VP SERIES VECTORPAD

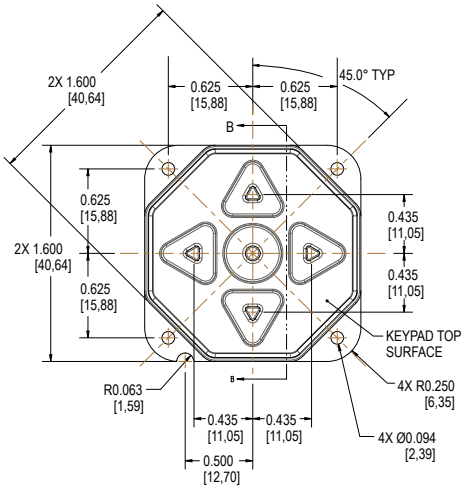
Directional Keypad

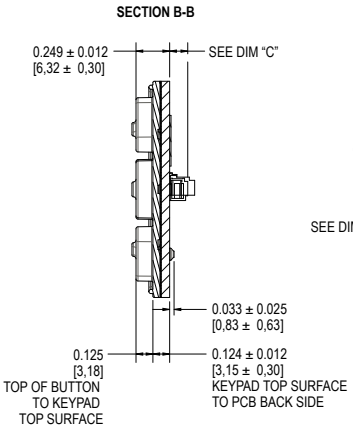
FEATURES

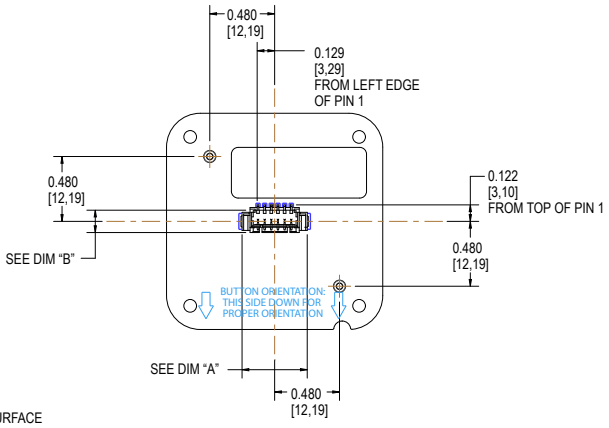
- Discrete output directional keypad
- Rear-panel mount
- Molex PicoBlade™ connector
- Overall size: 1.6 in. (41 mm) square
- IP67 rating (button side when mounted)
- Long life: 1,000,000 cycles per key
- Construction: High strength silicone rubber over FR-4 printed circuit board
- Operating temp: -50 °C to +85 °C
- NVIS backlight, custom legends and configurations available

ASSEMBLY DIMENSIONS in inches [and millimeters]

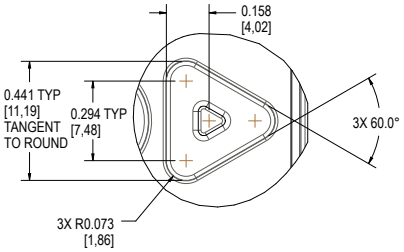
Dimension illustrations not to scale







4x Button Detail



Note: Tolerance ± 0.005" [0.127 mm]
unless otherwise stated

Mating Connector

PicoBlade™ PCB Headers
1.25 mm Pitch, 6-Position

1. Right Angle (90°) Header Molex (PN: 532610671)
   – **Type**: SMT, single row, right angle, 6-position
2. Vertical Header Molex (PN: 533980671)
   – **Type:** SMT, single row, vertical, 6-position

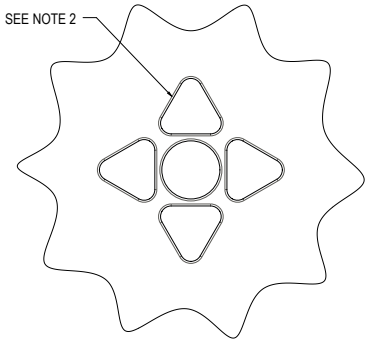
Recommended Mating Connector
Molex PicoBlade™ Receptacle Crimp Housing,
1.25 mm pitch, Single Row, Friction Lock, 6 Circuits
(PN: 510210600)

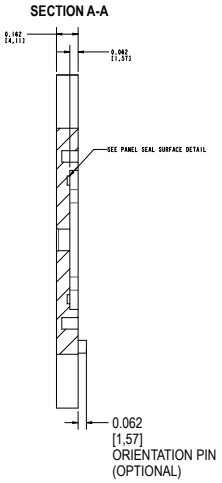
Connector Chart

Connector	Dimension					
	A		B		C	
	IN	MM	IN	MM	IN	MM
PicoBlade™ Vertical (53398-0671)	0.481	12.25	0.145	3.7	0.185	4.7
PicoBlade™ 90 Right Angle (53261-0671)	0.481	12.25	0.165	4.2	0.134	3.4

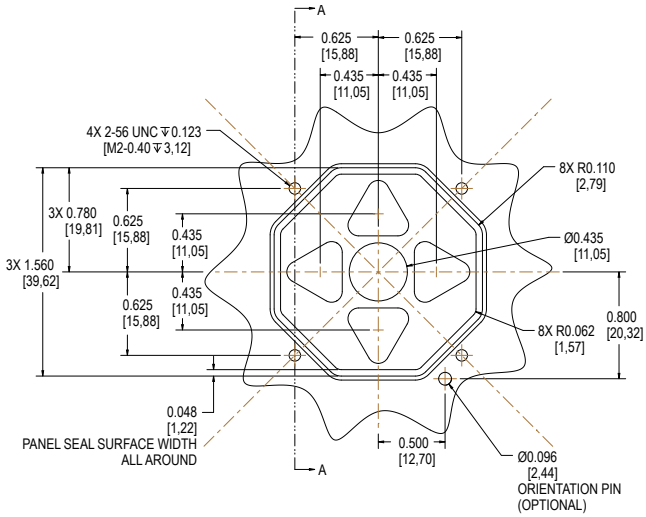
SUGGESTED PANEL DIMENSIONS in inches [and millimeters]

Panel Outside View





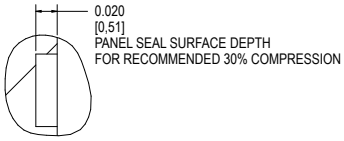
Panel Inside View



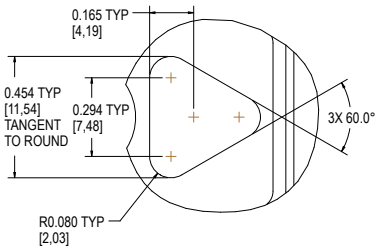
Notes:

1. Tolerance ± 0.005" [0.127 mm] unless otherwise stated
2. An edge break or round is recommended for the button openings. This is to prevent damage to the rubber caused by friction between the rubber and panel with repeated actuations.

Panel Seal Surface Detail



4x Button Cut-Out Detail

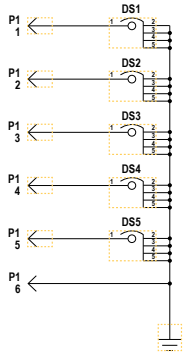


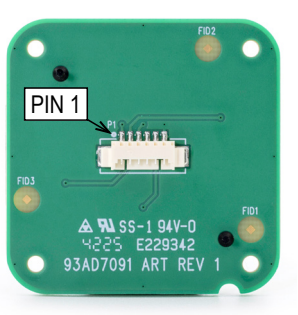
MOUNTING EXAMPLE

Mounting Recommendations

Mounting Method	Screw-mounted through designated mounting holes in the PCB (washer and thread locker recommended)
Recommended Screw	Imperial: 2-56 Pan Head, 5/32" length (no washer) Metric: M2 Pan Head, 4 mm length (no washer)
Recommended Fastener Material	Stainless steel or corrosion-resistant equivalent
Recommended Torque	4 in-lbs (0.458 Nm)
Mounting Surface	Flat, rigid mounting surface required for proper sealing and support
Surface Preparation	Mounting surface should be clean, dry, and free of burrs, scratches, or debris

SCHEMATIC





Specifications are subject to change.

SPECIFICATIONS

Environmental Testing Standards

Storage Temperature, High	+85 °C for 24 hrs	MIL-STD-810H Method 501.7, Procedure I
Storage Temperature, Low	-50 °C for 24 hrs	MIL-STD-810H Method 502.7, Procedure I
Thermal Shock	-50 °C to +85 °C, 24 cycles, 30 min dwell time, 1 hr 15 min stabilization	MIL-STD-810H Method 503.7, Procedure I-C
Altitude	57 kPa for 1 hr (15,000 ft)	MIL-STD-810H Method 500.6, Procedure I
Solar Radiation	10-day Actinic Effects hot-dry cycle	MIL-STD-810H Method 505.7, Procedure II
Random Vibration	Transportation random vibration profile, ~7.7 Grms over 10-2000 Hz, 3 hrs per axis across three mutually perpendicular axes	MIL-STD-810H Method 514.8, Procedure I
Functional Shock	40 G, 11 ms saw-tooth pulse, 3 shocks in each direction across three mutually perpendicular axes	MIL-STD-810H Method 516.8, Procedure I
Humidity	10 cycles, 24 hrs each, 30 °C to 60 °C at 95 ± 4% RH	MIL-STD-810H Method 507.6, Procedure II
Transit Drop	26 drops from 48 in. across faces, edges, and corners when individually packaged	MIL-STD-810H Method 516.8, Procedure IV
Chemical Resistance	8-hr exposure to cleaning compounds, antifreeze, rifle bore cleaner, DS-200, lubricating oil, hydraulic fluid, Dexron III, insect repellent, and isopropyl alcohol	MIL-STD-810H Method 504.3, Procedure II
Insulation Resistance	500 ± 25 VDC for 120 sec, insulation resistance ≥1000 MΩ	MIL-STD-202 Method 302, Test Condition B
Dielectric Strength	500 ± 25 Vrms for 60 sec, no flashover, no arcing, leakage current ≤1 mA	MIL-STD-202 Method 301
Contact Capacitance	1000 Hz, 0.6 Vrms for 60 seconds, contact capacitance ≤27 pF	MIL-STD-202 Method 305
Dust-Tight	Fine talc dust in a circulating chamber with applied pressure differential for 8 hrs (button side when mounted)	IP6X
Immersion	1 meter water immersion for 2 hrs (button side when mounted)	MIL-STD-810H Method 512.6, Procedure I

ORDERING INFORMATION

V P 5 7 5 0 - R X B

Series

Key Quantity
5 = 5 Button

Operating Force
750 = 750 ± 50% grams
• Additional force options available

Backlighting Scheme
B = No backlight/indicators
• Custom backlight version available

Connector
P = PicoBlade™ 90° right-angle
V = PicoBlade™ vertical

Keytop Landmark
R = Raised
• Custom backlight version available