

# 2100 SERIES SUBSEA ROTARY ACTUATOR

MODEL SHOWN:  
2100RHS-SSSB0830-8R01

### GENERAL SPECIFICATIONS:

- PEAK OUTPUT TORQUE: UP TO 50 FT-LB (HT MODEL)
- MAX NO-LOAD SPEED: UP TO 75 RPM (HS MODEL)
- INTEGRATED SERVO CONTROL AND MOTOR DRIVE
- INTERNAL PRESSURE COMPENSATOR
- 8 PIN MICRO WET-MATE CONNECTOR STANDARD
  - CUSTOM OPTIONS SUCH AS METAL SHELL CONNECTORS ARE AVAILABLE. CONTACT 2G FOR INFORMATION.
- COMMUNICATION PHYSICAL LAYER OPTIONS: RS-232, RS-485, CAN, ETHERNET, ANALOG VOLTAGE CONTROL, AND ANALOG CURRENT CONTROL
- MAXIMUM RADIAL LOAD:
  - 40 LB WITH SHAFT CANTILEVERED 2" FROM MOUNTING FACE
  - 200 LB WITH SHAFT SUPPORTED
- MAX IMUM AXIAL LOAD: 100 LB
- AVAILABLE LOW-PROFILE RIGHT-ANGLE DRIVE UNIT. CONTACT 2G FOR DETAILS.

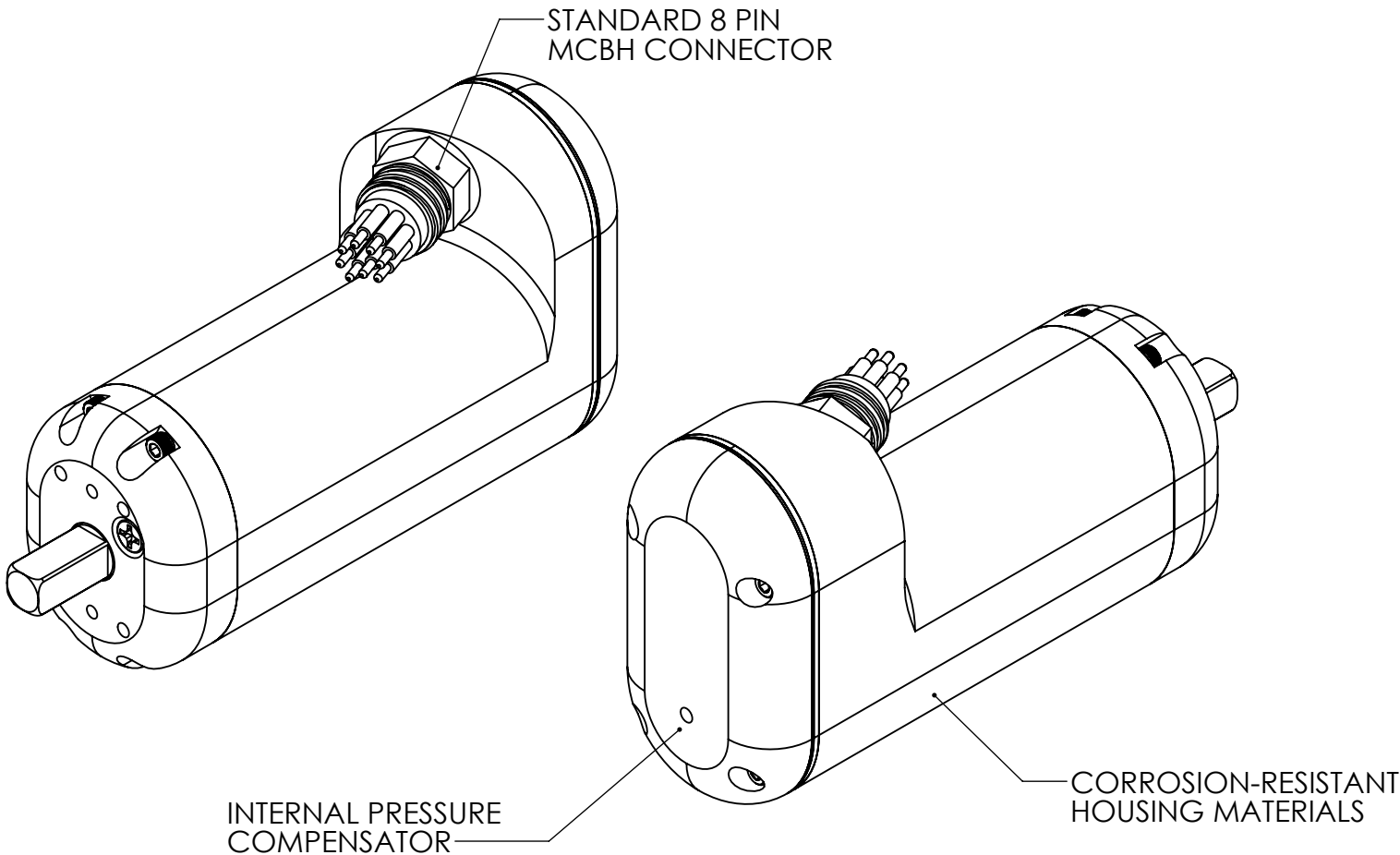
### OPERATING ENVIRONMENT:

- DESIGNED FOR MISSION-CRITICAL SUBSEA USE
- PRESSURE-BALANCED OIL-FILLED HOUSING
- CORROSION-RESISTANT HOUSING MATERIAL OPTIONS:
  - STAINLESS STEEL, PASSIVATED
  - ALUMINUM, HARDCOAT ANODIZED
  - TITANIUM
- OPERATIONAL DEPTH RATING: >6000 METERS SEAWATER
- DESIGN PRESSURE: 10,000 PSI
- OPERATING TEMPERATURE RANGE: -20°C to 65°C
- STORAGE TEMPERATURE RANGE: -30°C to 85°C
- OPERATING VOLTAGE OPTIONS:
  - 24 VDC NOMINAL (STANDARD)
  - 48 VDC NOMINAL
  - 96 VDC NOMINAL


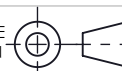
### ONBOARD MOTOR DRIVER AND SERVO SYSTEM:

- CLOSED-LOOP POSITION CONTROL WITH PID TUNING
- CONFIGURABLE LIMITS FOR CURRENT, POWER, VELOCITY, AND ACCELERATION
- CONFIGURABLE MOTION PROFILE GENERATOR
- CONTACTLESS NON-WEARING ABSOLUTE POSITION SENSOR
- DOES NOT REQUIRE HOMING
- 0.002° RESOLUTION, 0.2° PRECISION, 1° ACCURACY
- COMMS PROTOCOLS: MODBUS & 2G PACKETS
- DEFAULT BAUD RATE: 115200

2G ENGINEERING CAN CUSTOMIZE ANY ACTUATOR TO SUIT YOUR APPLICATION. CERTAIN OPTIONS MAY IMPACT DIMENSIONS, PERFORMANCE, AND LEAD TIME. CONTACT 2G TO CONFIRM SPECIFICATIONS FOR YOUR APPLICATION.



RATED OUTPUT (24 VDC)		
MODEL	CONTINUOUS	PEAK
-	ft-lb [Nm]	ft-lb [Nm]
HT	35 [47]	50 [68]
MT	18 [24]	26 [35]
HS	9 [12]	12 [16]

MATERIAL: -	<b>UNLESS OTHERWISE SPECIFIED:</b> - DIMENSIONS ARE IN INCHES - DIMENSIONS IN [ ] ARE IN mm - TOLERANCES: DECIMALS: .X ±.05 .XX ±.015 .XXX ±.005 ANGULAR: MACHINED: ±0.5° OTHER: ±2° - THREAD DEPTHS ON TAPPED HOLES ARE MINIMUMS - TAP DRILL DIAMETERS ARE REFERENCE - MAX FILLET RADIUS ON INSIDE SHARP CORNERS: 0.005 - BREAK ALL SHARP EDGES 0.010 MAX AND REMOVE BURRS - SURFACE FINISH: ≤63 Ra (µin)	INITIALS	DATE	 <b>2G ENGINEERING</b> WWW.2G-ENG.COM 608-825-4799	
MATERIAL COMMENTS:		DRAWN	DJF		05/17/2023
		APPROVED	DJF		05/17/2023
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SIZE B				DWG. NO. 2100R	REV. B
INTERPRET GEOMETRIC DIMENSIONING & TOLERANCING PER ASME Y14.5-2009		SCALE: 2:3		SHEET 1 OF 5	

D

C

B

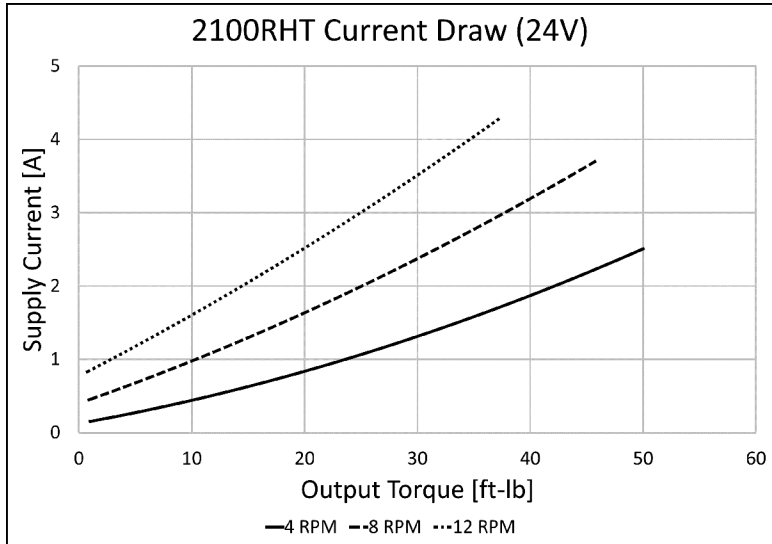
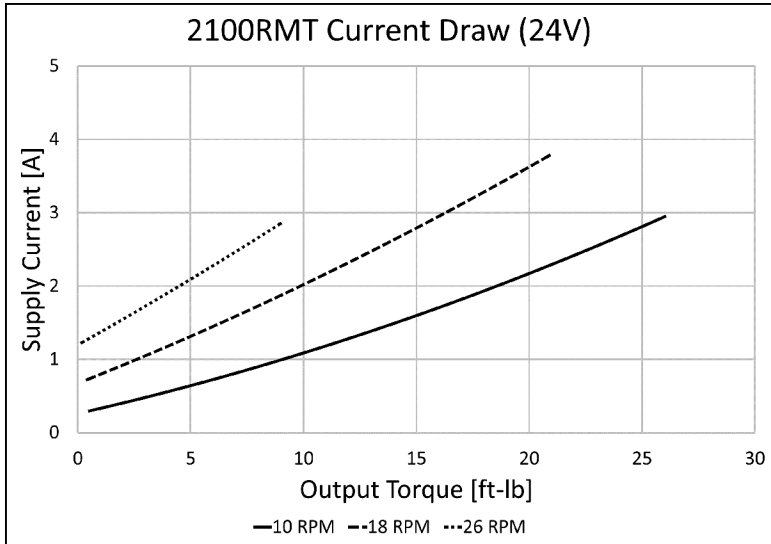
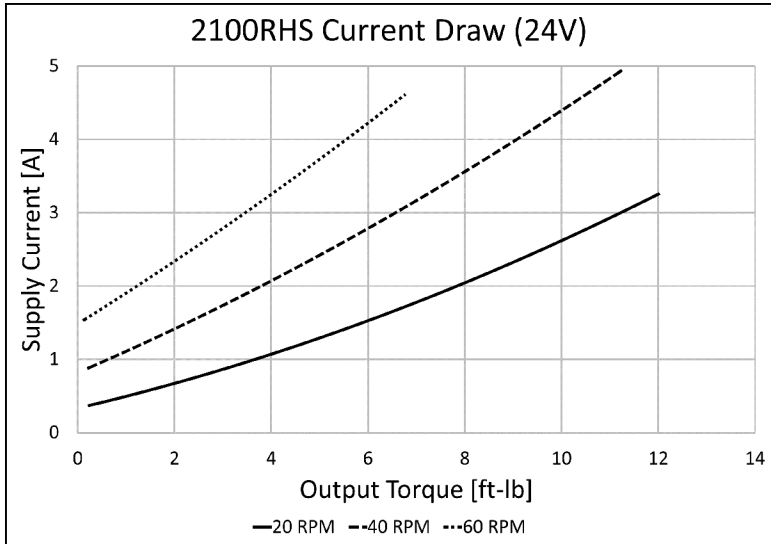
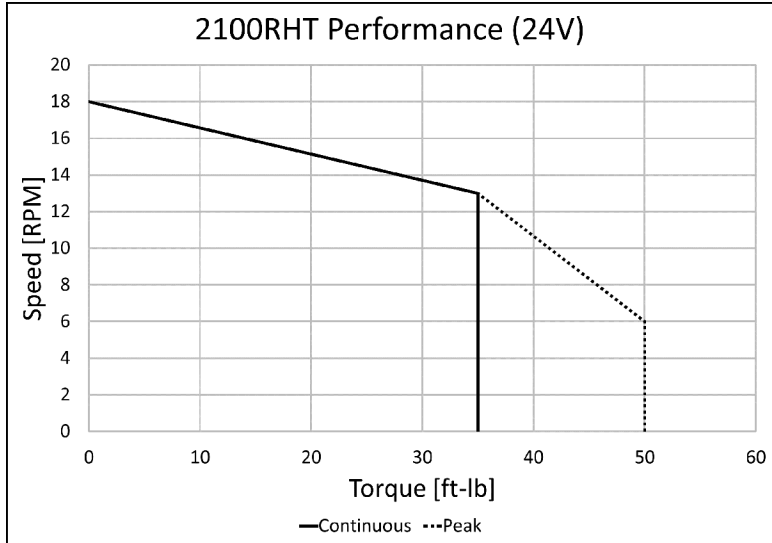
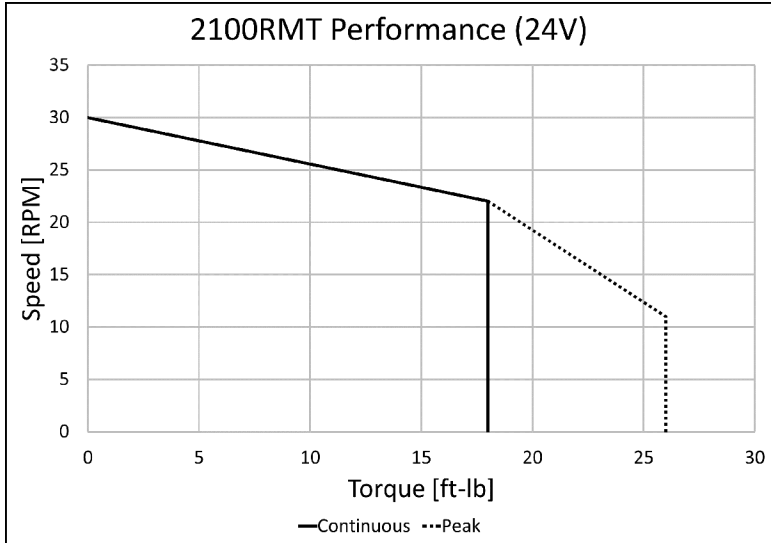
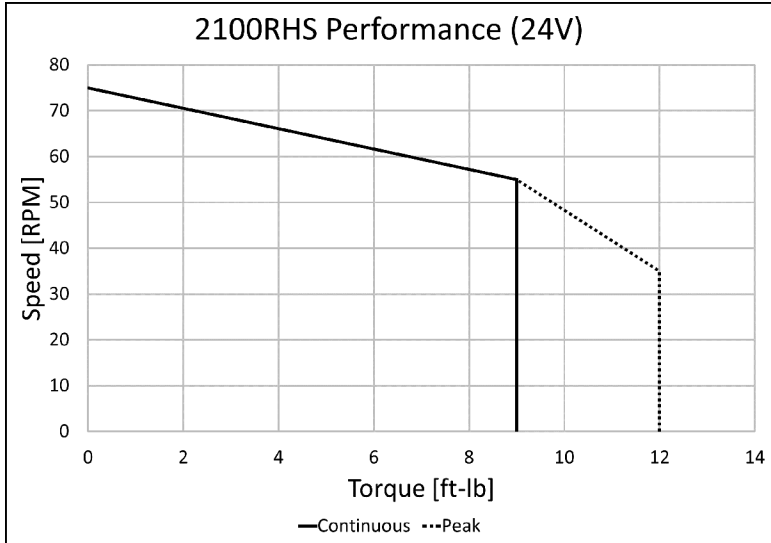
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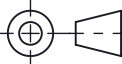
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ALL CHARTS ARE SHOW PERFORMANCE AT 24 VDC.  
OPERATION AT OTHER VOLTAGES WILL IMPACT PERFORMANCE.

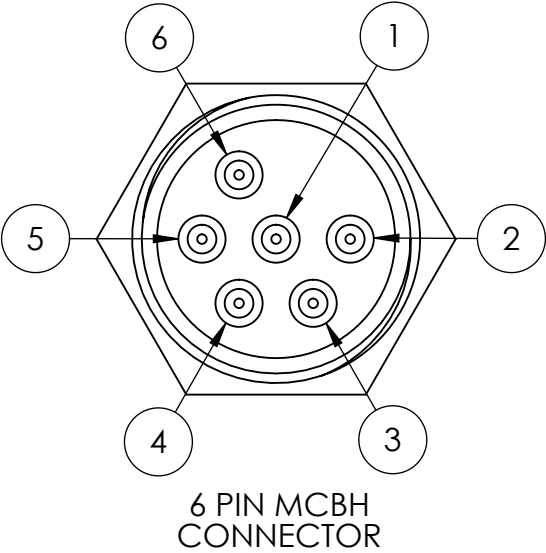
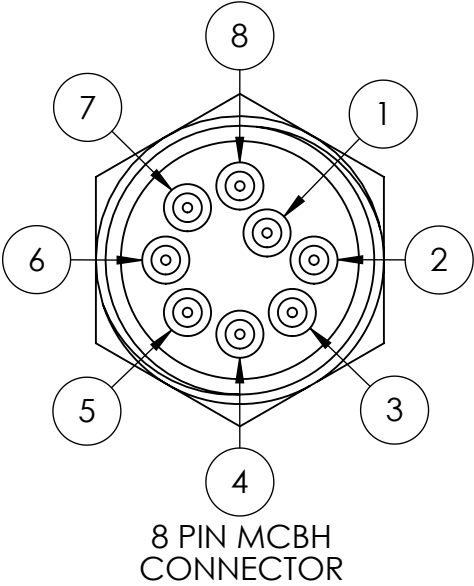
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MATERIAL COMMENTS:		APPROVED DJF	05/17/2023	DWG. NO. <b>2100R</b>	
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		SIZE B	THIRD ANGLE PROJECTION 	SHEET 2 OF 5	

SERIES		OUTPUT			HOUSING MATERIAL		SHAFT STYLE		SHAFT DIAMETER*		SHAFT LENGTH*			COMMUNICATION		VOLTAGE	
2100R	SUBSEA	HT	HIGH TORQUE	-	SS	STAINLESS STEEL	K	KEYED	A	1/4"	0500	0.50"	-	6L	RS-232 AND RS-485, NON-ISOLATED	01	24 VDC NOMINAL (12-30 VDC RANGE)
		MT	MID TORQUE		AL	ALUMINUM	S	SQUARE	B	3/8"	0830	0.83"		8L	RS-232, RS-485, 0-10V ANALOG VOLTAGE CONTROL, NON-ISOLATED	05	48 VDC NOMINAL (20-55 VDC RANGE)
		HS	HIGH SPEED		TI	TITANIUM	F	FLAT	C	1/2"	1000	1.00"		8M	RS-232, CAN, 0-10V ANALOG VOLTAGE CONTROL, NON-ISOLATED	09	96 VDC NOMINAL (55-120 VDC RANGE)
									1500	1.50"	8R	RS-232 AND RS-485					
									2000	2.00"	8V	RS-232 AND 0-10V ANALOG VOLTAGE CONTROL					
											8C	RS-232 AND CAN					
										8E	RS-232 AND ETHERNET						

PIN	PIN ASSIGNMENTS						
	NON-ISOLATED AVAILABLE WITH ANY VOLTAGE OPTION.			ISOLATED AVAILABLE WITH -05 AND -09 VOLTAGE OPTIONS ONLY.			
	6L	8L	8M	8R	8V	8C	8E
1	RS-232 TX	VIN -	VIN -	VIN -	VIN -	VIN -	VIN -
2	RS-232 RX	VIN +	VIN +	VIN +	VIN +	VIN +	VIN +
3	RS-485 -	0-10V ANALOG INPUT	0-10V ANALOG INPUT	N/C	N/C	N/C	RS-232 TX
4	VIN +	0-10V ANALOG OUTPUT	0-10V ANALOG OUTPUT	COMMS GND	COMMS GND	COMMS GND	RS-232 RX
5	VIN -	RS-232 TX	RS-232 TX	RS-232 TX	RS-232 TX	RS-232 TX	ETHERNET TX+
6	RS-485 +	RS-232 RX	RS-232 RX	RS-232 RX	RS-232 RX	RS-232 RX	ETHERNET TX-
7	N/A	RS-485 +	CAN HI	RS-485 +	0-10V ANALOG INPUT	CAN HI	ETHERNET RX+
8	N/A	RS-485 -	CAN LO	RS-485 -	0-10V ANALOG OUTPUT	CAN LO	ETHERNET RX-

STANDARD SHAFT OPTIONS*			
CODE	STYLE	DIAMETER	LENGTH
FC1500	FLAT	0.500"	1.500"
KC1500	KEYED	0.500"	1.500"
KC2000	KEYED	0.500"	2.000"
SB0830	SQUARE	0.375"	0.830"

\* HIGH TORQUE UNITS REQUIRE A SHAFT SIZE OF AT LEAST 1/2" DIAMETER OR 3/8" SQUARE, AND AT LEAST 0.83" LENGTH.



MATERIAL:  
-

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- TAP DRILL DIAMETERS ARE REFERENCE  
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- BREAK ALL SHARP EDGES 0.010 MAX AND REMOVE BURRS  
- SURFACE FINISH: ≤63 Ra (µin)

INITIALS  
DATE

DRAWN  
DJF  
05/17/2023

APPROVED  
DJF  
05/17/2023

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SIZE  
B  
THIRD ANGLE  
PROJECTION

CLICK HERE FOR USER MANUAL AND COMMUNICATION PROTOCOL INFORMATION.

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608-825-4799

TITLE: 2100 SERIES ROTARY ACTUATOR

DWG. NO.  
2100R

SCALE: 2:1

SHEET 3 OF 5

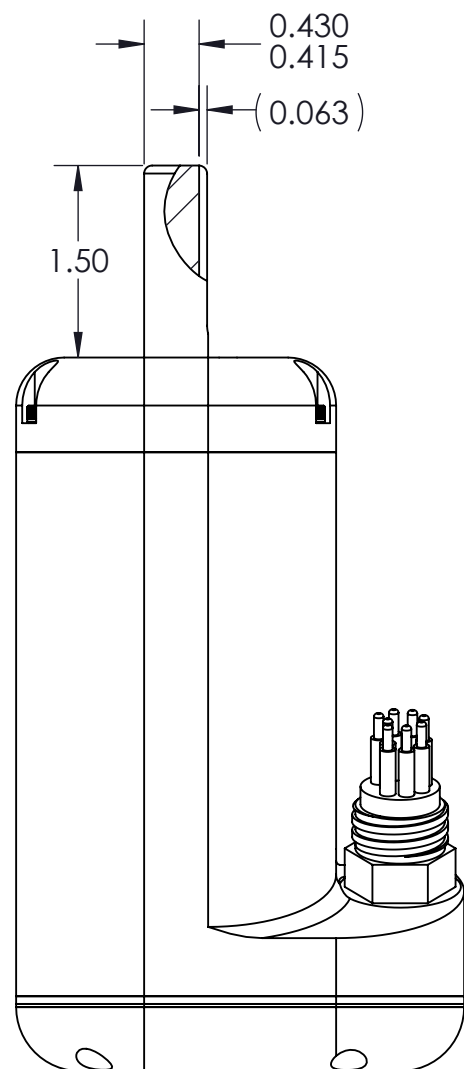
REV.  
B

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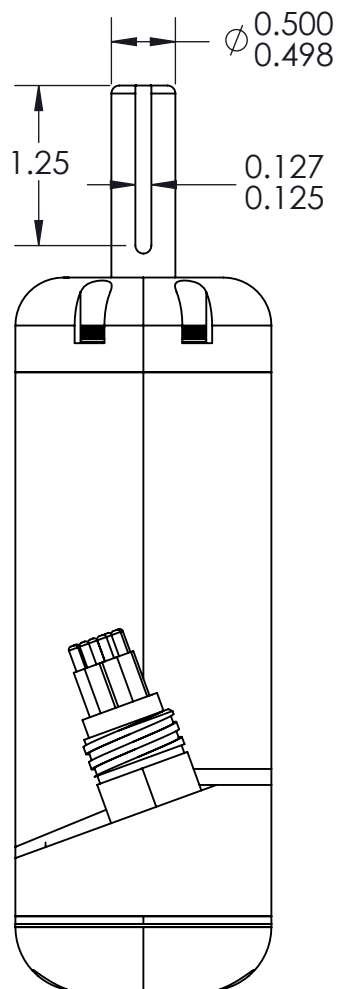
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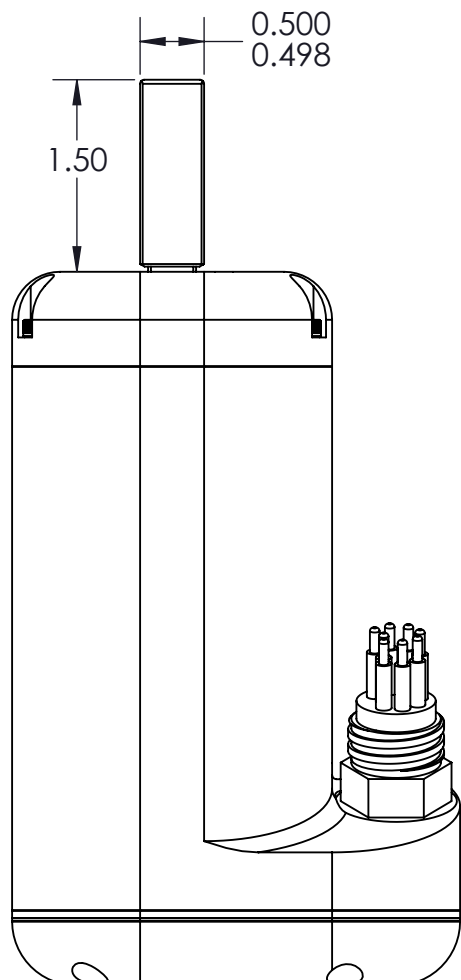
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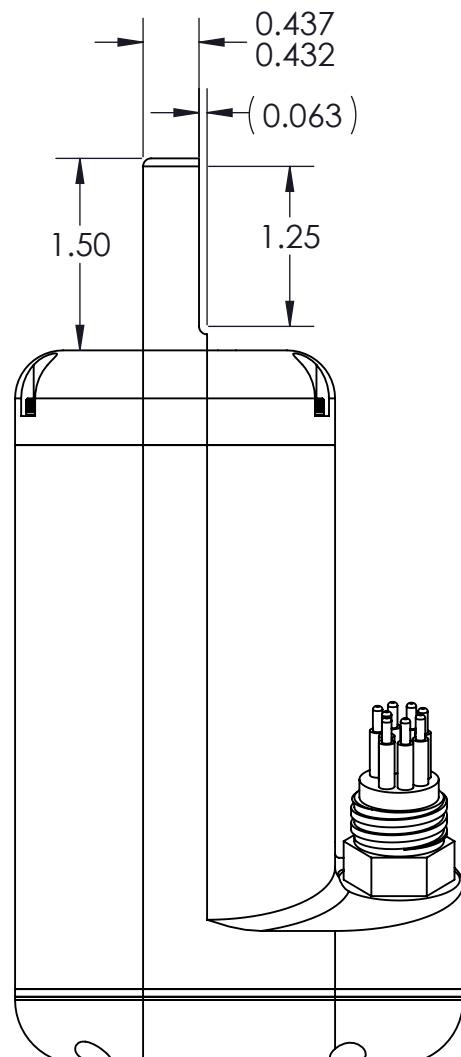
**KEYED SHAFT  
KC1500**



**SQUARE SHAFT  
SC1500**



**FLAT SHAFT  
FC1500**



D

C

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SIZE  
BTHIRD ANGLE  
PROJECTIONINTERPRET GEOMETRIC DIMENSIONING  
& TOLERANCING PER ASME Y14.5-2009**2G ENGINEERING**

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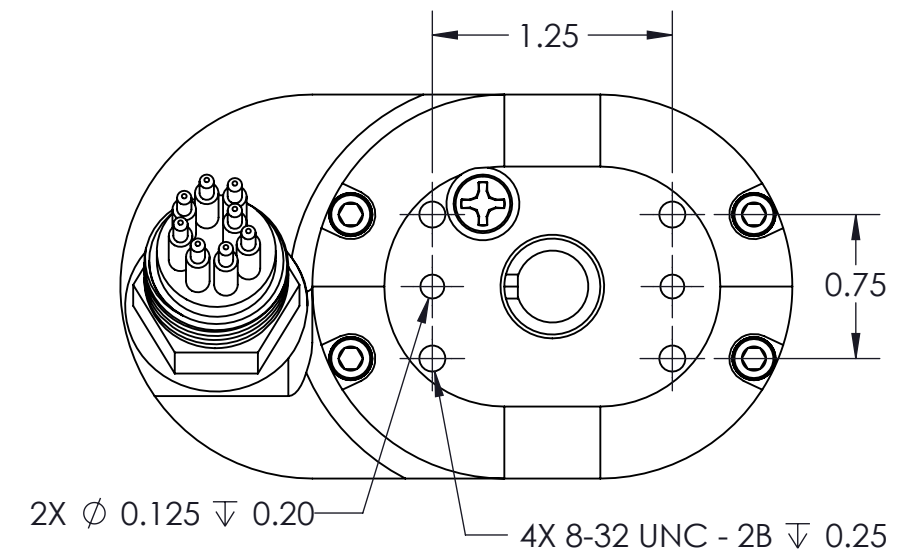
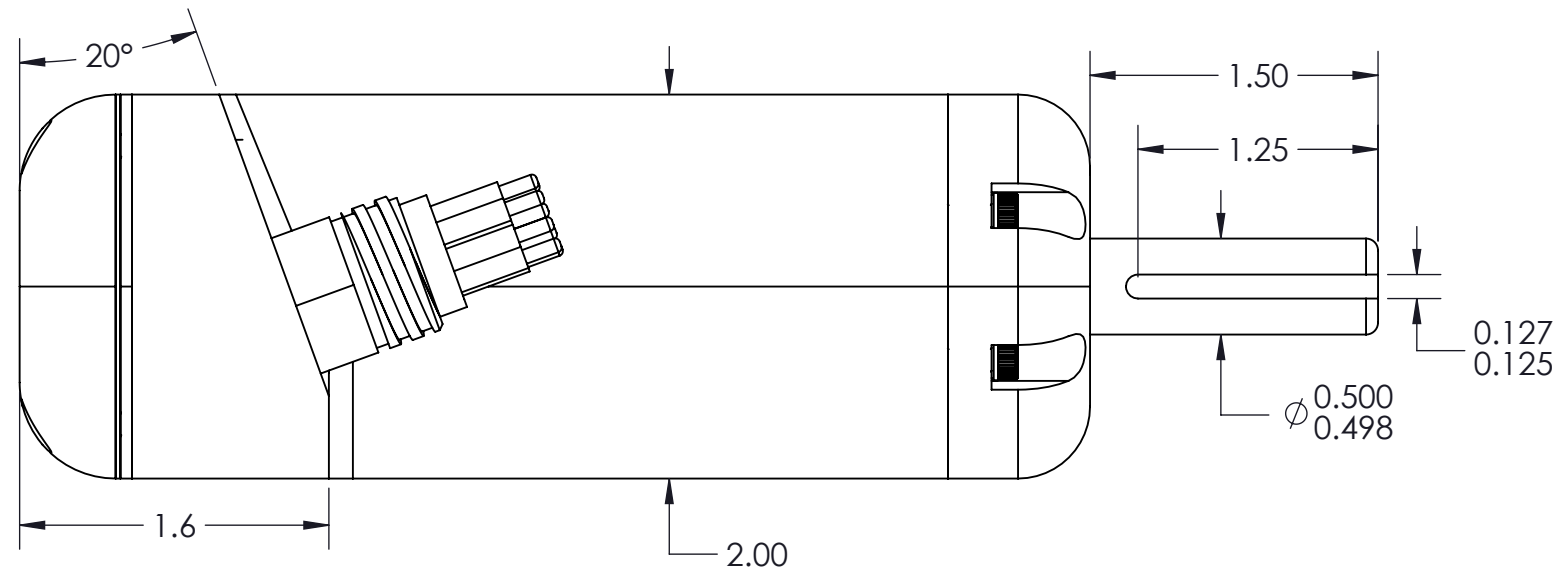
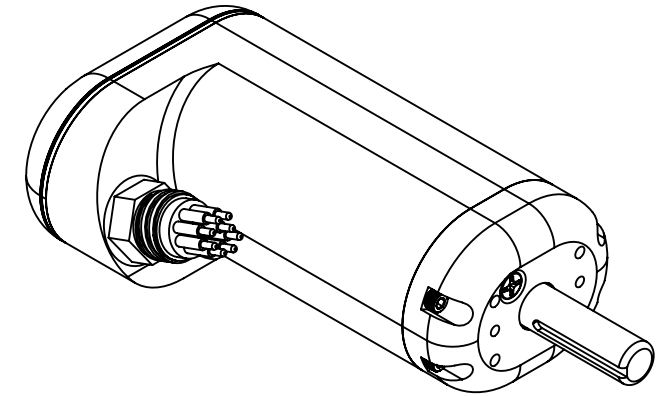
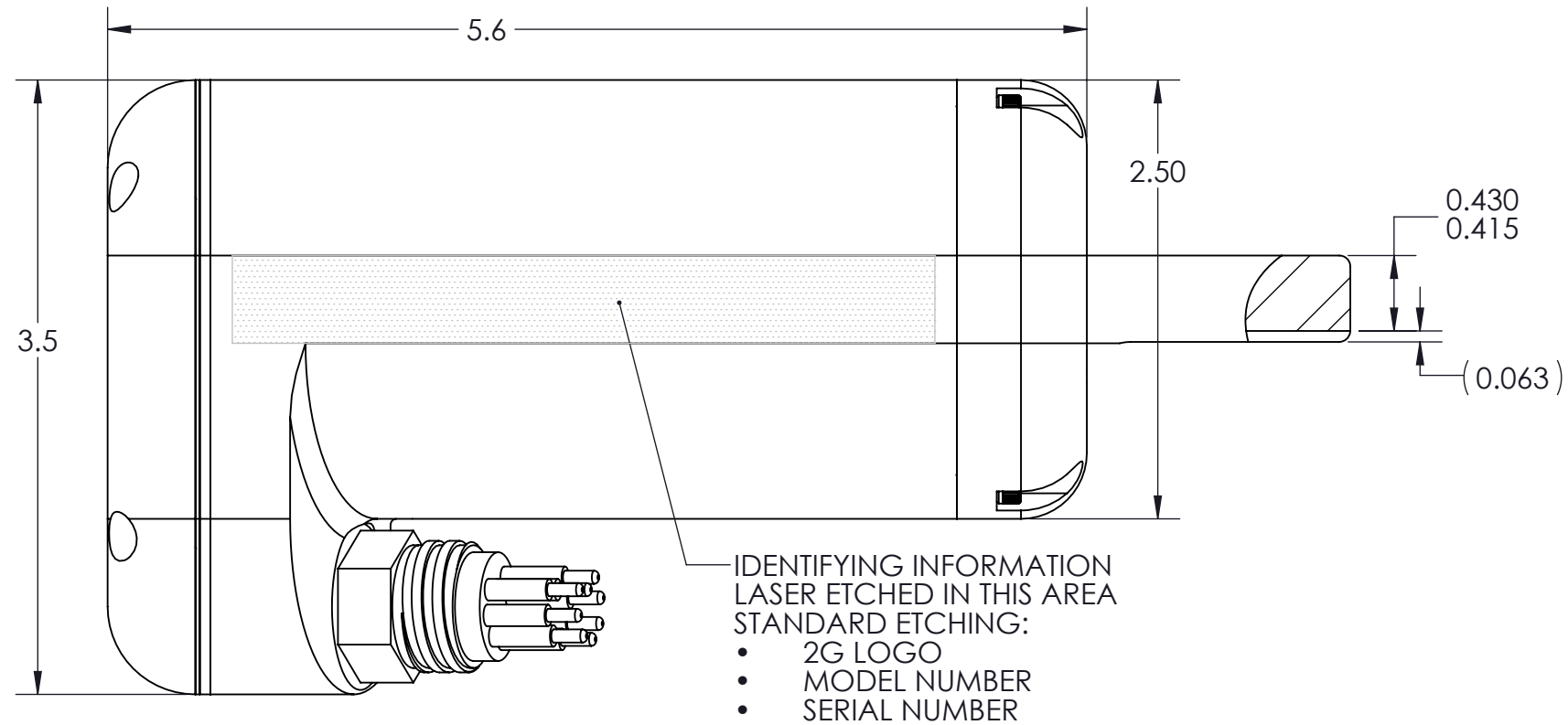
DWG. NO.

**2100R**

SCALE: 2:3

SHEET 4 OF 5

REV.  
**B**



APPROXIMATE WEIGHTS (LBS)	STAINLESS	ALUMINUM	TITANIUM
DRY/SURFACE	5.4	3.2	3.8
WET/SUBMERGED	4.4	2.2	2.8

**MODEL SHOWN:**  
2100RHS-SSSB0830-8R01

**MATERIAL:**

—

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- TOLERANCES:

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.X	±.05
xy	+ .015

.XX	±.015
XXY	±.005

ANGULAR: .XXX ±.005

ANGULAR:  
MACHINED:  $\pm 0.5^\circ$

MACHINED:  $\pm 0.5^\circ$   
OTHER:  $\pm 2^\circ$

OTHER:  $\pm 2$   
- THREAD DEPTHS ON TAPPED HOLES

- THREAD DEPTHS ON TAPPED HOLES  
ARE MINIMUMS

- TAP DRILL DIAMETERS ARE REFERENCE

- MAX FILLET RADIUS ON INSIDE

SHARP CORNERS: 0.005

- BREAK ALL SHARP EDGES 0.010 MAX

AND REMOVE BURRS

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APPROVED	DJF	05/17/2023

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SIZE B THIRD ANGLE PROJECTION

INTERPRET GEOMETRIC DIMENSIONING  
& TOLERANCING PER ASME Y14.5-2001

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GEOMETRIC DIMENSIONING  
DRAWING PER ASME Y14.5-2000



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TITLE: 2100 SERIES ROTARY ACTUATOR

DWG. NO.	
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2100R

SCALE: 1:1

EV.  
B

SHEET 5 OF 5