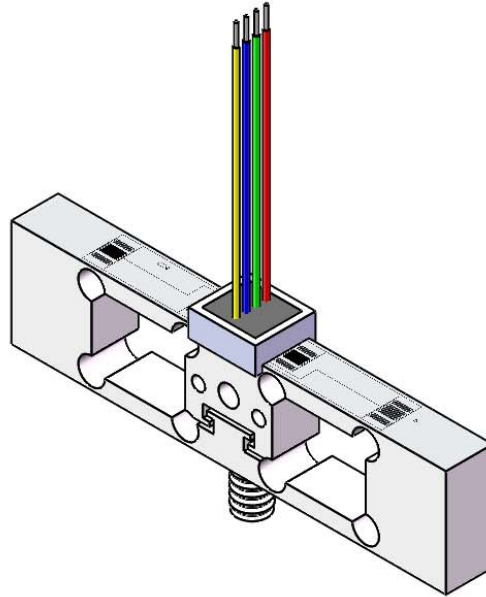


REVISIONS			
MOD No.	REV.	DRAWN BY:	DATE
3473	1	SML	10/18/19



APPLICATION NOTES

SMD "S300" SENSOR

GENERAL DESCRIPTION: The SMD "S300" Sensor is a monolithic stainless steel bodied structure with a proprietary thin film technology strain gauge applied, capable of producing an analog voltage output in response to loadings of up to 10, 30, and 80grams depending on the model chosen. (Refer to PRODUCT SPECIFICATION SMD2352).

PHYSICAL CONSIDERATIONS:

Mounting: One 3mm dia. for a shoulder bolt associated with two 2mm holes for roll pins are provided through the mid-section of the sensor body. Washers or spacers should be used between the sensor and a rigid mounting surface to preclude any interference with the sensor's moving element.

Loading: Load forces may be applied in either direction to the load button on the free side of the sensor, perpendicular to its body and on the center axis of the #10-32 threaded hole. Single point contact is best and often achieved by contacting a spherical element with a flat surface. The design of the S300 sensor provides for inherent overload protection up to 1000% of its full load value.

Wiring: Color coded lead wires are provided for electrical connections however when extended, 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:

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 S300 is very stable over time & temperature.

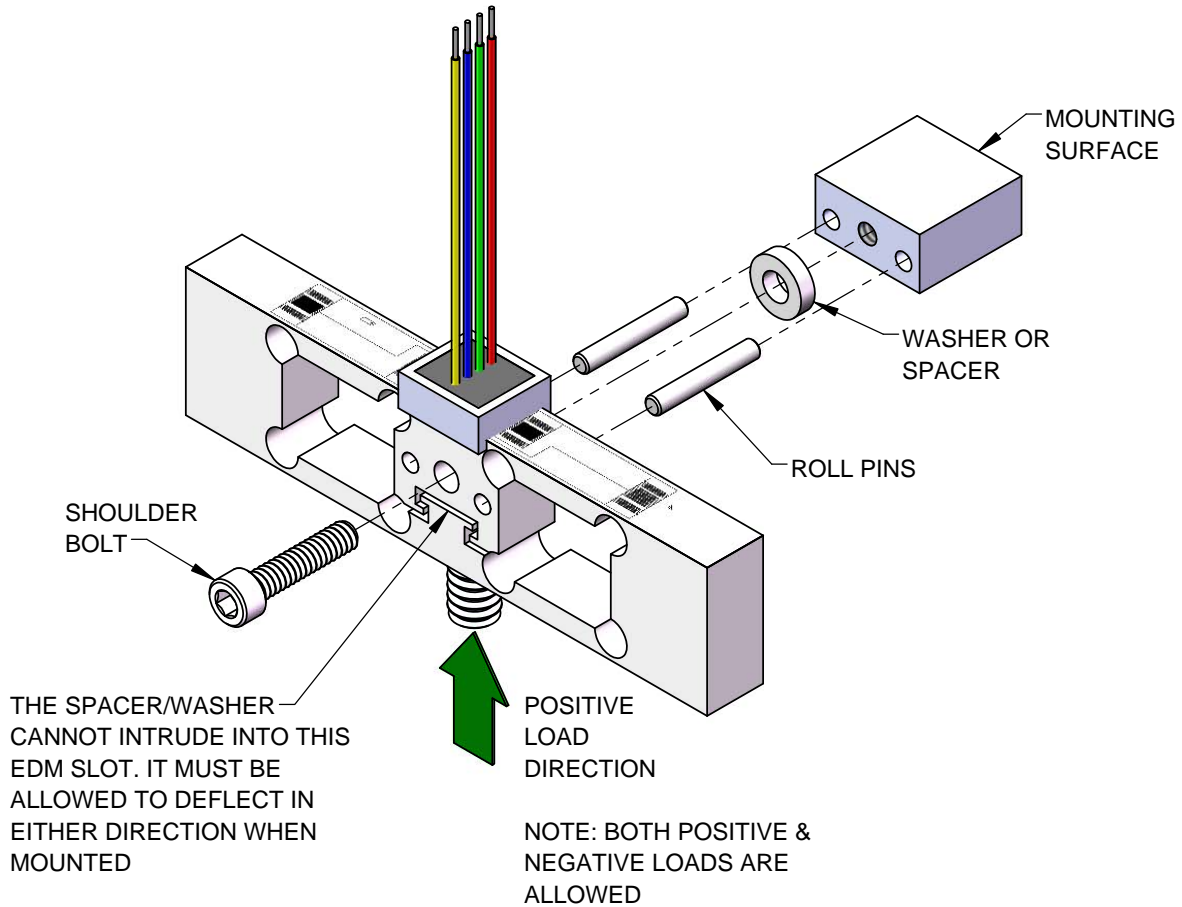
PRECAUTIONS:

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.

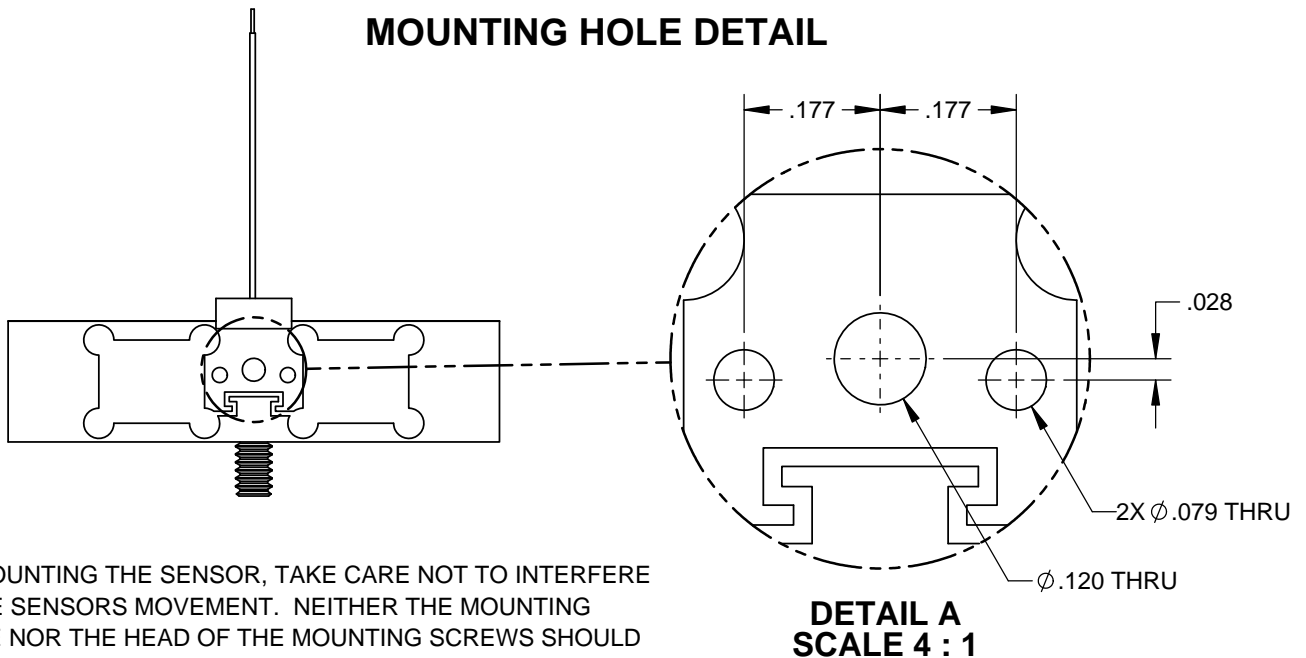
UNLESS OTHERWISE SPECIFIED: BREAK SHARP EDGES .003-.015 SURFACES TO BE SQUARE &/OR PARALLEL W/IN .005 X/X = 1/64" .XXX = ±.005" .X = ±.030" .XXXX = ±.001" .XX = ±.010" ANGLES = ±2° SURFACE FINISH 32/				55 Barnes Park Rd. North Wallingford, CT 06492 Telephone: (203) 294-5800 www.smdsensors.com						
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° SURFACE FINISH 0.8/		TITLE: APPLICATION NOTES - S300 SENSOR		DATE: 2/28/13	SCALE: NONE	DIM: INCHES	DRAWN: RFP/SML	CHECKED: DES	NEXT ASSY: -	REV
		SMD2352AN		USED ON: S300	SHT 1 OF 2		1			

RECOMMENDED MOUNTING FOR S300 SENSOR

Ideally, load interface should be via a single point of contact, such as the intersection of a spherical element with a flat surface.




MOUNTING HOLE DETAIL



NOTE:
WHEN MOUNTING THE SENSOR, TAKE CARE NOT TO INTERFERE WITH THE SENSORS MOVEMENT. NEITHER THE MOUNTING SURFACE NOR THE HEAD OF THE MOUNTING SCREWS SHOULD COVER THE NARROW SLOT LOCATED UNDER THE MOUNTING HOLES.

UNLESS OTHERWISE SPECIFIED:			
BREAK SHARP EDGES .003-.015. REMOVE ALL BURRS. SURFACES TO BE SQUARE &/OR PARALLEL W/IN .005		BREAK SHARP EDGES .08-.4. REMOVE ALL BURRS. SURFACES TO BE SQUARE &/OR PARALLEL W/IN .127	
X/X = ±1/64"	.XXX = ±.005"	.Xmm = ±0.5mm	ANGLES = ±2°
.X = ±.030"	.XXXX = ±.001"	X.XXmm = ±0.3mm	SURFACE FINISH 0.8/√
.XX = ±.010"	ANGLES = ±2°	X.XXXmm = ±0.15mm	
SURFACE FINISH 32/√			



**STRAIN MEASUREMENT
DEVICES**

55 Barnes Park Rd. North
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Telephone: (203) 294-5800
www.smdsensors.com

DWG No. SMD2352AN	SHT 2 OF 2	REV 1
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