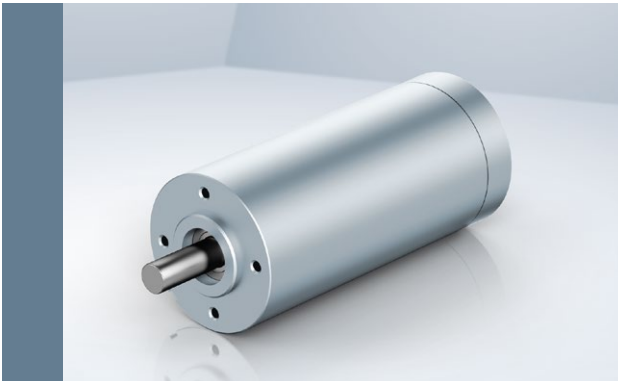


# ECI Motor

## ECI-42.XX-K1



- Highly dynamic 3-phase internal rotor motor with EC technology
- Robust, noise-optimized ball bearing system for a long service life
- High efficiency and high power density realized in a compact design
- Basic motor with electronic module K1 for operation with external drive electronics
- Low cogging torque

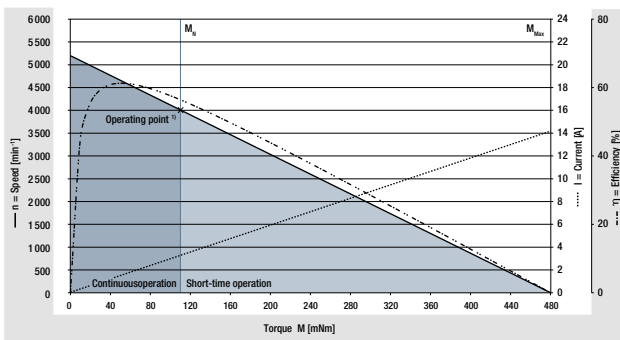
Nominal data					
Type		ECI-42.20-K1 B00	ECI-42.20-K1 D00	ECI-42.40-K1 B00	ECI-42.40-K1 D00
Nominal voltage ( $U_N$ )	V DC	24	48	24	48
Nominal speed ( $n_N$ )**	rpm	4 000**	4 000**	4 000**	4 000**
Nominal torque ( $M_N$ )**	mNm	110**	110**	220**	220**
Nominal current ( $I_N$ )**	A	2.5**	1.3**	5.1**	2.6**
Nominal output power ( $P_N$ )**	W	46**	46**	92**	92**
Free-running speed ( $n_f$ )	rpm	5 900	5 900	5 700	5 700
Permanent holding torque ( $M_{HO}$ )	mNm	110	110	220	220
Permiss. peak current ( $I_{max}$ )***	A	14***	7***	21***	10.5***
Motor constant ( $K_E$ )	mVs/rad	40.9	84.2	42.8	83.9
Terminal resistance ( $R_t$ )	$\Omega$	0.9	3.25	0.39	1.5
Terminal inductance ( $L_t$ )	mH	1.1	4.5	0.5	1.84
Starting torque ( $M_{max}$ )	mNm	480	480	960	960
Ambient temperature range ( $T_U$ )	$^{\circ}\text{C}$	0...+40	0...+40	0...+40	0...+40
Rotor moment of inertia ( $J_r$ )	$\text{kgm}^2 \times 10^{-6}$	3.42	3.42	6.7	6.7
Motor mass (m)	kg	0.33	0.33	0.48	0.48
Order number (IP 40)	Litzenausführung	932 4220 122	932 4220 123	932 4240 122	932 4240 123

Subject to change

\* Classification of degree of protection refers to installed state with sealing on the flange side  
 \*\* At TU max. 40  $^{\circ}\text{C}$  / 104  $^{\circ}\text{F}$   
 \*\*\* Permissible time for peak current: max. 5 sec. – to be repeated only after complete cool down

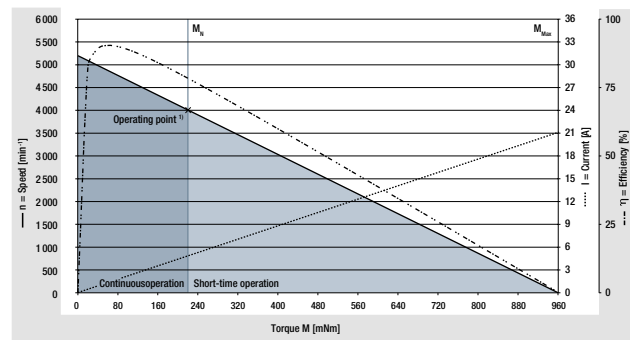
### Characteristic curve

ECI-42.20, 24 V (at 25  $^{\circ}\text{C}$  / 77  $^{\circ}\text{F}$ )



1) Nominal data, see table above

ECI-42.40, 24 V (at 25  $^{\circ}\text{C}$  / 77  $^{\circ}\text{F}$ )

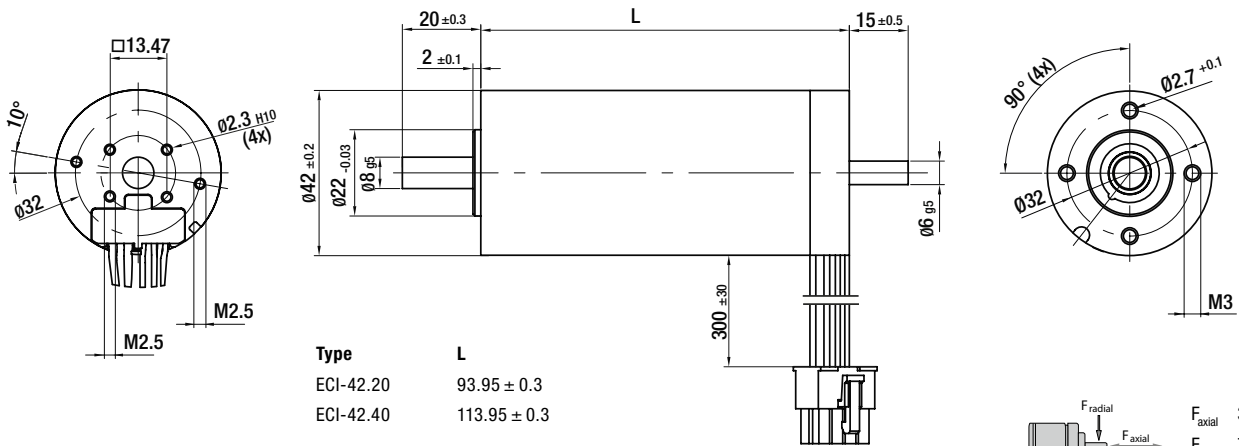


1) Nominal data, see table above

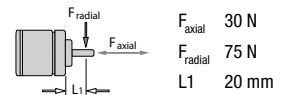
# ECI Motor

## ECI-42.XX-K1

### Technical drawing



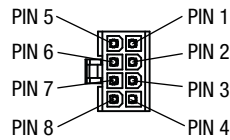
Permissible shaft load at nominal speed and life expectancy  $L_{10}$  (rated operation) of 20 000 h



### Electrical connection

#### Signal wire

No.	Colour	Function
4	green	Hall A
3	white	Hall B
8	grey	Hall C
2	red	UB
7	black	GND



Molex pin  
No. 39-01-2085

#### Supply wire

No.	Colour	Function
1	yellow	Phase W
5	purple	Phase V
6	brown	Phase U

### Modular construction kit

#### Brake system

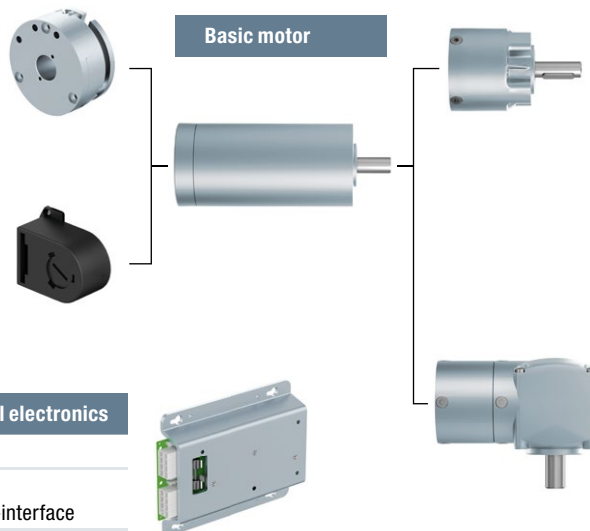
Principle spring applied brake	
BFK 457-01	
Braking torque Nm	0.12

#### Encoder system

Optical incremental encoder	
HEDS 5500	
Impulse / rotation Z	512

#### Recommended external control electronics

VT-D	Speed control
VT-MI-14	Positioning control with CANopen Bus-interface



#### Planetary gearhead

Noiseless Plus 42	
Torque ( $M_N$ ) Nm	bis 4.1
Reductions i	4.3:1 - 121:1
Performax® 42	
Torque ( $M_N$ ) Nm	bis 5.6
Reductions i	3.18:1 - 102:1
Performax®Plus 42	
Torque ( $M_N$ ) Nm	bis 12.1
Reductions i	3.18:1 - 102:1

#### Crown gearhead

EtaCrown® 52	
Torque ( $M_N$ ) Nm	bis 3.5
Reductions i	4:1 - 113:1
EtaCrown®Plus 42	
Torque ( $M_N$ ) Nm	bis 10
Reductions i	54:1 - 289:1

For motor-gearbox combinations, depending on the choice of the single components, the maximum allowable torque (gearbox) can be exceeded respectively not reached.