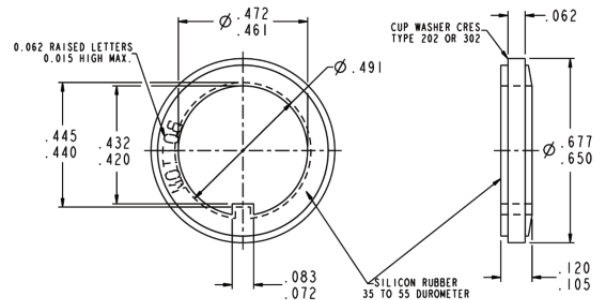




T9 Toggle Switches

MIL & Commercial Toggle Switches



Optional Panel Seal P/N 710196/MIL. P/N M5423/16-01

Qualified to MIL-DTL-3950

UL, CSA & CE approvals

Commercial versions sealed per IP68

Lever lockout option available

Mechanical life 40,000 cycles, minimum

Optional panel seal

Maintained & momentary toggle action

RoHS/WEEE/Reach compliant

The T9 Toggle Switch is an ideal switch for demanding applications. Qualified to MIL-DTL-3950, this high performance switch is a logical choice for use in environments where sealing and resistance to shock and vibration are required..

The T9 is particularly suitable for applications in defence, off-highway, aviation, commercial and industrial equipment. This compact, environmentally sealed switch is available in single and double pole configurations with lever lock out option. Circuitry configurations include two or three positions with many combinations of OFF-ON in momentary and maintained action including ON-ON-ON.

Ordering Information

Part numbering example

T9 - M S 2 - 21 A

Type

M. MIL Qualified to MIL-PRF-3950
C. Commercial version

Contacts

S. Standard (Silver plate)
L. Low level (Gold plate)

Poles

1. Single pole
2. Double pole

Lockout Suffix

A, B, D, E, F, G, H, J, K, L, M, N, P
(see charts below and over)

Circuit ID

21. to 33. 1 or 2 pole (see chart over)
01. to 06. 2 pole only (see chart over)

Stock Profile

OTTO Part No.	Military Part No.
T9-MS1-21	MS24523-21
T9-MS1-23	MS24523-23
T9-MS2-21	MS24524-21
T9-MS2-23	MS24524-23
T9-MS2-27	MS24524-27
TG-00001	MS25224-1
TG-00002	MS25224-3

Lever Lockout Configuration Codes

A Locked in all three positions
B Locked in centre and keyway side position
D Locked out of centre position
E Locked in centre position
F Locked in opposite keyway position
G Locked in keyway side position
H Locked out of centre and keyway side position
J Locked out of centre and opposite keyway position
K Locked in centre and opposite keyway position
L Locked out of keyway side position
M Locked out of and into opposite keyway position
N Locked out of opposite keyway position
P Locked out of an into keyway side position

SWITCH..it with

OTTO®

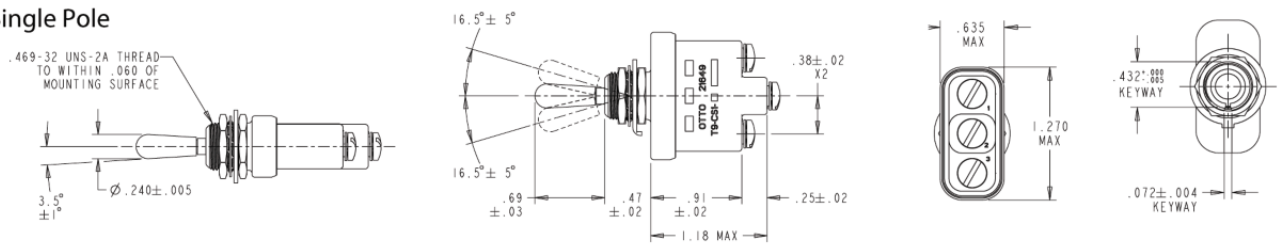


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Single Pole MS24523 (T9-MS1-xx)

Single Pole

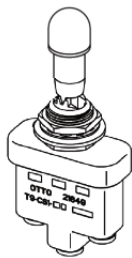
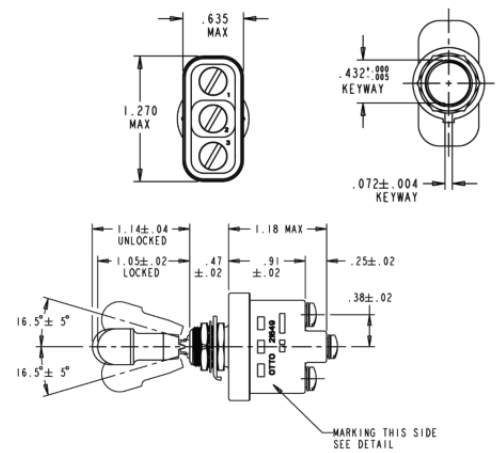
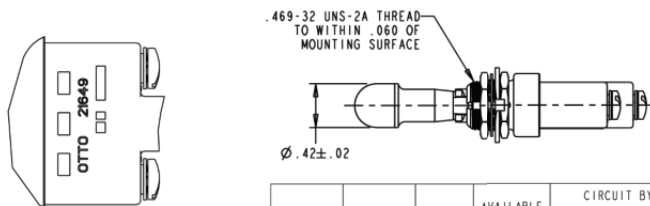
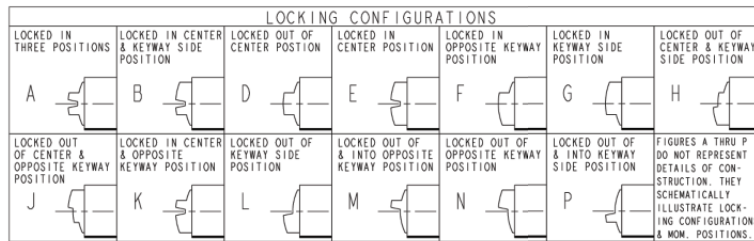


Low level 10mA @ 30mV (commercial version only)

OTTO PART NO.	MILITARY NO.	DASH NO.	CIRCUIT BY TOGGLE LEVER POSITION			ELECTRICAL RATINGS - SEA LEVEL & 65,000 FT					
			KEYWAY 1-2	CENTER	OPP. KEYWAY 2-3	28 VDC			115 VAC		
						LAMP	RESISTIVE	INDUCTIVE	LAMP	RESISTIVE	INDUCTIVE
T9-MS1-	MS24523-	21	ON	OFF	ON	5	20	15	3	15	10
		22	OFF	NONE	ON						
		23	ON	NONE	ON						
		24	NONE	OFF	ON						
		25	NONE	MOM OFF	ON						
		26	MOM ON	NONE	ON	4	15	10	2	15	7
		27	MOM ON	OFF	MOM ON						
		28	MOM ON	OFF	NONE						
		29	MOM OFF	NONE	ON						
		30	MOM ON	NONE	OFF						
31	MOM ON	OFF	ON								
OTTO PART NO.	MILITARY NO.	DASH NO.	KEYWAY 1-2	CENTER	OPP. KEYWAY 2-3	28 VDC			115 VAC		
T9-MS1-	MS24523-	32	NONE	ON	MOM ON	4	15	10	2	15	7
		33	NONE	ON	ON	5	20	15	3	15	10

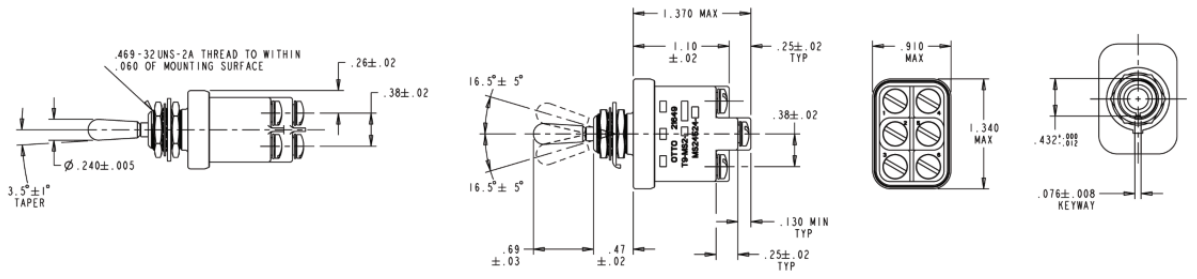
Single Pole MS24658 (T9-MS1xxx) Lever/Lock

Lever/Lock Single Pole



OTTO BASE PART NO.	MILITARY NO.	DASH NO.	AVAILABLE LOCKOUTS (SEE CHART)	CIRCUIT BY TOGGLE LEVER POSITION			ELECTRICAL RATINGS - SEA LEVEL & 65,000 FT					
				KEYWAY 1-2	CENTER	OPP. KEYWAY 2-3	28 VDC			115 VAC		
							LAMP	RESISTIVE	INDUCTIVE	LAMP	RESISTIVE	INDUCTIVE
T9-MS1-	MS24658-	21	ALL	ON	OFF	ON	5	20	15	3	15	10
		22	D F G	OFF	NONE	ON						
		23	D F G	ON	NONE	ON						
		24	E F K M	NONE	OFF	ON						
		25	F	NONE	OFF (M)	ON						
		26	F	MOM ON	NONE	ON	4	15	10	2	15	7
		27	E L N	MOM ON	OFF	MOM ON						
		28	E	MOM ON	OFF	NONE						
		29	F	MOM OFF	NONE	ON						
		30	F	MOM ON	NONE	OFF						
		31	E F K L M N	MOM ON	OFF	ON						
OTTO BASE NO.	MILITARY NO.	DASH NO.	AVAILABLE LOCKOUT	KEYWAY 1-2	CENTER	OPP. KEYWAY 2-3	28 VDC			115 VAC		
T9-MS1-	MS24658-	32	E	NONE	ON	MOM ON	4	15	10	2	15	7
		33	E F K M	NONE	ON	ON	5	20	15	3	15	10

Double Pole MS27407 (T9-MS2-xx)



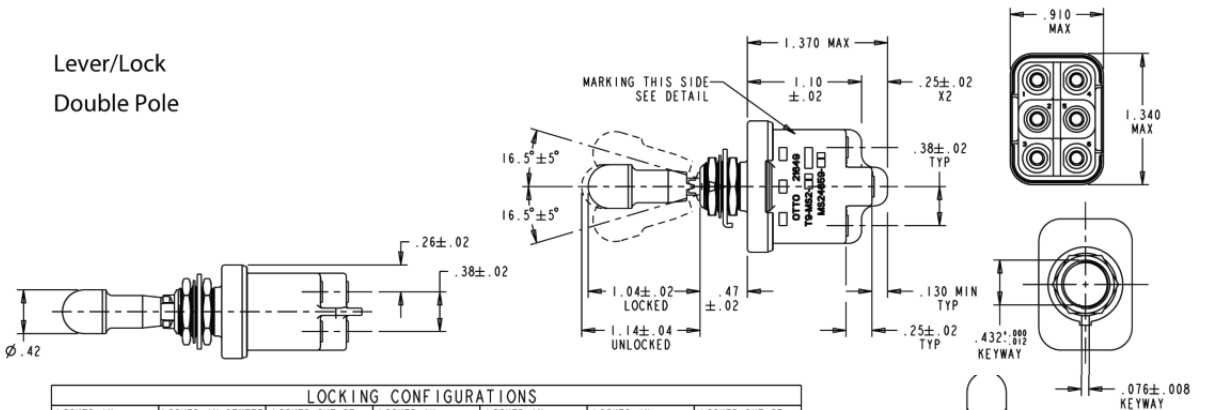
Low level 10mA @ 30mV (commercial version only)

OTTO BASE PART NO.	MILITARY STANDARD	DASH NO.	CIRCUIT CONFIGURATION			ELECTRICAL CURRENT RATINGS (AMPS) - SEA LEVEL & 65,000 FT					
			KEYWAY 1-2 / 4-5	CENTER 2-3 ON 4-5	OPP. KEYWAY 2-3 / 5-6	28 VDC			115 VAC, 60Hz & 400Hz		
						LAMP	RESISTIVE	INDUCTIVE	LAMP	RESISTIVE	INDUCTIVE
T9-MS2-01	MS27407-	1	ON	2-3 ON 4-5	ON	7	20	15	4	15	15
T9-MS2-02		2	MOM ON	2-3 ON 4-5	ON	5	18	10	2	11	8
T9-MS2-03		3	MOM ON	2-3 ON 4-5	MOM ON	7	20	15	4	15	15
T9-MS2-04		4	ON	1-2 ON 5-6	ON	5	18	10	2	11	8
T9-MS2-05		5	MOM ON	1-2 ON 5-6	ON	7	20	15	4	15	15
T9-MS2-06		6	MOM ON	1-2 ON 5-6	MOM ON	5	18	10	2	11	8
T9-MS2-	MS24524-	21	ON	OFF	ON	7	20	15	4	15	15
		22	OFF	NONE	ON						
		23	ON	NONE	ON						
		24	NONE	OFF	ON						
		25	NONE	MOM OFF	ON	5	18	10	2	11	8
		26	MOM ON	NONE	ON						
		27	MOM ON	OFF	MOM ON						
		28	MOM ON	OFF	NONE						
		29	MOM OFF	NONE	ON						
		30	MOM ON	NONE	OFF						
31	MOM ON	OFF	ON								
OTTO BASE PART NO.	MILITARY STANDARD	DASH NO.	KEYWAY	CENTER 1-2 / 4-5	OPP. KEYWAY 2-3 / 5-6	28 VDC			115 VAC		
T9-MS2-	MS24524-	32	NONE	ON	MOM ON	5	18	10	2	11	8
		33	NONE	ON	ON	7	20	15	4	15	15

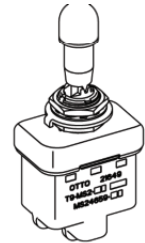


Double Pole MS24659 (T9-MS2-xxx) Lever/Lock

Lever/Lock
Double Pole



LOCKING CONFIGURATIONS							
LOCKED IN THREE POSITIONS	LOCKED IN CENTER & KEYWAY SIDE POSITION	LOCKED OUT OF CENTER POSITION	LOCKED IN CENTER POSITION	LOCKED IN OPPOSITE KEYWAY POSITION	LOCKED IN KEYWAY SIDE POSITION	LOCKED OUT OF CENTER & KEYWAY SIDE POSITION	FIGURES A THRU P DO NOT REPRESENT DETAILS OF CONSTRUCTION. THEY SCHEMATICALLY ILLUSTRATE LOCKING CONFIGURATIONS & MOM. POSITIONS.
A	B	D	E	F	G	H	
LOCKED OUT OF CENTER & OPPOSITE KEYWAY POSITION	LOCKED IN CENTER & OPPOSITE KEYWAY POSITION	LOCKED OUT OF KEYWAY SIDE POSITION	LOCKED OUT OF & INTO OPPOSITE KEYWAY POSITION	LOCKED OUT OF OPPOSITE KEYWAY POSITION	LOCKED OUT OF & INTO KEYWAY SIDE POSITION		
J	K	L	M	N	P		



OTTO BASE PART NO.	MILITARY STANDARD	DASH NO.	AVAILABLE LOCKOUTS (SEE CHART)	CIRCUIT CONFIGURATION			SWITCH POSITION MARKING	ELECTRICAL RATINGS - SEA LEVEL & 65,000 FT							
				KEYWAY 1-2 / 4-5	CENTER 1-2 / 4-5	OPP. KEYWAY 2-3 / 5-6		28 VDC			115 VAC, 60Hz & 400Hz				
								LAMP	RESISTIVE	INDUCTIVE	LAMP	RESISTIVE	INDUCTIVE		
T9-MS2-	MS24659-	21	ALL	ON	OFF	ON	ON	OFF	ON	7	20	15	4	15	15
		22	D, F, G	OFF	NONE	ON	OFF	ON							
		23	D, F, G	ON	NONE	ON	ON	ON							
		24	E, F, K, M	NONE	OFF	ON	OFF	ON							
		25	F	NONE	MOM OFF	ON	OFF	ON	5	18	10	2	11	8	
		26	F	MOM ON	NONE	ON	ON	ON							
		27	E, L, N	MOM ON	OFF	MOM ON	ON	OFF							ON
		28	E	MOM ON	OFF	NONE	ON	OFF							ON
		29	F	MOM OFF	NONE	ON	OFF	ON							
		30	F	MOM ON	NONE	OFF	ON	OFF							ON
31	E, F, K, L, M, N	MOM ON	OFF	ON	ON	OFF	ON								
OTTO BASE PART NO.	MILITARY STANDARD	DASH NO.	AVAILABLE LOCKOUT	KEYWAY	CENTER 1-2 / 4-5	OPP. KEYWAY 2-3 / 5-6	SWITCH POSITION MARKING	28 VDC			115 VAC				
T9-MS2-	MS24659-	32	E	NONE	ON	MOM ON	ON ON	5	18	10	2	11	8		
		33	E, F, K, M	NONE	ON	ON	ON ON	7	20	15	4	15	15		

T9 Toggle Guards

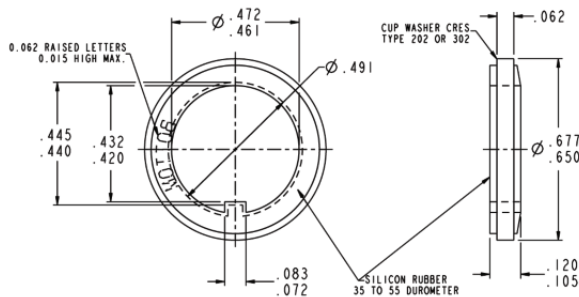
Toggle Switch Guards



The TG series toggle guards are offered for 2 and 3 position switches with 15/32-32 threaded bushings and slotted or flat keyways.

All models feature spring loaded covers that lock in either the open or closed positions. In the open position the switch actuator operates on all positions freely, in the closed position, the switch actuator is locked in the desired position.

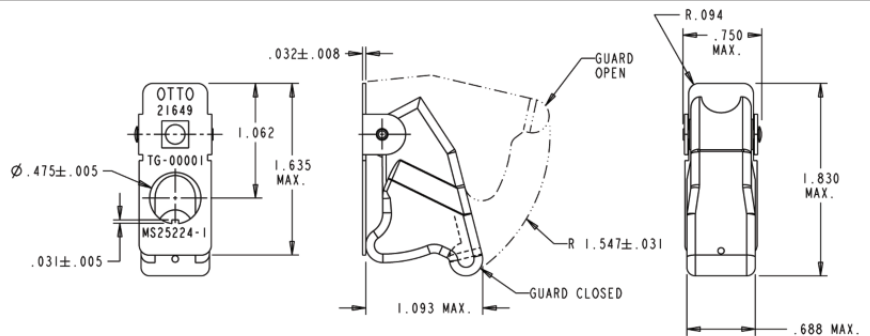
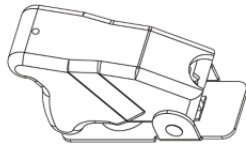
The toggle guard is easily installed on the switch from the front panel with two mounting hex nuts and may be used with the optional panel seal provided with each switch - No. 710196 illustrated below.



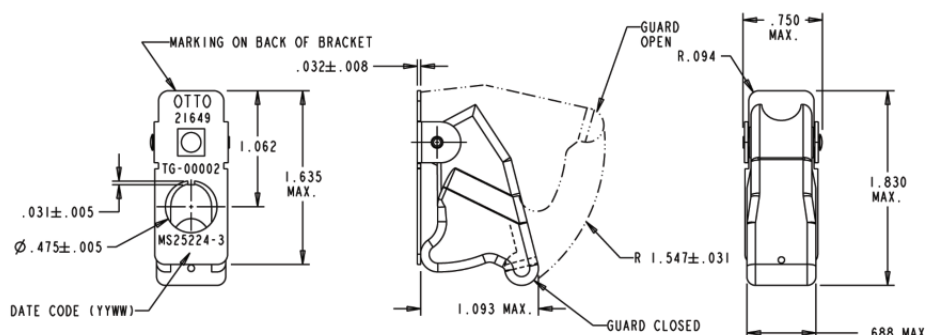
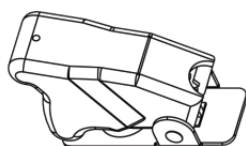
Optional Panel Seal P/N 710196/MIL. P/N M5423/16-01

- The TG series of toggle guards are offered with the T9 switch range.
- MS approved and QPL'd choices per MIL-DTL-7703 and MS25224-1 and -3
- Moulded plastic cover.
- Black metal mounting bracket.

TG-00001
MS25224-1



TG-00002
MS25224-3



WIRE..it SWITCH..it PROTECT..it MANAGE..it IDENTIFY..it PROTECT..it RELAY..it CONNECT..it



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