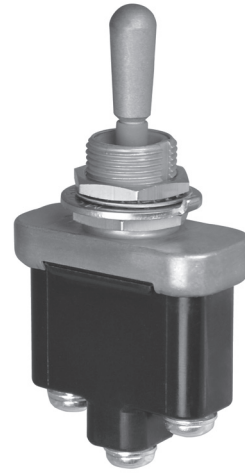


## ENVIRONMENTALLY SEALED TOGGLE

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 military, off-highway, aviation, commercial and industrial equipment. This compact, environmentally sealed switch is available in single and double pole configurations with a lever lockout option. Circuitry configurations include two or three positions with many combinations of OFF-ON in momentary and maintained action including ON-ON-ON.

### Features:

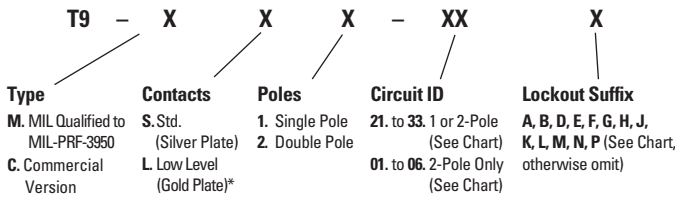
- Qualified to MIL-DTL-3950
- Commercial version is sealed per IP68S
- Lever lockout option available
- Maintained & momentary toggle action
- Optional panel seal
- RoHS compliant
- Black matte finish available. Contact factory.



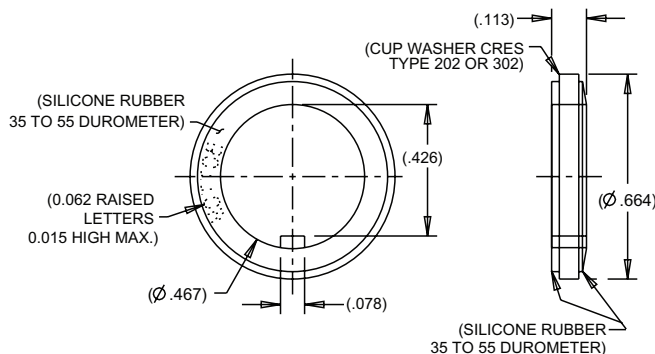
### Standard Characteristics/Ratings:

|                              |  |
|------------------------------|--|
| <b>ELECTRICAL RATINGS:</b>   | See Product Family Table   |
| <b>Electrical Life:</b>      | 20,000 cycles  |
| <b>Mechanical Life:</b>      | 40,000 cycles  |
| <b>Seal:</b>                 | IP68S and per MIL-DTL-3950   |
| <b>Operating Temp Range:</b> | -65°C to +71°C   |
| <b>MATERIALS:</b>            |  |
| <b>Toggle:</b>               | Stainless steel, passivated  |
| <b>Bushing &amp; Cover:</b>  | Aluminum, clear anodized or zinc alloy   |
| <b>Case:</b>                 | Thermoset plastic  |
| <b>Terminal Hardware:</b>    | Included   |
| <b>Mounting Hardware:</b>    | Hardware is not installed on switches.<br>Hex nuts, MS35333-136 lockwasher, MS25081-C4 keyway washer, 0.138-32 UNC-2A screw with lockwasher (as required). |

### T9 PART NUMBER CODE



\* Available in commercial only.

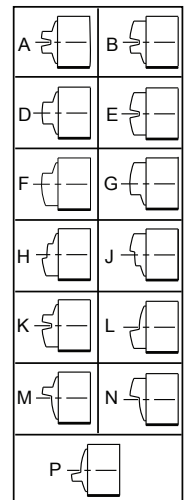


Optional Panel Seal P/N C710196, MIL-DTL- 5423/16

### Lever Lockout Configuration Codes

Figures A thru P are schematics to illustrate lockout configurations and momentary positions. They do not represent details of construction.

- A** Locked in all three positions
- B** Locked in Center and Keyway Side position
- D** Locked out of Center position
- E** Locked in Center position
- F** Locked in Opposite Keyway position
- G** Locked in Keyway Side position
- H** Locked out of Center and Keyway Side Position
- J** Locked out of Center and Opposite Keyway position
- K** Locked in Center 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 and into Keyway Side position

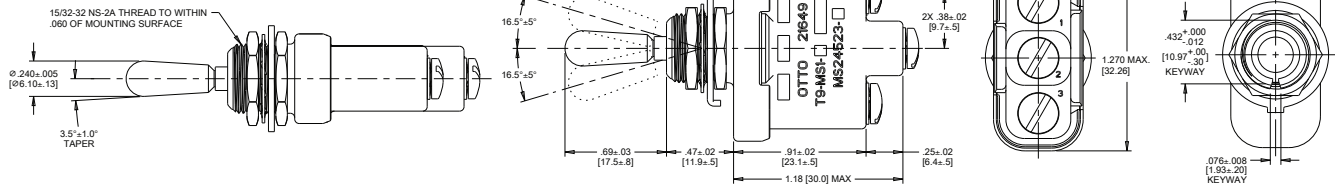


# COMMERCIAL & MIL TOGGLE SWITCHES

T9  
TOGGLES

## PRODUCT FAMILY TABLE

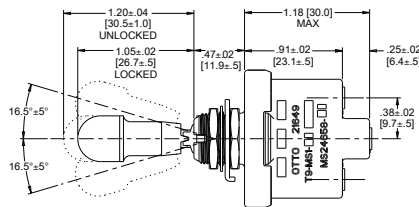
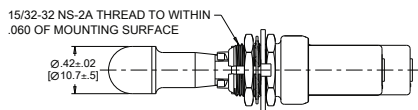
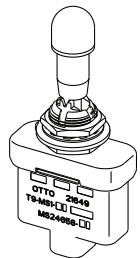
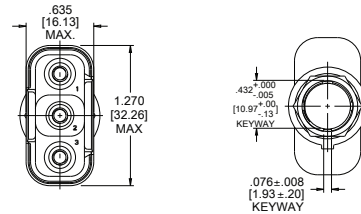
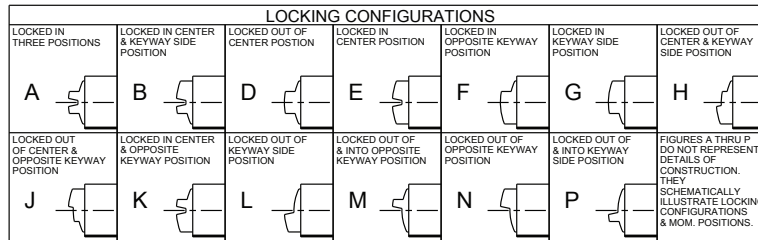
### Single Pole



Low level 10mA @ 30mV

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

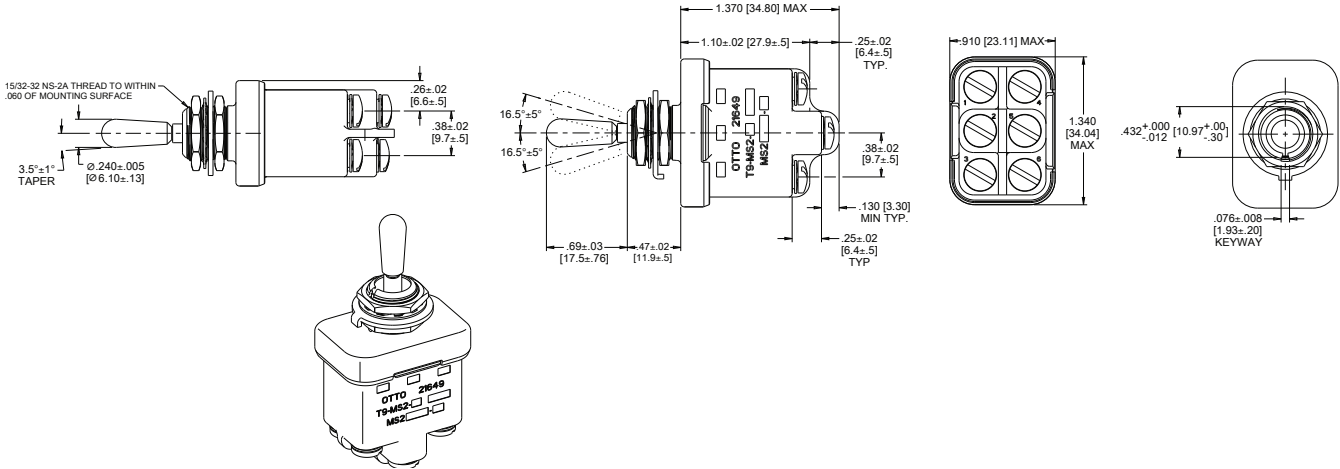
### Lever/Lock Single Pole



| 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 | SWITCH POSITION MARKING | 28 VDC                                     |           |           | 115 VAC |           |           |
|                    |              |          |                                |                                  |            |                 |                         | LAMP                                       | RESISTIVE | INDUCTIVE | LAMP    | RESISTIVE | INDUCTIVE |
| T9-MS1-            | MS24658-     | 21       | ALL                            | ON                               | OFF        | ON              | ON OFF ON               | 5  | 20        | 15        | 3       | 15        | 10        |
|                    |              | 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                             | OFF (M)    | ON              | OFF ON                  |  |           |           |         |           |           |
|                    |              | 26       | F                              | MOM ON                           | NONE       | ON              | ON ON                   |  |           |           |         |           |           |
|                    |              | 27       | E L N                          | MOM ON                           | OFF        | MOM ON          | ON OFF ON               | 4  | 15        | 10        | 2       | 15        | 7         |
|                    |              | 28       | E                              | MOM ON                           | OFF        | NONE            | ON OFF                  |  |           |           |         |           |           |
|                    |              | 29       | F                              | MOM OFF                          | NONE       | ON              | OFF ON                  |  |           |           |         |           |           |
|                    |              | 30       | F                              | MOM ON                           | NONE       | OFF             | ON OFF                  |  |           |           |         |           |           |
|                    |              | 31       | E F K L M N                    | MOM ON                           | OFF        | ON              | ON OFF ON               |  |           |           |         |           |           |
| OTTO BASE NO.      | MILITARY NO. | DASH NO. | AVAILABLE LOCKOUT              | KEYWAY                           | CENTER 1-2 | OPP. KEYWAY 2-3 | SWITCH POSITION MARKING |  |           |           |         |           |           |
| T9-MS1-            | MS24658-     | 32       | E                              | NONE                             | ON         | MOM ON          | ON ON                   | 4  | 15        | 10        | 2       | 15        | 7         |
| T9-MS1-            | MS24658-     | 33       | E F K M                        | NONE                             | ON         | ON              | ON ON                   | 5  | 20        | 15        | 3       | 15        | 10        |

PRODUCT FAMILY TABLE

**Double Pole**

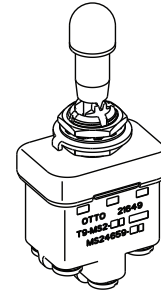
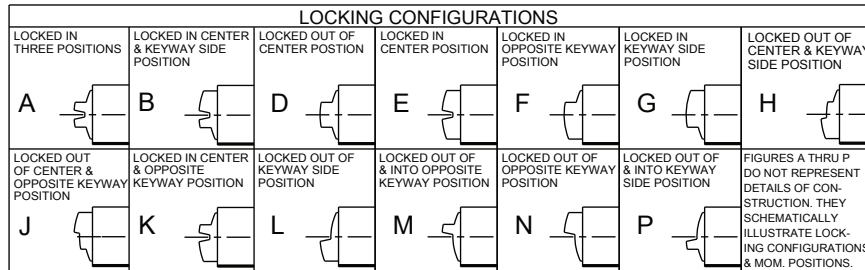
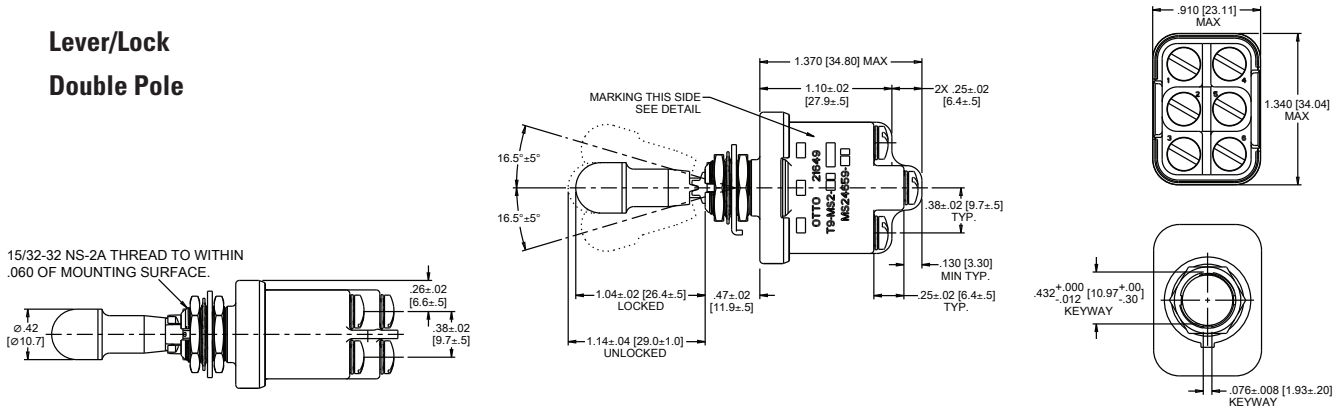


Low level 10mA @ 30mV

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

## PRODUCT FAMILY TABLE

### Lever/Lock Double Pole



| 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                  | 5  | 18        | 10        | 2                     | 11        | 8         |
|                    |                   | 25       | F                              | NONE                  | MOM OFF          | ON                    | OFF ON                  |  |           |           |                       |           |           |
|                    |                   | 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                  |  |           |           |                       |           |           |
|                    |                   | 29       | F                              | MOM OFF               | NONE             | ON                    | OFF ON                  |  |           |           |                       |           |           |
| 30                 | F                 | MOM ON   | NONE                           | OFF                   | ON OFF           |                       |                         |  |           |           |                       |           |           |
| 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        |