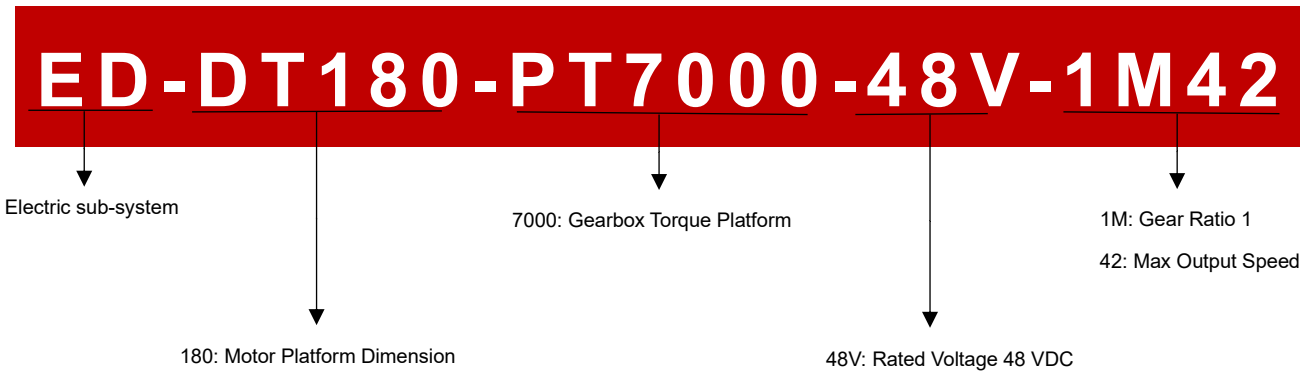
Technical Information

ED-DT180-PT7000-48V-1M42

Product Technical Specification

- Permanent Magnet Synchronous Motor (PMSM) with Flat Wire Winding.
- The ED-DT180-PT7000-48V-1M42 is engineered to deliver high-efficiency electric propulsion for engineering vehicles.
- The machine is developed specifically for demanding applications. It is smaller, lighter and more efficient than conventional products on the market.

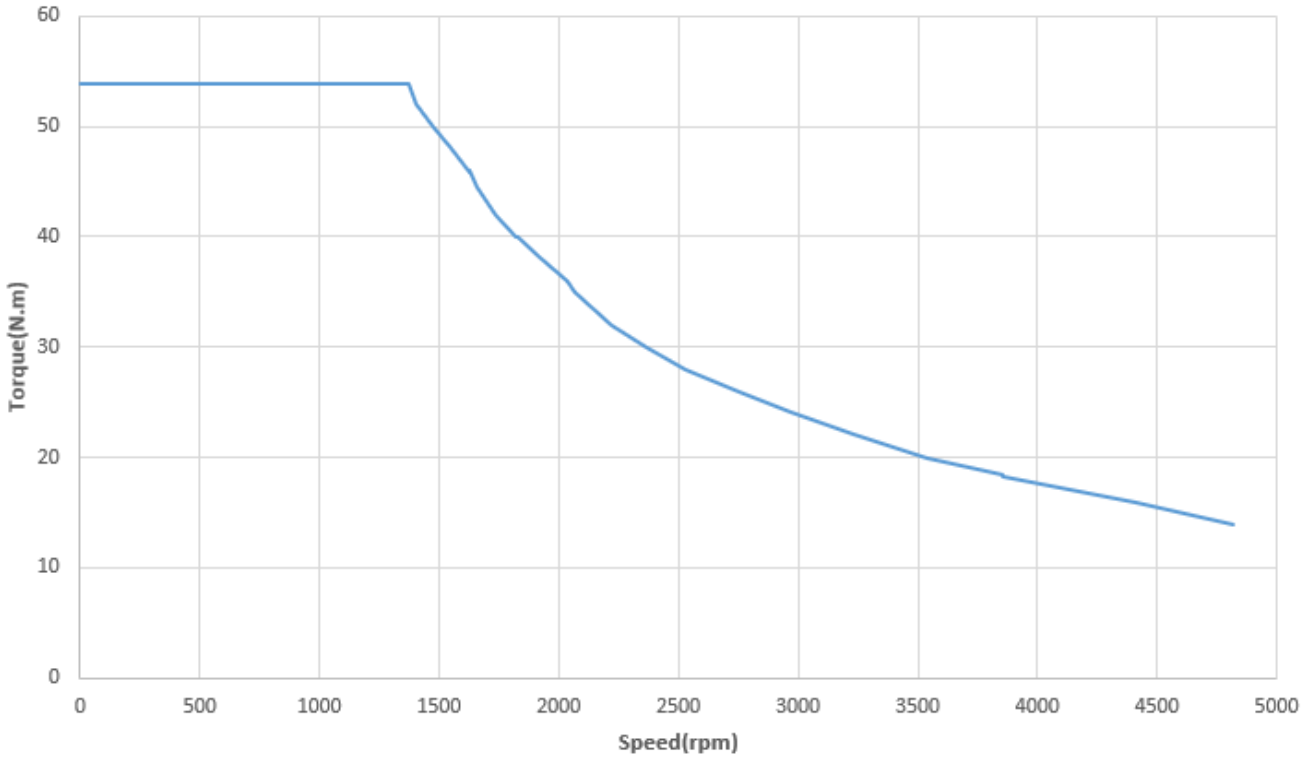
1 Model Designation



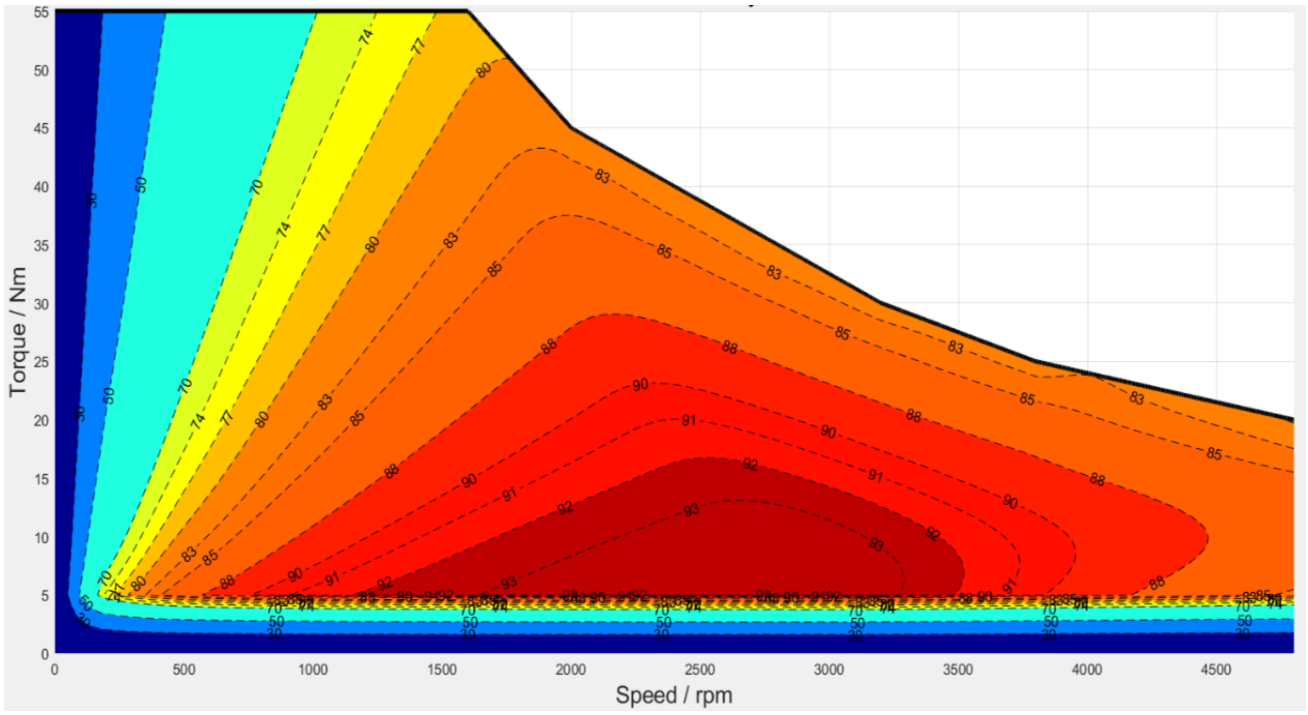
2 Specifications

Item	Value	Item	Value
Rated Voltage (VDC)	48	Voltage Range (VDC)	33-66
Rated Output Power(kW)	3.5	Max Output Power(kW)	7.5
Rated / Max Output Speed(rpm)	21/42	Rated / Max Output Torque (N.m)	1600/6180
Gearbox Lubrication	0.85L/SHC626	Gearbox Ratio	114.5
Motor Connection Method	Y Connection	The Poles of Motor	4
Speed Sensor Type	SIN/COS	The Poles of Encoder	4
SIN/COS Vpp (V)	3.2±0.4	Line Back EMF. (V/k rpm)	10.3±10% (25℃)
Line Resistance (mΩ)	29.5±5% Unbalance<=3%	Line Inductance (uH)	108±5% Unbalance<=3%
Lnsulation Leakage Current	<=5mA (1500Vrms,1min)	Insulation Resistance	>=20 MΩ (500VDC)
Duty Type	S2	Insulation Class	H
Temp Sensor Type	PT1000	Altitude (m)	<=1000
Brake Rated Voltage(V)	48	Drop-Out Voltage (V)	<=24
Pull-In Voltage (V)	<=32	Rated Brake Torque(N.m)	>=85
Maintain Current(A)	<=2	Effective Braking Cycles	>=1000Time
Ambient Operating Temperature(℃)	-30~55℃	Ambient Storage Temperature(℃)	-30~85℃
IP Rating	IP67 Outside of U\ V\ W	Weight(kg)	66.5±1

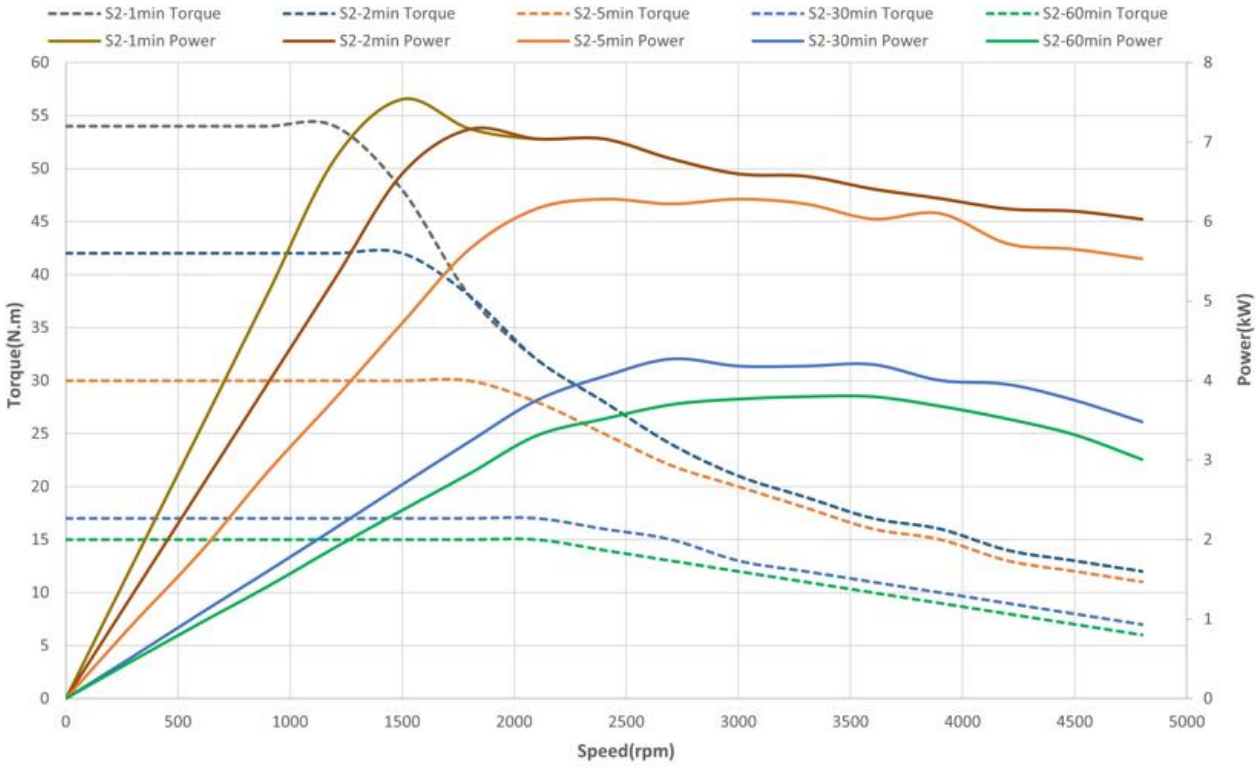
3 Motor External Characteristic Curve @ 48VDC



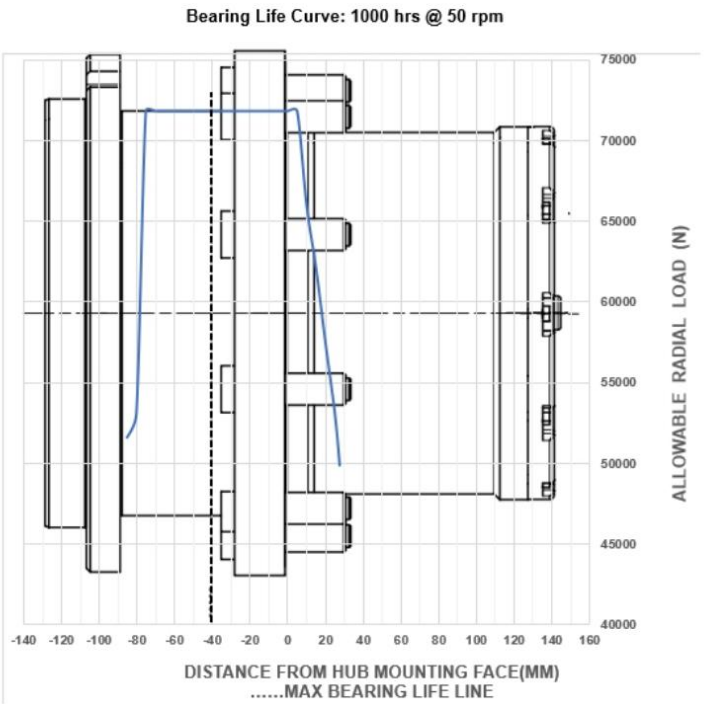
4 Motor Efficiency Map at 48VDC



5 Motor S2 Mode Work Curve at 48VDC

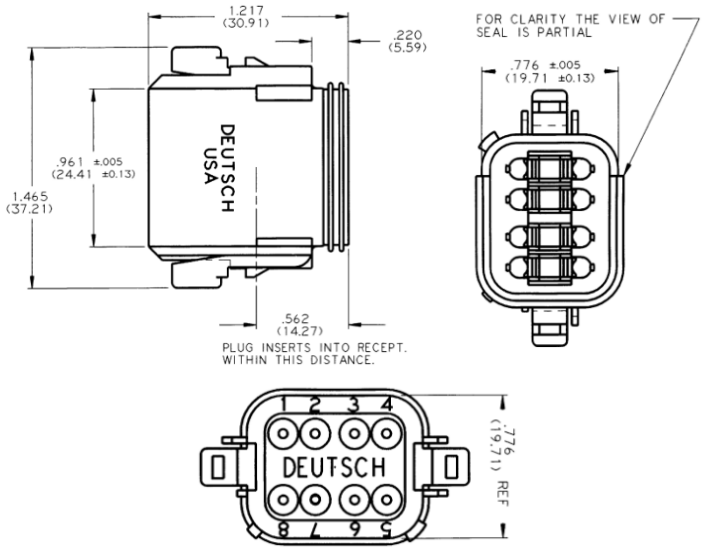


6 Bearing Curve

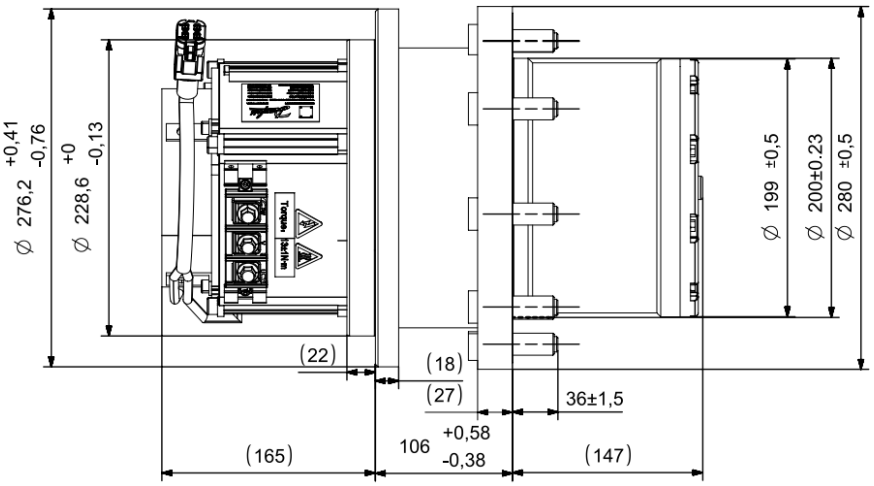


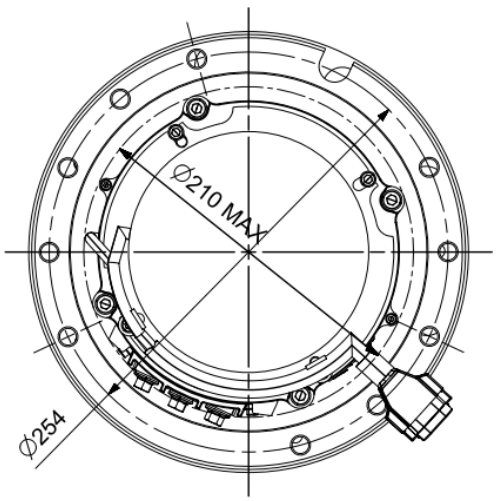
7 Pin Definition

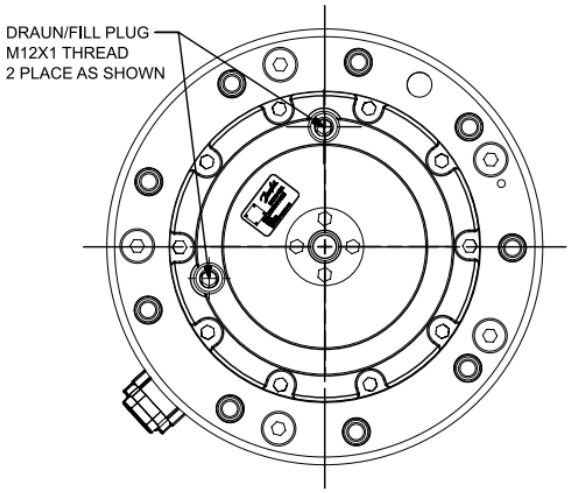
Connector type：DT06-08SA-EP06		
Pin	**Description**	**Color**
1	VCC +5V	Orange
2	GND	Grey
3	Brake+	Red
4	Brake-	Black
5	Temp Sensor-	Yellow
6	Temp Sensor+	White
7	SIN	Green
8	COS	Blue



8 Dimensions







8 Validation standards

Standard	Description
Withstand Voltage Test	EN 1175
Insulation Resistance Test	EN 1175
Low Temperature Storage Test	IEC 60068-2-1: Test A: Cold
Low Temperature Operation Test	IEC 60068-2-1: Test A: Cold
High Temperature Storage Test	IEC 60068-2-2: Test B: Dry heat
High Temperature Operation Test	IEC 60068-2-2: Test B: Dry heat
Salt Spray Test	IEC 60068-2-52 Test Kb: Salt mist, cyclic (sodium chloride solution)
EMC Test	ISO 13766-1-2018; IEC 61000-4-2; IEC 61000-4-8 and IEC 61000-4-5
Over-Speed Test	IEC 60034-1-2017 Part 1: Rating and performance
Constant Damp Heat Test	IEC 60068-2-78: Test Cab: Damp heat, steady state
Damp Heat Cycle Test	IEC 60068-2-30 Test Db: Damp heat, cyclic (12 h + 12 h cycle)
Temperature Shock Test	IEC 60068-2-14 Test N: Change of temperature
Swept-Sine Vibration Test	IEC 60068-2-6 Test Fc: Vibration (sinusoidal)
Broadband Random Vibration Test	IEC 60068-2-64 Test Fh: Vibration, broadband random and guidance
Shock Vibration Test	IEC 60068-2-27 Test Ea and guidance: Shock
IP Protection Test	IEC 60529:2008 Degrees of protection provided by enclosures (IP Code)
Free Fall Test	IEC 60068-2-31: Test Ec: Rough Handling Shocks