Ground Truth Robotics
A DFKI SPINOFF COMPANY

Fact Sheet Elastic Actuator 300Nm

Motor type	ILM 85x23
Gear Type	CPL-32-2A
Mechanics	
Rated Speed (rpm)	15
Rated Torque[1] (Nm)	258
Repetitive Peak Torque (Nm)	372
Collision Torque (Nm)	686
Max. Speed (rpm)	12
Stiff ness (Nm/rad)	4263
Gear reduction	160
Weight[2] (kg)	5.85
Electrical	
Power (W)	580
Nominal Voltage (V)	48
Nominal Current (A)	11
Control Logic	
Supply Voltage[3] (V)	12
Nominal Current (A)	2.5W/U
Communication Protocol[4]	NDLCom, LVDS
Number of PCBs	4

[1] The rated torque is determined by rated motor torque*gear ratio*efficiency. The efficiency is specified at 20°, for lubrication using fat and at rated velocity.

[2] It is the overall weight including all mechanical parts, brake, electronics and the wiring.

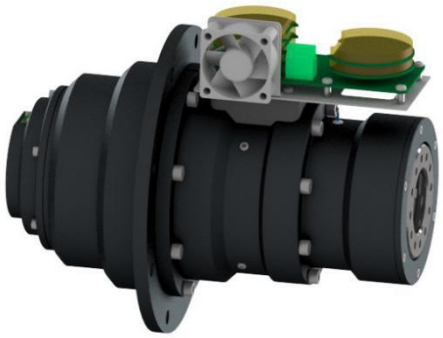
[3] The supply voltage of FPGA is converted and fed by the electronics.

[4] NDLCom refers to Node-Level Data Link Communication Protocol, which is developed by RIC DFKI. It composes frames and handles packet transmission between multiple nodes.

Position Sensors	
Quantity	3
Resolution (deg)	19 bit
Mechanical Brake	
Manufacturer	Mayr
Supply /Activation voltage (V)	10 / 12
On / Off a disconnection	on
Motor current measurements	
Phase currents (yes / no)	yes
Line currents (yes / no)	yes

Elastic Actuator 300Nm

Like the 120Nm model, the 300Nm model of the FourByThree family of compliant actuators is characterized by a torsion bar going through the hollow shaft of the actuator. Thus, the hollow shaft is not available for cables anymore, but it is used to locate the spring element and create a highly-compact elastic actuator.



- Lightweight BLDC-motor TQ-Systems (3.00 Nm, 580 W, 48 V)
- HarmonicDrive Gear ratio 120:1
- Three absolute position encoders, 19 bit resolution
- Max. 5 degree deflection
- Mechanical safety brake
- Overall weight 5850 g
- Stiffness 4263 Nm/rad

Just for experimental usage (research). No warranty.