

RS-St.No.	MPN	Type	Description
174-3821	103-2001-001	F2UEE	F-Series Pushbutton Switch 2-pole push-push
174-3837	103-4001-001	F4UEE	F-Series Pushbutton Switch 4-pole push-push
174-3843	103-6001-001	F6UEE	F-Series Pushbutton Switch 6-pole push-push
174-3900	115-0051-100	F02 01	Black Cap for F-Series Switches



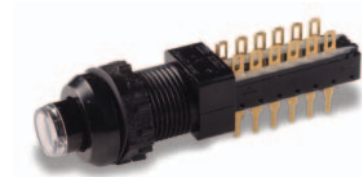
F Series Pushbutton Switches

Features/Benefits

- Up to 10 poles per module
- Various contact terminals
- Various mounting & switch ganging configurations
- Mechanical indicator buttons
- 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 du = 20C: Silver: < 2A, Gold: <0.5A.

DIELECTRIC STRENGTH (50 Hz, 1 min.): Chassis/contact: ^1500V
Between contacts: ^1500V.

OPERATING LIFE "OA/EE" (24V/200mA): >10⁵ operations
"GR": >3.5 x 10⁴ operations.

CONTACT RESISTANCE: Initial: Typical %10 mΩ, max. 20 mΩ
After operating life: %100 mΩ

INSULATION RESISTANCE: ^10⁹ Ω between open contacts,
^10⁹ Ω between chassis and contacts.

CAPACITANCE (at f = 10 kHz): %0.7 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: 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: 3.5N±0.5N (350 grams±100 grams); 4U: 5N±1N (500 grams±100 grams); 6U: 6.5N±1N (650 grams±100 grams); 8U: 9.0N±1N (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.

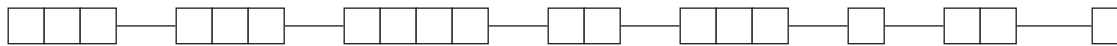
LOCKOUT PIN: Steel.

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-89 thru A-97. 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

Contact Arrangement

- 2U** 2PDT
- 4U** 4PDT
- 6U** 6PDT
- 8U** SPDT
- 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)** None
- TB** Top/bottom

Terminal Style

- (NONE)** Solder lugs & PC pins
- 01A** Cut solder lugs
- 01B** Cut PC pins, for other configurations, consult factory

Electrical Function

- (NONE)** BBM Break-Before-Make
- M** MBB (special) Make-Before-Break

Contact Material

- (NONE)** Silver, AG
- AU** Gold

Dress nut*

*Central mounted F series only

- (NONE)** No dress nut
- B** Black
- C** Chrome



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

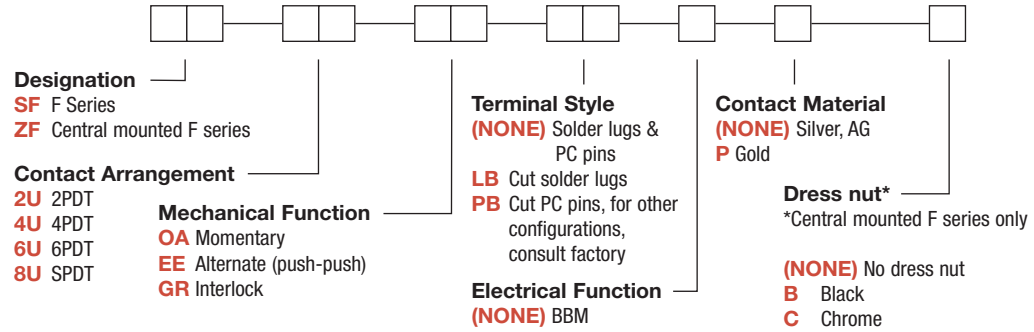
F Series Pushbutton Switches



A

Pushbutton

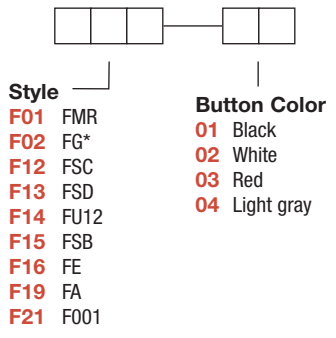
European Order Code - Switch Only



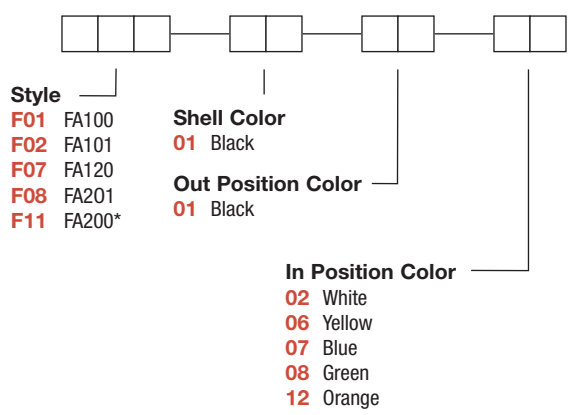
*Minimum order quantities apply.

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.



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



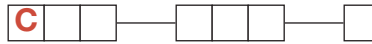
F Series Pushbutton Switches

Pushbutton
A

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

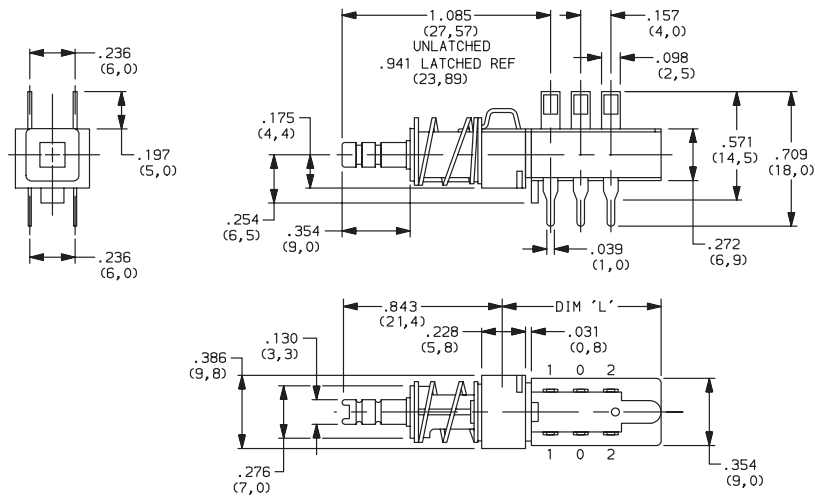
Special Acknowledgements
See note

*Minimum order quantities apply.

SWITCHES WITH STANDARD OPTIONS

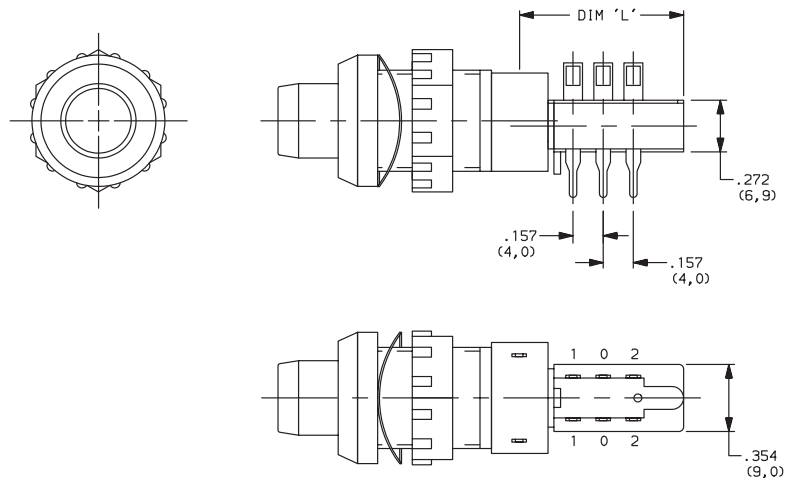
F2UEE

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)



Third Angle
Projection

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





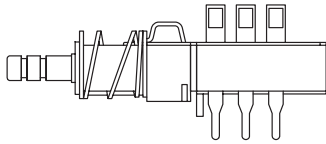
F Series Pushbutton Switches

Pushbutton
A

TERMINAL STYLE

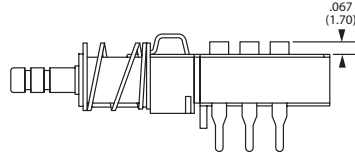


(NONE) SOLDER LUGS & PC PINS



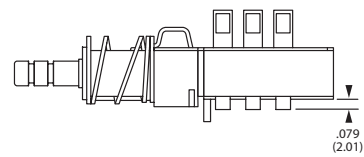
01A CUT SOLDER LUGS (North America)

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

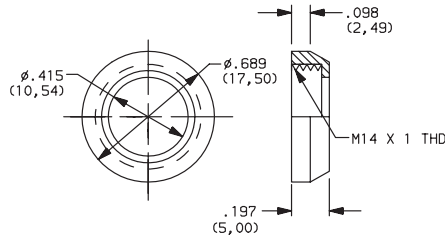
* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

DRESS NUT

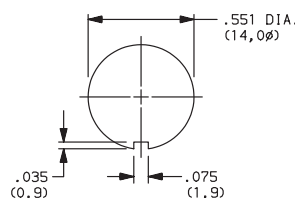


(NONE) NO DRESS NUT FOR F & F/LT DESIGNATIONS

B BLACK

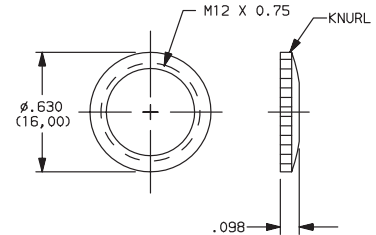


PANEL CUTOUT

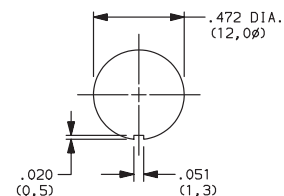


NOTE: Available with ZF designation and FA200 buttons.

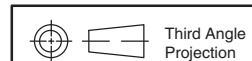
C CHROME



PANEL CUTOUT



NOTE: Available with ZF designation and FG button.



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



F Series Pushbutton Switches



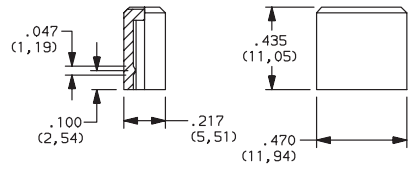
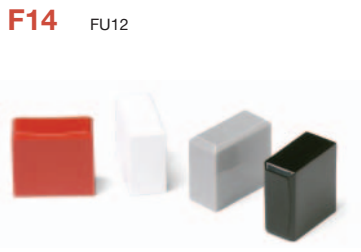
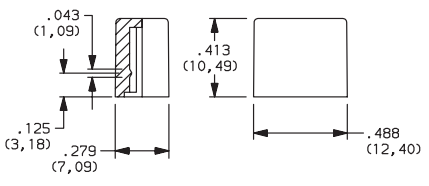
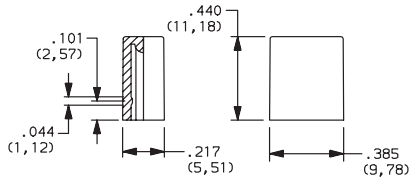
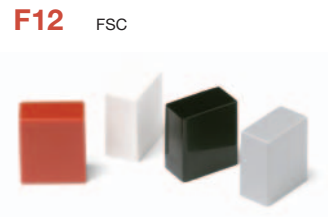
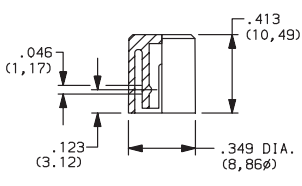
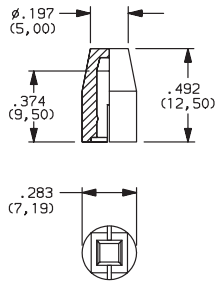
A
Pushbutton

SOLID BUTTON

COLOR

STYLE

STYLE



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



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



F Series Pushbutton Switches

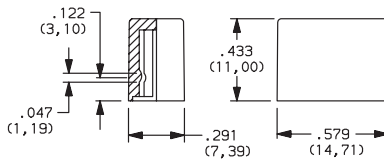
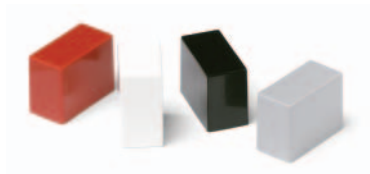
A
Pushbutton

SOLID BUTTON

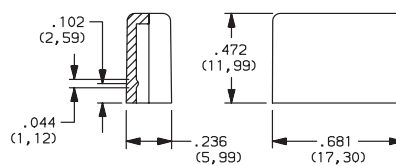


STYLE

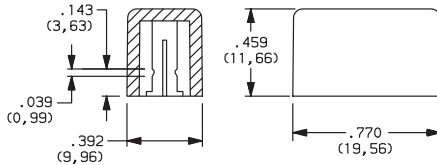
F15 FSB



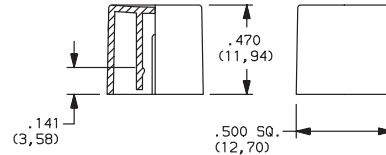
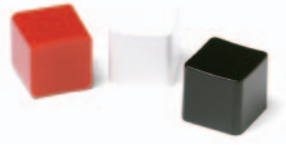
F16 FE



F19 FA

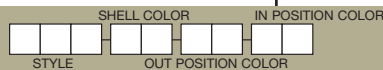


F21 F001



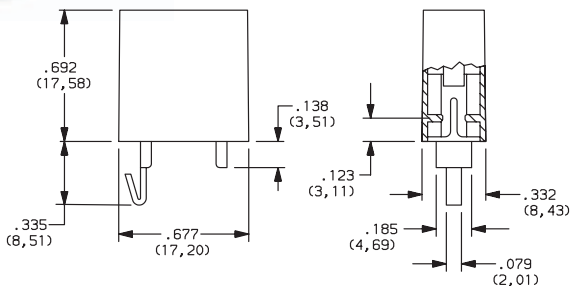
OPTION CODE	COLOR
01	BLACK
02	WHITE
03	RED
04	LT. GRAY

MECHANICAL BUTTON

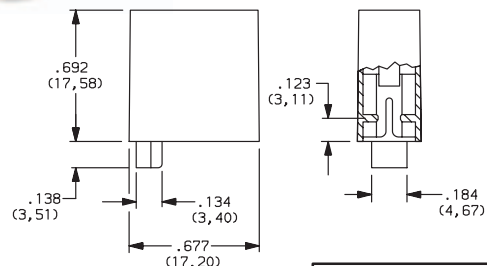


STYLE

F01 FA100



F02 FA101



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

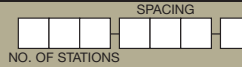




F Series Pushbutton Switches

A
Pushbutton

CHASSIS



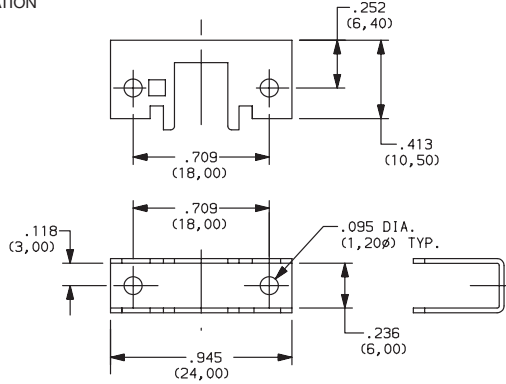
NUMBER OF STATIONS

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

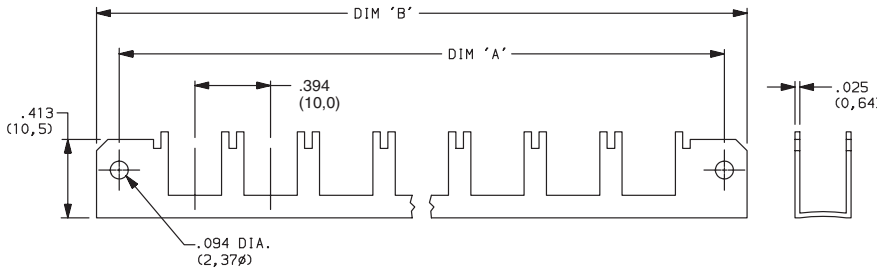
NOTE: Single station chassis available with mounting configurations, consult factory.

SPACING

00 SINGLE STATION

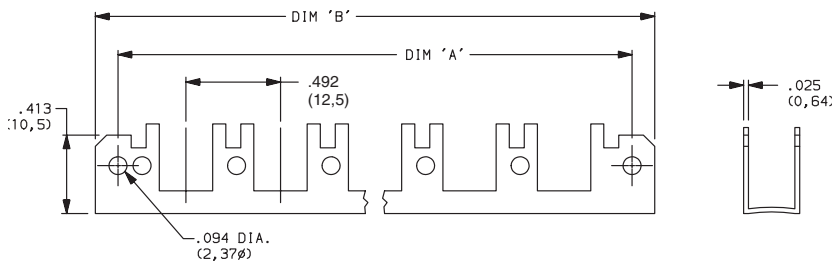


10 10mm



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

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

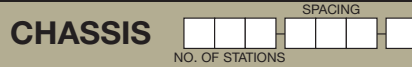


F Series Pushbutton Switches



A

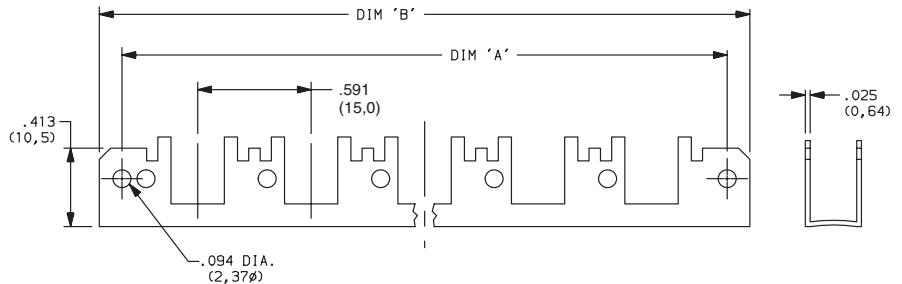
Pushbutton



SPACING

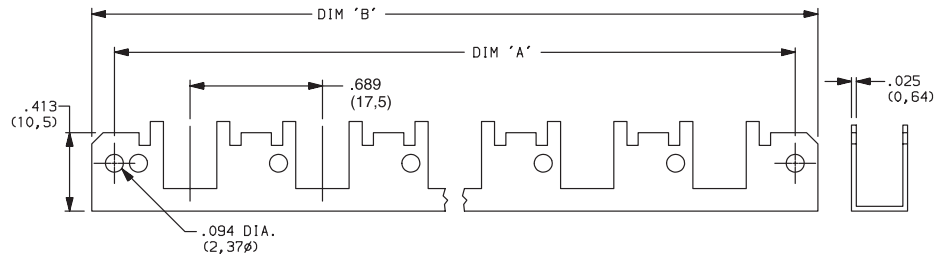
15 15mm

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



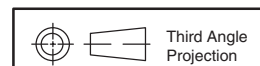
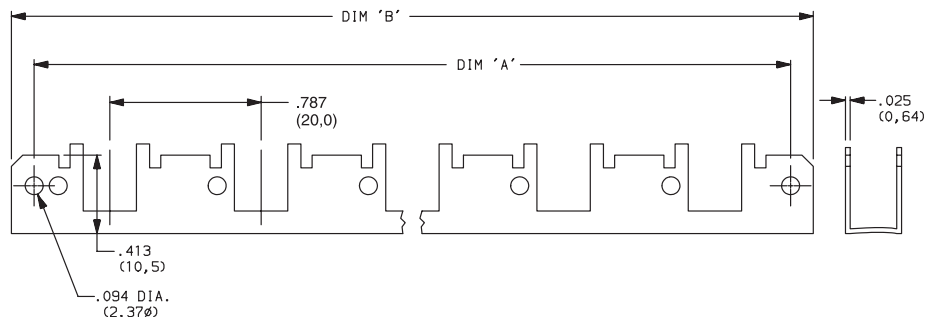
17.5 17.5mm

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

