



# **T STANDALONE AXIS**

**ASME-DXR+T01550303NASS0000**

Data sheet

Version 1.0



TESTING CONDITIONS	UNIT	
Position controller	-	AccurET 300 4/7.5A
Rated payload	kg	1
Rated inertia	kg.m <sup>2</sup>	7.74E-03
Tool point position	mm	20 above the rotor's interface
Ambient temperature	°C	22 ±1
Isolation system	-	none

DIMENSIONAL DATA (1)	UNIT	
Stage width	mm	215
Stage length	mm	215
Inside diameter	mm	Hollowshaft 37.5
Table height	mm	67.5
Total mass (without payload)	kg	5
Rotor inertia (without payload)	kg.m <sup>2</sup>	3.3 E-3

TORQUE CAPABILITIES	UNIT	
Tp Peak torque	Nm	7.87
Tc Continuous torque (2)	Nm	1.74
Ts Stall torque	Nm	1.32
Td Max. detent torque (average to peak)	Nm	0
Tfrs Static friction (maximal value)	Nm	0.97
Tfrd Dynamic friction (maximal value)	Nm/(rad/s)	4.30E-03

LOAD CAPACITIES	UNIT	
Axial load	kg	30

DYNAMIC PERFORMANCE	UNIT	
Maximum speed	rad/s (rpm)	41.8 (400)
Maximum acceleration	rad/s <sup>2</sup>	2'200
Typical position stability (at encoder level)	arcsec	±0.2

STAGE ACCURACY	UNIT	
Positioning accuracy (without mapping)	arcsec	± 30
Positioning accuracy (with mapping)	arcsec	±3
Unidirectional repeatability	arcsec	±1
Bidirectional repeatability	arcsec	±2
Radial runout	µm	±3.5
Total axial error (at a diameter of 85 mm)	µm	±3

ENCODER CHARACTERISTICS	UNIT	
Encoder and signal type	-	Optical - incremental
Output signal	-	1 Vpp or TTL
Line count	Period/turn	18'000
Reference mark	-	one at 0±5 [deg]
Power supply	V	5 VDC ± 10 %

ELECTRICAL SPECIFICATIONS		UNIT	
	Motor type	-	Toothless
	Motor model	-	TTB0126-030-3NA
	Number of phases	-	3
Kt	Torque constant	Nm/Arms	1.23
Ku	Back EMF constant (3)	Vrms/(rad/s)	0.71
R20	Electrical resistance at 20°C (3)	Ohm	10.50
L1	Electrical inductance (3)	mH	2.65
Ip	Peak current	Arms	6.90
Ic	Continuous current (2)	Arms	1.47
Is	Stall current	Arms	1.11
ns	Stall speed	rad/s (rpm)	0.02
Udc	Nominal input voltage	VDC	300
Pc	Max. cont. power dissipation (2)	W	41.9 (depends on system configuration)
2p	Number of poles	-	28

WORKING ENVIRONMENT		
Clean room compatibility (4)		ISO 5 / ISO 1 with option air purge
IP protection grade		IP40

VACUUM CHARACTERISTICS		UNIT	
Vacuum supply for axis cleanliness			
V <sub>c</sub>	Vacuum	bar	-0.06
Fv <sub>c</sub>	Vacuum flow	l/min	5

TYPICAL MOVE AND SETTLE TIMES		UNIT	
Move 1: 0.004° within ±40 µdeg		ms	250
Move 2: 1° within ±40 µdeg		ms	250
Move 3: 90° within ±40 µdeg		ms	400
Move 4: 180° within ±40 µdeg		ms	500
Move 5: 360° within ±40 µdeg		ms	600

GUIDING ELEMENTS		
Type		Cross-roller bearing

MATERIAL AND FINISH		
Baseplate		Aluminium base
Shaft		Stainless steel

OPTIONS / ACCESSORIES / FEATURES		UNIT	
Limit switch	-		No
Limited stroke	-		Configurable. See interface drawing
Temperature sensors	-		No
Air purge	-		Bidirectionnal pneumatic fitting

According to the Machinery Directive 2006/42/EC, the system presently described falls into the "partly completed machinery" category and fully complies with it as long as the system is operated according to the working conditions described in the corresponding manual. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the system is used in an improper way.

**Notes:** The specifications given may be mutually exclusive.

- (1) Without any additional customer part attached to the mobile interface.
- (2) Coils at 80°C, with additional surface of 0.05 m<sup>2</sup> fixed on the base and 0.017 m<sup>2</sup> on the rotor made of black anodized aluminium.
- (3) Terminal to terminal.
- (4) Under laminar flow at 0.25 m/s perpendicular to rotation axis. Measured at interface plate height. Contact ETEL for more details.