

TECNOTION[®]

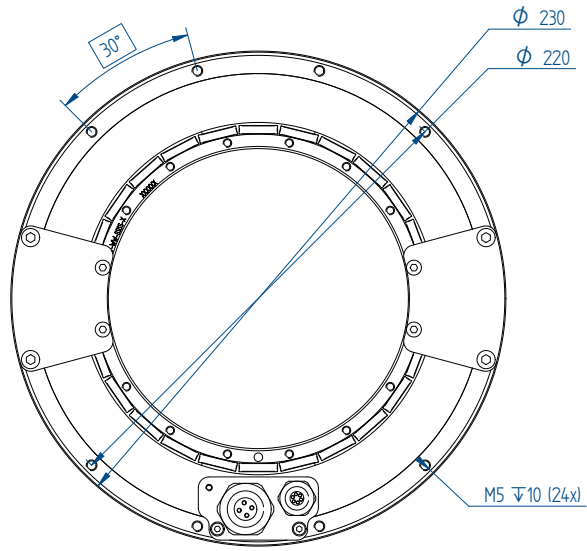
THE LINEAR MOTOR COMPANY

Frameless torque motor series

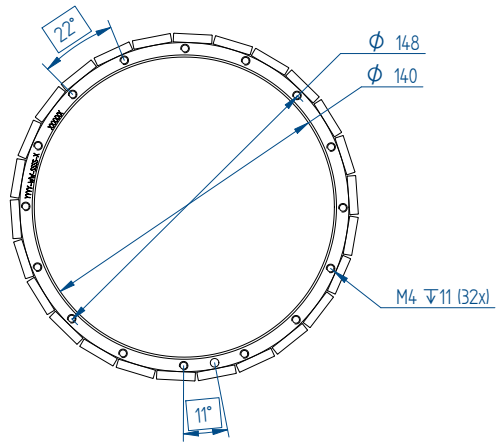


Mounting instructions and tolerances can be found in the torque installation manual. Manuals and 3D CAD files can be downloaded from our website.

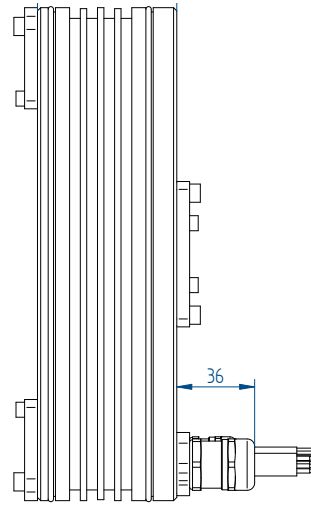
STATOR



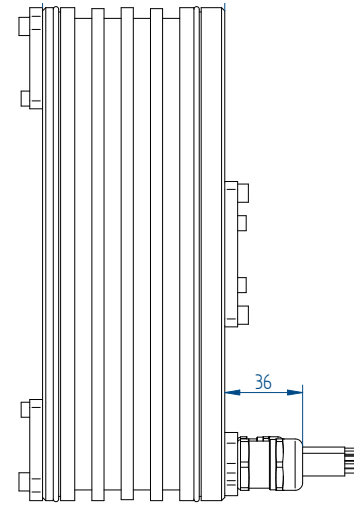
ROTOR



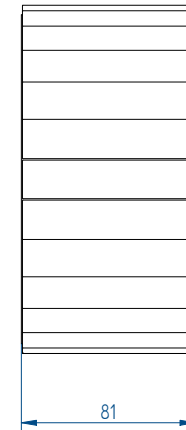
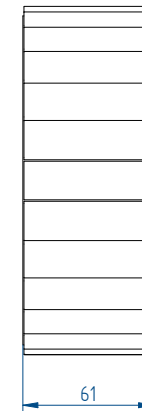
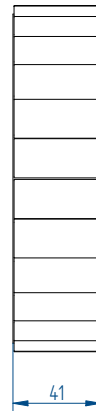
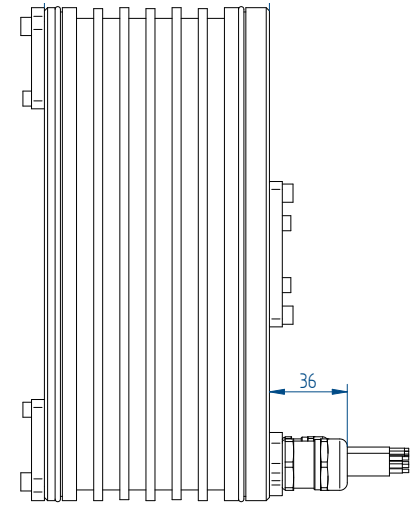
QTL-A 230-65



QTL-A 230-85



QTL-A 230-105



	Parameter	Remarks	Symbol	Unit	QTL-A 230-65	QTL-A 230-85	QTL-A 230-105
Performance	Winding type				N	N	N
	Motor type max. voltage ph-ph	3-phase synchronous		$V_{ac\ rms} (V_{dc})$	480 (680)		
	Ultimate torque @ 20°C/s increase	magnet @ 25°C	T_u	Nm	173	259	346
	Peak torque @ 6°C/s increase	magnet @ 25°C	T_p	Nm	140	211	281
	Continuous torque	coil @ 100°C	T_c	Nm	67	107	147
	Stall torque	coil @ 100°C	T_s	Nm	48	76	104
	Maximum speed ⁽¹⁾	@ T_c @ 680 Vdc	n_{max}	rpm	709	451	321
	Motor torque constant	up to I_c	K_t	Nm/A _{rms}	8.7	13.1	17.5
	Motor constant	coils @ 25°C	K_m	(Nm) ² /W	8.0	13.5	19.2
	Electrical	Ultimate current	magnet @ 25°C	I_u	A _{rms}	22.0	22.0
Peak current		magnet @ 25 °C	I_p	A _{rms}	16.9	16.9	16.9
Maximum continuous current ⁽²⁾		coils @ 100°C	I_c	A _{rms}	7.69	8.16	8.42
Stall current ⁽²⁾		coils @ 100°C	I_s	A _{rms}	5.44	5.77	5.95
Back EMF phase-phase _{peak}			K_e	V/krpm	747	1121	1494
Back EMF phase-phase _{RMS}			K_e	V/krpm	528	793	1057
Coil resistance per phase		coils @ 25°C ex. cable	R	Ω	3.18	4.25	5.31
Coil induction per phase		$l < 0.6 I_p$	L	mH	16.0	22.3	28.7
Electrical time constant			τ_e	ms	5.0	5.3	5.4
Poles			N_{mgn}	nr	26	26	26
Thermal	Continuous power loss	coils @ 100°C	P_c	W	735	1102	1469
	Thermal resistance ⁽³⁾	coils to mount. sfc.	R_{th}	°C/W	0.109	0.073	0.054
	Thermal time constant		τ_{th}	s	49	44	41
	Water cooling flow	for $\Delta T=3K$	Φ_w	l/min	3.5	5.3	7.0
	Water Cooling pressure drop	order of magnitude	ΔP_w	bar	0.7	1.0	1.5
	Temperature cut-off / sensor				PTC 1kΩ (3x) / PT1000 (3x)		
Mechanical	Stator OD		OD_s	mm	230		
	Rotor ID		ID_R	mm	140		
	Motor height		H_{motor}	mm	65	85	105
	Lamination stack height		H_{arm}	mm	40	60	80
	Rotor inertia		J_R	kg*m ²	0.009	0.014	0.019
	Stator mass	excluding cables	M_s	kg	5.2	7.2	9.0
	Rotor mass		M_R	kg	1.6	2.4	3.2
	Total mass	excluding cables	M_T	kg	6.8	9.6	12.2
	Cable mass	all cables	m	g	500		
	Cable type (power)	length 2 m	d	mm (AWG)	10.6 (13)		
Cable type (sensor)	length 2 m	d	mm (AWG)	6.4 (25)			



QTL 230 series, with a height of 85 mm

All specifications ±0%

1. Actual values depend on bus voltage. Please check the T/n diagram in our manual or online simulation tool.
2. These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool or manual.
3. R_{th} based on given water flow and pressure.

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