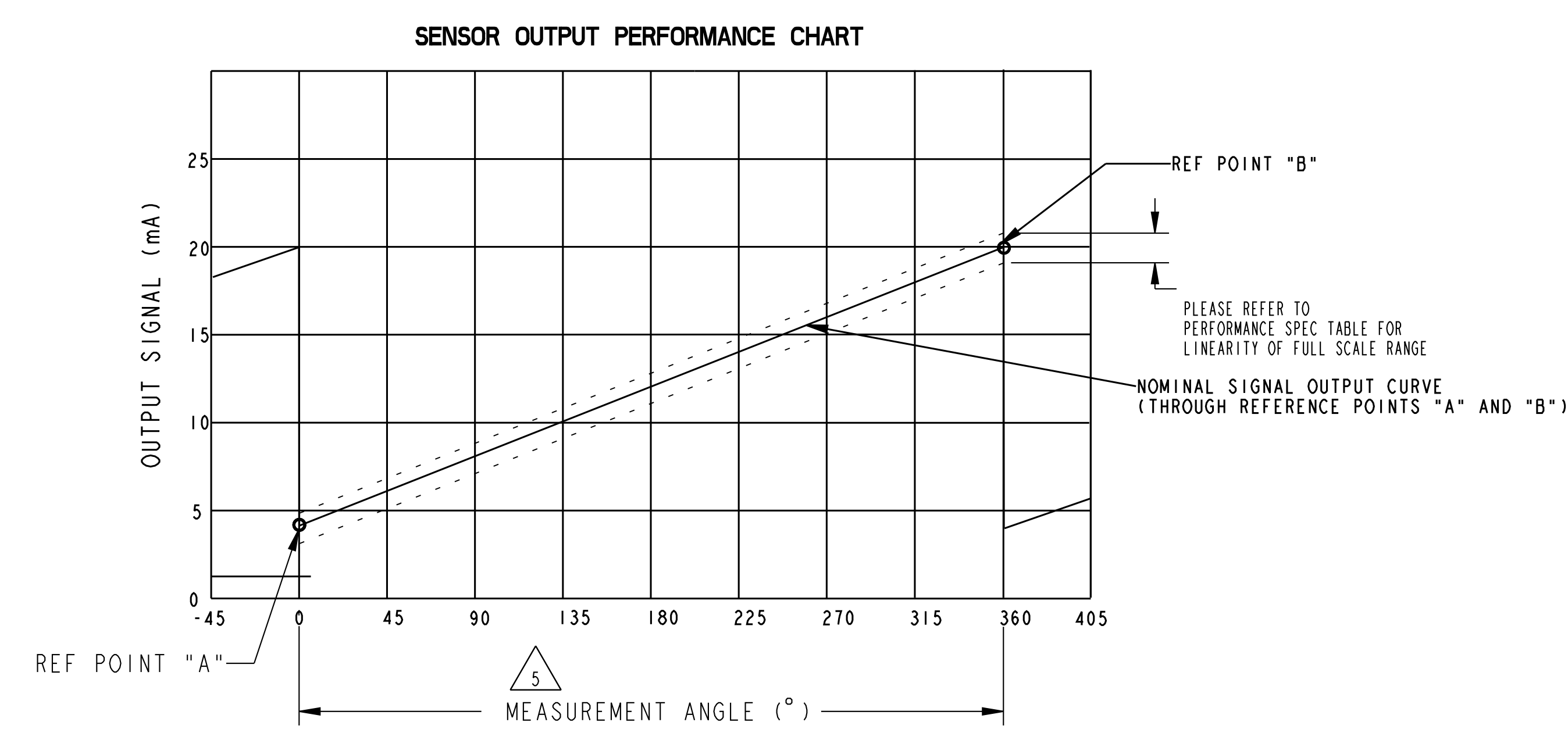
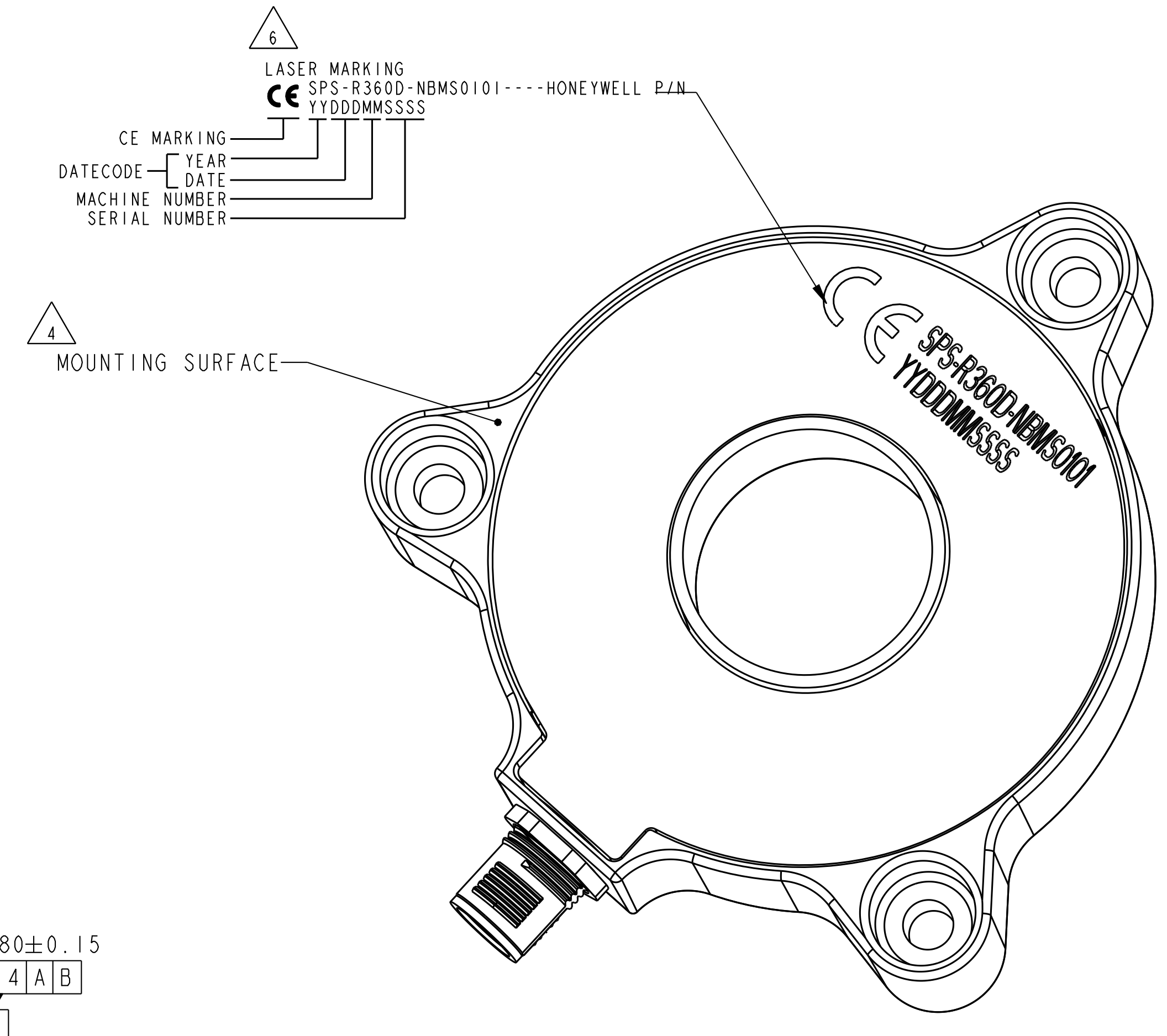
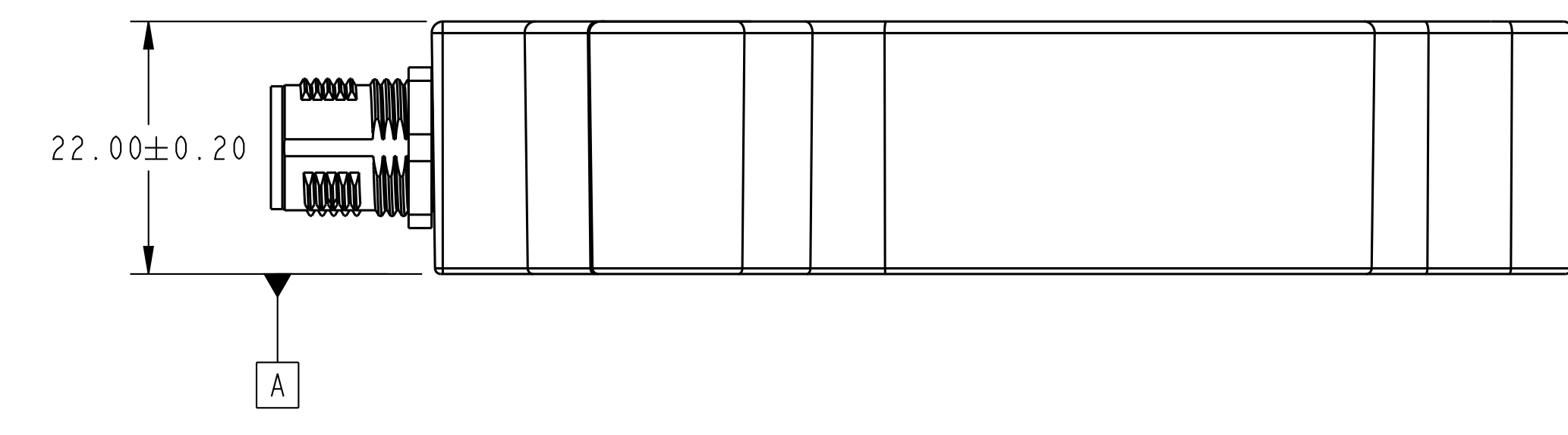
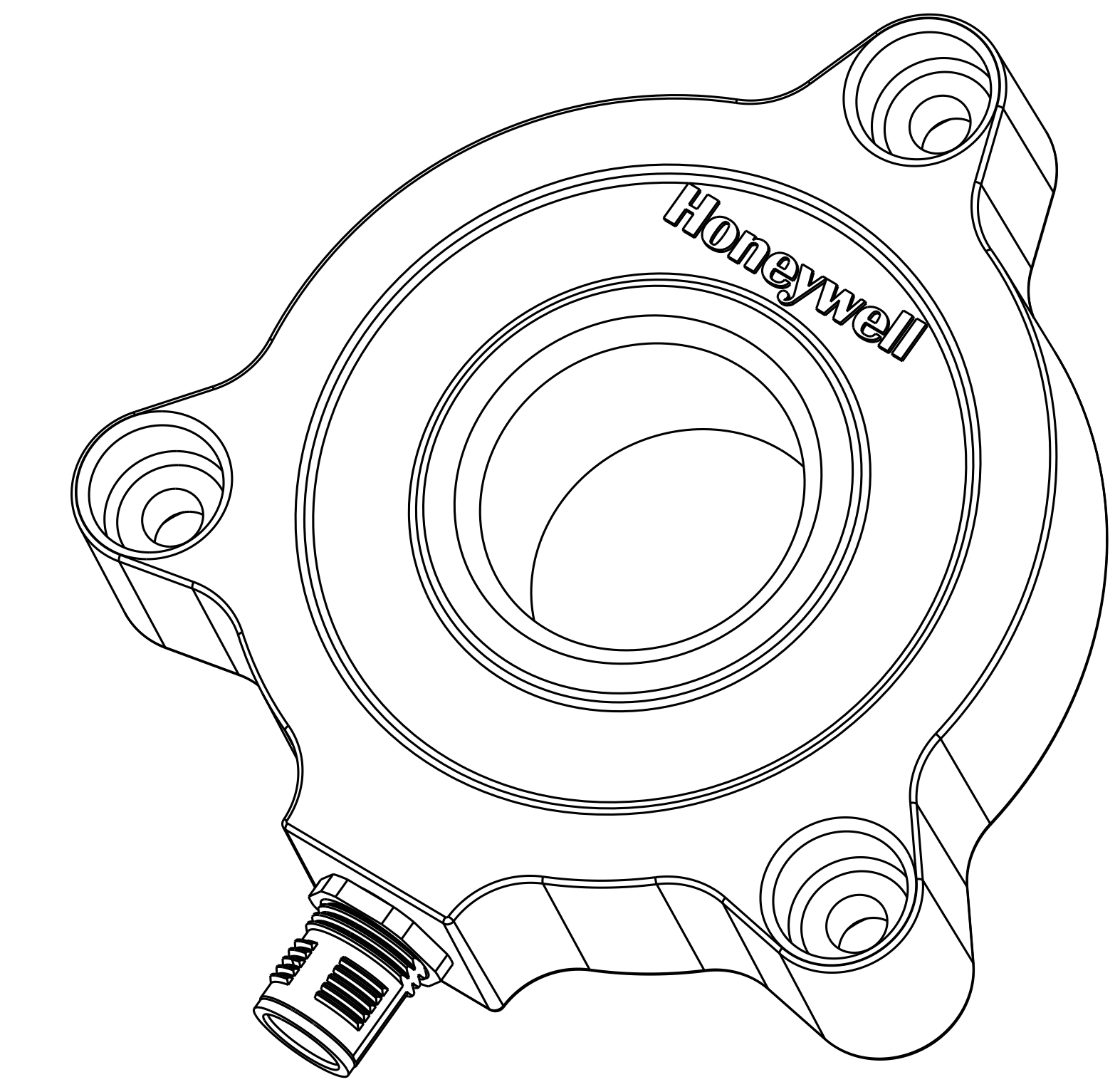
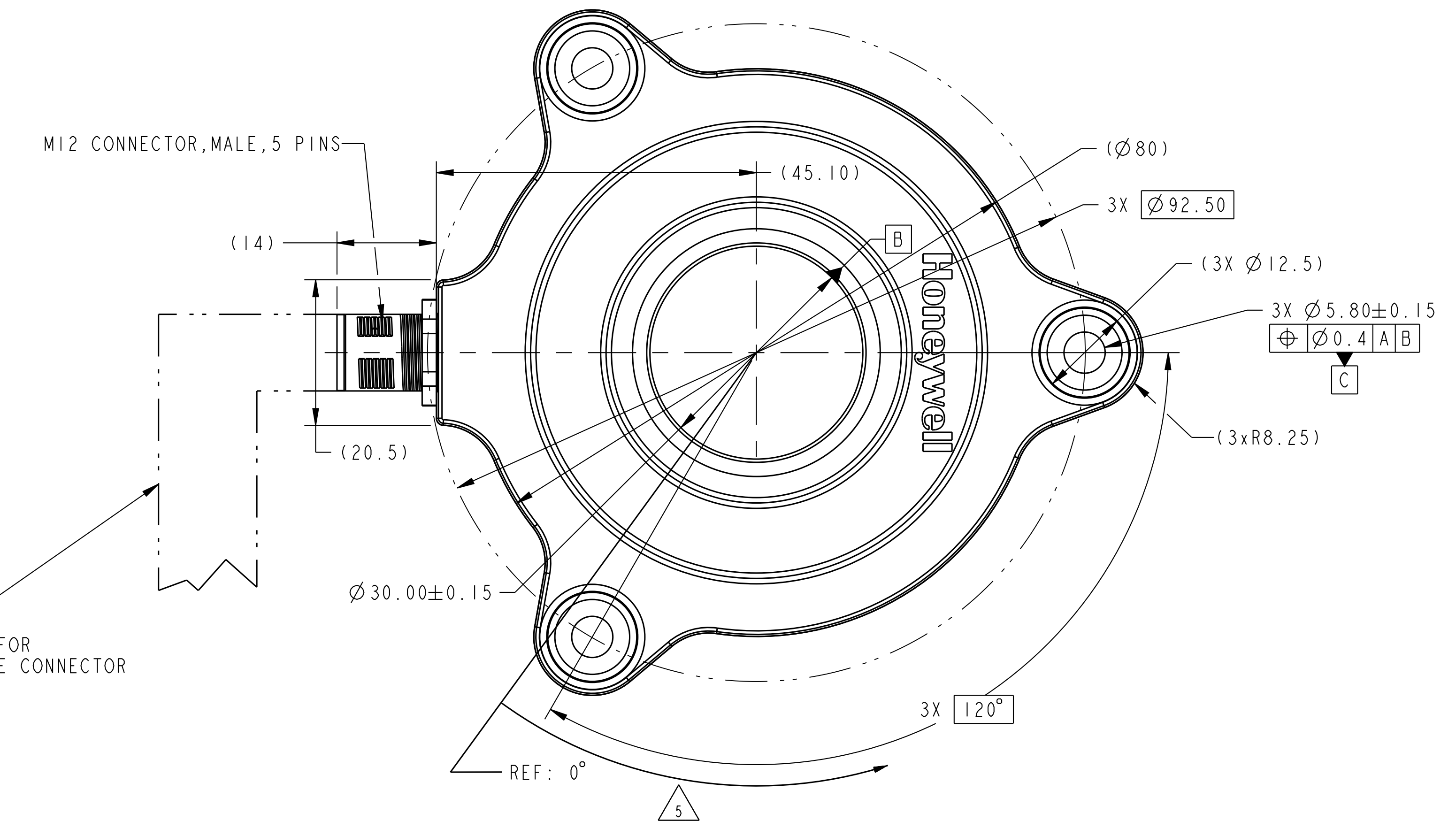


- DEFINITIONS:**
- 1 - LINEARITY: DEVIATIONS FROM A BEST FIT STRAIGHT LINE THROUGH THE OUTPUT, EXPRESSED AS A PERCENTAGE OF THE FULL SCALE SIGNAL RANGE (% OF 16mA).
  - 2 - ACCURACY: DEVIATIONS FROM THE IDEAL OUTPUT LINE EXPRESSED AS A PERCENTAGE OF THE FULL SCALE SIGNAL RANGE (% OF 16mA).
  - 3 - %FS: ERROR EXPRESSED AS A PERCENTAGE OF THE OUTPUT SPAN OF THE SENSOR (% OF 16mA).
  - 4 - OFFSET: DEVIATION FROM THE IDEAL OUTPUT AT THE MINIMUM INPUT CONDITION, EXPRESSED AS A PERCENTAGE OF THE FULL SCALE SIGNAL RANGE (% OF 16mA).
  - 5 - SENSITIVITY: THE SLOPE OF THE OUTPUT SIGNAL VS MAGNET TRAVEL, EXPRESSED AS  $\mu$ A'S OF OUTPUT PER DEGREE OF TRAVEL.
  - 6 - TC: TEMPERATURE COEFFICIENT OF A GIVEN PARAMETER, AS A PERCENTAGE OF THE FULL SCALE SIGNAL RANGE (% OF 16mA) PER DEGREE OF TEMPERATURE RISE FROM ROOM.
  - 7 -  $V_{cc}$ =SUPPLY VOLTAGE(+)
  - 8 - RADIAL ERROR = DISTANCE BETWEEN SENSOR AXIS AND MAGNET COLLAR AXIS (SHAFT AXIS)



PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
MEASUREMENT DISTANCE	0	---	360	Degree(°)	---
AIR GAP	1	3	5	MM	---
LINEARITY	-0.03	---	0.030	%FS	25°C
LINEARITY TC	---	---	0.0011	(%FS/DEG C)	-40>T<85°C
OFFSET	-0.036	-0.011	0.015	%FS	25°C
OFFSET TC	---	---	0.0033	%FS/DEG C	-40>T<85°C
ACCURACY	-0.069	---	0.069	%FS	25°C
SENSITIVITY	44.43	44.45	44.47	$\mu$ A / DEGREE	25°C
SENSITIVITY TC	---	---	80	PPM / DEG C	-40>T<85°C
RESOLUTION	---	0.01	---	DEGREE C	---
START UP TIME	---	130	---	mS	---



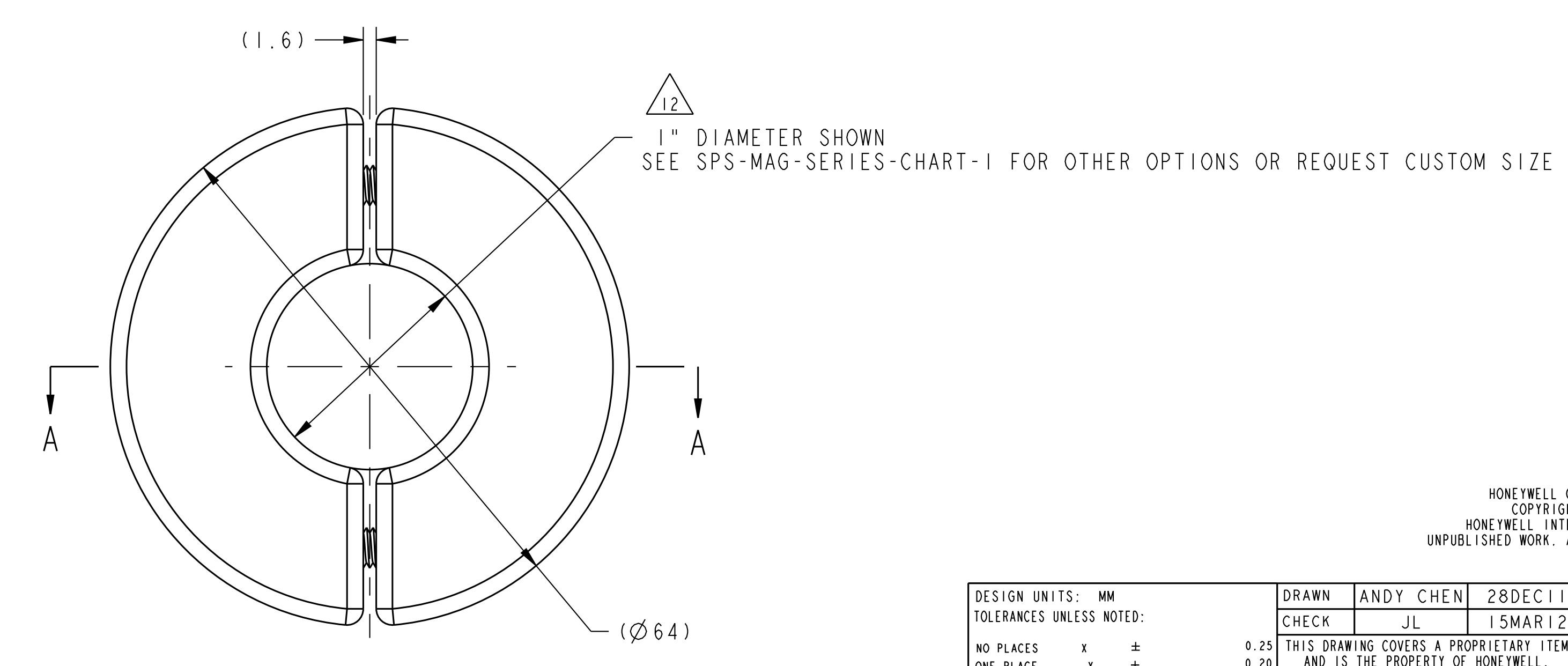
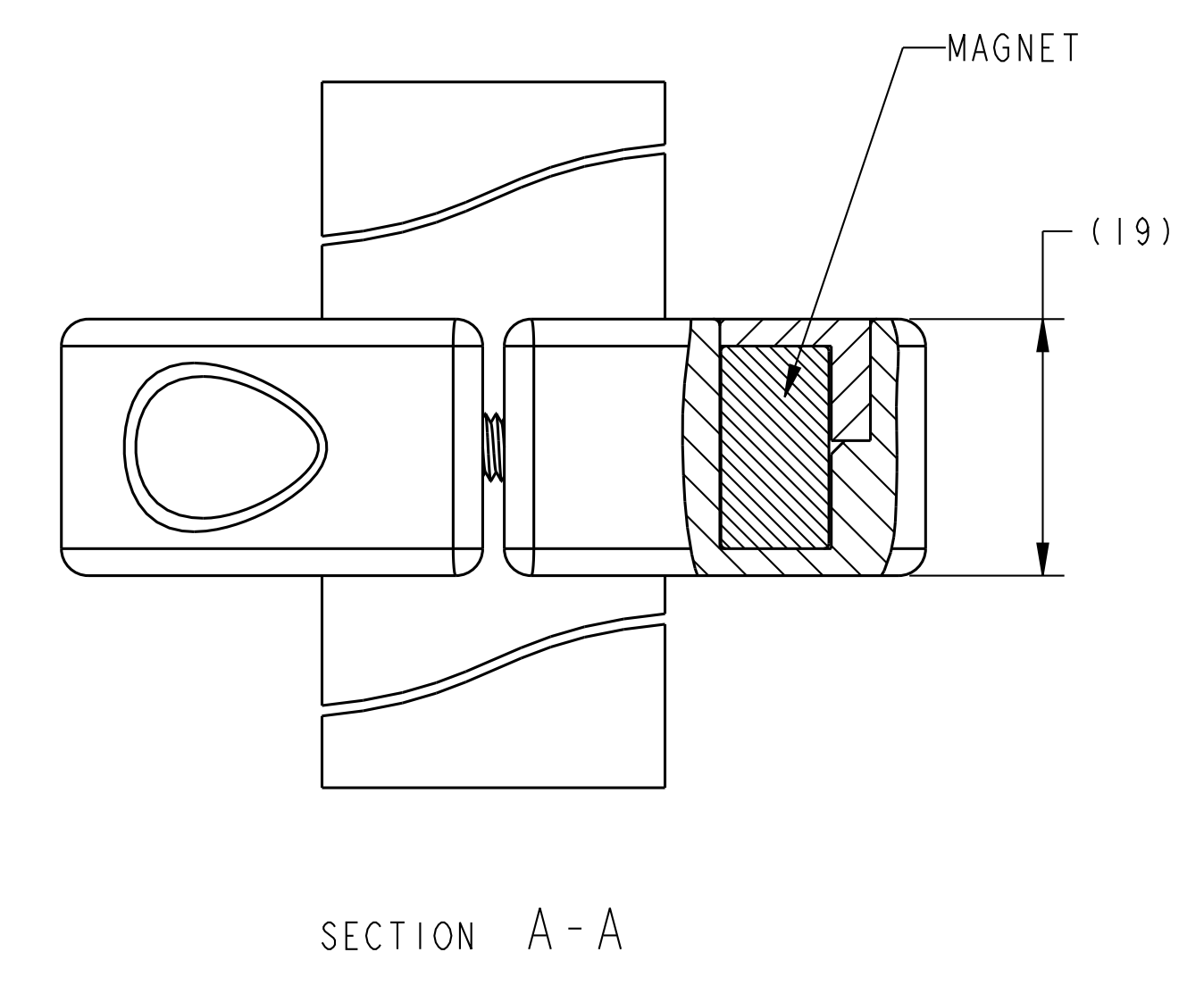
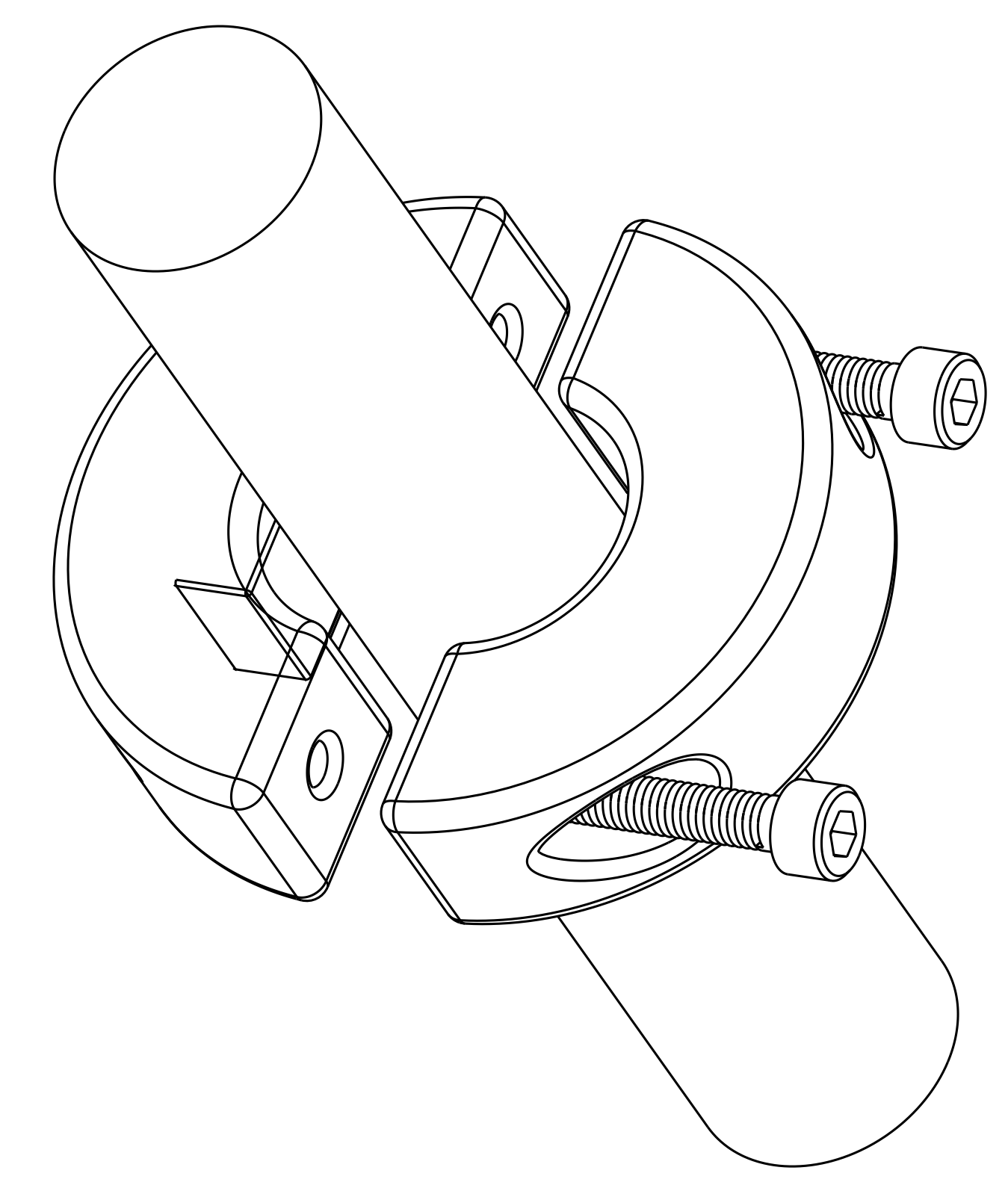
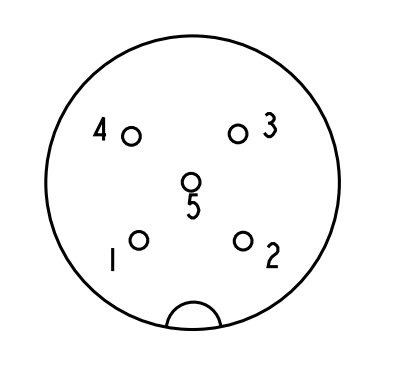
**IMPACT OF MAGNET MISPOSITION TABLES**

% LINEARITY		0	0.05	0.1	0.25	0.5	0.75	1	1.5	2	2.5
RADIAL ERROR (mm)	-2	-0.005	0.001	0.007	0.027	0.066	0.113	0.166	0.294	0.450	0.635
	-1	-0.002	0.003	0.008	0.025	0.060	0.101	0.150	0.269	0.417	0.593
	0	0.000	0.004	0.008	0.023	0.053	0.090	0.135	0.245	0.383	0.550
AXIAL ERROR (mm)	1	0.002	0.005	0.009	0.021	0.047	0.079	0.119	0.220	0.350	0.508
	2	0.005	0.007	0.009	0.019	0.040	0.068	0.104	0.196	0.317	0.466
	3	0.007	0.008	0.010	0.017	0.033	0.057	0.088	0.172	0.284	0.424

% ACCURACY		0	0.05	0.1	0.25	0.5	0.75	1	1.25	2	2.5
RADIAL ERROR (mm)	-2	0	0.006	0.012	0.033	0.076	0.129	0.191	0.263	0.538	0.770
	-1	0	0.005	0.011	0.029	0.069	0.118	0.176	0.245	0.509	0.733
	0	0	0.004	0.009	0.026	0.061	0.106	0.162	0.226	0.479	0.697
AXIAL ERROR (mm)	1	0	0.004	0.008	0.022	0.054	0.095	0.147	0.208	0.450	0.660
	2	0	0.003	0.006	0.018	0.047	0.084	0.132	0.190	0.420	0.623
	3	0	0.002	0.005	0.015	0.039	0.073	0.117	0.171	0.391	0.586

- NOTES:**
- 1 - IDEAL OUTPUT @ REF POINT A ( $\Delta A=0^\circ$ ): 4mA
  - 2 - IDEAL OUTPUT @ REF POINT B ( $\Delta B=360^\circ$ ): 20mA
  - 3 - OPERATING CONDITIONS:  
 TEMP RANGE -40°C TO 85°C  
 SUPPLY VOLTAGE 12 TO 30 VDC  
 SUPPLY CURRENT 90mA MAX
  - 4 - MOUNTING: MOUNT SENSOR ON THE EPOXY SIDE  
 MOUNTING SCREWS: UNC 10-24 OR M5  
 RECOMMENDED INSTALLATION TORQUE: 44.25 TO 61.95 IN-LBS (5 TO 7 N.M)
  - 5 - ROTATION OF MAGNET IS COUNTER CLOCKWISE AS PICTURED WITH MAGNET BELOW SENSOR (EPOXY SIDE).
  - 6 - LASER MARKING INCLUDES HONEYWELL PART #, DATE CODE & SERIAL #
  - 7 - CONNECTOR PIN ASSIGNMENTS
    - 1 - SUPPLY VOLTAGE(+)
    - 2 - TEST PIN, CONNECT TO GROUND(-)
    - 3 - GROUND(-)
    - 4 - OUTPUT(O)
    - 5 - TEST PIN, CONNECT TO GROUND(-)
  - 8 - FERROUS MATERIAL WITHIN 100 MM (3.9") RADIUS OF MAGNET MAY IMPACT SENSOR PERFORMANCE
  - 9 - TOLERANCE APPLIES FOR FULL SENSE RANGE
  - 10 - PLEASE FOLLOW CONNECTOR SUPPLIER RECOMMENDATION TO INSTALL MATING M12 5 PINS CONNECTOR.
  - 11 - PERFORMANCE TABLE BASED UPON NON-FERROUS SHAFT.
  - 12 - MAGNET ASSEMBLY IS SOLD SEPARATELY.

**CONNECTOR PIN ASSIGNMENT**



DESIGN UNITS: MM  
 TOLERANCES UNLESS NOTED:  
 NO PLACES ± .25  
 ONE PLACE ± .15  
 TWO PLACE ± .10  
 THREE PLACE ± .05  
 ANGLES ± 0.3°

DRAWN: ANDY CHEN 28DEC11  
 CHECK: JL 15MAR12

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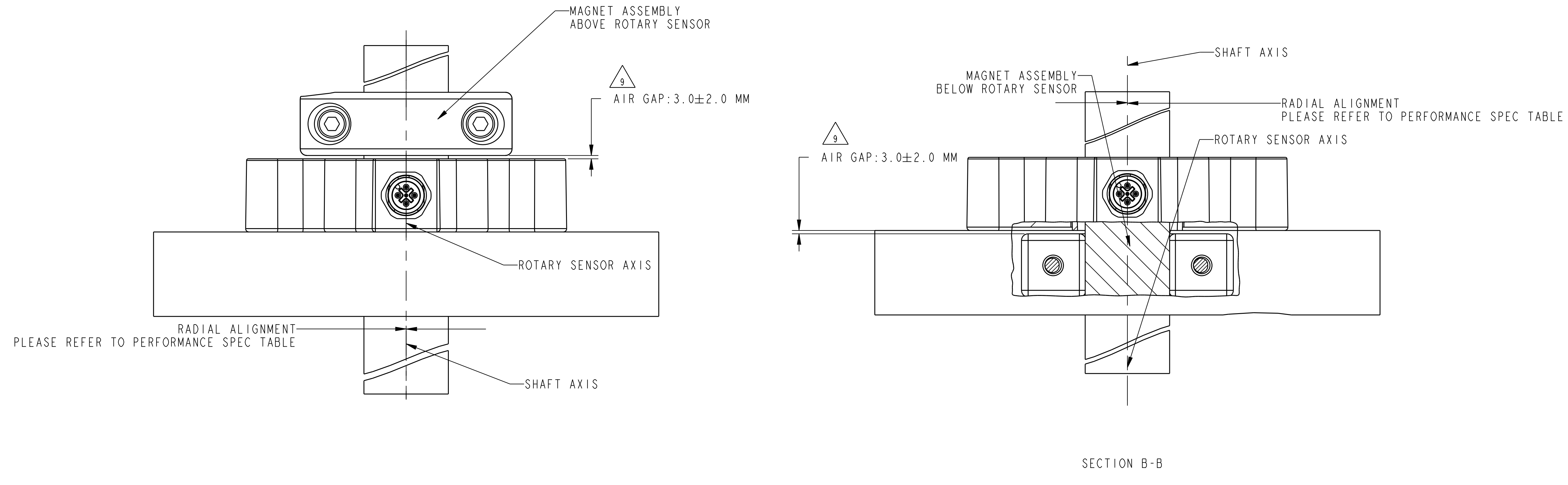
INTERPRET PER ASME Y14.5M-1994 OTHER HONEYWELL ENGINEERING STANDARDS MAY APPLY

Pro/ENGINEER 3D SCALE 2:1 SHEET 1 OF 2

**Honeywell**

SPS ROTARY 360 DEGREE 4 TO 20 MA  
 SPS-R360D-NBMS0101

**THRU SHAFT APPLICATION**



**PART LIST AND DESCRIPTION TABLE**

ITEM	PART NAME	DESCRIPTION	QTY.
1	ROTARY SENSOR	PROVIDE SENSOR INSIDE	1
2	MAGNET ASSEMBLY	CAN PURCHASE SEPARATELY ACCORDING TO YOUR APPLICATION. PLEASE REFER TO SPS-MAG-SERIES-CHART-1	1
3	MOUNTING SCREW	M5 OR UNC 10-24	3
4	MOUNTING PLATE	PROVIDE SURFACE TO MOUNT SENSOR	N/A
5	SHAFT	PROVIDE SHAFT TO ATTACH MAGNET ASSEMBLY	N/A

**BLIND SHAFT APPLICATION**

