

# t-Rex 3206 (short version, focus rotational speed) I-65-51-L34 S2



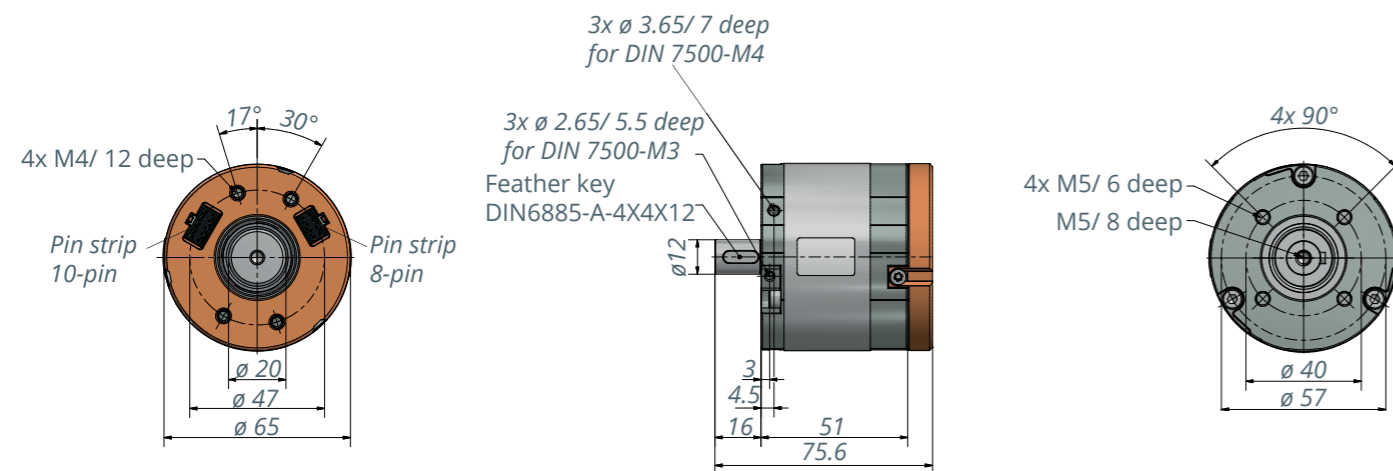
## Description

14-pole BLDC motor with high-performance neodymium magnets and three digital Hall sensors to detect the rotor position. The electrical connections are designed as a plug-in system. Additional power electronics are required to operate the motor. Motor design with a hollow shaft is also available upon request. This allows the implementation of output on both sides.

## Special features

- Designed with **focus on rotational speed**
- Enormous performance density – 3 times stronger than motors of comparable size
- High overload resistance
- Special winding upon request
- Design and manufacture of motor to specified operating point is possible

3206.00-1000 with shaft



## Digital Hall-sensors

### Supply of sensors

5 V DC +10 %  
Power consumption: < 70 mA

### Output signals of sensors

„single ended“ TTL 5 V output

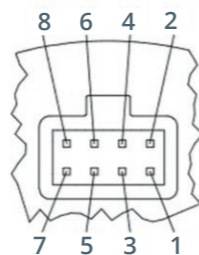
### Signal structure

The Hall sensors have a 120° phase shift to each other. Due to the 14-pole design the **Signal frequency** is seven times higher than the speed

### Temperature sensor:

NTC 10k B-value 3650 K

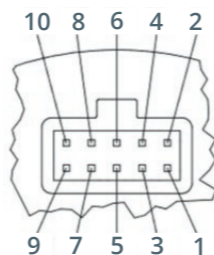
## Hall-sensors



- 1= H2+
- 2= GND
- 3= H1+
- 4= GND
- 5= 5V
- 6= H3+
- 7= NTC 10K
- 8= NTC 10K

Socket strip RM 2.54 / 8 PIN  
W+P 3491-08

## Motor phases



- 1= -
- 2= U-Phase
- 3= U-Phase
- 4= U-Phase
- 5= V-Phase
- 6= V-Phase
- 7= V-Phase
- 8= W-Phase
- 9= W-Phase
- 10= W-Phase

Socket strip RM 2.54 / 10 PIN  
W+P 3491-10

t-Rex 3206 I-65-51 L34 S2 DH	3206.00-1000		
Rated voltage	24 VDC	36 VDC	48 VDC
Rated current	4.7 A	4.3 A	4 A
Rated torque	0.5 Nm	0.4 Nm	0.4 Nm
Rated speed	1784 rpm	2834 rpm	3896 rpm
Shaft power (output)	90 W	127 W	155 W
Max. efficiency	82 %	83 %	82 %
Idle speed	2225rpm	3328 rpm	4324 rpm
No-load current	0.6 A	0.6 A	0.9 A
Stall torque*	2.5 Nm	2.5 Nm	2.5 Nm
Starting current at idle speed	25 A	23 A	22 A
Torque constant	0.102 Nm/A	0.108 Nm/A	0.114 Nm/A
Speed constant	93 rpm/V	92 rpm/V	90 rpm/V

## Motor parameters

Terminal resistance (phase to phase)	121 mOhm
Terminal inductance (phase to phase)	916 μH
Rotor inertia	104 kg* mm <sup>2</sup>
Number of poles	14
Interconnection of the motor	Star
Number of coils per phase	2
Interconnection of coils	2 Series
Direction of rotation	bidirectional

\* Is limited by the current carrying capacity of the coils  
Note: Max. ambient temperature = 40 °C, controller-specific  
At the nominal point (T<sub>U</sub> = 20°C), controller-specific

Motor cable approx. 1.5 m

Item number: 3200.53-05

## Motor characteristics at 24 V

