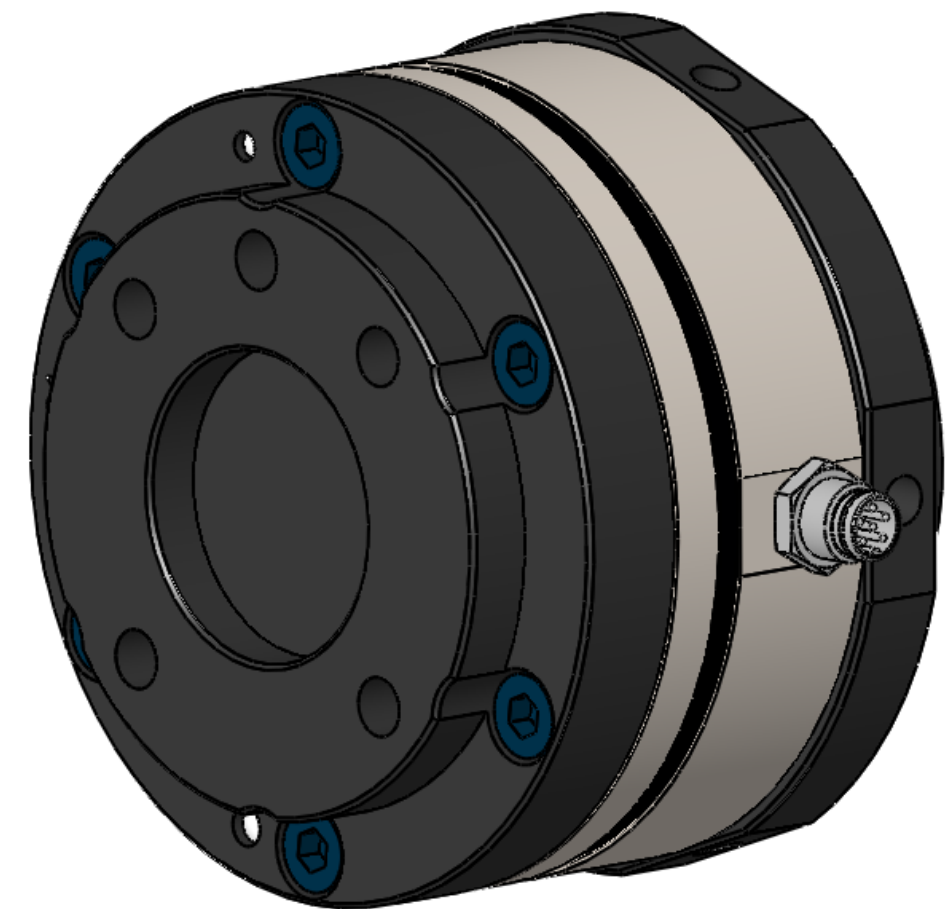


# Axia80 F/T Sensor with HCR Robot Kit

REV.	DESCRIPTION	INITIATOR	DATE
03	ECO 19837; 9105-COB-HCR-Axia80-01 was 9105-HCR-Axia80	EPR	4/19/2021

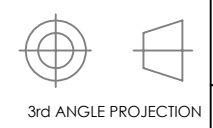
Loading Characteristics	Fxy	Fz	Txy	Tz
Rated Range 0	± 500 N	± 900 N	± 20 Nm	± 20 Nm
Rated Range 1	± 200 N	± 360 N	± 8 Nm	± 8 Nm
Overload Rating	± 2500 N	± 4500 N	± 100 Nm	± 100 Nm
Effective Resolution	0.1 N	0.1 N	0.005 Nm	0.005 Nm
<b>Stiffness (Calculated)</b>				
X-axis & Y-axis forces (Kx, Ky)	2.7x10 <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			
<b>Resonant Frequency (Sensor only)</b>				
Fx, Fy, Tz	2200 Hz			
Fz, Tx, Ty	2600 Hz			
<b>Physical Specifications (Sensor with Interface Plates)</b>				
Weight	0.78 kg			
Center of Mass*	X = 0.24 mm	Y = 0.01 mm	Z = -14.31 mm	
Moments of Inertia (kg * mm <sup>2</sup> )*	lxx = 736.22	lxy = 0.08	lzx = -3.36	
	lyx = 0.08	lyy = 728.90	lyz = 2.43	
	lzx = -3.36	lzy = 2.43	lzz = 622.59	
<b>Physical Specifications (Sensor only)</b>				
Weight	0.27 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	lzx = -2.20	
	lyx = -0.07	lyy = 170.73	lyz = -0.11	
	lzx = -2.20	lzy = -0.11	lzz = 227.98	
<b>Operational Specifications</b>				
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.

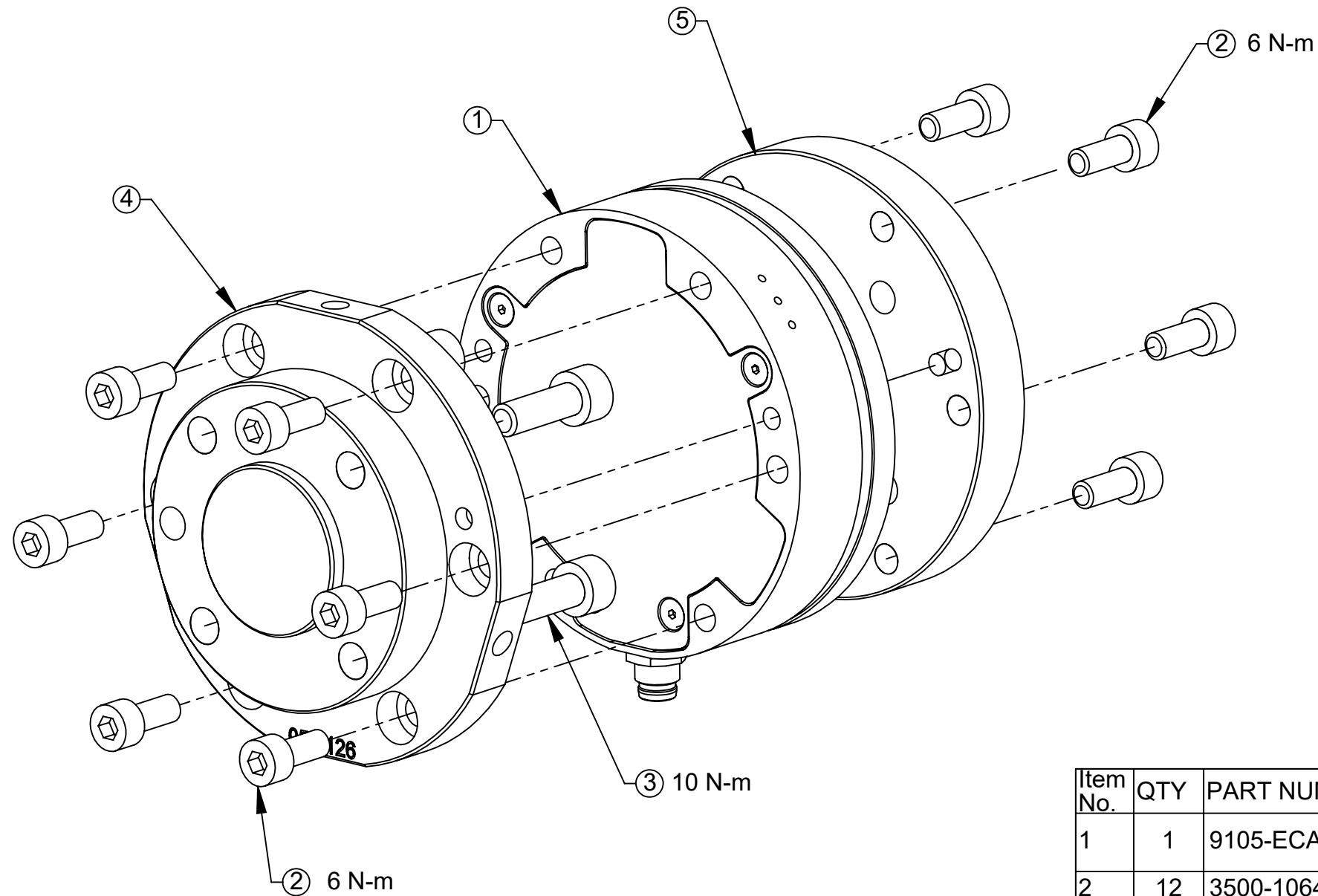
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DRAWN BY: T. Dean 2/27/20		TITLE	
CHECKED BY: D. Oberklein 2/28/20		Axia80-M20 ECAT F/T Sensor with HCR Robot Kit	
PROJECT # 200211-1	SHEET 1 OF 4	SCALE	REVISION
		2:1.5	03
		SIZE	
		B	
		DRAWING NUMBER	
		9230-05-1598	



Item No.	QTY	PART NUMBER	DESCRIPTION
1	1	9105-ECAT-Axia80-M20	Axia80-M20 ECAT F/T Sensor, IP64 dust-proof protection, 6 Pin M8
2	12	3500-1064012-15	M5-0.8 x 12mm SHCS, Blue
3	4	3500-1066018-15	M6-1 x 18mm SHCS, Blue
4	1	3700-05-2126	IP for Axia80 Transducer MAP to BC 50, (4)M6, Boss 31.5, Dowel 6 (at -Y) w/ Cable Mount
5	1	3700-05-2191	IP for AXIA80 TAP to BC50, (4) M6TAPPED, RECESS 31.5, D6
See Note 11	1	3810-05-2182	L-Wrench, Ball End Tip, 4mm Hex, Stubby
See Note 3. & 11	1	9105-C-ZC22-ZC39-0.155	Cable, 6 Pin Axia sensor to 8 pin M8, 0.15m

**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. Item not shown for clarity.

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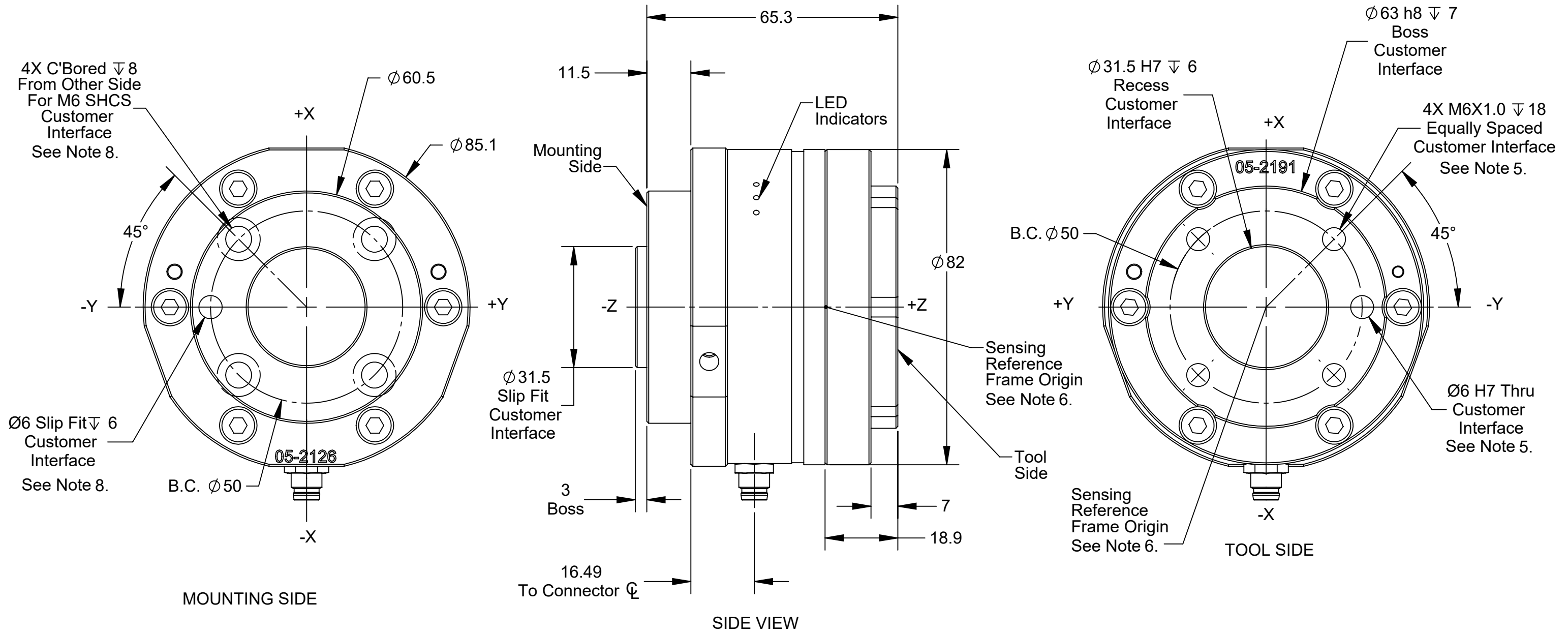
3rd ANGLE PROJECTION



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CHECKED BY: D. Oberklein 2/28/20		Axia80-M20 ECAT F/T Sensor with HCR Robot Kit	
SCALE	SIZE	DRAWING NUMBER	REVISION
1:1	B	9230-05-1598	03
PROJECT # 200211-1 SHEET 2 OF 4			

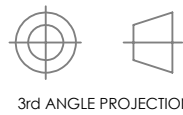


**Notes:**

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

NOTES: UNLESS OTHERWISE SPECIFIED.

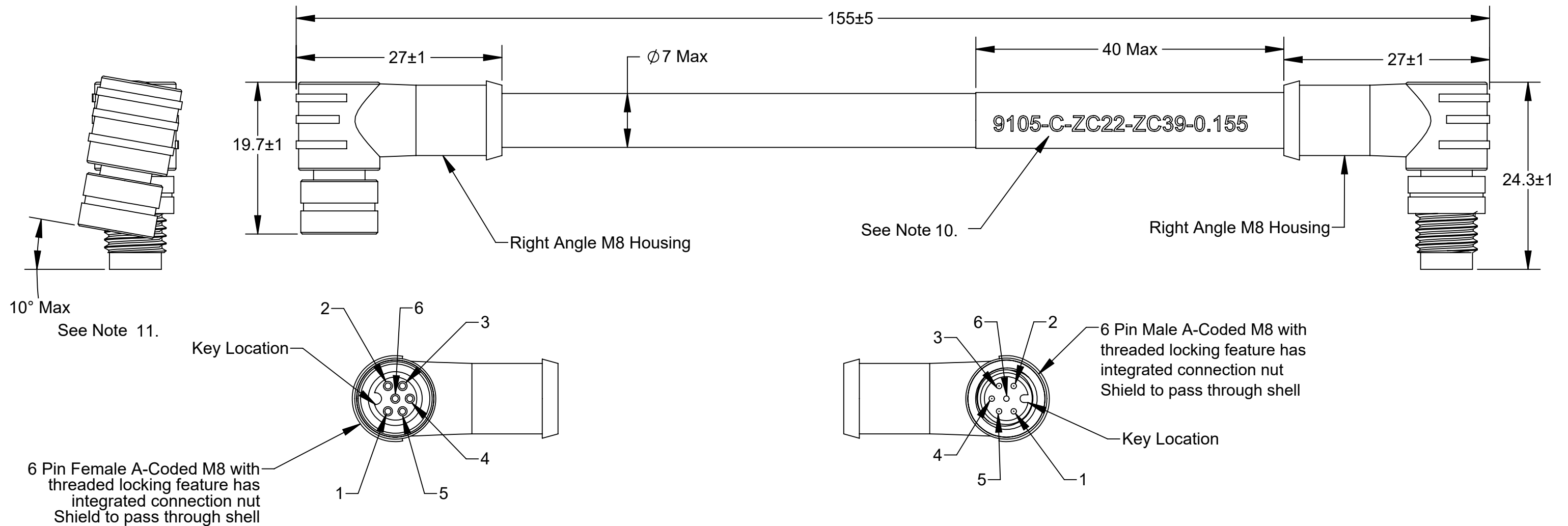
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CHECKED BY: D. Oberklein 2/28/20		Axia80-M20 ECAT F/T Sensor with HCR Robot Kit	
PROJECT # 200211-1	SHEET 3 OF 4	SCALE	SIZE
		1:1	B
		DRAWING NUMBER	REVISION
		9230-05-1598	03



10° Max  
See Note 11.

6 Pin Female A-Coded M8 with threaded locking feature has integrated connection nut Shield to pass through shell

6 Pin Male A-Coded M8 with threaded locking feature has integrated connection nut Shield to pass through shell

6-Pin Female M8	Signal	6-Pin Male M8
1	TX+	3
2	TX-	4
3	RX+	5
4	RX-	6
5	V+	1
6	V-	2
Shell	Shield	Shell

Designates Twisted Pair

- Notes:
- Cable Assembly RoHS compliant
  - Minimum Operating Temperature =  $<-5^{\circ}\text{C}$
  - Maximum Operating Temperature =  $>70^{\circ}\text{C}$
  - Current Rating = 0.25A
  - Voltage Rating = 30V
  - Cable jacket made from TPE
  - Cable rated to IP54 when connectors mated on both ends
  - Cable Jacket Color: Black
  - Overmold Color: Black
  - ATI PN: 9105-C-ZC22-ZC39-0.155
  - Direction of connector faces shall be oriented in the same direction

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	DRAWN BY: T. Dean 2/27/20 CHECKED BY: D. Oberklein 2/28/20		TITLE <b>Axia80-M20 ECAT F/T Sensor with HCR Robot Kit</b>	
	PROJECT # 200211-1 SHEET 4 OF 4	SCALE <b>2:1</b>	SIZE <b>B</b>	DRAWING NUMBER <b>9230-05-1598</b>
				REVISION <b>03</b>