

## **Key Features**

- Slide 298 x 176 mm (l x w)
- Stroke 300 mm
- Payload up to 20 kg
- Incremental Encoder
- Dynamic Linear Motor up to 2 m/s
- High Repeatability
- Granite Rail



# Air Bearing Linear Axis on Granite Rail

### **Concept and Design**

The EZ-4360 linear axis was originally designed for use in measuring machines and for moving optical components.

The almost 300 mm long slide travels on the granite with bearings located far to the outside, allowing the transmission of high tilting moments. The solid granite rail and the ZeroMet™ (Renishaw) scale guarantee good repeatability even with moderate temperature fluctuations.

The slide is designed for payloads of up to 20 kg. Its surface offers plenty of space for customer-specific structures and sensors.

The axis is driven by a linear motor (Tecnotion UL6). Due to the magnetic preload, the axis can also be operated vertically. An incremental measuring system (Renishaw Tonic™) is installed in the standard version. Deviating strokes can be realized on request.

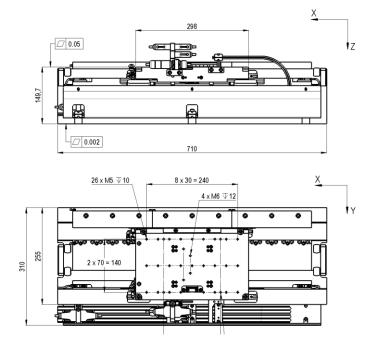
#### **Applications**

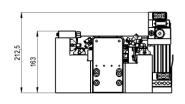
Electronics manufacturing, PCB manufacturing, inspection technology, non-contact 2D measurement, sensor and camera positioning for inspection, AOI (automatic optical inspection), automation processes. In general: applications with high demands on dynamics, precision, repeatability, smooth scan movements, short settling times.

#### **Drive Control**

We offer the linear axis EZ-2352-094 with the following drive controllers:

- Kollmorgen Servostar AKD / S300 / S700
- ACS Controller with UDMpa Drive
- Triamec TSD130







## Specifications

Stroke mm 300 Positioning Accuracy (non-compensated) (XTX)	specifications		
Positioning Accuracy (non-compensated) (XTX)	Туре	Unit	EZ-4360
Repeatability (bidirectional) 19 nm 30-100 Position Stability 10 nm 30-100 Vertical/Horizontal Straightness (XTZ/XTY) µm 2 Pitch (XRY) µrad 10 Max. Speed unloaded m/s 2 10 Max. Speed unloaded m/s 10 Mechanical Data Unit EZ-4360 Dimension LxWxH mm 710x307x212 Max. Load 20 kg 20 Load Capacity vertical (Z) N 560 Load Capacity lateral (Y) N 280 Moment of Tilt around X Nm 25 Moment of Tilt around Z Nm 70 Mowing Mass (slide) kg 7.5 Total Mass (incl. slide) kg 7.5 Type incremental, Renishaw Tonic Signal Vxpp, RS422  Drive Unit EZ-4360 Type 3-phase, synchronous, ironless Max. Voltage ph-ph Vxc 230 (300 Vpc) Constant Force N 110 Peak Force N 380 Constant Current Ams 1.6 Peak Current Ams 5.6 Cable Length (open end) m 6 Interfaces and Environment Unit EZ-4360 Interfaces and Environment Unit EZ-4360 Ilmit Switch included (5V) Clean Room Suitability applicable Drive Contol  Drive Contol	Stroke	mm	300
Position Stability 19	Positioning Accuracy (non-compensated) (XTX)	μm	3
Vertical/Horizontal Straightness (XTZ/XTY)         μm         2           Pitch (RRY)         μrad         10           Yaw (XRZ)         μrad         10           Max. Speed unloaded         m/s         2           Max. Acceleration unloaded         m/s²         10           Mechanical Data         Unit         EZ-4360           Dimension LxWxH         mm         710x307x212           Max. Load ²²         kg         20           Load Capacity vertical (Z)         N         560           Load Capacity lateral (Y)         N         280           Moment of Tilt around X         Nm         25           Moment of Tilt around Z         Nm         70           Moving Mass (side)         kg         7.5           Total Mass (incl. slide)         kg         7.7           Ez-4360         7.	Repeatability (bidirectional) 1)	nm	50
Pitch (XRY)         µrad         10           Yaw (XRZ)         µrad         10           Max. Speed unloaded         m/s         2           Max. Acceleration unloaded         m/s²         10           Mechanical Data         Unit         EZ-4360           Dimension Lx WxH         mm         710x307x212           Max. Load ²²         kg         20           Load Capacity vertical (Z)         N         560           Load Capacity lateral (Y)         N         280           Moment of Tilt around X         Nm         25           Moment of Tilt around Z         Nm         70           Moment of Tilt around Z         Nm         70           Moving Mass (slide)         kg         7.5           Total Mass (incl. slide)         kg         7.5           Encoder         EZ-4360         EZ-4360           Type         incremental, Renishaw Tonic           Signal         1Vpp, RS422         Drive           Drive         Unit         EZ-4360           Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         Vac         230 (300 Voc)           Constant Force         N         110 <th< td=""><td>Position Stability <sup>1)</sup></td><td>nm</td><td>30 - 100</td></th<>	Position Stability <sup>1)</sup>	nm	30 - 100
Yaw (XRZ)         μrad         10           Max. Speed unloaded         m/s         2           Max. Acceleration unloaded         m/s²         10           Mechanical Data         Unit         EZ-4360           Dimension LxWxH         mm         710x307x212           Max. Load <sup>22</sup> kg         20           Load Capacity vertical (Z)         N         560           Load Capacity lateral (Y)         N         280           Moment of Tilt around X         Nm         25           Moment of Tilt around Y         Nm         20           Moment of Tilt around Z         Nm         70           Moving Mass (slide)         kg         7.5           Total Mass (incl. slide)         kg         7.5           Encoder         EZ-4360         Total Mass (incl. slide)         EZ-4360           Ty	Vertical/Horizontal Straightness (XTZ/XTY)	μm	2
Max. Speed unloaded     m/s     2       Max. Acceleration unloaded     m/s²     10       Mechanical Data     Unit     EZ-4360       Dimension LxWxH     mm     710x307x212       Max. Load 20     kg     20       Load Capacity vertical (Z)     N     560       Load Capacity lateral (Y)     N     280       Moment of Tilt around X     Nm     25       Moment of Tilt around Y     Nm     20       Moment of Tilt around Z     Nm     70       Moving Mass (slide)     kg     7.5       Total Mass (incl. slide)     kg     7.7       Encoder     EZ-4360       Type     incremental, Renishaw Tonic       Signal     1 Vpp, RS422       Drive     Unit     EZ-4360       Type     3-phase, synchronous, ironless       Max. Voltage ph-ph     VAC     230 (300 Vpc)       Constant Force     N     380       Max. Voltage ph-ph     VAC     230 (300 Vpc)       Constant Current     Arms     1.6       Peak Current     Arms     5.6       Cable Length (open end)     m     6       Interfaces and Environment     Interfaces and Environment     5       Air Consumption     Sl/min     5       S	Pitch (XRY)	μrad	10
Max. Acceleration unloaded m/s² 10  Mechanical Data Dimension LxWxH mm 710x307x212  Max. Load ² kg 20  Load Capacity vertical (Z) N 560  Load Capacity vertical (Y) N 280  Moment of Tilt around X Nm 25  Moment of Tilt around Z Nm 20  Moment of Tilt around Z Nm 70  Mowing Mass (slide) kg 7.5  Total Mass (incl. slide) kg 7.7  Encoder EZ-4360  Type incremental, Renishaw Tonic Signal 1'ypp, R5422  Drive Unit EZ-4360  Type 3-phase, synchronous, ironless Max. Voltage ph-ph VAC 230 (300 Vpc)  Constant Force N 380  Constant Force N 380  Constant Current A <sub>rms</sub> 1.6  Peak Current A <sub>rms</sub> 5.6  Cable Length (open end) m 6  Interfaces and Environment Unit EZ-4360  Interfaces and Environment Supply Pressure bar 5  MTBF h > 20,000  Limit Switch included (5 V)  Clean Room Suitability applicable  Drive Control Standard Kollmorgen Servostar AKD / S300 / 5700  Standard Kollmorgen Servostar AKD / S300 / S700	Yaw (XRZ)	μrad	10
Mechanical Data         Unit         EZ-4360           Dimension LxWxH         mm         710x307x212           Max. Load <sup>2)</sup> kg         20           Load Capacity vertical (Z)         N         560           Load Capacity lateral (Y)         N         280           Moment of Tilt around X         Nm         25           Moment of Tilt around Y         Nm         20           Moment of Tilt around Z         Nm         70           Moving Mass (slide)         kg         7.5           Total Mass (incl. slide)         kg         7.5           Total Mass (incl. slide)         kg         7.7           Eccoder         EZ-4360         1Vpp, RS422           Drive         Unit         EZ-4360           Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         V <sub>AC</sub> 230 (300 V <sub>DC</sub> )           Constant Force         N         110           Peak Force         N         380           Constant Current         Arms         1.6           Peak Current         Arms         5.6           Cable Length (open end)         m         6           Interfaces and Environment         Interfaces and Environment	Max. Speed unloaded	m/s	2
Dimension LxWxH         mm         710x307x212           Max. Load <sup>7)</sup> kg         20           Load Capacity vertical (Z)         N         560           Load Capacity lateral (Y)         N         280           Moment of Tilt around X         Nm         25           Moment of Tilt around Y         Nm         20           Moment of Tilt around Z         Nm         70           Moving Mass (slide)         kg         7.5           Total Mass (incl. slide)         kg         7.5           Freader         EZ-4360         77           Encoder         EZ-4360         77           Type         incremental, Renishaw Tonic           Signal         1 Vpp, RS422           Drive         Unit         EZ-4360           Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         Vac         230 (300 Vpc)           Constant Force         N         110           Peak Force         N         380           Constant Current         Arms         5.6           Cable Length (open end)         m         6           Interfaces and Environment         Interfaces and Environment         5           MTBF <td>Max. Acceleration unloaded</td> <td>m/s²</td> <td>10</td>	Max. Acceleration unloaded	m/s²	10
Max. Load 20         kg         20           Load Capacity vertical (Z)         N         560           Load Capacity lateral (Y)         N         280           Moment of Tilt around X         Nm         25           Moment of Tilt around Y         Nm         20           Moment of Tilt around Z         Nm         70           Moving Mass (slide)         kg         7.5           Total Mass (incl. slide)         kg         7.7           Ercode         Ez-4360           Type         incremental, Renishaw Tonic           Signal         1 Vpp, RS422           Drive         Unit         Ez-4360           Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         VAC         230 (300 Vpc)           Constant Force         N         110           Peak Force         N         380           Constant Current         Arms         1.6           Peak Current         Arms         5.6           Cable Length (open end)         m         6           Interfaces and Environment         Unit         Ez-4360           MTBF         h         > 20,000           Limit Switch         included (5V)	Mechanical Data	Unit	EZ-4360
Load Capacity vertical (Z)         N         560           Load Capacity lateral (Y)         N         280           Moment of Tilt around X         Nm         25           Moment of Tilt around Y         Nm         20           Moment of Tilt around Z         Nm         70           Moving Mass (slide)         kg         7.5           Total Mass (incl. slide)         kg         77           Ercoder         EZ-4360         Type           Type         incremental, Renishaw Tonic           Signal         1Vpp, RS422           Drive         Unit         EZ-4360           Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         VAC         230 (300 Vpc)           Constant Force         N         380           Constant Force         N         380           Constant Current         Arms         1.6           Peak Force         N         380           Constant Current         Arms         5.6           Cable Length (open end)         m         6           Interfaces and Environment         Unit         EZ-4360           MTBF         h         > 20,000           Limit Switch         i	Dimension LxWxH	mm	710×307×212
Load Capacity lateral (Y)         N         280           Moment of Tilt around X         Nm         25           Moment of Tilt around Y         Nm         20           Moment of Tilt around Z         Nm         70           Moving Mass (slide)         kg         7.5           Total Mass (incl. slide)         kg         77           Encoder         EZ-4360           Type         incremental, Renishaw Tonic           Signal         1Vpp, RS422           Drive         Unit         EZ-4360           Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         VAC         230 (300 Vpc)           Constant Force         N         110           Peak Force         N         380           Constant Current         Arms         1.6           Peak Current         Arms         5.6           Cable Length (open end)         m         6           Interfaces and Environment         Unit         EZ-4360           Air Consumption         SI/min         5           Supply Pressure         bar         5           MTBF         h         > 20,000           Limit Switch         included (5 V)	Max. Load <sup>2)</sup>	kg	20
Moment of Tilt around X         Nm         25           Moment of Tilt around Y         Nm         20           Moment of Tilt around Z         Nm         70           Moving Mass (slide)         kg         7.5           Total Mass (incl. slide)         kg         77           Encoder         EZ-4360           Type         incremental, Renishaw Tonic           Signal         1Vpp, RS422           Drive         Unit         EZ-4360           Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         VAC         230 (300 Vpc)           Constant Force         N         110           Peak Force         N         380           Constant Current         Arms         1.6           Peak Current         Arms         5.6           Cable Length (open end)         m         6           Interfaces and Environment         Unit         EZ-4360           Airr Consumption         SI/min         5           Supply Pressure         bar         5           MTBF         h         > 20,000           Limit Switch         included (5 V)           Clean Room Suitability         applicable           <	Load Capacity vertical (Z)	Ν	560
Moment of Tilt around Y         Nm         20           Moment of Tilt around Z         Nm         70           Moving Mass (slide)         kg         7.5           Total Mass (incl. slide)         kg         77           Ercoder         Ez-4360           Type         incremental, Renishaw Tonic           Signal         1 Vpp, RS422           Drive         Unit         Ez-4360           Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         Vac         230 (300 Vpc)           Constant Force         N         110           Peak Force         N         380           Constant Current         Arms         1.6           Peak Current         Arms         5.6           Cable Length (open end)         m         6           Interfaces and Environment         Unit         Ez-4360           MTBF         h         > 20,000           Limit Switch         included (5 V)           Clean Room Suitability         applicable           Drive Control         Ez-4360           Standard         Kollmorgen Servostar AKD / S300 / S700	Load Capacity lateral (Y)	Ν	280
Moment of Tilt around Z         Nm         70           Moving Mass (slide)         kg         7.5           Total Mass (incl. slide)         kg         77           Encoder         EZ-4360           Type         incremental, Renishaw Tonic           Signal         1Vpp, RS422           Drive         Unit         EZ-4360           Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         VAC         230 (300 Vpc)           Constant Force         N         110           Peak Force         N         380           Constant Current         Arms         1.6           Peak Current         Arms         5.6           Cable Length (open end)         m         6           Interfaces and Environment         Unit         EZ-4360           Air Consumption         Sl/min         5           Supply Pressure         bar         5           MTBF         h         > 20,000           Limit Switch         included (5 V)           Clean Room Suitability         applicable           Drive Control         EZ-4360           Standard         Kollmorgen Servostar AKD / S300 / S700	Moment of Tilt around X	Nm	25
Moving Mass (slide)         kg         7.5           Total Mass (incl. slide)         kg         77           Encoder         EZ-4360           Type         incremental, Renishaw Tonic           Signal         1Vpp, RS422           Drive         Unit         EZ-4360           Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         Vac         230 (300 Vpc)           Constant Force         N         110           Peak Force         N         380           Constant Current         Arms         1.6           Peak Current         Arms         5.6           Cable Length (open end)         m         6           Interfaces and Environment         Unit         EZ-4360           Airr Consumption         Sl/min         5           Supply Pressure         bar         5           MTBF         h         > 20,000           Limit Switch         included (5 V)           Clean Room Suitability         applicable           Drive Control         EZ-4360           Standard         Kollmorgen Servostar AKD / S300 / S700	Moment of Tilt around Y	Nm	20
Encoder         EZ-4360           Type         incremental, Renishaw Tonic           Signal         1 Vpp, RS422           Drive         Unit         EZ-4360           Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         VAC         230 (300 VpC)           Constant Force         N         110           Peak Force         N         380           Constant Current         Arms         1.6           Peak Current         Arms         5.6           Cable Length (open end)         m         6           Interfaces and Environment         Unit         EZ-4360           Air Consumption         Sl/min         5           Supply Pressure         bar         5           MTBF         h         > 20,000           Limit Switch         included (5 V)           Clean Room Suitability         applicable           Drive Control         EZ-4360           Standard         Kollmorgen Servostar AKD / S300 / S700	Moment of Tilt around Z	Nm	70
Encoder Type incremental, Renishaw Tonic Signal 1Vpp, RS422  Drive Unit EZ-4360 Type 3-phase, synchronous, ironless Max. Voltage ph-ph VAC 230 (300 VDC) Constant Force N 110 Peak Force N 380 Constant Current Arms 1.6 Peak Current Arms 5.6 Cable Length (open end) m 6 Interfaces and Environment Unit EZ-4360 Air Consumption SI/min 5 Supply Pressure bar 5 MTBF h > 20,000 Limit Switch included (5 V) Clean Room Suitability applicable  Drive Control EZ-4360 Standard Kollmorgen Servostar AKD / S300 / S700	Moving Mass (slide)	kg	7.5
Type Signal Incremental, Renishaw Tonic Signal 1 Vpp, RS422  Drive Unit EZ-4360  Type 3-phase, synchronous, ironless Max. Voltage ph-ph VAC 230 (300 Vpc) Constant Force N 110 Peak Force N 3880 Constant Current Arms 1.6 Peak Current Arms 5.6 Cable Length (open end) m 6 Interfaces and Environment Unit EZ-4360  Air Consumption SI/min 5 Supply Pressure bar 5 MTBF h > 20,000 Limit Switch included (5 V) Clean Room Suitability applicable  Drive Control EZ-4360  Kollmorgen Servostar AKD / S300 / S700	Total Mass (incl. slide)	kg	77
Signal1 Vpp, RS422DriveUnitEZ-4360Type3-phase, synchronous, ironlessMax. Voltage ph-phVAC230 (300 VpC)Constant ForceN110Peak ForceN380Constant CurrentArms1.6Peak CurrentArms5.6Cable Length (open end)m6Interfaces and EnvironmentUnitEZ-4360Air ConsumptionSI/min5Supply Pressurebar5MTBFh> 20,000Limit Switchincluded (5 V)Clean Room SuitabilityapplicableDrive ControlEZ-4360StandardKollmorgen Servostar AKD / S300 / S700	Encoder		EZ-4360
DriveUnitEZ-4360Type3-phase, synchronous, ironlessMax. Voltage ph-phVAC230 (300 Vpc)Constant ForceN110Peak ForceN380Constant CurrentArms1.6Peak CurrentArms5.6Cable Length (open end)m6Interfaces and EnvironmentUnitEZ-4360Air ConsumptionSI/min5Supply Pressurebar5MTBFh> 20,000Limit Switchincluded (5 V)Clean Room SuitabilityapplicableDrive ControlEZ-4360StandardKollmorgen Servostar AKD / S300 / S700	Туре		incremental, Renishaw Tonic
Type         3-phase, synchronous, ironless           Max. Voltage ph-ph         V <sub>AC</sub> 230 (300 V <sub>DC</sub> )           Constant Force         N         110           Peak Force         N         380           Constant Current         A <sub>rms</sub> 1.6           Peak Current         A <sub>rms</sub> 5.6           Cable Length (open end)         m         6           Interfaces and Environment         Unit         EZ-4360           Air Consumption         Sl/min         5           Supply Pressure         bar         5           MTBF         h         > 20,000           Limit Switch         included (5 V)           Clean Room Suitability         applicable           Drive Control         EZ-4360           Standard         Kollmorgen Servostar AKD / S300 / S700	Signal		1Vpp, RS422
Max. Voltage ph-ph         V <sub>AC</sub> 230 (300 V <sub>DC</sub> )           Constant Force         N         110           Peak Force         N         380           Constant Current         A <sub>rms</sub> 1.6           Peak Current         A <sub>rms</sub> 5.6           Cable Length (open end)         m         6           Interfaces and Environment         Unit         EZ-4360           Air Consumption         SI/min         5           Supply Pressure         bar         5           MTBF         h         > 20,000           Limit Switch         included (5V)           Clean Room Suitability         applicable           Drive Control         EZ-4360           Kollmorgen Servostar AKD / S300 / S700	Drive	Unit	EZ-4360
Constant Force N 380  Peak Force N 380  Constant Current A <sub>rms</sub> 1.6  Peak Current A <sub>rms</sub> 5.6  Cable Length (open end) m 6  Interfaces and Environment Unit EZ-4360  Air Consumption SI/min 5  Supply Pressure bar 5  MTBF h > 20,000  Limit Switch included (5 V)  Clean Room Suitability applicable  Drive Control EZ-4360  Kollmorgen Servostar AKD / S300 / S700	Туре		3-phase, synchronous, ironless
Peak Force N 380  Constant Current A <sub>rms</sub> 1.6  Peak Current A <sub>rms</sub> 5.6  Cable Length (open end) m 6  Interfaces and Environment Unit EZ-4360  Air Consumption SI/min 5  Supply Pressure bar 5  MTBF h > 20,000  Limit Switch included (5 V)  Clean Room Suitability applicable  Drive Control EZ-4360  Kollmorgen Servostar AKD / S300 / S700	Max. Voltage ph-ph	$V_{AC}$	230 (300 V <sub>DC</sub> )
Constant Current Arms 1.6 Peak Current Arms 5.6 Cable Length (open end) m 6  Interfaces and Environment Unit EZ-4360 Air Consumption SI/min 5 Supply Pressure bar 5 MTBF h > 20,000 Limit Switch included (5 V) Clean Room Suitability applicable  Drive Control EZ-4360  Kollmorgen Servostar AKD / S300 / S700	Constant Force	Ν	110
Peak Current A <sub>rms</sub> 5.6 Cable Length (open end) m 6  Interfaces and Environment Unit EZ-4360  Air Consumption SI/min 5 Supply Pressure bar 5 MTBF h > 20,000 Limit Switch included (5 V) Clean Room Suitability applicable  Drive Control EZ-4360  Kollmorgen Servostar AKD / S300 / S700	Peak Force	N	380
Cable Length (open end)  m 6  Interfaces and Environment Unit EZ-4360  Air Consumption SI/min 5  Supply Pressure bar 5  MTBF h > 20,000 Limit Switch included (5 V) Clean Room Suitability applicable  Drive Control  EZ-4360  Kollmorgen Servostar AKD / S300 / S700	Constant Current	$A_{rms}$	1.6
Interfaces and Environment  Air Consumption  SI/min  Supply Pressure  bar  5  MTBF  h  > 20,000  Limit Switch  Clean Room Suitability  Drive Control  Standard  Limit Servostar AKD / S300 / S700	Peak Current	$A_{rms}$	5.6
Air Consumption SI/min 5 Supply Pressure bar 5 MTBF h > 20,000 Limit Switch included (5 V) Clean Room Suitability applicable  Drive Control EZ-4360 Standard Kollmorgen Servostar AKD / S300 / S700	Cable Length (open end)	m	6
Supply Pressure bar 5 MTBF h > 20,000 Limit Switch included (5 V) Clean Room Suitability applicable  Drive Control EZ-4360 Standard Kollmorgen Servostar AKD / S300 / S700	Interfaces and Environment	Unit	EZ-4360
MTBF h > 20,000  Limit Switch included (5 V)  Clean Room Suitability applicable  Drive Control EZ-4360  Standard Kollmorgen Servostar AKD / S300 / S700	Air Consumption	SI/min	5
Limit Switch included (5 V) Clean Room Suitability applicable  Drive Control EZ-4360  Standard Kollmorgen Servostar AKD / S300 / S700	Supply Pressure	bar	5
Clean Room Suitability applicable  Drive Control EZ-4360  Standard Kollmorgen Servostar AKD / S300 / S700	MTBF	h	> 20,000
Drive Control EZ-4360 Standard Kollmorgen Servostar AKD / S300 / S700	Limit Switch		included (5 V)
Standard Kollmorgen Servostar AKD / S300 / S700	Clean Room Suitability		applicable
<u> </u>	Drive Control		EZ-4360
High End ACS Controller, Triamec	Standard	k	Kollmorgen Servostar AKD / S300 / S700
	High End		ACS Controller, Triamec

<sup>1)</sup> depending on drive control

Subject to technical modifications and typographical errors.

<sup>2)</sup> large mass moments of inertia must be taken into account