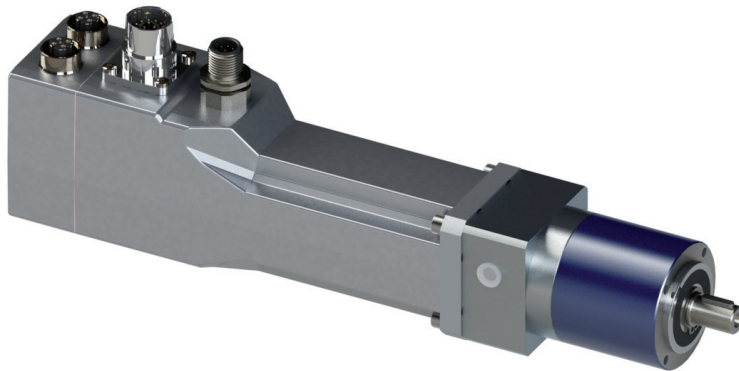


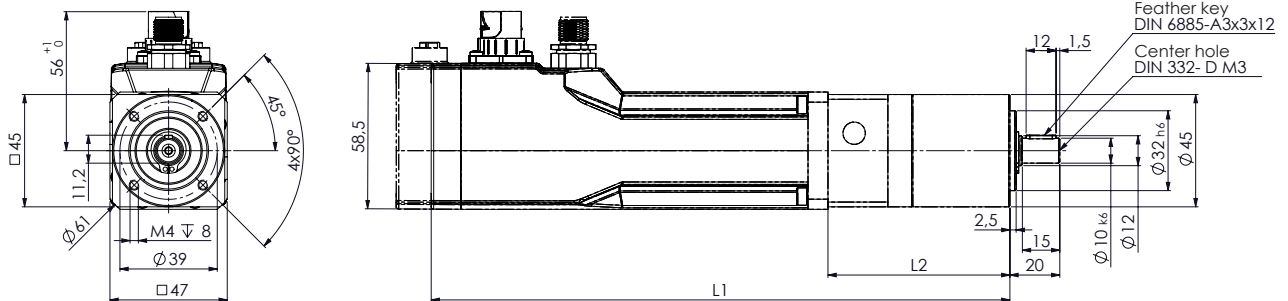
HFI 22 - GPK 45



Integrated Synchronous Servo Drive with planetary gear

positioning capability
various field bus systems
functional safety STO
with or without parking brake

Planetary gear series GPK 45 up to 20 Nm peak torque



Type	Gear Ratio	Dimension	
		L1 *) **)	L2 **)
HFI2230-GPK45	4 :1 - 7:1(1-stage)	202	73
HFI2230-GPK45	9 :1 - 49:1(1-stage)	217	88
HFI2260-GPK45	4 :1 - 7:1(1-stage)	232	73
HFI2260-GPK45	9 :1 - 49:1(2-stage)	247	88

- *) Designs with parking brake respectively 32 mm longer.
Designs with fieldbus module respectively 14 mm longer.
**) Shorter designs with teathed motorshaft on request.

type	HFI 22 - GPK 45
series	-
operation acc. to standards VDE 0530	S1
isolation acc. to standards VDE 0530	F
protection acc. to standards VDE 0530	IP 54
kind of connection	flange connector
rotating direction	reversible
bearing (motor and gear box)	ball bearing
gear box	not self-locking

for detailed motor data please refer to data sheet HFI 22

Motor design:

The HFI 22 - GPK 45 are composed of brushless synchronous servo motors with concentrated winding systems and integrated electronics and a flange-mounted planetary gear. These very compact and powerful drives are well suited for peripheral applications in single or multi axes systems operating at selective 24VDC or 48VDC.

The HFI's are operated either by analogue/digital signals or via the CAN interface. By means of an optional fieldbus module, the devices can be integrated into common, Ethernet-based fieldbuses.

The rotor position is evaluated through a linear hall sensor system. The sinusoidal motor current feed leads to smooth and constant torque development.

Optionally the drives are available with functional safety „STO“ according to Performance-Level [e], cat. 3; SIL-3.

The drive's configuration is done via RS232 and a clear and simple to use PC-Software „DserV“.

Other gear ratios and special designs on request.

Gearbox design:

The planetary gear GPK 45 splits the torque to be transmitted into three symmetrical parts. In conjunction with the one-piece gear housing and with the combination of output bearing and centring flange it leads to a very compact design.

The connection to the motor shaft is done via a clamping hub and offers easy possibilities of interchanging.

All toothing parts are made of heat-treated high-strength steel.

The gearbox has a synthetic grease lifetime lubrication.

The planet wheels are equipped with needle bearings.

The output shaft is double-supported by roller bearing which leads to high axial and radial load capabilities.

Through the very robust construction the gearboxes series GPK 45 are well suited for industrial applications.

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HFI 22 - GPK 45

1 nominal voltage	2 nominal speed	3 nominal torque ²⁾	4 starting torque	5 nominal power ²⁾	6 nominal current ¹⁾	7 power gear box input	8 nominal speed gear box input	9 ratio gear box	10 efficiency gear box	load limitations gear box			14 max. backlash	15 moment of inertia gear box ³⁾	16 total weight motor + gear box	17 F _R (allow. radial shaft load) ⁴⁾	18 F _A (allow. axial shaft load)
VDC	rpm	Nm	Nm	W	ADC	W	rpm	i	%	W	Nm	Nm	∠ min	kgm ²	kg	N	N

HFI 2230 - GPK 45

24 48	1000	0,87	1,5	90	6,1 3,0	95	4000	4 :1	95	735	7	15	20	0,00291x10 ⁻³	1,40	500	200
24 48	571	1,5	2,6	90	6,1 3,0	95	4000	7 :1	95	420	7	15	20	0,00270x10 ⁻³	1,40	500	200
24 48	444	1,9	3,4	85	6,1 3,0	95	4000	9 :1	90	465	10	20	25	0,00310x10 ⁻³	1,55	500	200
24 48	250	3,3	6,0	85	6,1 3,0	95	4000	16 :1	90	365	14	20	25	0,00287x10 ⁻³	1,55	500	200
24 48	143	5,8	11	85	6,1 3,0	95	4000	28 :1	90	210	14	20	25	0,00268x10 ⁻³	1,55	500	200
24 48	82	10 ⁵⁾	18	85	6,0 ⁵⁾ 3,0 ⁵⁾	95	4000	49 :1	90	85	10	20	25	0,00268x10 ⁻³	1,55	500	200

HFI 2260 - GPK 45

24 48	750	1,4	2,4	115	7,1 3,6	120	3000	4 :1	95	550	7	15	20	0,00291x10 ⁻³	1,70	500	200
24 48	429	2,5	4,2	115	7,1 3,6	120	3000	7 :1	95	315	7	15	20	0,00270x10 ⁻³	1,70	500	200
24 48	333	3,1	5,4	105	7,1 3,6	120	3000	9 :1	90	350	10	20	25	0,00310x10 ⁻³	1,85	500	200
24 48	188	5,5	9,6	105	7,1 3,6	120	3000	16 :1	90	275	14	20	25	0,00287x10 ⁻³	1,85	500	200
24 48	107	9,6	17	105	7,1 3,6	120	3000	28 :1	90	155	14	20	25	0,00268x10 ⁻³	1,85	500	200
24 48	61	10 ⁵⁾	20 ⁵⁾	64	4,2 ⁵⁾ 2,1 ⁵⁾	70	3000	49 :1	90	65	10	20	25	0,00268x10 ⁻³	1,85	500	200

Tolerances +/- 10 %.

Columns 3 and 10

Values are valid at operating temperature after run-in period.

Columns 3 and 6

To avoid gearbox overload, it is necessary to limit the motor torque by adjusting the motor current in the integrated electronics (at higher gear ratios).

Columns 4

Values are valid assuming that the drive is loaded with peak torque. For higher ratios it is necessary to limit the peak current in the integrated electronics.

Columns 11, 12 and 13

To avoid gearbox overload do not exceed the mentioned values. For oscillating operation the mentioned limitations must be multiplied by 0,75.

¹⁾ input DC-current

²⁾ Values are for motor-assembling on a locating face of aluminium of at least 0,15 m² at a thickness of 10 mm or similar metal face.

³⁾ Values are reduced to motor shaft.

⁴⁾ Middle of the shaft-extension.

⁵⁾ Motor current must be limited in the integrated electronics to avoid excess of the mentioned value.