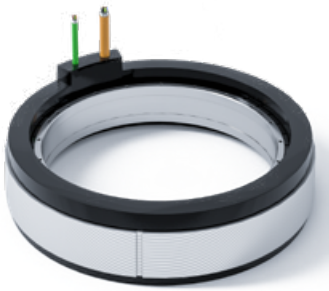
Torque QTL 290 series



QTL 290 series, with a height of 65 mm

	Parameter	Remarks	Symbol	Unit	QTL-A 290-65	QTL-A 290-85	QTL-A 290-105
Performance	Winding type				N	N	N
	Motortype 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	389	583	778
	Peak torque @ 6°C/s increase	magnet @ 25°C	T_p	Nm	316	474	632
	Continuous torque	coil @ 100°C	T_c	Nm	140	222	305
	Stall torque	coil @ 100°C	T_s	Nm	99	157	215
	Maximum speed[1]	@ T_c @ 680 V_{dc}	n_{max}	rpm	306	189	130
	Motor torque constant	up to I_c	K_t	Nm/A_{rms}	19.7	29.5	39.3
	Motor constant	coils @ 25°C	K_m	$(Nm)^2/W$	27.0	45.5	64.7
Electrical	Ultimate current	magnet @ 25°C	I_u	A_{rms}	22.0	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}	7.14	7.54	7.75
	Stall current[2]	coils @ 100°C	I_s	A_{rms}	5.05	5.33	5.48
	Back EMF phase-phase$_{peak}$		K_e	V/krpm	1681	2521	3362
	Back EMF phase-phase$_{RMS}$		K_e	V/krpm	1189	1783	2377
	Coil resistance per phase	coils @ 25°C ex. cable	R	Ω	4.77	6.37	7.96
	Coil induction per phase	$I < 0.6\ I_p$	L	mH	23.9	34.7	45.5
	Electrical time constant		τ_e	ms	5.0	5.5	5.7
	Poles		N_{mgn}	nr	38	38	38
Thermal	Continuous power loss	coils @ 100°C	P_c	W	948	1410	1864
	Thermal resistance[3]	coils to mount. sfc.	R_{th}	°C/W	0.084	0.057	0.043
	Thermal time constant	up to 63% max. coiltemp	τ_{th}	s	57	52	49
	Temperature cut-off / sensor				PTC 1kΩ (3x) / PT1000 (3x)		
Mechanical	Stator OD		OD_S	mm	290		
	Rotor ID		ID_R	mm	220		
	Motor height		H_{motor}	mm	65	85	105
	Lamination stack height		H_{arm}	mm	40	60	80
	Rotor inertia		J_R	$kg*m^2$	0.031	0.046	0.061
	Stator mass	excluding cables	M_S	kg	6.0	8.3	10.8
	Rotor mass		M_R	kg	2.3	3.5	4.7
	Total mass	excluding cables	M_T	kg	8.3	11.8	15.5
	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)		

All specifications ±10%

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. *Rth based on radial mounting of stator lamination stack.*

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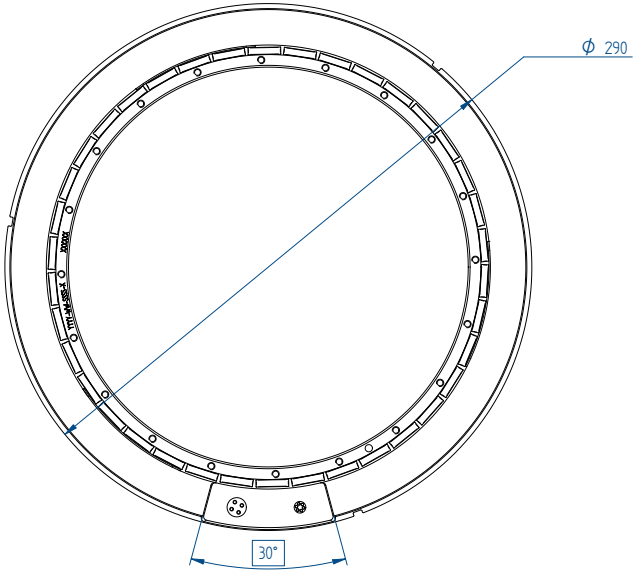
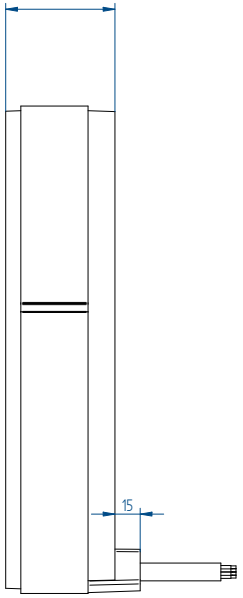
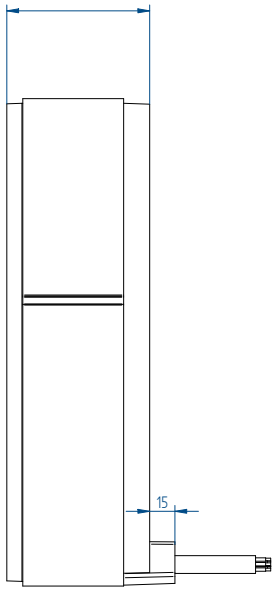
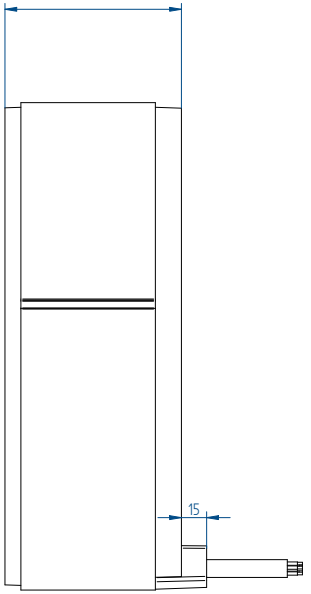
	QTL-A 290-65	QTL-A 290-85	QTL-A 290-105

Stator

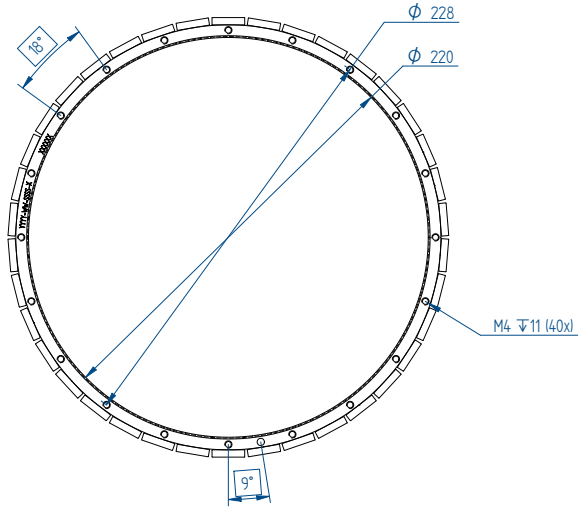


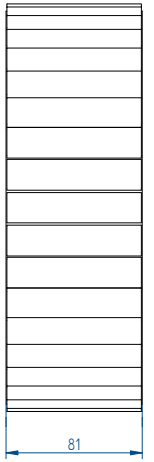






Rotor





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

** All sizes are in mm*