

C&K F Series Pushbutton Switches



A

Pushbutton



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 $\theta_a = 20^\circ\text{C}$: Silver: < 2A, Gold: <0.5A.

DIELECTRIC STRENGTH (50 Hz, 1 min.): Chassis/contact: $\geq 1500\text{V}$ Between contacts: $\geq 1500\text{V}$

OPERATING LIFE "OA/EE" (24V/200mA): $>10^5$ operations "GR": $>3.5 \times 10^4$ operations.

CONTACT RESISTANCE: Initial: Typical $\%10\text{ m}\Omega$, max. $20\text{ m}\Omega$ After operating life: $\%100\text{ m}\Omega$

INSULATION RESISTANCE: $\geq 10^9\ \Omega$ between open contacts, $\geq 10^9\ \Omega$ between chassis and contacts.

CAPACITANCE (at $f = 10\text{ kHz}$): $\%0.7\text{ pF}$ 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: $3.5\text{N} \pm 0.5\text{N}$ (350 grams ± 100 grams); 4U: $5\text{N} \pm 1\text{N}$ (500 grams ± 100 grams); 6U: $6.5\text{N} \pm 1\text{N}$ (650 grams ± 100 grams); 8U: $9.0\text{N} \pm 1\text{N}$ (900 grams ± 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

Designation F (STD.) F Series FLT Light touch F series ZF Central mounted F series Contact Arrangement 2U 2PDT 4U 4PDT 6U 6PDT 8U BPDT 10U 10PDT Mechanical Function OA Momentary EE Alternate (push-push) GR Interlock AOR Central release OASP Momentary with lockout GRSP Interlock with lockout	Terminal Sealing (NONE) (STD.) None TB Top/bottom Terminal Style (NONE) (STD.) Solder lugs & PC pins 01A Cut solder lugs 01B Cut PC pins, for other configurations, consult factory Electrical Function (NONE) (STD.) BBM M MBB (special)	Contact Material (NONE) (STD.) Silver, AG AU Gold Dress nut* (NONE) (STD.) No dress nut B Black C Chrome
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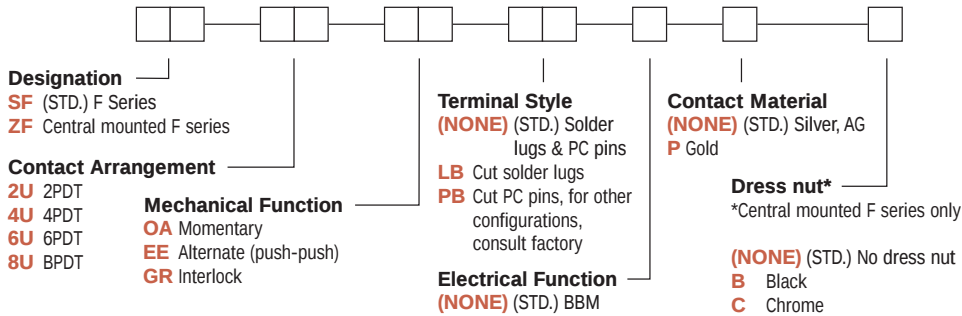
C&K F Series Pushbutton Switches



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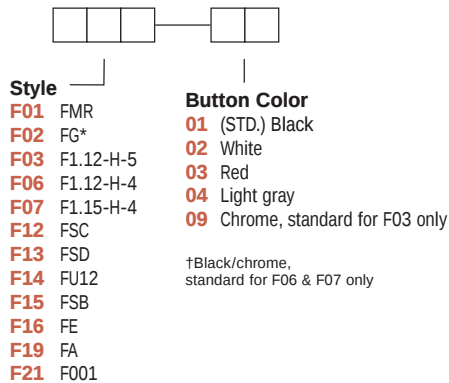
European Order Code - Switch Only



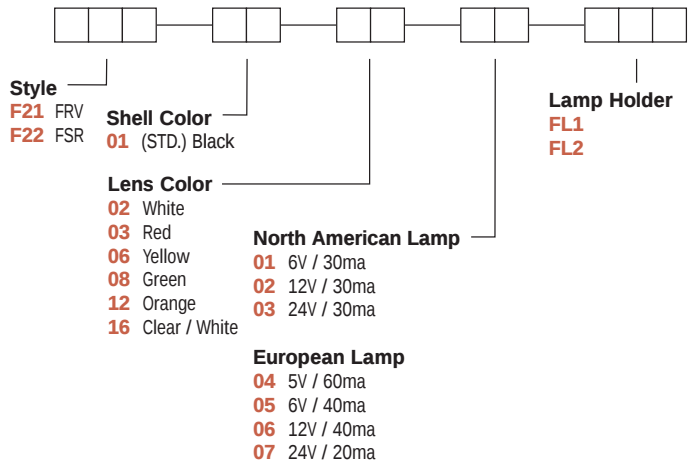
*Minimum order quantities apply.

Order Code - Buttons

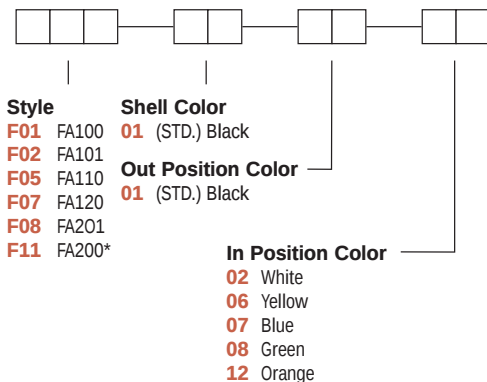
Solid Buttons



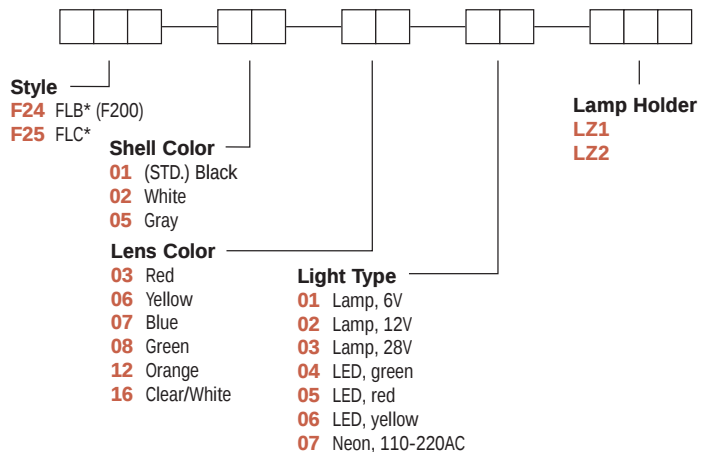
Illuminated Buttons with Chassis



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



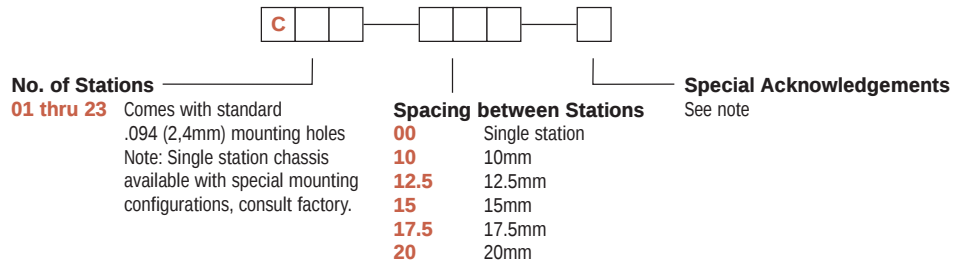
A

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.

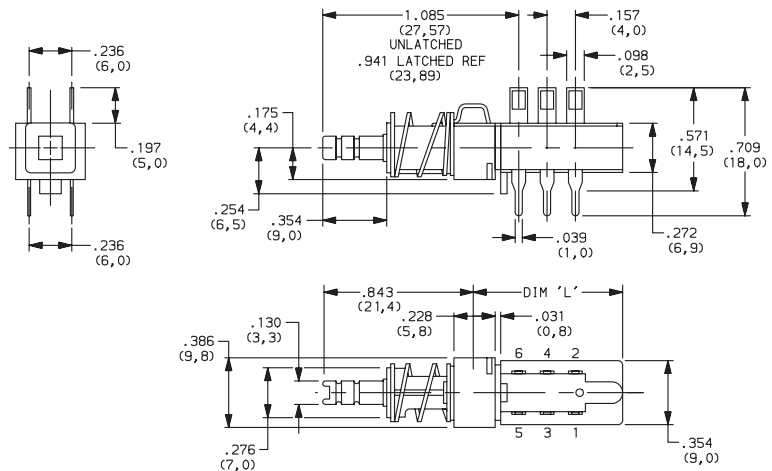


*Minimum order quantities apply.

SWITCHES WITH STANDARD OPTIONS

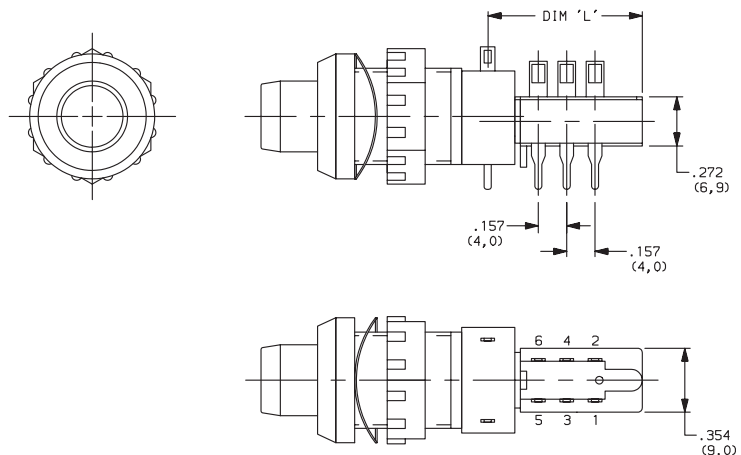
F2UEE

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)



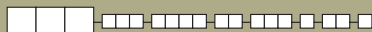
C&K F Series Pushbutton Switches



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Pushbutton

DESIGNATION



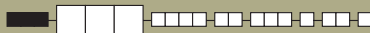
Designation, North America

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

Designation, Europe

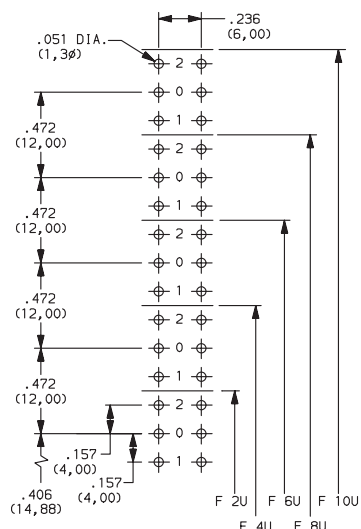
SF (STD.) F Series
ZF Central mounted F series

CONTACT ARRANGEMENT



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

PC MOUNTING



MECHANICAL FUNCTION



North America

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

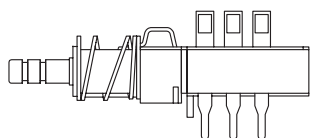
Europe

OPTION CODE	FUNCTION
OA	Momentary
EE	Alternate (push-push)
GR	Interlock

TERMINAL SEALING

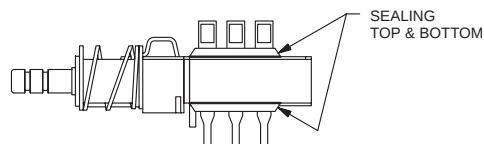


(NONE) (STD.) NO SEAL



F2UEE shown in example above.

TB TOP & BOTTOM



NOTE: Available for North America only



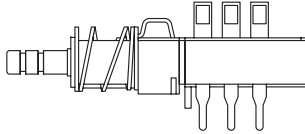
Third Angle
Projection
 Dimensions are shown: IN (mm)
 Dimensions subject to change

C&K F Series Pushbutton Switches

TERMINAL STYLE

(NONE)

(STD.) SOLDER LUGS & PC PINS

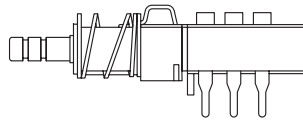


01A

CUT SOLDER LUGS (North America)

LB

CUT SOLDER LUGS (Europe)

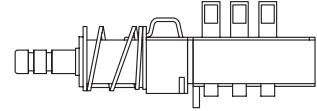


01B

CUT PC PINS (North America)

PB

CUT PC PINS (Europe)



A

Pushbutton

ELECTRICAL FUNCTION

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

CONTACT MATERIAL

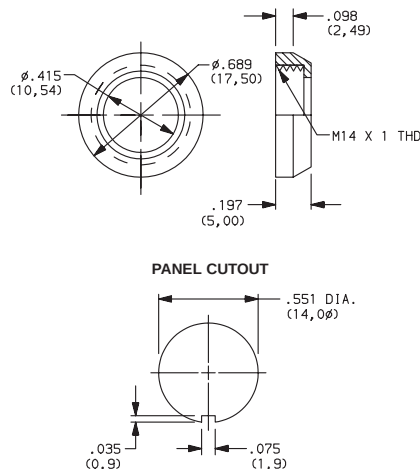
NORTH AMERICA OPTION CODE	EUROPE OPTION CODE	MATERIAL	RATING
(NONE) (STD.)	(NONE) (STD.)	Silver, AG	50 VA/15 W; 125/30 V; 0.5/0.5 A
AU	P	GOLD	1 VA/300mW; 50/30 V; 0.04 A/0.01 A

DRESS NUT

(NONE)

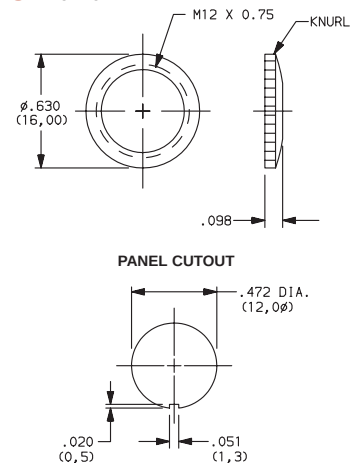
(STD.) NO DRESS NUT
FOR F & F/LT DESIGNATIONS

B BLACK



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

C CHROME



NOTE: Available with ZF designation and FG button.



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

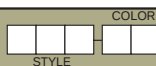
C&K F Series Pushbutton Switches



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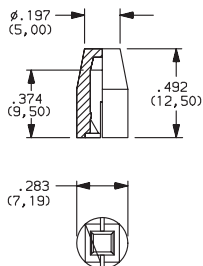
Pushbutton

SOLID BUTTON

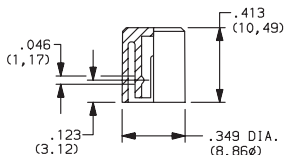


STYLE

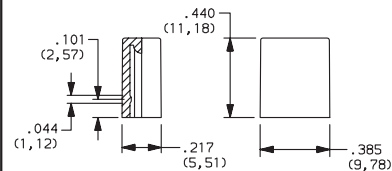
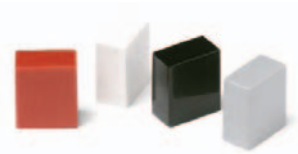
F01 FMR



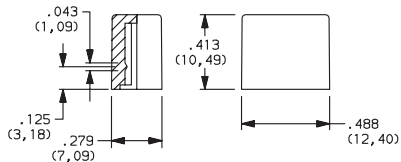
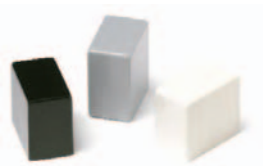
F02 FG



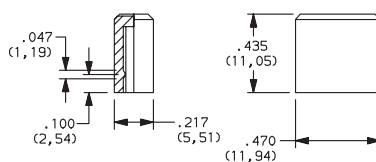
F12 FSC



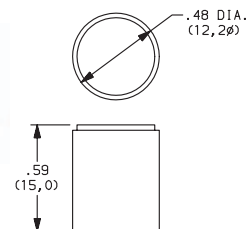
F13 FSD



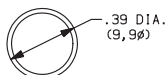
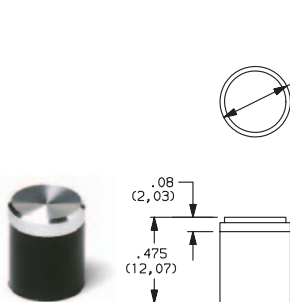
F14 FU12



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)



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

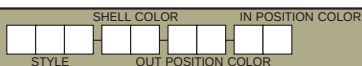
C&K F Series Pushbutton Switches



A

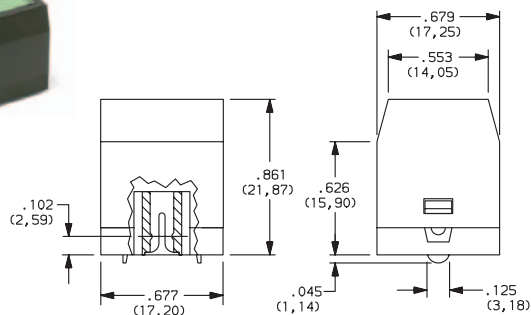
Pushbutton

MECHANICAL BUTTON

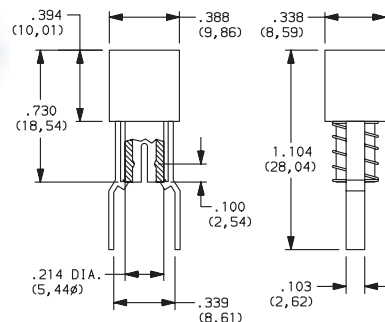


STYLE

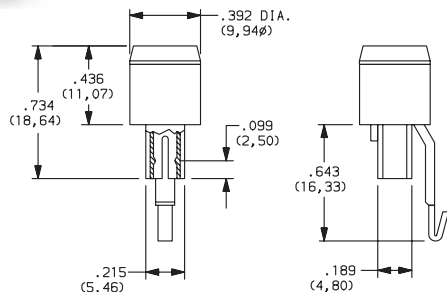
F05 FA110



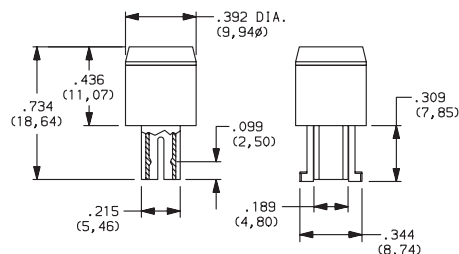
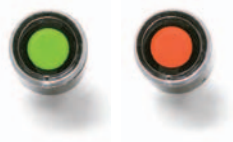
F07 FA120



F08 FA201



F11 FA200



SHELL COLOR

01 (STD.) BLACK

OUT POSITION COLOR

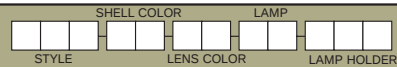
01 (STD.) BLACK

IN POSITION COLOR

OPTION CODE	COLOR
02	WHITE
06	YELLOW
07	BLUE
08	GREEN
12	ORANGE

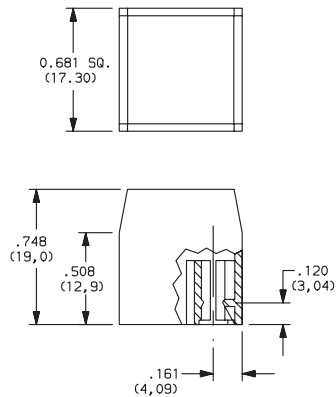
C&K F Series Pushbutton Switches

ILLUMINATED BUTTON WITH CHASSIS

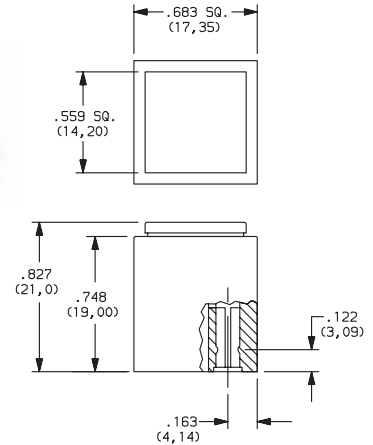


STYLE

F21 FRV



F22 FSR



SHELL COLOR

01 (STD.) BLACK

LENS COLOR

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

LAMP

North America

OPTION CODE	LAMP
01	6V / 30mA
02	12V / 30mA
03	24V / 30mA

Europe

OPTION CODE	LAMP
04	5V / 60mA
05	6V / 40mA
06	12V / 40mA
07	24V / 20mA

LAMP HOLDER

OPTION CODE	DESCRIPTION
FL1	Standard version. No electrical connection to module. Lamps are illuminated by applying voltage to the solder lugs of the lampholder contacts.
FL2	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.



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Pushbutton

C&K F Series Pushbutton Switches

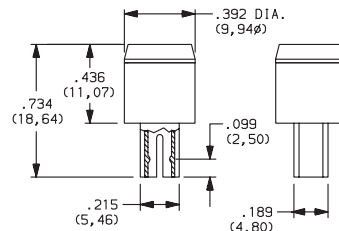
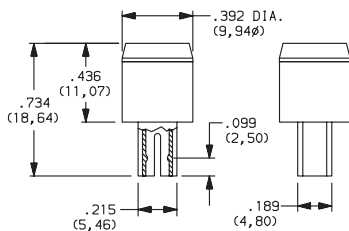
CENTRAL MOUNTED ILLUMINATED BUTTON

SHELL COLOR		LIGHT TYPE	
STYLE		LENS COLOR	LAMP HOLDER

STYLE

F24 FLB (F200)

F25 FLC



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

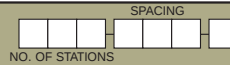
OPTION CODE	DESCRIPTION
LZ1	Illumination dependent on button position. Button depressed, lamp on.
LZ2	Illumination independent of button position.



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

C&K F Series Pushbutton Switches

CHASSIS



A

Pushbutton

NUMBER OF STATIONS

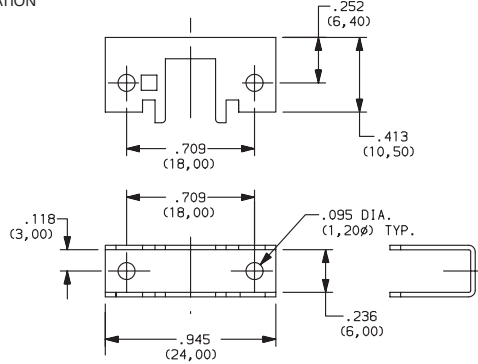
C00 Thru C10

Comes with standard 0.094 (2,44mm) mounting holes

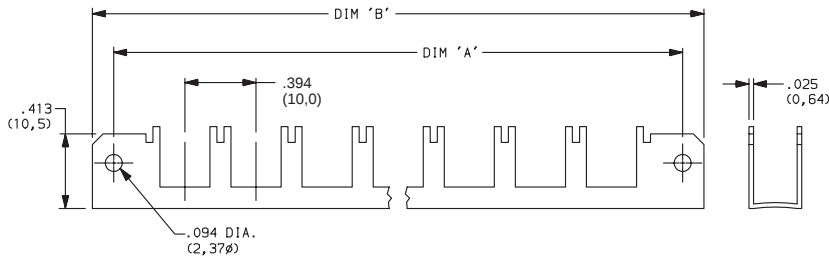
NOTE: Single station chassis available with mounting configurations, consult factory.

SPACING

00 SINGLE STATION

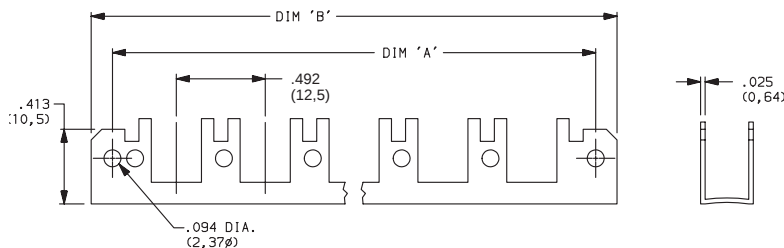


10 10mm



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

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

C&K F Series Pushbutton Switches



A

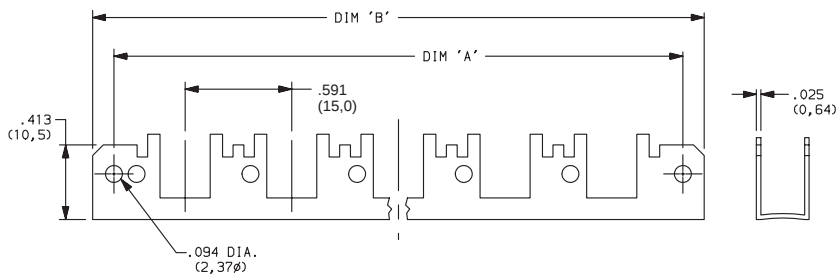
Pushbutton

CHASSIS SPACING
NO. OF STATIONS

SPACING

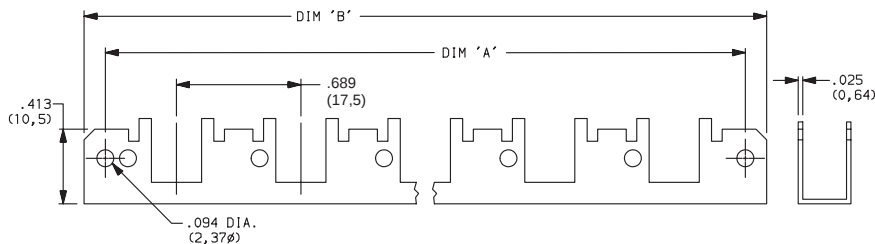
15 15mm

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



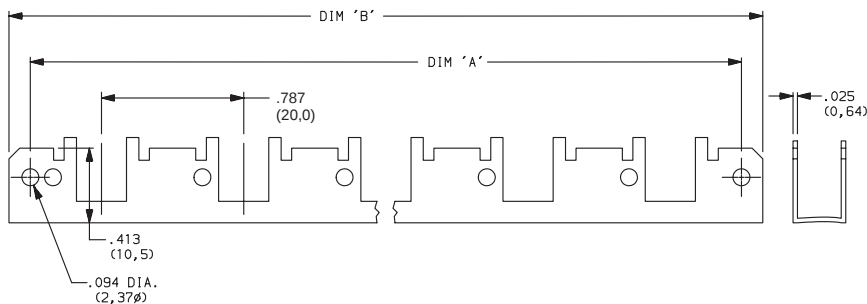
17.5 17.5mm

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 (75,52)	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



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