

Torque QTR 78 series



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

Parameter	Remarks	Symbol	Unit	QTR-A 78-17	QTR-A 78-25	QTR-A 78-34	QTR-A 78-60
Winding type				N	Y	Y	Y
Motor type 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	@ T_c @ 48 V_{dc}	n_{max}	rpm	2657	2360	1463	324
Maximum speed @ max. voltage	@ T_c	n_{max}	rpm	23000	23000	23000	8147
Motor torque constant	up to I_c	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
Ultimate current	magnet @ 25°C	I_u	A_{rms}	13.84	27.98	27.98	24.99
Peak current	magnet @ 25°C	I_p	A_{rms}	7.58	15.32	15.32	15.05
Maximum continuous current ⁽¹⁾	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	$l < 0.6 I_p$	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
Continuous power loss	coils @ 100°C	P_c	W	80	150	207	302
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			
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)			

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 $\pm 10\%$

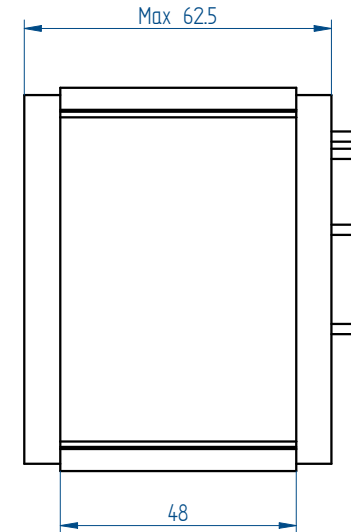
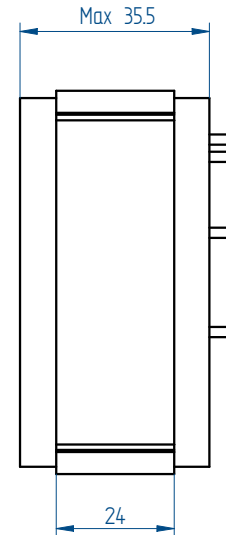
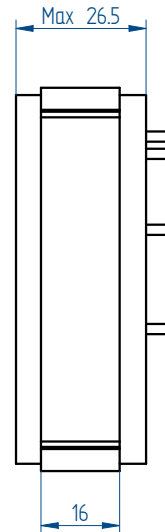
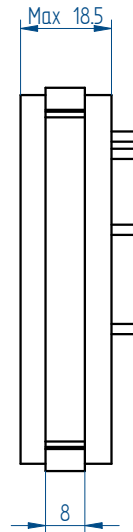
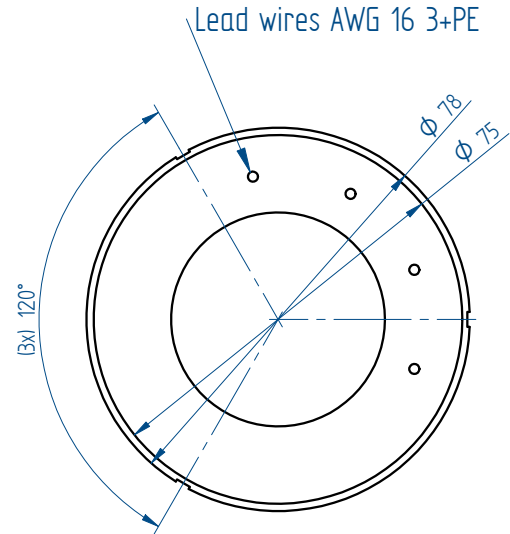
QTR-A 78-17

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QTR-A 78-60

Stator



Rotor

