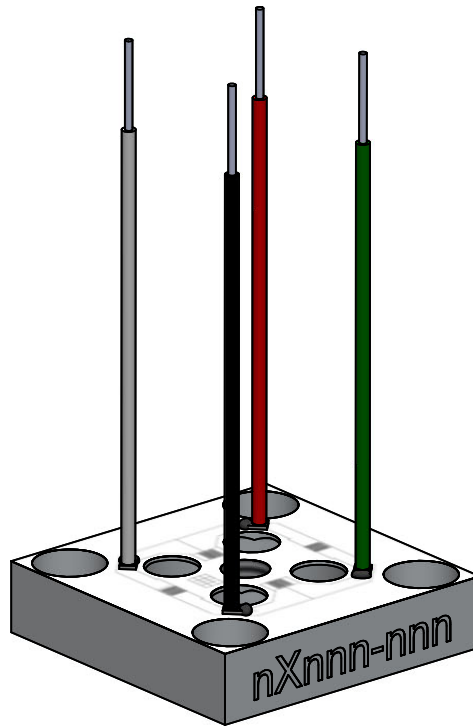


REVISIONS			
MOD No.	REV.	DRAWN BY:	DATE
3911	1	SML	4/30/21



APPLICATION NOTES

SMD "S415" SENSORS

GENERAL DESCRIPTION: The SMD "S415" Sensor is a monolithic stainless steel or aluminum bodied structure with a proprietary thin film technology strain gauge applied, capable of producing a linear, analog voltage output in response to loadings of up to 10Kg depending on the model chosen.

PHYSICAL CONSIDERATIONS:

Mounting: The S415 has four 2.7mm dia. mounting holes with counter bores positioned at the corners of the sensor body.

Loading: Load forces may be applied in either direction to the center boss of the sensor, perpendicular to its body and on the center axis of the threaded center hole. For accuracy and repeatability, a single point of contact is best. The configuration of these sensors provides for no inherent overload protection (loading in excess of 175% of rated capacity) therefore provisions should be designed into the application hardware to preclude excessive deflection and damage to the sensor.


Wiring: Wire leads of various material, length, and color per customer request are a common option however adequate forms of strain relieving should be provided in the assembly design.

ELECTRICAL CONSIDERATIONS:

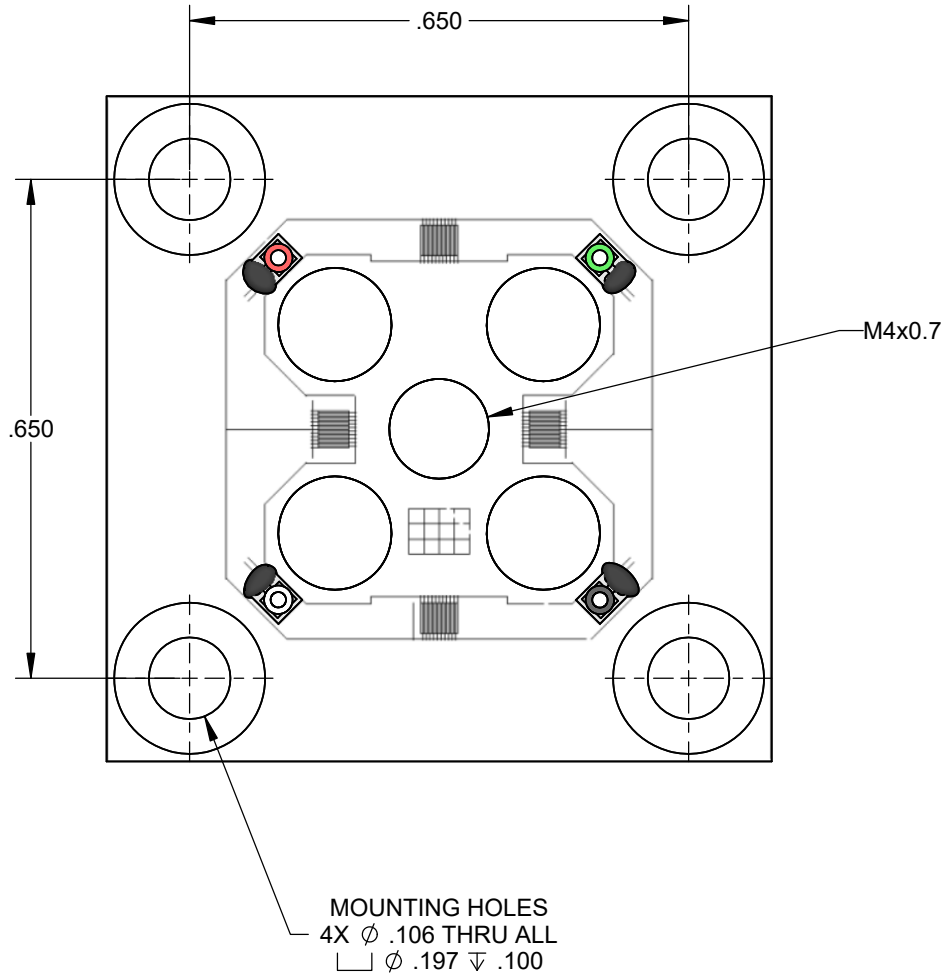
As seen in the schematic drawing, 4 resistive elements are created by proprietary thin film technology in a Wheatstone bridge configuration and adjoining areas of strain concentration. The application of a load to the sensor causes an electrical imbalance between the resistive elements and produces an output voltage (in millivolts) that is linear and proportionate to the load applied. Less than the maximum excitation voltage may be used however the resulting output will be reduced proportionately.

ENVIRONMENTAL CONCERNS and PRECAUTIONS:

While the thin film technology is itself immune to normal humidity levels, care must be taken to avoid condensing moisture and direct water exposure. The S415 is very stable over time and temperature. Due to the nature of the thin film technology, care in handling should be observed and no damage be allowed to occur especially in the area of the thin film strain gauges. During handling and assembly procedures anti-static discharge practices should be observed.

UNLESS OTHERWISE SPECIFIED: BREAK SHARP EDGES .003-.015 SURFACES TO BE SQUARE &/OR PARALLEL W/IN .005 X/X = 1/64" .XXX = ±.005" .X = ±.030" .XXXX = ±.001" .XX = ±.010" ANGLES = ±2° SURFACE FINISH \checkmark ³²				55 Barnes Park Rd. North Wallingford, CT 06492 Telephone: (203) 294-5800 www.smdsensors.com		
BREAK SHARP EDGES .08-.4 SURFACES TO BE SQUARE &/OR PARALLEL W/IN .127 .Xmm = ±0.5mm X.XXmm = ±0.3mm X.XXXmm = ±0.15mm ANGLES = ±2° \checkmark ^{0.8} SURFACE FINISH \checkmark				APPLICATION NOTES - S415 SENSORS TITLE:		
DATE: 2/28/13	SCALE: NONE	DIM: INCHES	DRAWN: RFP/SML	CHECKED: DES	NEXT ASSY: -	REV
DWG No. SMD4654AN			USED ON: S415	SHT 1 OF 2		1

S415 MOUNTING



UNLESS OTHERWISE SPECIFIED:

BREAK SHARP EDGES .003-.015. REMOVE ALL BURRS.
SURFACES TO BE SQUARE &/OR PARALLEL W/IN .005

X/X = ±1/64" .XXX = ±.005"
.X = ±.030" .XXXX = ±.001"
.XX = ±.010" ANGLES = ±2°

SURFACE FINISH 32/✓

BREAK SHARP EDGES .08-.4. REMOVE ALL BURRS.
SURFACES TO BE SQUARE &/OR PARALLEL W/IN .127

.Xmm = ±0.5mm ANGLES = ± 2°
.X.XXmm = ±0.3mm
.X.XXXmm = ±0.15mm

SURFACE FINISH 0.8/✓



STRAIN MEASUREMENT
DEVICES

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DWG No. **SMD3323AN**

SCALE -

SHT 2 OF 2

REV **1**