QTR 133 series

QTR-A-133-17 stator and rotor

	Parameter	Remarks	Symbol	Unit	QTR-A-133-17			QTR-A-133-25			QTR-A-133-34		QTR-A-133-60
Performance	Winding type				N	Y	Z	N	Y	Z	N	Z	N
	Motor type, max voltage ph-ph	3-phase synchronous	U_{max}	$V_{ac\ rms}$ (V_{dc})	230 (325)								400 (565)
	Ultimate torque @ 20 K/s increase	magnets @ 25°C	T_u	Nm	5.6	6.5	6.5	11.9	13.6	13.6	20.5	20.3	55.4
	Peak torque @ 6 K/s increase	magnets @ 25°C	T_p	Nm	3.7	4.3	4.3	7.4	8.6	8.6	13.0	12.8	35.2
	Continuous torque[1]	coils @ 100°C	T_c	Nm	2.6	2.6	2.6	5.8	6.0	6.0	9.8	9.4	22.2
	Maximum speed[2]	@ 48 V_{dc} @ T_c	n_{max}	rpm	335	855	1678	44	352	803	123	491	158
	Maximum speed[2]	@ U_{max} @ T_c	n_{max}	rpm	4009	5000	5000	2053	3811	5000	1071	4561	681
	Motor torque constant	$I \leq I_c$	K_t	Nm/A_{rms}	0.58	0.32	0.19	1.16	0.65	0.37	2.08	0.56	5.55
	Motor constant	coils @ 25°C	K_m	$(Nm)^2/W$	0.058	0.060	0.060	0.166	0.173	0.173	0.340	0.312	1.082
Electrical	Ultimate current	magnets @ 25°C	I_u	A_{rms}	13.9	28.3	48.9	13.9	28.3	48.9	13.3	48.9	13.6
	Peak current	magnets @ 25°C	I_p	A_{rms}	7.5	15.3	26.5	7.5	15.3	26.5	7.3	26.5	7.4
	Continuous current[1]	coils @ 100°C	I_c	A_{rms}	4.4	8.1	14.0	5.1	9.2	16.0	4.7	16.8	4.0
	Back EMF ph-ph$_{peak}$		K_e	V/krpm	49	28	16	99	55	32	178	48	475
	Back EMF ph-ph$_{rms}$		K_e	V/krpm	35	20	11	70	39	23	126	34	336
	Resistance per phase	coils @ 25°C ex. cable	R_{ph}	Ω	1.93	0.58	0.19	2.69	0.81	0.27	4.24	0.34	9.49
	Induction per phase	$I < 0.6\ I_p$	L_{ph}	mH	3.80	1.19	0.40	5.91	1.85	0.62	11.56	0.84	36.75
	Electrical time constant		τ_e	ms	2.0	2.1	2.1	2.2	2.3	2.3	2.7	2.5	3.9
Thermal	Continuous power loss[1]	coils @ 100°C	P_c	W	147			268			368		590
	Thermal resistance	coils to mount. sfc.	R_{th}	K/W	0.51			0.28			0.20		0.13
	Thermal time constant		τ_{th}	s	21	24	24	16	19	19	18	17	26
	Temperature sensor				PTC 1kΩ / KTY83-122								
Mechanical	Stator OD		OD_s	mm	133								
	Rotor ID		ID_r	mm	84								
	Stator height		H_s	mm	17			25			34		60
	Lamination stack height		H_{arm}	mm	8			16			24		48
	Poles		N_{mgn}		28								
	Rotor inertia		J_r	kg m^2	2.1E-04			4.2E-04			6.2E-04		1.2E-03
	Stator mass	ex. cables	m_s	g	414			717			1037		2090
	Rotor mass		m_r	g	106			208			309		613
	Total mass	ex. cables	m	g	520			925			1346		2703
	Cable mass	all cables	m	g/m	126	180	180	126	180	180	126	180	190
	Cable type (power)	length 0.5 m	d	mm (AWG)	6.5 (20)	6.7 (14)	6.7 (14)	6.5 (20)	6.7 (14)	6.7 (14)	6.5 (20)	6.7 (14)	9.6 (18)
	Cable type (sensor)	length 0.5 m	d	mm (AWG)	4.5 (26)								

[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

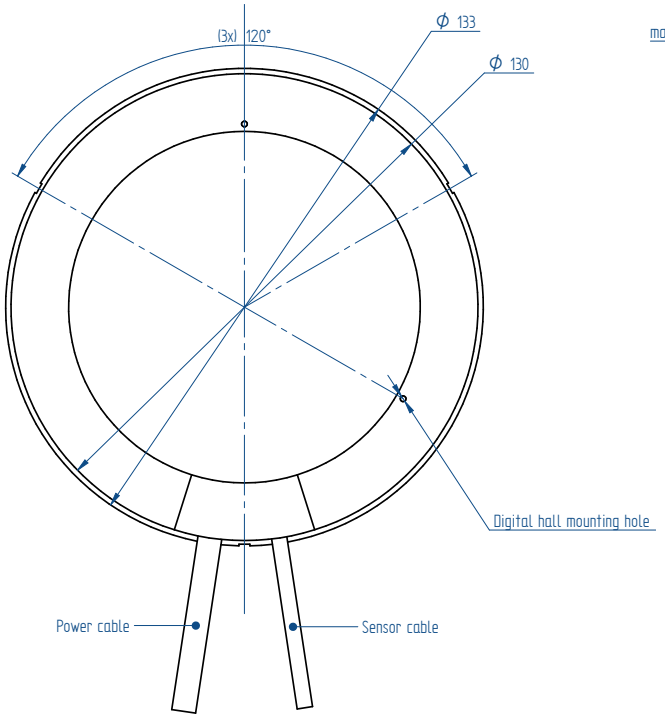
*N-windings approved, full approval pending.

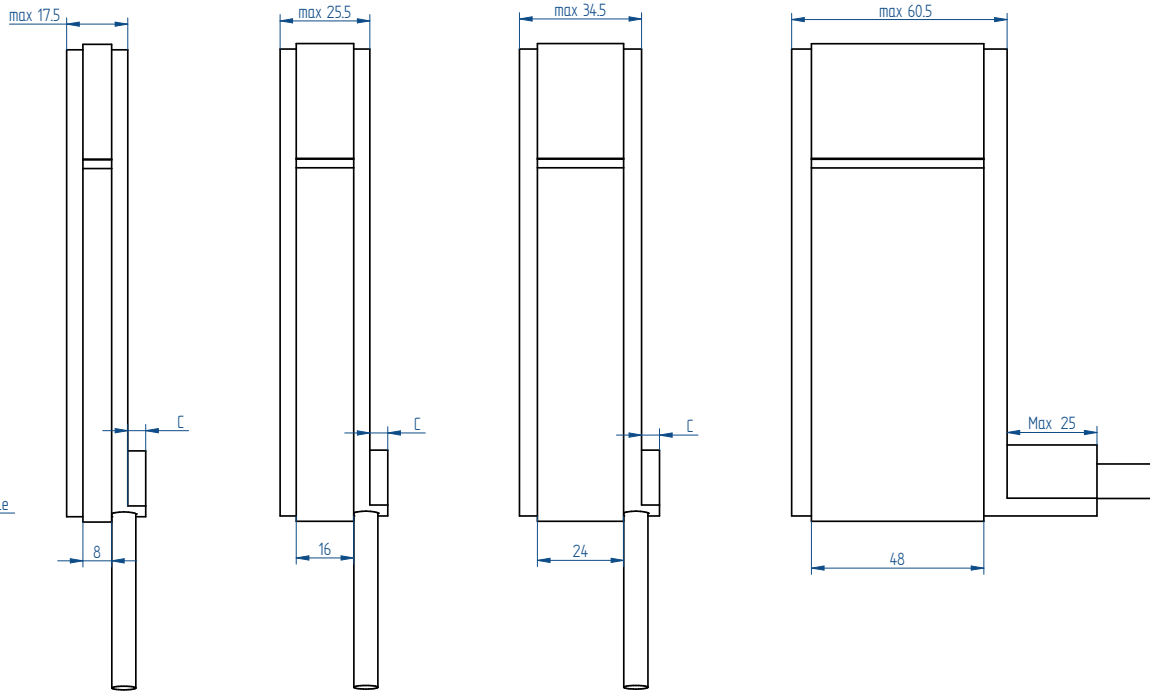
All specifications ±10%

TECNOTION®
direct drive in motion

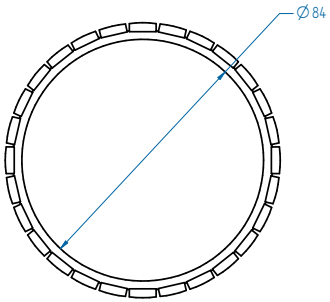
	QTR-A-133-17	QTR-A-133-25	QTR-A-133-34	QTR-A-133-60

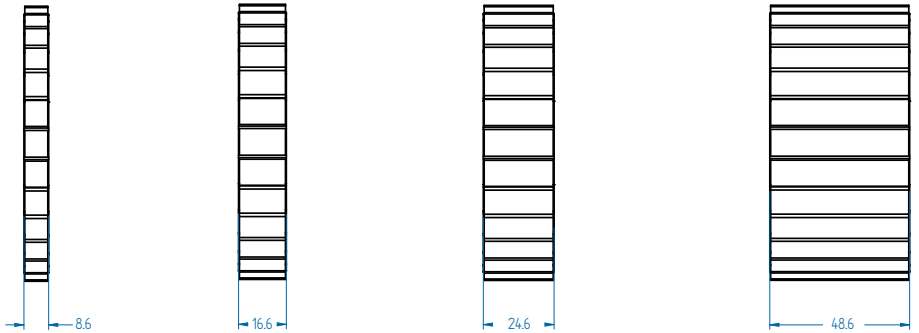
Stator





Rotor





Winding	C (mm)
N	max 3.5
Y+Z	max 5.5

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*