

Fact Sheet Steer Actuator with associated Motor Control Modules

Key features:

- Redundant actuator for steering, normally mounted between steering column and steering wheel
- Upon request, a steer bracket set available for a wide range of cars
- Integrated high resolution multiturn absolute encoders
- EMC compliance acc. ECE-R10 (test result outstanding)
- No safety relevance acc. ECE or ISO. Full joysteer 3.0 system mandatory for such.



Description:

The steer actuator executes the steering function by transmitting motion to the steering column. The module is redundant, hence does have 2 motors with integrated hall- and absolute multiturn sensors for positioning control.

The steer actuator module is installed in between the steering column and the steering wheel. The mounting of the actuator needs a vehicle specific steer bracket (interface to the chassis) and a vehicle specific steering wheel adapter (interface to the steering column). It is not required to modify or to dismount the steering column for the installation. The actuator must be installed in the vehicle interior.

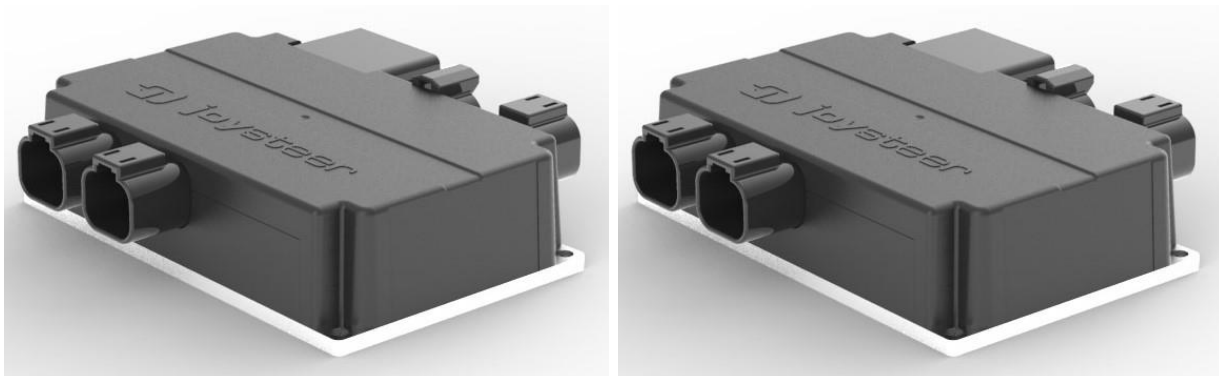
The steer actuator module is delivered with the Fixing-Kit, which is needed to compensate mechanical misalignments between the steering column and the brackets.

The steering column adjustment mechanism (steering wheel position) must be securely locked! Moving the steering column position may cause the steering actuator mounting to fail (torque support fails).

Technical Data of Steer Actuator with Motor Control Module:

- Operates on 24VDC, (for 12VDC test are pending)
- Operating temperature -20 to +80°C
- IP Class IP 5K0
- Max Torque 23Nm
- No load speed ~900°/s (150 rpm)
- Rotation range no limitation due to multiturn sensor
- Max Power consumption 350W
- Resolution (position controlled) 0.056° / increment (sensor on motor shaft)

Motor Control Module:



Due to the redundancy of the actuator, two Motor Control Modules are required.

CAN-Bus Communication:

- Identifier 11-Bit-Identifier / Base frame format (CAN 2.0A)
- Baud rate 500 kbit/s (high speed)

Data/Signals from Control-System to Motor Control Module (abstract):

Timing of these CAN signals = asynchronous (no timing restriction)

- Set actuator position Target value
- Limit speed Limits the dynamic (motor speed) of the actuator
- Limit torque Limits the dynamic (motor current) of the actuator

Data/Signals from Motor Control Module to Control-System (abstract):

Timing of these CAN signals = periodic, every 10ms

- Actual actuator position
- Actual actuator speed
- Actual actuator torque
- Diagnostics

Power Supply

A small buffer battery is essential for the Motor Control Modules (energy recovery from the motors).

Power and communication cables

Customized cables are assembled when ordered (definition of cable lengths and connectors).

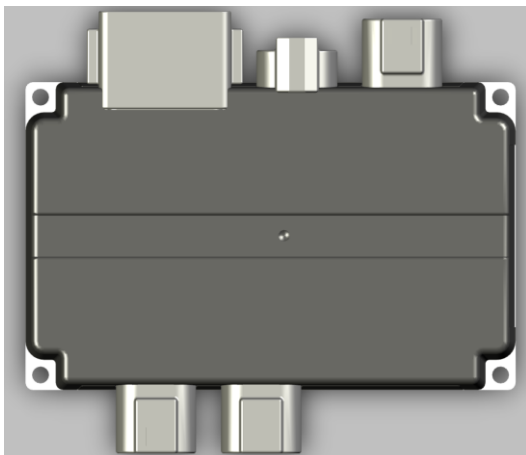
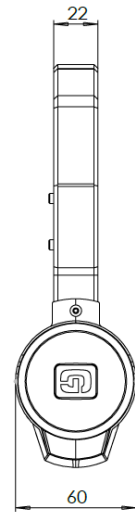
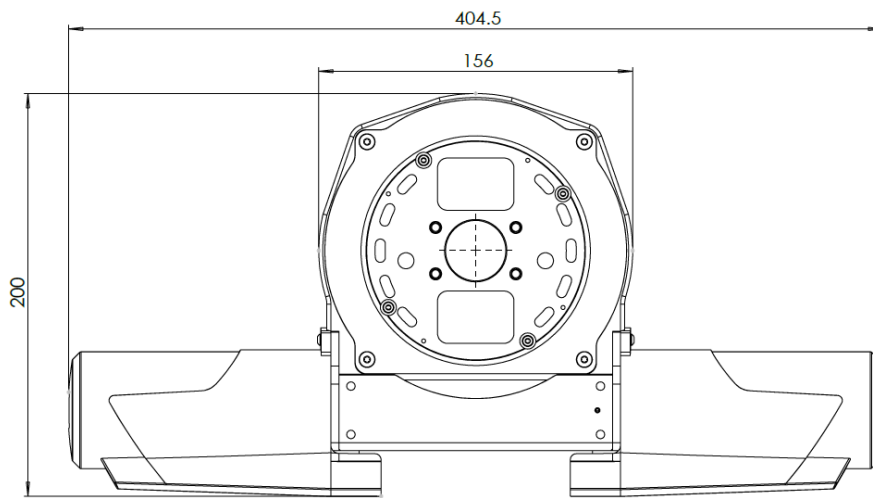
Parametrisation



The parametrization can be done with the SystemManager tool. Runs on Windows and Android. Connection to the MC with a USB-CAN-Bus Interface.



Dimensions:



Dimension of the Motor Control Module = 131 x 82 x 36mm