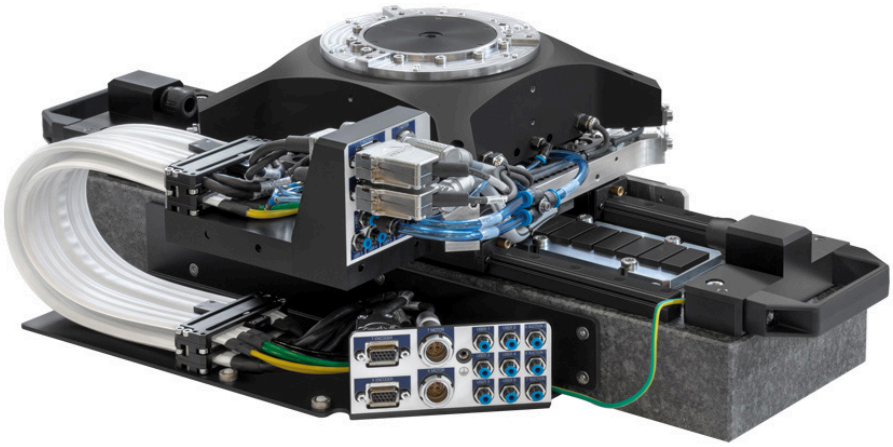

CHARON2 XT (DRX+) with AccurET Modular

Data Sheet

Version 2.1

AXIS DESIGNATION			
Number of controlled axes		2	
Axes name		X (bottom axis)	Theta
Thrust transmitter: DD (direct drive) or ID (indirect drive)		DD	DD

TESTING CONDITIONS	UNIT		
Position controller	-	Modular 300 7/15 Arms	Modular 300 7/15 Arms
Motion controller	-	UltimET	
Rated payload (1)	kg	2	
Rated inertia (1)	$kg.m^2$	N/A	0.018
Rated input voltage	VDC	96	96
Tool point position	mm	195 mm (above bottom surface)	
Ambient temperature	°C	22 ±1	
Isolation system	-	QuiET	

DIMENSIONAL DATA	UNIT		
Width	mm	300	
Length	mm	593	
Height	mm	176	
Total stroke	mm or °	205	Infinite
Moving mass (without payload)	kg	12	-
Total mass (without payload)	kg	30	
Rotor inertia (without payload)	$kg.m^2$	-	0.004

FORCE / TORQUE CAPABILITIES (2)	UNIT		
Peak force / torque	N or Nm	332	7.87
Continuous force / torque	N or Nm	130	1.74
Standstill force / torque	N or Nm	98	1.32
Max. detent force / torque (average to peak)	N or Nm	7.1	0
Static friction (maximal value)	N or Nm	22	1
Dynamic friction (maximal value)	N/(m/s) or Nm/(rad/s)	60	0.03

LOAD CAPACITIES	UNIT	
Maximum payload	kg	30

DYNAMIC PERFORMANCE	UNIT		
Duty cycle	%	30	10
Maximum speed	m/s or rad/s	1	30
Maximum acceleration	m/s^2 or rad/s^2	20	180
Typical position stability at 2kHz	nm or arcsec	±10	±0.08

ACCURACY	UNIT		
Positioning accuracy (without mapping)	µm or arcsec	±15	±30
Positioning accuracy (with mapping)	µm or arcsec	±1	±3
Unidirectional repeatability	µm or arcsec	-	±1
Bidirectional repeatability	µm or arcsec	±0.3	±2
Horizontal straightness / radial runout	µm	±2.5	±3.5
Vertical straightness / total axial error at R = 42.5 mm	µm	±2	±3
Roll	arcsec	±3	-
Pitch	arcsec	±3.5	-
Yaw	arcsec	±5	-

WORKING ENVIRONMENT	
Clean room compatibility (3)	ISO 2

ELECTRICAL SPECIFICATIONS (1)		UNIT	X (bottom axis)	Theta
	Motor type	-	Ironcore	Toothless
	Motor model	-	LMG10-030-3QB-H01	TTB0126-030-3NA-239
	Number of phases	-	3	3
Kt	Force constant	N/Arms or Nm/Arms	26.6	1.23
Ku	Back EMF constant (4)	Vrms/(m/s) or Vrms/(rad/s)	16.2	0.712
Km	Motor constant	Nm/√W	16.8	-
R20	Electrical resistance at 20 °C (4)	Ohm	1.68	10.50
L1	Electrical inductance (4)	mH	9.02	2.65
Ip	Peak current	Arms or A_{DC}	30.0	6.90
Ic	Continuous current	Arms or A_{DC}	5.00	1.47
Is	Standstill current	Arms or A_{DC}	3.79	1.11
ns	Standstill speed	mm/s or rad/s	0.22	0.0016
Um	Max. input voltage	VDC	100	100
Pc	Max. cont. power dissipation	W	77.6	41.9
2τp	Magnetic period	mm	32	-
2p	Number of poles	-	-	28

ENCODER CHARACTERISTICS	UNIT		
Encoder and signal type	-	Optical - incremental	Optical - incremental
Output signal	-	1 Vpp	1 Vpp
Signal period or line count	µm	4	18000
Reference mark	-	One	One
Power supply	V	5	5

TYPICAL MOVE AND SETTLE TIMES	UNIT		
Move 1: 10 µm within ±100 nm window	ms	40	-
Move 2: 25 mm within ±100 nm window	ms	130	-
Move 3: 80 mm within ±100 nm window	ms	185	-
Move 5: 1 deg within ±40 µdeg	ms	-	100
Move 4: 180 deg within ±40 µdeg	ms	-	500

GUIDING ELEMENTS		
Type	Ball bearing	Crossed roller bearing

MATERIAL AND FINISH		
Baseplate	Granite	Alluminium alloy
Carriage	Stainless steel	Stainless steel

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. Unless stated otherwise, all measurements are made within the testing conditions.
(1) Payload can be assimilated to a cylinder of diameter 270 mm, 19 mm thick, weighting 2 kg. Inertia is expressed with respect to the center of gravity of the payload, Z being the axis of rotation.
(2) Tolerances on electrical parameters are available on request.
(3) Under laminar flow conditions at 0.25 m/s along X axis. Measured at 145 mm from the bottom surface of the stage. Contact ETEL for more details.
(4) Terminal to terminal.

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