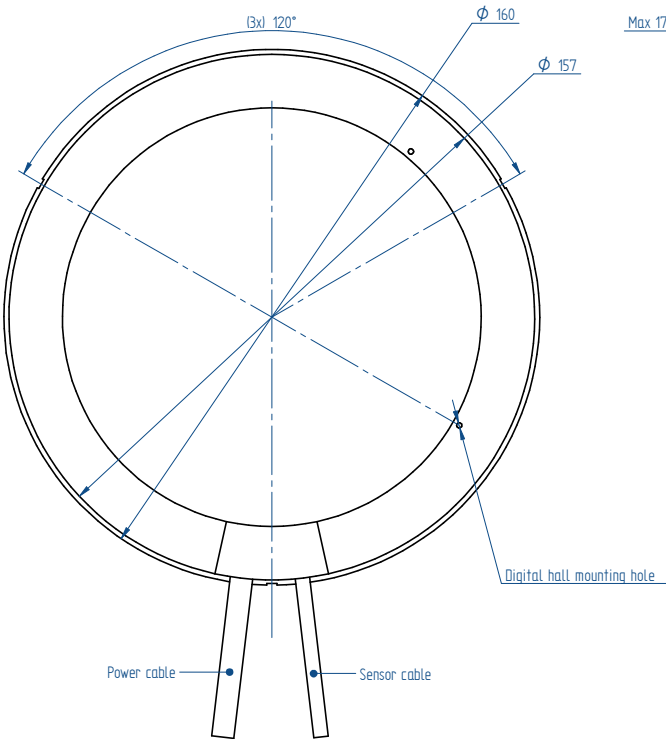
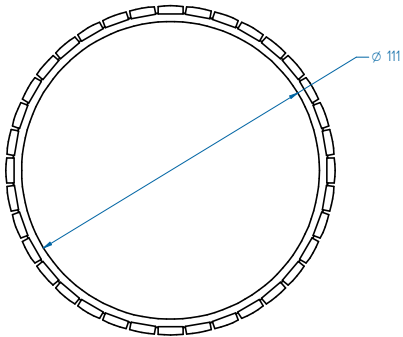


Mounting instructions and tolerances can be found in the torque installation manual. Manuals and 3D CAD files can be downloaded from our website.

STATOR

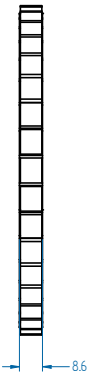
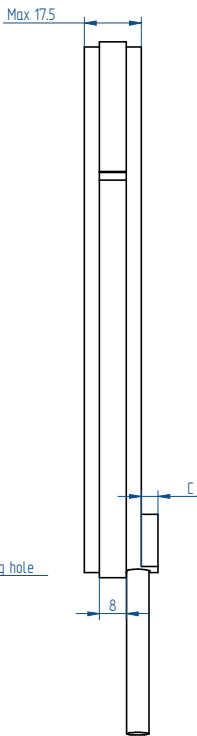


ROTOR

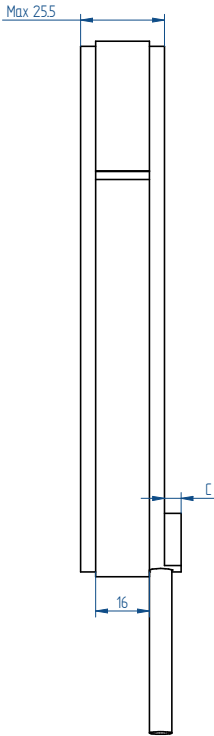


* All sizes are in mm

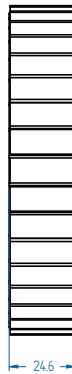
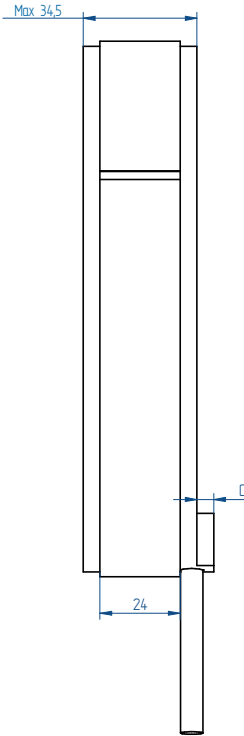
QTR-A 160-17



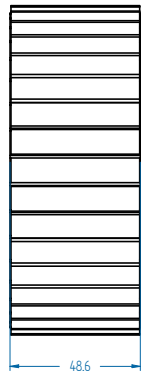
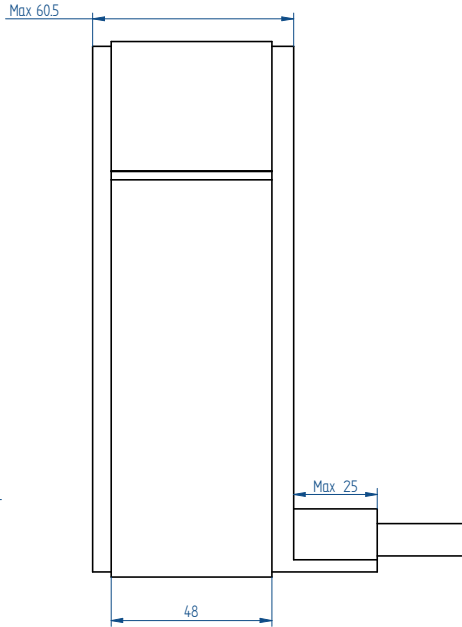
QTR-A 160-25



QTR-A 160-34



QTR-A 160-60



winding	C (mm)
N	3.5
Y+Z	5.5

	Parameter	Remarks	Symbol	Unit	QTR-A-160-17			QTR-A-160-25			QTR-A-160-34		QTR-A-160-60
Performance	Winding type				N	Y	Z	N	Y	Z	N	Z	N
	Motortype max. voltage ph-ph	3-phase synchronous		$V_{acrms} (V_{dc})$	230 (300)								420 (600)
	Ultimate torque @ 20°C/s increase	magnet @ 25°C	T_u	Nm	9.3	10.6	10.6	19.6	22.4	22.4	34.1	33.6	91.6
	Peak torque @ 6°C/s increase	magnet @ 25°C	T_p	Nm	6.2	7.1	7.1	12.5	14.2	14.2	21.7	21.4	58.3
	Continuous torque	coil @ 100°C	T_c	Nm	4.1	4.2	4.2	9.4	9.7	9.7	15.7	15.0	36.3
	Maximum speed ⁽³⁾ @ 48 Volt	@ T_c	n_{max}	rpm	142	467	965	0	165	441	0	259	0
	Maximum speed @ max. voltage	@ T_c	n_{max}	rpm	2145	3871	6663	1084	2039	3604	555	2464	411
	Motor torque constant	up to I_c	K_t	Nm/A _{rms}	0.96	0.54	0.31	1.92	1.07	0.62	3.45	0.93	9.20
	Motor constant	coils @ 25°C	K_m	(Nm) ² /W	0.12	0.13	0.13	0.35	0.38	0.38	0.73	0.67	2.29
Electrical	Ultimate current	magnet @ 25°C	I_u	A _{rms}	13.8	28.2	48.8	13.8	28.2	48.8	13.3	48.8	13.5
	Peak current	magnet @ 25°C	I_p	A _{rms}	7.6	15.4	26.7	7.6	15.4	26.7	7.3	26.7	7.4
	Maximum continuous current ⁽¹⁾	coils @ 100°C	I_c	A _{rms}	4.3	7.8	13.4	4.9	9.0	15.7	4.6	16.2	3.9
	Back EMF phase-phase _{peak}		K_e	V/krpm	82	46	26	164	92	53	295	79	787
	Back EMF phase-phase _{RMS}		K_e	V/krpm	58	32	19	116	65	37	209	56	556
	Coil resistance per phase	coils @ 25°C ex. cable	R	Ω	2.47	0.75	0.25	3.47	1.03	0.35	5.45	0.44	12.30
	Coil induction per phase	$l < 0.6 I_p$	L	mH	4.89	1.57	0.52	7.68	2.45	0.82	15.0	1.11	47.9
	Electrical time constant	coils @ 25°C	τ_e	ms	2.0	2.1	2.1	2.2	2.4	2.4	2.8	2.5	3.9
	Poles		N_{mgn}	nr	36	36	36	36	36	36	36	36	36
Thermal	Continuous power loss	coils @ 100°C	P_c	W	174	174	174	326	326	326	441	441	750
	Thermal resistance ⁽²⁾	coils to mount. sfc.	R_{th}	°C/W	0.43	0.43	0.43	0.23	0.23	0.23	0.17	0.17	0.10
	Thermal time constant	up to 63% max. coiltemp	τ_{th}	s	25	29	29	19	22	22	21	21	29
	Temperature cut-off / sensor				PTC 1kΩ / KTY83-122								
Mechanical	Stator OD		OD _s	mm	160								
	Rotor ID		ID _R	mm	111								
	Motor height		H _{motor}	mm	17			25			34		60
	Lamination stack height		H _{arm}	mm	8			16			24		48
	Rotor inertia		J _R	kg*m ²	4.7E-04			9.2E-04			1.4E-03		2.6E-03
	Stator mass	excluding cables	M _s	g	527			875			1212		2555
	Rotor mass		M _R	g	138			269			401		754
	Total mass	excluding cables	M _T	g	665			1144			1613		3309
	Cable mass	all cables	m	g	63	90	90	63	90	90	63	90	95
	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)	4.3 (26)								



QTR-A-160 Stator and rotor shown with a height of 17mm

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 160 series motors is 12,000 rpm. If you plan a high speed application, please contact Tecnotion.

All specifications ±10%