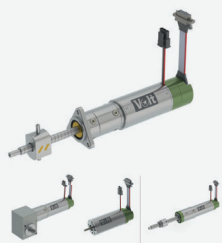




TECHNOLOGY PROTECTS FUTURE



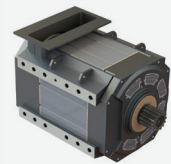
Slotless Motors



Frameless Motors



Servo Motors

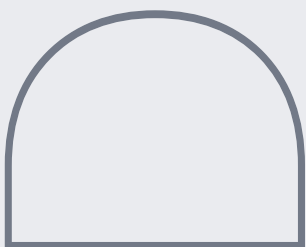
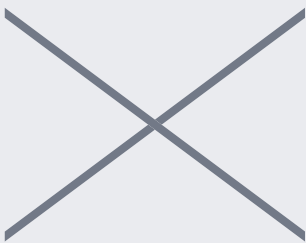


**Power System
Engines**

VOLT TECHNOLOGY

Adopts the principle of aiming to be the leading one/firm in the field by manufacturing innovative products and technologies via decreasing the external dependencies approach and combining R&D concepts by continuous development and maintainability.

It continues to work on power group system design, production and integration with the leading companies of the sector in order to gain test and technological competence in the field of engines and powertrains, which is important for Power Group Development and Systems.



OUR COMPETENCIES

- Design
- Manufacturing
- Test

MOTOR SERIES

- VsOm Slotless
- VsSr Servo
- VsGm Frameless

Performance Data, Dimension,
Performance Chart

Manufacturing

- Machining
- Coil Winding
- Mounting
- Lamination
- Metal Injection
- Plastic Injection
- Mould Manufacturing
- Cabling
- Wire EDM
- Dyeing

Volt Technology has prototype and mass production capabilities by hi-tech electrical, electronical, mechanical and analytical model methods.

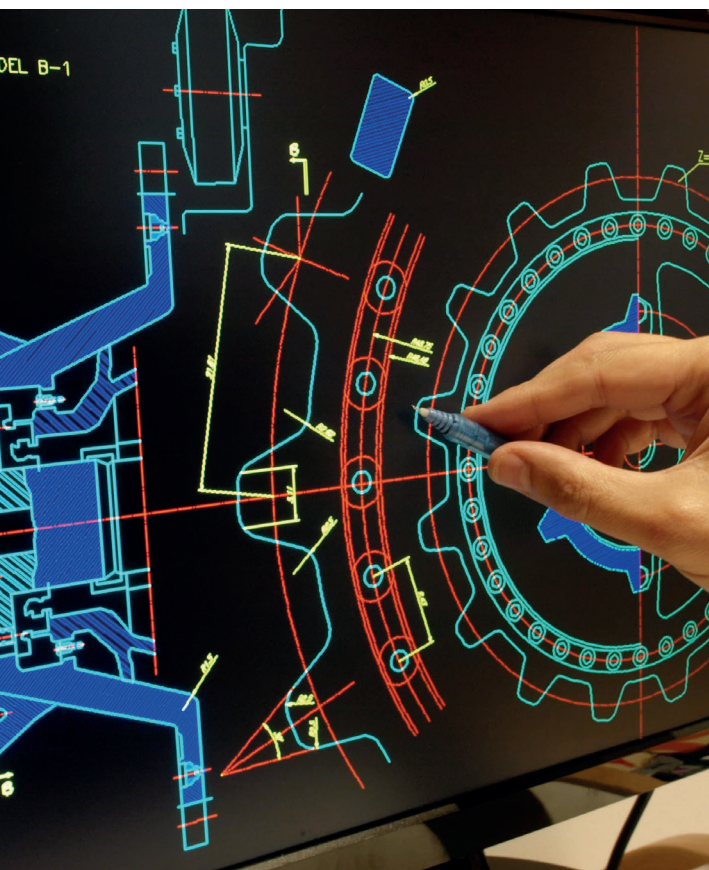
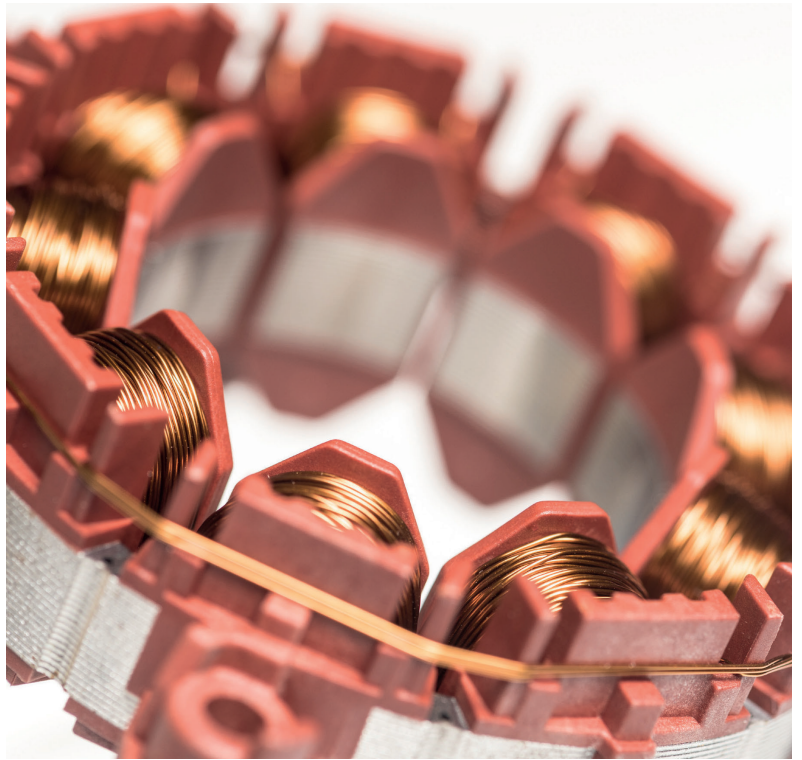
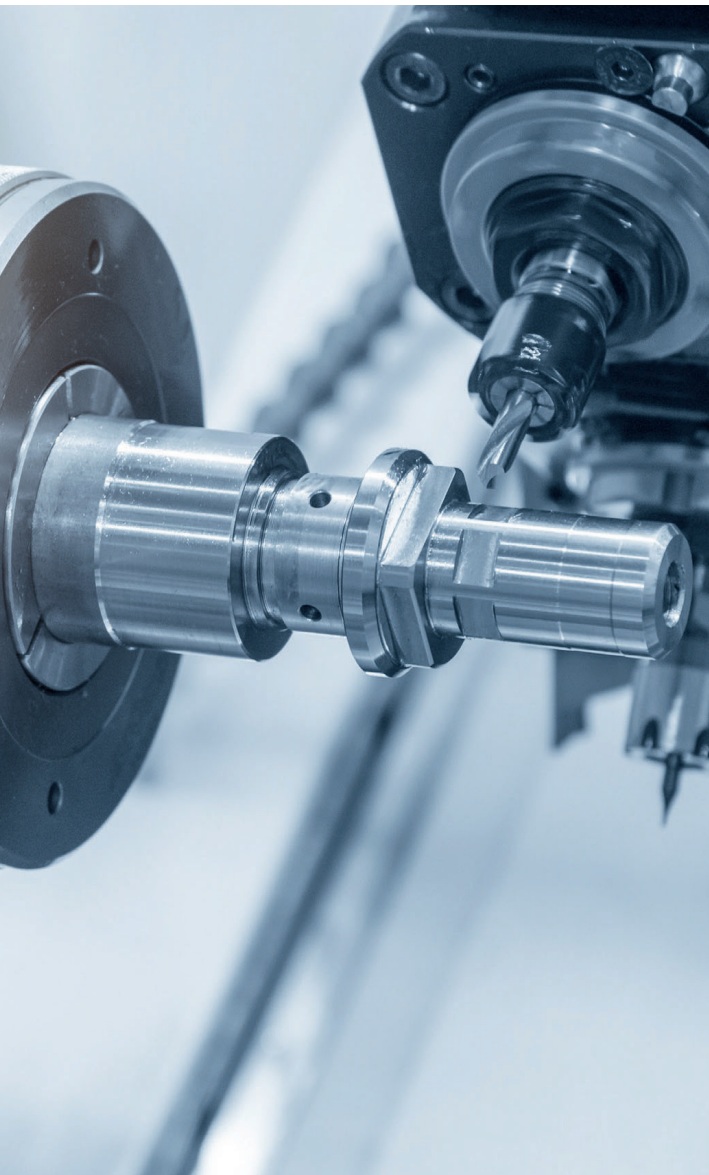
Besides, automatic mass production band setups, design and production of test systems, machines, moulds and kits are being implemented.

Design

Test

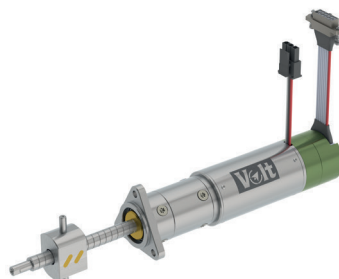
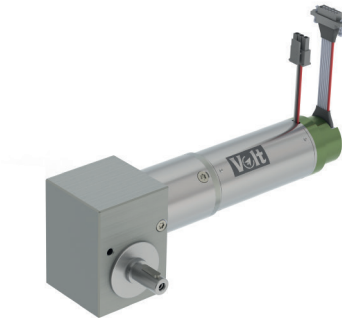
Within our workspace, MIL-STD-810/DO-160G standards compatible tests are being performed with qualified personnel with 24 kinds of different test equipments perform;

- CMM Measurement
- Climatization Test
- Salt Fog Test
- Hardness Measurement
- Optical Emission Spectrometry Analysis
- Profile Projection Measurement
- Shaft Measurement
- Enamelled Magnet Wire Test
- Lamination Sheet Metal Control and Analysis
- Detriment Inspections and Analysis via Stereo and Optical Microscope



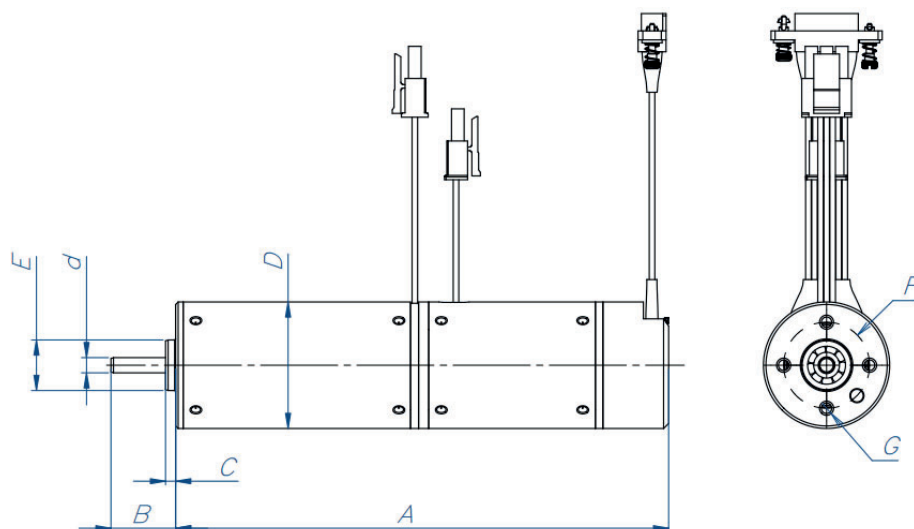
TECHNOLOGY
PROTECTS
FUTURE



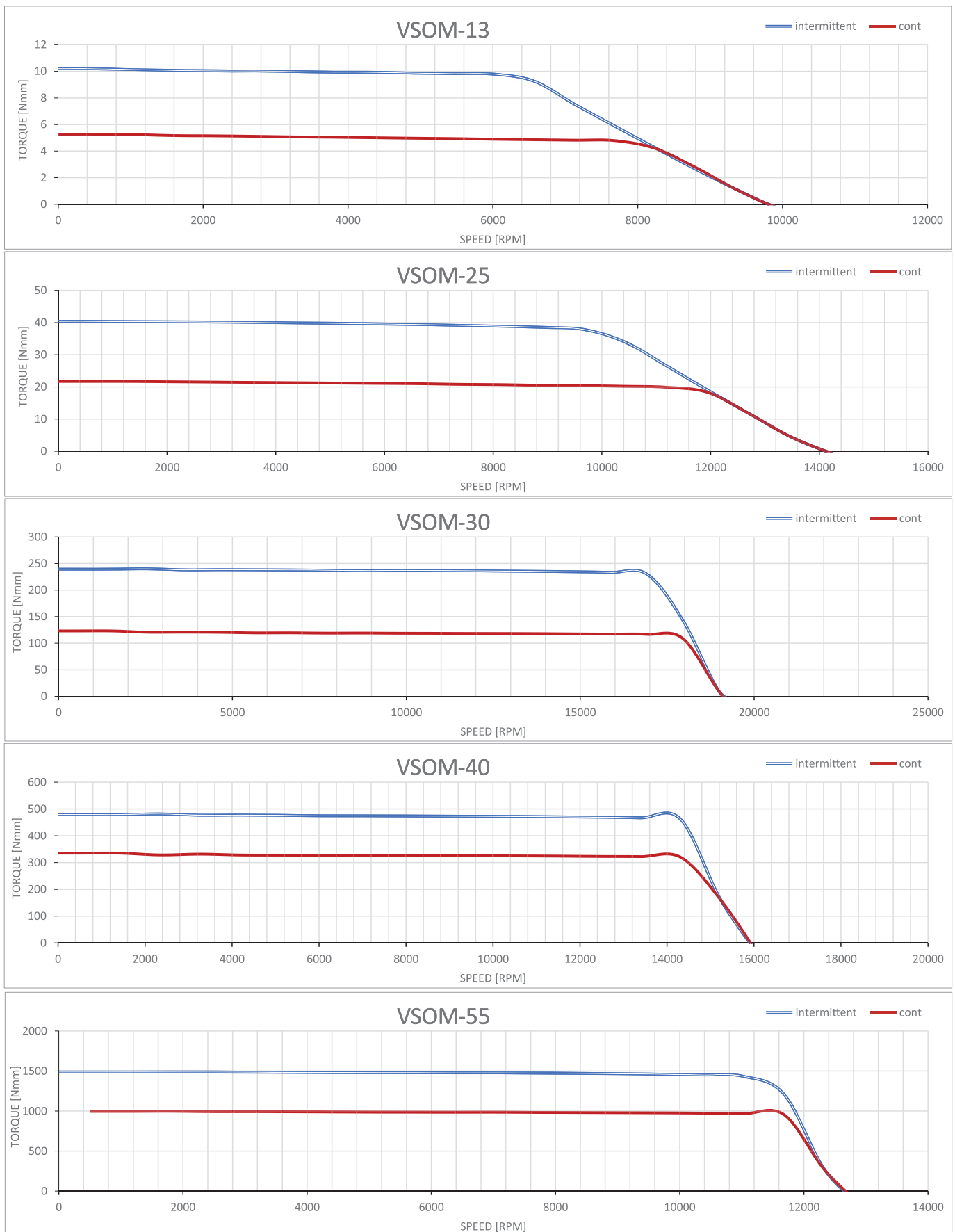


SLOTLESS MOTORS

SLOTLESS MOTOR PERFORMANCE DATA & PARAMETERS							
MOTOR PARAMETERS	SYMBOL	UNITS	Ø 13	Ø 25	Ø 30	Ø 40	Ø 55
Rated DC Voltage	U_n	V	6	24	48	28	48
Continuous Stall Torque	T_c	Nmm	5	20	120	330	1000
Continuous Phase Current	I_c	A_{rms}	0,85	1,3	4,5	19,6	28
Peak Stall Torque	T_p	Nmm	10	45	240	480	1500
Peak Phase Current	I_m	A_{rms}	1,7	2,6	8,6	29	45
Rated Shaft Torque	T_n	Nmm	5	21	120	330	1000
Rated Phase Current	I_n	A_{rms}	0,8	1,2	4,2	19,6	28
Rated Shaft Power	P_n	W	3,2	22	201	484	838
Rated Shaft Speed	n_n	Rpm	6.000	10.000	16.000	14.000	8.000
Torque Constant	K_t	Nmm/ A_{peak}	5,7	16,1	24,2	17,2	36,6
EMF Constant	K_e	V_s	0,006	0,0168	0,0252	0,0178	0,0377
Motor Constant	k_m	Rpm/V	0,0053	0,0101	0,0445	0,0832	0,1422
No Load Speed	n_o	Rpm	9600	13800	18300	15100	12200
Line to Line Resistance	R_{LL}	Ohm	1,14	2,5	0,29	0,042	0,065
Line to Line Inductance	L_{LL}	mH	0,077	0,42	0,062	0,012	0,027
Motor Inertia	J_m	kgmm ²	0,049	0,56	3,2	11,8	42,8
Motor Mass	m	gr	40	165	260	460	920



SLOTLESS MOTOR SIZE PARAMETERS [mm]								
	A	B	C	Ø D	Ø d	Ø E	Ø F	G
VSOM-13	48	8	1,5	13	2	6	10	2x M1,6 ↓1,5
VSOM-25	70,1	12,8	2	25	3	10	17	4x M2,5 ↓5
VSOM-25-W/BRAKE	97,6							
VSOM-30	84,1	12,2	2	30	4	16	22	4x M3 ↓4
VSOM-30-W/BRAKE	117							
VSOM-40	127	18	2	40	5	22	32	4x M3 ↓6
VSOM-55	101	16	3	55	8	30	38	4x M4 ↓5





TECHNOLOGY
PROTECTS
FUTURE

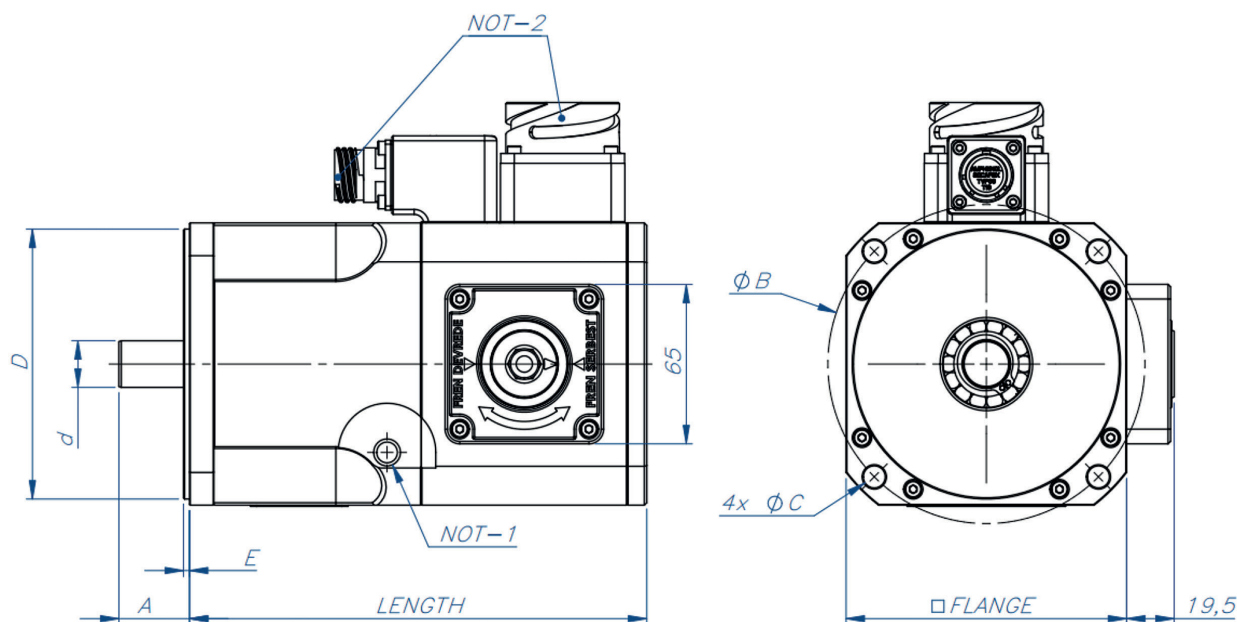




SERVO MOTORS

SERVO MOTOR PERFORMANCE DATA & PARAMETERS

MOTOR PARAMETERS	SYMBOL	UNITS	VSSR-80				VSSR-105	VSSR-115				VSSR-140			
			SL1	SL2	SL3	SL4	SL1	SL1	SL2	SL3	SL4	SL1	SL2	SL3	SL4
Maximum Phase Current	I_{max}	A_{rms}	40	50	120	180	300	120	180	190	400	600	600	1000	1500
Rated DC Voltage	U_n	V	24	24	24	24	24	24	24	24	24	24	24	24	24
Rated Shaft Speed	n_N	rpm	2400	2300	1280	1500	3150	1280	1500	1600	1700	2924	2200	2500	3000
Continuous Stall Torque	T_p	Nm	1,1	1,9	4,2	5,5	9,4	4,2	5,5	6,5	8	9,3	13,2	18	20
Continuous Phase Current	I_o	A_{rms}	13,2	20,8	20,5	32,1	127	20,5	32,1	45,8	64,8	115	117	200	266
Peak Stall Torque	M_{max}	Nm	2	3,5	6,7	10	22,5	6,7	10	10	12	16,8	22	30	32
Peak Phase Current	I_{max}	A_{rms}	24	38	32,6	57,9	300	32,6	57,9	70,1	96,8	210	194	330	425
Rated Shaft Torque	M_N	Nm	1	1,7	3,8	5	8,5	3,8	5	6	7,5	8,4	12	16	18
Rated Phase Current	I_N	A_{rms}	12	18,6	19	29,2	115	19	29,2	42,4	60,8	110	107	177	240
Rated Shaft Power	P_N	W	250	410	510	785	2800	510	785	1005	1338	2575	2765	4188	5655
No Load Speed	n_o	Rpm	3700	2950	1490	2000	4150	1490	2000	2200	2700	4110	2950	3500	4300
Maximum Shaft Speed	n_{max}	Rpm	9000	9000	9000	9000	8000	9000	9000	9000	9000	8000	8000	8000	8000
Torque Constant	K_t	Nm/ A_{rms}	0,085	0,0929	0,190	0,174	0,075	0,190	0,174	0,144	0,125	0,081	0,114	0,0917	0,0765
EMF Constant	K_e	V_s	0,069	0,0757	0,169	0,142	0,062	0,169	0,142	0,118	0,102	0,066	0,093	0,0746	0,0623
Line to Line Resistance	R_{LL}	Ohm	0,0848	0,0596	0,04	0,022	4,2	0,04	0,022	0,0104	0,0078	0,0045	0,0047	0,0022	0,0012
Line to Line Inductance	L_{LL}	mH	0,1975	0,162	0,261	0,153	22,4	0,261	0,153	0,079	0,0697	0,027	0,0385	0,018	0,0098
Motor Inertia	J_m	kgcm ²	0,65	0,81	3,41	4,53	7,5	3,41	4,53	5,65	7,25	13	18	23	28

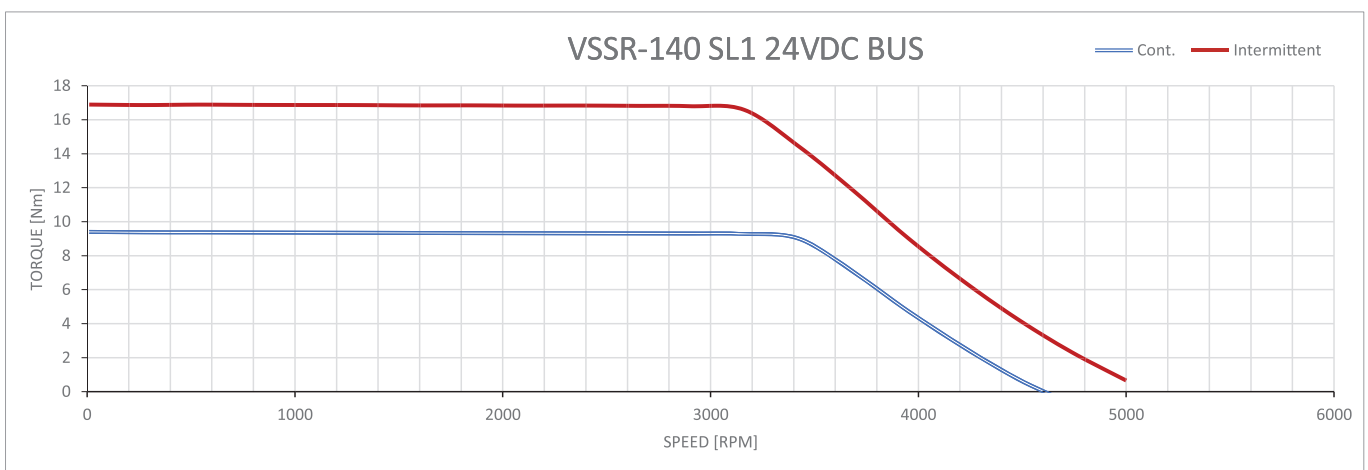
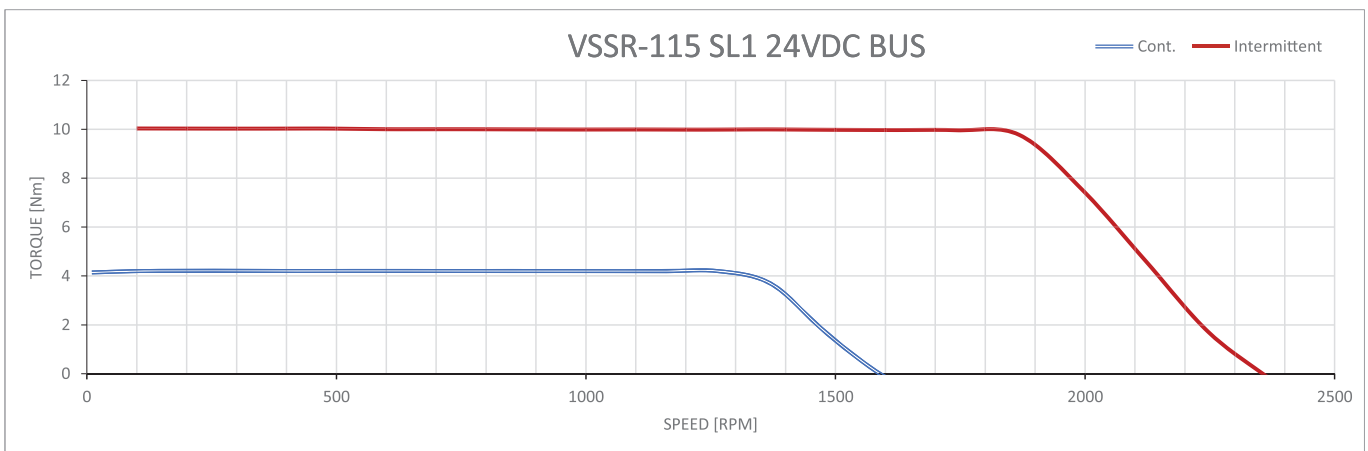
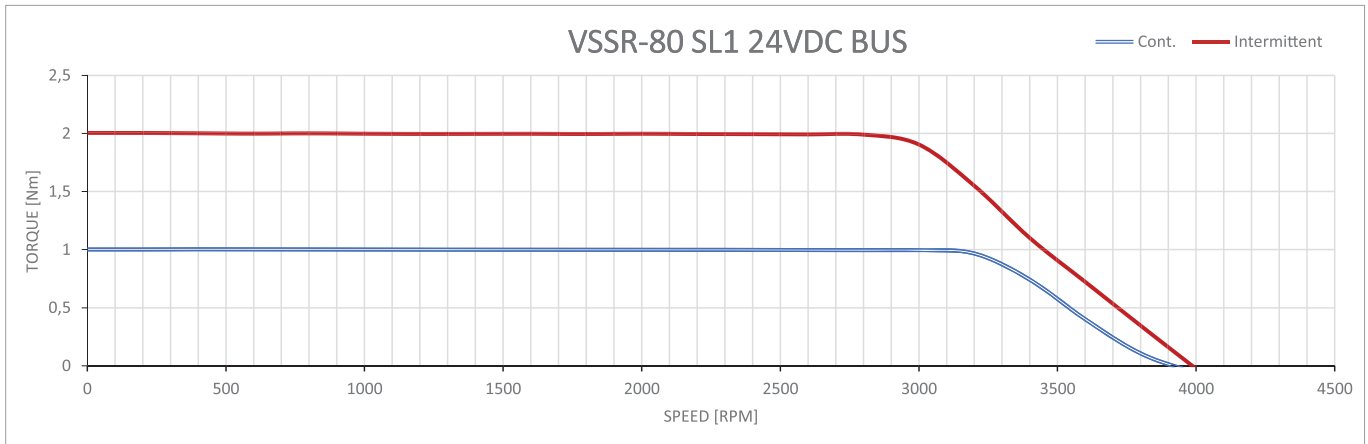


SERVO MOTOR SIZE PARAMETERS [mm]

	FLANGE	LENGTH				A	Ø B	C	Ø D	Ø d	Ø E
		SL1	SL2	SL3	SL4						
VSSR-80	80	115	122,5	135	155	24	80	4xØ4,8	60	11	2,5
VSSR-80- W/BRAKE		150	157,5	170	190						
VSSR-105	105	204,5				32	115	4xØ9	95	16	3
VSSR-105- W/BRAKE		244,5									
VSSR-115	115	142,5	157,5	172,5	187,5	40	130	4xØ9	110	19	2,5
VSSR-115- W/BRAKE		187,5	202,5	217,5	232,5						
VSSR-140	140	151	166	181	196	50	165	4xØ11	130	24	3,5

Note:1 Manual brake mechanism of the 80" motor case is located on the rear cover.

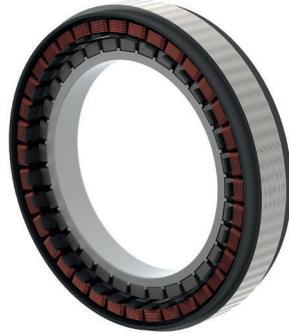
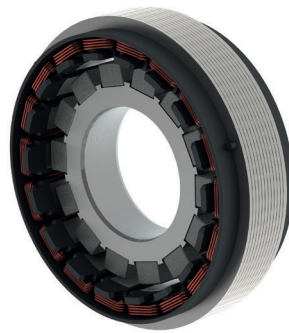
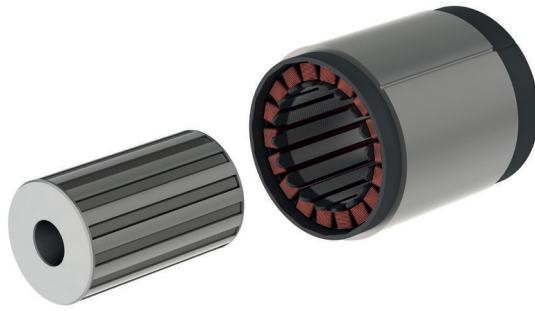
Note:2 Connector positions and types can optionally be customized.





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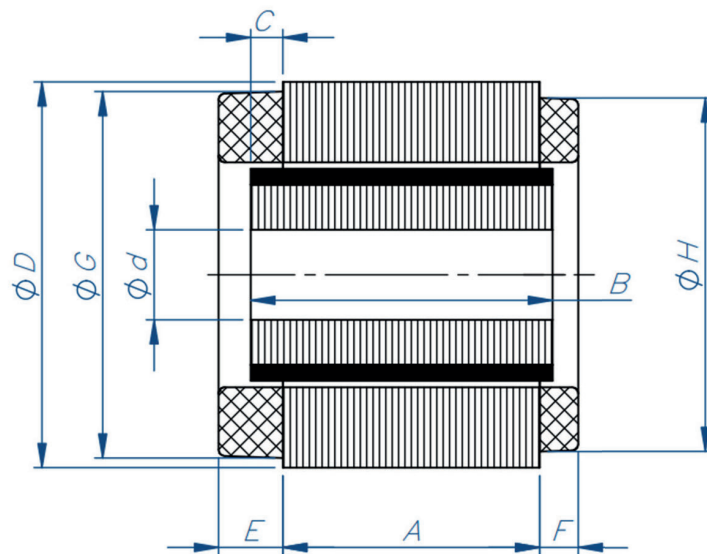


FRAMELESS MOTORS

FRAMELESS MOTOR PERFORMANCE DATA & PARAMETERS

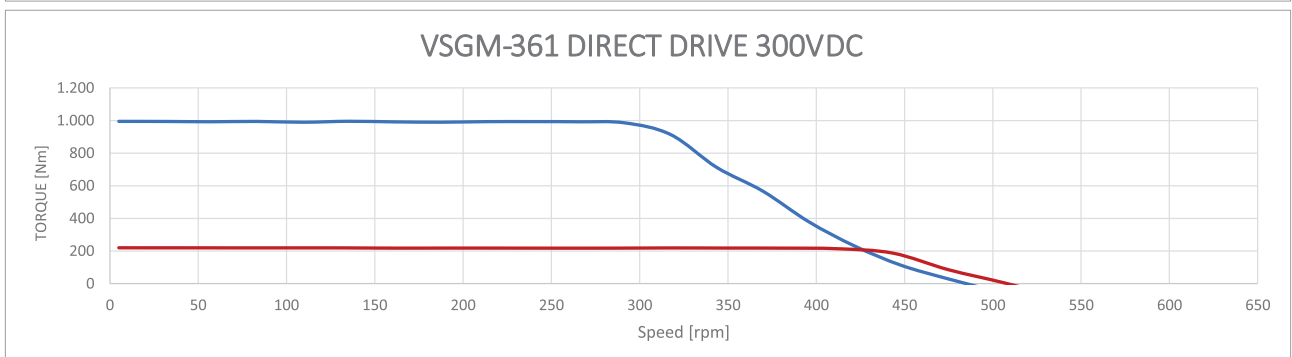
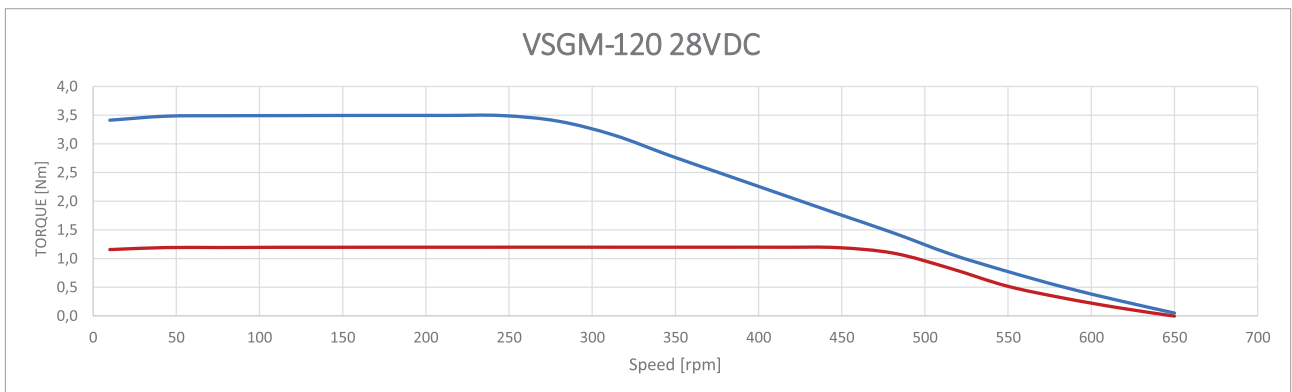
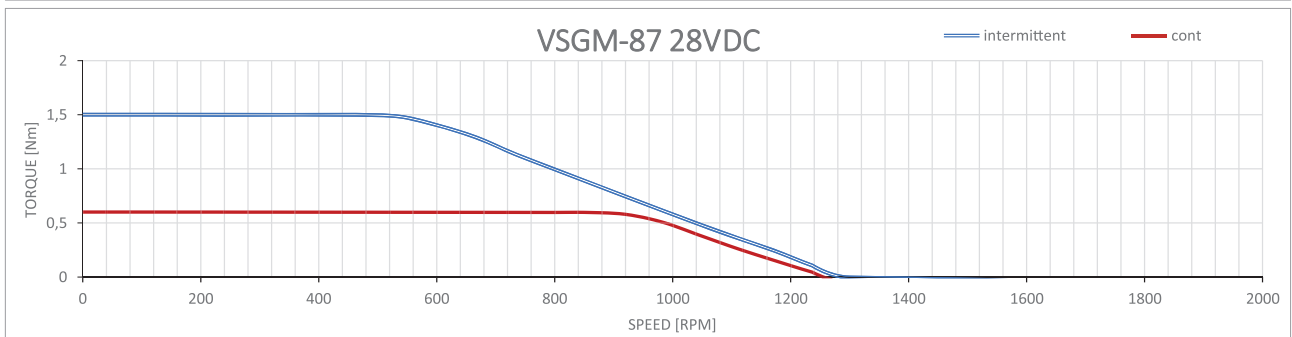
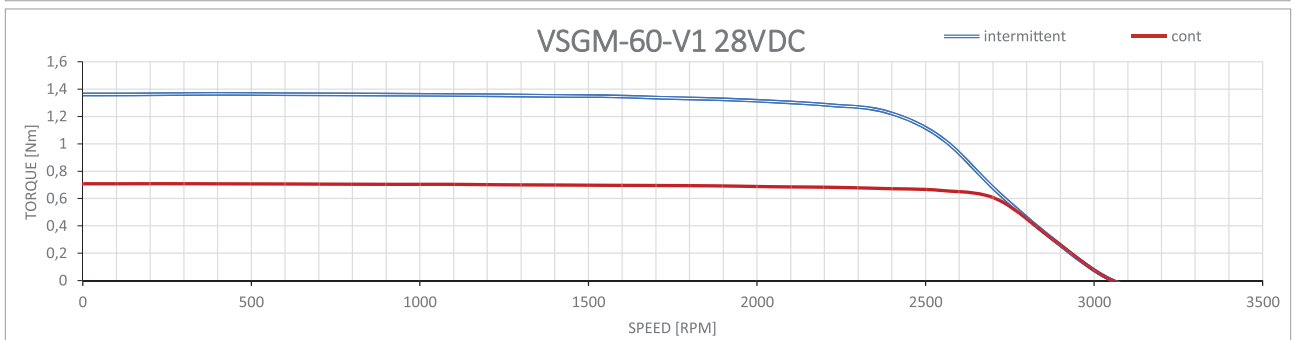
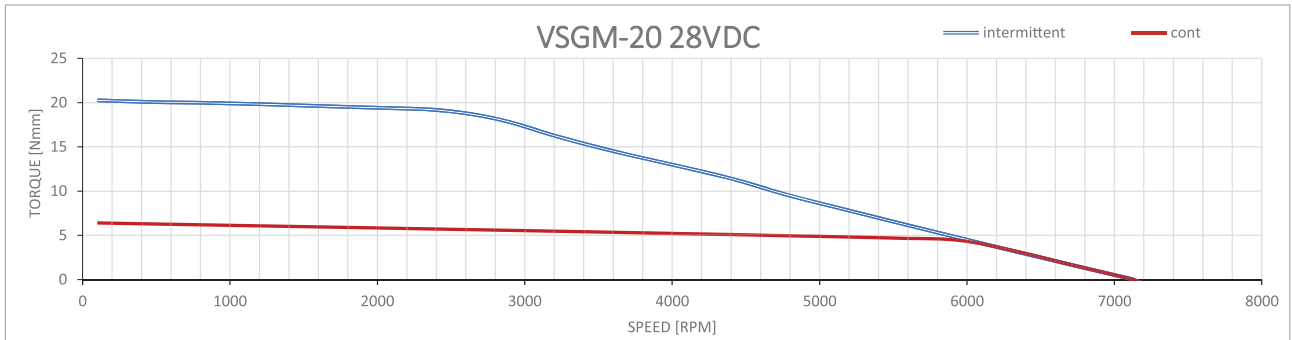
MOTOR PARAMETERS	SYMBOL	UNITS	FRAMELESS MOTOR												
Outer Diameter	Ø	mm	Ø 20	Ø28	Ø 36	Ø 38		Ø 40	Ø 60		Ø 87	Ø120	Ø155	Ø202,9	Ø361
Cover Length	L	mm	9	43,2	6,1	58,4	38	81,2	40	51,2	9,55	13	10	81,8	101,6
Maximum Phase Current	I _{max}	A _{rms}	0,62	8	2,0	20	9,5	4,3	15	26,5	5,5	6,4	6,5	28	129
Rated DC Voltage	U _n	V	28	120	28	120	28	120	28	28	28	28	48	300	300
Rated Shaft Speed	n _N	rpm	1800	20000	300	6000	3600	5500	2700	2100	350	400	400	100	220
Continuous Stall Torque	T _p	Nmm	10	150	60	0,42	240	600	700	1250	600	1,3	4	60x10 ³	240 x10 ³
Continuous Phase Current	I _o	A _{rms}	0,32	4	1,0	3,2	5,5	3,2	8,5	11,2	2,3	2,4	4,4	7,5	31,4
Peak Stall Torque	M _{max}	Nmm	20	330	60	2350	400	1620	1350	3000	1500	3500	6	225x10 ³	1000 x10 ³
Peak Phase Current	I _{max}	A _{rms}	0,62	8	2,0	20	9,5	8	26,5	15	5,5	6,4	6,5	28	129
Rated Shaft Torque	M _N	Nmm	6	130	30	250	240	450	700	1250	600	1200	4000	50	220
Rated Phase Current	I _N	A _{rms}	0,2	4	1,0	2,2	5,5	3,2	8,5	11,2	2,2	2,2	4,4	6,3	28,8
Rated Shaft Power	P _N	W	1,10	315	1,0	157	90	260	198	210	22	50	168	525	5070
No Load Speed	n _o	Rpm	7500	27500	11000	8500	5600	8000	3100	2300	1300	650	670	465	480
Torque Constant	K _t	Nmm/A _{peak}	0,034	0,040	0,031	0,121	0,046	0,148	0,09	0,114	0,287	0,55	0,94	8,35	8,04
EMF Constant	K _e	V _s	0,036	0,042	0,025	0,127	0,048	0,155	0,092	0,12	0,236	0,45	0,775	6,81	6,55
Line to Line Resistance	R _{LL}	Ohm	3,0	1,9	2,33	1,9	0,6	1,2	0,24	0,3	2,33	1,75	1,45	3,45	0,318
Line to Line Inductance	L _{LL}	mH	2,5	0,91	0,21	1,4	0,5	0,7	0,21	0,32	0,54	0,85	4,1	14,9	1,45
Motor Inertia	J _m	kgmm ²	0,115	0,37	3,0	4,63	3,02	13,2	46,4	58,2	83,2	295,3	546,2	22372	2,42xe5
Motor Mass	m	gr	26	210	45	410	300	700	760	900	215	450	1370	13,3	30,1

*Custom supply voltage can be requested.



FRAMELESS MOTOR SIZE DATA & PARAMETERS [mm]

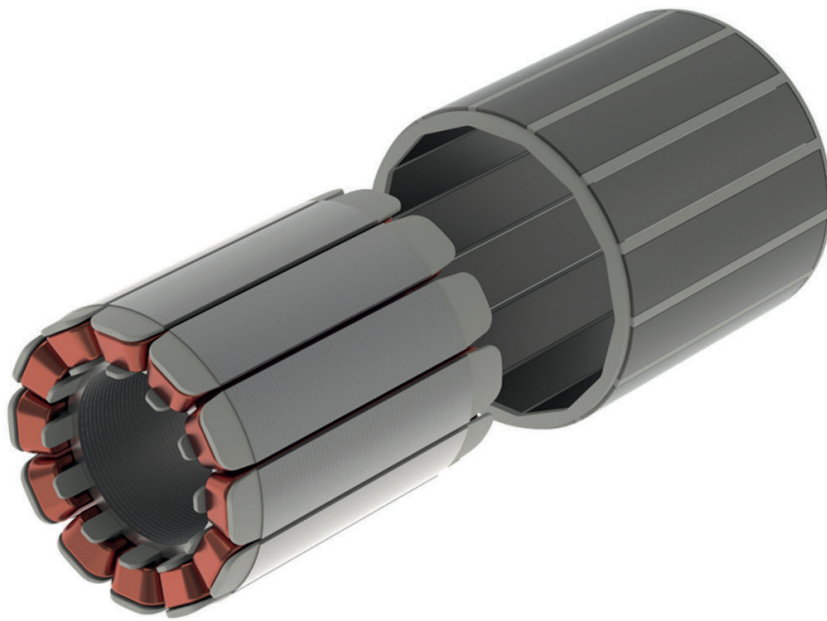
	A	B	C	$\varnothing D$	$\varnothing d$	E	F	$\varnothing G$	$\varnothing H$
VsGm-20	9,00	12,20	2,60	20,0	3,00	3,75	1,75	19,00	19,00
VsGm-28	43,20	46,50	0,76	28,0	5,00	8,9	7,62	25,4	25,4
VsGm-36	6,10	6,10	0	36,0	15,24	2,85	2,85	33,15	33,15
VsGm-38-V1	58,50	66,1	0,89	37,78	9,53	6,99	10,16	36,07	36,07
VsGm-38-V2	38,10	45,70	6,35	38,1	9,21	7,60	3,00	37,00	34,20
VsGm-40	81,20	88,90	6,81	40,0	10,20	9,80	3,30	36,80	36,80
VsGm-60-V1	40,00	46,20	5,20	60,2	10,00	11,20	7,00	58,50	56,50
VsGm-60-V2	51,20	57,20	5,00	60,2	12,70	11,20	7,00	58,50	56,50
VsGm-87	9,55	9,55	0	87,0	58,00	4,10	4,10	84,30	84,30
VsGm-120	13	13	0	120	87	3,5	3,5	115	115
VsGm-155	10	14	2	155	20	5,5	5,5	148,5	148,5
VsGm-202,9	81,8	86,36	2,3	2,3	104,17	12,32	12,32	198	198
VsGm-361	101,6	104,14	2,21	2,21	225,04	10	10	22,23	21,59



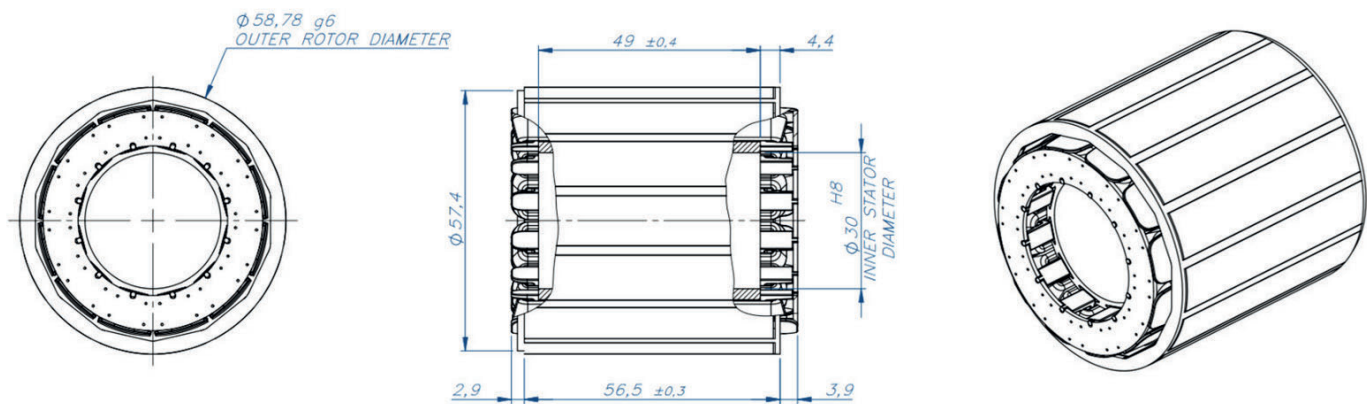


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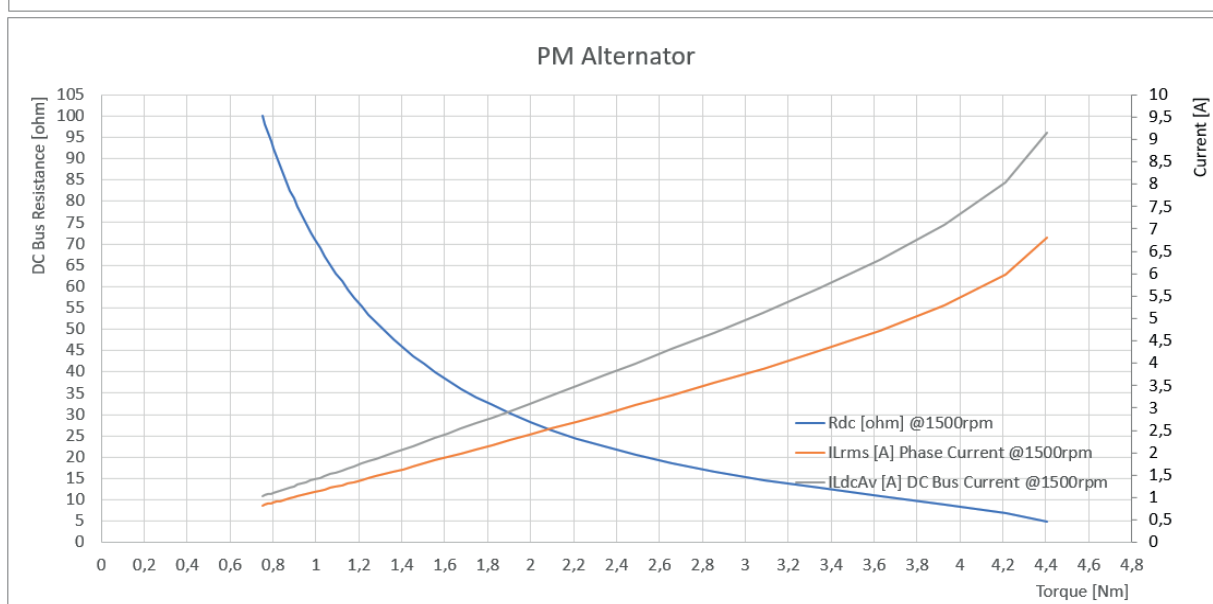
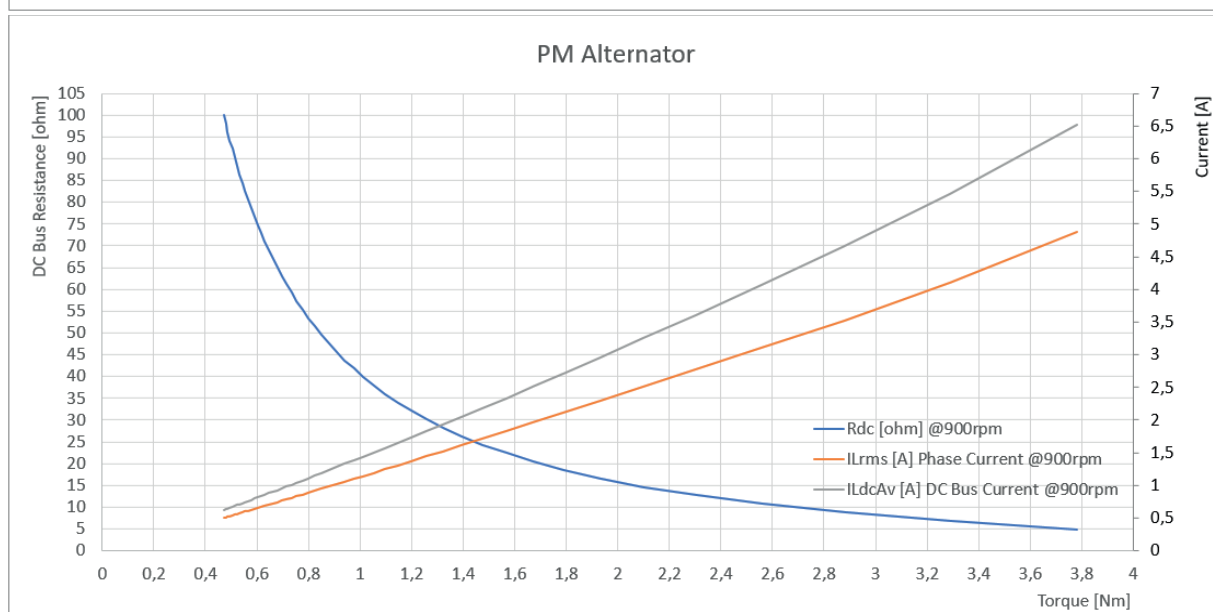
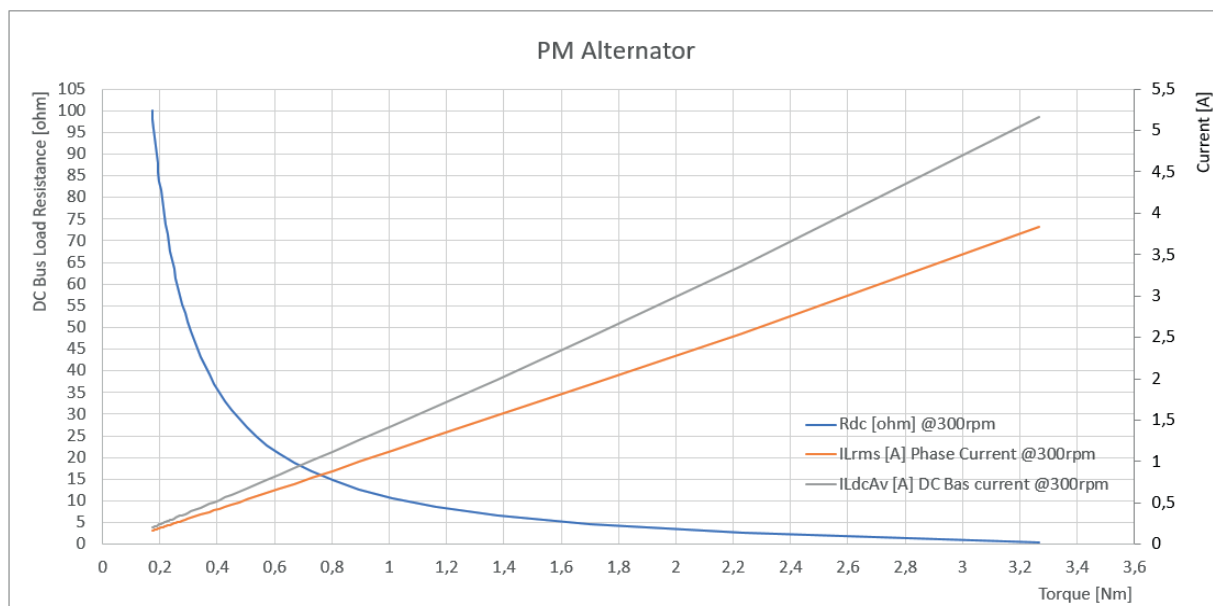
PERMANENT MAGNET ALTERNATOR

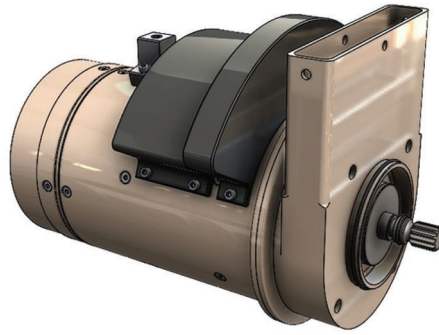


MAIN FEATURES

- Permanent Magnet Alternator
- Outer rotor construction
- 3 Phase sinusoidal output voltage
- High efficient power generation
- Resistance magnet on rotor
- Up to 1500 rpm

MOTOR DATA & PARAMETERS	SYMBOL	UNITS	PERMANENT MAGNET ALTERNATOR
Outer Diameter	$\varnothing$	mm	64
Axial Thickness	L	mm	130
Voltage constant @no-load (RMS)	K	V_s	63,1
Rated phase current (RMS)	I	A	1,3
Efficiency	η	-	>65%
Torque @300rpm	T	Nmm	28
Torque @1500rpm	T	Nmm	2
Environment temperature	T	°C	-40 / +50
Minimum endurance life	-	h	500
Winding Type	-	-	Wye





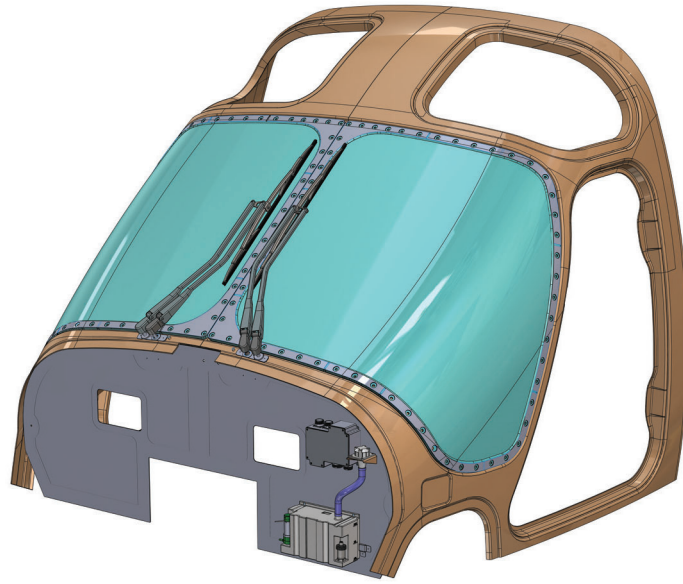
GENERATOR STARTER GENERATOR AND FADEC ALTERNATORS

FEATURES

- Unity Power Factor Control
- 3 or 6 Phases System
- Over current , Over voltage and Over Speed Protection
- Temperature Control
- Bi-Directional Motor/Generator Control Unit
- Customized Mechanical and Electrical Interfaces
- Embedded FPGA Control

Type : Permanent Magnet Synchronous Generator
Wound Rotor Synchronous Generator, Claw Pole Synchronous Generator

GENERATOR PARAMETERS	SYMBOL	UNIT	VALUE
Power	P	kW	10-150
rpm	n	krpm	6-25
Rated Output Voltage	U	V	28VDC , 270VDC, 115/200 VAC 400
Air Cooling	P	kW	40
Liquid Cooling	P	kW	40-150
Communication Protocol			Arinc 429 (Optionally be customized.)



WINDSHIELD WIPING AND WASHING SYSTEM

**DRIVE MOTORS FOR WIPER ARMS AND WASHER PUMP
ARE PERMANENT MAGNET TYPE CONTROLLED BY ELECTRONIC AND
ENCODER FEEDBACK**

FEATURES
Wiper Arm Torque Control
Wiper Arm Speed Control
Slip- Stick Prevention System
Low Power Consumption
Flow Control With Variable Speed Water Pump
Adjustable Wiping Angle
Adjustable Wiper Arm Force
Electronic And Mechanical Washer Water Level Indicator
Easy Adaptation To Platforms

Strong Values, **Strong Future**

SAYA Group and its companies grow with a people-centric perspective. They produce for Turkey in all their industries with the following values in mind: "Stakeholder Satisfaction," "Respect for Society and Environment," "Development and Innovation" and "Trustworthiness."

SAYA Group is a "Strategic Architect and Auditor," which supervises diverse business models while serving as a consolidator in steering the Group companies' different business models and strategies in line with the Group's goals and determining and supporting the subsidiaries' tactical and operational business needs.

The Group has the following goals to be achieved by 2023 ; the centennial celebration of the Republic of Turkey: Attain at least 25 percent of its total revenues from exports, employ over 4.000 people and in keeping with social responsibility objectives, continue to carry out projects that support education, help the needy, arts and culture.



We will be the leading company
that produces high technology to
protect our future



You can contact us to get information about our alternative products and solutions.

www.voltteknoloji.com.tr

Tel : 0232 877 10 60 Fax : 0232 877 10 59

Kemalpaşa OSB Mah. 31 Sk. No:8 Kemalpaşa 35735 İZMİR - TÜRKİYE

Email : bilgi@voltteknoloji.com.tr