

hydraulic pump drive

HPD50



hydraulic pump drive

The HPD50 is a joint development between BÜHLER MOTOR (brushless DC motor) and MELECS (electronics and system integration). BÜHLER MOTOR and MELECS have a long-term experience in designing and manufacturing electromechanic assemblies (BLDC motors) and electronic control units (ECU) for various automotive applications. State of the art key-components in the powertrain of four-wheel driven cars (AWD drives) require high-performance, low-weight and no-maintenance components and modules. These requirements are fully met by this new product.

If required, a complete pump could be provided for evaluation purposes.

For special applications with different requirements please contact MELECS or Bühler Motor.

applications

High pressure hydraulic power blocks

AWD drives

Torque vectoring couplings

Diff lock applications etc.

Transmission applications

Stopp/Start applications

High flow power blocks

The system is made for axial piston pumps in automotive applications and can be customized for different pump concepts in automotive or industrial applications.

The motor is a long-lifetime, high-efficient BLDC engine. Other power requirements are available on request.

The inverter is a 6 bridge Mos-Fet type. It will be controlled from an external controller (DSC) over a low frequency PWM signal. The feedback to the external controller could also be a PWM signal.

specifications

The HPD50 is designed for usage in harsh environment:

Housing IP6K9K

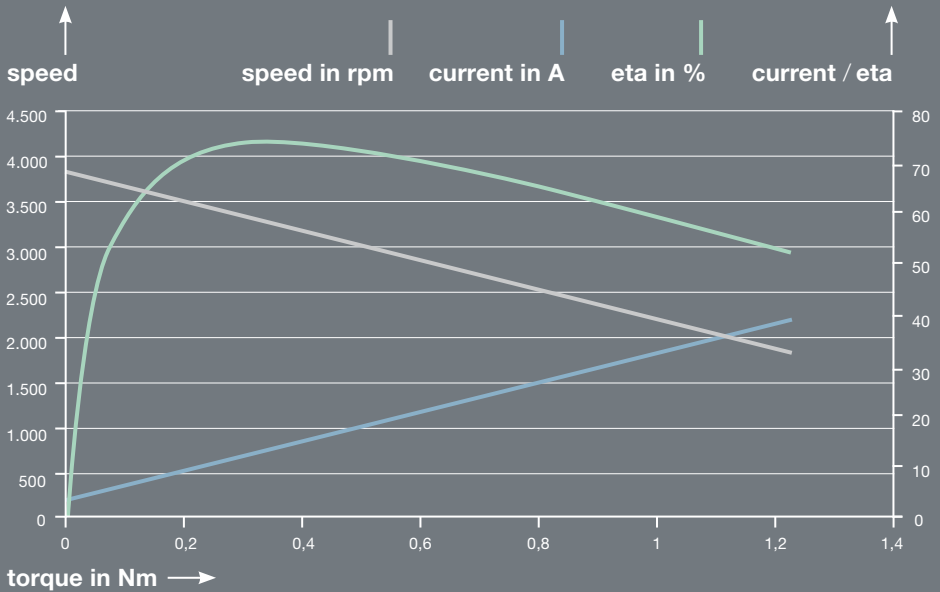
Transmission (mounting plate) temperature up to 140 °C.

Ambient air temperature up to 115 °C

Accelerations up to 30 g

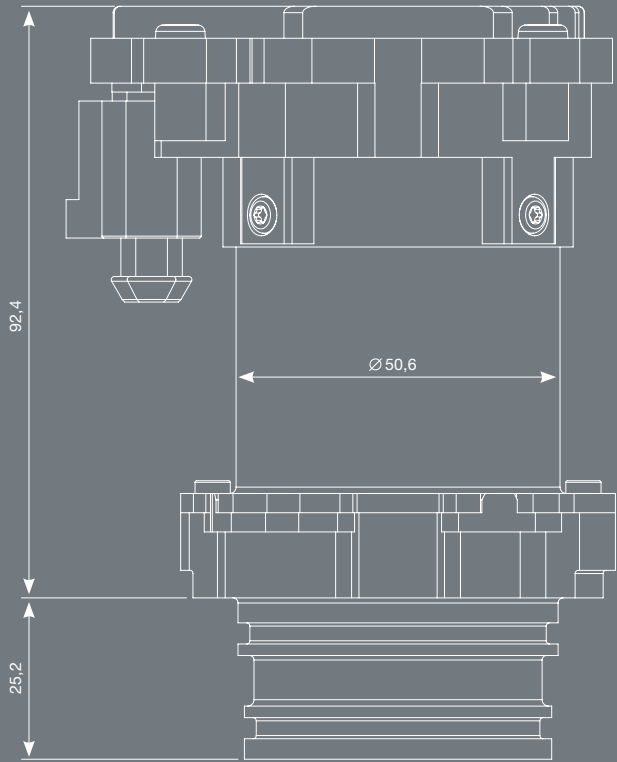
Lifetime up to 10.000 h

performance curve

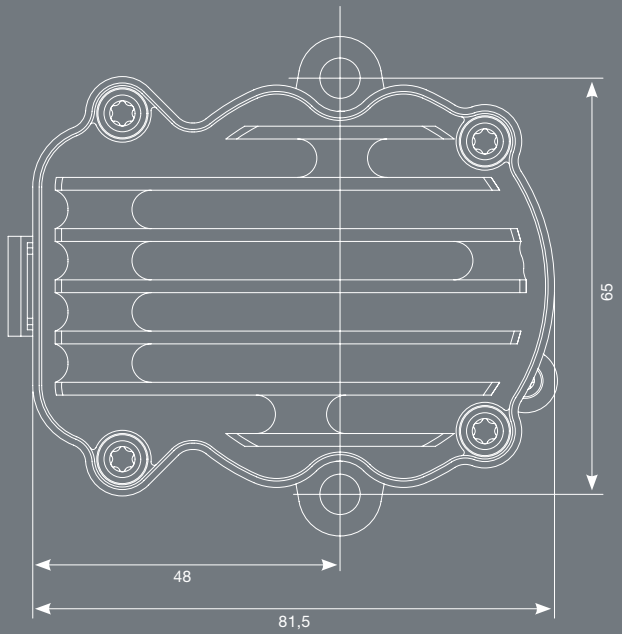


motor characteristics

Nominal voltage	V	=	12	VDC
No load	n_0	=	3430	rpm \pm 10%
-	I_0	=	1,2	A \pm 15 %
Load condition	T_L	=	30	Ncm
Load speed	n_L	=	2770	rpm \pm 10 %
Load phase current (RMS value)	I_{Ph_L}	=	8,5	A \pm 10 %
Output power	P_{out}	=	84	W (ref)
Torque constant	K_T	=	3,6	Ncm/A
Voltage constant (BEMF)	K_e	=	3,7	mV/rpm
Stall torque	T_S	=	-190	Ncm
Terminal resistance	R	=	0,12	Ohm
Max output power	P_{max}	=	150	W
Armature moment of inertia	J_A	=	8240	g mm ²
Winding	ϑ	=	210	$^{\circ}$ C
Ambient temperature	ϑ	=	-40/140	$^{\circ}$ C



dimensions





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