

TECNOTION[®]

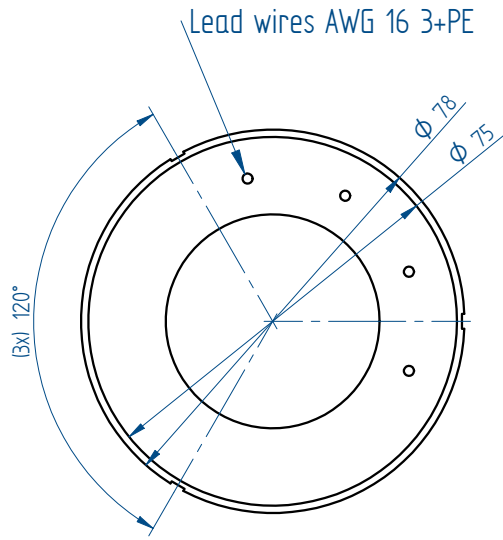
THE LINEAR MOTOR COMPANY

Frameless torque motor series

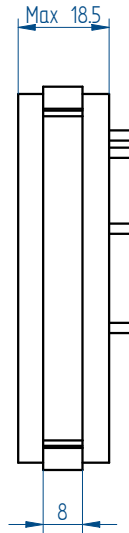


Mounting instructions and tolerances can be found in the torque installation manual. Manuals and 3D CAD files can be downloaded from our website.

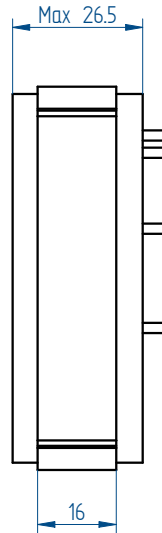
STATOR



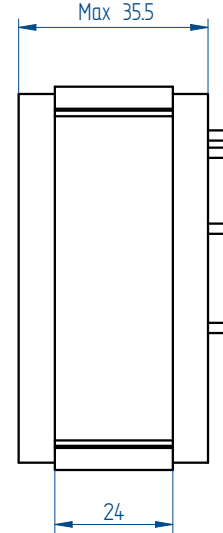
QTR-A 78-17



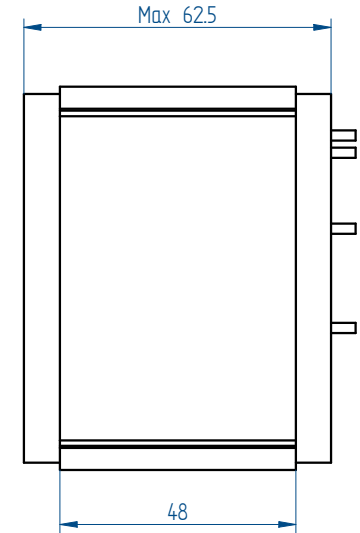
QTR-A 78-25



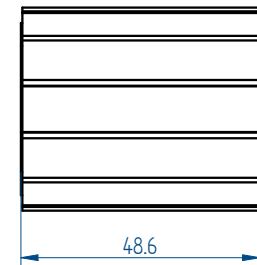
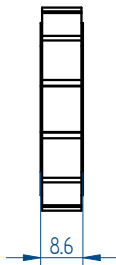
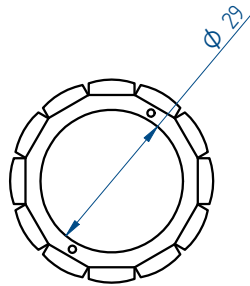
QTR-A 78-34



QTR-A 78-60



ROTOR



* All sizes are in mm

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	Parameter	Remarks	Symbol	Unit	QTR-A 78-17	QTR-A 78-25	QTR-A 78-34	QTR-A 78-60
Performance	Winding type				N	Y	Y	Y
	Motortype max. voltage ph-ph	3-phase synchronous		$V_{acrms} (V_{dc})$	420 (600)			
	Ultimate torque @ 20°C/s increase	magnet @ 25°C	T_u	Nm	1.22	2.93	4.54	10.85
	Peak torque @ 6°C/s increase	magnet @ 25°C	T_p	Nm	0.84	1.90	2.88	7.57
	Continuous torque	coil @ 100°C	T_c	Nm	0.57	1.38	2.19	4.41
	Maximum speed ⁽³⁾ @ 48 Volt	@ Tc @ 48 Vdc	n_{max}	rpm	2657	2360	1463	324
	Maximum speed @ max. voltage	@ Tc	n_{max}	rpm	23000	23000	23000	8147
	Motor torque constant	up to Ic	K_t	Nm/A _{rms}	0.117	0.131	0.198	0.530
	Motor constant	coils @ 25°C	K_m	(Nm) ² /W	0.0053	0.0166	0.0304	0.0842
	Electrical	Ultimate current	magnet @ 25°C	I_u	A _{rms}	13.84	27.98	27.98
Peak current		magnet @ 25°C	I_p	A _{rms}	7.58	15.32	15.32	15.05
Maximum continuous current		coils @ 100°C	I_c	A _{rms}	4.89	10.56	11.08	8.33
Back EMF phase-phase _{peak}			K_e	V/krpm	10.0	11.2	16.9	45.3
Back EMF phase-phase _{RMS}			K_e	V/krpm	7.1	7.9	12.0	32.0
Coil resistance per phase		coils @ 25°C ex. cable	R	Ω	0.857	0.342	0.430	1.111
Coil induction per phase		$l < 0.6$ lp	L	mH	1.35	0.76	1.04	3.4
Electrical time constant		coils @ 25°C	τ_e	ms	1.6	2.2	2.4	3.1
Poles			N_{mgn}	nr	12	12	12	12
Thermal		Continuous power loss	coils @ 100°C	P_c	W	80	150	207
	Thermal resistance ⁽²⁾	coils to mount. sfc.	R_{th}	°C/W	0.99	0.53	0.39	0.26
	Thermal time constant	up to 63% max. coiltemp.	τ_{th}	s	20	16	16	41
	Temperature cut-off / sensor				No temperature sensor			
Mechanical	Stator OD		OD _S	mm	78			
	Rotor ID		ID _R	mm	29			
	Motor height		H _{motor}	mm	18	26	35	62
	Lamination stack height		H _{arm}	mm	8	16	24	48
	Rotor inertia		J _R	kg*m ²	1.3E-05	2.5E-05	3.8E-05	7.6E-05
	Stator mass	excluding cables	M _S	g	208	353	501	1003
	Rotor mass		M _R	g	42	84	126	243
	Total mass	excluding cables	M _T	g	250	437	627	1246
	Cable mass	all cables	m	g	36			
Cable type (power)	length 0.5 m	d	mm (AWG)	2.06 (16)				



QTR-A 78 Stator and rotor shown with a height of 17 mm

1. 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.
2. R_{th} based on radial mounting of stator lamination stack.
3. MAXIMUM allowable speed for QTR-A 78 series motors is 23.000 rpm. If you plan a high speed application, please contact Tecnotion.

All specifications ±0%

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