

# **Quick Reference Guide** F Series Switches

The F Series switches offer high performance industrial toggles, rockers, and paddles with high current and high voltage rating in a small case. The F Series encompasses many circuit configurations ranging from single pole through four poles, in two and three positions with a choice of momentary or maintained circuits. This toggle series is UL, CSA recognized for 6A at 250 VAC, 6A at 125VAC with silver contacts and 0.4 VA max. at 20 V AC/DC with optional gold plated contacts, typically used for low energy switching. Electrical life is rated from 25,000 to 50,000 cycles at full load. Other electrical parameters include contact resistance of 10 milliohms max., insulation resistance of 1,000 megohms and actuation force of 19.6 N max.

All F Series switches are panel mounted with 6.0 mm threaded bushing conforming to standard panel cut outs and are constructed of brass with chrome plating. Design engineers are given the option of three toggle styles: standard toggle, locking lever to avoid unwanted switching and long flat toggle.

#### FEATURES

- Wide choice of toggles, rockers, and paddles
- Wide range of switch functions
- Terminals are gold-flashed to prevent oxidation and for ease of soldering

#### Applications

These devices are designed to meet requirements of light to medium-duty applications including:

- Industrial
- Instrumentation
- Medical equipment



### te.com/products/switches

### **Typical Performance Characteristics**

Number of Poles : 1 to 4 Switch Functions : ON-ON, ON-(ON), ON-OFF-ON, ON-ON, ON-OFF-(ON), (ON)-OFF-(ON) Contact Rating : 6 A @250 VAC, 6 A @125 VAC, Gold Contact : 0.4 VA max. 20 V AC/DC Electrical Life : 25,000 to 50,000 cycles Mechanical Life : 50,000 to 100,000 cycles Contact Resistance : Max. 10 mOhm 0.4 VA Max. at 2-4 VDC 100 mA 125/250 VAC at 2-4 VDC 1 A Insulation Resistance : Min. 1,000 MOhm Dielectric Strength : 1,000 VAC for 1 min. Actuation Force : Max. 19.6 N Panel Cut-out : 6.2 mm Standards and Specs : UL, CSA

#### **Material Specifications**

Contacts : Brass silver alloy finish Toggle : Brass chromium plated Terminals : Brass plate Case : Phenol resin Cover : Steel zinc plated Seal : Rubber seal, insert molded rubber

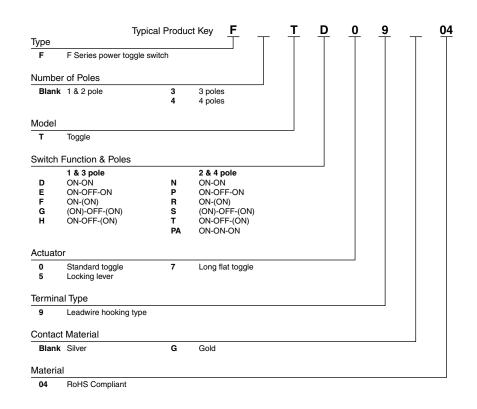
### **Other Characteristics**

Contact Timing : Break before Make Right Angle Versions : No Standard Number of Positions : 2 or 3 Terminals / Mounting Style : Leadwire hooking Actuator Style : Standard, long locking; rocker Dimensions Case (LxWxH) : 14.8 x 8 ... 23 x 10.5 mm Packaging : Bulk Choice of momentary or maintained circuits

#### **Environmental Specification**

Operating Temperature : -20 to +70°C Storage Temperature : -20 to +70°C Vibration Resistance : 1.5 mm 10-55 Hz Shock Resistance : 50 g for 11±1 msec Terminal Strength : 24.5 N

### F Series Toggle Switches Product Key





### Actuator



Code 0 — Standard Toggle

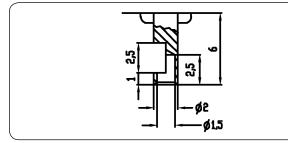


Code 7 — Long Flat Toggle



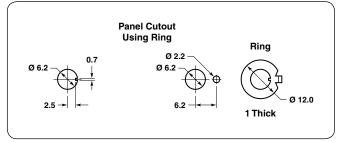
Code 5 — Locking Lever

#### Terminal



Code 9 — Leadwire Hooking Type

### Mounting — F Series Toggles



**Recommended Hole Layout to Prevent Rotation** 

| Product Key | Poles   | Switch Function | Actuator      | Terminal              | Contacts | Part Number |
|-------------|---------|-----------------|---------------|-----------------------|----------|-------------|
| FTD09G04    | 1 pole  | ON-ON           | Standard      | Leadwire Hooking Type | Gold     | 3-6437630-4 |
| FTD59G04    | 1 pole  | ON-ON           | Locking Lever | Leadwire Hooking Type | Gold     | 4-6437630-0 |
| FTD79G04    | 1 pole  | ON-ON           | Flat Toggle   | Leadwire Hooking Type | Gold     | 5-6437630-4 |
| FTE09G04    | 1 pole  | ON-OFF-ON       | Standard      | Leadwire Hooking Type | Gold     | 5-6437630-1 |
| FTE79G04    | 1 pole  | ON-OFF-ON       | Flat Toggle   | Leadwire Hooking Type | Gold     | 5-6437630-8 |
| FTF09G04    | 1 pole  | ON-(ON)         | Standard      | Leadwire Hooking Type | Gold     | 6-6437630-3 |
| FTG09G04    | 1 pole  | (ON)-OFF-(ON)   | Standard      | Leadwire Hooking Type | Gold     | 3-6437630-8 |
| FTH09G04    | 1 pole  | ON-OFF-(ON)     | Standard      | Leadwire Hooking Type | Gold     | 6-6437630-4 |
| FTN09G04    | 2 poles | ON-ON           | Standard      | Leadwire Hooking Type | Gold     | 6-6437630-8 |
| FTN59G04    | 2 poles | ON-ON           | Locking Lever | Leadwire Hooking Type | Gold     | 6-6437630-1 |
| FTN79G04    | 2 poles | ON-ON           | Flat Toggle   | Leadwire Hooking Type | Gold     | 5-6437630-9 |



| Dreduct Kou | Balaa   | Switch Function | Actuates      | Terminel              | Comtracto | Dent Number |
|-------------|---------|-----------------|---------------|-----------------------|-----------|-------------|
| Product Key | Poles   | Switch Function | Actuator      | Terminal              | Contacts  | Part Number |
| F3TD0904    | 3 Poles | ON-ON           | Standard      | Leadwire Hooking Type | Silver    | 2-6437630-8 |
| F4TD0904    | 4 Poles | ON-ON           | Standard      | Leadwire Hooking Type | Silver    | 3-6437630-5 |
| F4TPA0904   | 4 Poles | ON-ON-ON        | Standard      | Leadwire Hooking Type | Silver    | 3-6437630-6 |
| FTD0904     | 1 Pole  | ON-ON           | Standard      | Leadwire Hooking Type | Silver    | 2-6437630-0 |
| FTD5904     | 1 Pole  | ON-ON           | Locking Lever | Leadwire Hooking Type | Silver    | 1-6437630-5 |
| FTD7904     | 1 Pole  | ON-ON           | Flat Toggle   | Leadwire Hooking Type | Silver    | 5-6437630-3 |
| FTE0904     | 1 Pole  | ON-OFF-ON       | Standard      | Leadwire Hooking Type | Silver    | 6-6437630-2 |
| FTF0904     | 1 Pole  | ON-(ON)         | Standard      | Leadwire Hooking Type | Silver    | 5-6437630-7 |
| FTG0904     | 1 Pole  | (ON)-OFF-(ON)   | Standard      | Leadwire Hooking Type | Silver    | 5-6437630-5 |
| FTH0904     | 1 Pole  | ON-OFF-(ON)     | Standard      | Leadwire Hooking Type | Silver    | 4-6437630-8 |
| FTN0904     | 2 Poles | ON-ON           | Standard      | Leadwire Hooking Type | Silver    | 4-6437630-2 |
| FTN5904     | 2 Poles | ON-ON           | Locking Lever | Leadwire Hooking Type | Silver    | 3-6437630-9 |
| FTN7904     | 2 Poles | ON-ON           | Flat Toggle   | Leadwire Hooking Type | Silver    | 5-6437630-2 |
| FTP0904     | 2 Poles | ON-OFF-ON       | Standard      | Leadwire Hooking Type | Silver    | 4-6437630-6 |
| FTPA0904    | 2 Poles | ON-OFF-ON       | Standard      | Leadwire Hooking Type | Silver    | 4-6437630-5 |
| FTR0904     | 2 Poles | ON-(ON)         | Standard      | Leadwire Hooking Type | Silver    | 4-6437630-4 |
| FTS0904     | 2 Poles | (ON)-OFF-(ON)   | Standard      | Leadwire Hooking Type | Silver    | 4-6437630-3 |
| FTT0904     | 2 Poles | ON-OFF-(ON)     | Standard      | Leadwire Hooking Type | Silver    | 4-6437630-1 |

## F Series Rocker Switches Product Key

| Turna    | Typical                    | Product | Key <u>F</u> | <b>Ļ</b> | <u>N</u> <u>1</u> | _ <u>9</u> | red | 0 |
|----------|----------------------------|---------|--------------|----------|-------------------|------------|-----|---|
| Туре     |                            |         |              |          |                   |            |     |   |
| F        | F Series power rocker swit | ch      |              |          |                   |            |     |   |
| Model    |                            |         |              |          |                   |            |     |   |
| L        | Snap-in lever & rocker     |         |              |          |                   |            |     |   |
| Switch F | Function & Poles           |         |              |          |                   |            |     |   |
| 1 pole   |                            | 2 pole  |              |          |                   |            |     |   |
| D.       | ON-ON                      | N       | ON-ON        |          |                   |            |     |   |
| Actuato  | r                          |         |              |          |                   |            |     |   |
| 1        | Long rocker                | 2       | Small rocker |          |                   |            |     |   |
| Termina  | l Туре                     |         |              |          |                   |            |     |   |
| 9        | Leadwire hooking type      |         |              |          |                   |            |     |   |
| Contact  | Material                   |         |              |          |                   |            |     |   |
| Blank    | Silver                     | G       | Gold         |          |                   |            |     |   |
| Rocker   | Color                      |         |              |          |                   |            |     |   |
| red      | Red                        | black   | Black        |          | white             | White      |     |   |
| Material | I                          |         |              |          |                   |            |     |   |
| 04       | RoHS Compliant             |         |              |          |                   |            |     |   |



#### Actuator

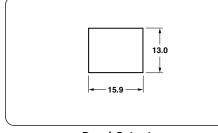


Code 1 – Long Rocker



Code 2 — Small Rocker

### Mounting — F Series Rocker



Panel Cutout Thickness 1 to 2.5 mm

| ROCKER       |         |                 |              |                |                       |          |             |
|--------------|---------|-----------------|--------------|----------------|-----------------------|----------|-------------|
| Product Key  | Poles   | Switch Function | Actuator     | Actuator Color | Terminal              | Contacts | Part Number |
| FLD19black04 | 1 Pole  | ON-ON           | Long Rocker  | Black          | Leadwire Hooking Type | Silver   | 3-6437630-2 |
| FLD29black04 | 1 Pole  | ON-ON           | Small Rocker | Black          | Leadwire Hooking Type | Silver   | 2-6437630-9 |
| FLN19black04 | 2 Poles | ON-ON           | Long Rocker  | Black          | Leadwire Hooking Type | Silver   | 3-6437630-7 |
| FLN29red04   | 2 Poles | ON-ON           | Long Rocker  | Red            | Leadwire Hooking Type | Silver   | 2-6437630-7 |
| FLN19white04 | 2 Poles | ON-ON           | Long Rocker  | White          | Leadwire Hooking Type | Silver   | 2-6437630-6 |
| FLN29black04 | 2 Poles | ON-ON           | Small Rocker | Black          | Leadwire Hooking Type | Silver   | 2-6437630-5 |
| FLN29red04   | 2 Poles | ON-ON           | Small Rocker | Red            | Leadwire Hooking Type | Silver   | 4-6437630-7 |
| FLN29white04 | 2 Poles | ON-ON           | Small Rocker | White          | Leadwire Hooking Type | Silver   | 2-6437630-3 |

| ACCESSORIES |                      |       |             |  |  |
|-------------|----------------------|-------|-------------|--|--|
| Product Key | Switch Compatibility | Color | Part Number |  |  |
| Bezel       | FL Series            | Black | 9-6437631-0 |  |  |
| Bezel       | FL Series            | Red   | 9-6437631-1 |  |  |
| Cap04       | F Series Toggles     | Black | 9-6437630-0 |  |  |



# How to Specify in a Switch

#### **Electrical Considerations**

| Voltage of Applications:                  | Current of      | Application:        |             |       |
|---|-----------------|---------------------|-------------|-------|
| Circuitry Configuration: Number of Poles: |                 | Number of Throws: _ |             |       |
| Number of Operations anticipated:         |                 |                     |             |       |
| Agency Approvals or Listings Desired:     |                 |                     |             |       |
| Mechanical Considerations                 |                 |                     |             |       |
| Type of Switch (Actuator Type): Toggle    | Pushbutton      | Rotary              | Rocker _    | Other |
| Switch Function (On/Off/On):              | On/Off:         | Momei               | ntary:      |       |
| Termination:Thru-Hole (PC) S              | Surface Mount W | /ire Lug Qu         | ick Connect | Other |
| Sealing Contamination Requirements:       |                 |                     |             |       |
| Product Processing Considerations         |                 |                     |             |       |
| Anticipated Soldering Process: Hand       | Wave SN         | MT Other            |             |       |

#### FOR MORE INFORMATION

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