



QTL-A-485-85 stator and rotor

QTL 485 series with cooling ring

Parameter	Remarks	Symbol	Unit	QTL-A-485-85	QTL-A-485-105
Performance	Winding type			I	I
Motor type, max voltage ph-ph	3-phase synchronous	U_{max}	$V_{ac,rms} (V_{dc})$	480 (680)	
Ultimate torque @ 20 K/s increase	magnets @ 25°C	T_u	Nm	1651	2202
Peak torque @ 6 K/s increase	magnets @ 25°C	T_p	Nm	1342	1789
Continuous torque ¹	coils @ 100°C	T_c	Nm	659	907
Stall torque ¹	coils @ 100°C	T_s	Nm	466	642
Maximum speed ²	@ U_{max} @ T_c	n_{max}	rpm	138	96
Motor torque constant	$I \leq I_c$	K_t	Nm/A _{rms}	41.7	55.6
Motor constant	coils @ 25°C	K_m	(Nm) ² /W	218.5	310.7
Electrical	Ultimate current	I_u	A _{rms}	44.0	44.0
Peak current	magnets @ 25°C	I_p	A _{rms}	33.8	33.8
Continuous current ¹	coils @ 100°C	I_c	A _{rms}	15.8	16.3
Stall current ¹	coils @ 100°C	I_s	A _{rms}	11.2	11.5
Back EMF ph-ph _{peak}		K_e	V/krpm	3569	4758
Back EMF ph-ph _{rms}		K_e	V/krpm	2523	3364
Resistance per phase	coils @ 25°C ex. cable	R_{ph}	Ω	2.66	3.32
Induction per phase	$I < 0.6 I_p$	L_{ph}	mH	14.5	19.0
Electrical time constant		τ_e	ms	5.4	5.7
Thermal	Continuous power loss ¹	P_c	W	2584	3444
Thermal resistance	coils to mount. sfc.	R_{th}	K/W	0.031	0.023
Thermal time constant		τ_{th}	s	47	44
Water cooling flow	for $\Delta T=3K$	Φ_W	l/min	12.4	16.5
Temperature sensor				PTC 1kΩ (3x)/ Pt1000 (3x)	
Mechanical	Stator OD	OD_s	mm	485	
Rotor ID		ID_r	mm	366	
Stator height		H_s	mm	85	105
Lamination stack height		H_{arm}	mm	60	80
Poles		N_{mgn}		62	
Rotor inertia		J_r	kg m ²	0.357	0.476
Stator mass	ex. cables	m_s	kg	18.75	25
Rotor mass		m_r	kg	9.68	12.9
Total mass	ex. cables	m	kg	28.43	37.9
Cable mass	all cables	m	kg/m	0.25	
Cable type (power)	length 2 m	d	mm (AWG)	10.6 (13)	
Cable type (sensor)	length 2 m	d	mm (AWG)	6.4 (25)	

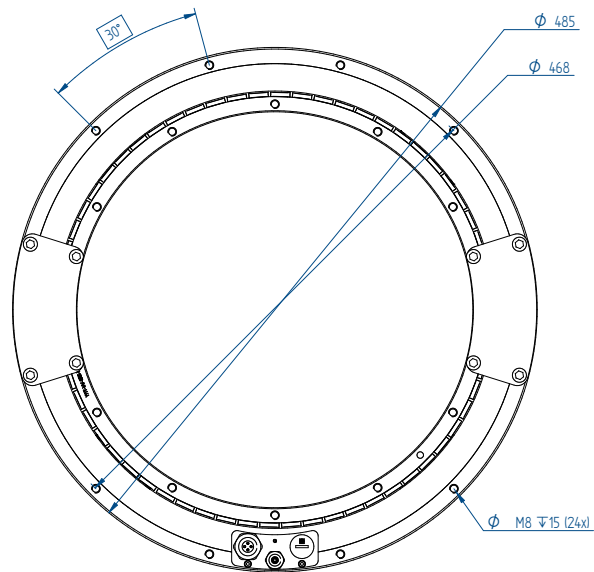
¹ These values are only applicable when the mounting surface is at 20°C and the motor is driven at continuous current. If these values differ in your application, please check our simulation tool.

² Actual values depend on bus voltage. Please check the T/n diagram in our manual or online simulation tool.

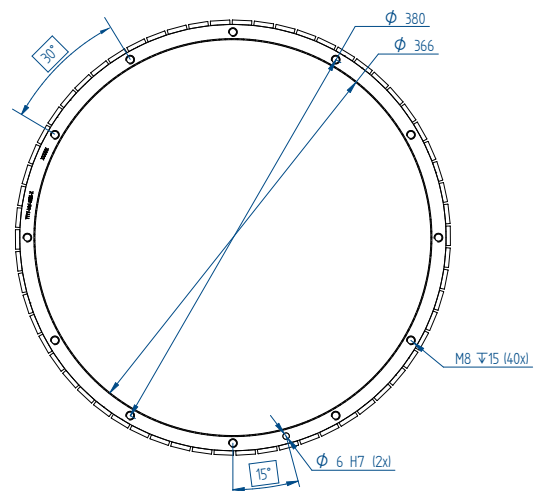
Series approvals



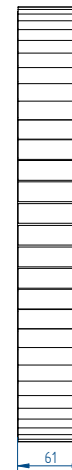
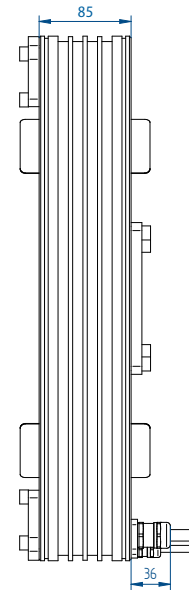
Stator



Rotor



QTL-A-485-85



QTL-A-485-105

