

# QLA- 360MPT-41

TO ACQUISITION ANTENNA POSITIONER FOR MICROWAVE LoS & SATELITE



The QLA-360MPT-41 is a Power over Ethernet (PoE) antenna positioner designed from the ground up to automatically track Low Earth Orbit (LEO) satellites used for communications.

The embedded antenna controller with built in GPS and digital compass has a full featured web based user interface which provides rapid and accurate antenna pointing. The user interface includes manual control and status along with a stored satellite database and two line element set program track capability which allows for easy tracking of satellites in low or medium earth orbit. QPARUSA also has a command line interface for customers that want to add our solution into a larger system.

The QLA-360MPT is typically paired with 2 to 4 ft antennas, payloads up to 200 lbs (90.7 kg), and offers 360° of azimuth and +/- 90° (180°) of elevation range. The positioner has an optional +/-10° tilt axis to eliminate keyhole effect seen in LEO satellites for direct overhead passes. Download the Interface Control Drawing (ICD) for more details. Optional transportable quad pod stand, riser stands, radio adapter brackets, antenna adapter brackets, polarization rotators, joysticks, and transit cases are also available.

## TECHNICAL SPECIFICATIONS - QLA-360MPT-41

Power	Power Over Ethernet (POE) 48VDC Supply Included
Material / Finish	Aluminum with stainless steel hardware / Hard coat anodize
Positioner Travel	
Azimuth	400° (+/-200°)
Elevation	180° (+/-90°)
Positioner Drive Rate	
Azimuth	Variable, up to 3.3°/sec no load
Elevation	Variable, up to 3.3°/sec no load
Temperature	
Operational	-22 to 140°F (-30 to 60°C)
Survival	-40 to 158°F (-40 to 70°C)
Feedback Resolution	0.1°
Backlash (Az/El)	less than 0.1°
Torque	
Continuous (Az/El)	100 ft-lbs (136 Nm)
Peak (Az/El)	180 ft-lbs (244 Nm)
Holding Non-Powered (Az/El)	100 ft-lbs (136 Nm)
Payload (Including Counterweights)	200 lbs (90.7 kg)
Dimensions	Height: 21.38" (54.3 cm), Width: 11.50" (29.2 cm), Depth: 16.00" (40.6 cm)
Weight	99 lbs (44.9 kg) without Counterweight Kit
Mounting Interface	Table top mount (See ICD for details) Picture shown mounted to optional pedestal riser
Antenna Mount Options	1/2-13 threaded holes or 1/2" fastener clearance holes (See ICD for details)
Communication Interface	
User Interfaces	Web based hosted internal to unit or Nextmove proprietary command protocol
Ethernet	10/100 Ethernet
Serial	RS-232
Other	Satellite Modem Interfaces for Acquisition and Tracking

REV	DESCRIPTION	DATE	APPROVED
B	IR800531	2019-02-06	CLC

NOTES: UNLESS OTHERWISE SPECIFIED

1. QLA-360MPT-40 CONFIGURABLE OPTIONS PER TABLE I. SHOWN WITHOUT COUNTERWEIGHTS. LINKALIGN-360MPT-40 SUPPLIED WITH 60 LBS OF COUNTERWEIGHTS (EQUIVALENT TO 60 FT-LBS OF TORQUE)
2. USE INTERFACE CONTROL DRAWING IN CONJUNCTION WITH DATASHEET N500159
3. SEE TABLE II FOR AVAILABLE LINKALIGN-360MPT-40 ACCESSORY OPTIONS
4. 48VDC POWER SUPPLY INCLUDED WITH POSITIONER. NOT SHOWN IN DRAWING
5. HARD COAT ANODIZE ALUMINUM CONSTRUCTION WITH STAINLESS STEEL HARDWARE
6. 400° (+/-200°) AZIMUTH TRAVEL WITH 12°/SEC DRIVE RATE (NO LOAD)
7. 180° (+/-90°) ELEVATION TRAVEL WITH 7°/SEC DRIVE RATE (NO LOAD)
8. -22° TO 140°F (-30° TO 60°C) OPERATIONAL TEMPERATURE RANGE. -40 TO 158°F (-40 TO 70°C) NON-OPERATIONAL TEMPERATURE RANGE
9. 0.1° FEEDBACK RESOLUTION IN ALL AXES
10. AZIMUTH AND ELEVATION BACKLASH LESS THAN 0.1°
- 11 21.38" (54.3 cm) HIGH X 11.50" (29.2 cm) WIDE X 16.00" (40.6 cm) DEEP. DIMENSIONS APPLY WHEN POSITIONER IS AT 0° AZIMUTH AND 0° ELEVATION ANGLES
12. WEIGHT APPROXIMATELY 99 LBS (44.9 kg)
13. PAYLOAD SHALL NOT EXCEED 200 LB (90.7 kg) (INCLUDING COUNTERWEIGHTS) OR 40 FT-LBS OF TORQUE ABOUT THE ELEVATION AXIS. EFFORT SHOULD BE MADE TO BALANCE ELEVATION PAYLOAD AS MUCH AS POSSIBLE BY USING THE (6) 10 LB COUNTERWEIGHTS PROVIDED. TO CALCULATE TORQUE, TAKE THE DISTANCE FROM THE PAYLOAD CENTER OF GRAVITY TO DATUM -B- IN FEET AND MULTIPLY BY THE PAYLOAD WEIGHT. POSITIONER IS BACKDRIVABLE WHEN NOT POWERED UP OR IN STANDBY MODE. ELEVATION HOLDING TORQUE IN THIS STATE IS 20 FT-LBS
- 14 TABLE TOP MOUNTING HOLES
- 15 CENTER OF GRAVITY 0.2" (0.5 cm) IN THE X-DIRECTION, 9.2" (23.4 cm) IN THE Y-DIRECTION AND 0.2" (0.5 cm) IN THE Z-DIRECTION

NOTES CONTINUED ON SHEET 6

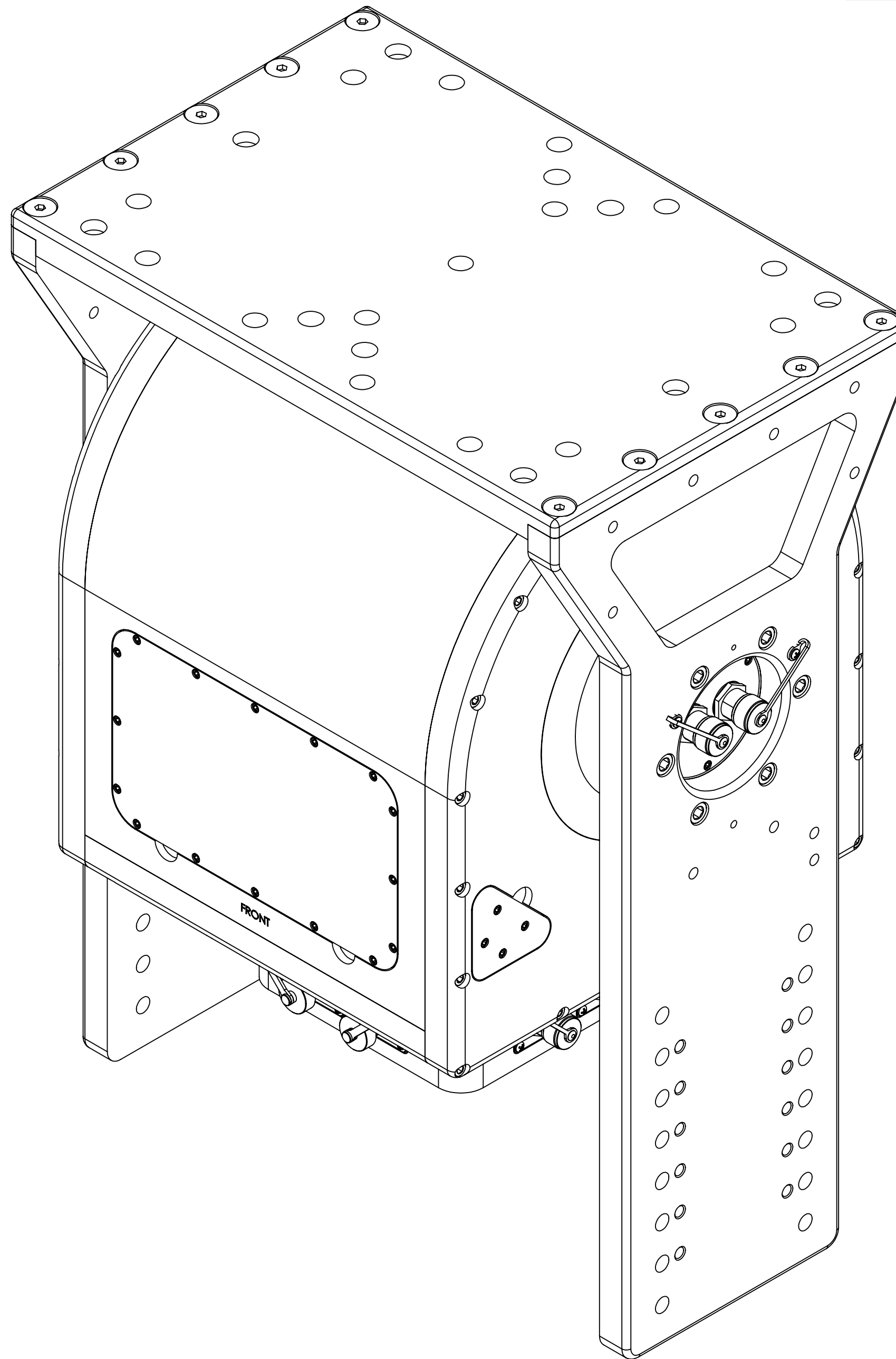
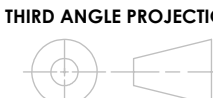


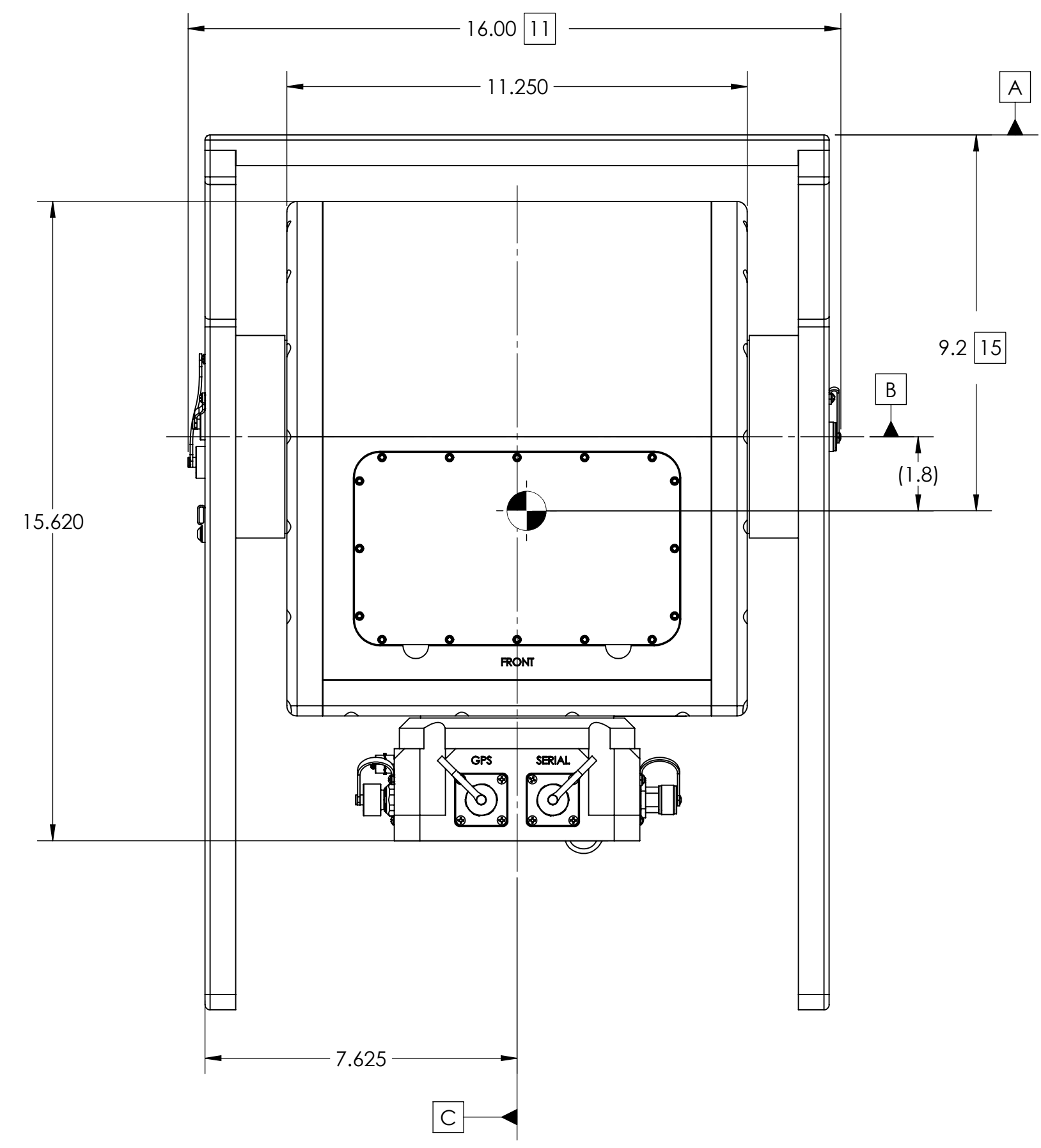
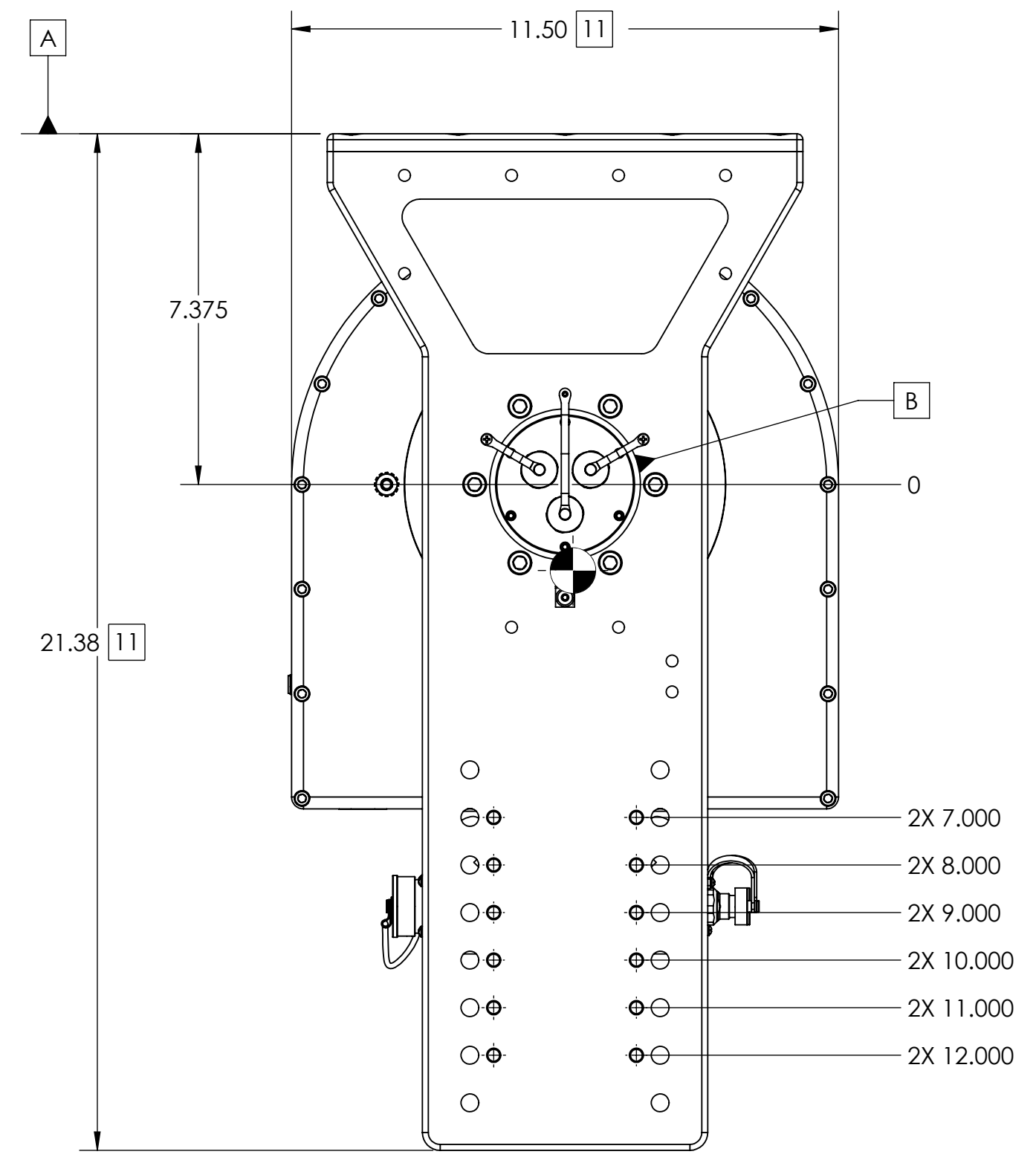
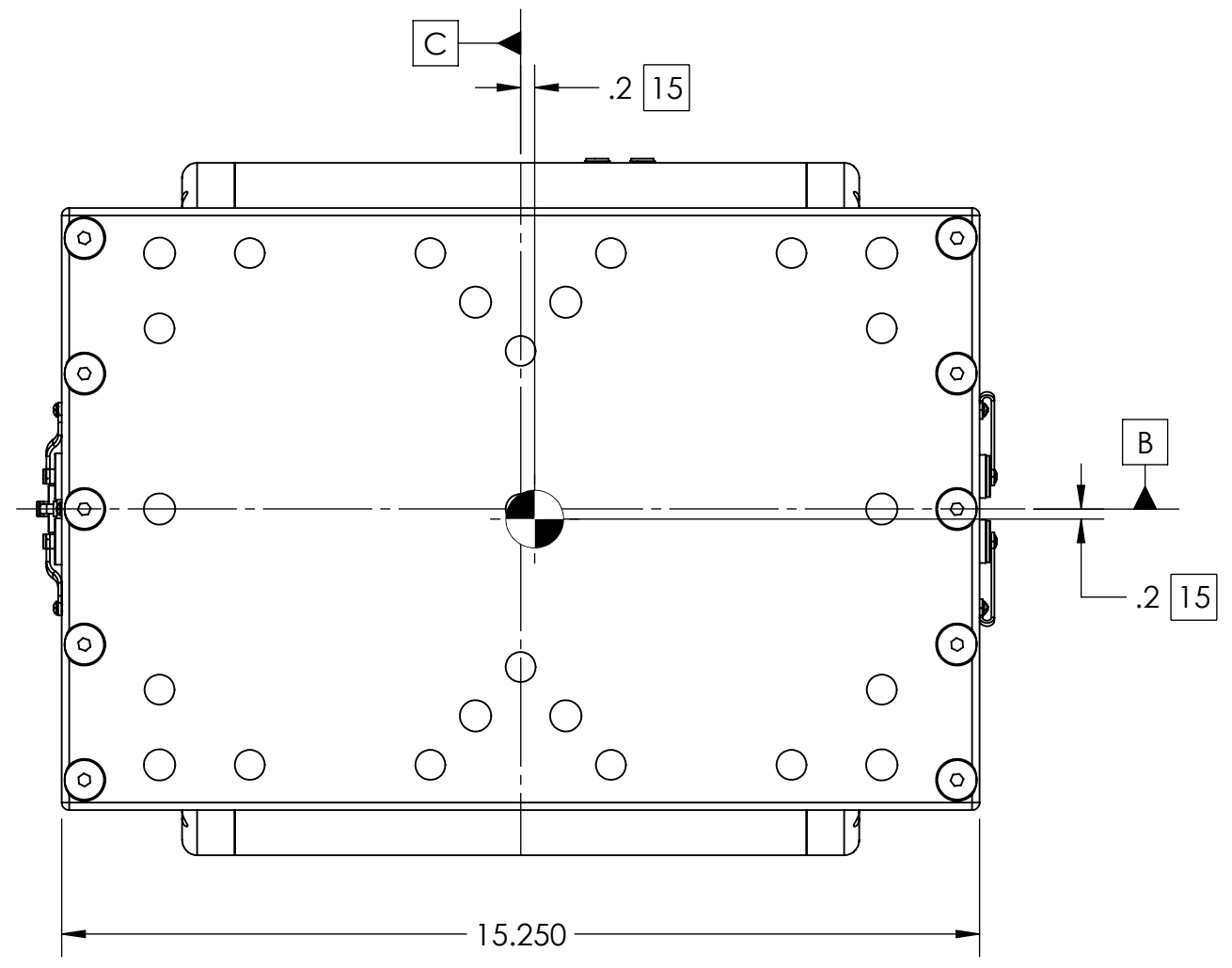
TABLE I	
<b>BUILDING A PART NUMBER</b>	<b>STANDARD OPTIONS</b>
LA-360MPT - 40 - - 100	<<EXAMPLE
	<b>SHIELDED ETHERNET CABLE STANDARD LENGTHS</b>
	050 = 50 ft
	100 = 100 ft
	150 = 150 ft
	200 = 200 ft
	250 = 250 ft
	300 = 300 ft
	XXX = Custom length in feet
	XXXC = Add "C" to end of cable length for unterminated mating connector
	<b>CUSTOM CONFIGURATION</b>
	= Standard options - leave blank
	<b>MOTOR DRIVES AND PAYLOAD</b>
	40 =
	Az 25 ft-lbs @ 12°/s, El 40 ft-lbs @ 7°/s, 200 lb payload. Typically paired with 3-6 ft antenna (+/-200° azimuth, +/-90° elevation)
	<b>MODEL</b>
	LA-360MPT = LinkAlign-360MPT (See motor drives and payload section for positioner travel range info)

TABLE II (MPT-40 ACCESSORY OPTIONS)		
ACCESSORY DESCRIPTION	ACCESSORY PART NUMBER	ACCESSORY ICD
RISER ASSEMBLY, MPT-40	ACC-N900553-XX	ICDN900553
CROSS ELEVATION DRIVE ASSEMBLY KIT, MPT-40	ACC-N900555-1	ICDN900555
QUADPOD, MPT-40	ACC-N900577-1	ICDN900577
TRANSIT CASE, MPT-40	TC-LA-360MPT-40-1	N/A

<b>SYMBOL KEY</b> <input type="checkbox"/> NOTE <input type="checkbox"/> PL ITEMS  <b>PROPRIETARY AND CONFIDENTIAL</b> THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF QPARUSA. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF QPARUSA IS PROHIBITED.  QPAR ANTENNAS USA, LLC LAS VEGAS, NV 89121 www.qparusa.com	<b>UNLESS OTHERWISE SPECIFIED:</b> DIMENSIONS ARE IN INCHES TOLERANCES: ANGLE ± 5 DEGREES TWO PLACE DECIMAL ±.030 THREE PLACE DECIMAL ±.010  INTERPRET DIM AND TOL PER ASME Y14.5M - 1994  <b>THIRD ANGLE PROJECTION</b>  DO NOT SCALE DRAWING	DRAWN C. CHEYNE 2019-02-06 CHECKED S. CHEYNE 2019-02-06 ME APPR. S. CHEYNE 2019-02-06 EE APPR.	<b>QPAR Antennas USA, LLC</b>  <b>TITLE:</b> <b>QLA-360MPT-40</b> <b>INTERFACE CONTROL</b> <b>DRAWING</b>  SIZE DWG. NO. REV <b>C ICDN900607 B</b> SCALE: 1:2 SHEET 1 OF 6
		<b>PART NO.</b> <b>SEE TABLE I</b>	

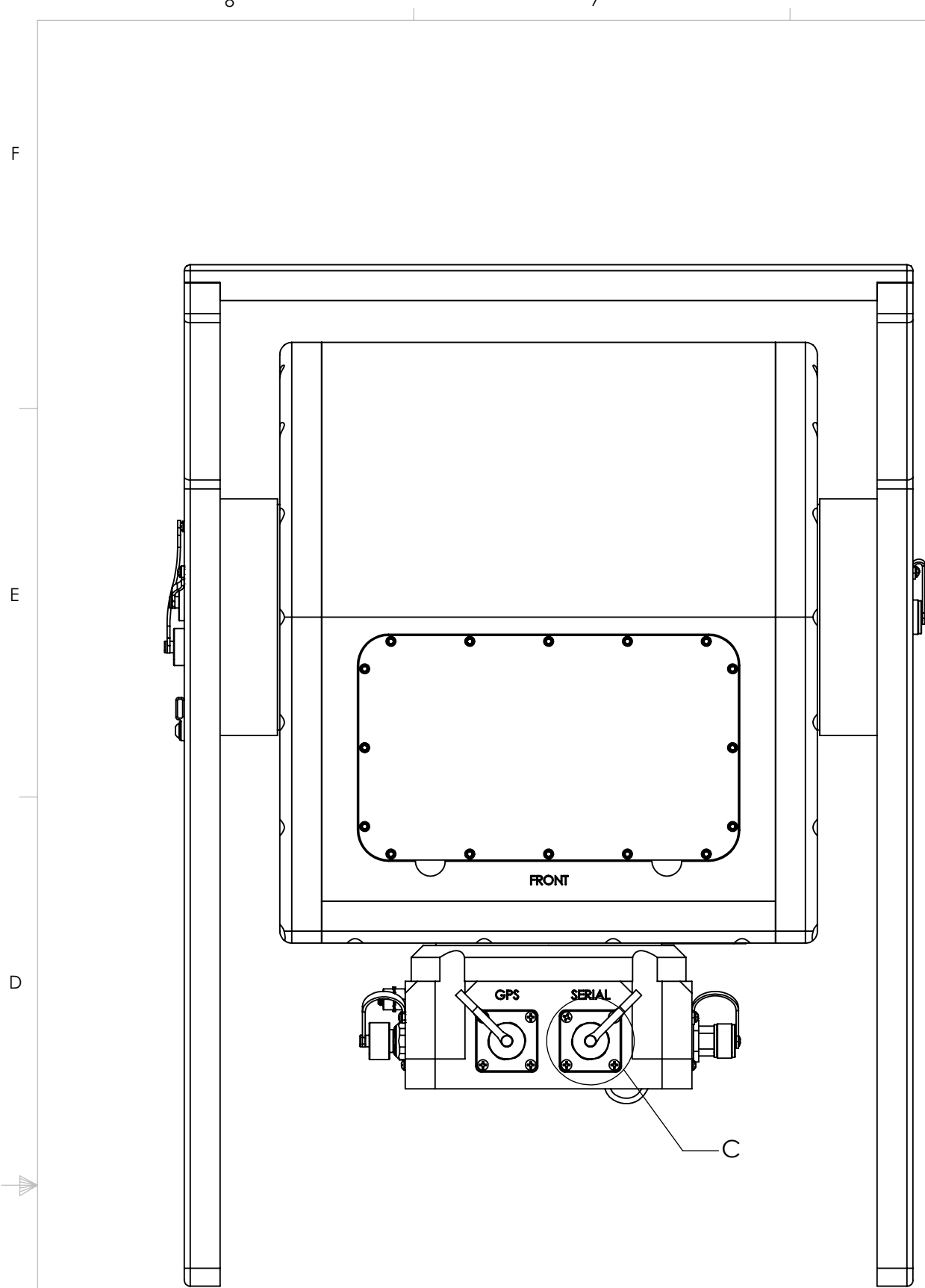
8 7 6 5 4 3 2 1

F  
E  
D  
C  
B  
A

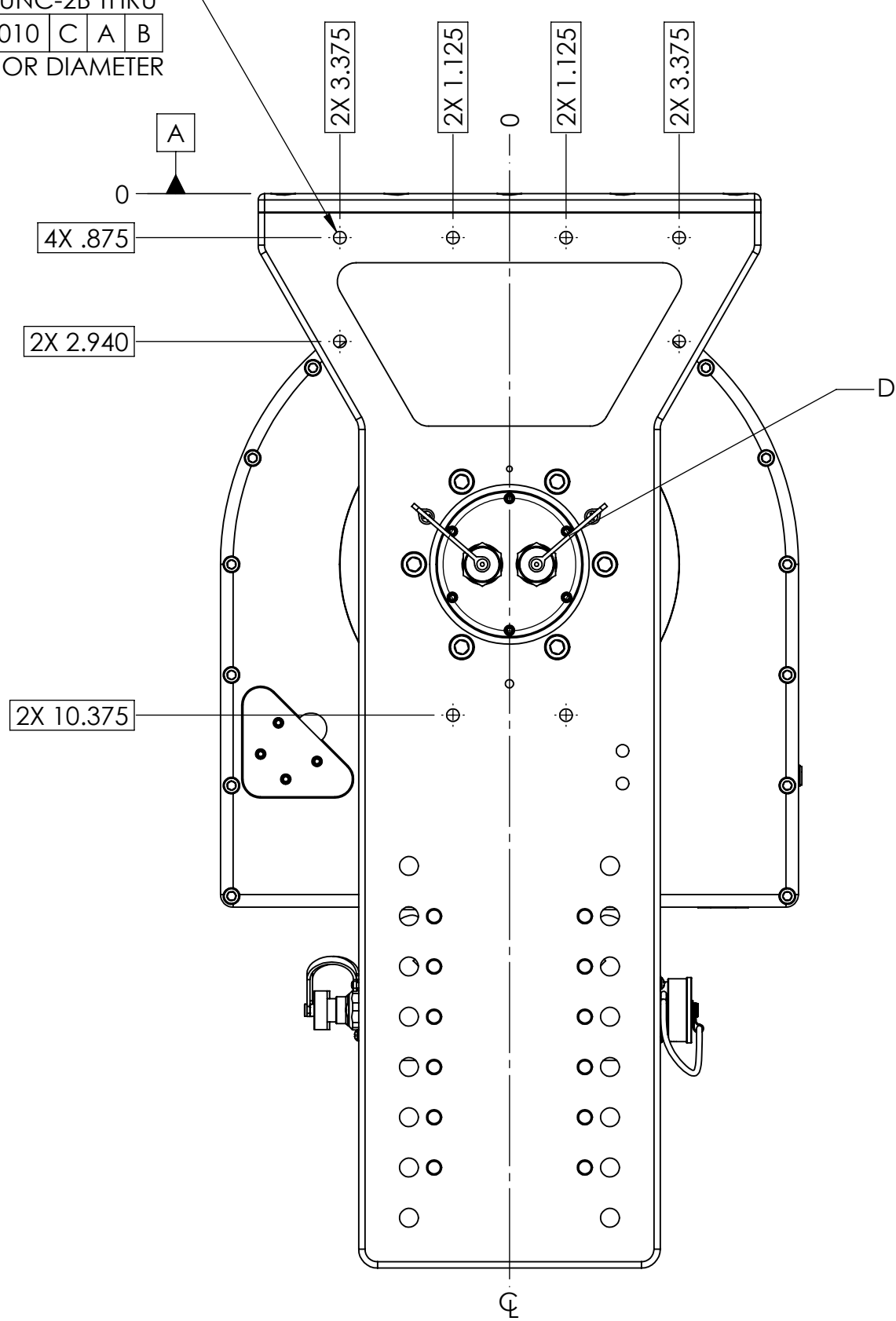


SHEET 3  
ZONE C-4

8 7 6 5 4 3 2 1

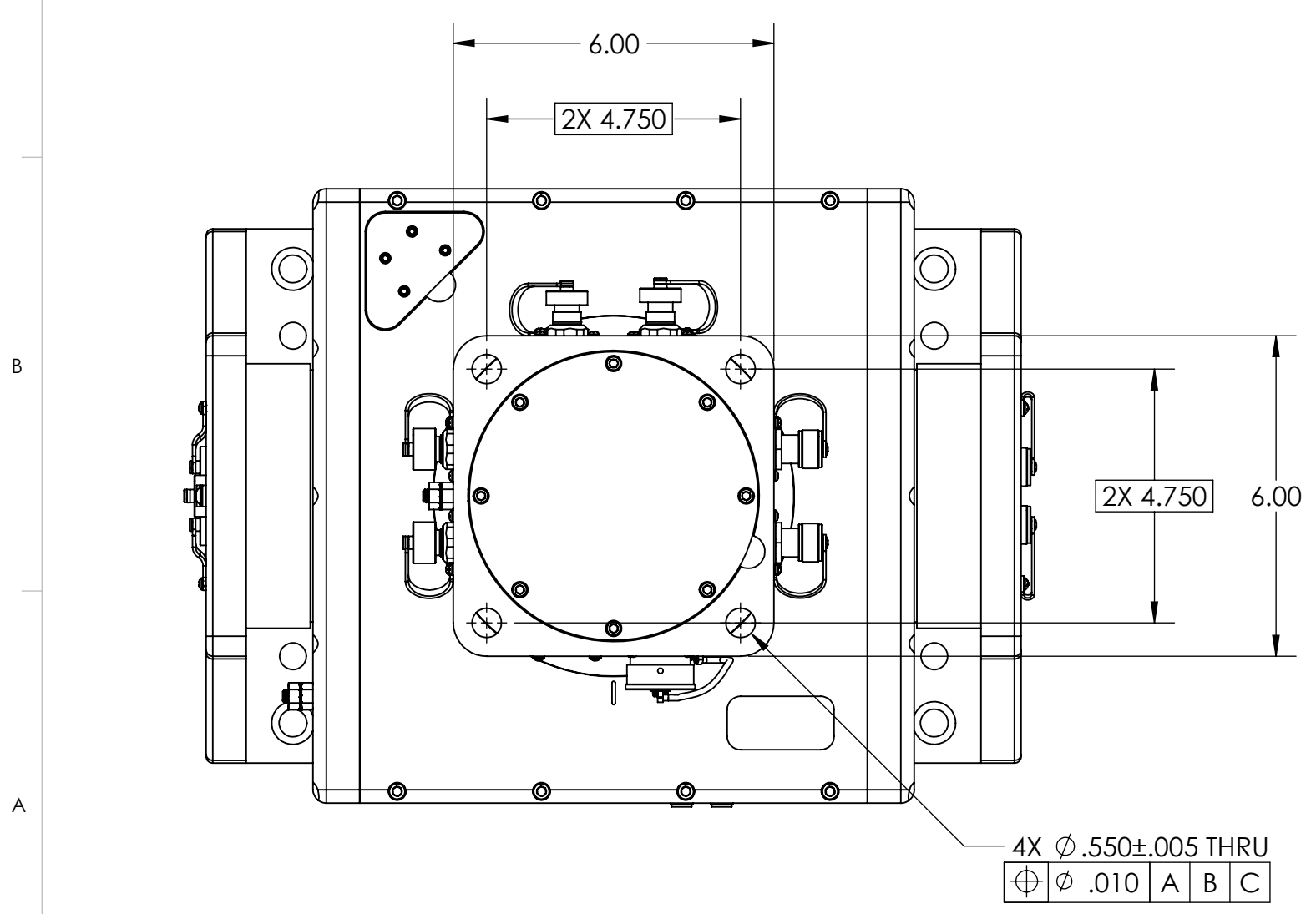


8X .250-20 UNC-2B THRU  
 $\oplus \phi .010$  C A B  
 MINOR DIAMETER

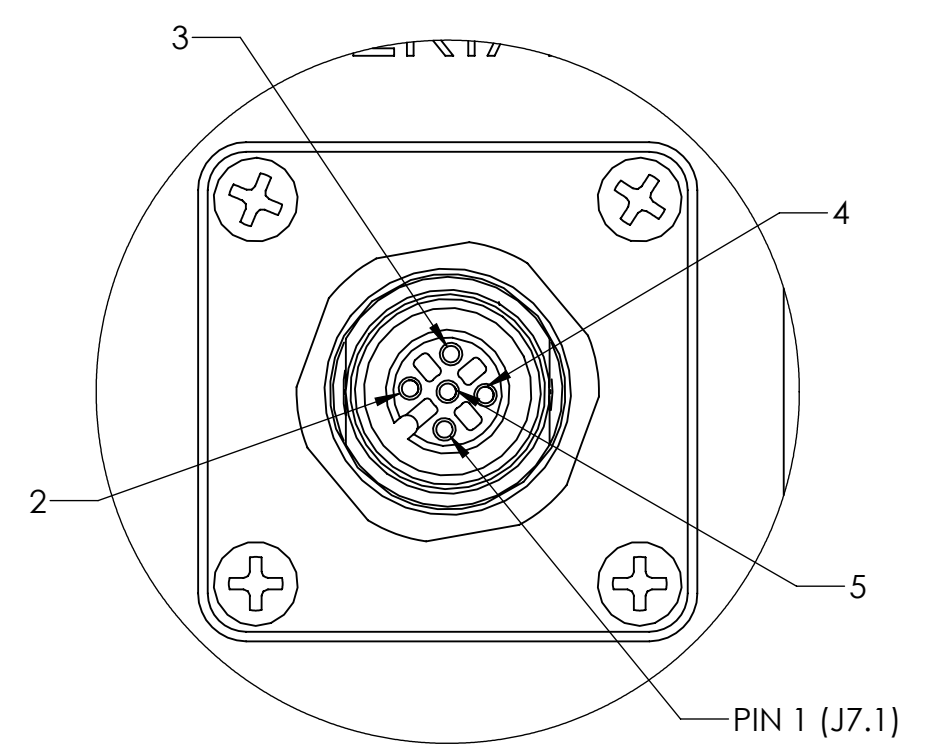


VIEW B-B  
 BOTH SIDES  
 SHEET 2  
 ZONE A-1

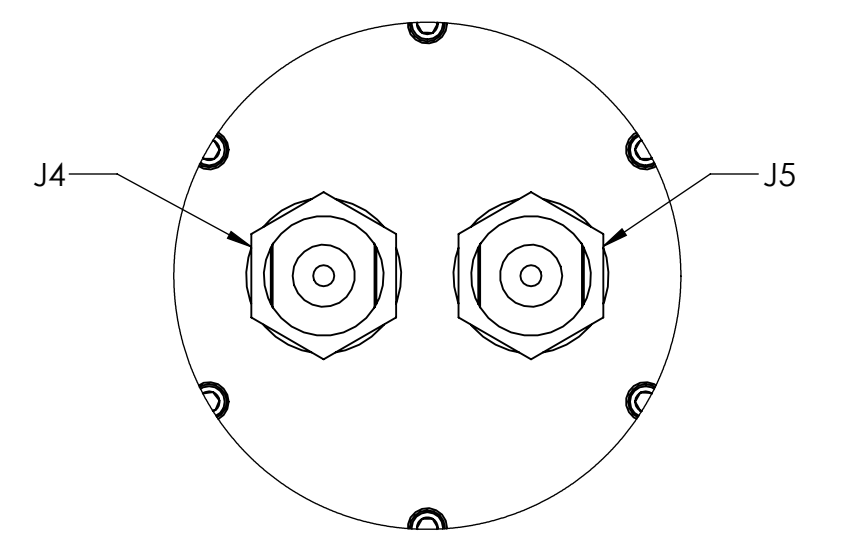
E  
 E  
 SHEET4  
 ZONE A6



4X  $\phi .550 \pm .005$  THRU  
 $\oplus \phi .010$  A B C



J7 CONNECTOR SHOWN FROM MATING SIDE  
 MATES WITH TURCK P/N - BS 8151-0/PG 9 OR RS 4.5T\*  
 DETAIL C  
 SCALE 2 : 1  
 SHOWN WITHOUT PROTECTIVE CAP  
 SEE TABLE III FOR J7 SERIAL CONNECTOR PINOUT DETAILS



J4 AND J5 CONNECTORS SHOWN FROM MATING SIDE  
 MATES WITH N-TYPE MALE CONNECTOR  
 DETAIL D  
 SCALE 1 : 1  
 SHOWN WITHOUT PROTECTIVE CAPS  
 SEE TABLE IV FOR J4 AND J5 PASS THRU CONNECTOR PINOUT DETAILS

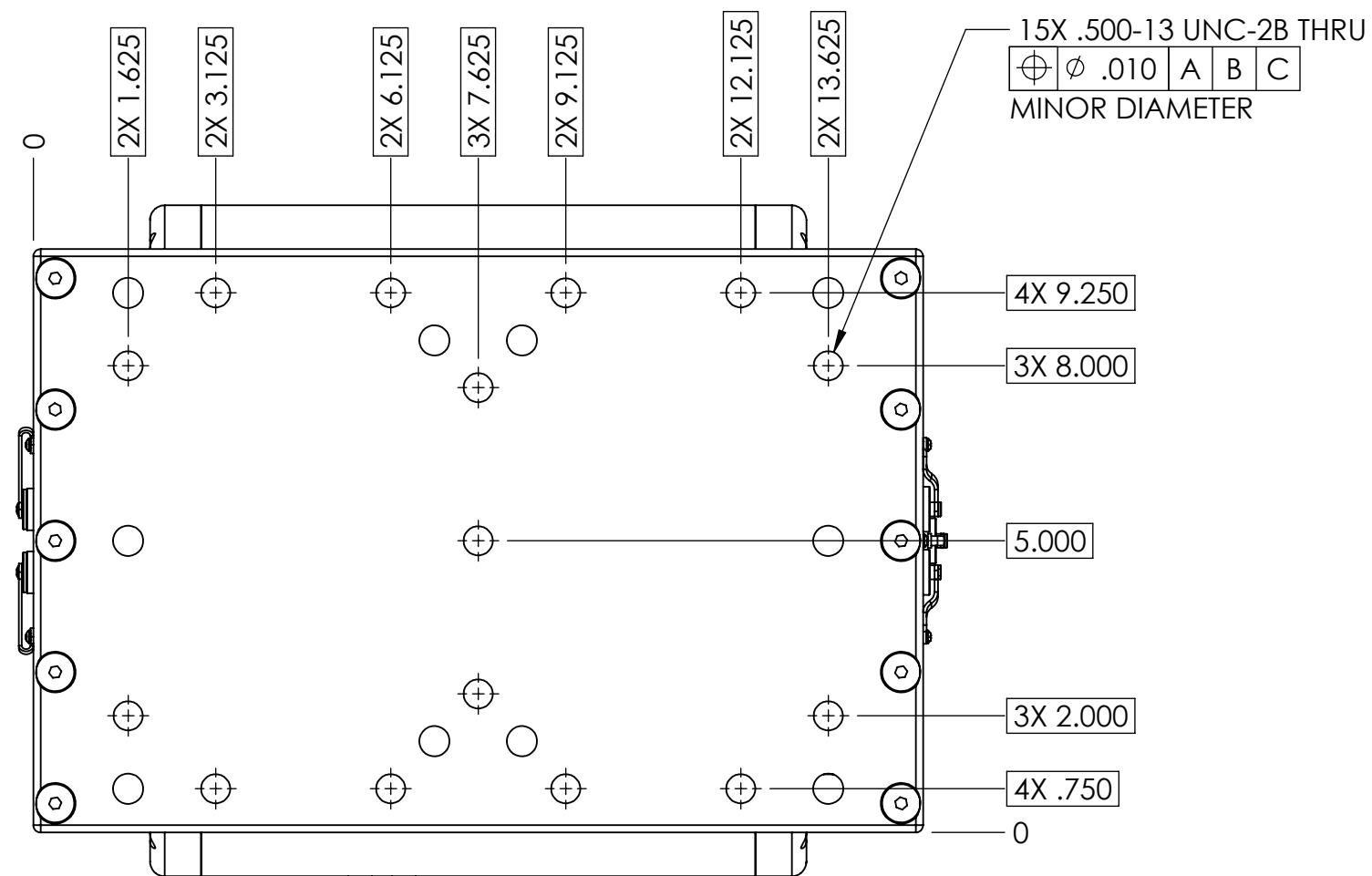
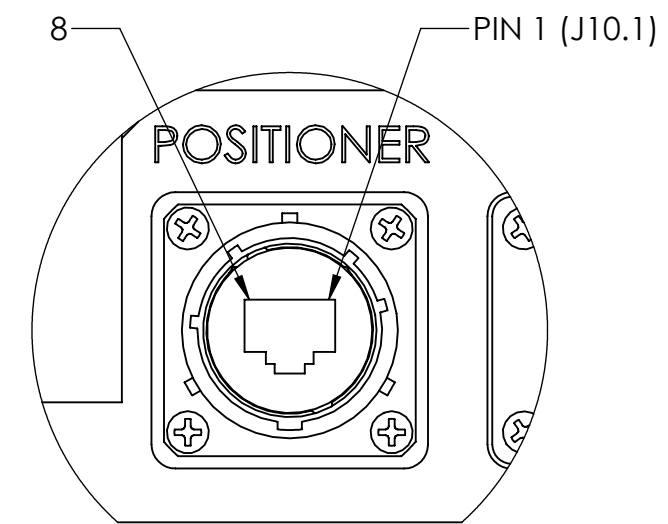


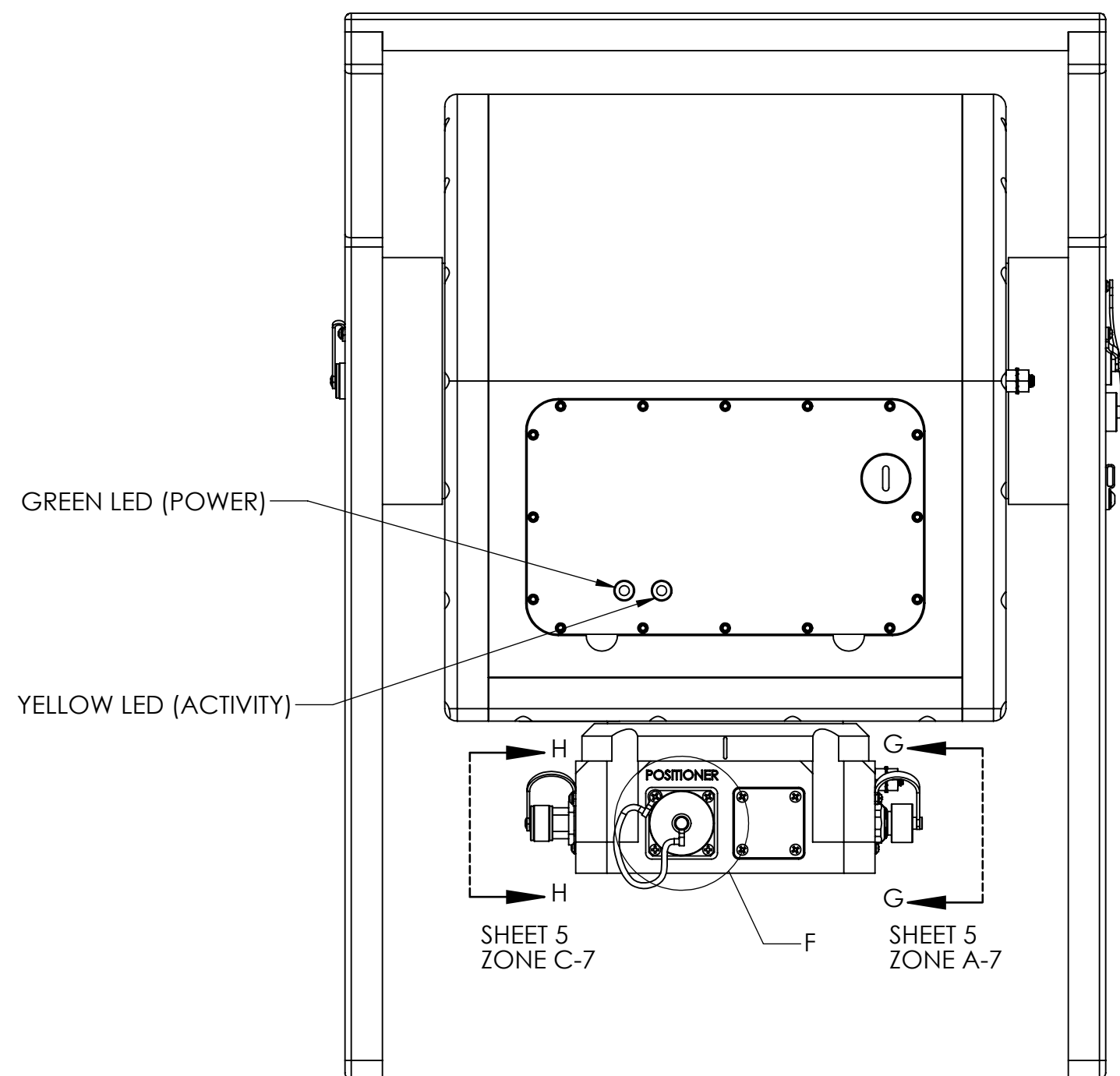
TABLE TOP MOUNTING HOLES

14

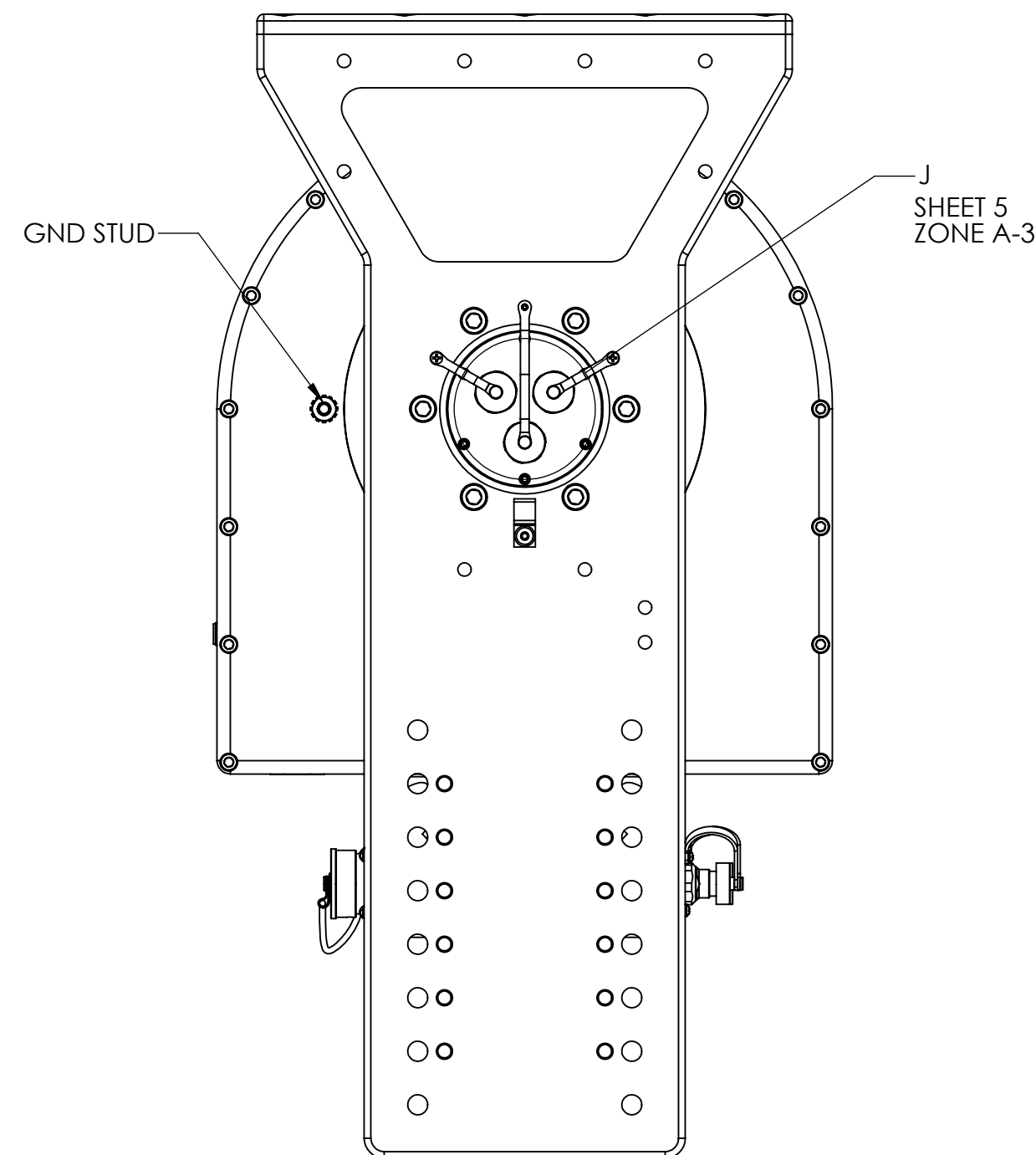


J10 CONNECTOR SHOWN FROM MATING SIDE  
 MATES WITH AMPHENOL P/N RJF68

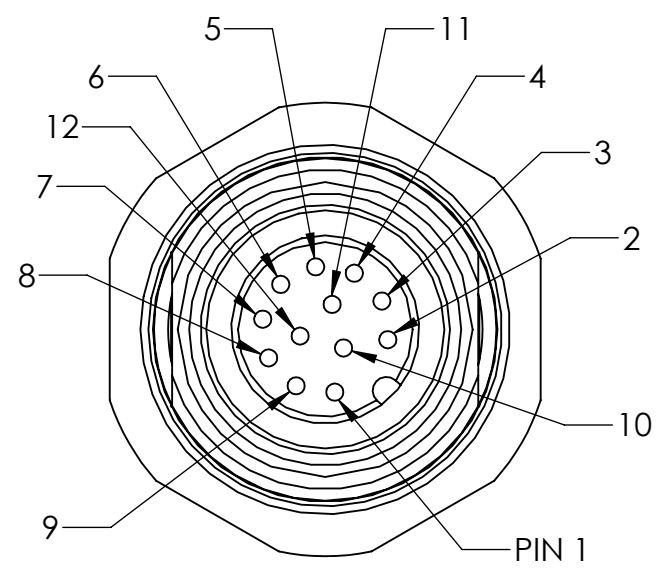
DETAIL F  
 SCALE 1 : 1  
 SHOWN WITHOUT PROTECTIVE CAP  
 SEE TABLE III FOR J10 CONNECTOR PINOUT DETAILS



VIEW E-E  
 SHEET 3  
 ZONE C-3

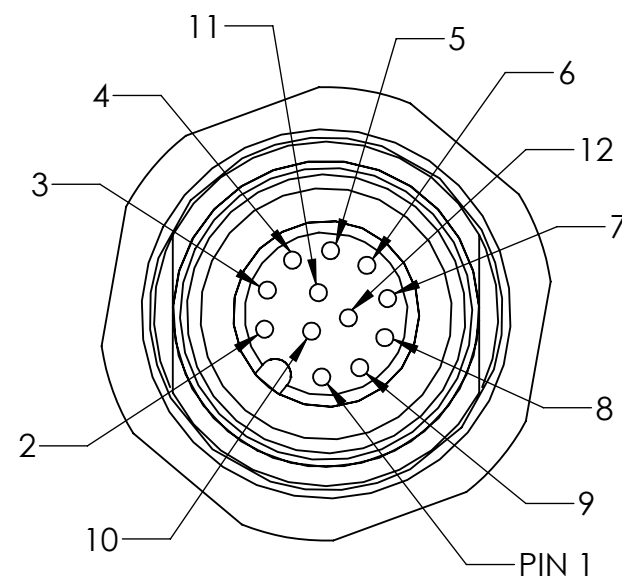






DETAIL K  
SCALE 3 : 1

P1 & P2 CONNECTOR PINOUT DETAILS  
2 PLACES

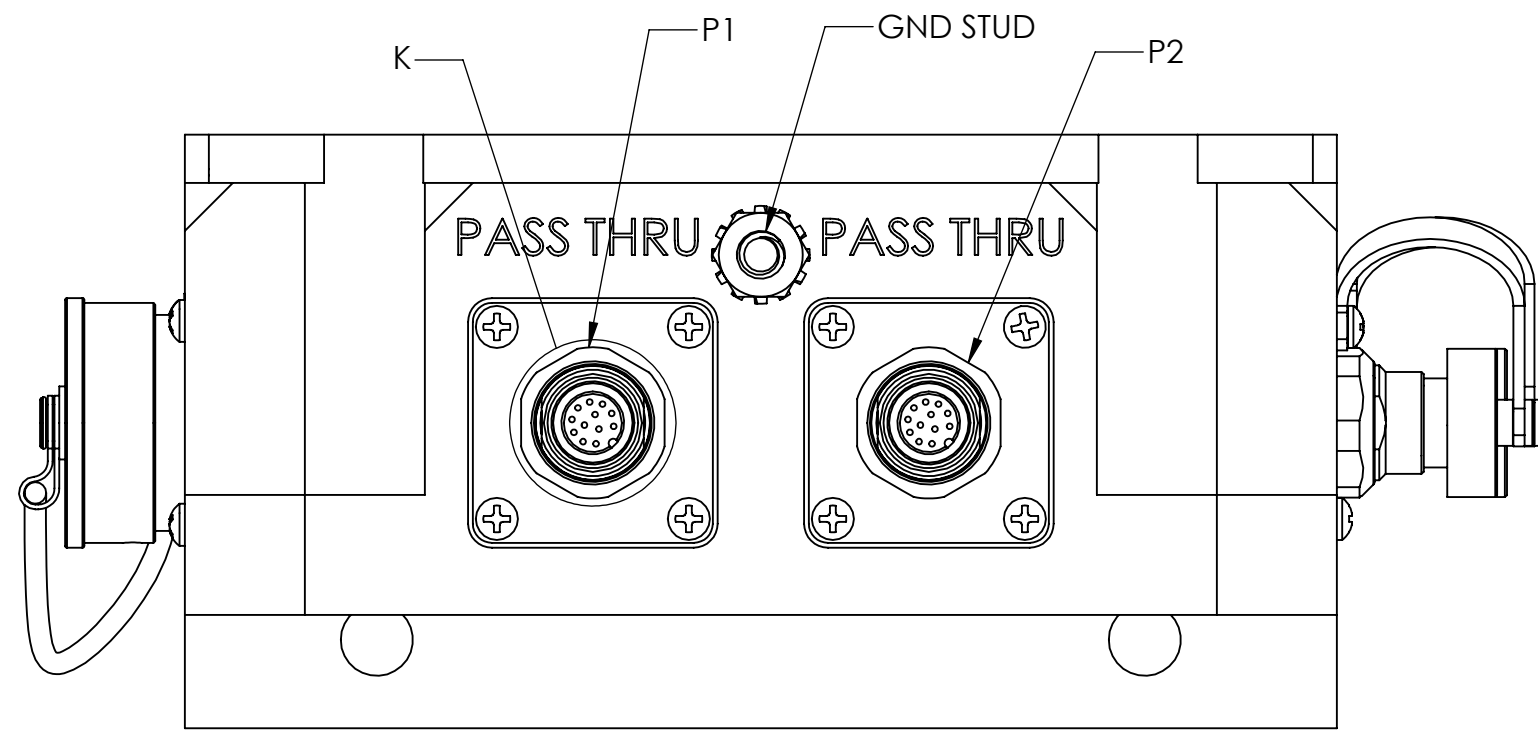


DETAIL L  
SCALE 3 : 1

J1 & J2 CONNECTOR PINOUT DETAILS  
2 PLACES

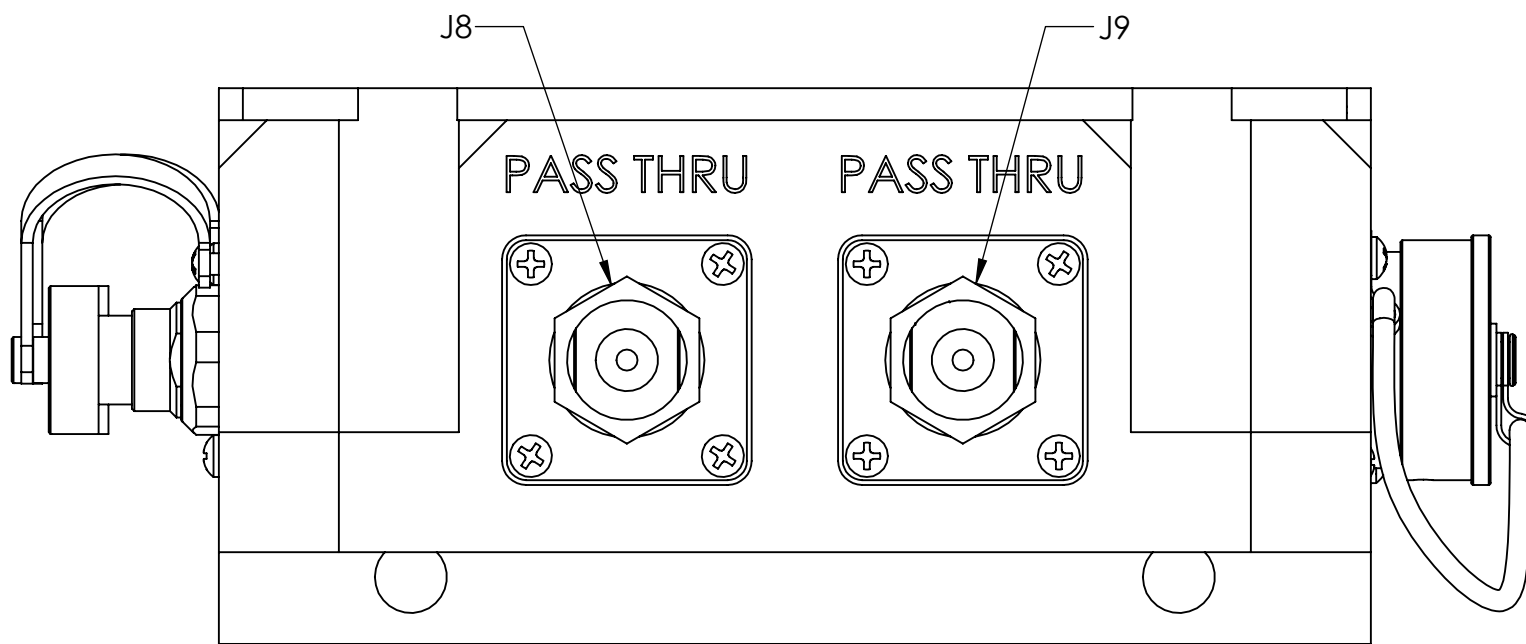
TABLE III (CONNECTOR FUNCTION)	
CONNECTOR DESIGNATION	FUNCTION
J7.1	DC RETURN FOR QPARUSA JOYSTICK
J7.2	NOT USED
J7.3	(B) TxD+/RxD+ DATA LINE
J7.4	(A) TxD-/RxD- DATA LINE
J7.5	DC POWER FOR QPARUSA JOYSTICK
J10.1	DATA PAIR 1
J10.2	DATA PAIR 1
J10.3	DATA PAIR 2
J10.4	+48-56VDC PoE POWER INPUT
J10.5	+48-56VDC PoE POWER INPUT
J10.6	DATA PAIR 2
J10.7	DC RETURN FOR PoE INPUT
J10.8	DC RETURN FOR PoE INPUT

TABLE IV (WIRING DIAGRAM)	
FROM	TO
P1.1	J1.1
↓	↓
P1.12	J1.12
P2.1	J2.1
↓	↓
P2.12	J2.12
J8.1	J4.1
J9.1	J5.1



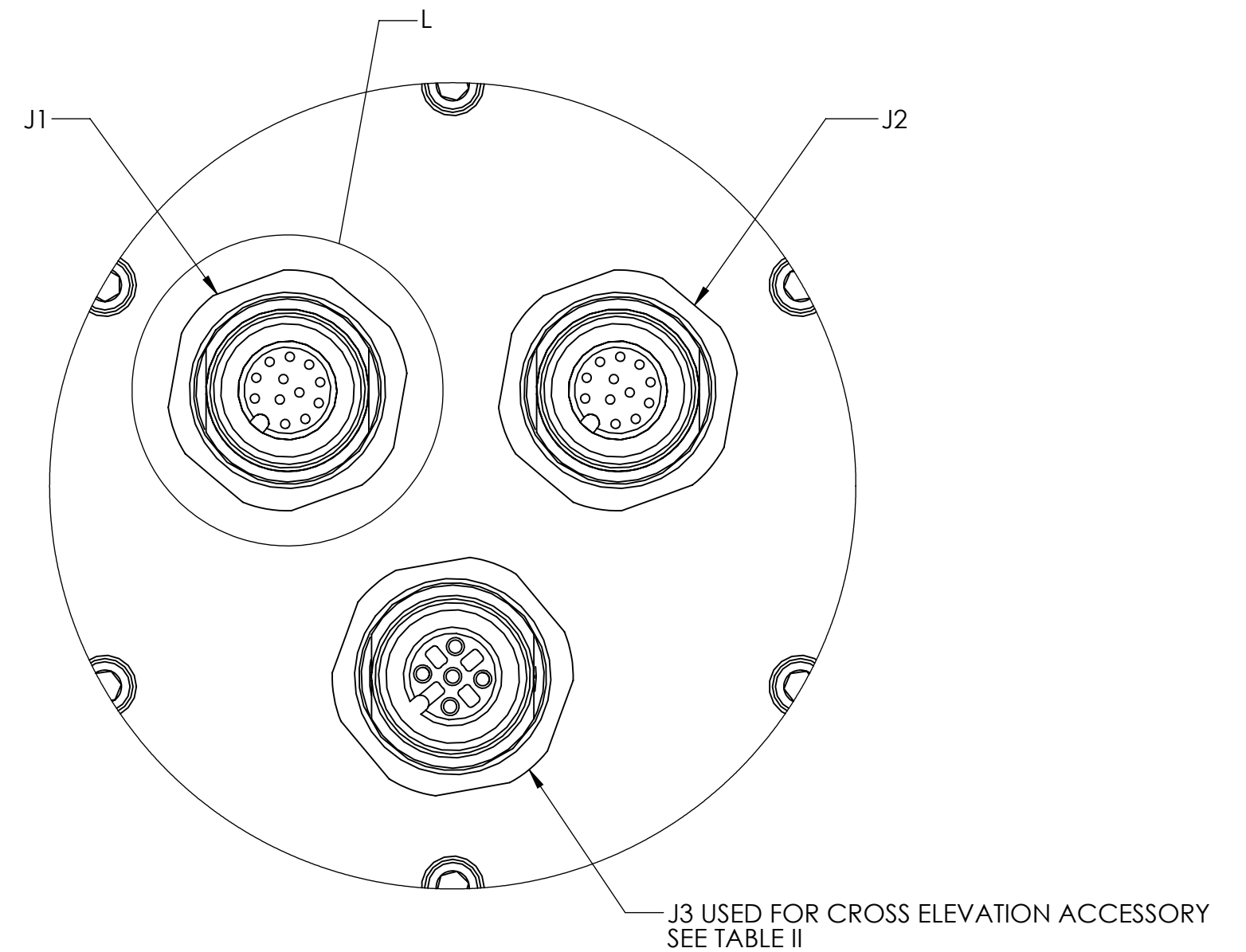
P1 & P2 CONNECTORS SHOWN FROM MATING SIDE  
MATES WITH TURCK P/N B 81 121-0/PG9 OR RK 12T-\*

SECTION G-G  
SCALE 1 : 1  
SHEET 4  
ZONE A-7  
SHOWN WITHOUT PROTECTIVE CAPS  
SEE TABLE IV FOR P1 & P2 PASS THRU CONNECTOR PINOUT DETAILS



J8 & J9 CONNECTORS SHOWN FROM MATING SIDE  
MATES WITH N-TYPE MALE CONNECTOR

SECTION H-H  
SCALE 1 : 1  
SHEET 4  
ZONE A-8  
SHOWN WITHOUT PROTECTIVE CAP  
SEE TABLE IV FOR J8 & J9 PASS THRU CONNECTOR PINOUT DETAILS

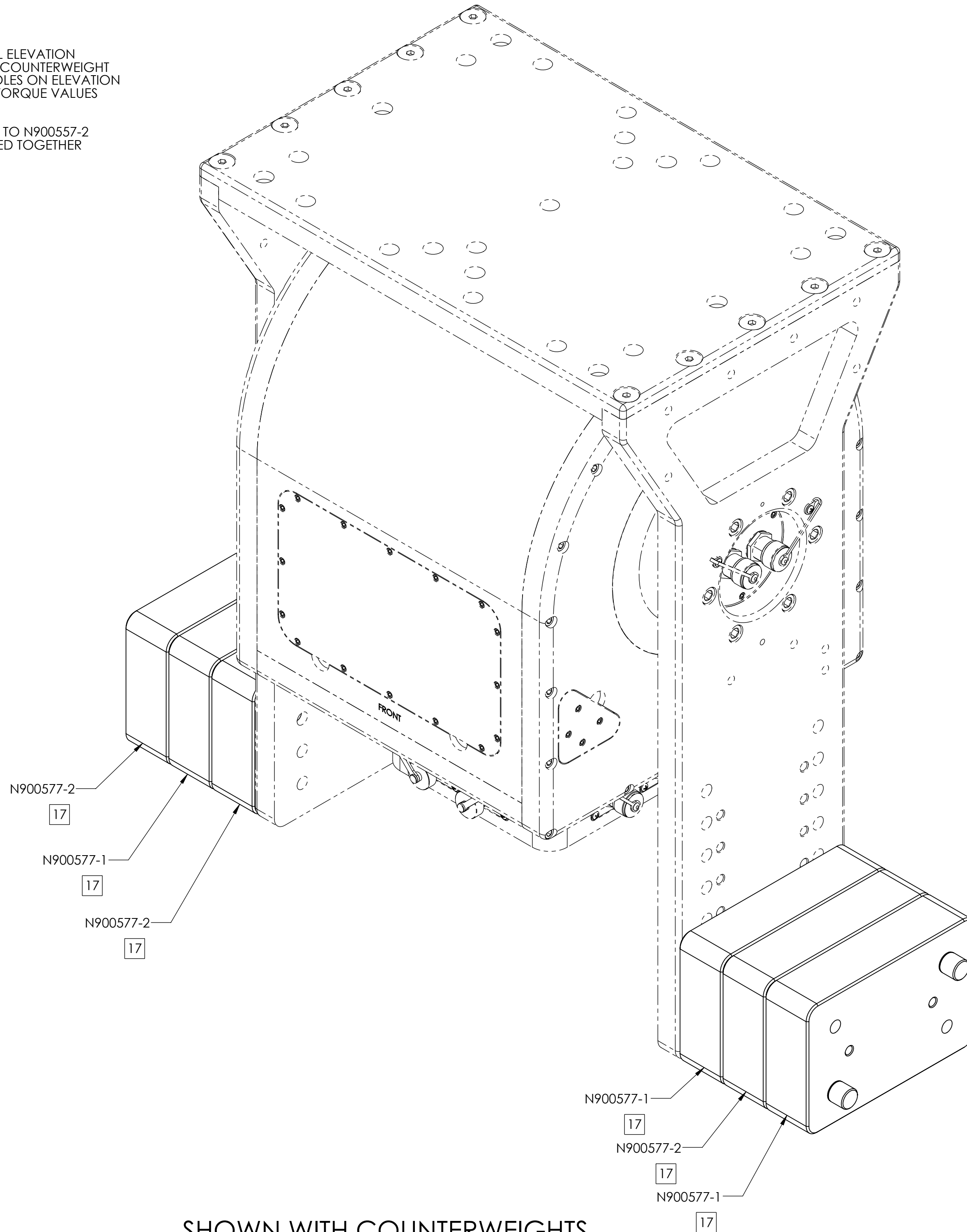


J1 & J2 CONNECTORS SHOWN FROM MATING SIDE  
MATES WITH TURCK P/N BS 81 121-0/PG9 OR RS 12T-\*

DETAIL J  
SCALE 2 : 1  
SHEET 4  
ZONE C-2  
SHOWN WITHOUT PROTECTIVE CAPS  
SEE TABLE IV FOR J1 & J2 PASS THRU CONNECTOR PINOUT DETAILS

NOTES CONTINUED:

- 16 COUNTERWEIGHTS SHOWN AT MAXIMUM ADDITIONAL ELEVATION TORQUE OF 60 FT-LBS TO ADJUST ELEVATION TORQUE COUNTERWEIGHT LOCATIONS MAY BE ADJUSTED USING MOUNTING HOLES ON ELEVATION ARM. SEE DIMENSIONS ON VIEW A-A TO CALCULATE TORQUE VALUES AT RESPECTIVE MOUNTING HOLE LOCATIONS
- 17 COUNTERWEIGHTS MUST ALTERNATE FROM N900557-1 TO N900557-2 OR VICE VERSA WHEN COUNTERWEIGHTS ARE STACKED TOGETHER



SHOWN WITH COUNTERWEIGHTS