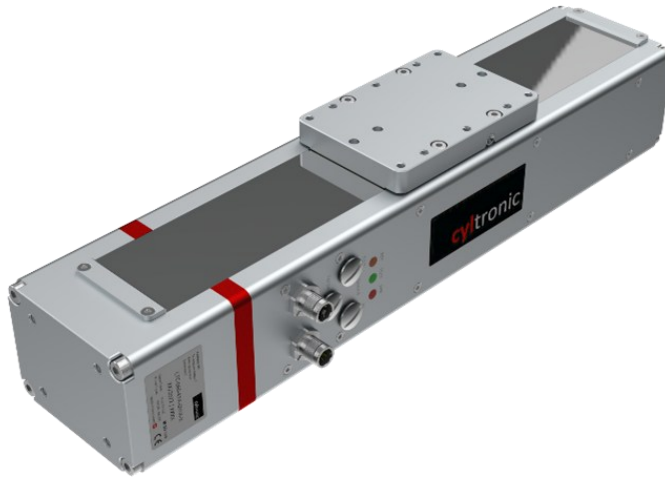


## Linear Axis CTL-060 - IO-Link Servo-Actuator

27.04.2026

Datasheet



### General Description

The CTL linear axis is a compact and versatile servo-linear drive. With this high-performance linear axis, any positioning movements in your machine can be easily implemented via IO-Link. Cyltronic technology combines all necessary components – such as the servo motor, servo controller, ball screw and linear guide – into a single product. Cyltronic's ready-to-use PLC software modules enable rapid integration into existing and new machines. The CTL offers designers and machine builders a compact, efficient drive solution. The integrated linear guide is optimally protected from external influences and can accommodate loads in all directions. Single- or multi-axis systems can be implemented quickly and without complex designs thanks to the well-thought-out mounting options. Other Cyltronic actuators can be mounted directly onto the linear axis carriage without the need for additional mounting parts.

### Control

#### Control over IO-Link

- Single turn Encoder
- Target position setting in real time
- Adjustable speed, force and acceleration settings in real time
- Real-time feedback of position, speed and force (cycle time of 1.5 ms)
- Pre-programmable travel sets
- Press-in mode
- Extensive diagnostic options
- Many more features

#### Control over digital I/O

- Simple 2-point movements
- Automatic teaching of the stroke distance
- Speed and force adjustable via potentiometer

## Ratings

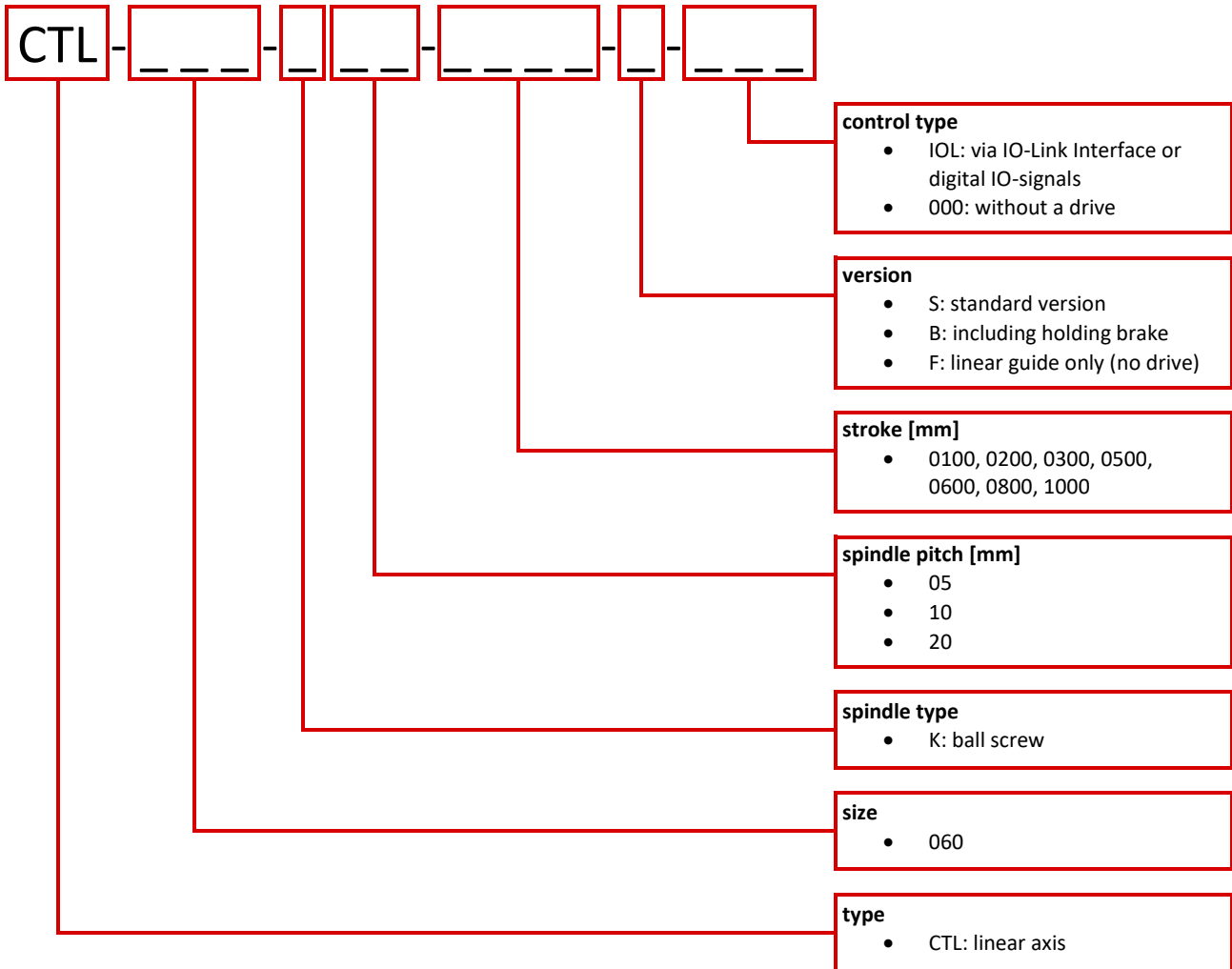
spindle pitch		[mm/rev]	5	10	20
stroke	[mm]	100, 200, 300, 500, 600, 800, 1000			
max. feed force (peak)	[N]	800	400	200	
max. feed force (continuous operation)	[N]	400	200	100	
max. speed	[mm/s]				
in 24 V operation		150	300	600	
in 48 V operation		300	600	1200	
max. acceleration	[m/s <sup>2</sup> ]	10	20	20	
positioning accuracy	[mm]	+/- 0.1	+/- 0.1	+/- 0.2	
positioning precision (repeatability)	[mm]	+/- 0.02	+/- 0.02	+/- 0.04	
spindle type		ball screw			
mounting position		any			
integrated linear guide		15 mm profile rail guide with ball carriage			
ambient temperature	[°C]	0...+40 (-20...+60 on request)			
storage temperature	[°C]	-20...+60			
ingress protection class		IP40 according to EN 60529			
relative humidity	[%]	0...90 (non-condensing)			
motor type		synchronous servomotor			
rotor position encoder		absolute, single turn, 12bit			
CE mark (see Declaration of Conformity))		according to EU-RoHS-RL			
		according to EU-EMV-Directive			

connectors, signals, control		
status display		3x LED
rated voltage power circuit	[V DC]	24 - 48
max. current consumption	[A]	3.5 (continuous load operation)
	[A]	5 (peak load operation)
operating range signal input	[V DC]	24
permissible voltage variations	%	+/- 15
max. current consumption logic	[mA]	50
max. current digital signal outputs	[mA]	100 / output
number of digital signal inputs	3	extend, retract, teach
number of digital signal outputs	3	extended, retracted, ready
features signal input		galvanically isolated from power circuit not galvanically isolated between signals
max. cable length	[m]	20
switching logic outputs		push-pull
switching logic inputs		positive switching
reference		end stop / manually by IO-Link

weight (+/- 10%)			
for 100 mm stroke	[g]	CTL-060-__-S:	2871
		CTL-060-__-B:	3624
		CTL-060-__-F:	2220
per 10mm stroke additionally	[g]	CTL-060-__-S / -B:	58
		CTL-060-__-F:	48
moving mass	[g]	CTL-060-__-S / -B:	588
		CTL-060-__-F:	487

materials	
housing, cover, slide	aluminum colorless anodized
connecting piece	aluminum, red anodized
cover plate	stainless steel hardened
screws, grease nipple	steel galvanized
spindle	heat-treated steel
spindle nut	roller bearing steel
guide rail	heat-treated steel
guide carriage	steel, plastic
covers knobs	stainless steel
connector fittings	zinc nickel plated
RoHS Information	conform according to declaration
REACH Information	all variants: contains > 0,1% of 7439-92-1

## Configuration Key



Example: CTL-060-K10-0100-S-IOL

## Core Program ★

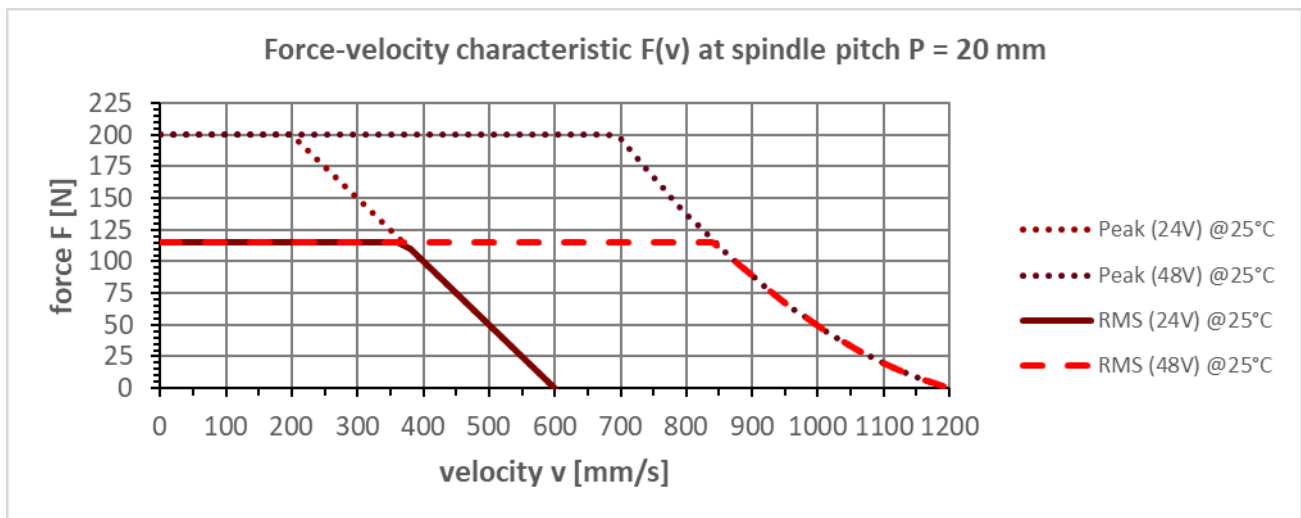
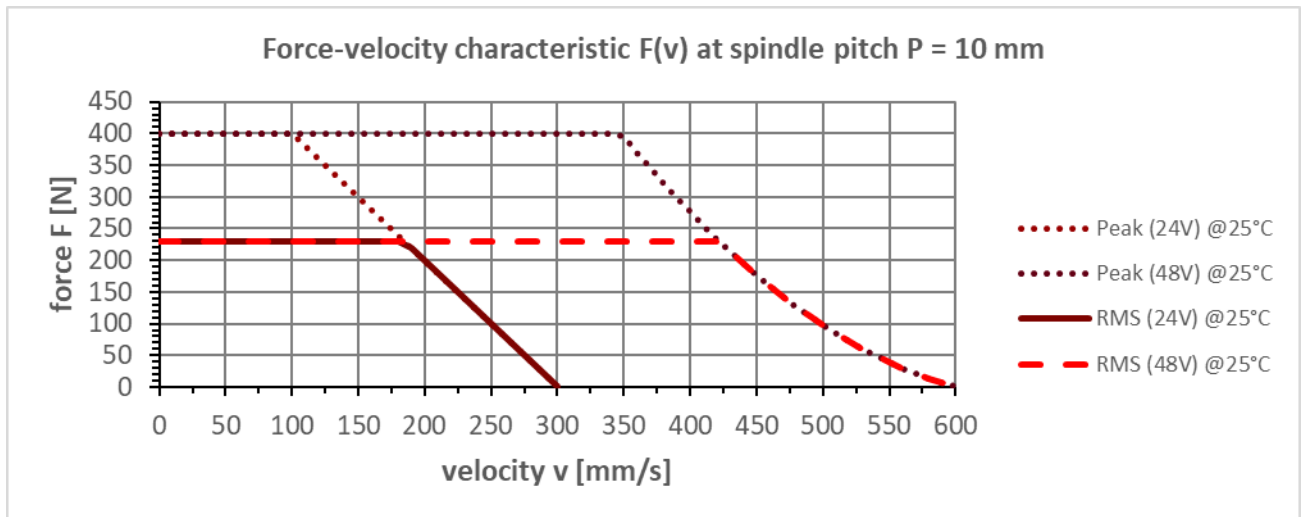
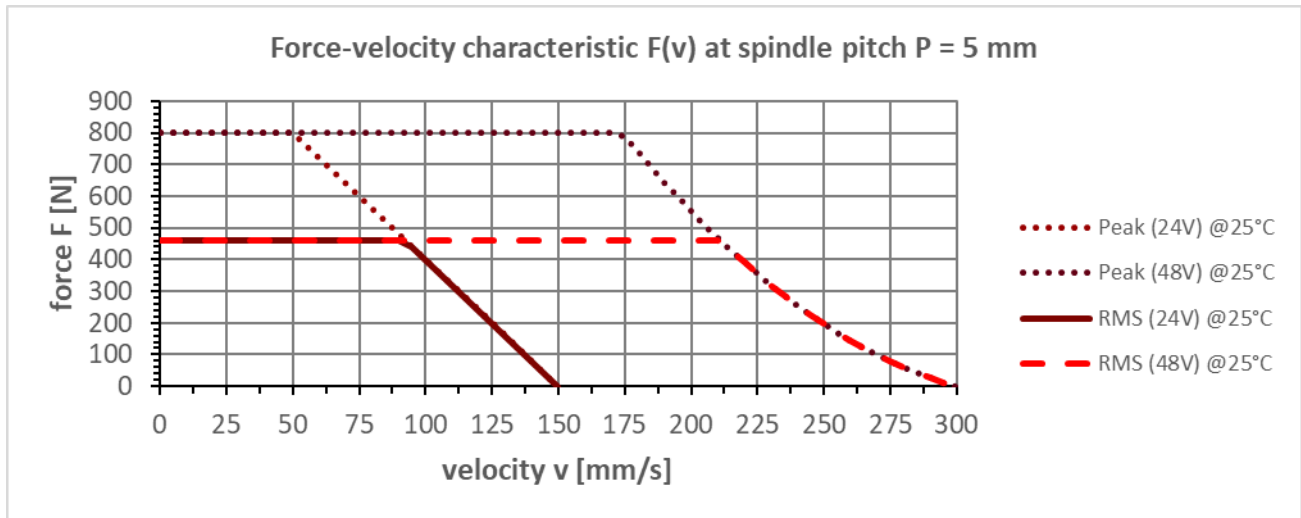
Our core program is assembled just in time according to your order and offers high availability. Variants not included in the core program are assembled to order. To cover your application appropriately, an increased delivery time is to be expected. If you require better availability for your series, please contact our sales team. We are happy to take on your challenges.

stroke [mm]	0100	0200	0300	0500	0600	0800	1000		
K05	★		★		★		★		
K10	★		★		★		★		
K20			★		★		★		

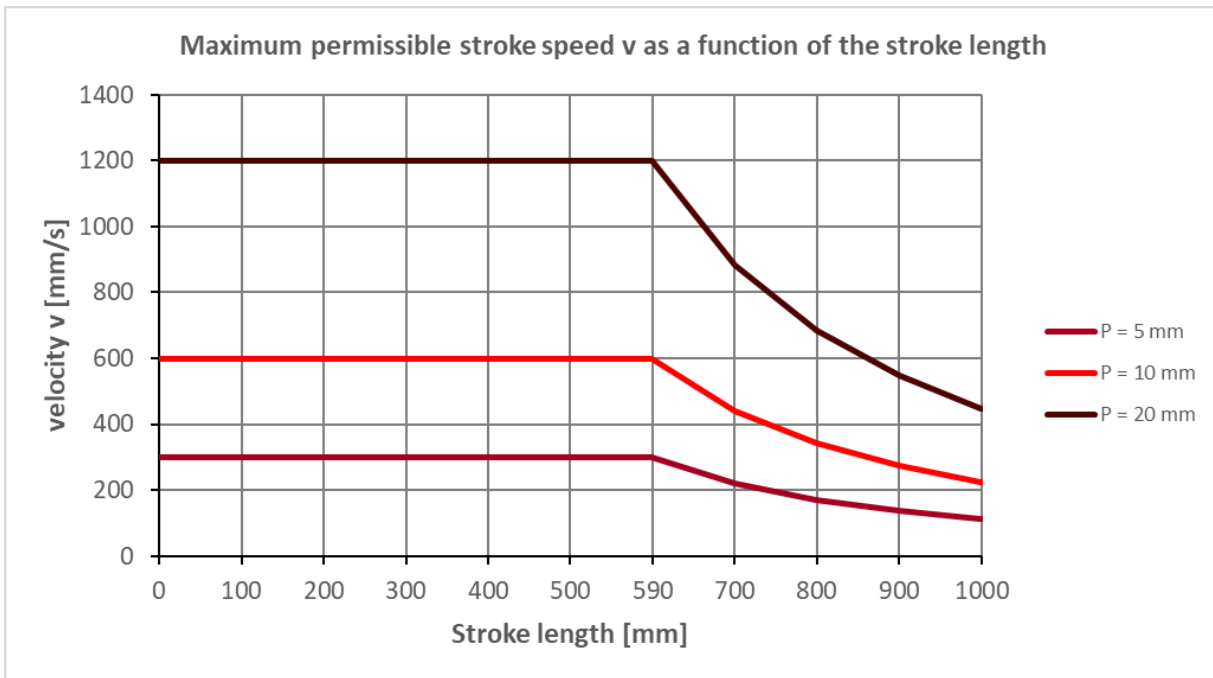


## Characteristics

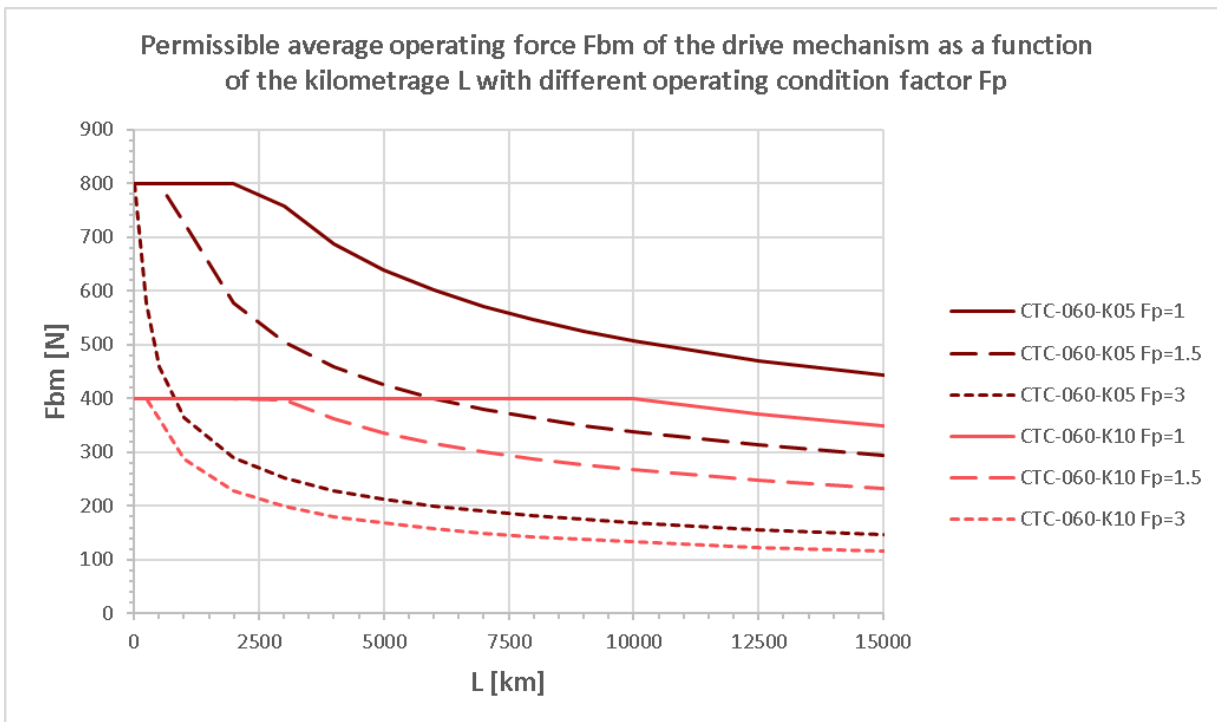
### Force-velocity characteristic



## Stroke speed



## Lifetime characteristic \* of the drive mechanism \*\*



Operating condition factor  $F_p$ :

$F_p = 1$  operation under ideal conditions

$F_p = 1.5$  operation under normal conditions

$F_p = 3$  operation with high impact and vibration or short stroke application (stroke < 100 mm)

\* failure probability 10%

\*\* ball screw and its bearing

## Holding brake

size		CTL-060		
functionality of the holding brake		spring-loaded, currentless braked		
spindle pitch	[mm/U]	5	10	20
maximum holding force	[N]	800	400	200
nominal voltage	[V DC]	24 +/-10%		
coil power (20 °C)	[W]	11.5 +/-10%		

## Relubrication interval

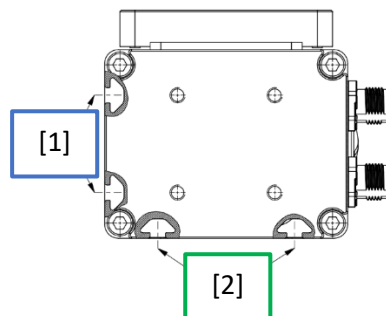
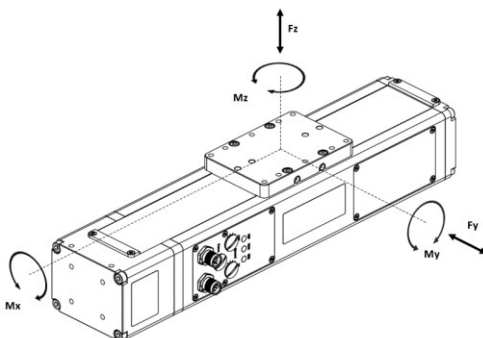
Type			Relubrication interval + lubricant quantity according to application								
Size	Nominal stroke [mm]	Spindle pitch	Continuous operation (> 3600 strokes / h)	Medium mileage (10 - 3600 strokes / h)	Low mileage (< 10 strokes / h)	short-stroke applications (< 20mm travel)	lubricant quantity spindle [3] [cm <sup>3</sup> ]	Distance Lubrication position spindle [mm]	lubricant quantity linear guide [2] [cm <sup>3</sup> ]	Distance Lubrication position linear guide [mm]	
CTL-060	100 - 300	K05	250 km	3 months	1 x / year	Lubrication run after 1 million motion cycles (= 4x stroke over entire nominal stroke range required)	1.2	150	0.2	300	
		K10	500 km								
	400 - 600	K05	250 km	3 months	1 x / year		0.6	150	0.2	300	
		K10	500 km								
	600 - 1000	K05	250 km	3 months	1 x / year		Relubrication interval: 2 months	0.6	150	0.2	300
		K10	500 km								

[2][3] Relubrication to be carried out according to the CTL-060 operation manual

## Tightening torques of screws

Thread	Tightening torque for mounting holes	Minimal screwing depth
M5	4.8 Nm (+/- 10%)	7.5 mm
M6	8.0 Nm (+/- 10%)	9.0 mm

## Permissible forces / moments on slide



[1] Side mounting grooves

[2] Bottom mounting grooves

Baugröße		CTL-060	
Permissible forces / moments on slide		[2] Bottom mounted:	[1] side mounted:
Fy	[N]	400	1500
Fz	[N]	500	1500
Mx	[Nm]	12	20
My	[Nm]	80	80
Mz	[Nm]	30	30

## Electrical Connection of the Drive

Power				Signal			
M12x1, 4-Pol T-coded according to EN 61076-2-11				M12x1, 8-Pol A-coded according to EN 61076-2-101 *			
on the device		connecting cable		on the device		connecting cable	
Pin	Color	Function	Pin	Color	IO-Link	Digital	
1	BN	power voltage 24 V-48 V ± 15% **	1	WH	IO-Link CQ	DO Ready	
2	WH	functional earth (FE)	2	BN	logic voltage 24 V ± 15% (max. 500 mA)	logic voltage 24 V ± 15% (max. 500 mA)	
3	BU	GND (0 V)	3	GN		DO is extended	
4	BK	reserved, do not connect	4	YE		DO is retracted	
			5	GY		DI retract	
			6	PK		DI extend	
			7	BU	GND (0 V)	GND (0 V)	
			8	RD		DI Teach / Reset / Powerless	

\* shielded cables are recommended

\*\* the use of a brake chopper is recommended for 48 V

## Electrical connection of the holding brake

Power		
M12x1, 4-Pol T-coded according to EN 61076-2-11		
on the device		connecting cable
Pin	Color	Function
1	BN	power voltage 24 V ± 10% * (open brake)
2	WH	reserved, do not connect
3	BU	GND (0 V)
4	BK	reserved, do not connect

\* **Caution!** In contrast to the power supply of the drive, the brake must be only powered with 24 V.

## IO-Link interface

Parameter	
transfer-rate	COM3
cycle time	1.5 ms
IO-Link specification	V1.1.3
process data input (Slave->Master)	status actual position (in mm) actual speed (in mm/s) actual force (in N)  - total 14 bytes -
process data output (Master->Slave)	motion mode target Position (in mm) override 1-3 (in %)  - total 8 bytes -
service data	configuration, diagnosis, statistics, identification
IO-Link profile	common profile BLOB transfer & firmware update