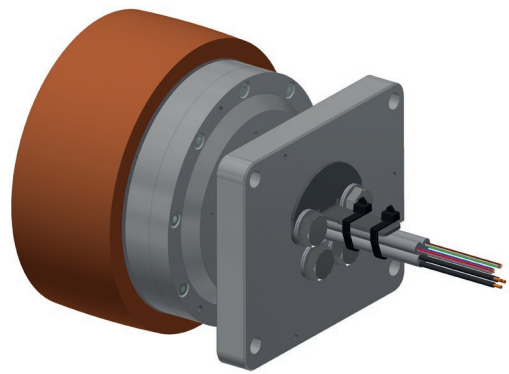


i-Wheel 3213.00-3XXX



Direct drive - Benefits in a nutshell

- No gearbox – no wear
- Much longer service life compared to conventional drive technology with a gear stage
- Excellent running properties with barely perceptible noise level
- Safe operation due to permanent temperature monitoring
- Ultra-compact with extremely high power density
- Easy replacement of the the wheel coating on site possible thanks to the patented Ketterer solution



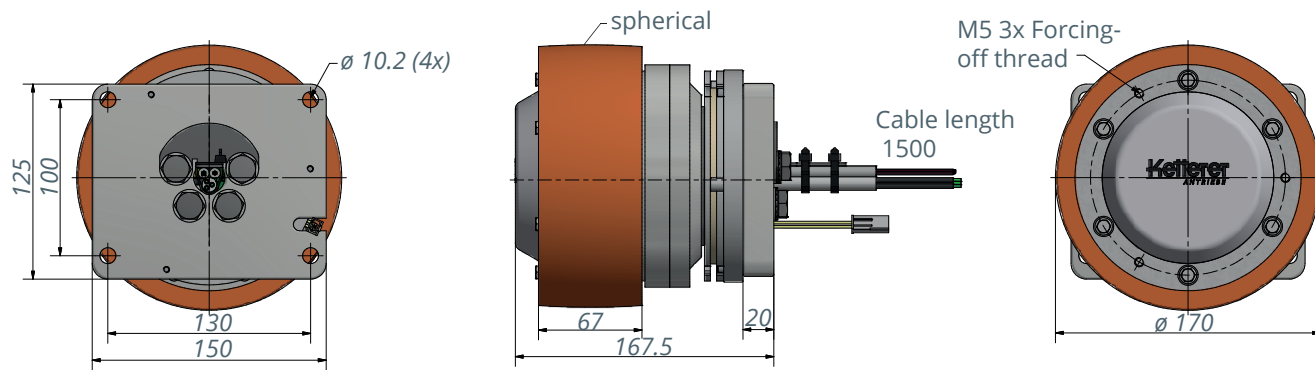
Safety first

- Rotational control system using diverse redundancy
- PL-d** safety level achievable with suitable controller
- Safe production processes, as there are no risks of contamination from gear oils and greases (no gearbox)

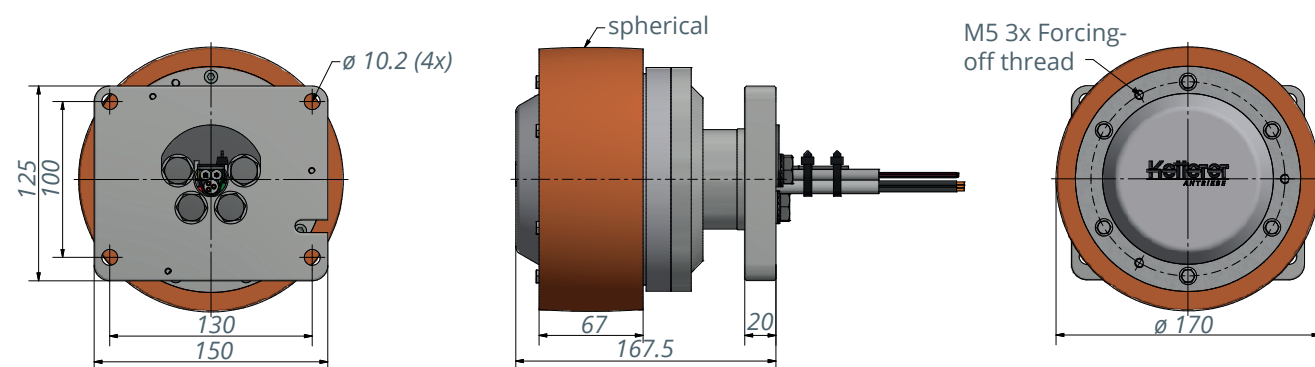
The choice is yours - we implement it

- Encoder optional: BiSS, SSI, TTL incremental (various resolutions)
- Brake optional: Spring-operated brake
- Can be combined with various controllers
- Customer-specific mechanical integration and system connection

3213.00-3XX1 with brake



3213.00-3XX2 without brake

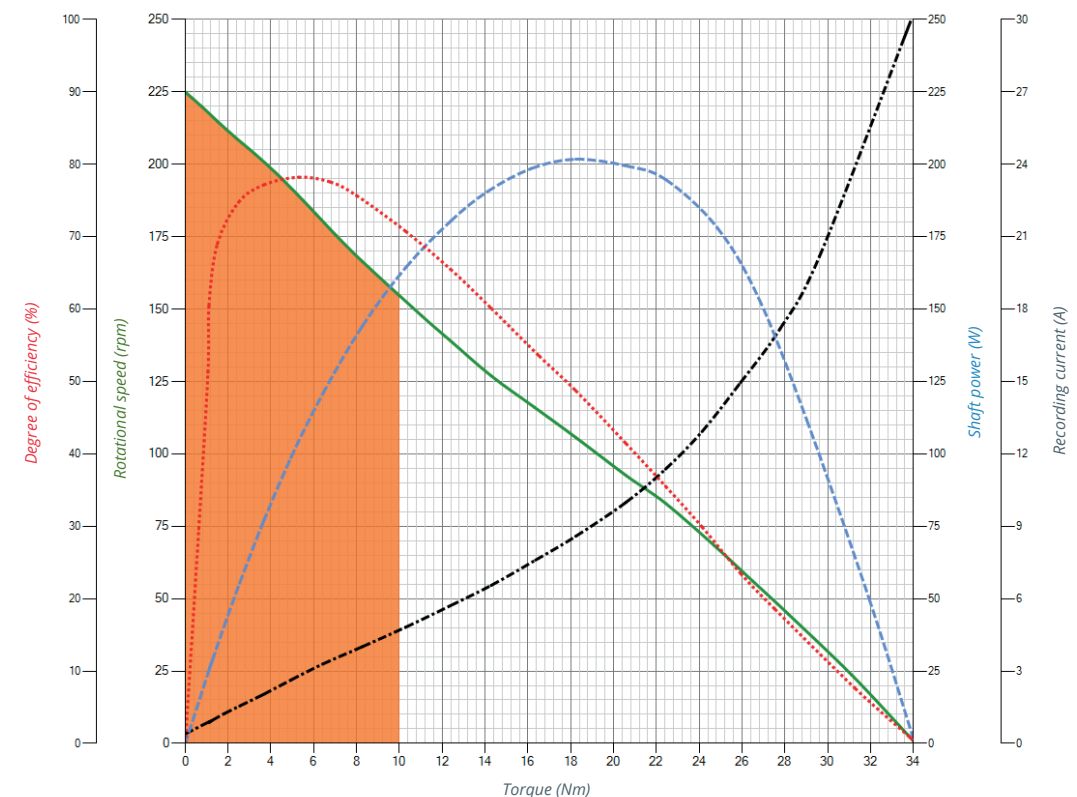


3213.00-3XXX i-Wheel-A-170-168	
Rated voltage	48 VDC
Rated current ¹⁾	4.7 A
Rated torque ¹⁾	10 Nm
Rated speed ¹⁾	154 rpm
Max. speed at rated torque ¹⁾	5 km/h
Shaft power (output) ¹⁾	161 W
Idle running speed ²⁾	225 rpm
No-load current ²⁾	0.4 A
Achievable max. speed ²⁾	up to 7 km/h
Max. efficiency ²⁾	78 %
Standstill torque ²⁾	34 Nm
Starting current at idle speed ²⁾	29 A
Torque constant ²⁾	2.1 Nm/A
Speed constant ²⁾	4.7 rpm/V
Terminal resistance (phase to phase)	1.75 Ohm
Terminal inductance	15 mH

1) Max. ambient temperature = 40 °C, controller-specific
 2) At the nominal point (TU = 20°C), controller-specific
 3) Radial and axial forces apply to the nominal service life
 L10h = 20,000h according to DIN ISO 281

3213.00-3XXX i-Wheel-A-170-168	
Rotor inertia	26,850 kg*mm ²
Max. radial axle load F ³⁾	7,500 N
Max. axial axle load F ³⁾	2,500 N
Number of magnets poles	32
Interconnection of the motor	L62S4
Encoder type in standard	Digital Halls + TTL magnetic incremental ABZ
Encoder resolution	4,096 crp
Material of the coating	Blickle Besthane 92 ±3 Shore A

Braking torque	30 Nm
Power supply brake	24 VDC / 21.5 W
Power consumption brake	7 W through PWM Power reduction
Weight incl. brake	17.6 kg



Brake:		
1	+24 V	PIN1
2	GND	PIN2
Motor phases: igus CF77.UL.25.04.D (4G2.5)		
U = 1		
V = 2		
W = 3		
The PE conductor is not connected		
Hall sensors: igus CF240.PUR.01.08 (8x0.14)C		
1	+5 V	red
2	GND	blue
3	H1	white
4	H2	brown
5	H3	green
6	PT1000	gray
7	PT1000	pink
Output signal: 3 square-wave signals The hall signals have a phase shift of 120° to each other. Power supply: 5V ± 5% Input current: typ. 40 mA		
Encoder: igus CF240.PUR.01.08 (8x0.14)C		
1	+5 V	red
2	GND	blue
3	A	gray
4	A-	pink
5	B	green
6	B-	yellow
7	Z	white
8	Z-	brown
Differential output signal: 3 square-wave signals (RS422) Channel A, B (90° phase shift) and Index Z Accuracy: ± 0.5° Power supply: 5V ± 5% Input current: typ. 35 mA		