

# C&K F Series Pushbutton Switches



## Features/Benefits

- Up to 10 poles per module
- Various contact terminals
- Various mounting & switch ganging configurations
- Mechanical indicator buttons
- Illumination options

## Typical Applications

- Audio selection
- Digital equipment interface
- Medical equipment interface



## Specifications

SWITCHING POWER: F module max. AC/DC: Silver: 50 VA/15W, Gold: 1 VA/300 mW.  
 SWITCHING VOLTAGE: F module max. AC/DC: Silver: 125/30V, Gold: 50/30 V.  
 SWITCHING CURRENT: F module max. AC/DC: Silver: 0.5A/0.5A, Gold: 0.04A/0.01A.  
 CARRYING CURRENT: Max at  $\delta u = 20C$ : Silver: < 2A, Gold: <0.5A.  
 DIELECTRIC STRENGTH (50 Hz, 1 min.): Chassis/contact:  $\geq 1500V$   
 Between contacts:  $\geq 1500V$   
 OPERATING LIFE "OA/EE" (24V/200mA):  $>10^5$  operations  
 "GR":  $>3.5 \times 10^4$  operations.  
 CONTACT RESISTANCE: Initial: Typical  $\leq 10 \text{ m}\Omega$ , max. 20  $\text{m}\Omega$   
 After operating life:  $\leq 100 \text{ m}\Omega$   
 INSULATION RESISTANCE:  $\geq 10^9 \Omega$  between open contacts,  
 $\geq 10^9 \Omega$  between chassis and contacts.  
 CAPACITANCE (at  $f = 10 \text{ kHz}$ ):  $\leq 0.7 \text{ pF}$  between 2 contacts.  
 TOTAL TRAVEL/LATCHING TRAVEL: 4.7mm/3.3mm (.185 inch/  
 .130 inch)

**NOTE:** Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

TYPICAL F OPERATING FORCE: 2U: 6.5N (650 grams); 4U: 6.5N (650 grams); 6U: 7.5N (750 grams); 8U: 9.0N (900 grams); 10U: 9.0N (900 grams).  
 EUROPEAN TYPICAL SF OPERATING FORCE:  
 2U:  $3.5N \pm 0.5N$  (350 grams  $\pm 100$  grams); 4U:  $5N \pm 1N$  (500 grams  $\pm 100$  grams); 6U:  $6.5N \pm 1N$  (650 grams  $\pm 100$  grams); 8U:  $9.0N \pm 1N$  (900 grams  $\pm 100$  grams).

## Materials

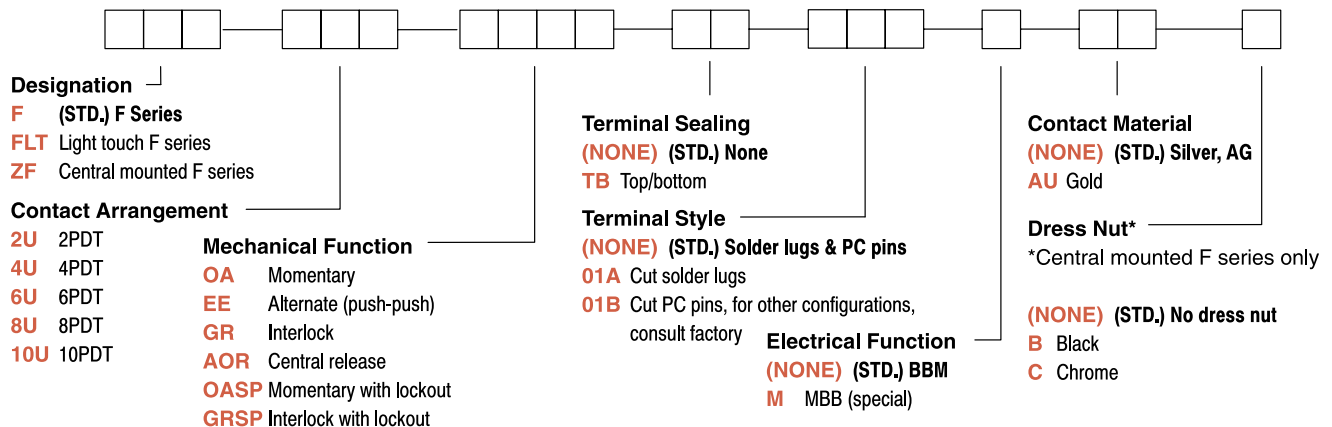
HOUSING: Polycarbonate UL 94V-0 or polyester UL 94V-0.  
 ACTUATOR: Polyester UL 94V-0.  
 MOVABLE CONTACTS: Bimetal brass, silver plated, gold plate over nickel.  
 STATIONARY CONTACTS & TERMINALS: Brass, silver plated, gold plated.  
 TERMINAL BOARD: Polyester UL 94V-0.  
 RETURN SPRING: Music wire.  
 TERMINAL SEAL: RTV adhesive sealant.  
 CHASSIS: Steel.  
 LOCKOUT PIN: Steel.  
 BLOCKERS: Steel.

## Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages A-88 thru A-96. For additional options not shown in catalog, consult Customer Service Center.

If requesting only a switch, select either a North American or European switch as noted below. Chassis and buttons are sold separately. If multiple stations are selected, we will assume all switches are the same unless noted otherwise.

## North American Order Code - Switch Only



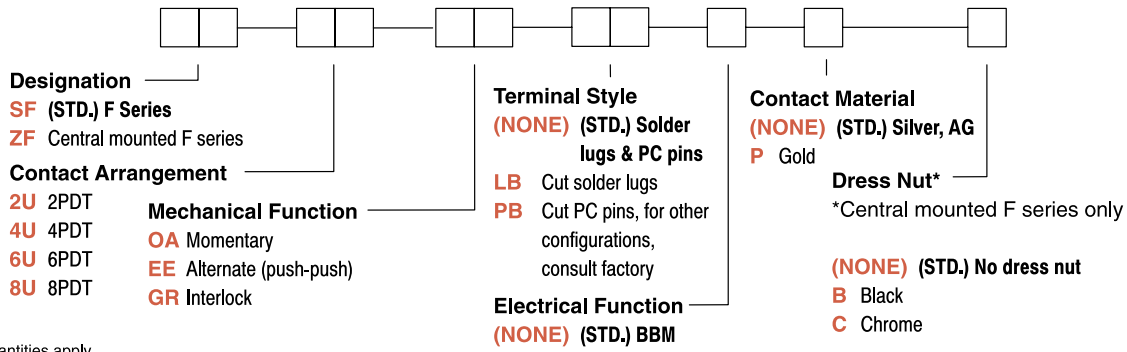
# C&K F Series Pushbutton Switches



A

Pushbutton

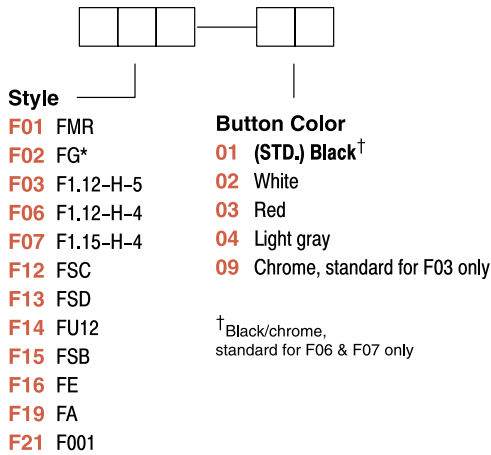
## European Order Code - Switch Only



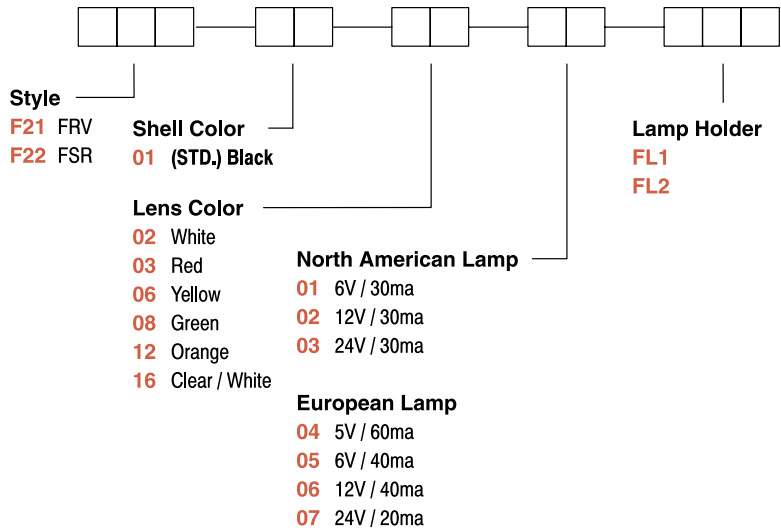
\*Minimum order quantities apply.

## Order Code - Buttons

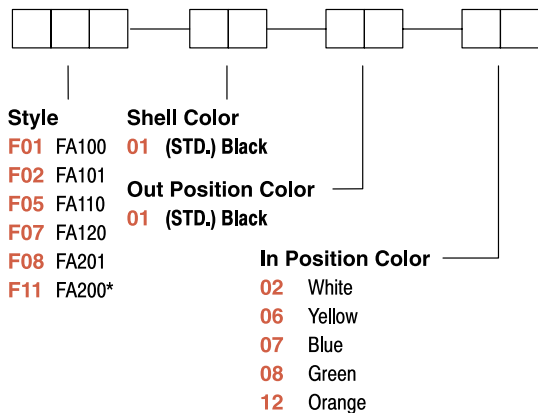
### Solid Buttons



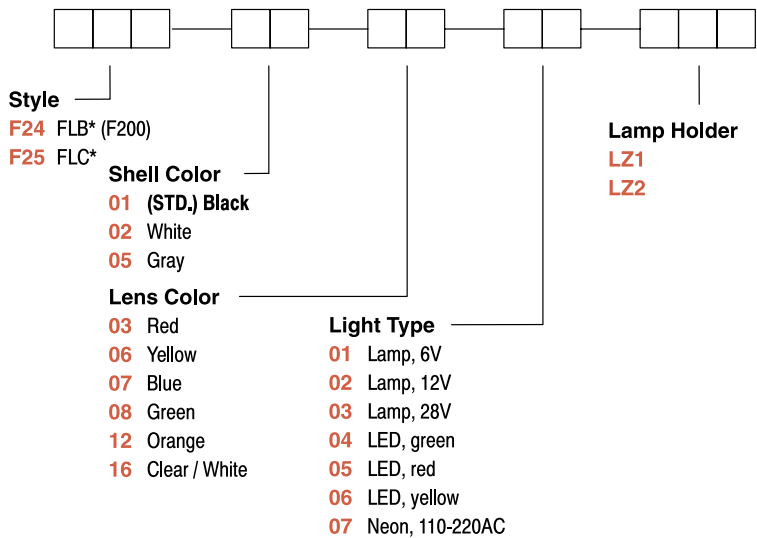
### Illuminated Buttons with Chassis



### Mechanical Indicator Buttons



### Central Mounted Illuminated Buttons



\*Button options for central mounting configurations, use 'FG' for central mount with chrome dress nut, use 'FA200', 'FLB' or 'FLC' for central mount with black dress nut.

## BUTTON REMOVAL

A button of a push-push switch should only be removed in the "OFF" non-latching position.

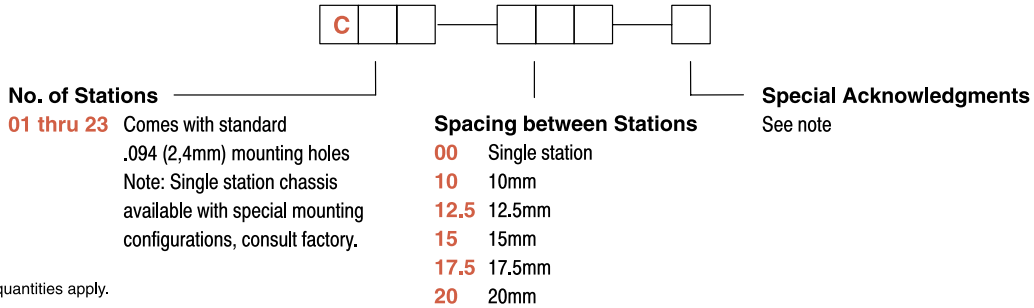
# C&K F Series Pushbutton Switches

A  
Pushbutton

## Order Code - Chassis

To order a switch with chassis, create the switch part number listed above and add the Chassis part number configurator information at the end of the part number.

Note: We do not guarantee or recommend interlocking beyond 10 stations.

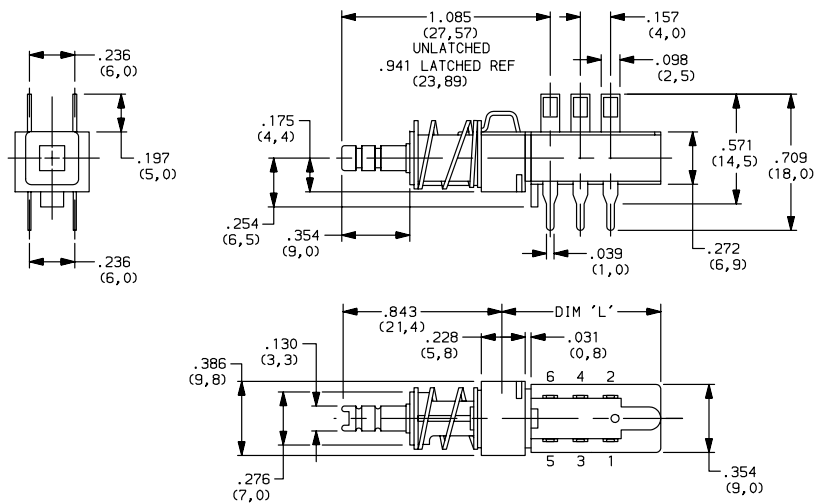


\*Minimum order quantities apply.

## SWITCHES WITH STANDARD OPTIONS

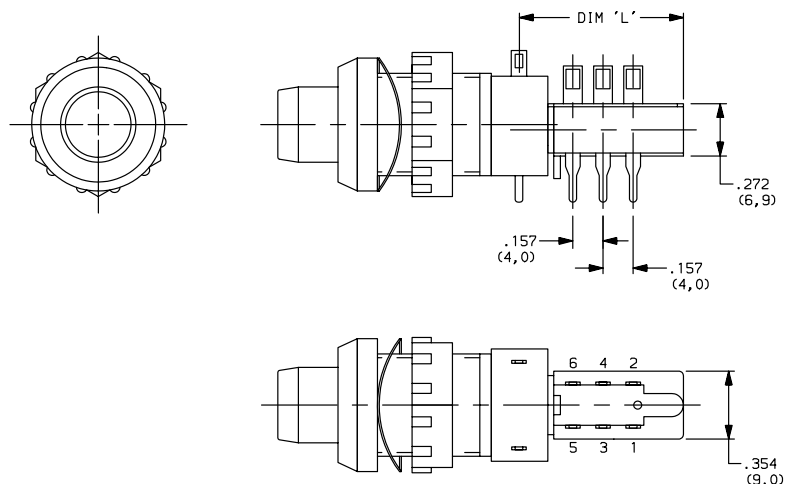
### F2UEE

CONTACT ARRANGEMENT	LENGTH DIM. 'L'
2U	0.827 (21,00)
4U	1.300 (33,00)
6U	1.770 (45,00)
8U	2.240 (57,00)
10U	2.720 (69,00)



### ZF2UEEBF25010802LZ1

CONTACT ARRANGEMENT	LENGTH DIM. 'L'
2U	0.827 (21,00)
4U	1.300 (33,00)
6U	1.770 (45,00)
8U	2.240 (57,00)
10U	2.720 (69,00)



# C&K F Series Pushbutton Switches

## DESIGNATION

### Designation, North America

- F** (STD.) F Series
- FLT** Light touch F series
- ZF** Central mounted F series

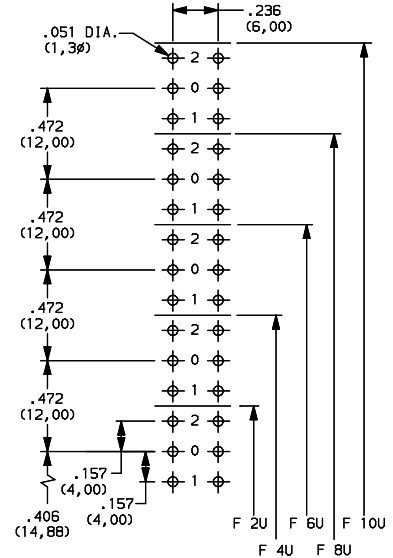
### Designation, Europe

- SF** (STD.) F Series
- ZF** Central mounted F series

## CONTACT ARRANGEMENT

OPTION CODE	NO. OF POLES	SCHEMATIC
<b>2U</b>	2PDT	
<b>4U</b>	4PDT	2X
<b>6U</b>	6PDT	3X
<b>8U</b>	8PDT	4X
<b>10U</b>	10PDT	5X

### PC MOUNTING



## MECHANICAL FUNCTION

### North America

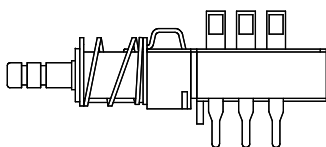
OPTION CODE	FUNCTION
<b>OA</b>	Momentary
<b>EE</b>	Alternate (push-push)
<b>GR</b>	Interlock
<b>AOR</b>	Central release
<b>OASP</b>	Momentary with lockout
<b>GRSP</b>	Interlock with lockout

### Europe

OPTION CODE	FUNCTION
<b>OA</b>	Momentary
<b>EE</b>	Alternate (push-push)
<b>GR</b>	Interlock

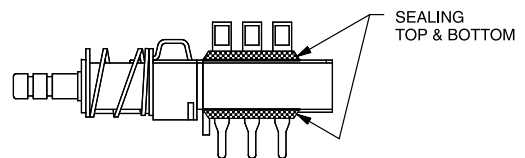
## TERMINAL SEALING

**(NONE)** (STD.) NO SEAL



F2UEE shown in example above.

**TB** TOP & BOTTOM



NOTE: Available for North America only.



Dimensions are shown: IN (mm)  
Dimensions subject to change



# C&K F Series Pushbutton Switches

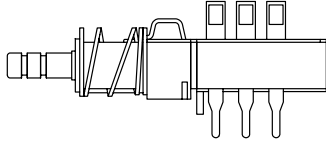


A

Pushbutton

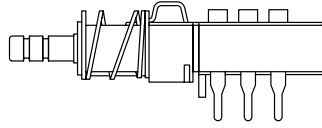
## TERMINAL STYLE

**(NONE)** (STD.) SOLDER LUGS & PC PINS



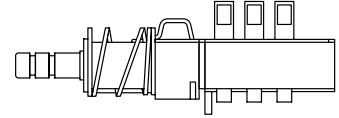
**01A** CUT SOLDER LUGS (North America)

**LB** CUT SOLDER LUGS (Europe)



**01B** CUT PC PINS (North America)

**PB** CUT PC PINS (Europe)



## ELECTRICAL FUNCTION

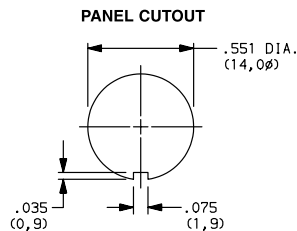
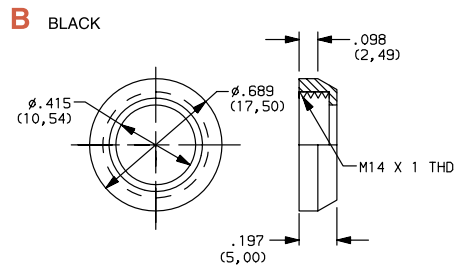
OPTION CODE	FUNCTION
<b>(NONE)</b> (STD.)	BBM Non-shorting
<b>M</b>	MBB Shorting (North America only)

## CONTACT MATERIAL

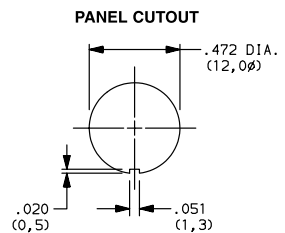
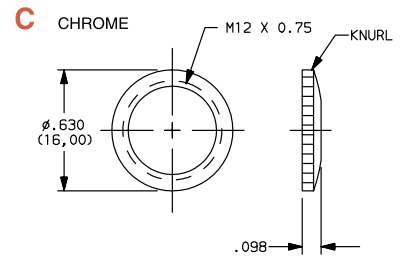
NORTH AMERICA OPTION CODE	EUROPE OPTION CODE	MATERIAL	RATING
<b>(NONE)</b> (STD.)	<b>(NONE)</b> (STD.)	Silver, AG	50 VA/15 W; 125/30 V; 0.5/0.5 A
<b>AU</b>	<b>P</b>	Gold	1 VA/300 mW; 50/30 V; 0.04 A/0.01 A

## DRESS NUT

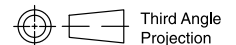
**(NONE)** (STD.) NO DRESS NUT FOR F & F/LT DESIGNATIONS



NOTE: Available with ZF designation and FA200, FLB or FLC buttons.



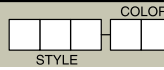
NOTE: Available with ZF designation and FG button.



# C&K F Series Pushbutton Switches



## SOLID BUTTON

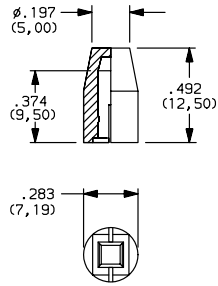


### STYLE

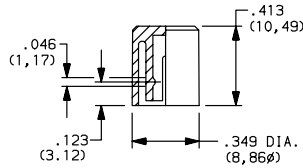
A

Pushbutton

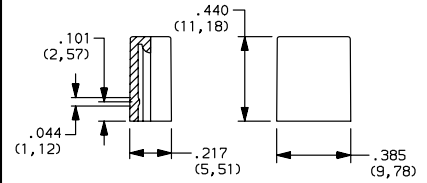
#### F01 FMR



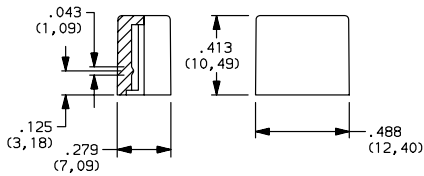
#### F02 FG



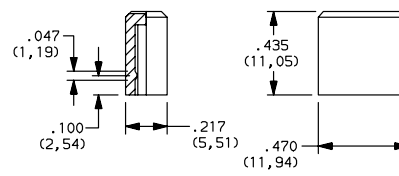
#### F12 FSC



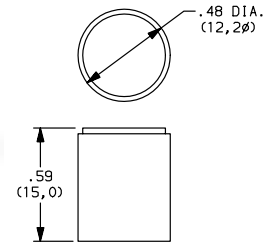
#### F13 FSD



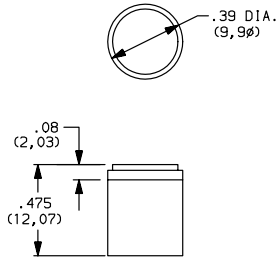
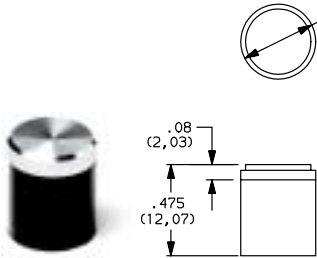
#### F14 FU12



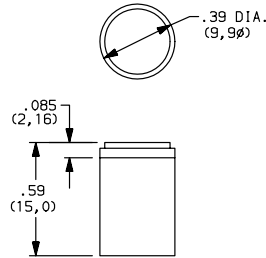
#### F03 F1.12-H-5



#### F06 F1.12-H-4



#### F07 F1.15-H-4



OPTION CODE	COLOR
01	(STD.) BLACK
02	WHITE
03	RED
04	LT. GRAY
09	BLACK/CHROME (F03, F06 & F07 buttons only)



Dimensions are shown: IN (mm)  
Dimensions subject to change

# C&K F Series Pushbutton Switches



A

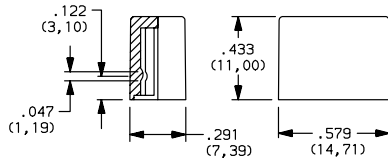
Pushbutton

## SOLID BUTTON

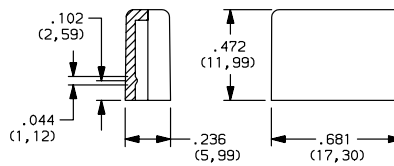
STYLE		COLOR	

### STYLE

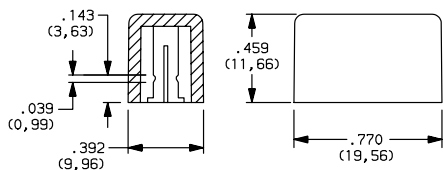
**F15** FSB



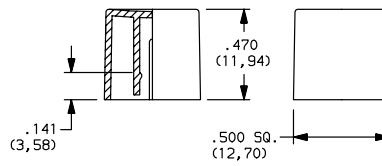
**F16** FE



**F19** FA



**F21** F001



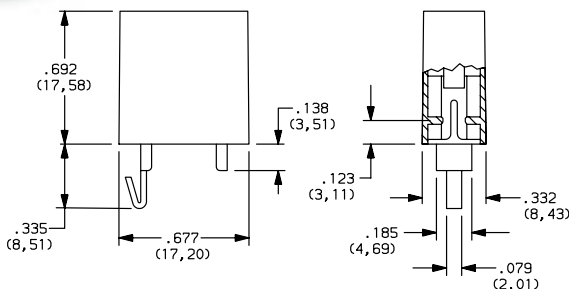
OPTION CODE	COLOR
01	(STD.) BLACK
02	WHITE
03	RED
04	LT. GRAY

## MECHANICAL BUTTON

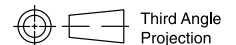
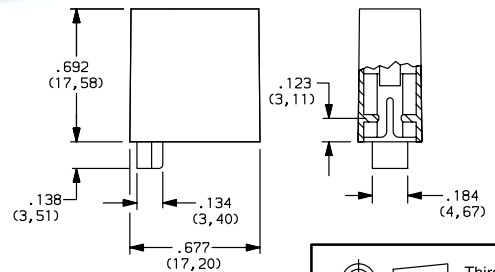
STYLE		SHELL COLOR		IN POSITION COLOR		OUT POSITION COLOR	

### STYLE

**F01** FA100

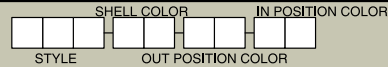


**F02** FA101



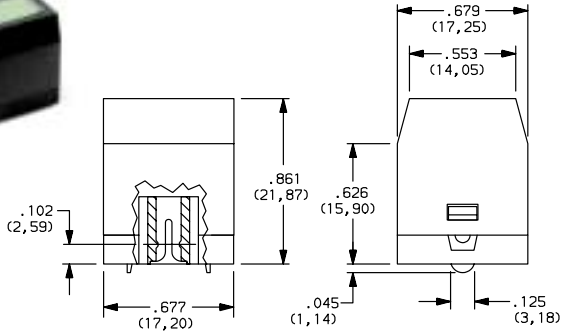
# C&K F Series Pushbutton Switches

## MECHANICAL BUTTON

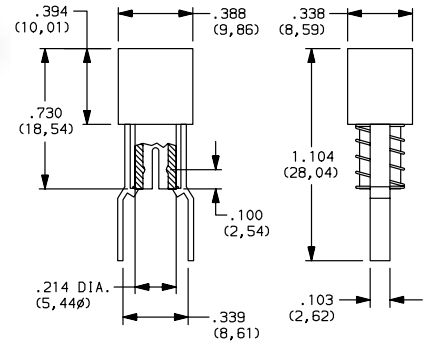


### STYLE

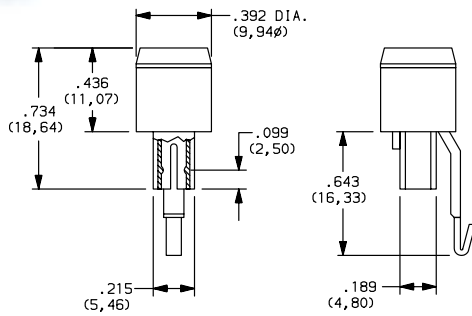
**F05** FA110



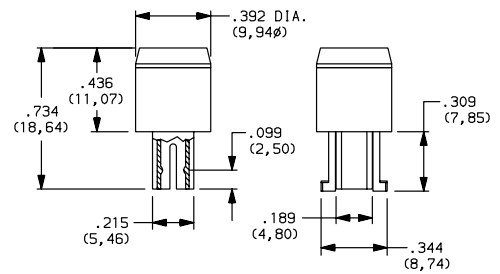
**F07** FA120



**F08** FA201



**F11** FA200



### SHELL COLOR

**01** (STD.) BLACK

### IN POSITION COLOR

### OUT POSITION COLOR

**01** (STD.) BLACK

OPTION CODE	COLOR
<b>02</b>	WHITE
<b>06</b>	YELLOW
<b>07</b>	BLUE
<b>08</b>	GREEN
<b>12</b>	ORANGE



Third Angle  
Projection

Dimensions are shown: IN (mm)  
Dimensions subject to change



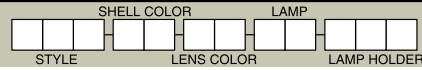
# C&K F Series Pushbutton Switches



A

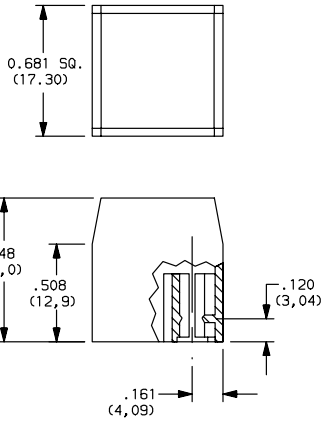
Pushbutton

## ILLUMINATED BUTTON WITH CHASSIS

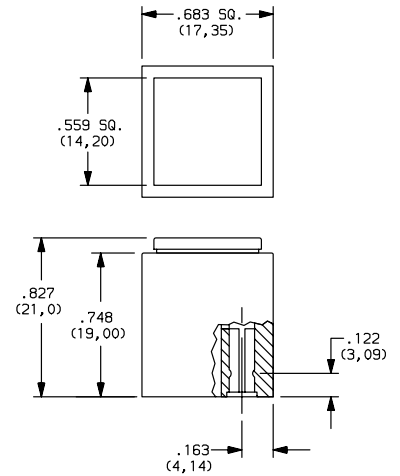


### STYLE

**F21** FRV



**F22** FSR



### SHELL COLOR

**01** (STD.) BLACK

### LENS COLOR

OPTION CODE	COLOR
<b>02</b>	WHITE
<b>03</b>	RED
<b>06</b>	YELLOW
<b>08</b>	GREEN
<b>12</b>	ORANGE
<b>16</b>	CLEAR / WT.

### LAMP

#### North America

OPTION CODE	LAMP
<b>01</b>	6V / 30ma
<b>02</b>	12V / 30ma
<b>03</b>	24V / 30ma

#### Europe

OPTION CODE	LAMP
<b>04</b>	5V / 60ma
<b>05</b>	6V / 40ma
<b>06</b>	12V / 40ma
<b>07</b>	24V / 20ma

### LAMP HOLDER

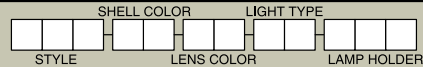
OPTION CODE	DESCRIPTION
<b>FL1</b>	Standard version. No electrical connection to module. Lamps are illuminated by applying voltage to the solder lugs of the lampholder contacts.
<b>FL2</b>	For use only on modules with solder lugs on top face. One of the lampholder contacts is electrically linked with the module by means of a blade spring connecting the normally closed contact of the left side front changeover.



# C&K F Series Pushbutton Switches



## CENTRAL MOUNTED ILLUMINATED BUTTON



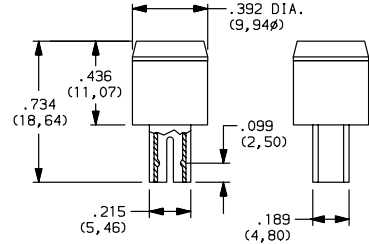
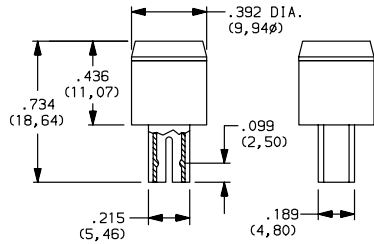
### STYLE

A

**F24** FLB (F200)

**F25** FLC

Pushbutton



### SHELL COLOR

OPTION CODE	COLOR
01	(STD.) BLACK
02	WHITE
05	GRAY

### LENS COLOR

OPTION CODE	COLOR
03	RED
06	YELLOW
07	BLUE
08	GREEN
12	ORANGE
16	CLEAR / WT.

### LIGHT TYPE

OPTION CODE	DESCRIPTION
01	Lamp, 6V
02	Lamp, 12V
03	Lamp, 28V
04	LED, green
05	LED, red
06	LED, yellow
07	Neon, 110-220AC

### LAMP HOLDER

OPTION CODE	DESCRIPTION
LZ1	Standard version. No electrical connection to module. Lamps are illuminated by applying voltage to the solder lugs of the lampholder contacts.
LZ2	For use only on modules with solder lugs on top face. One of the lampholder contacts is electrically linked with the module by means of a blade spring connecting the normally closed contact of the left side front changeover.



Third Angle  
Projection  
Dimensions are shown: IN (mm)  
Dimensions subject to change

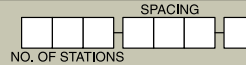
# C&K F Series Pushbutton Switches



A

Pushbutton

## CHASSIS



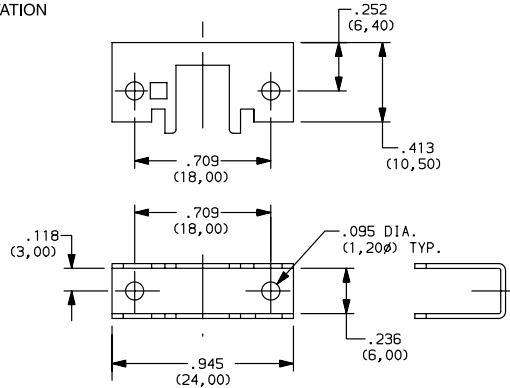
## NUMBER OF STATIONS

**C00 Thru C10** Comes with standard 0.094 (2,44mm) mounting holes

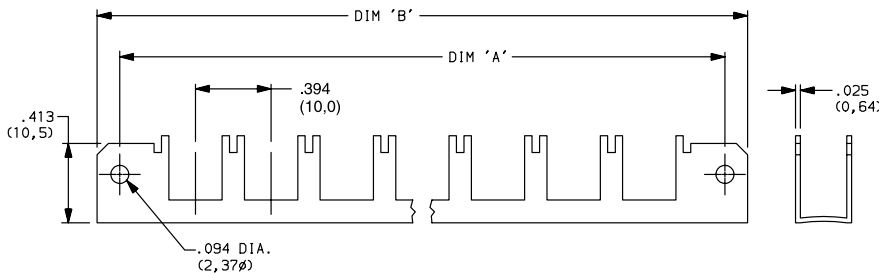
**NOTE:** Single station chassis available with mounting configurations, consult factory.

## SPACING

### 00 SINGLE STATION

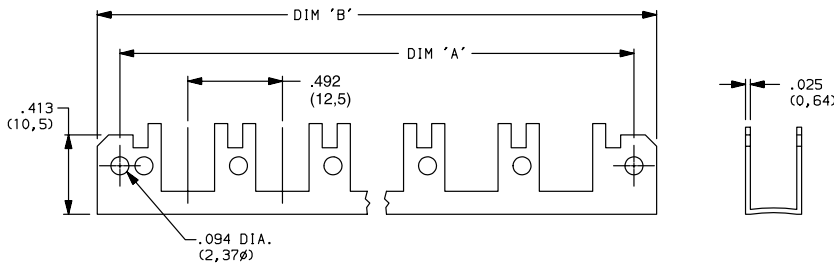


### 10 10mm

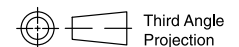


No. of Stations	Dim. 'A'	Dim. 'B'	Tolerance
2	1.182 (30,02)	1.418 (36,02)	0.005
3	1.575 (40,01)	1.811 (46,00)	0.010
4	1.969 (50,01)	2.205 (56,01)	0.010
5	2.363 (60,02)	2.599 (66,01)	0.010
6	2.757 (70,03)	2.993 (76,02)	0.015
7	3.150 (80,01)	3.386 (86,00)	0.015
8	3.544 (90,02)	3.780 (96,01)	0.015
9	3.938 (100,03)	4.174 (106,02)	0.015
10	4.331 (110,01)	4.567 (116,00)	0.015

### 12.5 12.5mm



No. of Stations	Dim. 'A'	Dim. 'B'	Tolerance
2	1.200 (30,48)	1.436 (36,47)	0.005
3	1.692 (42,98)	1.928 (48,97)	0.010
4	2.184 (55,47)	2.420 (61,47)	0.010
5	2.676 (67,97)	2.912 (73,96)	0.010
6	3.169 (80,49)	3.405 (86,49)	0.015
7	3.661 (92,99)	3.897 (98,98)	0.015
8	4.153 (105,49)	4.389 (111,48)	0.015
9	4.645 (117,98)	4.881 (123,98)	0.015
10	5.137 (130,48)	5.373 (136,47)	0.015



Third Angle Projection

# C&K F Series Pushbutton Switches



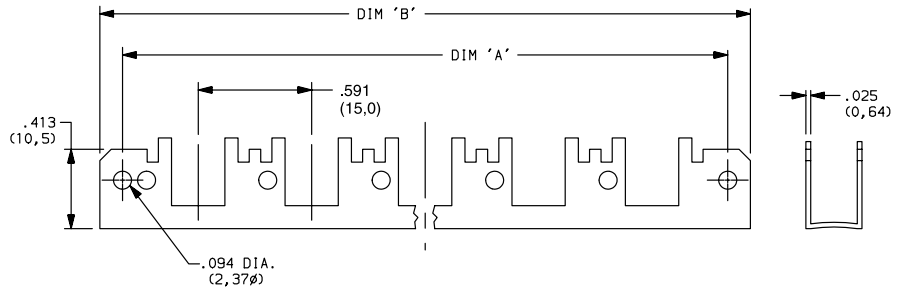
**CHASSIS** **SPACING**  
NO. OF STATIONS

## SPACING

**A**

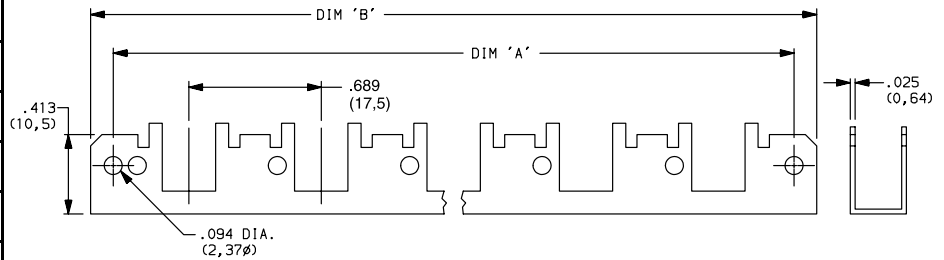
**15** 15mm

No. of Stations	Dim. 'A'	Dim. 'B'	Tolerance
2	1.374 (34,90)	1.615 (41,02)	0.005
3	1.969 (50,01)	2.205 (56,01)	0.010
4	2.560 (65,02)	2.796 (71,02)	0.010
5	3.150 (80,01)	3.386 (86,00)	0.010
6	3.741 (95,02)	3.977 (101,02)	0.015
7	4.332 (110,03)	4.568 (116,03)	0.015
8	4.922 (125,02)	5.158 (131,01)	0.015
9	5.513 (140,03)	5.749 (146,02)	0.015
10	6.103 (155,02)	6.339 (161,01)	0.015



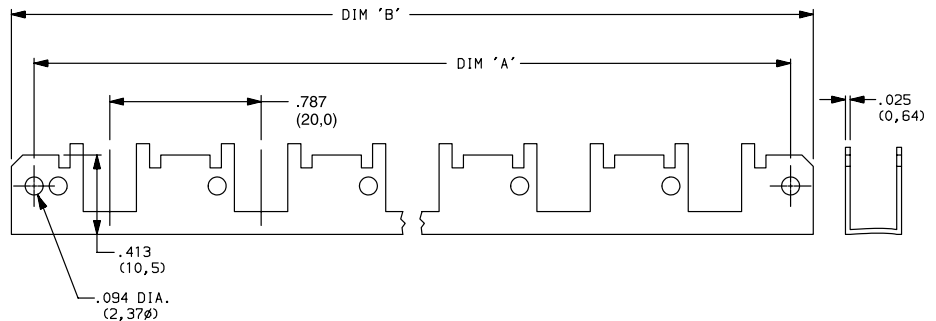
**17.5** 17.5mm

No. of Stations	Dim. 'A'	Dim. 'B'	Tolerance
2	1.477 (37,52)	1.713 (43,51)	0.005
3	2.166 (55,02)	2.402 (61,01)	0.010
4	2.855 (72,52)	3.091 (78,51)	0.010
5	3.544 (90,02)	3.780 (96,01)	0.010
6	4.233 (107,52)	4.469 (113,51)	0.015
7	4.922 (125,02)	5.158 (131,01)	0.015
8	5.611 (142,52)	5.847 (148,51)	0.015
9	6.300 (160,02)	6.536 (166,01)	0.015
10	6.989 (177,52)	7.225 (183,52)	0.015



**20** 20mm

No. of Stations	Dim. 'A'	Dim. 'B'	Tolerance
2	1.575 (40,01)	1.811 (46,00)	0.005
3	2.363 (60,02)	2.599 (66,01)	0.010
4	3.150 (80,01)	3.386 (86,00)	0.010
5	3.938 (100,03)	4.174 (106,02)	0.010
6	4.725 (120,02)	4.961 (126,01)	0.015
7	5.512 (140,00)	5.748 (146,00)	0.015
8	6.300 (160,02)	6.536 (166,01)	0.015
9	7.087 (180,01)	7.323 (186,00)	0.015
10	7.875 (200,03)	8.111 (206,02)	0.015



Dimensions are shown: IN (mm)  
Dimensions subject to change