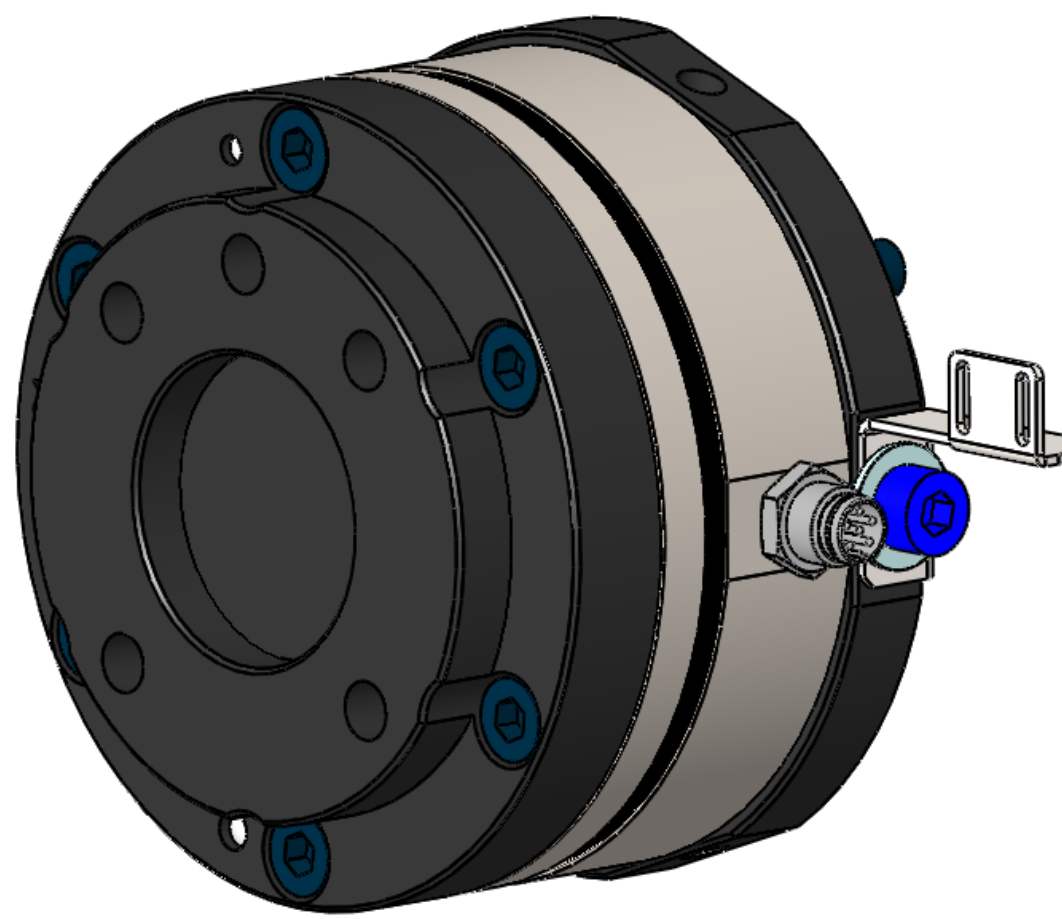


# Axia80 F/T Sensor with TM Robot Kit

REV.	DESCRIPTION	INITIATOR	DATE
05	ECO 19837; 9105-COB-TM-AXIA80-01 was 9105-TM-AXIA80	EPR	4/16/2021

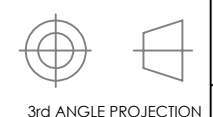
Loading Characteristics				
Fxy	Fz	Txy	Tz	
Rated Range 0 (default)	± 500 N	± 900 N	± 20 Nm	± 20 Nm
Overload Rating	± 2500 N	± 4500 N	± 100 Nm	± 100 Nm
Effective Resolution	0.1 N	0.1 N	0.005 Nm	0.005 Nm
Stiffness (Calculated)				
X-axis & Y-axis forces (Kx, Ky)	2.7x10 <sup>7</sup> N/m			
Z-axis force (Kz)	4.1x10 <sup>7</sup> N/m			
X-axis & Y-axis torque (Ktx, Kty)	2.4x10 <sup>4</sup> Nm/rad			
Z-axis torque (Ktz)	4.8x10 <sup>4</sup> Nm/rad			
Resonant Frequency (Sensor only)				
Fx, Fy, Tz	2200 Hz			
Fz, Tx, Ty	2600 Hz			
Physical Specifications (Sensor with Interface Plates)				
Weight	0.79 kg			
Center of Mass*	X = 0.09 mm	Y = 0.01 mm	Z = -14.53 mm	
Moments of Inertia (kg * mm <sup>2</sup> )*	lxx = 746.96	lxy = 1.53	lxz = 0.90	
	lyx = 1.53	lyy = 763.93	lyz = 2.71	
	lzx = 0.90	lzy = 2.71	lzz = 647.77	
Physical Specifications (Sensor only)				
Weight	0.28 kg			
Center of Mass*	X = 0.50 mm	Y = 0.03 mm	Z = -12.31 mm	
Moments of Inertia (kg * mm <sup>2</sup> )*	lxx = 173.52	lxy = -0.07	lxz = -2.20	
	lyx = -0.07	lyy = 170.73	lyz = -0.11	
	lzx = -2.20	lzy = -0.11	lzz = 227.98	
Operational Specifications				
Communication	EtherCAT			
Supply Voltage	12-30V DC			
System Resolution	16 Bit			
Max Data Rate	4 kHz			
Operating Temperature	0-65°C			
IP Rating	IP64			

\*Measurements taken from Sensing Reference Frame Origin



NOTES: UNLESS OTHERWISE SPECIFIED.

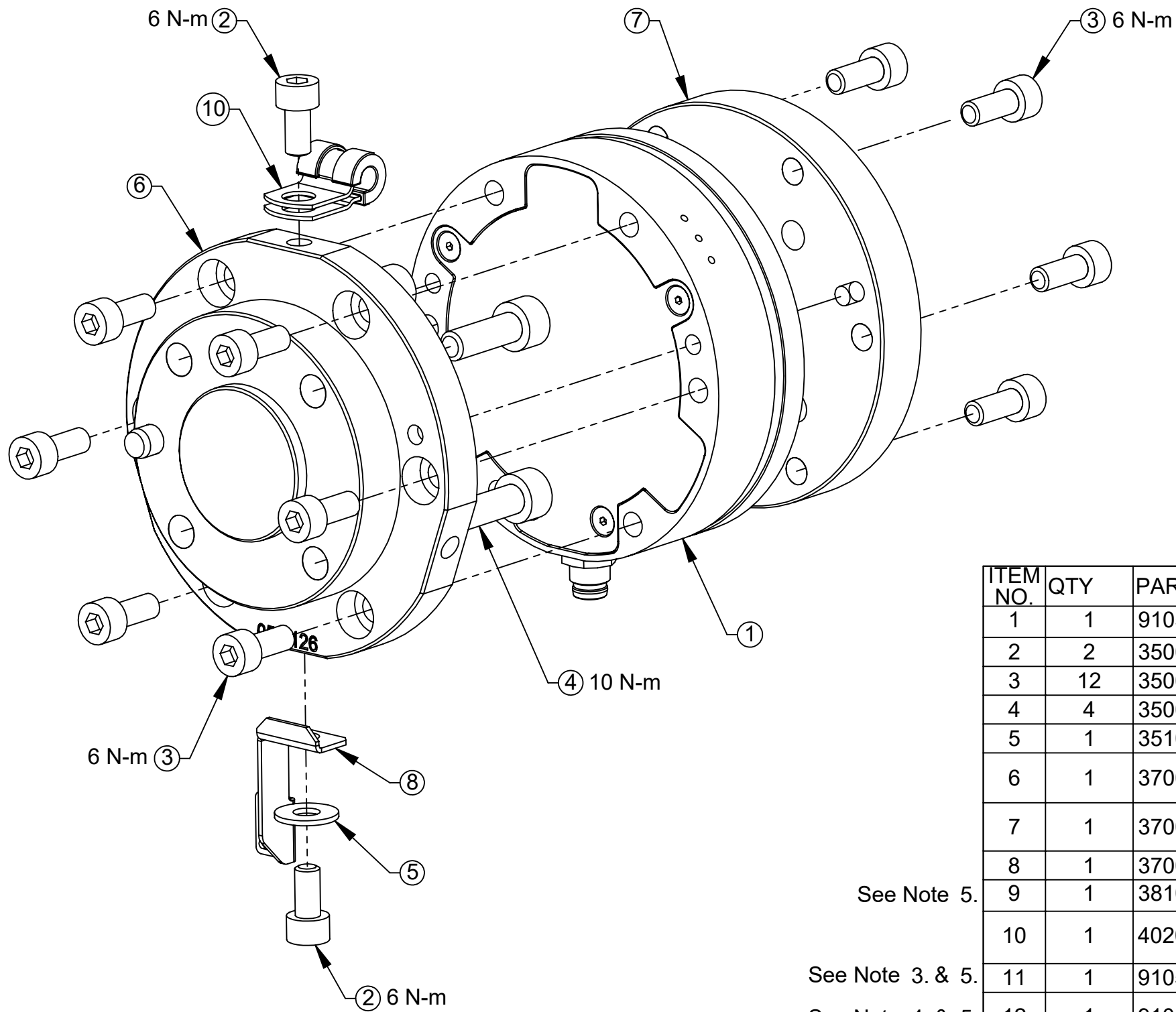
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DRAWN BY: R.Dupree 04/30/18		TITLE	
CHECKED BY: L.Fisher 09/19/18		Axia80 F/T Sensor with TM Robot Kit	
PROJECT # 180412-1	SHEET 1 OF 5	SCALE	SIZE
		2:1.5	B
		DRAWING NUMBER	REVISION
		9230-05-1535	05



ITEM NO.	QTY	PART NUMBER	DESCRIPTION
1	1	9105-ECAT-Axia80	Axia80 EtherCat F/T Sensor, IP60 dust-proof protection
2	2	3500-1064010-15	M5-0.8 x 10mm SHCS, Blue
3	12	3500-1064012-15	M5-0.8 x 12mm SHCS, Blue
4	4	3500-1066018-15	M6-1 x 18mm SHCS, Blue
5	1	3510-5064001-11	M5 Flat Washer
6	1	3700-05-2126	IP for Axia80 Transducer MAP to BC 50, (4)M6, Boss 31.5, Dowel 6 (at - Y) w/ Cable Mount
7	1	3700-05-2191	IP for AXIA80 TAP to BC50, (4) M6TAPPED, RECESS 31.5, D6
8	1	3700-05-2245	Axia80 Cable Connector Bracket
9	1	3810-05-2182	L-Wrench, Ball End Tip, 4mm Hex, Stubby
10	1	4020-0000029-00	Clamp, Loop, 304 SS with Neoprene Cushion, 3/16" ID, 1/4" MTG
11	1	9105-C-ZC22-ZC28-4	Cable, 6 Pin Axia sensor to 8 Pin M12, 4m, Shielded Shell
12	1	9105-C-ZC28-U-RJ45S-4	Cable, 8 Pin M12 shielded shell split to shielded RJ45 and unterminated power, ground, shield, sync, 4m

**Notes:**

1. Material: Aluminum
2. Do not touch internal electronics or instrumentation. This could damage transducer and will void the warranty.
3. See Sheet 4 for pinout and cable lengths.
4. See Sheet 5 for pinout and cable lengths.
5. Items not shown for clarity.

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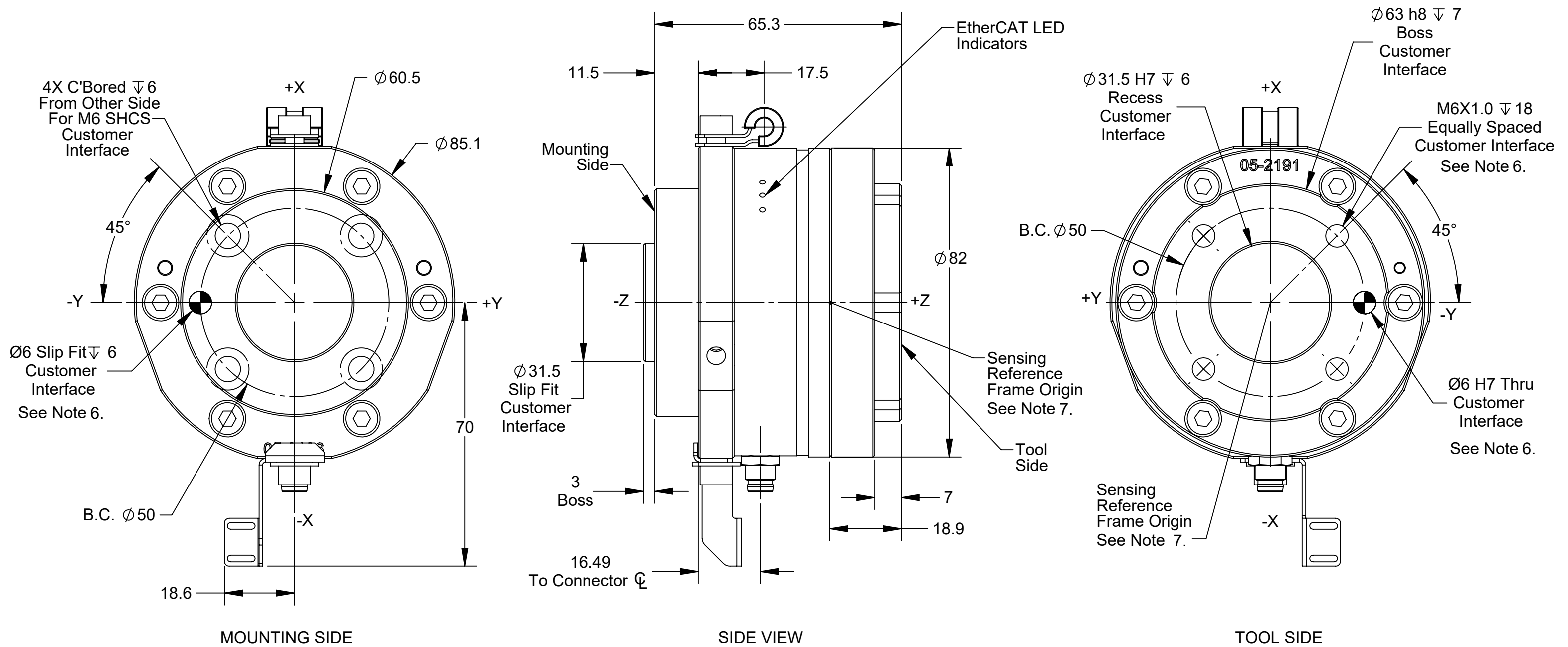
3rd ANGLE PROJECTION



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CHECKED BY: L.Fisher 09/19/18		Axia80 F/T Sensor with TM Robot Kit		
PROJECT # 180412-1	SHEET 2 OF 5	SCALE	SIZE	DRAWING NUMBER
		1:1	B	9230-05-1535
				REVISION
				05

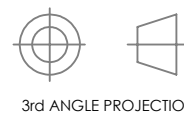


**Notes:**

- 6. Do not exceed interface depth, may cause incorrect readings.
- 7. User may adjust Tool Center Point. Refer to User Manual.
- 8. Axis labels based on F/T sensor coordinate system.

NOTES: UNLESS OTHERWISE SPECIFIED.

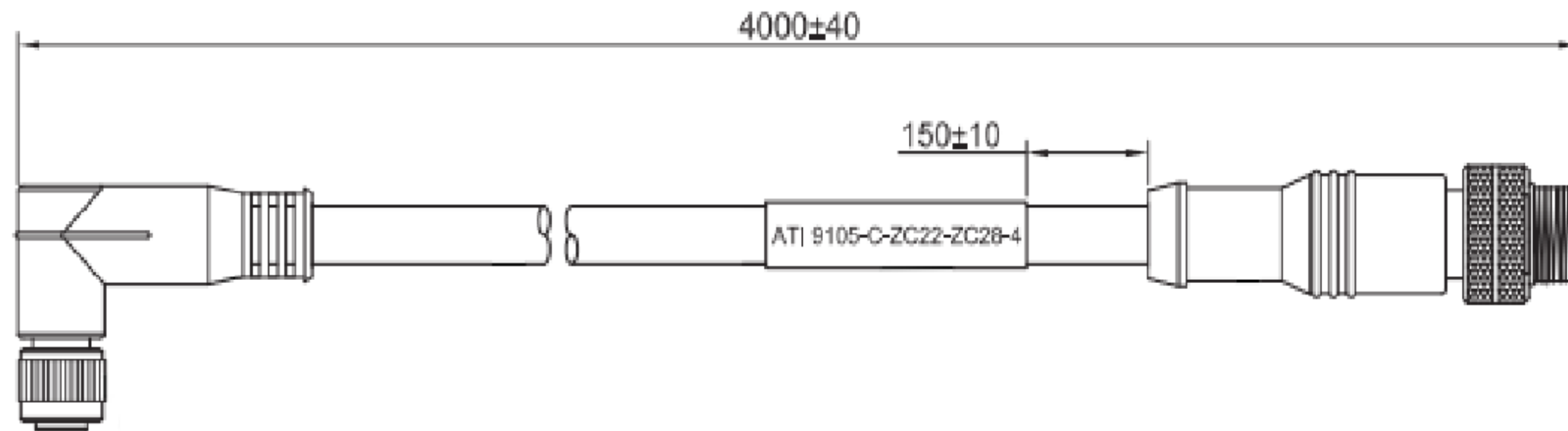
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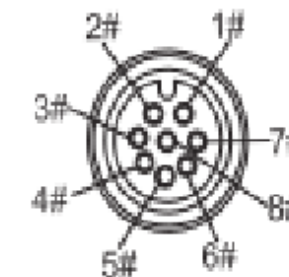
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CHECKED BY: L.Fisher 09/19/18		Axia80 F/T Sensor with TM Robot Kit		
PROJECT # 180412-1	SHEET 3 OF 5	SCALE	SIZE	DRAWING NUMBER
		1:1	B	9230-05-1535
				REVISION
				05

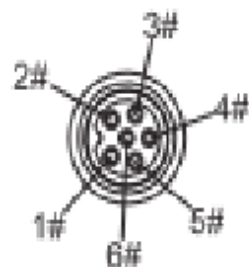


M12 8P MALE



P2

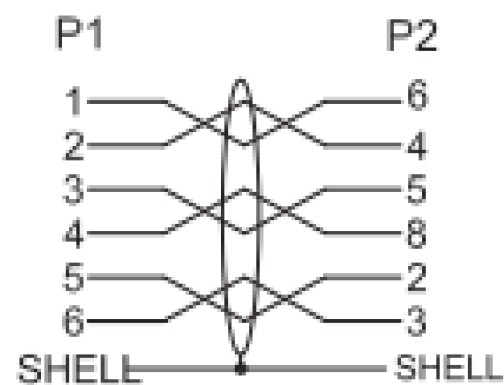
P1  
M8 6P FEMALE



Cable Properties:

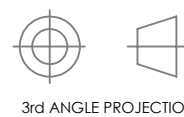
1. RoHS Compliance
2. IP67 Rated
3. Operating Temperature: -20°C to 80°C
4. Voltage Rating: 30V (Max.)
5. Current Rating: 1A (Max.)

PIN ASSIGNMENT



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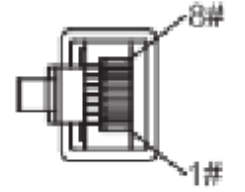
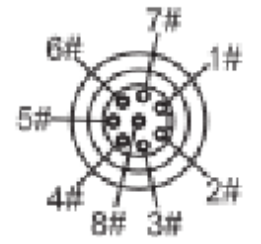
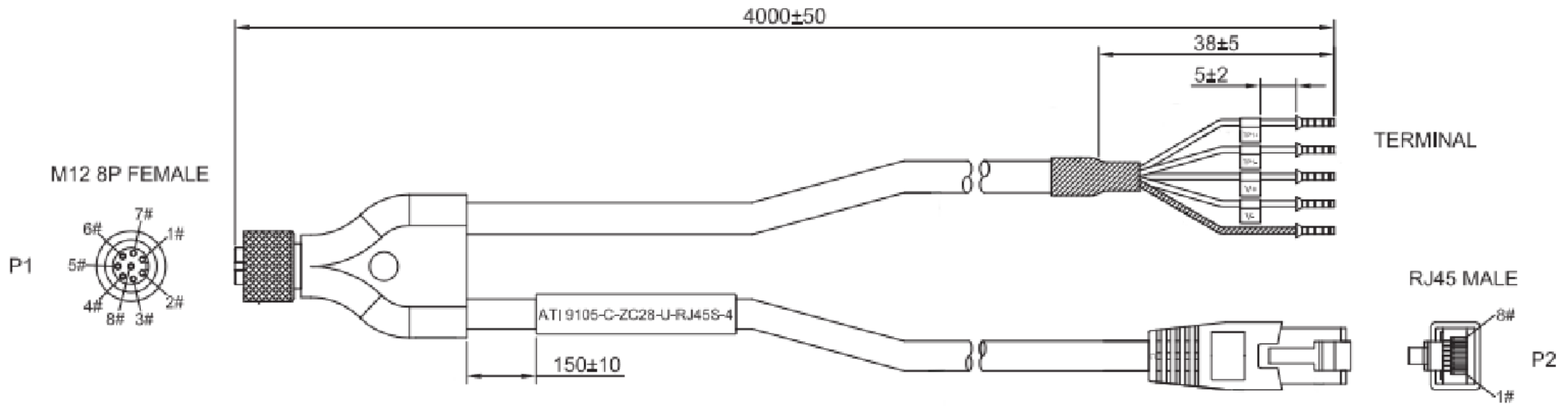
3rd ANGLE PROJECTION



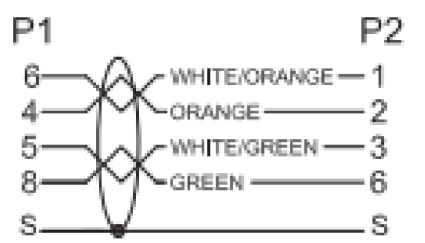
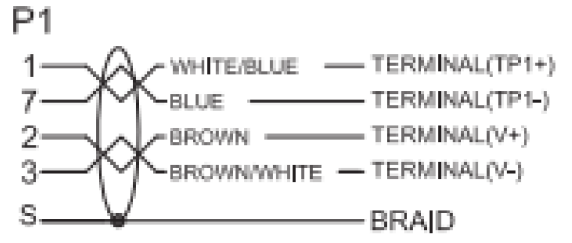
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CHECKED BY: L.Fisher 09/19/18		Axia80 F/T Sensor with TM Robot Kit		
PROJECT # 180412-1	SHEET 4 OF 5	SCALE 1:1	SIZE B	DRAWING NUMBER 9230-05-1535
				REVISION 05



**PIN ASSIGNMENT**

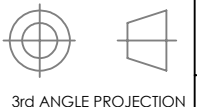


**Cable Properties:**

1. RoHS Compliance
2. IP67 Rated
3. Operating Temperature: -10°C to 80°C
4. Voltage Rating: 60V (Max.)
5. Current Rating: 1A (Max.)

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SCALE	SIZE	DRAWING NUMBER	REVISION
1:1	B	9230-05-1535	05
PROJECT # 180412-1		SHEET 5 OF 5	