ENGINEERING TOMORROW

Data Sheet

ePowerpack ED-EP130

Low voltage motor and converter system

FEATURES

- Competitive and compact size allows for easy installation
- Integrated structure provides up to 93 % efficiency
- High enclosure class IP67 – sealed from moisture and dust
- Embedded with SAE flange for quick coupling
- Package test ensures the whole unit is within higher consistency
- Low energy consumption and environmentally friendly

SOFTWARE FEATURES

- Motor speed control via CANbus / analog signal
- Configurable Power Map curve

TYPICAL APPLICATIONS

- Scissor lift
- Boom lift
- Hydraulic station

GENERAL

Danfoss ePowerpack is intelligently designed for maximizing efficiency and compactness.

ePowerpack consists of a high-performance, interior permanent magnet motor and a high-power, passive air-cooled converter with a full-featured digital signal processor. Variants include optional gear pumps with different power settings in software.

These systems are optimal for MEWP and off-highway applications, providing hydraulic flows that fit demanding criteria.

SPECIFICATIONS

General	
Control mode	Speed
Speed request	CAN / analog
Flange	SAE A
Shaft	ANSI B92.1-9T-16/32 internal spline

Cooling	
Cooling method	Passive air-cooling

Ambient Conditions	
Storage temperature range	-40°C - +85°C
Operating temperature range	-40°C - +65°C
Absolute maximum device internal temperature	Motor +150°C, inverter +95°C
Altitude	2000 m, up to 5000 m allowed (see section DERATING for details)
Relative humidity	< 95 %
Enclosure class	IP67

Connections	
Battery / DC-link side cable cross section	Up to 50 mm^2 (Cu)
Battery / DC-link connection	2x M6x16 threaded terminal connection (B+, B-)
Battery / DC-link connections cable lug size	50-6
Battery / DC-link side recommended cable lug	50 mm^2: Druseidt 03227 (straight), 03842 (right-angled 90°) https://druseidt.de
LV connector	8-pin Tyco electronics AMPSEAL connector https://www.te.com
LV connector type	1-776276-1 (see Picture 3)
LV connector pin configuration	See section SIGNAL CONNECTOR PINOUT
LV mating connector type	TE 776286-1
LV mating connector pin type	0.5-1.25 mm^2: TE 770854-3 (gold plated)

Standards and classifications
EMC requirements: IEC61800-3:2018
Vibration class IEC 60068-2 - Vibration (Sinusoidal): IEC 60068-2-6:2007 - Vibration (Broadband random): IEC 60068-2-64 Edition 2.1 2019 - Shock: IEC 60068-2-27:2008 - Bump: IEC 60068-2-27:2008
ECE R10.06 supplement 03

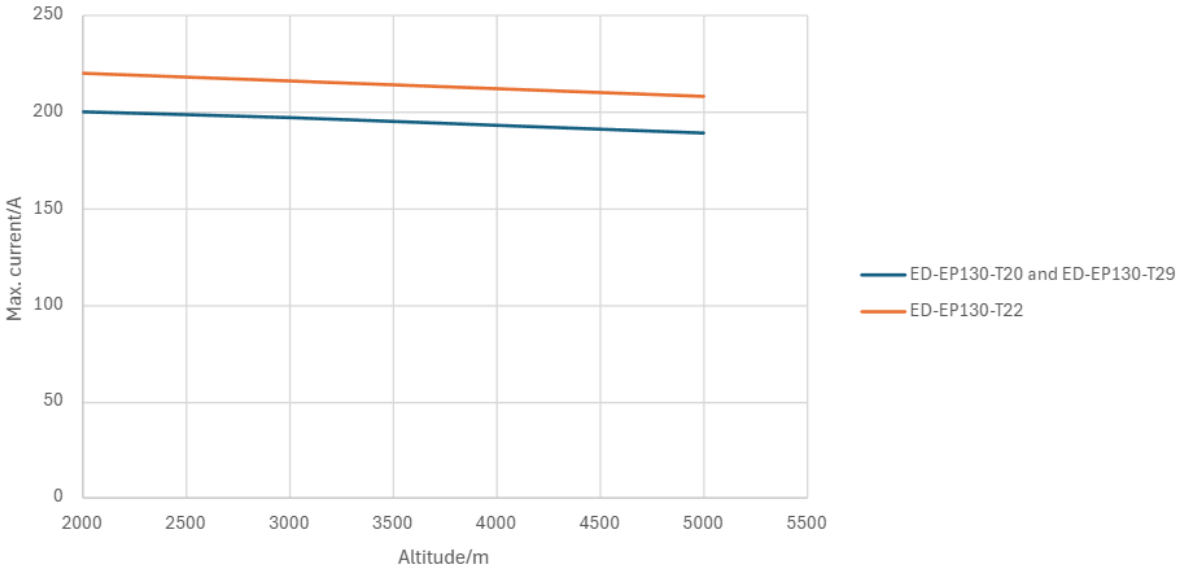
ED-EP130-T20-24-3600	
Rated voltage	24 V_{DC}
Operating voltage	16.8-33 V_{DC}
Bus rated current @ rated voltage	92 A_{DC}
Bus maximum current @ rated voltage	180 A_{DC}
Rated phase current (S2-60 min)	65 A_{RMS}
Maximum phase current (S2-30 s)	200 A_{RMS}
Rated torque	6.3 Nm
Maximum torque	20.0 Nm
Rated speed	3000 rpm
Maximum speed	3600 rpm
Power @ S2-60 min	2.0 kW
Power @ S3-55 %	2.5 kW
Weight	11.3 kg
Overall dimensions L x W x H	244 x 138 x 232.5 mm (see Picture 4)

ED-EP130-T22-24-4000	
Rated voltage	24 V_{DC}
Operating voltage	16.8-33 V_{DC}
Bus rated current @ rated voltage	135 A_{DC}
Bus maximum current @ rated voltage	220 A_{DC}
Rated phase current (S2-60 min)	110 A_{RMS}
Maximum phase current (S2-30 s)	220 A_{RMS}
Rated torque	9.6 Nm
Maximum torque	22.0 Nm
Rated speed	3000 rpm
Maximum speed	4000 rpm
Power @ S2-60 min	3.0 kW
Power @ S3-55 %	3.5 kW
Weight	13.5 kg
Overall dimensions L x W x H	269 x 138 x 232.5 mm (see Picture 5)

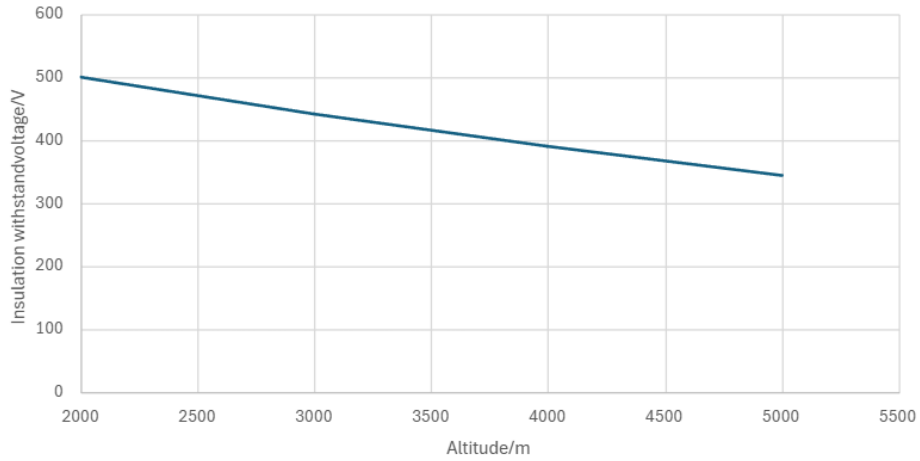
ED-EP130-T29-48-4000	
Rated voltage	48 V_{DC}
Operating voltage range	36.4-57.6 V_{DC}
Bus rated current @ rated voltage	90 A_{DC}
Bus maximum current @ rated voltage	150 A_{DC}
Rated phase current (S2-60 min)	80 A_{RMS}
Maximum phase current (S2-30 s)	200 A_{RMS}
Rated torque	13.0 Nm
Maximum torque	29.0 Nm
Rated speed	3000 rpm
Maximum speed	4000 rpm
Power @ S2-60 min	4.0 kW

Power @ S3-55 %	5.0 kW
Weight	13.5 kg
Overall dimensions L x W x H	269 x 138 x 232.5 mm (see Picture 5)

DERATING



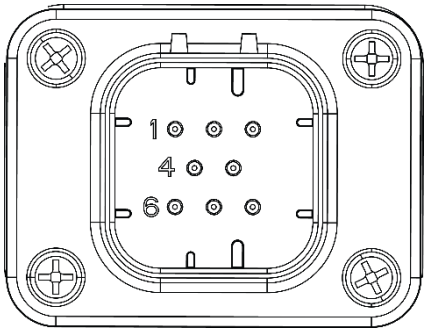
Picture 1 Current correction (S2-30s)



Picture 2 Insulation withstand voltage

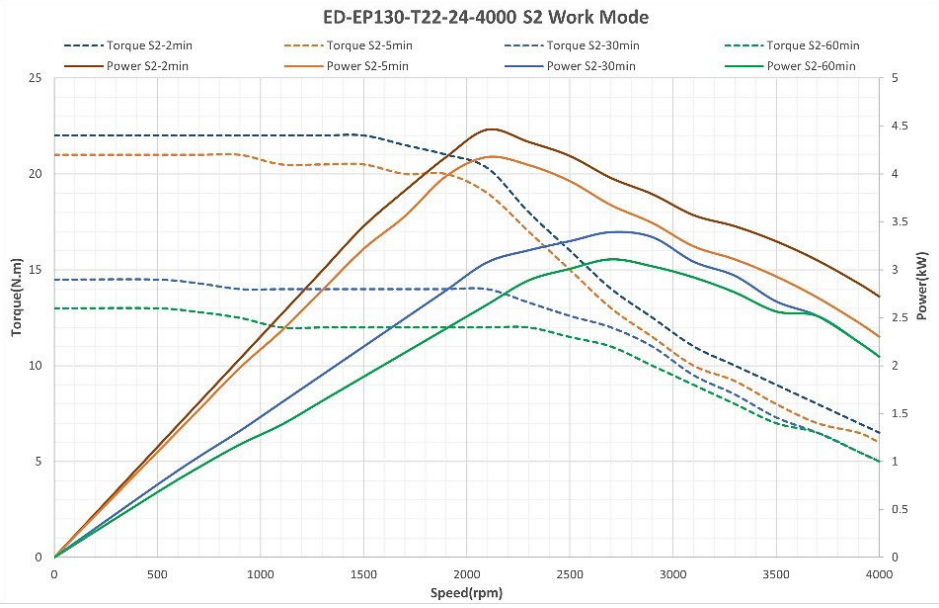
SIGNAL CONNECTOR PINOUT

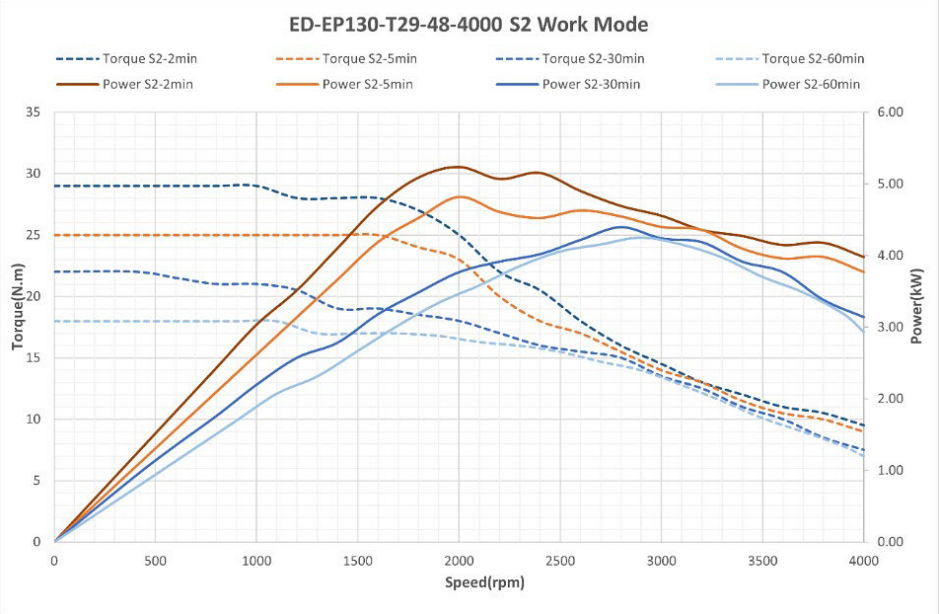
PIN	Signal name	Description	Note
1	Main Relay Coil Driver	The main relay is driven (connected to the negative end of the relay drive)	Continuous output current ≤1.5A
2	Key Switch	Key input switch, providing power to logic	Max input current 2A, Voltage: 16.8-33V_{DC}
3	Pot Wiper	Analog throttle signal input	Input impedance 75KΩ±10%, Voltage: 0-5V
4	ENABLE	Enable signal input	Maximum voltage 33V High Level >=7V±0.3V Low level: <=4V±0.3V
5	DIRECTION	Directional signal input	Maximum voltage 33V High Level >=7V±0.3V Low level: <=4V±0.3V
6	CAN_H	CAN H	Max 500Kbs, without 120Ω inside
7	CAN_L	CAN L	Max 500Kbs, without 120Ω inside
8	I/O GND	I/O GND	



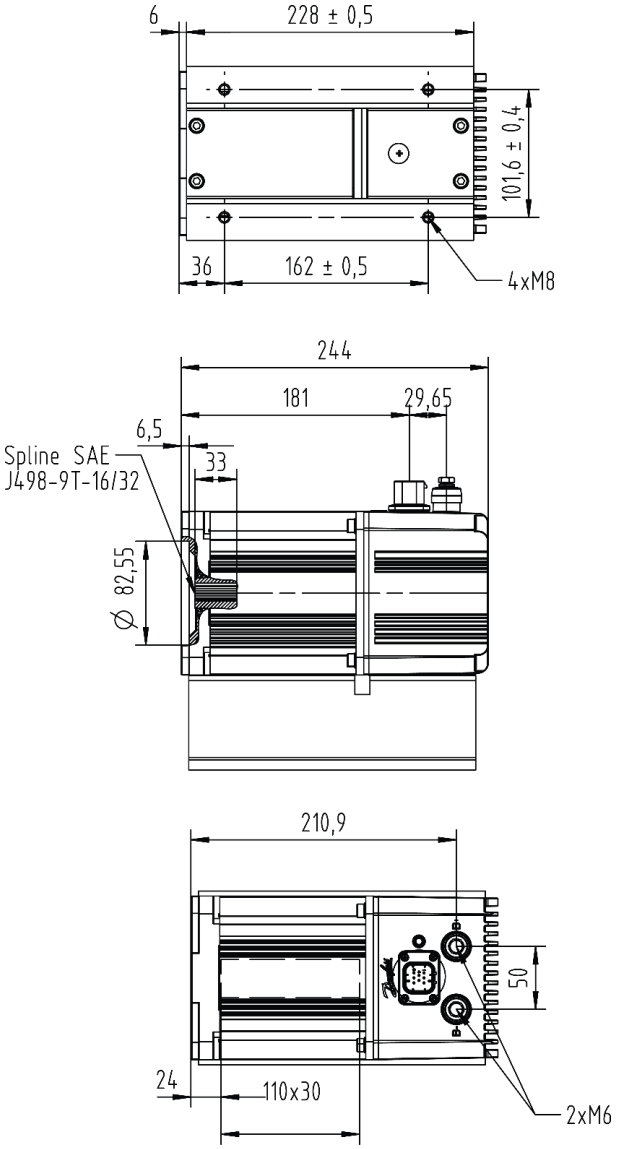
Picture 3 Connector

PERFORMANCE CURVES





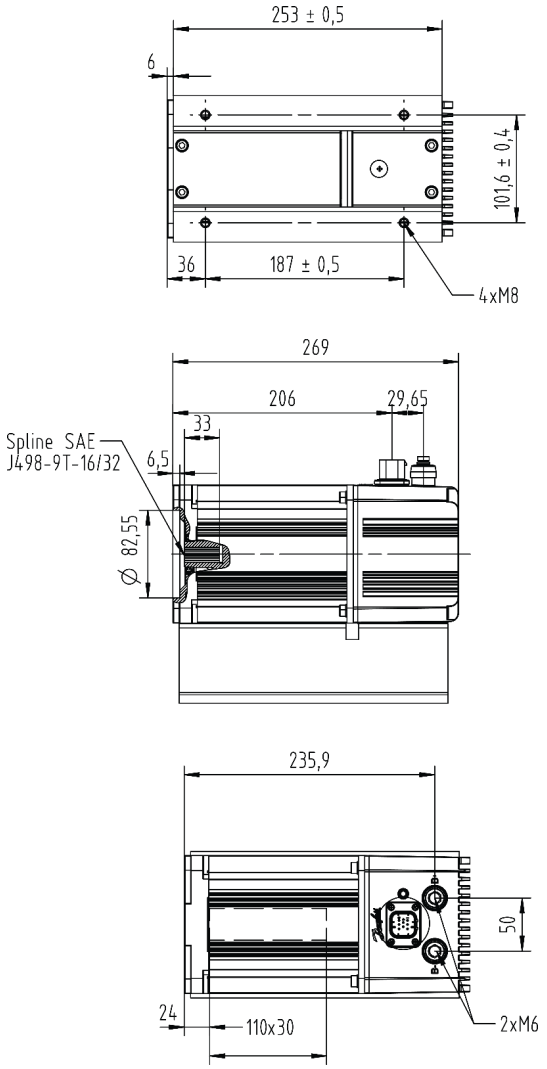
DIMENSIONS



Picture 4 Dimensions for ED-EP130-T20-24-3600

Dimension	Length
L	244 mm
W	138 mm
H	232.5 mm

Table 1 Dimensions for ED-EP130-T20-24-3600



Picture 5 Dimensions for ED-EP130-T22-24-4000 and ED-EP130-T29-48-4000

Dimension	Length
L	269 mm
W	138 mm
H	232.5 mm

Table 2 Dimensions for ED-EP130-T22-24-4000 and ED-EP130-T29-48-4000

PRODUCT CODE AND OPTIONS

Product code	Description
ED-EP130-T20/22/29-24/48-3600/4000	ED - electric sub-system/system products
	EP130 – motor and converter system
	e.g. T20 - peak torque 20 Nm
	e.g. 24 - 24 V_{DC} rated voltage
	e.g. 3600 maximum speed