terminals
	Keyway Position	Opposite Keyway				
1	OFF	2-3 ON	L191	11TS15-2	11TS115-2	11TS95-2
	2-1 ON	2-3 ON	L191	11TS15-3	11TS115-3	11TS95-3
	OFF*	2-3 ON	L192	11TS15-4		11TS95-4
	2-1 ON*	OFF	L192	11TS15-6	11TS115-6	11TS95-6
	2-1 ON*	2-3 ON	L192	11TS15-8	11TS115-8	
2	OFF	2-3 & 5-6 ON	L191	12TS15-2	12TS115-2	12TS95-2
	2-1 & 5-4 ON	2-3 & 5-6 ON	L191	12TS15-3	12TS115-3	12TS95-3
	OFF*	2-3 & 5-6 ON	L192	12TS15-4		
	2-1 & 5-4 ON*	OFF	L192	12TS15-6		
	2-1 & 5-4 ON*	2-3 & 5-6 ON	L192	12TS15-8	12TS115-8	

TS 3-POSITION ORDER GUIDE

No. Of Poles	Circuit(s) Made With Toggle At:			UL/CSA Rating Code	Screw Terminals	Solder Terminals	Quick-Connect Terminals
	Keyway Position	Center Position	Opposite Keyway				
1	2-1 ON	OFF	2-3 ON	L191	11TS15-1	11TS115-1	11TS95-1
	2-1 ON*	OFF	2-3 ON	L192	11TS15-5	11TS115-5	11TS95-5
	2-1 ON*	OFF	2-3 ON*	L192	11TS15-7	11TS115-7	11TS95-7
2	2-1 & 5-4 ON	OFF	2-3 & 5-6 ON	L191	12TS15-1	12TS115-1	12TS95-1
	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON	L192	12TS15-5	12TS115-5	12TS95-5
	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON*	L192	12TS15-7		12TS95-7
	2-1 & 5-4 ON	2-1 & 5-6 ON	2-3 & 5-6 ON	L191	—		12TS95-10

* Marked toggle positions are momentary. All other positions are maintained.