

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
- RoHS compliant

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: $\sim 1500\text{V}$ Between contacts: $\sim 1500\text{V}$.

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

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

INSULATION RESISTANCE: $\sim 10^9\text{ }\Omega$ between open contacts, $\sim 10^9\text{ }\Omega$ between chassis and contacts.

CAPACITANCE (at $f = 10\text{ kHz}$): $\sim 0.7\text{ pF}$ between 2 contacts.

TOTAL TRAVEL/LATCHING TRAVEL: 4.7mm/3.3mm (.185 inch/.130 inch).

All models and options are RoHS compliant and compatible.

NOTE: For the latest information regarding RoHS compliance, please go to: www.ittcannon.com/rohs. All models and options are RoHS compliant and compatible.

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).

OPERATING TEMPERATURE RANGE: -40°C to 70°C .

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-90 thru A-98. 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 F Series FLT Light touch F series ZF Central mounted F series	Terminal Sealing (NONE) None TB Top/bottom	Terminal Style (NONE) Solder lugs & PC pins 01A Cut solder lugs 01B Cut PC pins, for other configurations, consult factory	Contact Material (NONE) Silver, AG AU Gold
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	Electrical Function (NONE) BBM M MBB (special)	Dress nut* (NONE) No dress nut B Black C Chrome

*Central mounted F series only



Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

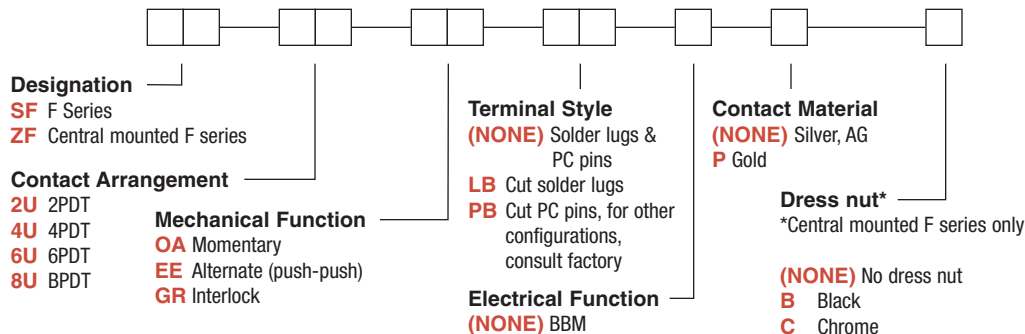


A

Pushbutton

C&K F Series Pushbutton Switches

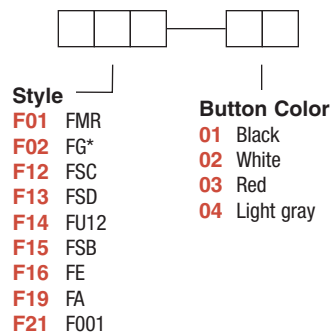
European Order Code - Switch Only



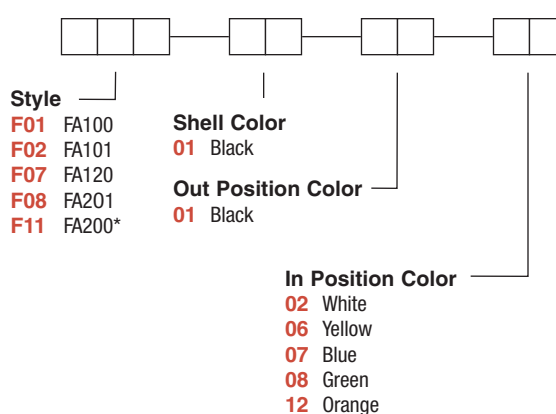
*Minimum order quantities apply.

Order Code - Buttons

Solid Buttons



Mechanical Indicator Buttons



*Button options for central mounting configurations, use 'FG' for central mount with chrome dress nut, use 'FA200' 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



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.

No. of Stations

01 thru 23 Comes with standard .094 (2,4mm) mounting holes
Note: Single station chassis available with special mounting configurations, consult factory.

Spacing between Stations

00	Single station
10	10mm
12.5	12.5mm
15	15mm
17.5	17.5mm
20	20mm

Special Acknowledgements

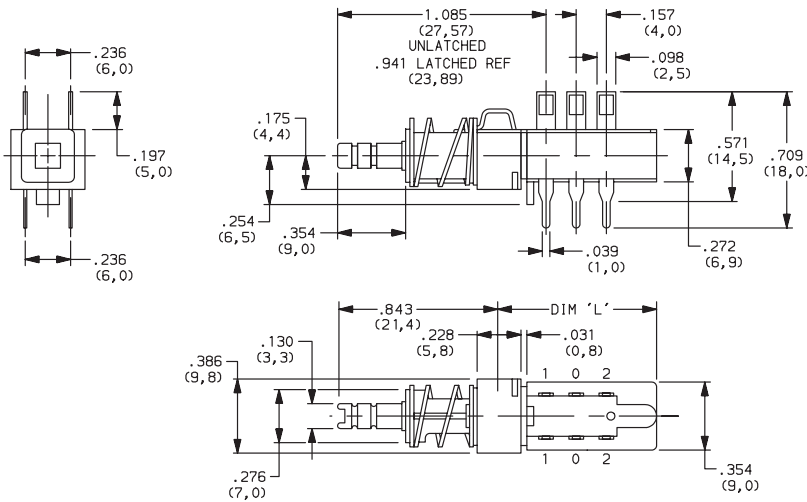
See note

*Minimum order quantities apply.

SWITCHES WITH STANDARD OPTIONS

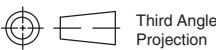
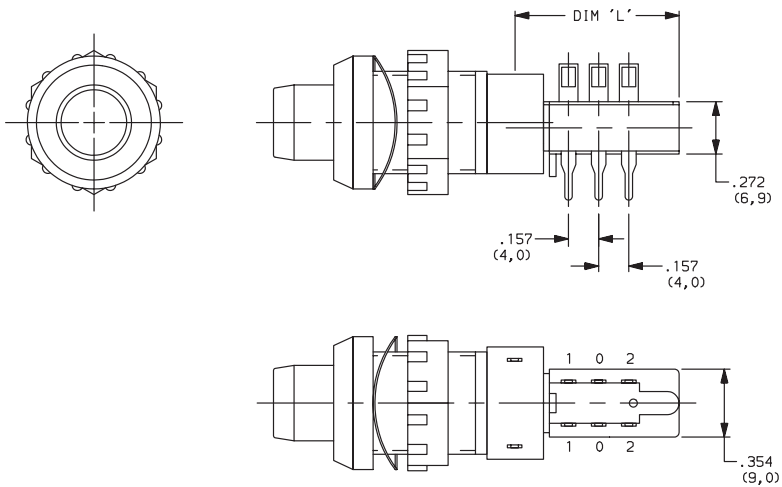
F2UEE

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)



ZF2UEEBF11010108

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)



Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change



Pushbutton

F F Series

FLT Light touch F series

ZF Central mounted F series

SF F Series

ZF Central mounted F series

PC MOUNTING

Diagram illustrating the PC mounting dimensions for a 10-pin connector. The dimensions are given in inches and mils (in parentheses).

Dimensions shown:

- .051 DIA. (1, 3ø) - Pin diameter
- .236 (6, 00) - Pin pitch
- .472 (12, 00) - Pin-to-pin distance (vertical)
- .406 (14, 88) - Pin-to-pin distance (horizontal)
- .157 (4, 00) - Pin-to-pin distance (horizontal, offset)

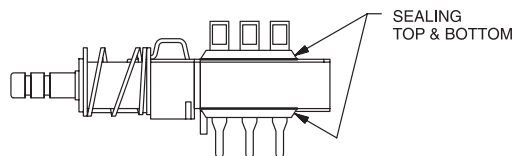
Pin locations are marked with circles containing the pin number (0, 1, 2) and the letter F (F 2U, F 4U, F 6U, F 8U, F 10U).

Europe

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

The diagram shows a linked list with a head pointer and a tail pointer. The head pointer points to the first node, which is a black rectangle. This is followed by two more black rectangles. Then, there is a white rectangle divided vertically, representing a node with two pointers. The left half of this white rectangle is connected to the third black rectangle, and the right half is connected to the first white rectangle. This first white rectangle is followed by two more white rectangles, then a black rectangle, and finally a white rectangle. The tail pointer points to the last white rectangle.

TB TOP & BOTTOM



NOTE: Available for North America only



Third Angle Projection

Dimensions are shown: Inches (mm)

Specifications and dimensions subject to change



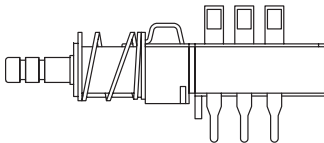
ITT

C&K F Series Pushbutton Switches

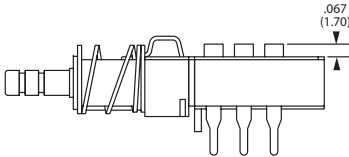


TERMINAL STYLE

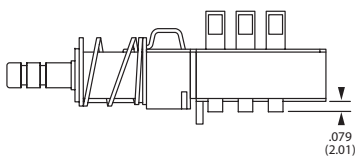
(NONE) SOLDER LUGS & PC PINS



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
(NONE)	BBM Non-shorting
M	MBB Shorting (North America only)

CONTACT MATERIAL

NORTH AMERICA OPTION CODE	EUROPE OPTION CODE	RoHS COMPLIANT *	RoHS COMPATIBLE *	MATERIAL	RATING
(NONE)	(NONE)	YES	YES	SILVER, AG	50 VA/15 W; 125/30 V; 0.5/0.5 A
AU	P	YES	YES	GOLD	1 VA/300mW; 50/30 V; 0.04 A/0.01 A

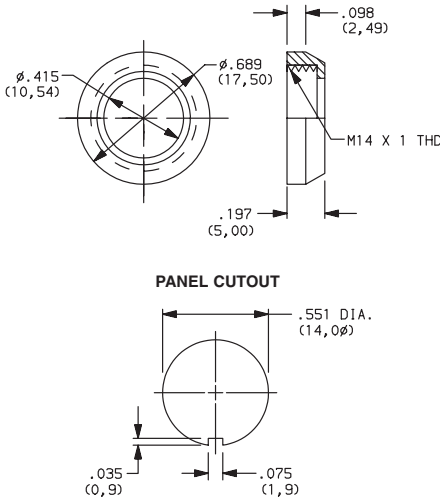
* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

NOTE: For the latest information regarding RoHS compliance, please go to: www.ittcannon.com/rohs.

DRESS NUT

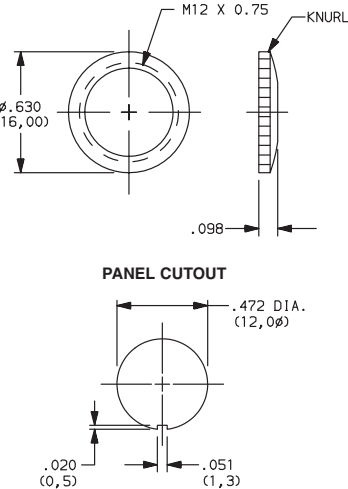
(NONE) NO DRESS NUT FOR F & F/LT
DESIGNATIONS

B BLACK



NOTE: Available with ZF designation and FA200 buttons.

C CHROME



NOTE: Available with ZF designation and FG button.



Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change





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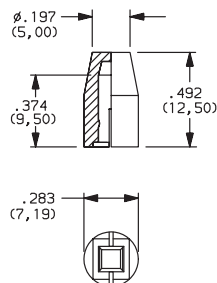
SOLID BUTTON



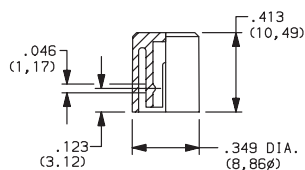
Pushbutton
A

STYLE

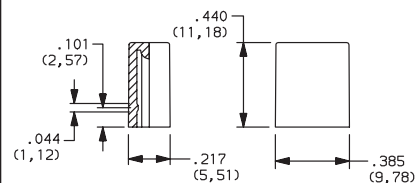
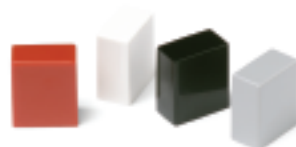
F01 FMR



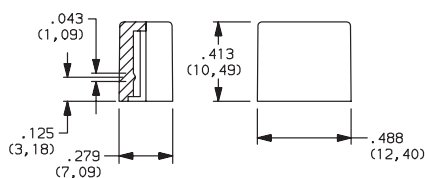
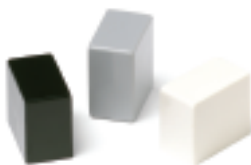
F02 FG



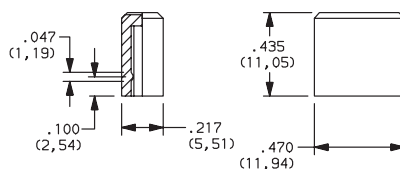
F12 FSC



F13 FSD



F14 FU12



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

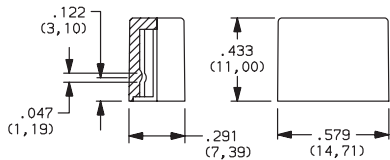
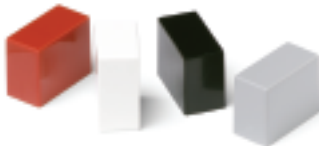
C&K F Series Pushbutton Switches



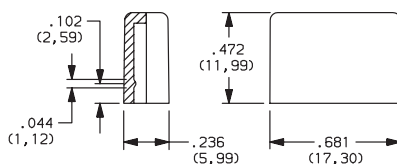
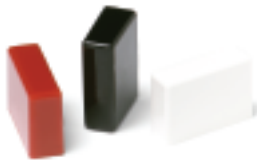
SOLID BUTTON

STYLE

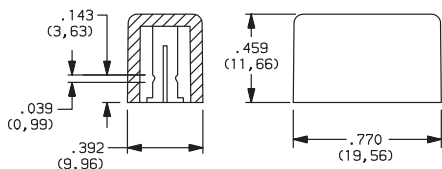
F15 FSB



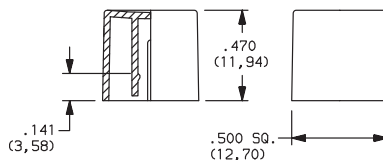
F16 FE



F19 FA



F21 F001

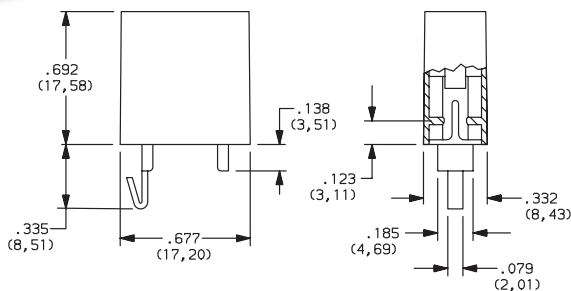


OPTION CODE	COLOR
01	BLACK
02	WHITE
03	RED
04	LT. GRAY

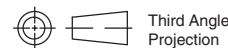
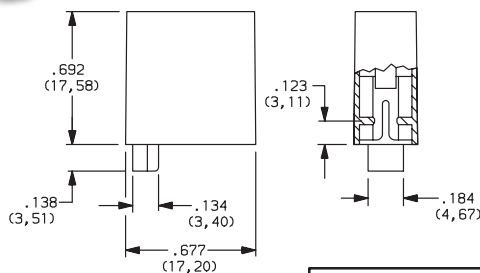
MECHANICAL BUTTON

STYLE

F01 FA100



F02 FA101



Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change



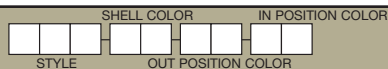


C&K F Series Pushbutton Switches

A

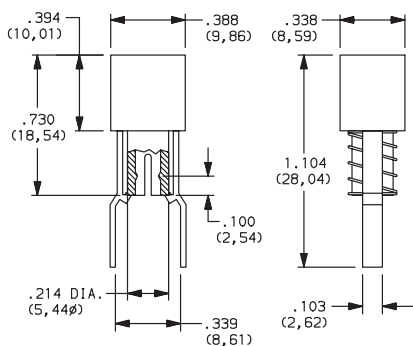
Pushbutton

MECHANICAL BUTTON

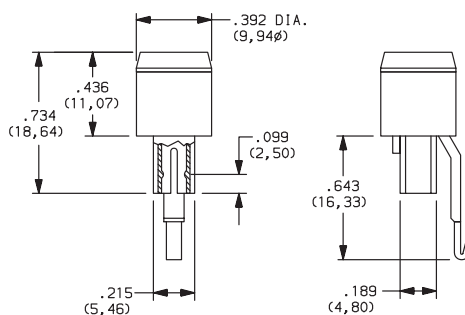


STYLE

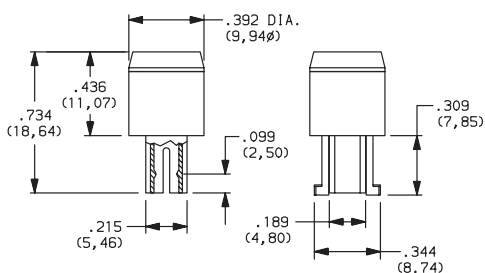
F07 FA120



F08 FA201



F11 FA200



SHELL COLOR

01 BLACK

OUT POSITION COLOR

01 BLACK

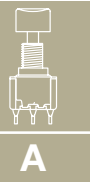
IN POSITION COLOR

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



Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

C&K F Series Pushbutton Switches



Pushbutton



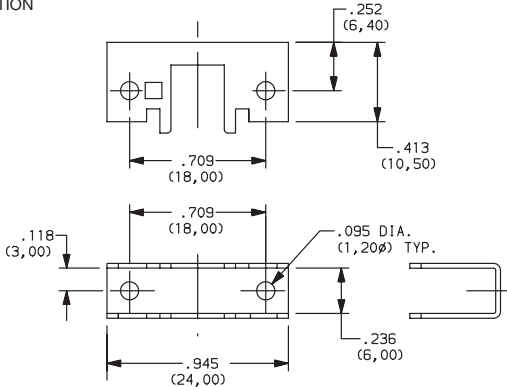
NUMBER OF STATIONS

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

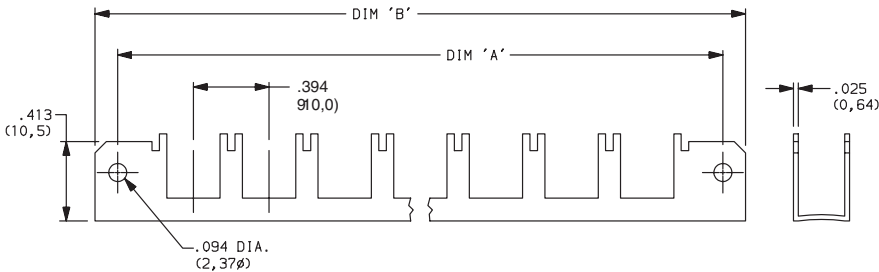
NOTE: Single station chassis available with mounting configurations, consult factory.

SPACING

00 SINGLE STATION

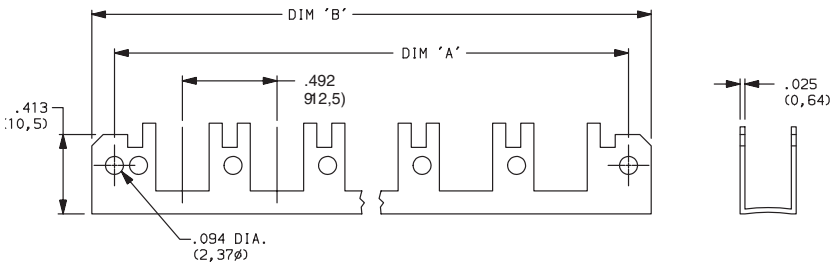


10 10mm

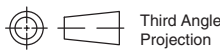


No. of Stations	Dim. 'A'	Dim. 'B'	Tolerance
2	1.182 (30,02)	1.418 (36,02)	0.005
3	1.575 (40,01)	1.811 (46,00)	0.010
4	1.969 (50,01)	2.205 (56,01)	0.010
5	2.363 (60,02)	2.599 (66,01)	0.010
6	2.757 (70,03)	2.993 (76,02)	0.015
7	3.150 (80,01)	3.386 (86,00)	0.015
8	3.544 (90,02)	3.780 (96,01)	0.015
9	3.938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



Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

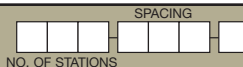


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A

Pushbutton

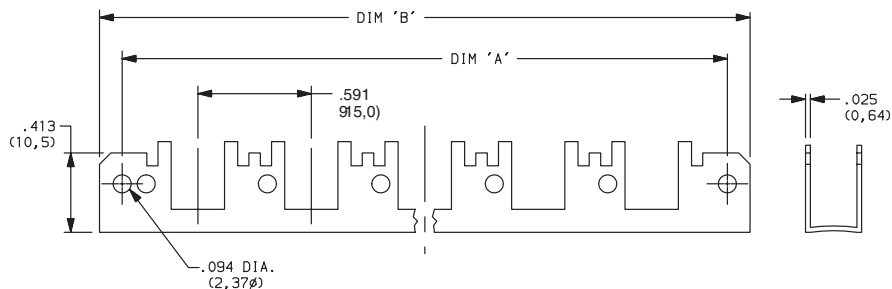
CHASSIS



SPACING

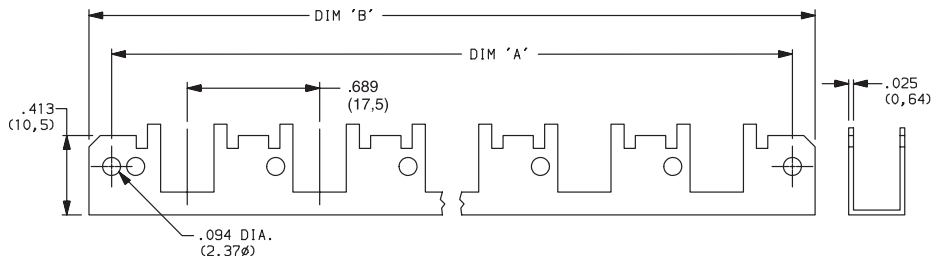
15 15mm

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



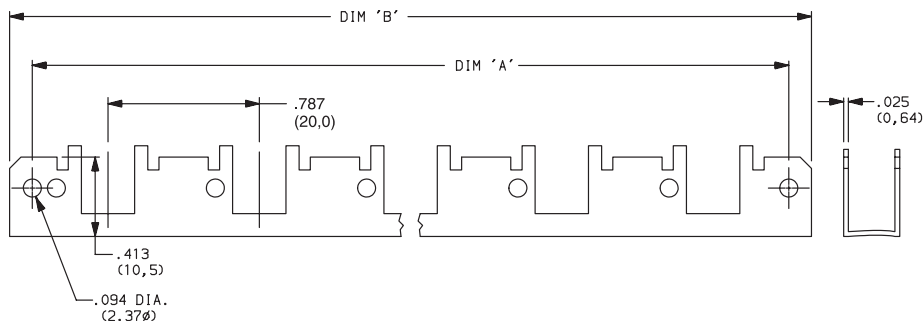
17.5 17.5mm

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



Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change