VAXOR MOTOR

MICRO JOINT ACTUATOR

VAXOR X25 SERIES

Φ25 mm Micro Joint Actuator

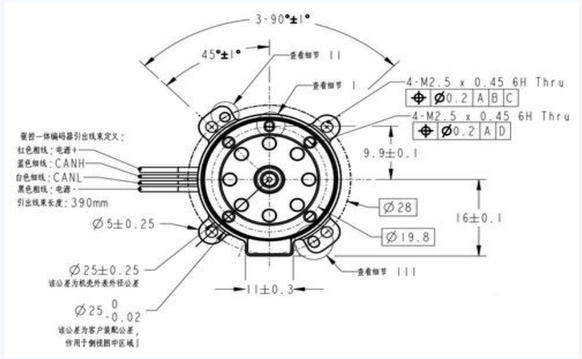
*Designed for dexterous hands, highly integrated robots, and other applications requiring precision motion-control actuators.Refer to the specifications during use and avoid operating beyond the stated limits. Please contact us with any product-related questions.

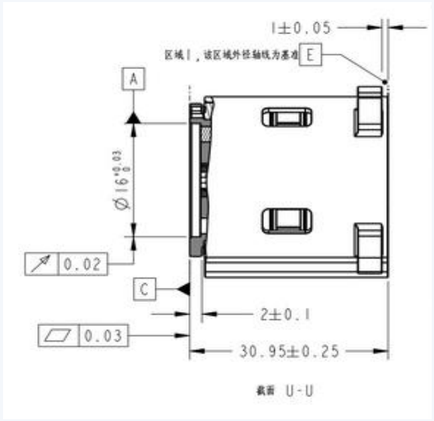
Φ25 mm	1800 mN•m	20 arcmin
Product Diameter	Maximum Torque	Gear Backlash

X25S-UZ / X25S-BZ

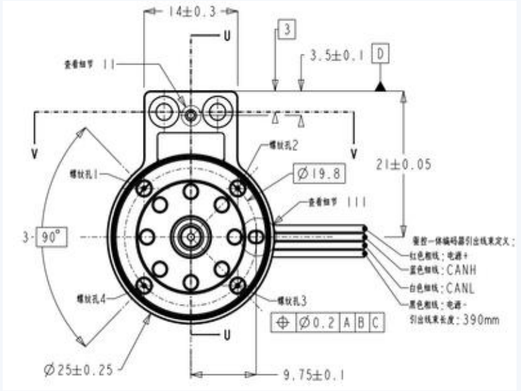
Mechanical Dimensions & Mounting Details

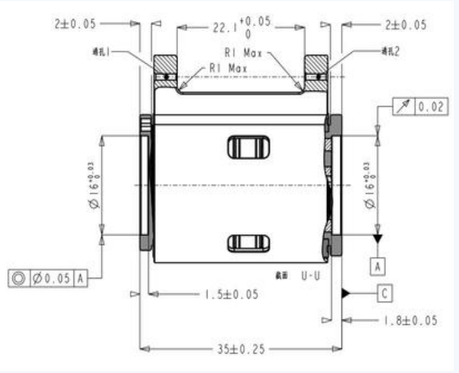
X25S-UZ30/50-MH-3



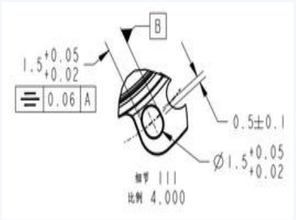


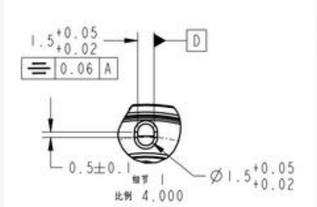
X25S-BZ30/50-MH-3

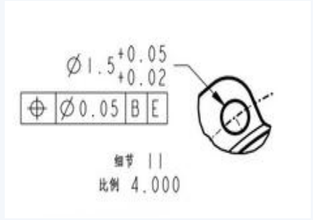




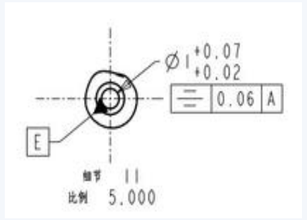
Housing Mounting Hole Detail

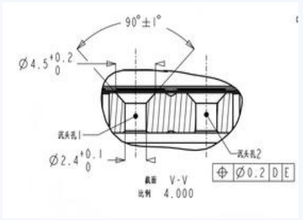


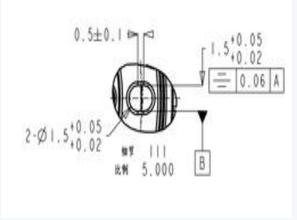




Housing Mounting Hole Detail







Technical Specifications & Performance Curves

12–18 V
Nominal Voltage

1800 mN•m
Maximum Torque

20 arcmin
Gear Backlash

93 / 103 g
Total Weight

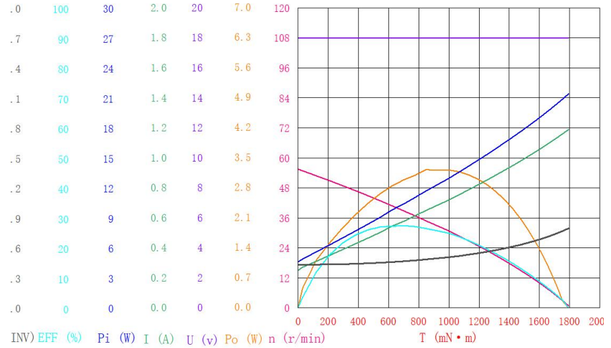
Test Conditions Single Motor · DC Bus Voltage 18 V · Duty Cycle 0.6

Motor Data

Parameter	Unit	Value
No Load Speed	rpm	≤3000
Nominal Speed	rpm	≤2000
Continuous Stalling Torque* (Chassis Temperature145°)	mN·m	43
Continuous Stalling Phase Current* (Chassis Temperature145°)	A	1.2
Stalling Torque (Max)*	mN·m	120
Stalling Current (Max)*	A	3.2
Terminal Resistance*	Ω	3.8
Unbalanced Three-Phase Resistance	%	≤2
Terminal Inductance*	mH	2.1
Unbalanced Three-Phase Inductance	%	≤2
Torque Constant	mN·m/A	42
Speed Constant	rpm/V	227
Rotor Inertia	gcm2	6.1

Assembly Data

Parameter	Unit	Gear Ratio 30:1	Gear Ratio 50:1
Gear Efficiency (maximum)	%	70	65
Gear Efficiency (Stalling Point)	%	60	55
Continuous Stalling Torque	mN·m	750	1150
Maximum Initial Torque	mN·m	1500	1800△
Gear Backlash	arcmin	P0≤20 P1≤36	
Encoder	—	Absolute Magnetic Encoder	
Communication Protocol	—	CAN FD	
Total Weight	g	93(UZ)/103(BZ)	
Total Inertia	g·cm²	12.7	



Efficiency • Current • Speed • Output Power

Thermal Data

Loss Power	W	5	8.3	13
Chassis Temperature	℃	80	115	145

Note: 1. * Indicates a ±10% deviation between actual and theoretical values. ; △ Indicates that output torque is limited by mechanical strength. 2. Motor thermal data was measured under natural cooling (without metal contact); performance will be better on a test bench or in the customer's complete system. 3. Contact Sales for customized backdrive torque and backlash performance.