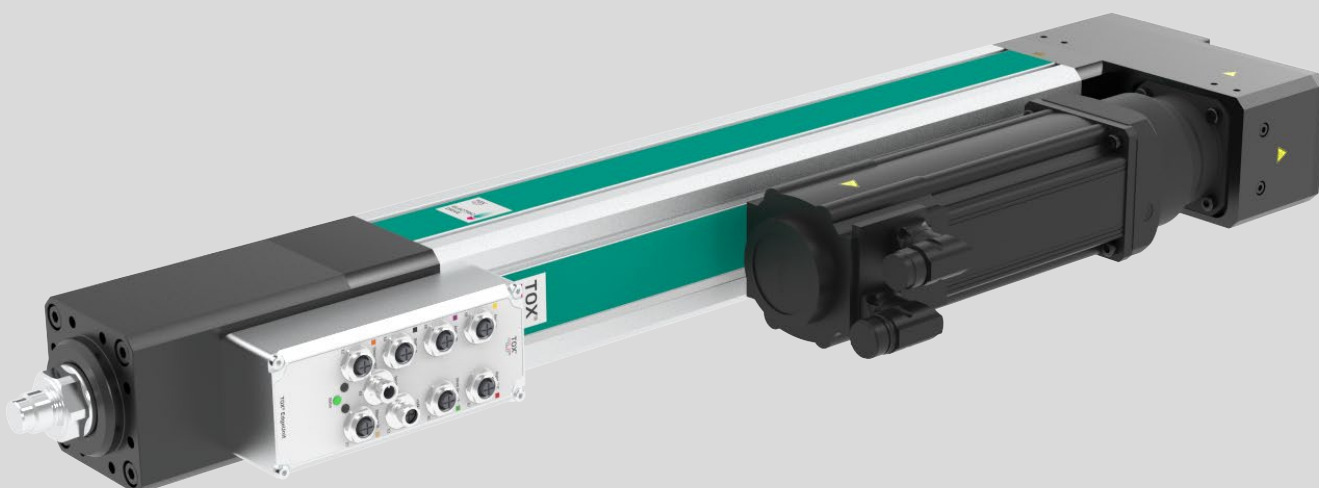


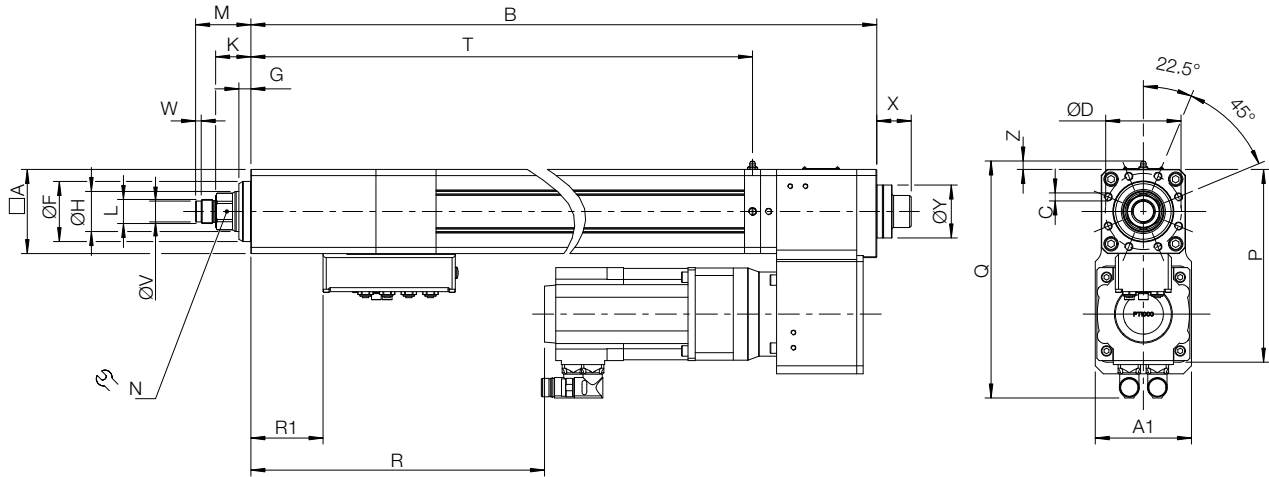
# TOX® ElectricPowerDrive Type EXe-K

Data sheet 40.55  
2025/07



# TOX® ElectricPowerDrive servo drive

Type EXe-K, 10–200 kN with planetary roller screw



## Dimensions and weights

### Preferred series (short delivery time)

| Type              | Stroke length mm | Max. nominal force kN | Weight approx. kg |
|-------------------|------------------|-----------------------|-------------------|
| EXe-K 010.XXX.150 | 150              | 10                    | 24                |
| EXe-K 010.XXX.300 | 300              | 10                    | 25                |
| EXe-K 030.XXX.150 | 150              | 30                    | 41                |
| EXe-K 030.XXX.300 | 300              | 30                    | 43                |
| EXe-K 030.XXX.450 | 450              | 30                    | 45                |
| EXe-K 060.XXX.150 | 150              | 60                    | 68                |
| EXe-K 060.XXX.300 | 300              | 60                    | 72                |
| EXe-K 060.XXX.450 | 450              | 60                    | 76                |
| EXe-K 100.XXX.150 | 150              | 100                   | 106               |
| EXe-K 100.XXX.300 | 300              | 100                   | 111               |
| EXe-K 100.XXX.450 | 450              | 100                   | 116               |
| EXe-K 200.XXX.150 | 150              | 200                   | 178               |
| EXe-K 200.XXX.300 | 300              | 200                   | 187               |
| EXe-K 200.XXX.450 | 450              | 200                   | 196               |

| Type              | A   | A1  | B    | C         | D   | F <sub>T</sub> | G  | H  | K <sup>1)</sup> | L       | M <sup>1)</sup> | N  | P   | Q   | R   | R1  | T    | V <sub>g6</sub> | W | X  | Y  | Z  |
|-------------------|-----|-----|------|-----------|-----|----------------|----|----|-----------------|---------|-----------------|----|-----|-----|-----|-----|------|-----------------|---|----|----|----|
| EXe-K 010.XXX.150 | 70  | 90  | 606  | 8x M6x12  | 60  | 50             | 10 | 30 | 28              | M12x1.5 | 40              | 27 | 165 | 220 | 202 | 12  | 497  | –               | – | 33 | 42 | 10 |
| EXe-K 010.XXX.300 | 70  | 90  | 756  | 8x M6x12  | 60  | 50             | 10 | 30 | 28              | M12x1.5 | 40              | 27 | 165 | 220 | 352 | 12  | 647  | –               | – | 33 | 42 | 10 |
| EXe-K 030.XXX.150 | 90  | 90  | 703  | 8x M8x16  | 80  | 65             | 10 | 40 | 26              | M22x2   | 46              | 36 | 208 | 253 | 247 | 53  | 585  | 18              | 7 | 35 | 52 | 10 |
| EXe-K 030.XXX.300 | 90  | 90  | 853  | 8x M8x16  | 80  | 65             | 10 | 40 | 26              | M22x2   | 46              | 36 | 208 | 253 | 397 | 53  | 735  | 18              | 7 | 35 | 52 | 10 |
| EXe-K 030.XXX.450 | 90  | 90  | 1003 | 8x M8x16  | 80  | 65             | 10 | 40 | 26              | M22x2   | 46              | 36 | 208 | 253 | 547 | 53  | 885  | 18              | 7 | 35 | 52 | 10 |
| EXe-K 060.XXX.150 | 105 | 120 | 817  | 8x M10x20 | 95  | 75             | 15 | 50 | 44              | M30x2   | 69              | 41 | 248 | 296 | 323 | 90  | 662  | 26              | 7 | 43 | 66 | 10 |
| EXe-K 060.XXX.300 | 105 | 120 | 967  | 8x M10x20 | 95  | 75             | 15 | 50 | 44              | M30x2   | 69              | 41 | 248 | 296 | 473 | 90  | 812  | 26              | 7 | 43 | 66 | 10 |
| EXe-K 060.XXX.450 | 105 | 120 | 1117 | 8x M10x20 | 95  | 75             | 15 | 50 | 44              | M30x2   | 69              | 41 | 248 | 296 | 623 | 90  | 962  | 26              | 7 | 43 | 66 | 10 |
| EXe-K 100.XXX.150 | 130 | 143 | 875  | 8x M12x24 | 115 | 90             | 17 | 60 | 42              | M30x2   | 67              | 55 | 295 | 378 | 343 | 115 | 702  | 26              | 7 | 46 | 75 | 10 |
| EXe-K 100.XXX.300 | 130 | 143 | 1025 | 8x M12x24 | 115 | 90             | 17 | 60 | 42              | M30x2   | 67              | 55 | 295 | 378 | 493 | 115 | 852  | 26              | 7 | 46 | 75 | 10 |
| EXe-K 100.XXX.450 | 130 | 143 | 1175 | 8x M12x24 | 115 | 90             | 17 | 60 | 42              | M30x2   | 67              | 55 | 295 | 378 | 643 | 115 | 1002 | 26              | 7 | 46 | 75 | 10 |
| EXe-K 200.XXX.150 | 160 | 160 | 1000 | 8x M16x32 | 135 | 105            | 17 | 75 | 42              | M39x2   | 77              | 65 | 345 | 409 | 372 | 155 | 789  | –               | – | 58 | 90 | 10 |
| EXe-K 200.XXX.300 | 160 | 160 | 1150 | 8x M16x32 | 135 | 105            | 17 | 75 | 42              | M39x2   | 77              | 65 | 345 | 409 | 522 | 155 | 939  | –               | – | 58 | 90 | 10 |
| EXe-K 200.XXX.450 | 160 | 160 | 1300 | 8x M16x32 | 135 | 105            | 17 | 75 | 42              | M39x2   | 77              | 65 | 345 | 409 | 672 | 155 | 1089 | –               | – | 58 | 90 | 10 |

<sup>1)</sup> Dimension refers to zero position of drive. Reference position = zero position - 3 mm.

Dimensions in mm

| Specifications EXe-K                                                                                     | 010                                                                                                  | 030                    | 060                    | 100                    | 200                    |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------|------------------------|------------------------|------------------------|
| <b>Mechanical</b>                                                                                        |                                                                                                      |                        |                        |                        |                        |
| Nominal pressing force                                                                                   | 10 kN                                                                                                | 30 kN                  | 60 kN                  | 100 kN                 | 200 kN                 |
| Nominal pulling force                                                                                    | 3 kN                                                                                                 | 8 kN                   | 17 kN                  | 30 kN                  | 60 kN                  |
| Max. speed                                                                                               | 300 mm/s                                                                                             | 280 mm/s               | 250 mm/s               | 200 mm/s               | 120 mm/s               |
| Acceleration / deceleration                                                                              | 3000 mm/s <sup>2</sup>                                                                               | 2000 mm/s <sup>2</sup> | 2000 mm/s <sup>2</sup> | 2000 mm/s <sup>2</sup> | 1000 mm/s <sup>2</sup> |
| Repeatability <sup>1)</sup>                                                                              | 0,01 mm                                                                                              |                        |                        |                        |                        |
| Max. tool weight<br>without brake <sup>4)</sup><br>with safety brake / motor holding brake <sup>5)</sup> | 10 kg<br>25 kg                                                                                       | 15 kg<br>125 kg        | 25 kg<br>300 kg        | 50 kg<br>500 kg        | 100 kg<br>1000 kg      |
| <b>Sensors</b>                                                                                           |                                                                                                      |                        |                        |                        |                        |
| Force transducer (Strain Gauge) measuring range <sup>2)</sup>                                            | 0.1 – 10 kN                                                                                          | 0.3 – 30 kN            | 0.6 – 60 kN            | 1 – 100 kN             | 2 – 200 kN             |
| System accuracy <sup>6)</sup>                                                                            | < 0,5 % of nominal pressing force                                                                    |                        |                        |                        |                        |
| Resolver                                                                                                 | ■                                                                                                    | ■                      | ■                      | ■                      | ■                      |
| Resolution (theoretically)                                                                               | 0.00198 mm                                                                                           | 0.00185 mm             | 0.00185 mm             | 0.00185 mm             | 0.00106 mm             |
| <b>Electrical</b>                                                                                        |                                                                                                      |                        |                        |                        |                        |
| Protection class <sup>3)</sup>                                                                           | IP 54                                                                                                |                        |                        |                        |                        |
| Power supply connection                                                                                  | see data sheet 40.15 System & Components                                                             |                        |                        |                        |                        |
| Climatic conditions                                                                                      | + 10° to + 40° C, from 40° C performance loss, max. 55° C; air moisture < 75 %, without condensation |                        |                        |                        |                        |

<sup>1)</sup> In thermal transient condition

<sup>2)</sup> Recommended operating range 1 – 100 %

<sup>3)</sup> Optional: Protection class IP 65

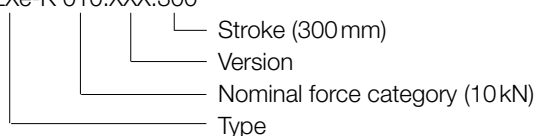
<sup>4)</sup> For higher weights, the tool can sink in de-energized condition

<sup>5)</sup> Higher tool weights on request

<sup>6)</sup> Calibrated to press forces in relation to TOX® calibration stand

## Ordering example

EXe-K 010.XXX.300



A wide range of accessories is available for the servo drive type EXe-K (see data sheet 40.95, TOX® ElectricPowerDrive Accessories).

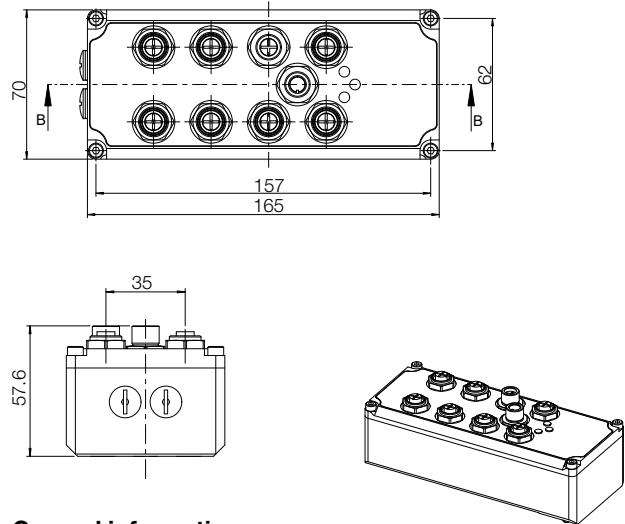
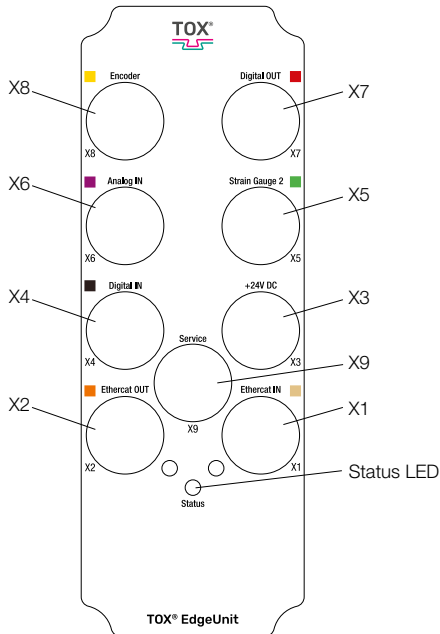
## Version

- 003 Basic version
- 004 Safety brake
- 005 Safety brake with rotary encoder
- 006 Motor holding brake
- 007 Includes holding time min 10s at min. 80% of nominal pressing force
- 008 Includes safety brake and holding time min. 10s at min. 80% of nominal pressing force
- 011 Includes identical nominal pressing/pulling force, punching
- 012 Includes safety brake and identical nominal pressing/pulling force, punching
- 017 Includes motor with fan (24VDC) - for shorter cooling time
- 018 Includes safety brake and motor with fan (24VDC) - for shorter cooling time
- 053 Includes protection class IP65
- 054 Includes safety brake and protection class IP65
- 302 Includes working piston with threaded holes on piston end
- 303 Includes safety brake and working piston with threaded holes on piston end

Further versions are available upon request!

# TOX® EdgeUnit

**TOX® EdgeUnit is the decentralized intelligence for each TOX® ElectricPowerDrive**



## General information:

- Ambient temperature: 0 ... 50°C
- IP protection: IP 65 (plug closed)
- Housing: aluminum
- Status LED shows different states of the TOX® EdgeUnit
- Integrated memory

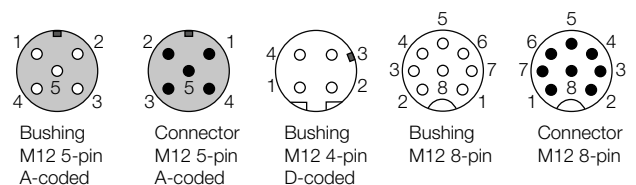
## Technical data/interfaces

|                             |                                                                             |
|-----------------------------|-----------------------------------------------------------------------------|
| <b>X1</b> ■                 | <b>Ethercat IN, incl. status LED</b>                                        |
| Pin assignment              | M12 4-pin Bushing, D-coded                                                  |
| <b>X2</b> ■                 | <b>Ethercat OUT, incl. status LED</b>                                       |
| Pin assignment              | M12 4-pin Bushing, D-coded                                                  |
| <b>X3</b>                   | <b>Power supply</b>                                                         |
| Voltage                     | + 24VDC (18 ... 28 VDC)                                                     |
| Current draw                | US1 <0,25A (without loads at Pin1, X4-7)<br>US2 ~0A (without outputs at X7) |
| US1<br>US2                  | Logic voltage + sensors<br>Output voltage<br>(not electrically isolated)    |
| Pin assignment              | M12 5-pin, connector A-coded<br>not AIDA compliant                          |
| <b>X4</b> ■                 | <b>Digital IN</b>                                                           |
| Digital IN 1 / Digital IN 2 | 24VDC                                                                       |
| Logic level 0 (LOW)         | 0V ... 10V                                                                  |
| Logic level 1 (HIGH)        | 16V ... 28V                                                                 |
| Input current               | max. 2 mA (at 24V)                                                          |
| Pin assignment              | M12 5-pin bushing, A-coded                                                  |
| <b>X5*</b> ■                | <b>Strain Gauge 2</b>                                                       |
| Measuring range             | 1.157 mV/V – 3,25 mV/V (intensifier adjustable)                             |
| Voltage VDC                 | 5V                                                                          |
| Shunt resistor              | typ. 700 Ω                                                                  |
| Resolution                  | 16 Bit                                                                      |
| Pin assignment              | M12 5-pin bushing, A-coded                                                  |

|                               |                                                              |
|-------------------------------|--------------------------------------------------------------|
| <b>X6*</b> ■                  | <b>Analog IN</b>                                             |
| Analog IN 1                   | -10 ... 10VDC, 16 bit                                        |
| Analog IN 2                   | 0 ... 10VDC, 12 bit                                          |
| Pin assignment                | M12 5-pin bushing, A-coded                                   |
| <b>X7</b> ■                   | <b>Digital OUT</b>                                           |
| Digital OUT 0 / Digital OUT 1 | 24VDC, US2                                                   |
| Output current                | max. 2 A (per channel) / overcurrent and short-circuit proof |
| Pin assignment                | M12 5-pin bushing, A-coded                                   |
| <b>X8*</b> ■                  | <b>Encoder</b>                                               |
| Pin assignment                | M12 8-pin bushing, A-coded                                   |
| <b>X9</b>                     | <b>Service pin</b>                                           |
| Pin assignment                | M12 8-pin connector, A-coded                                 |

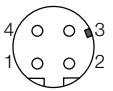
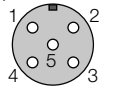
\*Compatible sensor types available on request

## M12 pin assignment

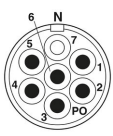


# Pin assignments

## EdgeUnit

| Version | Designation                                                                       | Description                                                                                                                                                                           |
|---------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X1      | Bushing M12<br>4-pin, D-coded                                                     | EtherCat In<br>Pin 1 = TD+<br>Pin 2 = RD+<br>Pin 3 = TD-<br>Pin 4 = RD-                                                                                                               |
| X2      |  | EtherCat Out<br>Pin 1 = TD+<br>Pin 2 = RD+<br>Pin 3 = TD-<br>Pin 4 = RD-                                                                                                              |
| X3      | Connector M12<br>5-pin, A-coded                                                   | Power<br>Pin 1 = 24V US2<br>Pin 2 = GND US2<br>Pin 3 = 24V US1<br>Pin 4 = GND US1<br>Pin 5 = PE<br>GND US1 = GND US2 = GND<br>not AIDA compliant                                      |
| X4      | Bushing M12<br>5-pin, A-coded                                                     | Digital In<br>Pin 1 = 24V US1<br>Pin 2 = DIN2 24V<br>Pin 3 = GND<br>Pin 4 = DIN1 24V<br>Pin 5 = PE                                                                                    |
| X5      |  | Strain Gauge 2<br>Pin 1 = S- signal strain gauge In<br>Pin 2 = 5V supply strain gauge<br>Pin 3 = GND supply strain gauge<br>Pin 4 = S+ signal strain gauge In<br>Pin 5 = not occupied |
| X6      |                                                                                   | Analog In<br>Pin 1 = 24V US1<br>Pin 2 = AIN2 0 ... 10V<br>Pin 3 = GND<br>Pin 4 = AIN1 -10 ... 10V<br>Pin 5 = PE                                                                       |
| X7      |                                                                                   | Digital Out<br>Pin 1 = 24V US1<br>Pin 2 = DOUT1 24V US2 (2A)<br>Pin 3 = GND<br>Pin 4 = DOUT0 24V US2 (2A)<br>Pin 5 = PE                                                               |
| X8      | Bushing M12 8-pin                                                                 | Encoder<br>Pin 1 = 5V<br>Pin 2 = APR<br>Pin 3 = ANR<br>Pin 4 = BPR<br>Pin 5 = BNR<br>Pin 6 = CPR<br>Pin 7 = CNR<br>Pin 8 = GND                                                        |

## Safety brake (optional)

| Pin | Designation | Description                 | Plug                                                                                |
|-----|-------------|-----------------------------|-------------------------------------------------------------------------------------|
| 1   | 24V         | Release brake V+            |  |
| 2   | 0V          | Release brake V-            |                                                                                     |
| 3   | 24V         | Sensor V+                   |                                                                                     |
| 4   | 0V          | Sensor V-                   |                                                                                     |
| 5   | S + 24V     | Sensor signal release brake |                                                                                     |
| 6   |             | Not occupied                |                                                                                     |
| 7   |             | Not occupied                |                                                                                     |

Type: CA-06S1N128008-M23, 7-pin

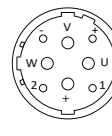
## Motor/Motor holding brake (optional)

### For TOX® ElectricPowerDrive EXe-K 010, 030, 060

| Pin | Designation | Description            | Plug                                                                                |
|-----|-------------|------------------------|-------------------------------------------------------------------------------------|
| 1   | BD1         | Holding brake DC +/-AC |  |
| 2   | BD2         | Holding brake DC +/-AC |                                                                                     |
| PE  | PE          | Protective conductor   |                                                                                     |
| 4   | U           | Power leg U            |                                                                                     |
| 5   | V           | Power leg V            |                                                                                     |
| 6   | W           | Power leg W            |                                                                                     |

Type: Intercontec ICN-M23, 6-pin

### For TOX® ElectricPowerDrive EXe-K 100, 200

| Pin | Designation | Description          | Plug                                                                                 |
|-----|-------------|----------------------|--------------------------------------------------------------------------------------|
| U   | U           | Power leg U          |  |
| +   | BD1         | Holding brake +      |                                                                                      |
| -   | BD1         | Holding brake -      |                                                                                      |
| W   | W           | Power leg W          |                                                                                      |
| V   | V           | Power leg V          |                                                                                      |
| PE  | PE          | Protective conductor |                                                                                      |
| 1   |             | Not occupied         |                                                                                      |
| 2   |             | Not occupied         |                                                                                      |

Type: Intercontec ICN-M40, 8-pin

## Resolver

| Pin | Designation | Description                    | Plug                                                                                  |
|-----|-------------|--------------------------------|---------------------------------------------------------------------------------------|
| 1   | +Ref        | Transformer windings           |  |
| 2   | -Ref        |                                |                                                                                       |
| 3   |             | Not occupied                   |                                                                                       |
| 4   | +COS        | Stand winding Cosinus          |                                                                                       |
| 5   | -COS        |                                |                                                                                       |
| 6   | +SIN        | Stand winding Sinus            |                                                                                       |
| 7   | -SIN        |                                |                                                                                       |
| 8   |             | Not occupied                   |                                                                                       |
| 9   |             |                                |                                                                                       |
| 10  | Shield      | Housing shield of transmitter  |                                                                                       |
| 11  | +           | Temperature monitoring: PT1000 |                                                                                       |
| 12  | -           |                                |                                                                                       |

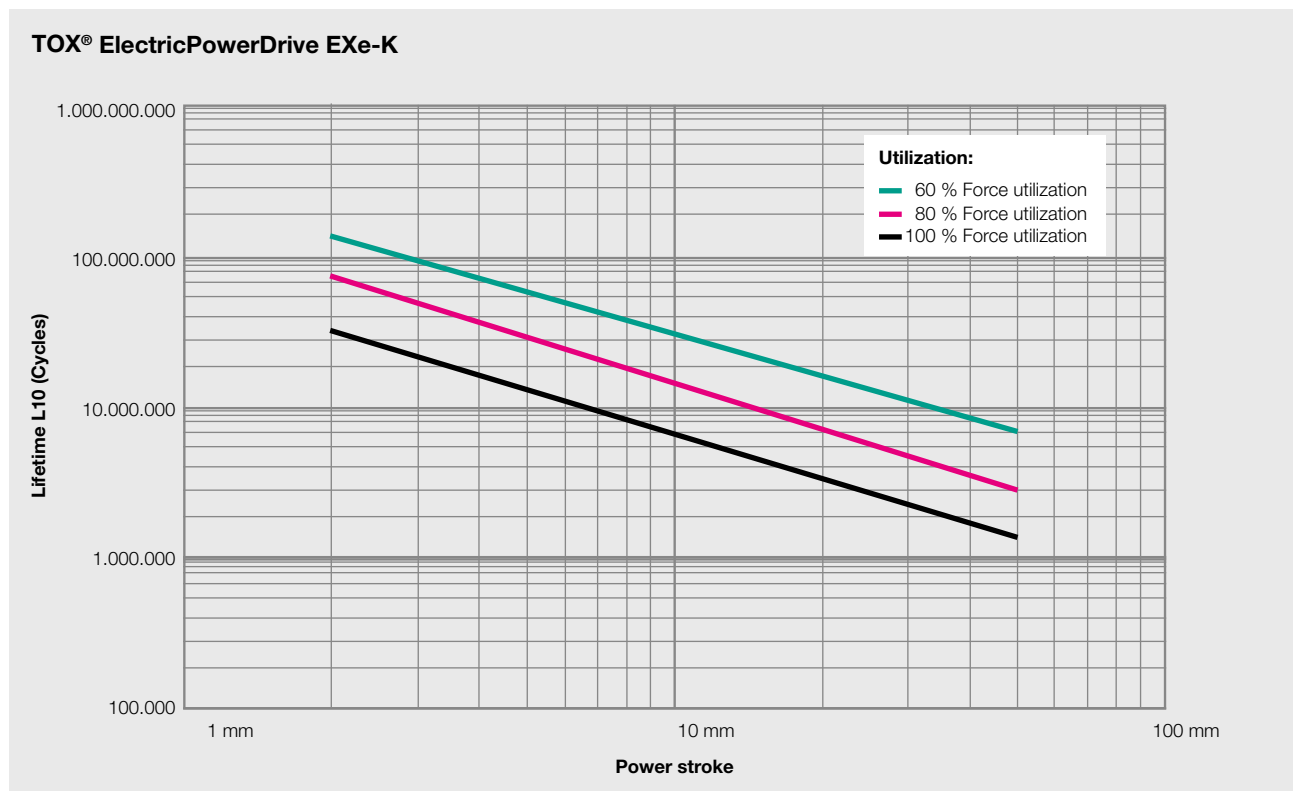
Type: Intercontec ICN-M23, 12-pin

## Lifetime L10

The lifetime L10 is a complex calculation. The following factors influence the lifetime L10, in some cases considerably:

- Rate of force application
- Powerstroke
- Punching impact
- Application
- Revolutions per minute

### Schematic illustration of the lifetime L10



We are happy to carry out the lifetime calculation for your application. Just ask us!