

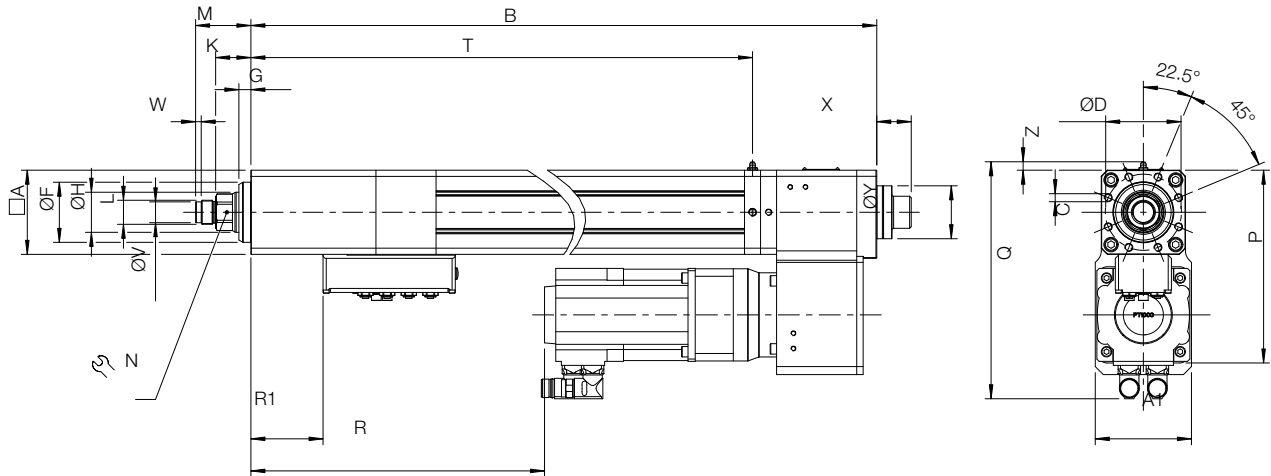
TOX[®]-ElectricPowerDrive Type EQe-K

Data sheet 40.45
2023/11



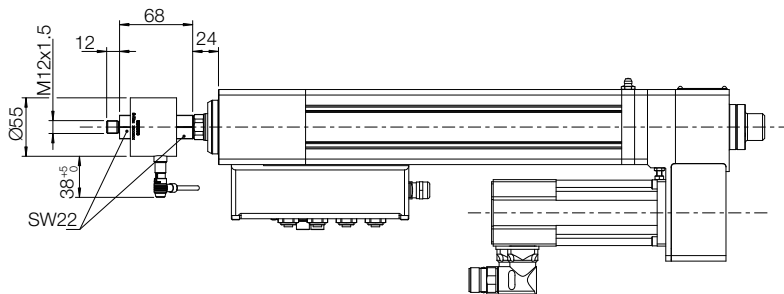
TOX[®]-ElectricPowerDrive servo drive

Type EQe-K, 5 – 100 kN with ball screw



Type EQe-K, 2 kN with ball screw

The TOX[®]-Force transducer ZPS 0002 is external installed on the working piston.



Dimensions and weights

Preferred series (short delivery time)

Type	Stroke length mm	Max. nominal force kN	Weight approx. kg
EQe-K 002.XXX.150	150	2	14.5
EQe-K 002.XXX.250	250	2	15.5
EQe-K 005.XXX.150	150	5	20
EQe-K 005.XXX.300	300	5	22
EQe-K 010.XXX.150	150	10	38
EQe-K 010.XXX.300	300	10	40
EQe-K 010.XXX.450	450	10	42
EQe-K 030.XXX.150	150	30	62
EQe-K 030.XXX.300	300	30	66
EQe-K 030.XXX.450	450	30	70
EQe-K 060.XXX.150	150	60	100
EQe-K 060.XXX.300	300	60	103
EQe-K 060.XXX.450	450	60	106
EQe-K 100.XXX.150	150	100	169
EQe-K 100.XXX.300	300	100	179
EQe-K 100.XXX.450	450	100	189

Type	A	A1	B	C	D	F ₁₇	G	H	K ¹⁾	L	M ¹⁾	N ¹⁾	P	Q	R	R1	T	V _{g6}	W	X	Y	Z
EQe-K 002.XXX.150	70	70	475	8x M6x12	60	50	10	25	24	M12x1.5	36	22	160	201	254	12	547	-	-	33	42	10
EQe-K 002.XXX.250	70	70	575	8x M6x12	60	50	10	25	24	M12x1.5	36	22	160	201	354	12	647	-	-	33	42	10
EQe-K 005.XXX.150	70	70	606	8x M6x12	60	50	10	30	28	M12x1.5	40	27	162	206	280	12	497	-	-	33	42	10
EQe-K 005.XXX.300	70	70	756	8x M6x12	60	50	10	30	28	M12x1.5	40	27	162	206	430	12	647	-	-	33	42	10
EQe-K 010.XXX.150	90	90	703	8x M8x16	80	65	10	40	26	M22x2	46	36	198	253	308	53	585	18	7	35	52	10
EQe-K 010.XXX.300	90	90	853	8x M8x16	80	65	10	40	26	M22x2	46	36	198	253	458	53	735	18	7	35	52	10
EQe-K 010.XXX.450	90	90	1003	8x M8x16	80	65	10	40	26	M22x2	46	36	198	253	608	53	885	18	7	35	52	10
EQe-K 030.XXX.150	105	120	817	8x M10x20	95	75	15	50	44	M30x2	69	41	248	296	405	90	662	26	7	43	66	10
EQe-K 030.XXX.300	105	120	967	8x M10x20	95	75	15	50	44	M30x2	69	41	248	296	555	90	812	26	7	43	66	10
EQe-K 030.XXX.450	105	120	1117	8x M10x20	95	75	15	50	44	M30x2	69	41	248	296	705	90	962	26	7	43	66	10
EQe-K 060.XXX.150	130	130	875	8x M12x24	115	90	17	60	42	M30x2	67	55	295	336	382	115	702	26	7	46	75	10
EQe-K 060.XXX.300	130	130	1025	8x M12x24	115	90	17	60	42	M30x2	67	55	295	336	532	115	852	26	7	46	75	10
EQe-K 060.XXX.450	130	130	1175	8x M12x24	115	90	17	60	42	M30x2	67	55	295	336	682	115	1002	26	7	46	75	10
EQe-K 100.XXX.150	160	160	1000	8x M16x32	135	105	17	75	42	M39x2	77	65	345	378	439	155	789	-	-	58	90	10
EQe-K 100.XXX.300	160	160	1150	8x M16x32	135	105	17	75	42	M39x2	77	65	345	378	589	155	939	-	-	58	90	10
EQe-K 100.XXX.450	160	160	1300	8x M16x32	135	105	17	75	42	M39x2	77	65	345	378	739	155	1089	-	-	58	90	10

¹⁾ Dimension refers to zero position of drive. Reference position = zero position -3 mm.

Dimensions in mm

Specifications EQe-K	002	005	010	030	060	100
Mechanical						
Nominal pressing force	2 kN	5 kN	10 kN	30 kN	60 kN	100 kN
Nominal pulling force	- ⁴⁾	3 kN	3 kN	8 kN	17 kN	30 kN
Max. speed	300 mm/s	220 mm/s	220 mm/s	200 mm/s	150 mm/s	150 mm/s
Repeatability ¹⁾	0.01 mm					
Max. tool weight without brake ³⁾	5 kg	10 kg	15 kg	25 kg	40 kg	45 kg
with safety brake / motor holding brake	5 kg	25 kg	125 kg	300 kg	500 kg	850/1000 kg
Sensors						
Force transducer measuring range ²⁾	0.02 – 2 kN ⁴⁾	0.05 – 5 kN	0.1 – 10 kN	0.3 – 30 kN	0.6 – 60 kN	1 – 100 kN
Accuracy	≤ ± 1% of nominal pressing force					
Resolver	■	■	■	■	■	■
Resolution (theoretically)	0.00247 mm	0.00123 mm	0.00158 mm	0.00148 mm	0.00123 mm	0.00148 mm
Electrical						
Protection class	IP54					
Mains supply	see data sheet 40.18 System & Components					
Climatic conditions	+ 10° to + 40° C, from 40° C performance loss, max. 55° C; air moisture < 75 %, without condensation					

¹⁾ In thermal transient condition

²⁾ Recommended operating range 1 – 100 %

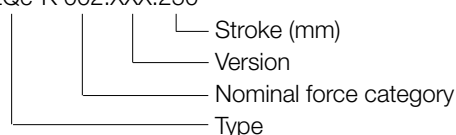
³⁾ For higher weights, the tool can sink in de-energized condition

⁴⁾ With TOX®-Force transducer ZPS 0002

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

Ordering example

EQe-K 002.XXX.250

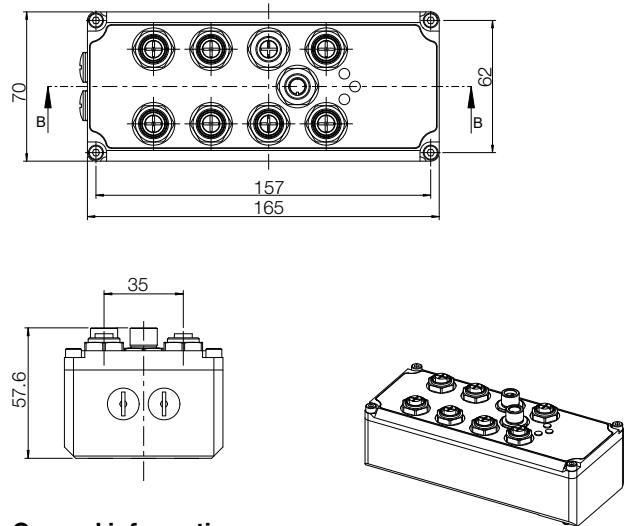
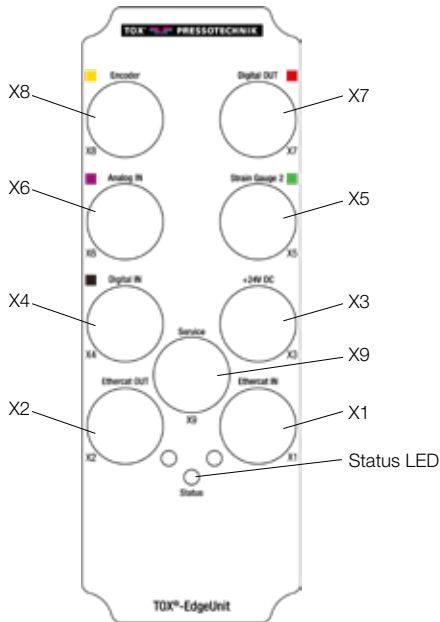


Version

- 003 Basic version
- 004 Safety brake
- 005 Safety brake with rotary encoder
- 006 Motor holding brake

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

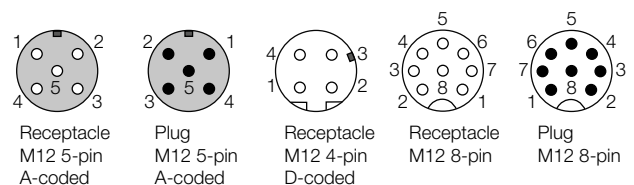
Technical data/interfaces

X1 ■	Ethercat IN, incl. status LED
Pin assignment	M12 4-pin Bushing, D-coded
X2 ■	Ethercat OUT, incl. status LED
Pin assignment	M12 4-pin Bushing, D-coded
X3	Power supply
Voltage	+ 24VDC (18 ... 28 VDC)
Current draw	US1 <0,25A (without loads at Pin1, X4-7) US2 ~0A (without outputs at X7)
US1 US2	Logic voltage + sensors Output voltage (not electrically isolated)
Pin assignment	M12 5-pin, plug A-coded
X4 ■	Digital IN
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
X5* ■	Strain Gauge 2
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

X6* ■	Analog IN
Analog IN 1	-10 ... 10VDC, 16 bit
Analog IN 2	0 ... 10VDC, 12 bit
Pin assignment	M12 5-pin bushing, A-coded
X7 ■	Digital OUT
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
X8* ■	Encoder
Pin assignment	M12 8-pin bushing, A-coded
X9	Service pin
Pin assignment	M12 8-pin Plug, A-coded

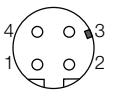
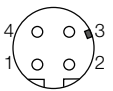
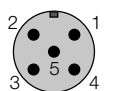
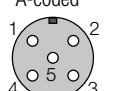
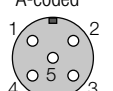
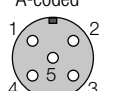
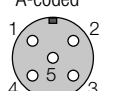
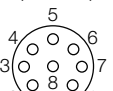
*Compatible sensor types available on request

M12 pin assignment




Pin assignments

EdgeUnit

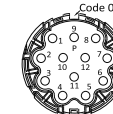
Version	Designation	Description
X1 Receptacle 4-pin, D-coded 	EtherCat In	Pin 1 = TD+ Pin 2 = RD+ Pin 3 = TD- Pin 4 = RD-
X2 	EtherCat Out	Pin 1 = TD+ Pin 2 = RD+ Pin 3 = TD- Pin 4 = RD-
X3 Plug 5-pin, A-coded 	Power	Pin 1 = 24V US2 Pin 2 = GND US2 Pin 3 = 24V US1 Pin 4 = GND US1 Pin 5 = PE GND US1 = GND US2 = GNO
X4 Receptacle 5-pin, A-coded 	Digital In	Pin 1 = 24V US1 Pin 2 = DIN2 24V Pin 3 = GND Pin 4 = DIN1 24V Pin 5 = PE
X5 	Strain Gauge 2	Pin 1 = Strain Gauge Sig (neg) Pin 2 = 5V Strain Gauge Ref Pin 3 = GND Pin 4 = Strain Gauge Sig (pos) Pin 5 = -
X6 	Analog In	Pin 1 = 24V US1 Pin 2 = AIN2 0 ... 10V Pin 3 = GND Pin 4 = AIN1 -10 ... 10V Pin 5 = PE
X7 	Digital Out	Pin 1 = 24V US1 Pin 2 = DOUT1 24V US2 (2A) Pin 3 = GND Pin 4 = DOUT0 24V US2 (2A) Pin 5 = PE
X8 Receptacle 8-pin 	Encoder	Pin 1 = 5V Pin 2 = APR Pin 3 = ANR Pin 4 = BPR Pin 5 = BNR Pin 6 = CPR Pin 7 = CNR Pin 8 = GND

Motor/Motor holding brake (optional)

Pin	Designation	Description	Plug
1	BD1	Immobilisation brake DC +/-AC	
2	BD2	Immobilisation 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

Resolver

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

Type: Intercontec ICN-M23, 12-pin

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	N.C.		
7	N.C.		

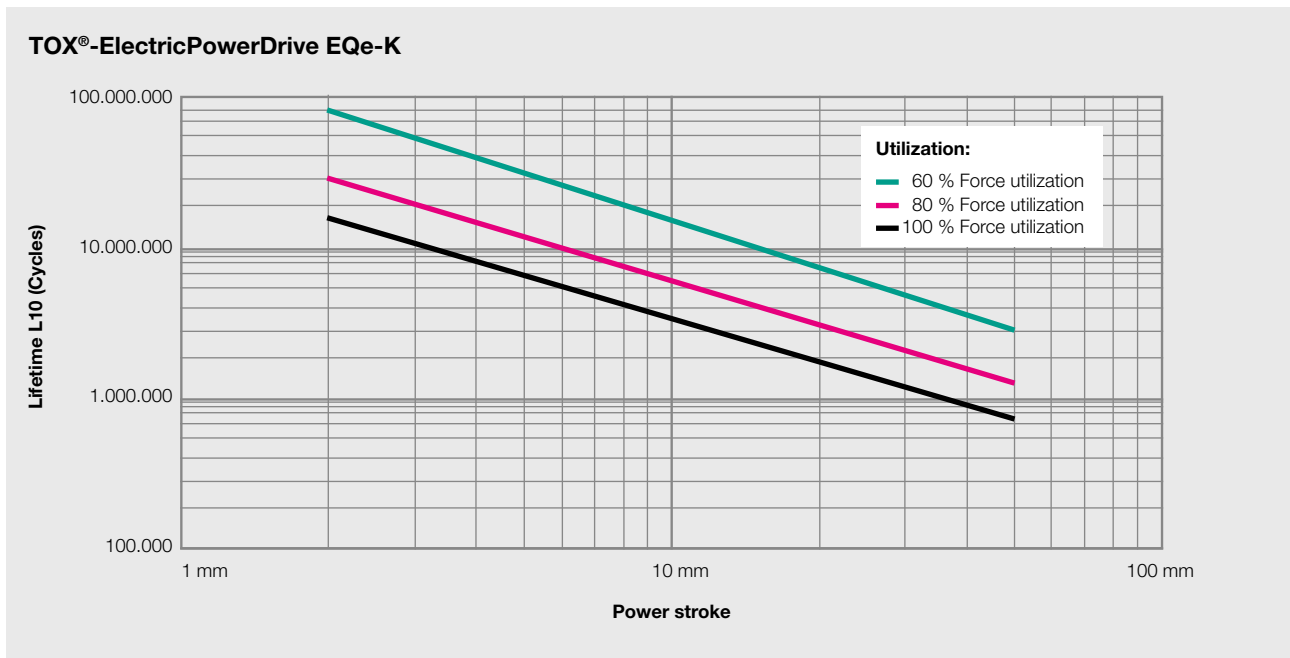
Type: Intercontec ASDA157FR12580150400, 7-pin

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!