

MOTION CONTROL TECHNOLOGIES

MOTION & DRIVE SYSTEM SOLUTIONS FOR DEFENCE INDUSTRY

- SERVO MOTOR • MOTOR DRIVER • EC SERVO MOTOR • FRAMELESS DIRECT DRIVE MOTORS
- AVIATION ALTERNATOR • ADVANCED MOTION CONTROL UNIT • BRUSHLESS DC MICRO MOTOR



SERVO MOTOR FOR TURRET APPLICATION

Design, test and manufacturing according to MIL-STD-810, MIL-STD-461 and MIL-STD-1275D requirements.



Key Features

- Compact and robust
- High torque overload capability with low voltage
- High efficiency
- Custom design
- High quality production
- High precision assembly
- Long life and high operational reliability
- Strong Field References

The modular design of the servo motor supports a variety of option. In addition, WAT can provide fully customized solutions including

- Turret systems and special applications
- Different circuit voltage [24V, 48V, 72V DC]
- Custom electrical framework design ability
- Lower inertia

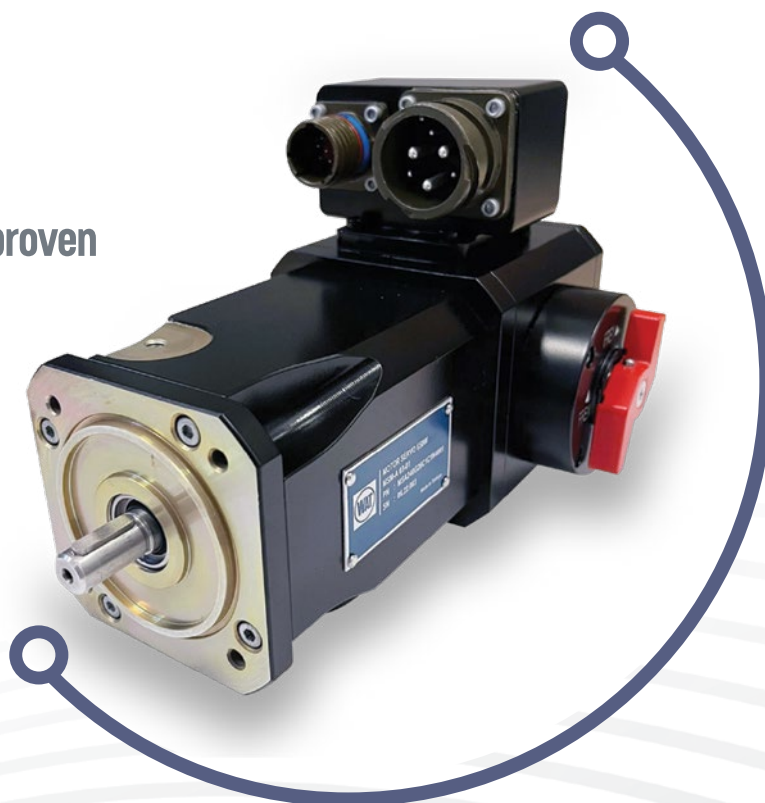


Product Features

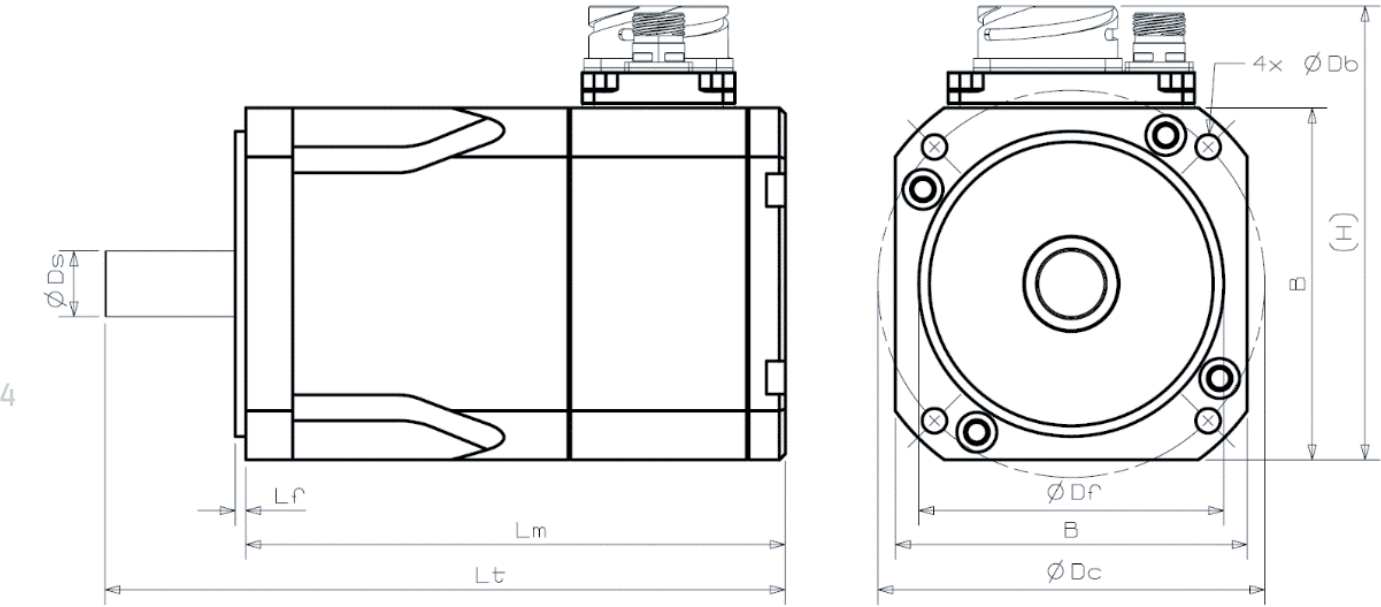
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VDC	VDC	24	24	24	24	24	24	24	24	24	24	24	24	24	48	48
Rated Power	W	200	500	650	650	750	1150	1150	1400	1400	1400	2300	3000	4000	6400	8600
No-load Speed	rpm	3100	3600	3700	3100	3550	3900	3100	3850	2950	2400	3150	2100	1900	1975	2050
Rated Speed	rpm	2400	3000	3100	2600	3000	3450	2750	3350	2575	2100	2750	1800	1600	1750	1825
Continuous Current	Arms	9.1	21.1	27.3	27.3	30.9	45.9	46.1	56	55.9	55.8	91.9	120.6	162.4	125.3	166.5
Continuous Torque	Nm	0.8	1.6	2	2.4	2.4	3.2	4	4	5.2	6.4	8	16	24	35	45
Efficiency	%	>77.5	>84.1	>85.4	>84.9	>86.7	>88.2	>88.0	>88.9	>88.7	>88.3	>90.4	>90.5	>90.6	>92.8	>93.1
Peak current	Arms	26.2	60.7	78.6	78.6	97	144.1	144.7	174.3	174	173.7	240.9	316.5	426.2	299.4	406.5
Peak Torque	Nm	2.2	4.4	5.5	6.6	7.2	9.6	12	12	15.6	19.2	20	40	60	80	105
Torque constant [Kt]	Nm/Arms	0.08791	0.07583	0.07326	0.08791	0.07767	0.06972	0.08677	0.07143	0.09302	0.11470	0.08705	0.13267	0.14778	0.27933	0.27027
Voltage constant [Ke]	Vpk/krpm	7.641	6.604	6.368	7.641	6.748	6.073	7.535	6.235	8.106	9.977	7.618	11.551	12.855	24.254	23.471
L-L Resistance @25 °C	mOhm	344.0 - 380.2	93.7 - 103.5	61.3 - 67.7	67.1 - 74.1	48.2 - 53.2	26.0 - 28.8	27.6 - 30.6	18.3 - 20.3	20.2 - 22.4	22.1 - 24.5	8.47 - 9.37	6.73 - 7.43	4.96 - 5.48	6.12 - 6.76	3.93 - 4.35
L-L Inductance	μH	283.5 - 313.3	198.9 - 219.9	140.6 - 155.4	166.5 - 184.1	128.8 - 142.4	75.3 - 83.3	91.3 - 100.9	59.1 - 65.3	74.9 - 82.7	90.7 - 100.3	42.7 - 47.1	46.3 - 21.2	38.1 - 42.1	94.0 - 103.9	70.9 - 74.5



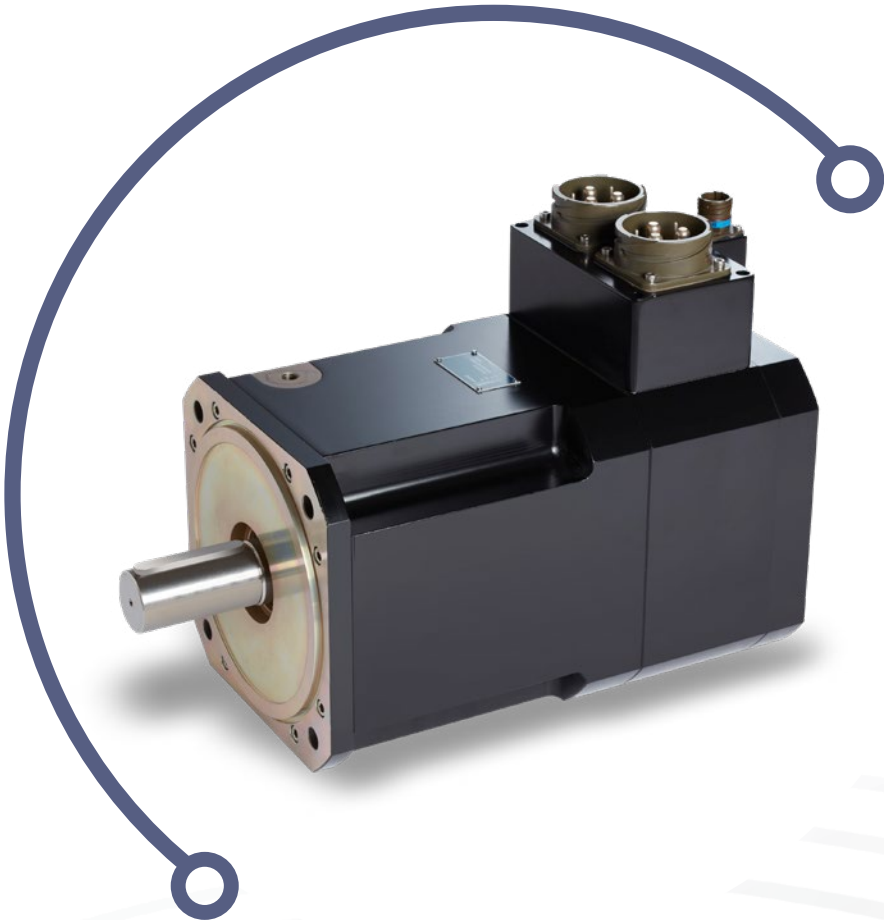
Field proven



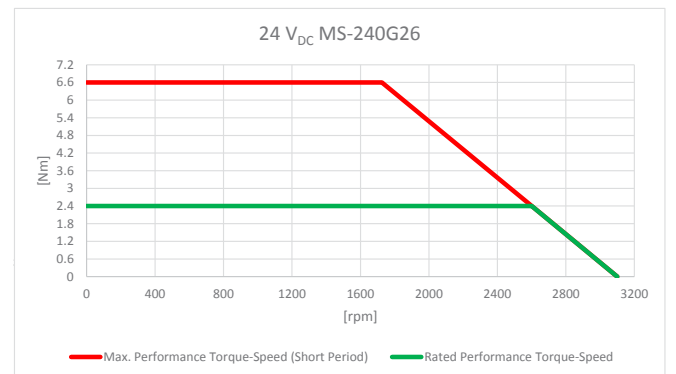
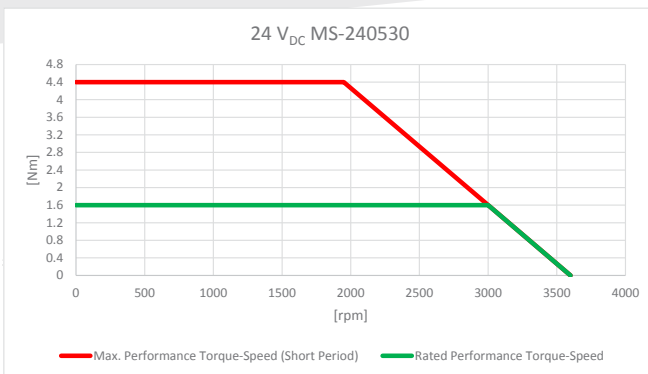
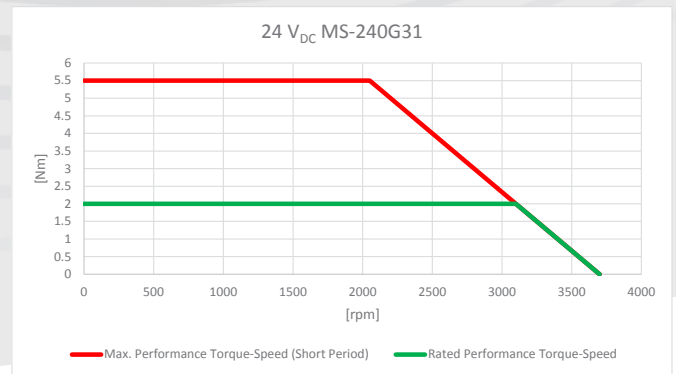
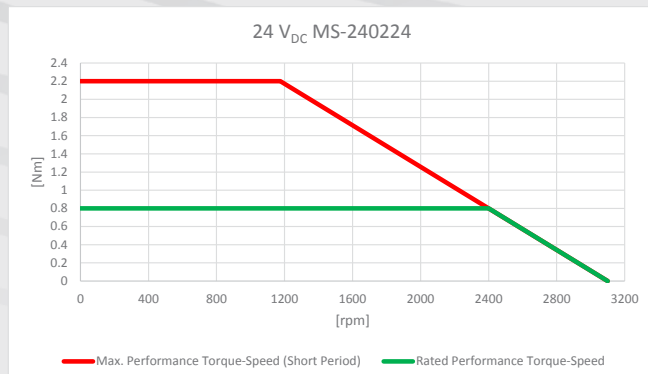
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B [Body Width]	mm	80				90			115			150			210	
Db [Connection Hole Size]	mm	5.5				6.5			8.5			10.5			13.5	
Dc [Connection hole axis diameter]	mm	80				100			130			165			215	
Df [Flange Diameter]	mm	60				80			95			130			180	
Ds [Shaft Diameter]	mm	10				14			19			24			38	
H [Total Height]	mm	139				129.5			155			193			253	
Lf [Flange Height]	mm	2.5				3			3.5			4.5			5.5	
Lm [Motor Length]	mm	151	168	178	187	179.5	193.5	206.5	188.5	200.5	212.5	232.5	279.5	324.5	340	367
Lt [Total Length]	mm	172.5	189.5	199.5	208.5	209.5	223.5	236.5	228.5	240.5	252.5	282.5	329.5	374.5	420	447
Rotor Inertia	kgmm ²	9	15.9	19.9	23.56	69.73	92.13	112.96	201.35	257.04	312.7	706.7	1323.9	1914.1		
Weight	kg					4.8	5.7	6.6	6.2	6.8	7.8	16.2	21.5	26.9		



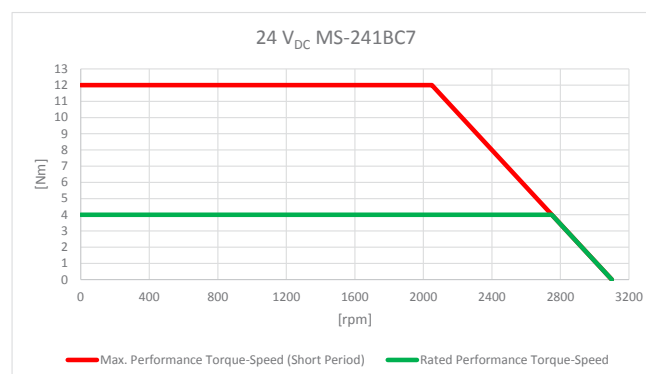
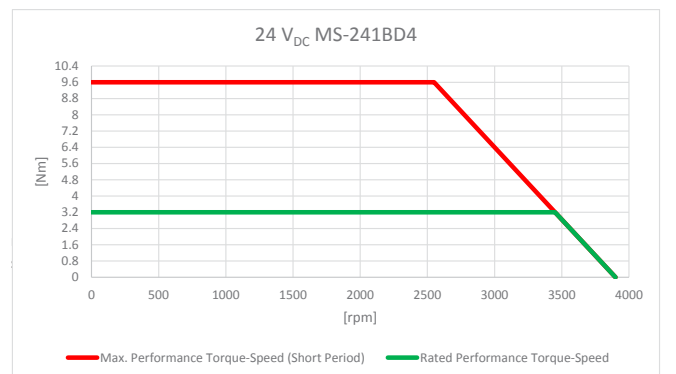
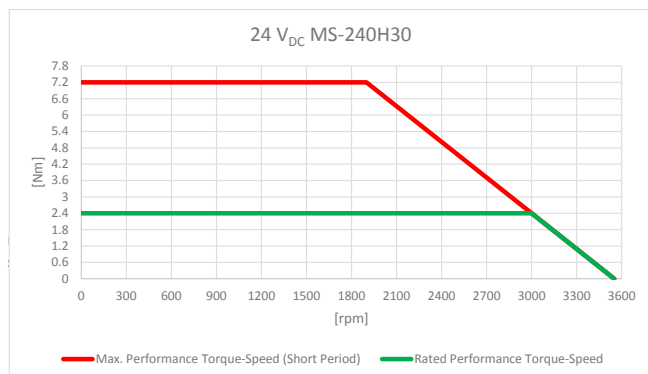
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Power Connector		CA-3102-E-20-22-P-*-B-***				CA-3102-E-20-22-P-*-B-***			CA-3102-E-28-22-P-*-B-***			CA-3102-E-36-3-P-*-B-***			CA-3102-E-36-3-P-*-B-***	
Data Connector		D38999-20-*-C-98-P-*				D38999-20-*-C-98-P-*			D38999-20-*-C-98-P-*			D38999-20-*-C-98-P-*			D38999-20-*-C-98-P-*	
Resolver		LTN RE-15				LTN RE-15			LTN RE-15			LTN RE-27			LTN RE-27	
Electromagnetic Brake Torque	Nm					3.5	3.5	5.5	5.5	5.5	7	17	17	25	40	65
Operating Voltage	VDC	24 ya da 48														
Brake Power Consumption	W															
Thermistor		PTC ya da NTC														



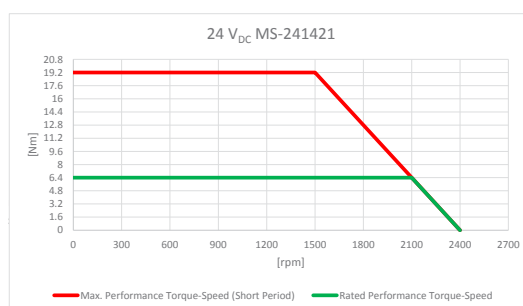
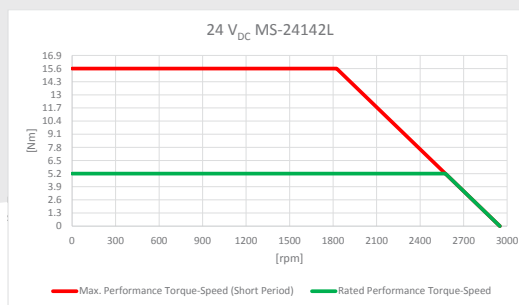
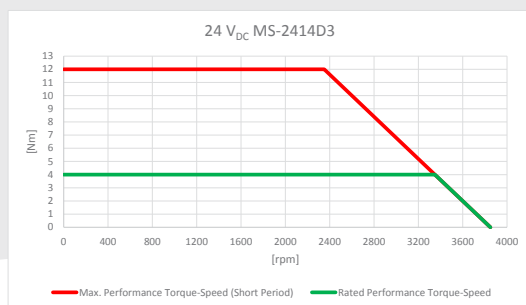
Type A Torque Speed



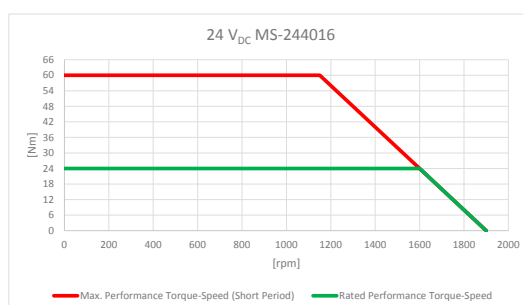
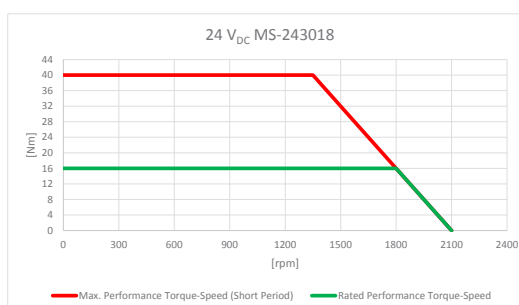
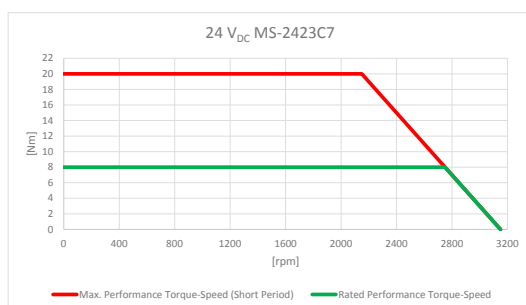
Type B Torque Speed



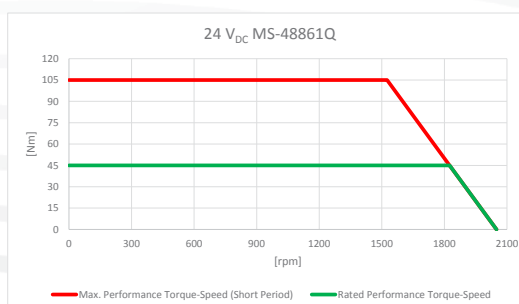
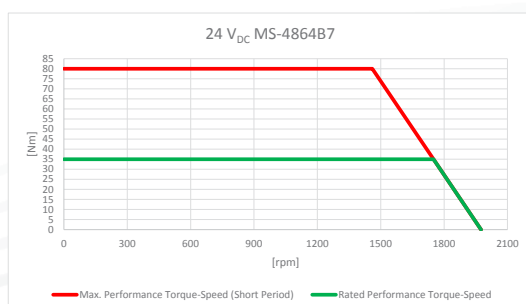
Type C Torque Speed



Type D Torque Speed



Type E Torque Speed



MILITARY MOTOR DRIVER UNIT FOR DEFENCE SYSTEMS

Reliable Control in Tough Conditions

Motor Driver Unit is developed for military systems. Designed and validated according to the requirements of MIL-STD-810G, MIL-STD-461G and MIL-STD-1275E standards.

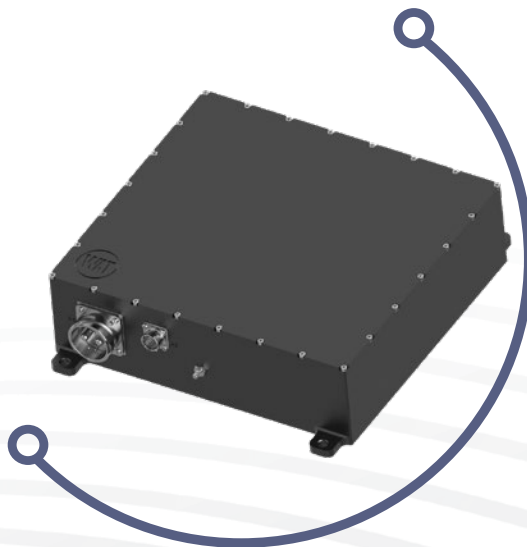
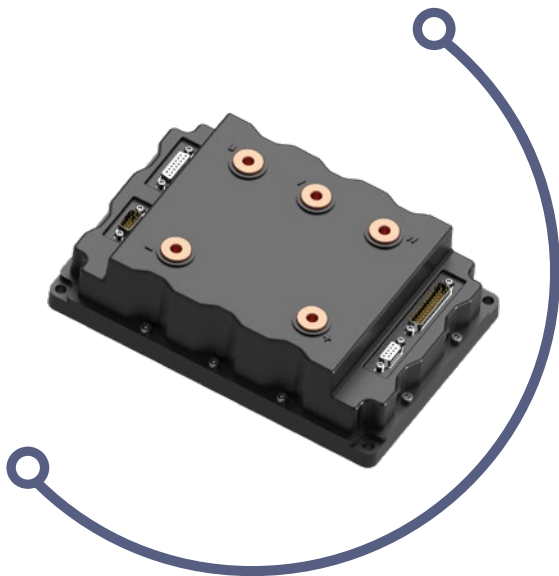
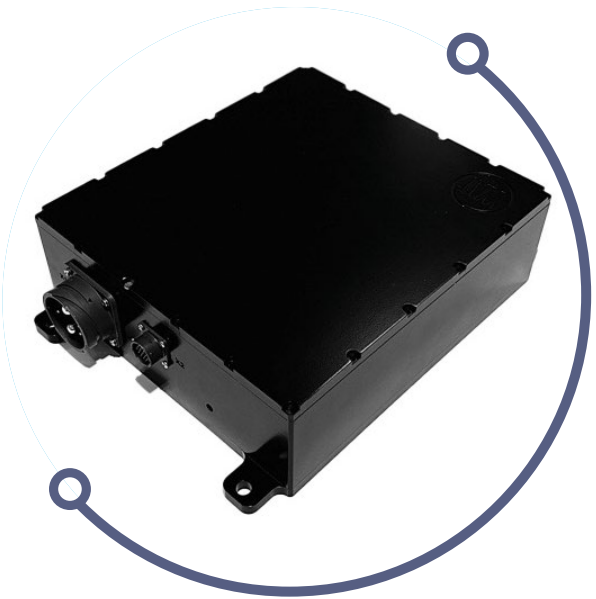
This versatile motor drive is an ideal system for high-performance military and specialty industrial applications with the ability to operate in a humid environment, high/low temperatures, high vibration/shock or other challenging environmental conditions.

Key Features:

- High Precision Motion Control
- Military certified
- Sealed for Harsh Environments
- High Power Efficiency
- Versatile Communication Interfaces
- Integrated Monitoring and Diagnostics
- User Friendly Interface

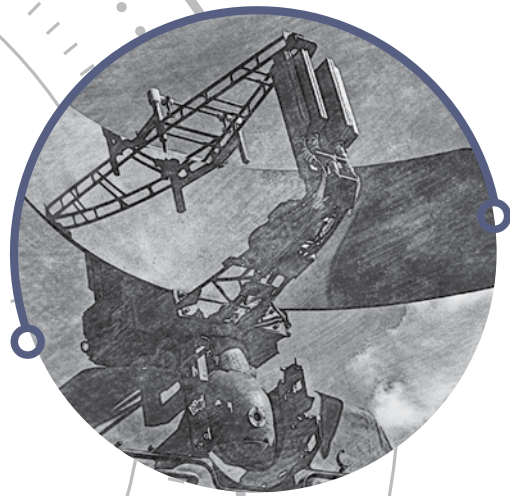
Application Areas:

- Turret and weapon Control
- Missile Guidance and Control Systems
- Naval System and submarines
- Radar and Antenna Positioning Systems
- Missile Launchers and Artillery Systems
- Optical and Thermal Imaging Systems
- Space and Satellite Defense Systems



WAT 30A SERVO MOTOR DRIVER

✓ Field proven

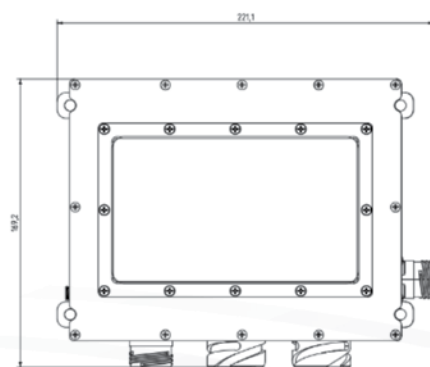
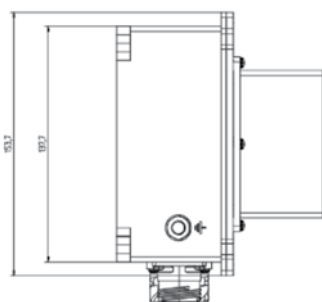
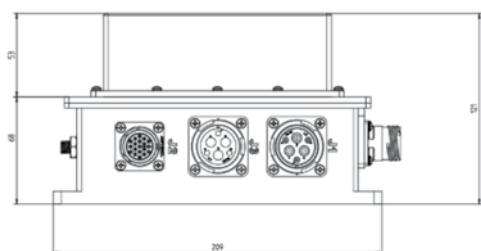


Product Features

Power	Input Voltage	18V-33V
	Continuous Output Current	30Adc [22A rms]
	Max. Output Current	60Adc [42A rms]
Control Modes and Command Type	Control Mode	Position, Speed, Torque
	Position Command Type	Internal Position Command
	Speed Command Type	Internal Speed Command
	Torque Command Type	Internal Torque Command
Control and Communication	Feedback	Resolver/BISS [opt.], SSI [opt.], Absolute A [opt.]
	Communication	CANOpen-RS232-RS422
	Control	FOC [Field Oriented Control]
I/O	DI/DO	4/0
	AI/AO	1/-
Protection and Security	Protection	Short Circuit, Ambient Over Temperature, Motor Over Temperature, High Voltage, Low Voltage, FeedBack Error, I2T Current limiting
Size and Environmental Conditions Strength	Operating Temperature [°C]	-32°C to +55°C
	Storage Temperature [°C]	-45 °C to +71 °C
	Moisture Resistance	0% to 95% Relative Humidity
	Dimension [H x W x L] [mm]	121mm x 221mm x 169mm
	Shock/Vibration	40Grms [11ms]/2.22Grms [2h]
	Weight [kg]	3kg

Standards

MIL-STD-810G	Environmental Engineering Considerations and Laboratory
MIL-STD-461G	Requirements for The Control of Electromagnetic Interference Characteristics of Subsystems and Equipment: CE102, CS101, CS114, CS115, CS116, RE102, RS102, RS103
MIL-STD-1275E	Characteristics of 28 Volt Dc Electrical Systems in Military Vehicles



WAT 100A SERVO MOTOR DRIVER

✓ Field proven

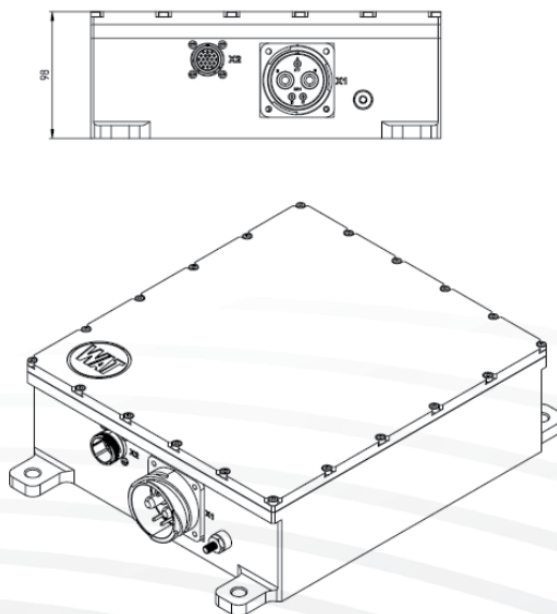
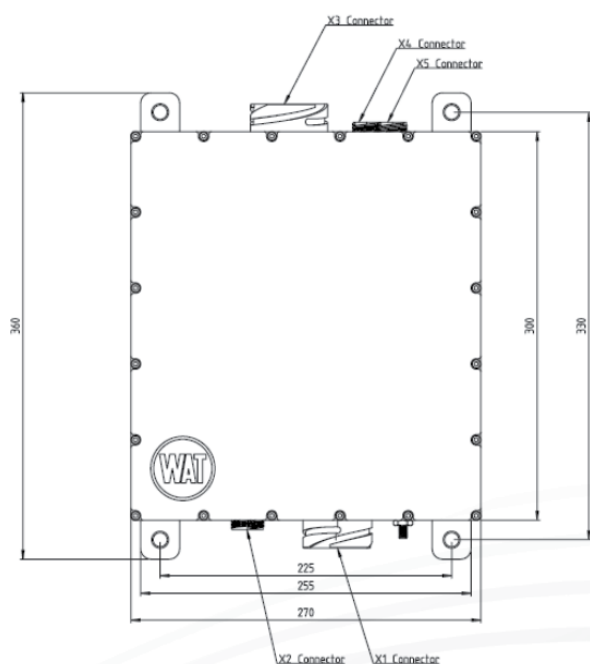


Product Features

Power	Main Input Voltage	18V-33V
	Continuous Output Current	100Adc [70Arms]
	Max. Output Current	200Adc [140Arms]
Control Modes and Command Type	Control Mode	Position, Speed, Torque
	Position Command Type	Internal Position Command
	Speed Command Type	Internal Speed Command
	Torque Command Type	Internal Torque Command
Control and Communication	Feedback	Resolver, SSI Encoder
	Communication	CANOpen, RS232
	Control	FOC [Field Oriented Control]
AI/AO	DI/DO	3/-
	AI/AO	1/-
Protection and Security	Protection	Short Circuit, Inverter Over Temperature, Motor Over Temperature, High Voltage, Low Voltage, Feedback Error, Over Current, Communication Fault,
Size and Environmental Conditions Strength	Operating Temperature [°C]	-32°C to +55°C
	Storage Temperature [°C]	-45 °C to +71 °C
	Moisture Resistance	0% to 95% Relative Humidity
	Dimension [H x W x L] [mm]	98mm x 360mm x 270mm
	Shock/Vibration	40Grms [11ms]/2.22Grms [2h]
	Weight [kg]	10 kg

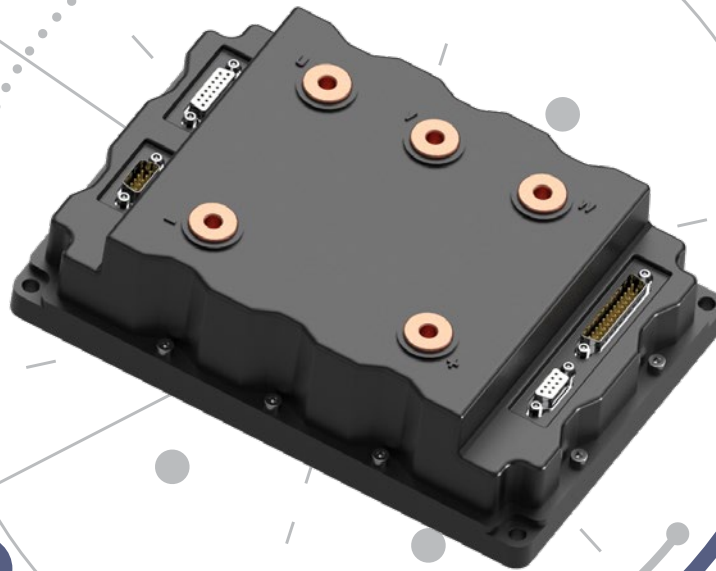
Standards

MIL-STD-810G	Environmental Engineering Considerations and Laboratory
MIL-STD-461G	Requirements for The Control of Electromagnetic Interference Characteristics of Subsystems and Equipment : CE102, CS101, CS114, CS115, CS116, RE102, RS102, RS103
MIL-STD-1275E	Characteristics of 28 Volt DC Electrical Systems in Military Vehicles



WAT 100A DRIVER MODULE

It is an advanced motor drive module available for the harsh environment. It can be easily adaptable for the systems have MIL-STD-810F, MIL-STD-1275E and MIL-STD-461G requirements.

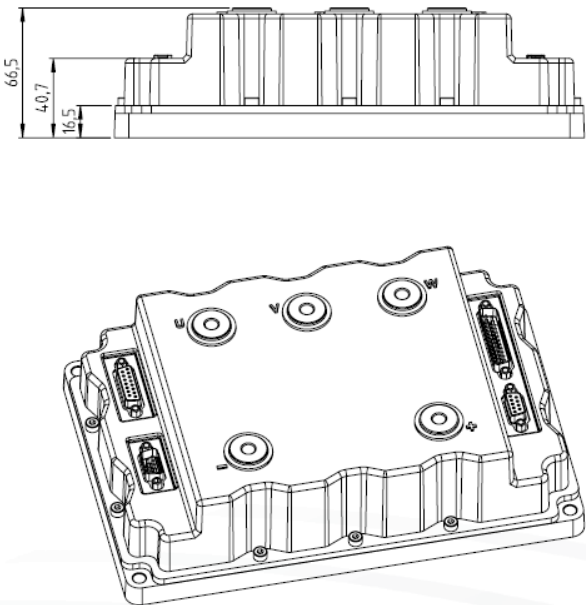
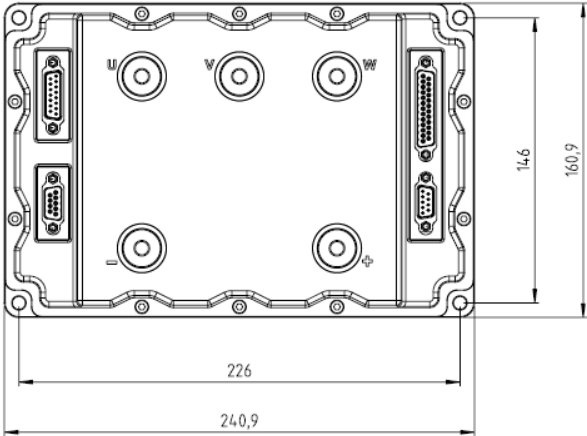


Product Features

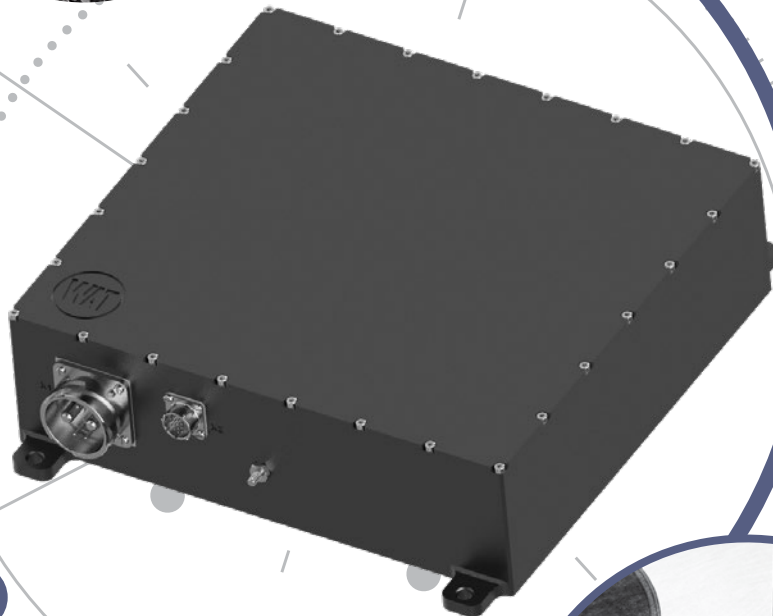
Power	Main Input Voltage	18V-33V
	Continuous Output Current	100Adc [70Arms]
	Max. Output Current	200Adc [140Arms]
Control Modes and Command Type	Control Mode	Position, Speed, Torque
	Position Command Type	Internal Position Command
	Speed Command Type	Internal Speed Command
	Torque Command Type	Internal Torque Command
Control and Communication	Feedback	Resolver, SSI Encoder
	Communication	CANOpen, RS232
	Control	FOC [Field Oriented Control]
AI/AO	DI/DO	4/3
	AI/AO	2/-
Protection and Security	Protection	Short Circuit, Inverter Over Temperature, Motor Over Temperature, High Voltage, Low Voltage, Feedback Error, Over Current, Communication Fault
Size and Environmental Conditions Strength	Operating Temperature [°C]	-32°C to +55°C
	Storage Temperature [°C]	-40 °C to +71°C
	Dimension [H x W x L] [mm]	66.5mm x 226mm x 160.9mm
	Shock/Vibration	40Grms (11ms)/2.22Grms (2h)
	Weight [kg]	2.6 kg

Standards

ISO 11898	Road vehicles - Controller Area Network [CAN] for High-speed Communication
CiA Draft Standard 301	CANOpen Communication Profile for Industrial Systems



WAT 200A SERVO MOTOR DRIVER

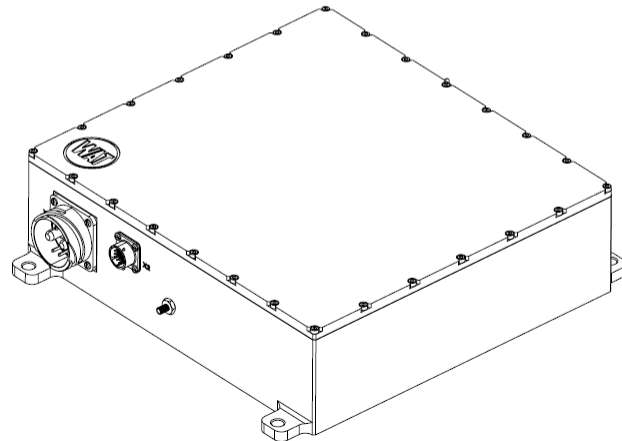
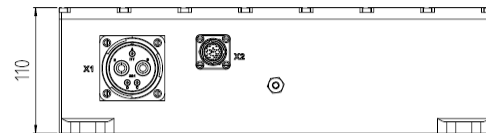
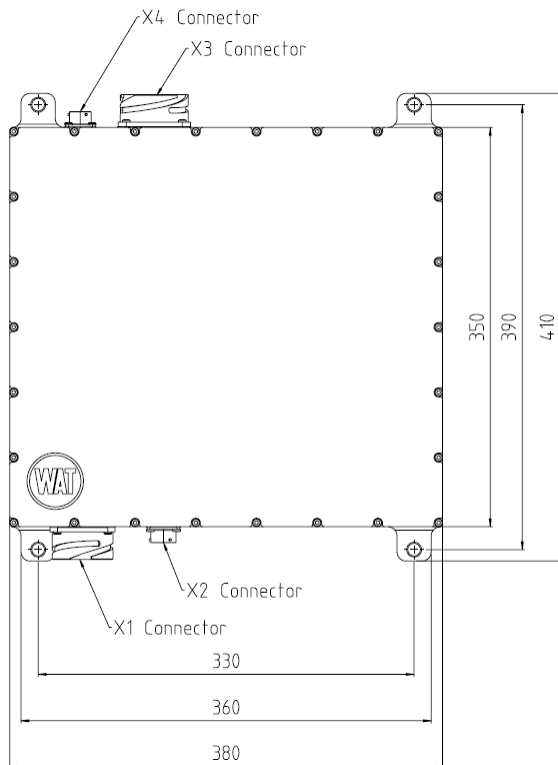


Product Features

Power	Main Input Voltage	18V-33V
	Continuous Output Current	200Adc [140Arms]
	Max. Output Current	400Adc [280Arms]
Control Modes and Command Type	Control Mode	Position, Speed, Torque
	Position Command Type	Internal Position Command
	Speed Command Type	Internal Speed Command
	Torque Command Type	Internal Torque Command
Control and Communication	Feedback	Resolver, SSI Encoder
	Communication	CANOpen, RS232
	Control	FOC [Field Oriented Control]
AI/AO	DI/DO	3/-
	AI/AO	1/-
Protection and Security	Protection	Short Circuit, Inverter Over Temperature, Motor Over Temperature, High Voltage, Low Voltage, Feedback Error, Over Current, Communication Fault
Size and Environmental Conditions Strength	Operating Temperature [°C]	-32°C to +55°C
	Storage Temperature [°C]	-45 °C to +71°C
	Moisture Resistance	0% to 95% Relative Humidity
	Dimension [H x W x L] [mm]	110mm x 410mm x 380mm
	Shock/Vibration	40Grms [11ms]/2.22Grms [2h]
	Weight [kg]	1 kg

Standards

MIL-STD-810G	Environmental Engineering Considerations and Laboratory
MIL-STD-461G	Requirements for The Control of Electromagnetic Interference Characteristics of Subsystems and Equipment : CEI02, CS101, CS114, CS115, CS116, RE102, RS102, RS103
MIL-STD-1275E	Characteristics of 28 Volt DC Electrical Systems in Military Vehicles



ADVANCED MOTION CONTROL UNIT

ENHANCE YOUR DEFENCE CAPABILITIES

Precision | Reliability | Performance

Why Choose Our Motion Control Systems?

Unmatched Accuracy	Achieve unparalleled precision in critical defense operations.
Robust Performance	Reliable performance under the most demanding conditions.
Advanced Technology	Cutting-edge solutions for modern defense needs.
Customizable Solutions	Tailored systems to meet specific defense requirements.

Key Features:

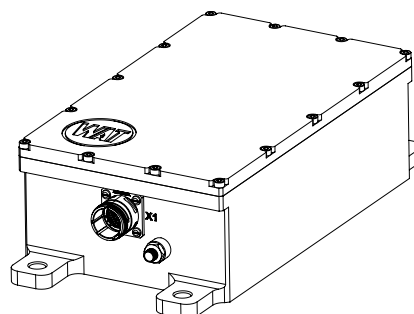
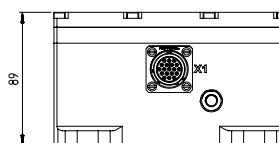
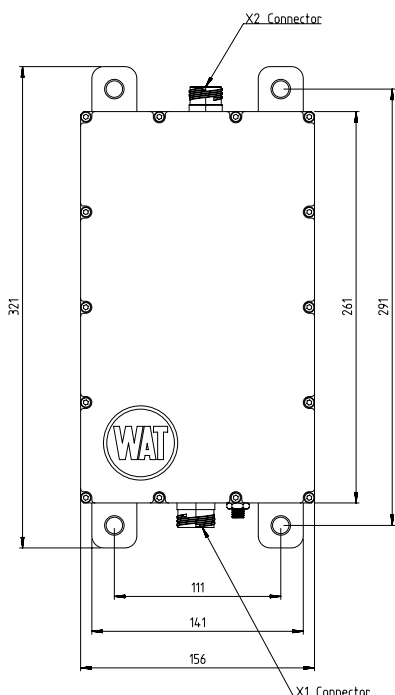
- Real-time motion control
- High resilience and durability
- Seamless integration with existing defense systems
- User-friendly interface with advanced security features

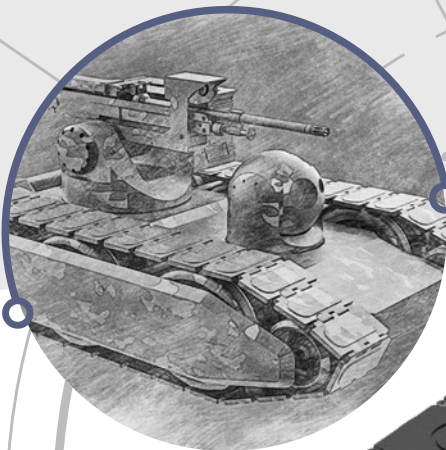
Application:

- Missile Guidance Systems
- Radar and Surveillance
- Weapon Stabilization Systems
- Automated Defense Systems

Strengthen Your Defense with Cutting-Edge Motion Control What Sets Us Apart?

Innovative Technology	Leveraging the latest advancements to meet defense standards.
Expert Support	Our team of defense specialists is here to assist you at every step.



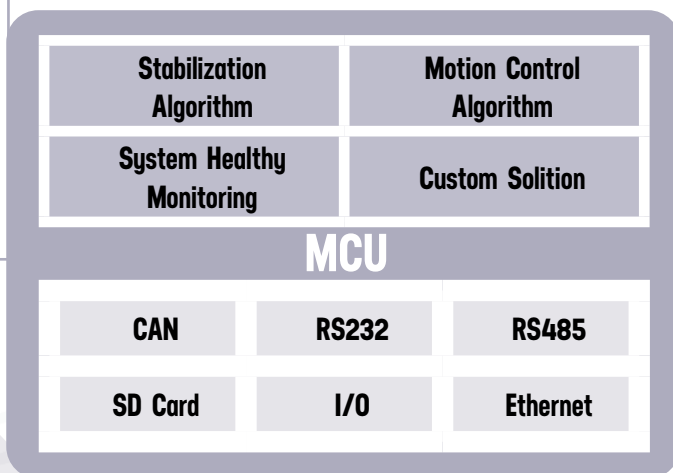


MOTOR
DRIVERS

MOTOR
DRIVERS

MOTOR
DRIVERS

GUI/SYSTEM
CONTROLLER



SENSORS

GYRO/IMO

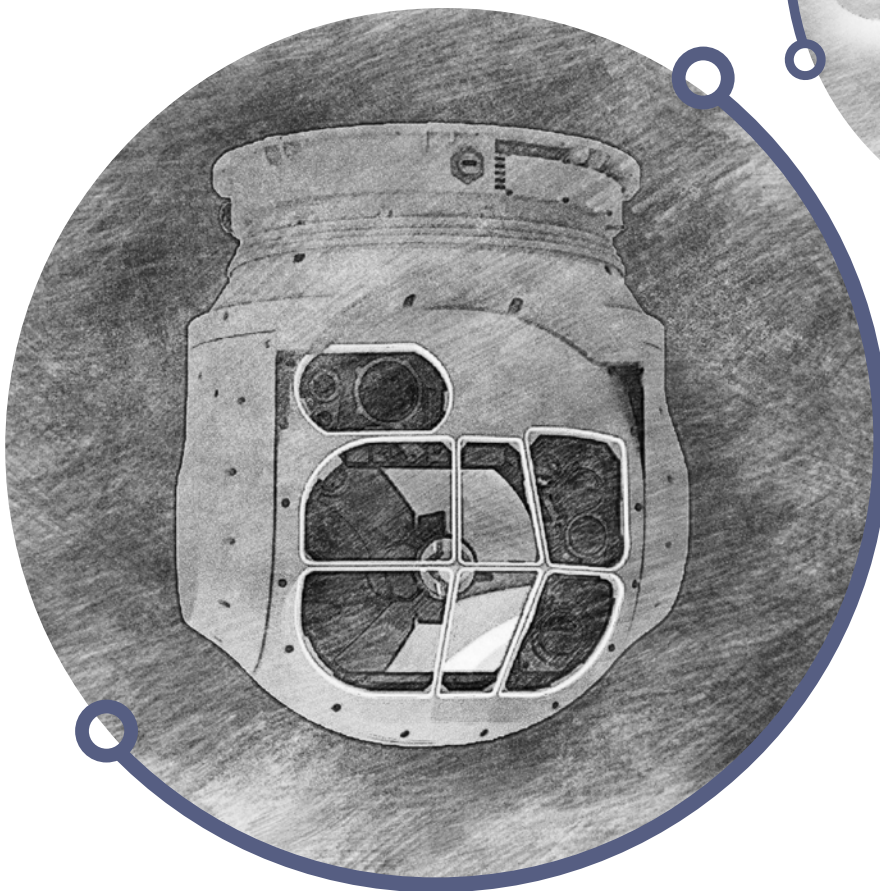
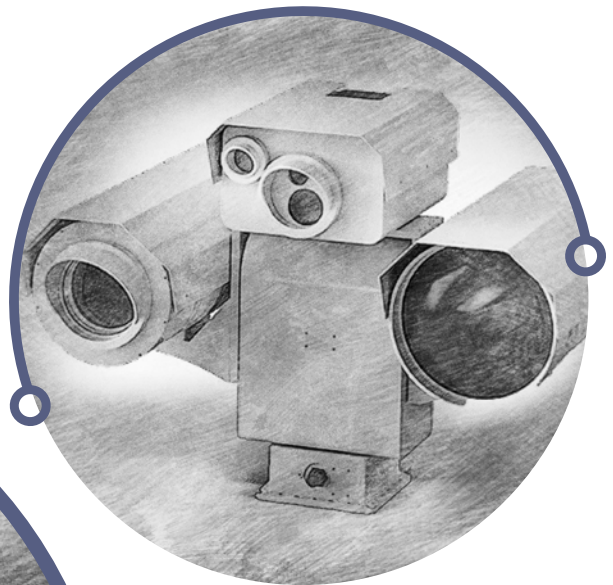
SWITCH

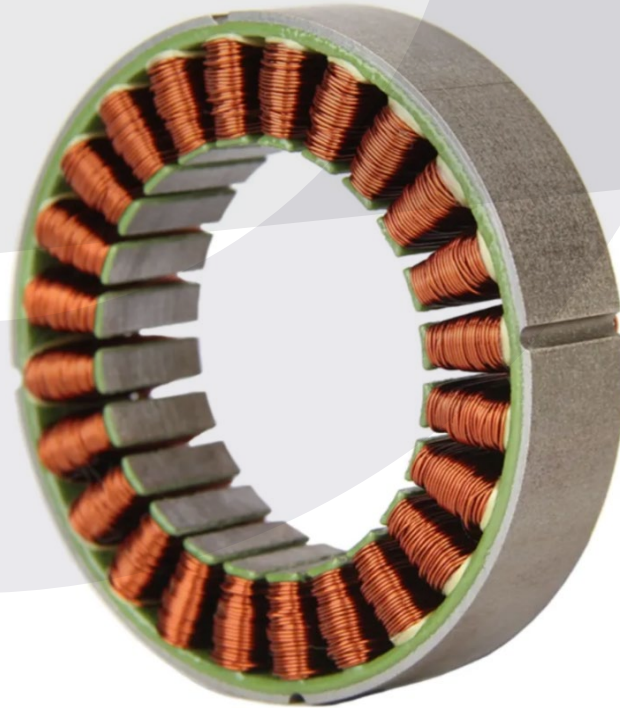
FRAMELESS DIRECT DRIVE MOTORS

Key Features

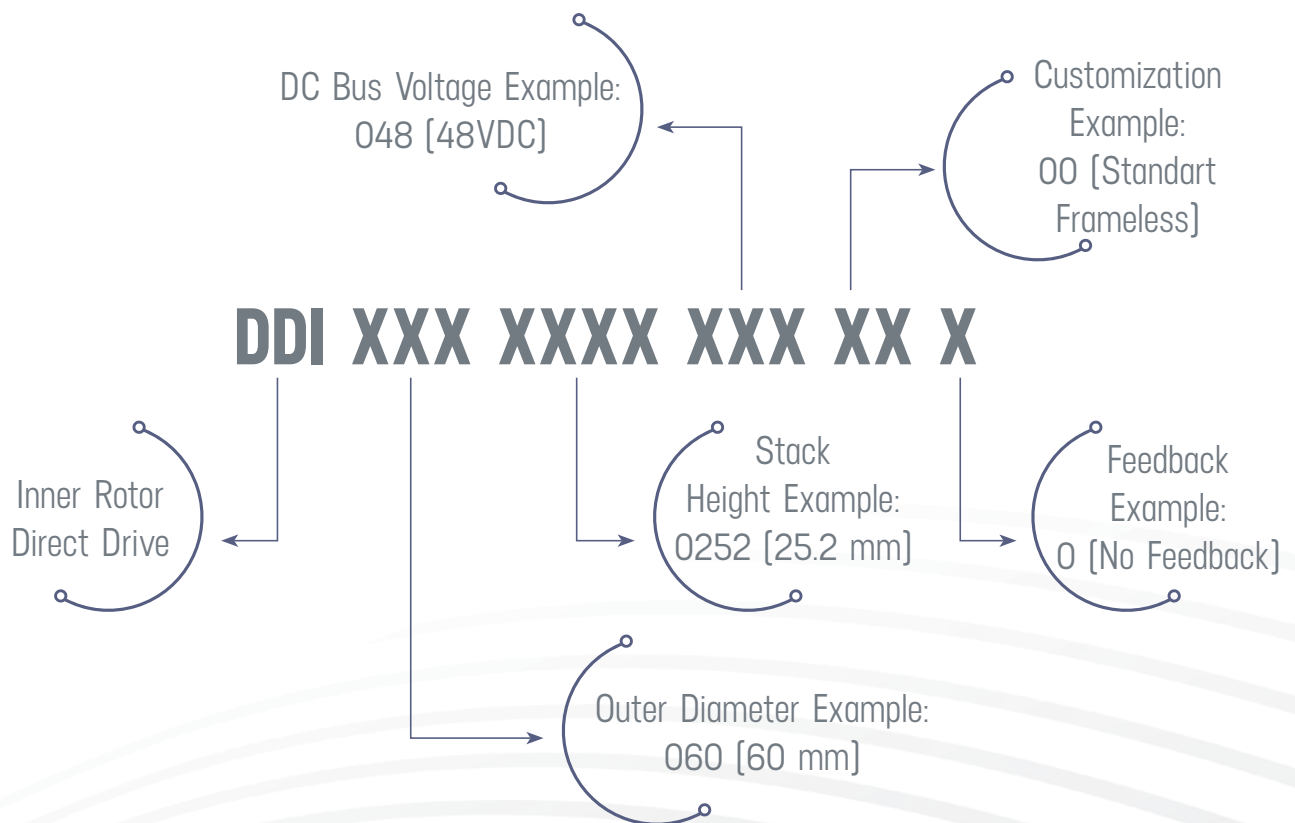
- Low Cogging for Accurate and Smooth Motion
- Slimmer Space Requirements
- Easy to Adapt on Board
- Lower Cost
- Custom Design Ability
- Encoder, Hall Sensor etc.

Continuous Torque @12mm St : 0.32-5.8Nm
Max Torque @12mm Stack : 1-11Nm
iameter [OD] : Ø60-200mm
Through Hole [ID] : Ø24-105mm

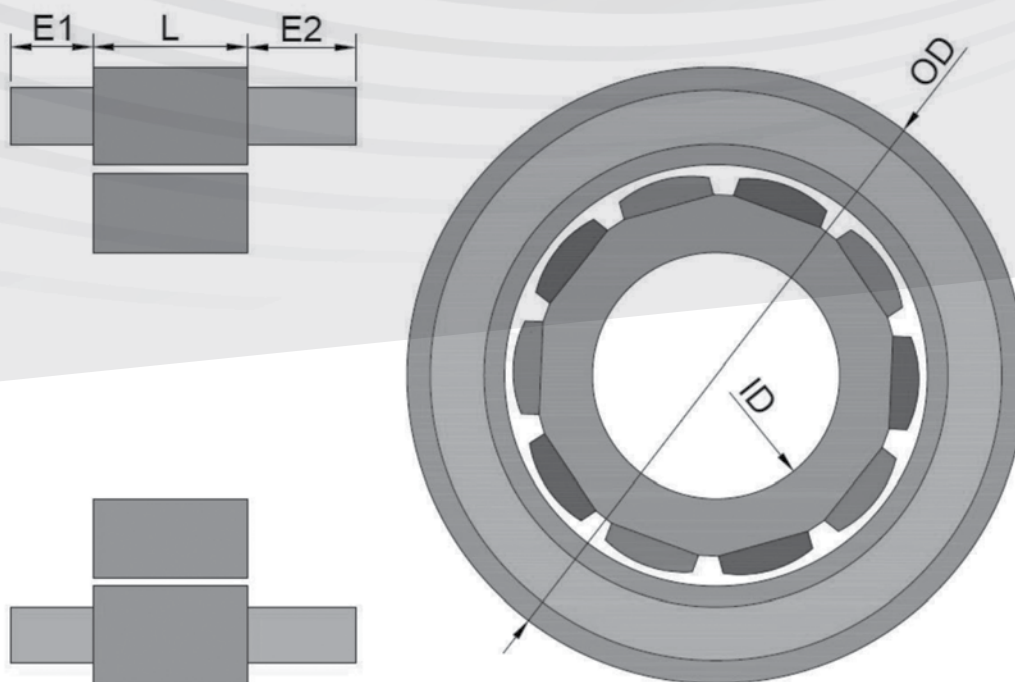




Direct Drive Code Definition



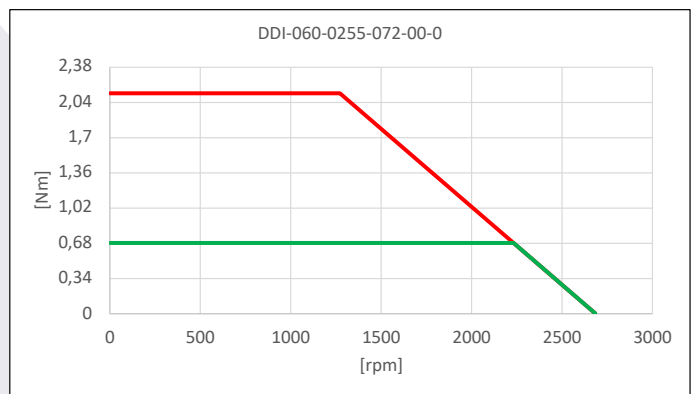
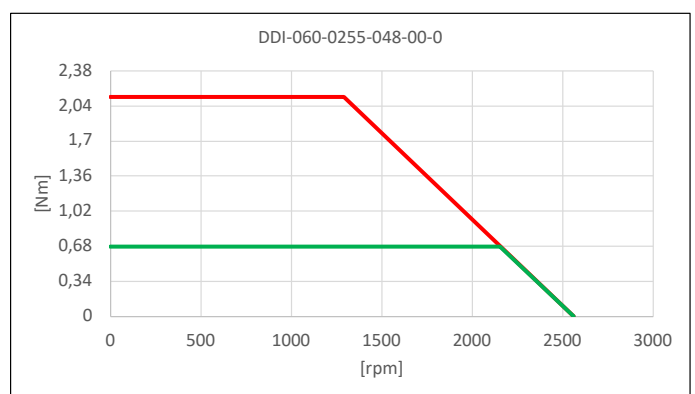
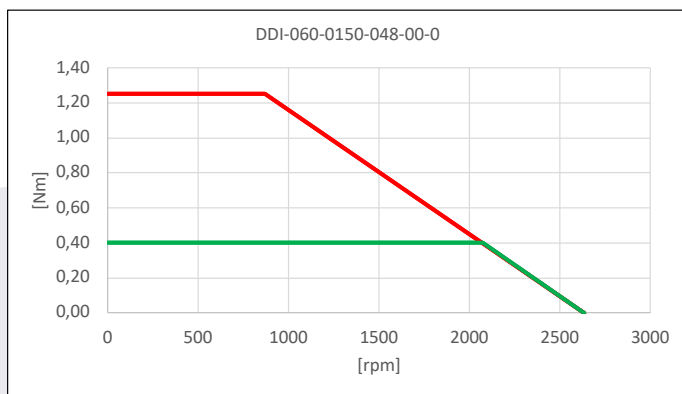
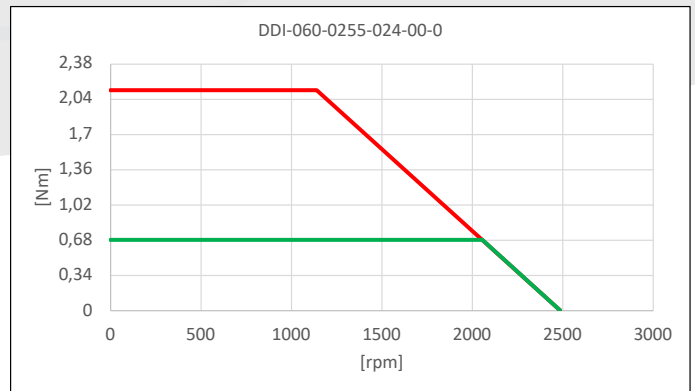
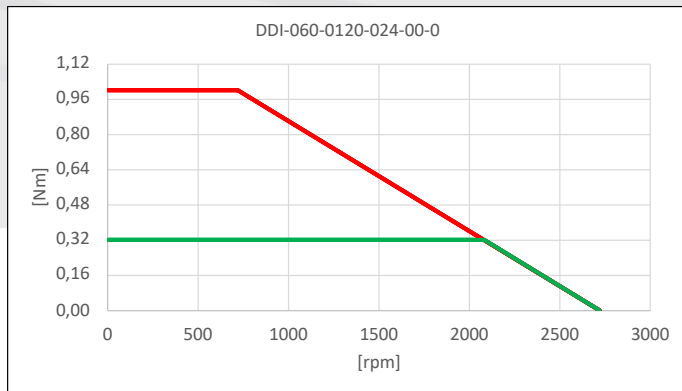
Product Features

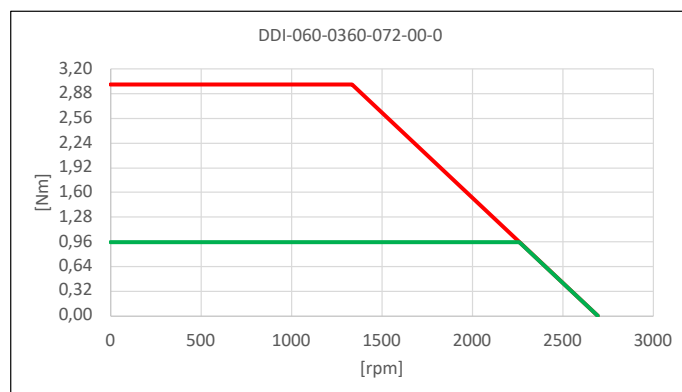
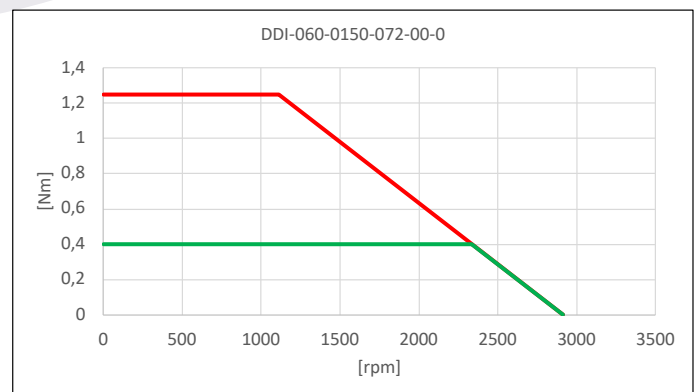
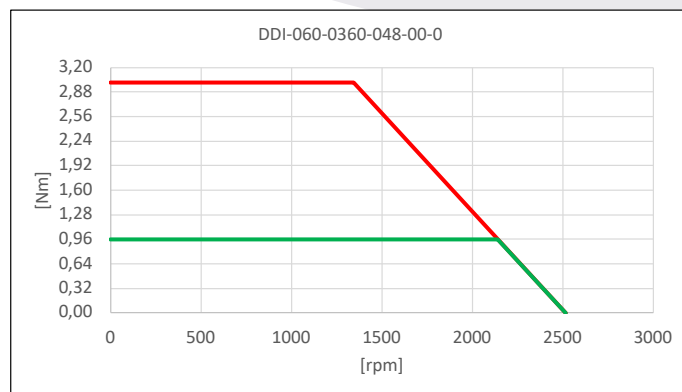
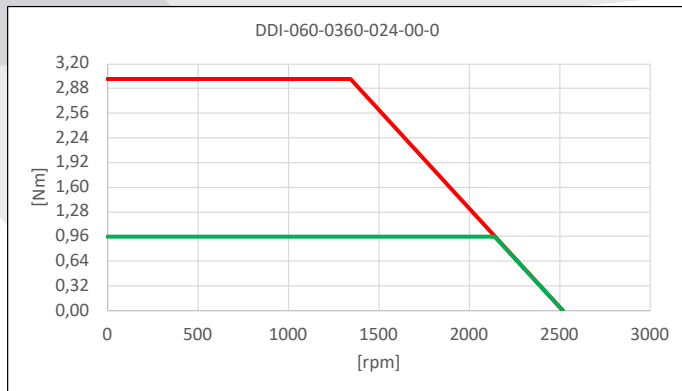


		DDI-060-0120-024-00-0	DDI-060-0150-048-00-0	DDI-060-0150-072-00-0
Dimensions	E1 (Non-lead side) [max.] [mm]:	8.0		
	L (Stack height) [mm]:	12	15	
	E2 (Lead side) [max.] [mm]:	10.5		
	OD (Outer diameter) [mm]:	60		
	ID (Inner diameter) [max.] [mm]:	30		
Electrical & Performance Characteristics	V DC [V]:	24	48	72
	Pole Pairs:	5		
	Rated Power [W]:	70	85	95
	Continuous Torque [Nm]:	0.32	0.40	
	Maximum Torque (Magnetic Saturation <5%) [Nm]:	1.00	1.25	
	Rated Speed [rpm]:	2080	2070	2335
	No-load speed [rpm]:	2720	2635	2910
	Continuous Current [Arms]:	3.68	2.23	1.64
	Ke [Phase-phase] [Vpk/krpm]:	7.529	15.558	21.129
	Kt [Sinusoidal] [Nm/Arms]:	0.08695	0.17937	0.24390

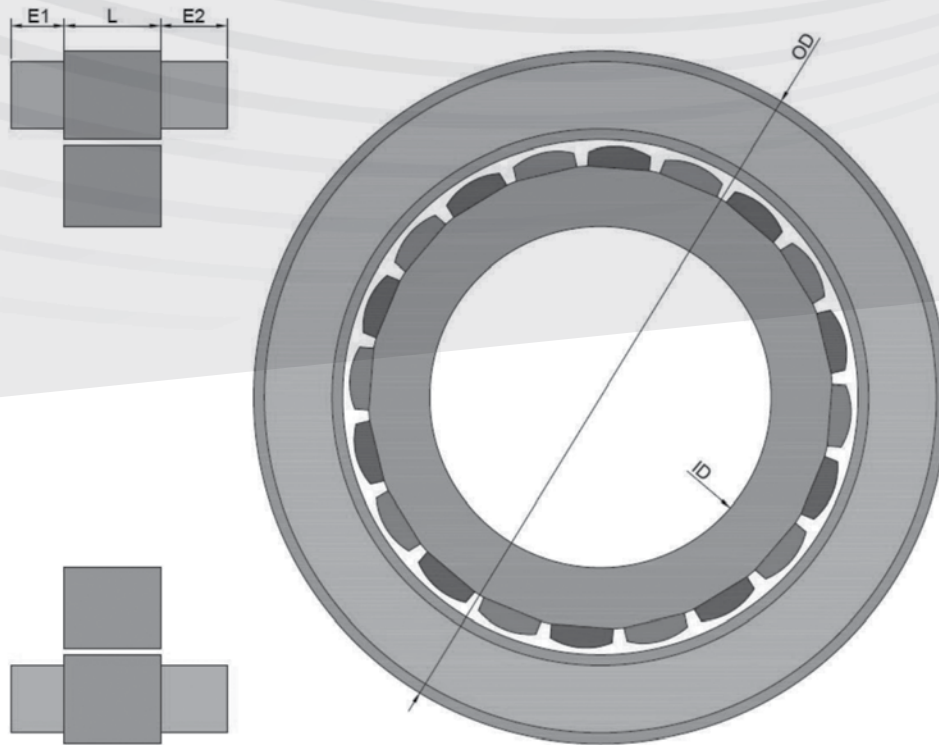
		DDI-060-0255-024-00-0	DDI-060-0255-048-00-0	DDI-060-0255-072-00-0
Dimensions	E1 (Non-lead side) [max.] [mm]:	8.0		
	L (Stack height) [mm]:	12		
	E2 (Lead side) [max.] [mm]:	10.5		
	OD (Outer diameter) [mm]:	60		
	ID (Inner diameter) [max.] [mm]:	30		
Electrical & Performance Characteristics	V DC [V]:	24	48	72
	Pole Pairs:	5		
	Rated Power [W]:	145	150	155
	Continuous Torque [Nm]:	0.68		
	Maximum Torque (Magnetic Saturation <5%) [Nm]:	2.13		
	Rated Speed [rpm]:	2055	2155	2230
	No-load speed [rpm]:	2485	2560	2680
	Continuous Current [Arms]:	7.21	3.68	2.57
	Ke (Phase-phase) [Vpk/krpm]:	8.163	16.000	22.944
	Kt (Sinusoidal) [Nm/Arms]:	0.09431	0.18478	0.26459

		DDI-060-0360-024-00-0	DDI-060-0360-048-00-0	DDI-060-0360-072-00-0
Dimensions	E1 (Non-lead side) [max.] [mm]:	8.0		
	L (Stack height) [mm]:	36.0		
	E2 (Lead side) [max.] [mm]:	10.5		
	OD (Outer diameter) [mm]:	60		
	ID (Inner diameter) [max.] [mm]:	30		
Electrical & Performance Characteristics	V DC [V]:	24	48	72
	Pole Pairs:	5		
	Rated Power [W]:	215		225
	Continuous Torque [Nm]:	0.96		
	Maximum Torque (Magnetic Saturation <5%) [Nm]:	3.00		
	Rated Speed [rpm]:	2140		2260
	No-load speed [rpm]:	2515		2695
	Continuous Current [Arms]:	7.21	5.15	3.68
	Ke (Phase-phase) [Vpk/krpm]:	8.067	16.135	22.588
	Kt (Sinusoidal) [Nm/Arms]:	0.09320	0.18640	0.26086





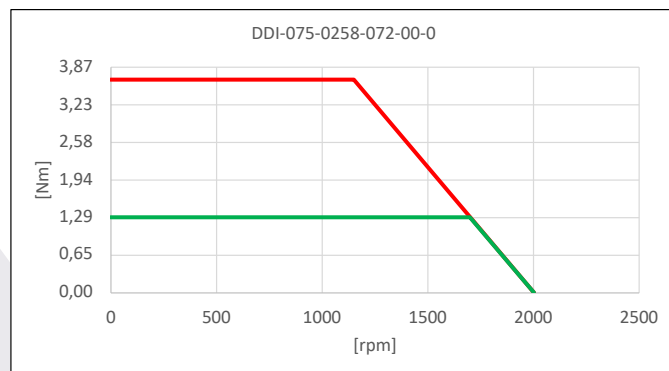
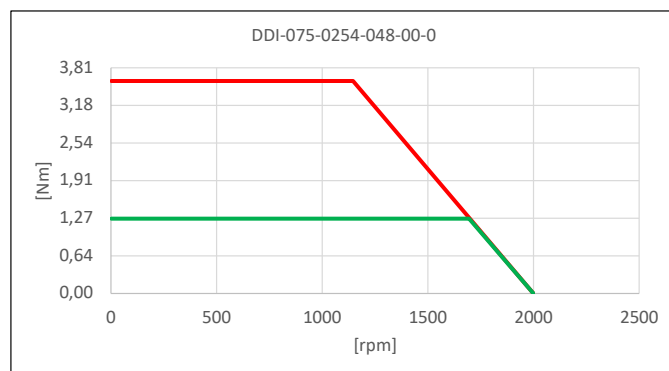
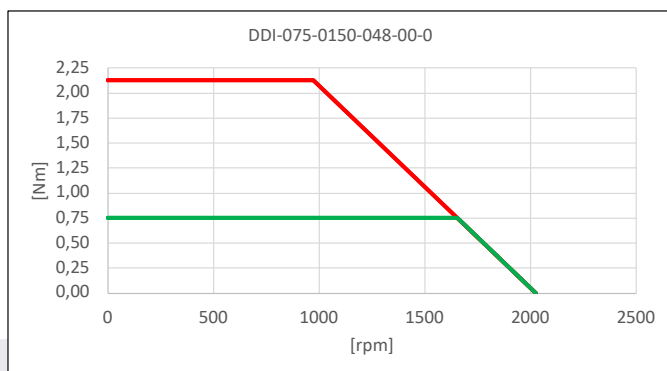
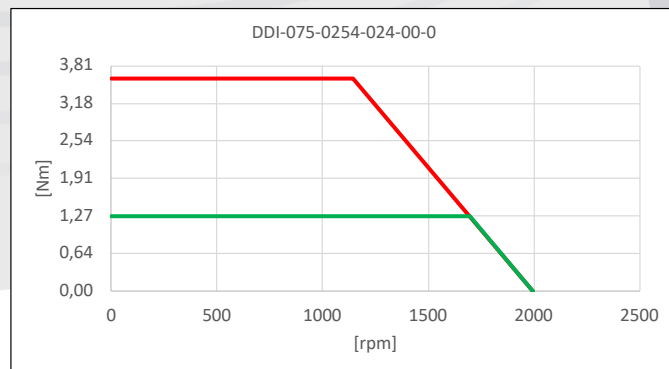
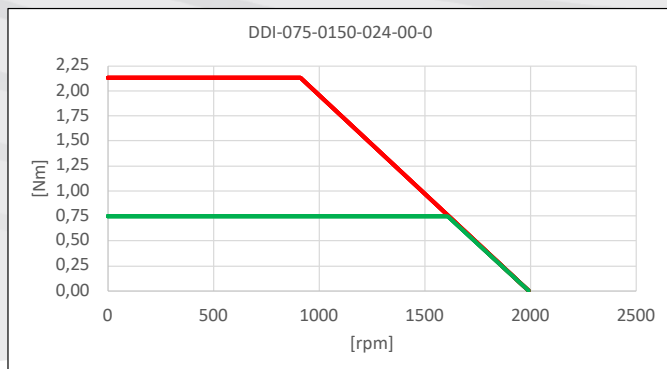
Product Features

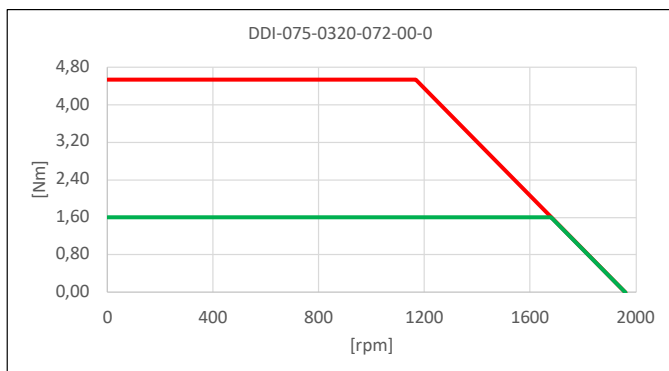
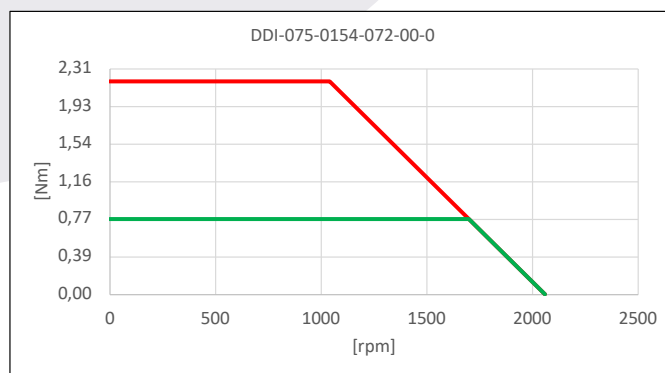
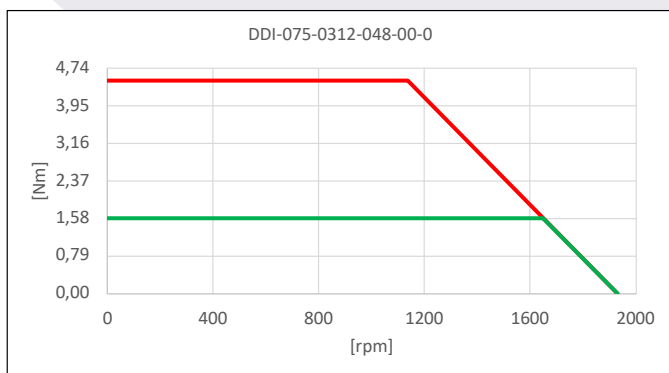
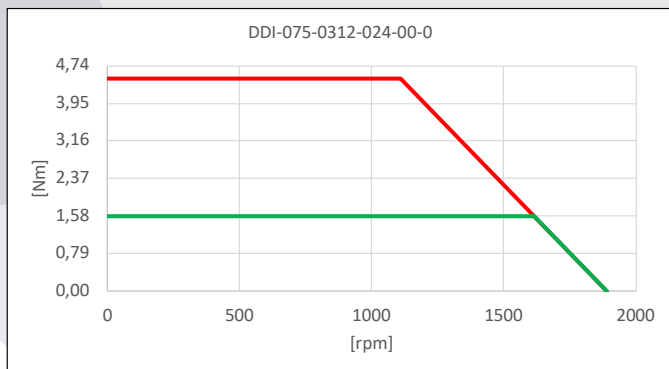


		DDI-075-0150-024-00-0	DDI-075-0150-048-00-0	DDI-075-0154-072-00-0
Dimensions	E1 (Non-lead side) [max.] [mm]:	7.0		
	L (Stack height) [mm]:	15.0		15.4
	E2 (Lead side) [max.] [mm]:	9.5		
	OD (Outer diameter) [mm]:	75		
	ID (Inner diameter) [max.] [mm]:	40		
Electrical & Performance Characteristics	V DC [V]:	24	48	72
	Pole Pairs:	7		
	Rated Power [W]:	125	130	135
	Continuous Torque [Nm]:	0.75		0.77
	Maximum Torque (Magnetic Saturation <5%) [Nm]:	2.13		2.18
	Rated Speed [rpm]:	1610	1655	1700
	No-load speed [rpm]:	1990	2025	2060
	Continuous Current [Arms]:	6.38	3.25	2.27
	Ke [Phase-phase] [Vpk/krpm]:	10.187	20.010	29.506
	Kt [Sinusoidal] [Nm/Arms]:	0.118	0.231	0.339

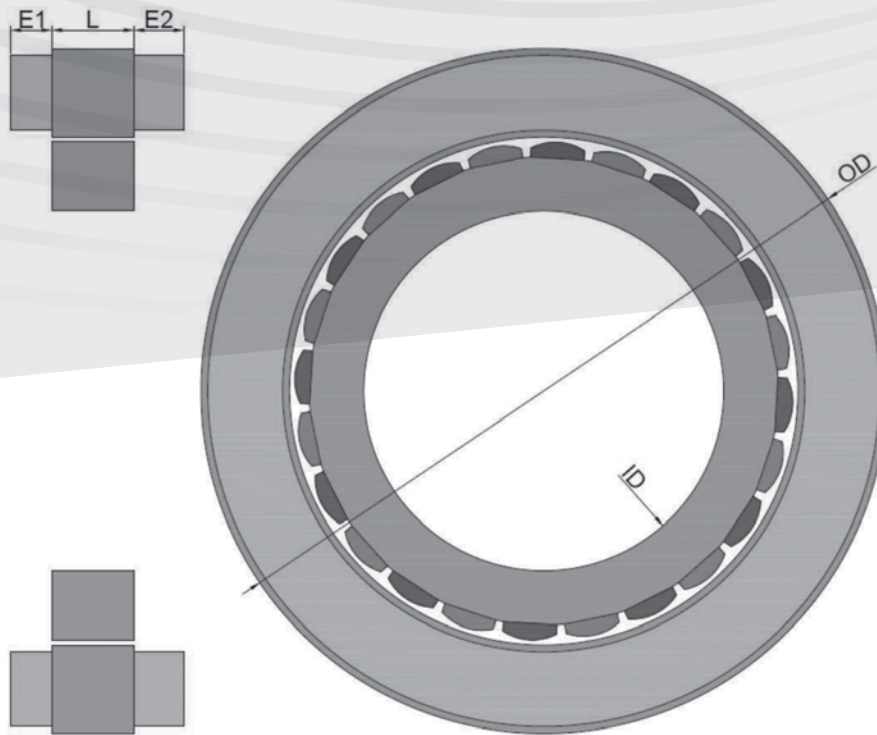
		DDI-075-0254-024-00-0	DDI-075-0254-048-00-0	DDI-075-0258-072-00-0
Dimensions	E1 (Non-lead side) [max.] [mm]:	7.0		
	L [Stack height] [mm]:	25.4		25.8
	E2 (Lead side) [max.] [mm]:	9.5		
	OD (Outer diameter) [mm]:	75		
	ID (Inner diameter) [max.] [mm]:	40		
Electrical & Performance Characteristics	V DC [V]:	24	48	72
	Pole Pairs:	7		
	Rated Power [W]:	225		230
	Continuous Torque [Nm]:	1.27		1.29
	Maximum Torque (Magnetic Saturation <%5) [Nm]:	3.60		3.66
	Rated Speed [rpm]:	1695	1695	1700
	No-load speed [rpm]:	1995	1995	2000
	Continuous Current [Arms]:	10.82	5.41	3.69
	Ke [Phase-phase] [Vpk/krpm]:	10.165	20.330	30.420
	Kt [Sinusoidal] [Nm/Arms]:	0.117	0.235	0.350

		DDI-075-0316-024-00-0	DDI-075-0316-048-00-0	DDI-075-0320-072-00-0
Dimensions	E1 (Non-lead side) [max.] [mm]:	7.0		
	L [Stack height] [mm]:	31.6		32.0
	E2 (Lead side) [max.] [mm]:	9.5		
	OD (Outer diameter) [mm]:	75		
	ID (Inner diameter) [max.] [mm]:	40		
Electrical & Performance Characteristics	V DC [V]:	24	48	72
	Pole Pairs:	7		
	Rated Power [W]:	265	270	280
	Continuous Torque [Nm]:	1.58		1.60
	Maximum Torque (Magnetic Saturation <%5) [Nm]:	4.48		4.53
	Rated Speed [rpm]:	1615	1650	1680
	No-load speed [rpm]:	1890	1930	1960
	Continuous Current [Arms]:	12.75	6.49	4.48
	Ke [Phase-phase] [Vpk/krpm]:	10.730	21.077	30.993
	Kt [Sinusoidal] [Nm/Arms]:	0.124	0.243	0.357





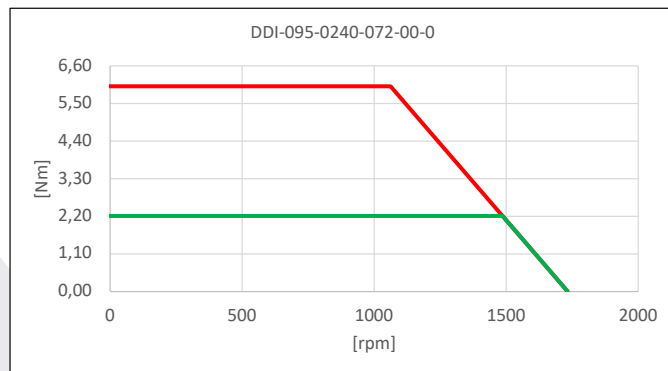
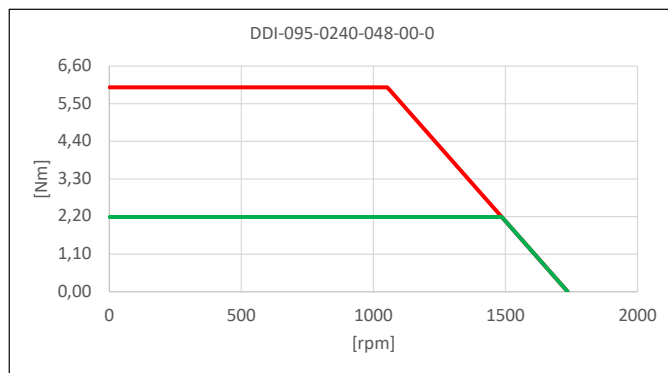
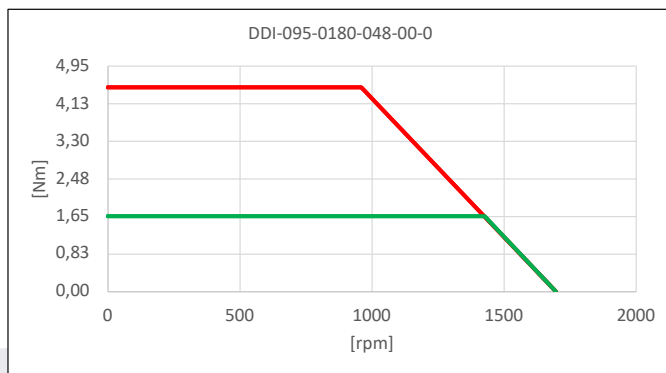
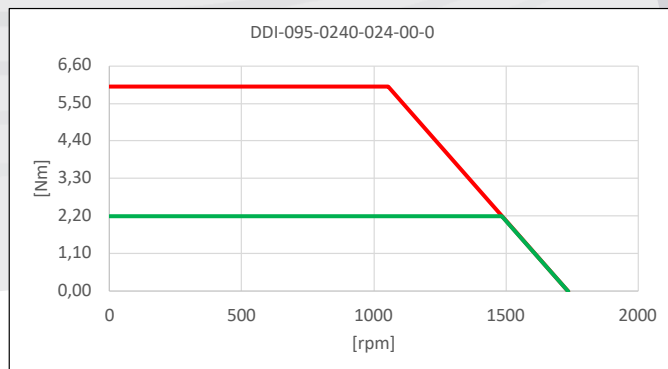
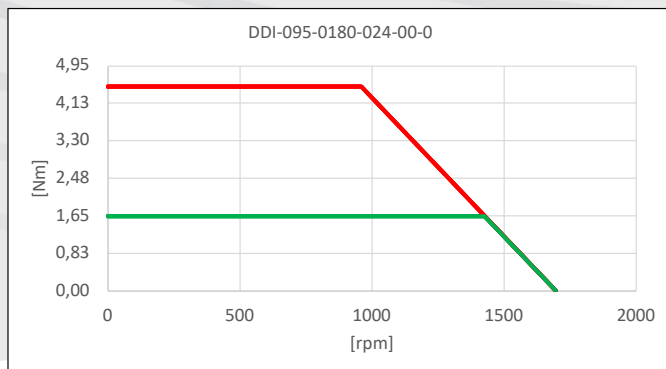
Product Features

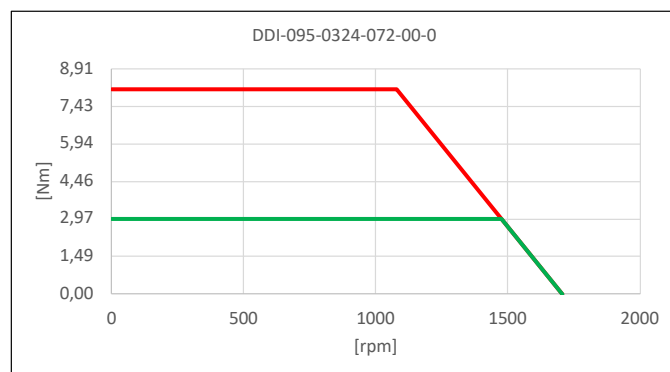
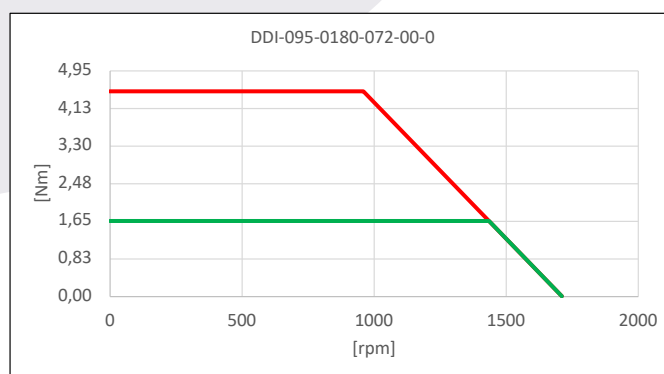
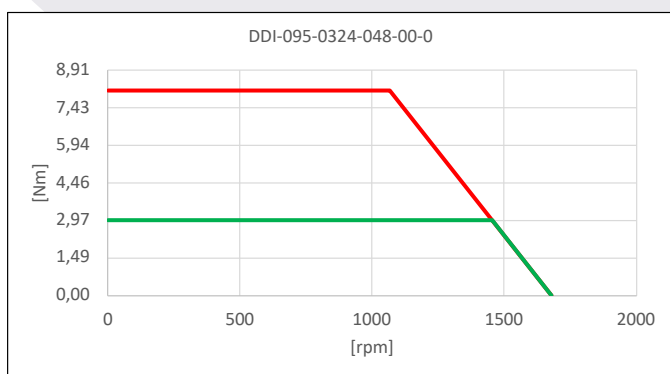
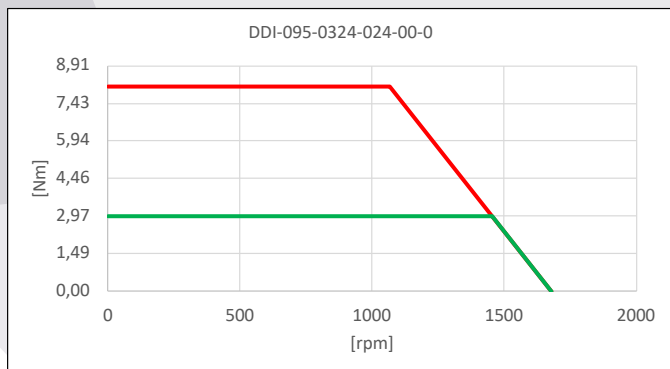


		DDI-095-0180-024-00-0	DDI-095-0180-048-00-0	DDI-095-0180-072-00-0
Dimensions	E1 (Non-lead side) [max.] [mm]:	8.5		
	L (Stack height) [mm]:	18.0		
	E2 (Lead side) [max.] [mm]:	11		
	OD (Outer diameter) [mm]:	95		
	ID (Inner diameter) [max.] [mm]:	54		
Electrical & Performance Characteristics	V DC [V]:	24	48	72
	Pole Pairs:	8		
	Rated Power [W]:	245		
	Continuous Torque [Nm]:	1.65		
	Maximum Torque (Magnetic Saturation <5%) [Nm]:	4.50		
	Rated Speed [rpm]:	1425		1435
	No-load speed [rpm]:	1695		1710
	Continuous Current [Arms]:	11.80	5.90	3.97
	Ke (Phase-phase) [Vpk/krpm]:	12.084	24.168	35.957
	Kt (Sinusoidal) [Nm/Arms]:	0.140	0.280	0.416

		DDI-095-0240-024-00-0	DDI-095-0240-048-00-0	DDI-095-0240-072-00-0
Dimensions	E1 (Non-lead side) [max.] [mm]:	8.5		
	L (Stack height) [mm]:	24.0		
	E2 (Lead side) [max.] [mm]:	11		
	OD (Outer diameter) [mm]:	95		
	ID (Inner diameter) [max.] [mm]:	54		
Electrical & Performance Characteristics	V DC [V]:	24	48	72
	Pole Pairs:	8		
	Rated Power [W]:	340		
	Continuous Torque [Nm]:	2.20		
	Maximum Torque (Magnetic Saturation <5%) [Nm]:	6.00		
	Rated Speed [rpm]:	1485		
	No-load speed [rpm]:	1735		1730
	Continuous Current [Arms]:	16.14	8.07	5.38
	Ke [Phase-phase] [Vpk/krpm]:	11.789	23.578	35.556
	Kt [Sinusoidal] [Nm/Arms]:	0.136	0.273	0.409

		DDI-095-0324-024-00-0	DDI-095-0324-048-00-0	DDI-095-0324-072-00-0
Dimensions	E1 (Non-lead side) [max.] [mm]:	8.5		
	L (Stack height) [mm]:	32.4		
	E2 (Lead side) [max.] [mm]:	11		
	OD (Outer diameter) [mm]:	95		
	ID (Inner diameter) [max.] [mm]:	54		
Electrical & Performance Characteristics	V DC [V]:	24	48	72
	Pole Pairs:	8		
	Rated Power [W]:	450		455
	Continuous Torque [Nm]:	2.97		
	Maximum Torque (Magnetic Saturation <5%) [Nm]:	8.10		
	Rated Speed [rpm]:	1455		1475
	No-load speed [rpm]:	1680		1705
	Continuous Current [Arms]:	21.04	10.52	7.12
	Ke [Phase-phase] [Vpk/krpm]:	12.202	24.404	36.075
	Kt [Sinusoidal] [Nm/Arms]:	0.141	0.282	0.417

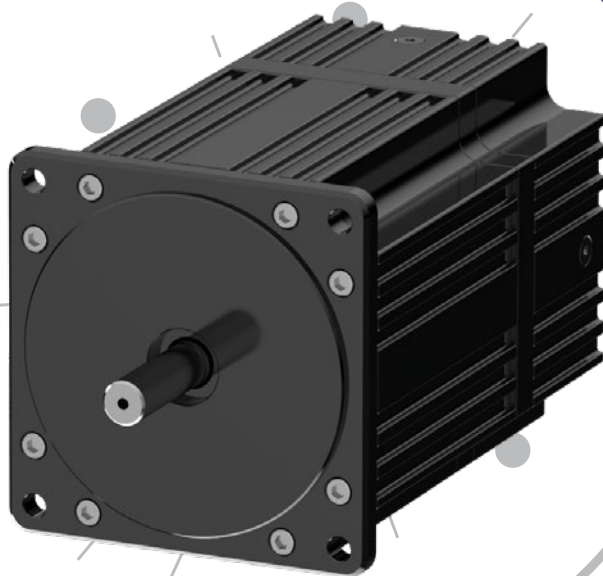




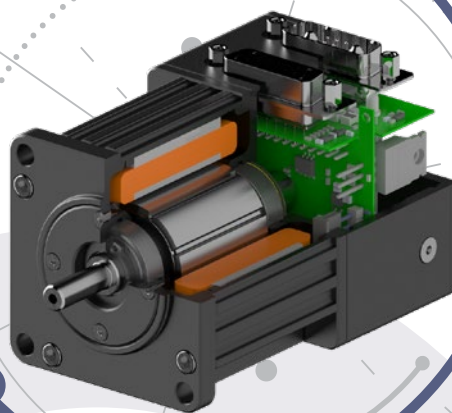
POWER & CONTROL WITH SEAMLESS INTEGRATION

A compact, all-in-one motor system with a built-in driver that simplifies installation and operation. This motor eliminates the need for external motor drivers, reducing wiring complexity and enhancing system efficiency. It offers advanced control features like speed, position, and torque monitoring, and multiple communication interfaces such as CAN and RS485. Designed for harsh environments, it includes features such as thermal management, real-time monitoring



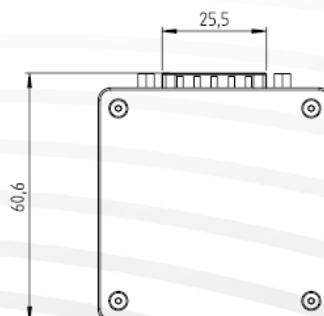
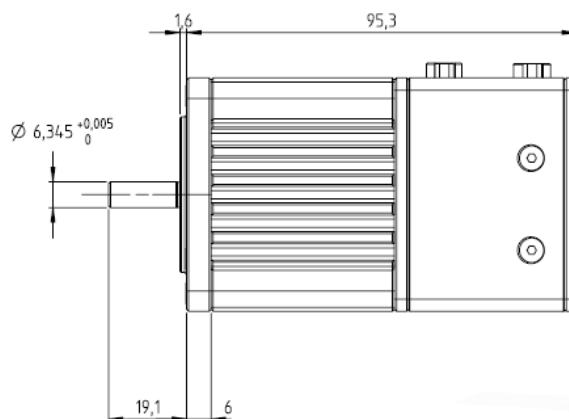
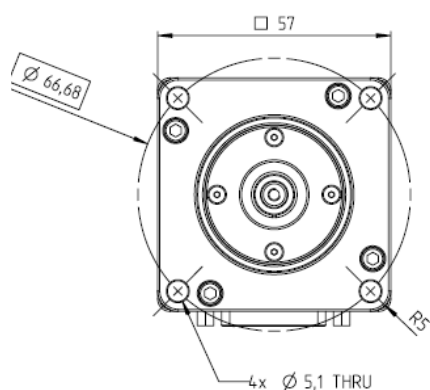


200W DRIVER INTEGRATED SERVO MOTOR

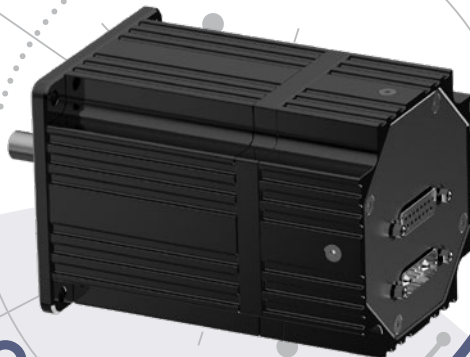
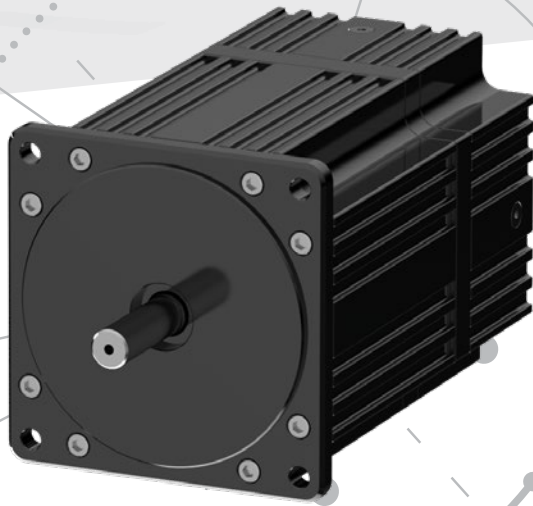


Product Features

Electrical Parameters	Main Input Voltage	12V-48V
	Rated Power	226W
	No Load Speed	8100rpm
	Continuous Current	6Arms
	Continuous Torque	0.33Nm
	Peak Torque	0.57Nm
	Voltage Constant	6.13V/kRPM
	Inductance	0.4mH
Control Modes and Command Type	Control Mode	Position, Speed, Torque
	Position Command Type	Internal Position Command
	Speed Command Type	Internal Speed Command
	Torque Command Type	Internal Torque Command
Control and Communication	Communication	CAN, RS485
	Control	Trapezoidal Control
	Encoder Resolution	2048
AI/AO	DI/DO	2/-
	AI/AO	-/-
Protection and Security	Protection	Short Circuit, Over Temperature, Over Voltage, Under Voltage, Feedback Error, Over Current
Size and Environmental Conditions Strength	Operating Temperature [°C]	-0°C to +85°C
	Storage Temperature [°C]	-20 °C to +85°C
	Dimension [H x W x L] [mm]	57mm x 57mm x 95.3mm
	Weight [kg]	0.8 kg

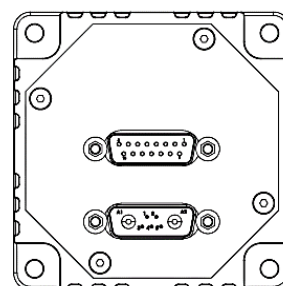
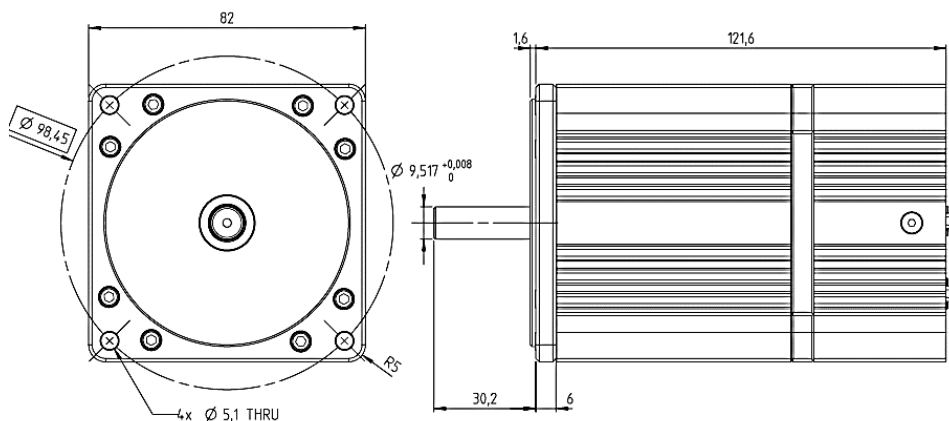


400W DRIVER INTEGRATED SERVO MOTOR



Product Features

Electrical Parameters	Main Input Voltage	12V-48V
	Rated Power	400W
	No Load Speed	8100rpm
	Continuous Current	10.3Arms
	Continuous Torque	1.2Nm
	Peak Torque	3.9Nm
	Voltage Constant	12.1V/kRPM
	Inductance	0.49mH
Control Modes and Command Type	Control Mode	Position. Speed. Torque
	Position Command Type	Internal Position Command
	Speed Command Type	Internal Speed Command
	Torque Command Type	Internal Torque Command
Control and Communication	Communication	CAN, RS485
	Control	Trapezoidal Control
	Encoder Resolution	2048
AI/AO	DI/DO	2/-
	AI/AO	-/-
Protection and Security	Protection	Short Circuit, Over Temperature, Over Voltage, Under Voltage, Feedback Error, Over Current
Size and Environmental Conditions Strength	Operating Temperature [°C]	-0°C to +85°C
	Storage Temperature [°C]	-20 °C to +85°C
	Dimension [H x W x L] [mm]	82mm x 82mm x 121.6mm
	Weight [kg]	1.4 kg



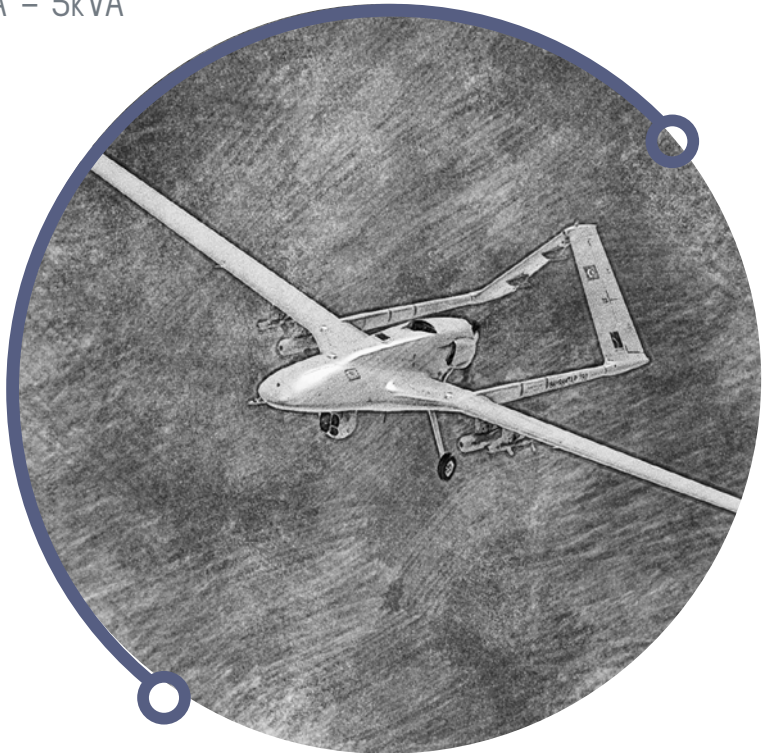
AVIATION ALTERNATORS

Product Features

CLAW POLE ALTERNATORS DATASHEET

Code	AC1800
Voltage	24 V DC
Pole Number	2p = 12
Voltage Constant [ke]	-
Nominal Power	1800 W
Speed	2000-9000 rpm
Current	91-100 Arms
Resistance [R _{II}]	145 mOhm
Resistance [H _{II}]	150 mH
Nominal Efficiency	>%90

- Belt-driven generator to alternator conversion
- Robust Design
- Power Range / Our Spectrum 1kVA – 5kVA



Product Features

PM ALTERNATORS DATASHEET

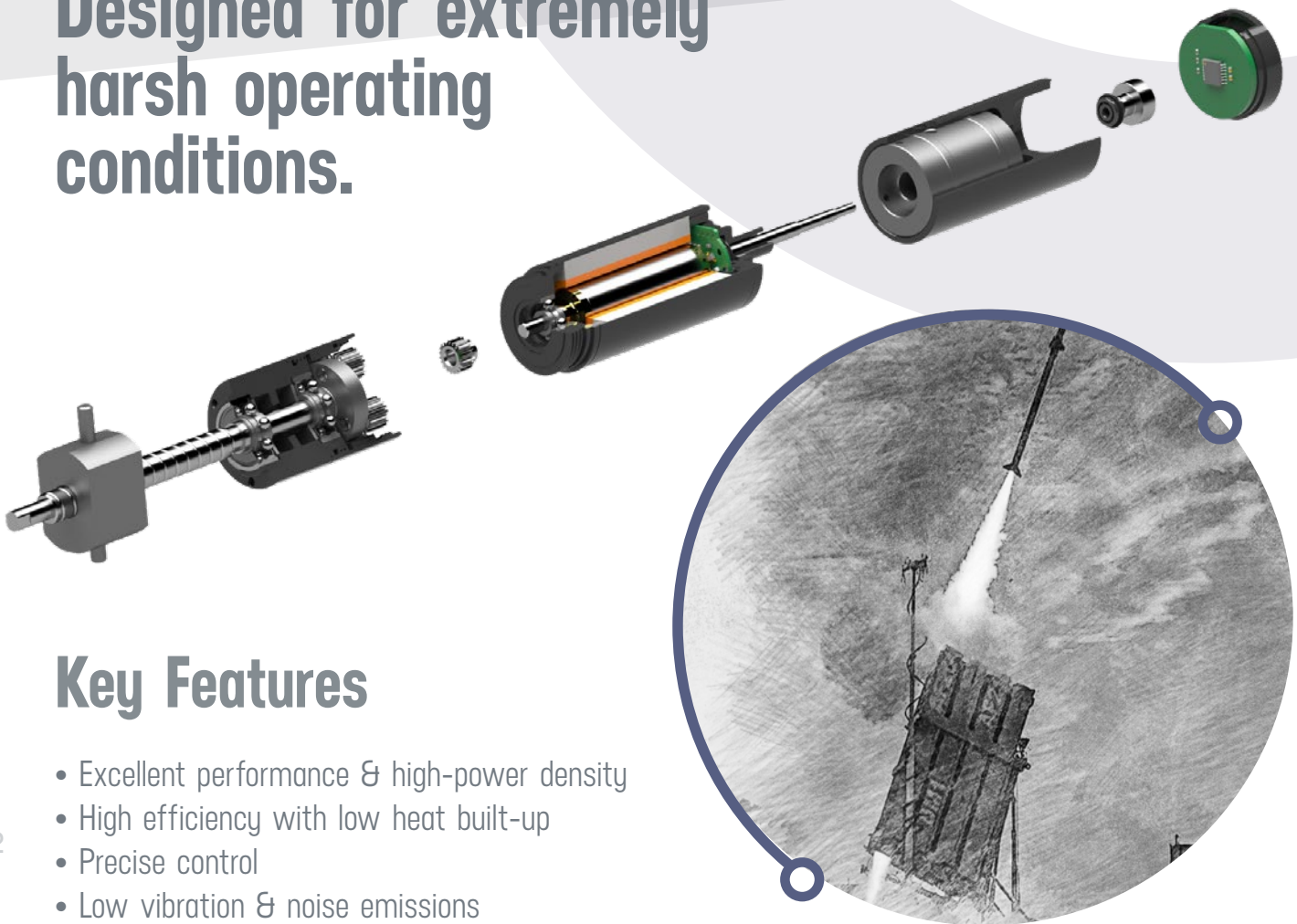
Alternatör Kodu[Stator/Rotor]	AP101000	AP103000	AC1800
Gerilim Aralığı	45 V-90 V AC	35 V-134 V AC	30 V-135 V AC
Kutup Sayısı:	2p=14	2p=14	2p = 12
Gerilim Sabiti [Ke]:	10.5 Vpk/krpm	12.5 Vpk/krpm	12.3 V/krpm
Nominal Güç:	1000 VA	3000 VA	1200 W
Hız Aralığı:	4000-8000 rpm	1800-8000 rpm	1800-8000 rpm
Akım Aralığı:	16.5 - 5.1 Arms	70-12 Arms	27-3 Arms
Terminaller Arası Direnç:	20 mOhm	37.8 mOhm	18 mOhm
Terminaller Arası Endüktans:	560 µH	850 mH	850 mH
Nominal Verim:	>%90	>%90	>%90

- Direct drive [No speed multiplier, no gearbox needed]
- Highest power-to-weight ratio in direct drive
- Power Range / Our Spectrum 1kVA – 5kVA



BRUSHLESS DC MICRO MOTORS WITH SLOTLESS IRON CORE

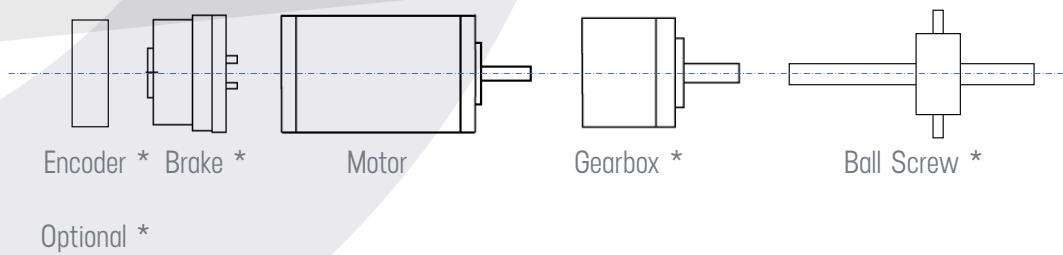
Designed for extremely
harsh operating
conditions.



Key Features

- Excellent performance & high-power density
- High efficiency with low heat built-up
- Precise control
- Low vibration & noise emissions
- Exceptional reliability
- Robust design at vibration, shock and thermal loads
- Configurable structure supported by wide product portfolio

Structure



Solutions

Aerospace industry

- Defence
- Aviation
- Urban air mobility
- Space
- Guidance

Industrial automation

- Laboratory automation
- Industrial power tools
- Inspection & instrumentation
- Semiconductor production

Mobility solutions

- Robotics
- Automotive
- Electric mobility

Medical technology

- Surgical systems
- Pumps & medication delivery systems

Nominal Voltage: 24 VDC

Power Range: 8-80 W

Diameter: 16-22-32-40 mm

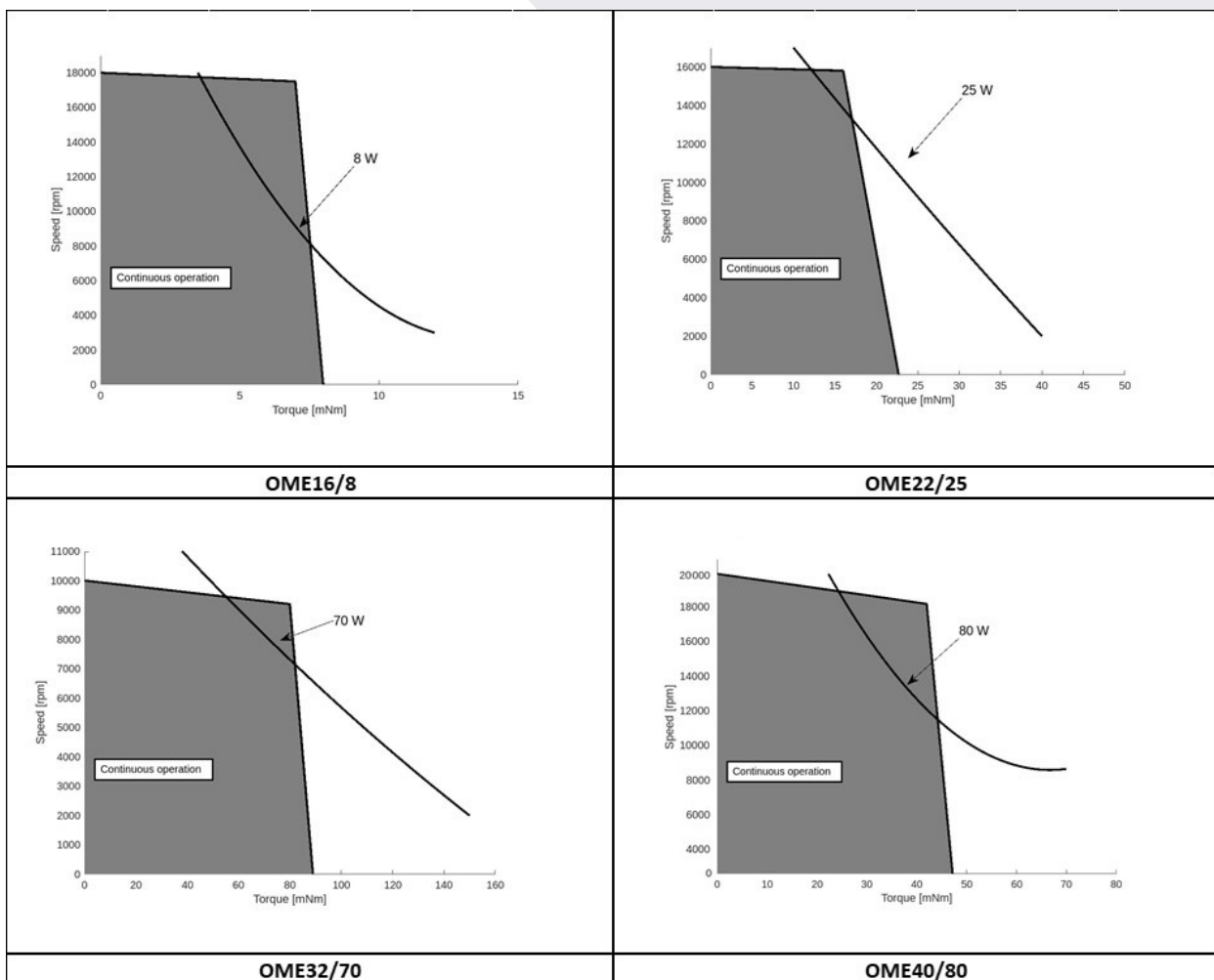
Integral Hall Sensor for Feedback (Optional Encoder)

Zero Cogging Torque

Operating Temperature Range: -35° to + 60°C

Your reliable partner is ready for the future.

Specifications

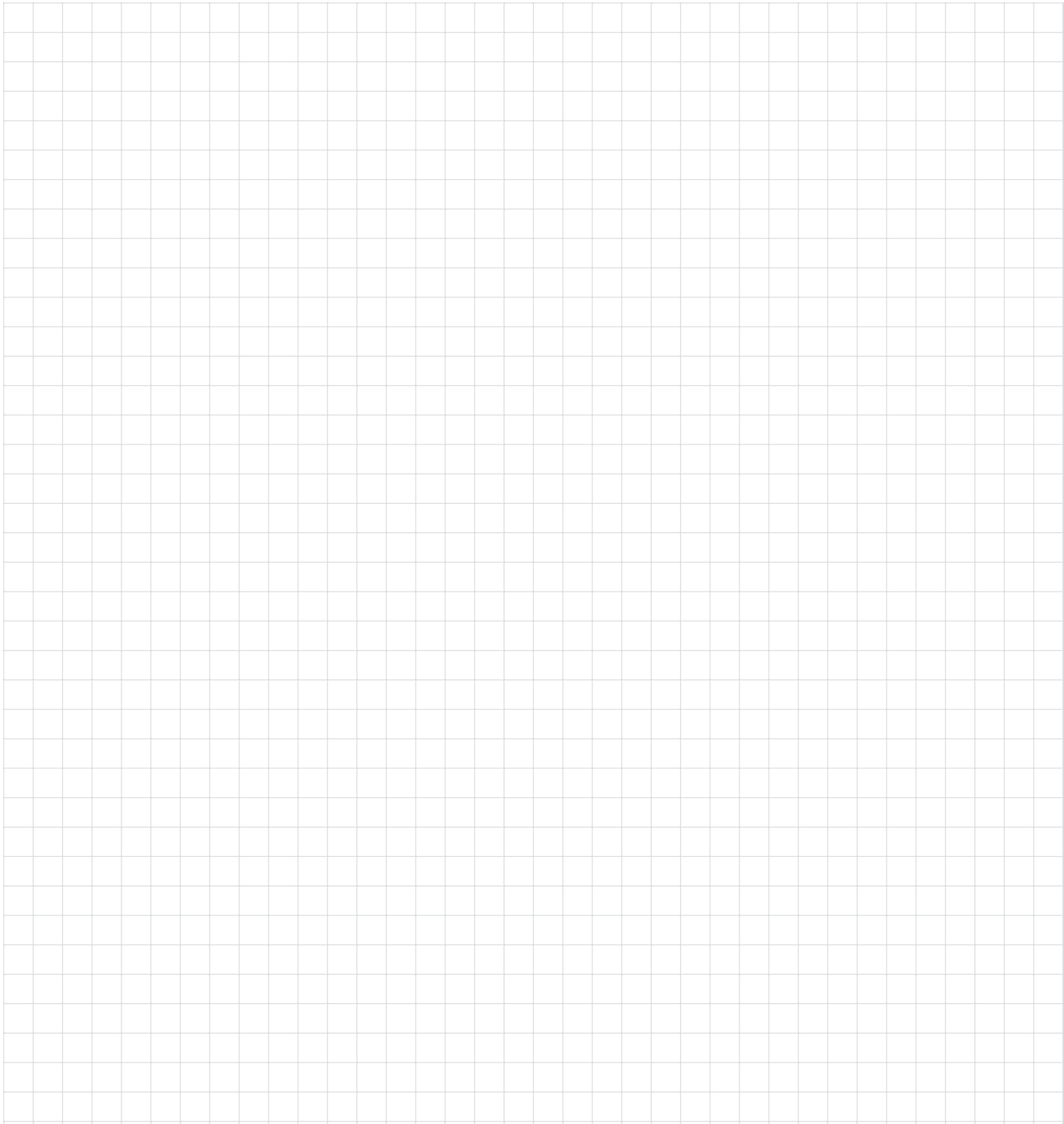


Product Features

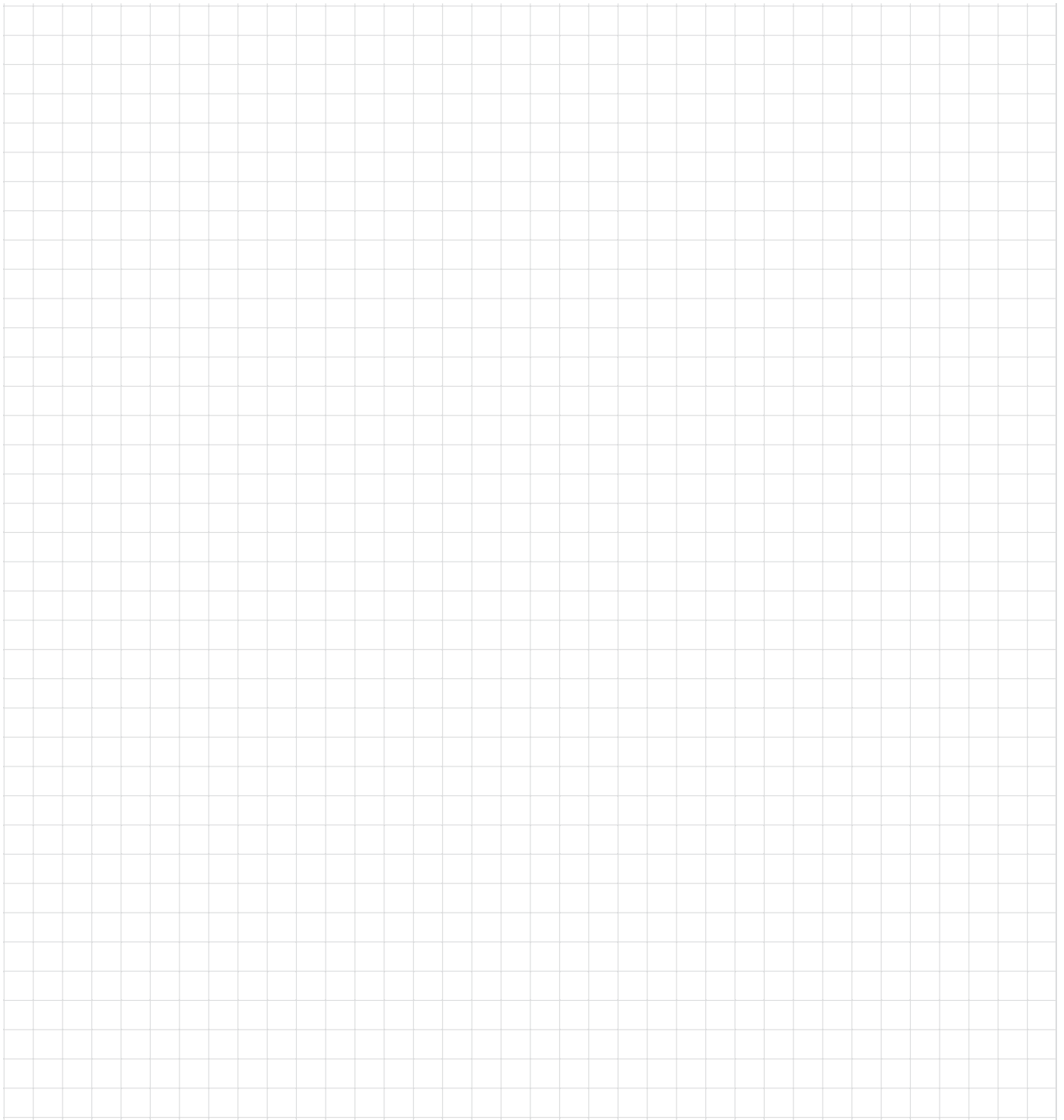
Electrical Data		Unit	OME16/8	OME22/25	OME32/70	OME40/80
1	Nominal Voltage	V	24	24	24	24
2	Optimization Direction		Symmetrical	Symmetrical	Symmetrical	Symmetrical
3	No Load Speed	rpm	11900	12900	11000	8040
4	Typical No Load Current	A	0.064	0.12	0.35	0.29
5	Nominal Speed	rpm	7300	10400	9450	6520
6	Max. Continuous Mechanical Power [@25°C]	W	8	25	80	70
7	Max. Continuous Current	A	0.909	1.4	2.46	3.44
8	Max. Continuous Torque	mNm	8	22.7	47.2	89.6
9	Back EMF Constant [kE]	rpm/V	1020	549	465	341
10	Torque Constant [kM]	mNm/A	9.32	17.4	20.5	28
11	Internal Resistance - Phase to Phase	ohm	5.3	3	1.39	1.35
12	Inductance - Phase to Phase	mH	0.14	0.182	0.226	0.186
13	Mechanical Time Constant	ms	5.18	5.06	6.59	8.82

General Data						
14	Ambient Working Temperature Range	°C	-35 to +60	-35 to +60	-35 to +60	-35 to +60
15	Ambient Storage Temperature Range	°C	-54 to +65	-54 to +65	-54 to +65	-54 to +65
16	Maximum Radial Load	N	6	16	28	80
17	Maximum Axial Load [Dynamic]	N	1	3.5	5.6	8
18	Maximum Winding Temperature	°C	155	155	155	155
19	Thermal Resistance Housing-Ambient	K/W	17.7	10.2	5.4	4.63
20	Thermal Time Constant Winding	s	0.9	1.99	14.8	3.78
21	Rotor Inertia	gcm ²	0.85	4.45	20	51.2
22	Hall Sensor Electrical Phasing	degree	120	120	120	120
23	Weight of Motor	g	58	119	270	460
24	Outer Diameter	mm	16	22	32	40
25	Other Dimensions	mm	Depends on Requirements and Configuration			

NOT



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WAT MOTOR SANAYİ ve TİCARET A.Ş.

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