

# MSA Series Specifications

MECHANICAL (X & Y AXES)	
ANGLE OF MOVEMENT	50° (25° EACH DIRECTION)
EXPECTED CYCLE LIFE	3 MILLION
CENTERING	SPRING RETURN
MAX. VERTICAL LOAD	50 lbf
MAX. HORIZONTAL LOAD	50 lbf *

\* Measured 0.44" Above Panel Surface, Y Direction

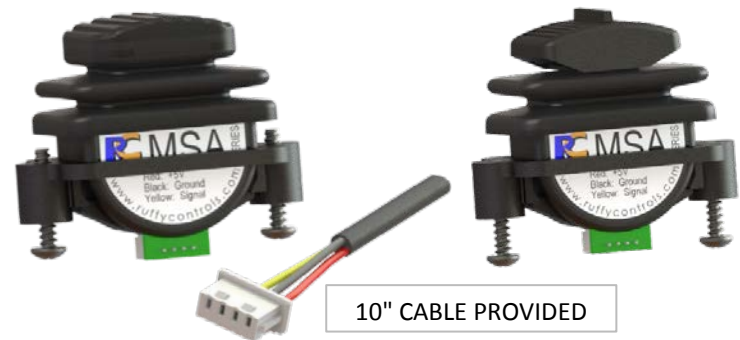
ELECTRICAL	
SENSOR TYPE	HALL EFFECT
RESOLUTION	12 BIT
SUPPLY VOLTAGE	5VDC ± 0.01VDC
OUTPUT VOLTAGE	SEE OPTIONS
RETURN TO CENTER VOLTAGE	± 50mV
OVERVOLTAGE MAX.	20VDC
REVERSE POLARITY MAX.	-10VDC

ENVIRONMENTAL	
OPERATING TEMPERATURE	-40°F TO 185°F
STORAGE TEMPERATURE	-40°F TO 185°F
IP SEALING ABOVE PANEL	IP67
EMC IMMUNITY LEVEL	EN61000-4-3 *Compliance to 30A/m
EMC EMISSIONS LEVEL	EN61000-6-3
ESD IMMUNITY LEVEL	EN61000-4-2 *Compliance to ±15kV/±8kV
VIBRATION TESTING	Per SAE J1455 Section 4.9 & MIL-STD810G 514.6
MECHANICAL SHOCK	Per SAE J1455 Section 4.10 & MIL-STD-202G

\*Extended Testing Levels

MOLEX 510210400 CONNECTOR			Single Output
PIN #	WIRE COLOR	DESCRIPTION	
1	N/A	N/A	
2	YELLOW	SENSOR	
3	BLACK	GROUND	
4	RED	POWER (+5V)	

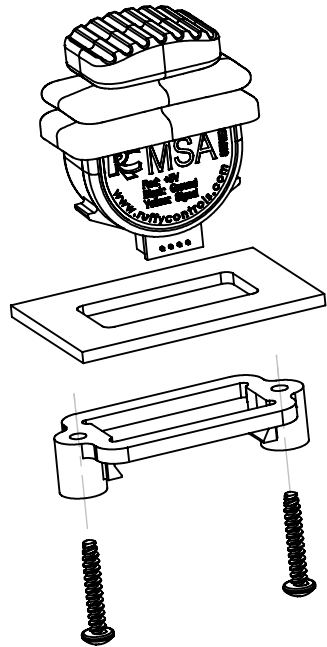
MOLEX 530470510 CONNECTOR			Dual Output
PIN #	WIRE COLOR	DESCRIPTION	
1	GREY	SENSOR 2	
2	RED	+5V SENSOR 1	
3	YELLOW	SENSOR 1	
4	PINK	+5V SENSOR 2	
5	BLACK	GROUND	



MATERIALS	
HOUSING	MINERAL & GLASS FILLED NYLON
BOOT	SILICONE
ACTUATOR	SILICONE or M&G FILLED NYLON

IP RATING: IP67 (ABOVE PANEL, ALL CONFIGURATIONS)

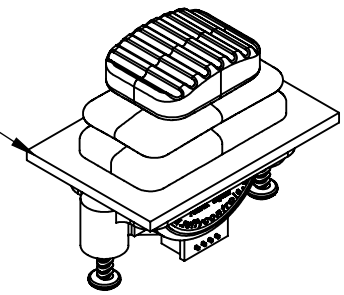
# MSA SERIES: PRODUCT & MOUNTING PANEL DIMENSIONS



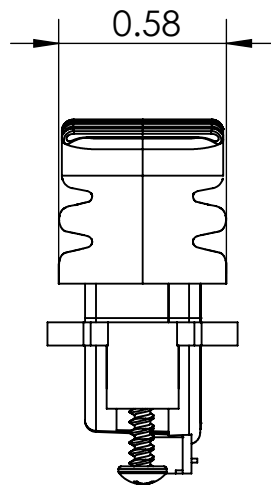
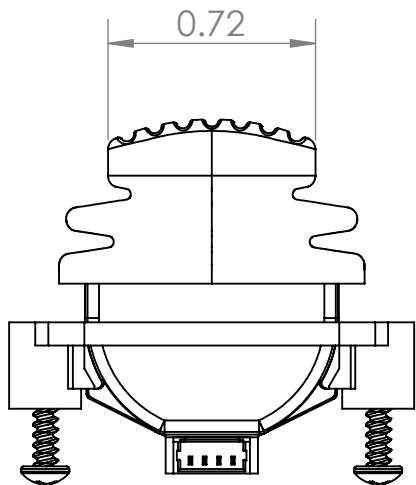
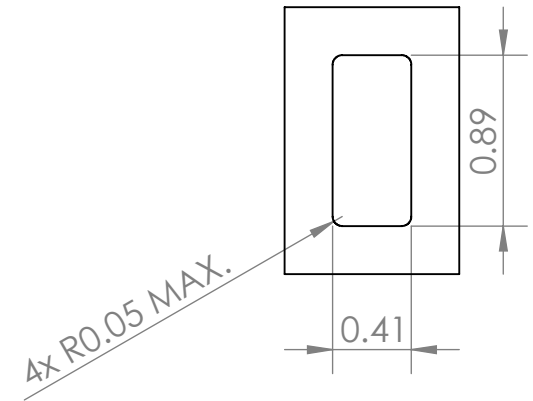
## MOUNTING DIRECTIONS:

1. DROP UNIT INTO PANEL CUTOUT.
2. INSTALL SUPPLIED MOUNTING CLIP UNDER PANEL UNTIL THE TWO HOOK FEATURES SNAP INTO PLACE.
3. INSTALL 2 MOUNTING SCREWS UNTIL THEY APPLY ADEQUATE PRESSURE ONTO PANEL.

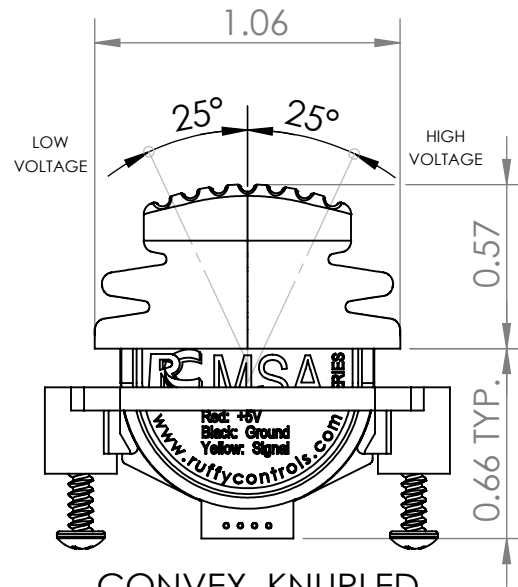
PANEL THICKNESS:  
UP TO 0.125"



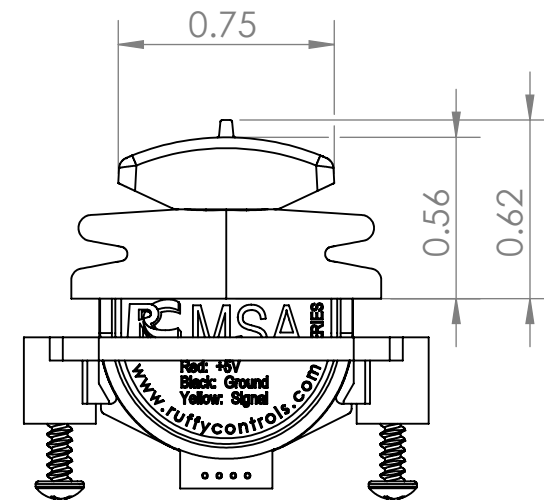
## PANEL CUTOUT DIMENSIONS



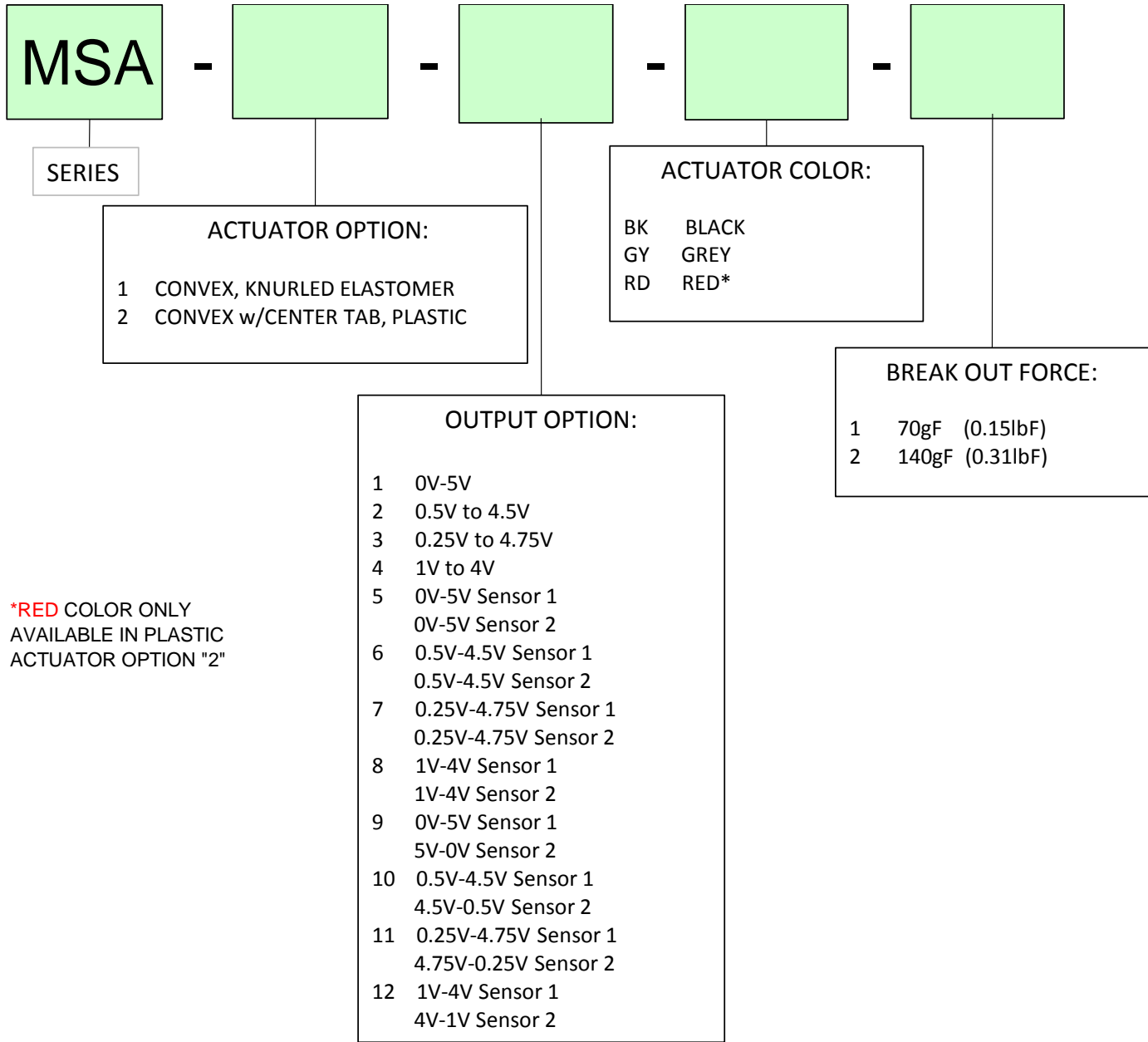
SCALE 3:2



CONVEX, KNURLED  
ELASTOMER ACTUATOR



CONVEX, PLASTIC  
ACTUATOR w/ CENTER TAB



\*RED COLOR ONLY  
AVAILABLE IN PLASTIC  
ACTUATOR OPTION "2"