



Positioning drives for linear units

Positioning drives

SeGMo-Positioning - precision and innovation from master craftsmen

The compact positioning drives from Lenord+Bauer set standards in terms of performance, efficiency and reliability. Developed for use in demanding applications, they offer you an outstanding combination of high torque density, long service life and excellent controllability. With their robust design and advanced technology, SeGMo positioning drives are the ideal choice for a wide range of industrial and machine applications.

Lenord+Bauer's high-precision manufacturing and strict quality standards guarantee that every drive meets our high performance and durability requirements. This partnership enables us to offer you innovative products with state-of-the-art technology and the highest quality.



*Finding solutions.
Founding trust.*

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GENERAL

- Compact drive unit for fully automated linear tasks
- BLDC motor and gear with multiturn absolute rotary encoder
- Integrated power amplifier
- Intelligent linear unit for assembly on a machine shaft

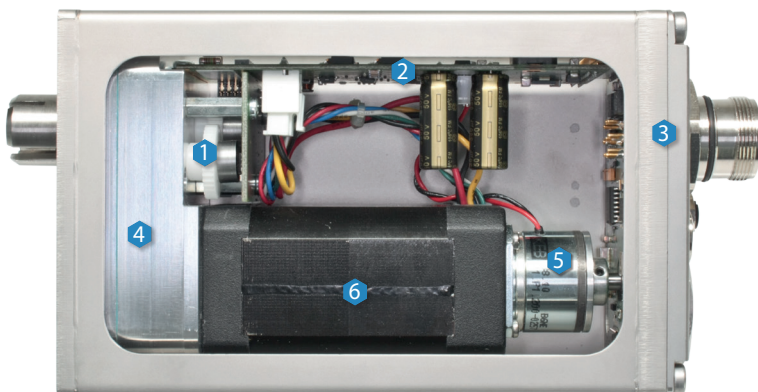
FIELDS OF APPLICATION

- Packaging machines
- Food and bottling lines
- Wood and plastic processing machines
- Printing and bookbinding machines
- Large production facilities

FEATURES

- Nominal torques from 1.4 Nm to 18 Nm
- Housing made of stainless steel or aluminum
- Operating temperature range -10 °C to +60 °C
- Batteryless absolute multiturn encoder
- Protection class IP 54, IP 67
- Communication interfaces CANopen (CiA 402); PROFIBUS-DP (V0/V1); sercos III; POWERLINK; PROFINET IO/RT; EtherCAT; EtherNet/IP; Modbus/TCP; IO-Link
- Optionally with cULus Component Recognition

Sensor, Gear and Motor mean SeGMo



Sensor, gear and motor are integrated in a compact housing to save space.

- ① Absolute position sensor
- ② Power amplifier
- ③ Front end interface
- ④ Gear unit
- ⑤ Holding brake
- ⑥ Brushless DC motor

ADVANTAGES

- Monitoring of important system parameters supports safe operation (overload protection)
- Ready for use directly after switching on the power supply due to absolute position detection of the batteryless multiturn magnetic-absolute multiturn rotary encoder
- Maintenance-free electrical parts
- Maintenance-free gear due to sealed-for-life lubrication



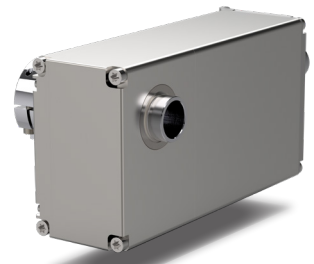
GEL 6009



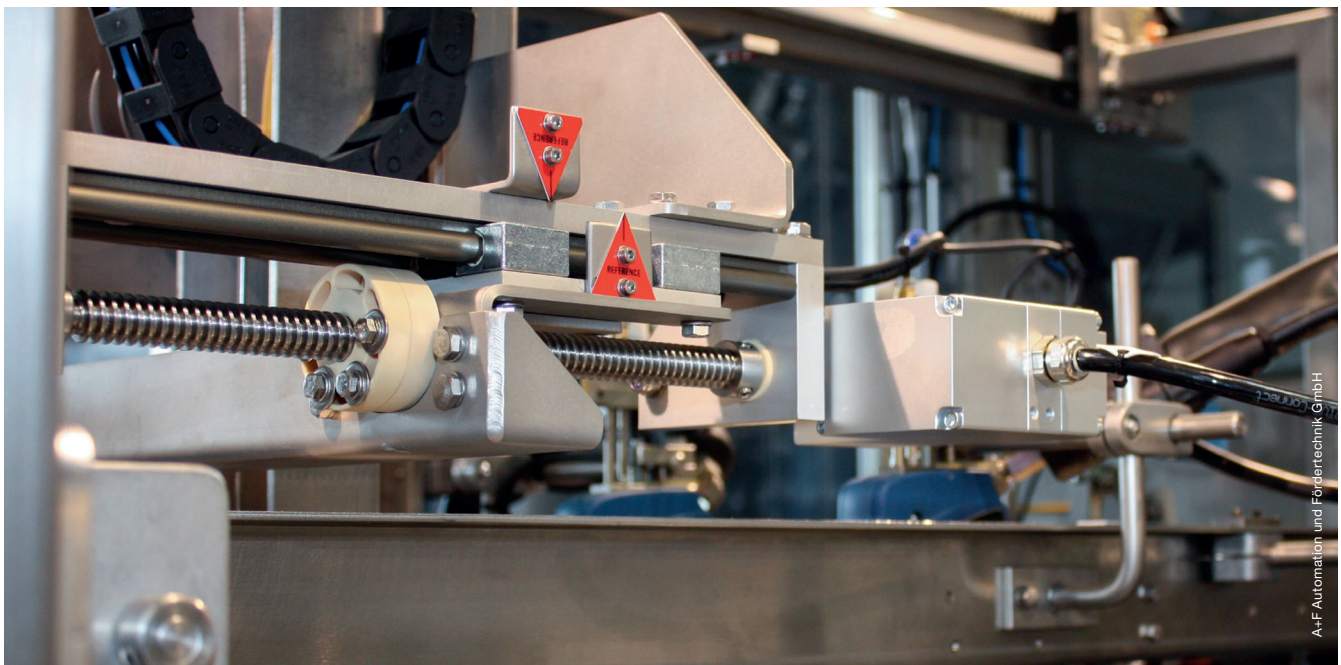
GEL 6109



GEL 6110



GEL 6113



A+F Automation und Fördertechnik GmbH

Perfectly integrated: The compact positioning drives automatically control height and width linear. Technical integration into the machine is particularly easy due to the wide range of interfaces.

PRODUCT INFO

The GEL 6009 is a compact mechatronic unit consisting of a 32-bit microprocessor, a compact power amplifier, a stepping motor, a powerful gear and a magnetic-absolute multiturn encoder.

The positioning drive requires two supply voltages. The logic circuit supply voltage supplies the control electronics and the power circuit supply voltage supplies the power electronics for the motor. The positioning drive is intended for stand-alone use and can directly connected to a higher level control system. Positioning drives with ST connection technology support Industrial Ethernet protocols and positioning drives with SA/SL connection technology support IO-Link.

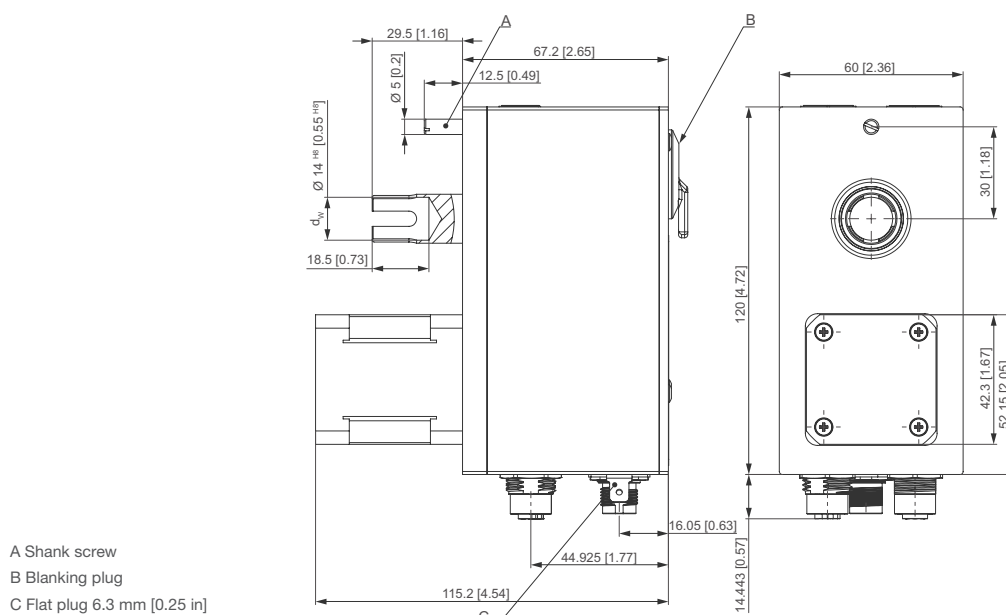
A magnetic absolute multiturn encoder makes reference search routines superfluous after a power failure or "EMERGENCY STOP". After the power supply is switched on, the positioning drive detects its position via the battery-less multiturn encoder and is ready for operation directly. When switched off, the output shaft can be adjusted by ± 171 revolutions without losing the absolute position. The multiturn encoder withstands high shock/vibration loads.



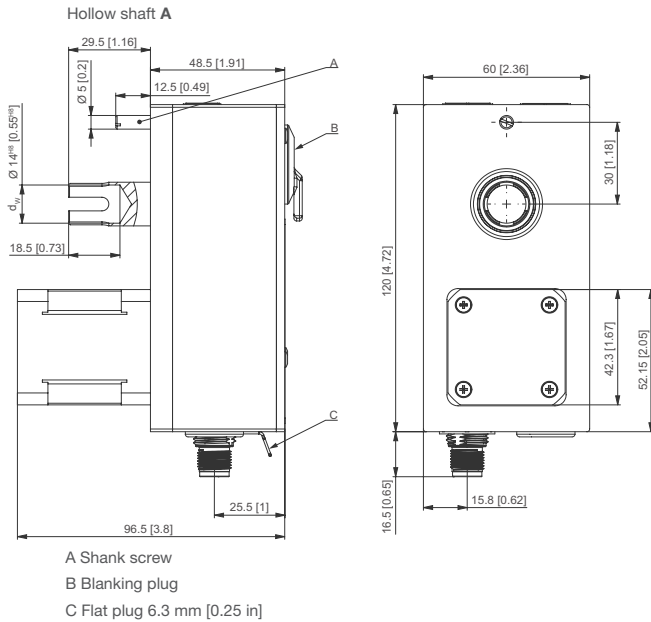
All dimensions in millimeters [inch]; general tolerance DIN ISO 2768 -mK

Positioning drive with ST connection technology

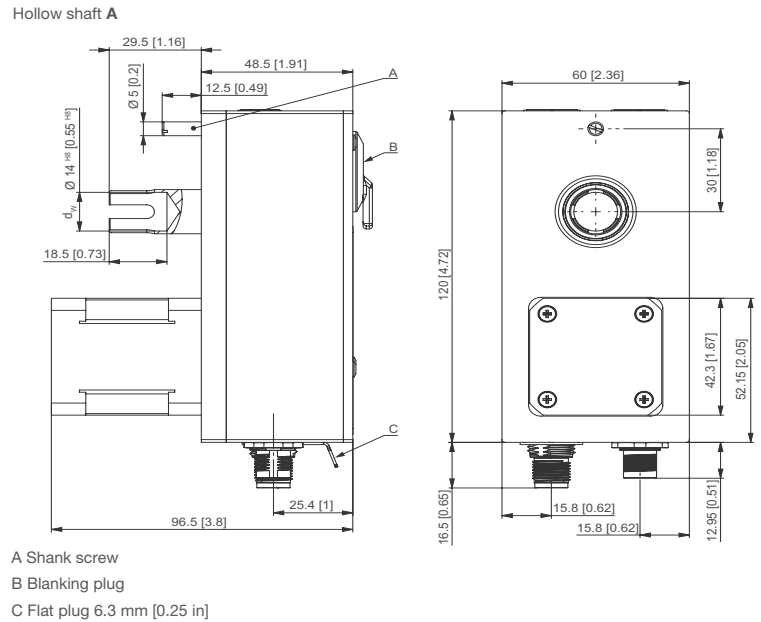
Hollow shaft A



Positioning drive with SA connection technology



Positioning drive with SL connection technology



Technical data

Supply voltage	24 V DC
Nominal current consumption	Max. 3 A at 24 V DC
Duty cycle (DuCy) in % (load-dependent)	Duty cycle = 25 % at 100% load torque
Communication interfaces: Fieldbus	IO-Link
Communication interfaces: Industrial Ethernet	PROFINET IO/RT; EtherCAT; EtherNet/IP
Nominal torque output shaft	5 Nm at 50 r.p.m.
Output shaft	Semi-hollow shaft
Housing material	Aluminum
Weight	≈ 1,00 kg / 35,27 oz
Operating temperature range	-10 °C to +55 °C / 14 °F to 131 °F
Degree of protection	IP 54
RoHS complaint product	Yes



PRODUCT INFO

The GEL 6109 positioning drive is a very compact positioning system. The graduated housing allows it to fit into almost any gap. This small power pack delivers up to 5 Nm at 70 r.p.m. The hollow plug-in shaft, which eliminates the need for an additional coupling to connect to the machine shaft, simplifies assembly and saves installation space.

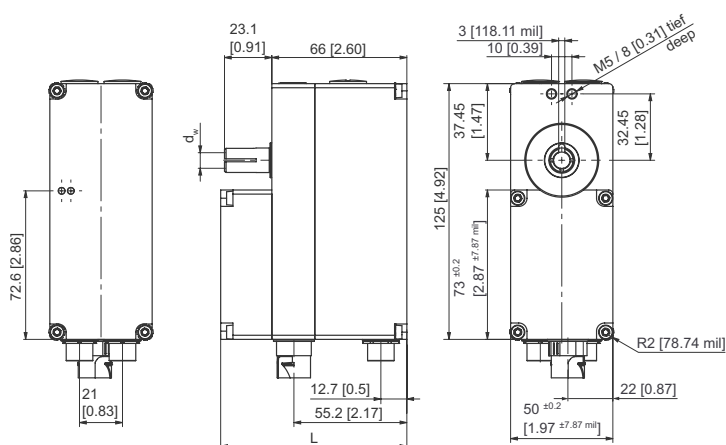
The positioning drive requires two supply voltages of 24 V to 30 V DC. The logic circuit supply voltage supplies the control electronics and the power circuit supply voltage supplies the power electronics for the motor. As a standalone device with integrated fieldbus interface, it is connected directly to the higher level control system. For this purpose, two fieldbus cables and a power supply cable are connected to the drive.

A magnetic absolute multiturn encoder makes reference search routines superfluous after a power failure or "EMERGENCY STOP". After the power is switched on, the positioning drive detects its position via the batteryless encoder and is ready for operation directly. The absolute rotary encoder withstands high shock/vibration loads.

All dimensions in millimeters [inch]; general tolerance DIN ISO 2768 -mK

GEL 6109 (ST connection technology)

Hollow shaft

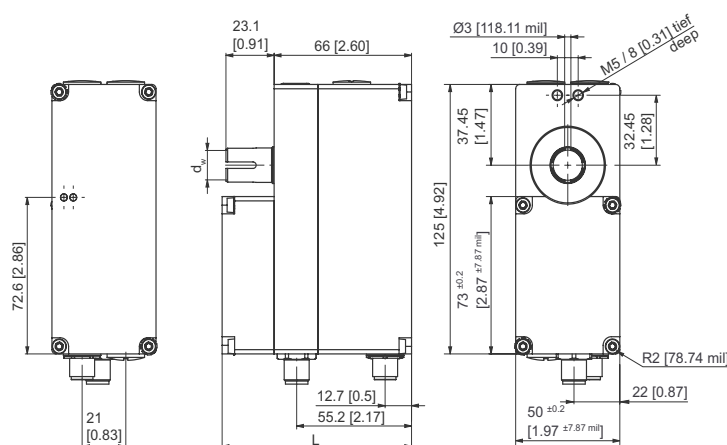


Construction type	Dimension L (housing length)
Short (S)	91 (3,58)
Long (L)	111 (4,37)

d_w Output shaft diameter

GEL 6109 (SL connection technology)

Hollow shaft

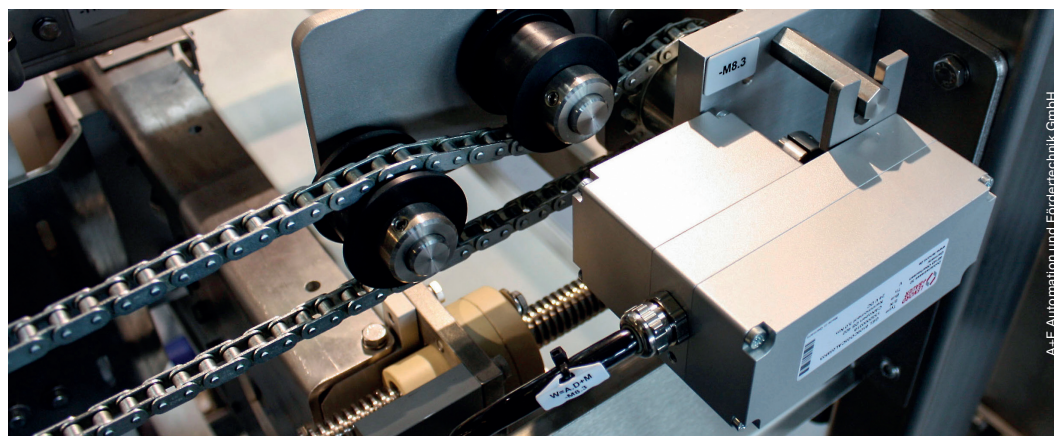


Construction type	Dimension L (housing length)
Short (S)	91 (3,58)
Long (L)	111 (4,37)

d_w Output shaft diameter

Technical data	
Supply voltage	24 V to 30 V DC
Nominal current consumption	2,6 A (max. 5 A) at 24 V DC
Duty cycle (DuCy) in % (load-dependent)	Duty cycle = 25 % at 100% load torque Duty cycle ≤ 50 % at reduced load torque
Communication interfaces: Fieldbus	IO-Link
Communication interfaces: Industrial Ethernet (IE)	sercos III; POWERLINK; PROFINET IO/RT; EtherCAT; EtherNet/IP; Modbus/TCP
Nominal torque output shaft	2,5 Nm and 5 Nm at 70 r.p.m.
Output shaft	Semi-hollow shaft, solid shaft, customized shafts upon request
Housing material	Aluminum
Weight	≈ 1,25 kg / 44,09 oz
Operating temperature range	-10 °C to +60 °C / 14 °F to 140 °F
Degree of protection	IP 67
cULus recognized Component, E196161	UL 61800-5-1 CSA C22.2 number 274-13
UL data: Degree of protection	Type 1
UL-data: Ambient temperature	0 °C to +55 °C / 32 °F to 131 °F
UL-data: Operating temperature range	-10 °C to +55 °C / 14 °F to 131 °F
Certification	cURus
RoHS complaint product	Yes

A real space saver - fits into the smallest corner



Thanks to its small dimensions, the GEL 6109 positioning drive offers more freedom in machine design.

PRODUCT INFO

The GEL 6110 series positioning drives are very compact and are available in either stainless steel or aluminum housings, both of which ensure degree of protection IP 67. The positioning drive is assembled using a hollow plug-in shaft without an additional coupling – thus saving adapter materials and minimizing mounting depth. This means that it can also be easily integrated into the respective machine concept in environments with hygiene requirements and where space is limited

The positioning drive requires two supply voltages of 24 V to 30 V DC. The logic circuit supply voltage supplies the control electronics and the power circuit supply voltage supplies the power electronics for the motor. As a standalone device with integrated fieldbus interface, it is connected directly to the higher level control system. For this purpose, two fieldbus cables and a power supply cable are connected to the drive. The drive can be configured with an integrated holding brake as an option.

A magnetic absolute multiturn encoder makes reference search routines superfluous after a power failure or "EMERGENCY STOP". After the power is switched on, the positioning drive detects its position via the batteryless encoder and is ready for operation directly. The absolute rotary encoder withstands high shock/vibration loads.

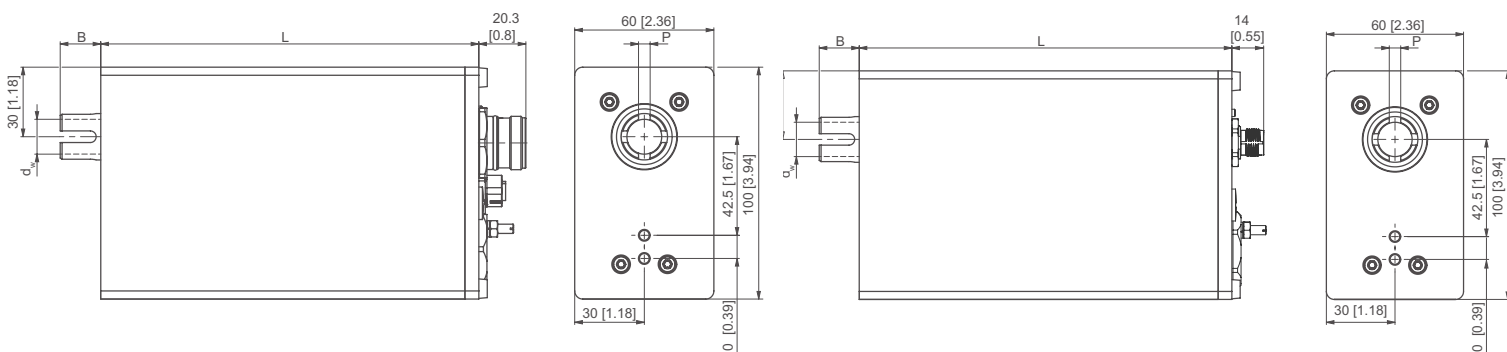


All dimensions in millimeters [inch]; general tolerance DIN ISO 2768 -mK

GEL 6110 up to 10 Nm (7,38 ft•lbf) nominal torque

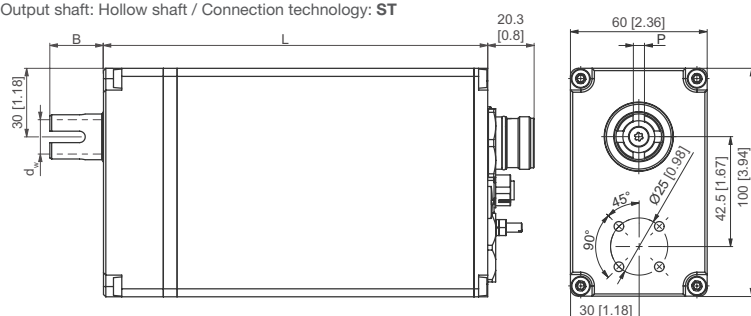
Output shaft: Hollow shaft / Connection technology: **ST**
Case material: Stainless steel

Output shaft: Hollow shaft / Connection technology: **SL**



Dimension B/d_w/P depending on the output shaft

Dimensions/output shaft	I	H	F	E	D	B	A	P	Q	O
Diameter d _w	8 H7	9 H7	10 H7	11 H7	12 H7	14 H7	15 H7	16 H7	18 H7	20 H7
slot width P	2 [0,08]	3 [0,12]	3 [0,12]	4 [0,16]	4 [0,16]	5 [0,2]	5 [0,2]	5 [0,2]	5 [0,2]	5 [0,2]
B	17,5 [0,69]								19,5 [0,77]	
B > 15 Nm [11,06 ft•lbf]	23,5 [0,93]								25,5 [1,0]	

GEL 6110 up to 15 Nm (11,06 ft-lbf) nominal torqueOutput shaft: Hollow shaft / Connection technology: **ST****Dimensions GEL 6110 - Dimension L depending on Construction type and housing material**

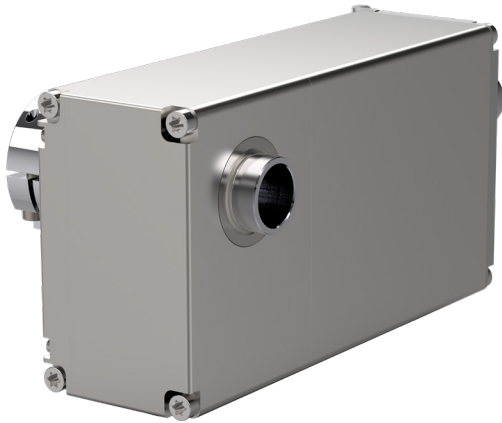
Nominal torque	Construction type	Housing material Dimension L (housing length)	
		Aluminium	Edelstahl
01, 03, 07	S	126 (4,96)	125 (4,92)
02, 05, 10	L	164 (6,46)	163 [6,42]
15	L	168,2 [6,62]	-
18	L	166,5 (6,56)	-

Dimension B/d_w depending on the output shaft

Dimensions/output shaft	S
Diameter d _w	10 h7
B	17,4 [0,69]

Technical data	
Supply voltage	24 V to 30 V DC
Nominal current consumption	3,6 A (max. 7,5 A) at 24 V DC
Duty cycle (DuCy) in % (load-dependent)	Duty cycle = 25 % at 100% load torque Duty cycle ≤ 50 % at reduced load torque
Communication interfaces: Fieldbus	CANopen (CiA 402); PROFIBUS-DP (V0/V1); IO-Link
Communication interfaces: Industrial Ethernet	sercos III; POWERLINK; PROFINET IO/RT; EtherCAT; EtherNet/IP; Modbus/TCP
Nominal torque output shaft	1,4 – 18 Nm at 230 – 25 r.p.m.
Output shaft	Semi-hollow shaft, solid shaft, customized shafts upon request
Housing material	Stainless steel, aluminum
Weight	≈ 1,60 kg – 3,50 kg / 56,44 oz – 123,46 oz
Operating temperature range	-10 °C to +60 °C / 14 °F to 140 °F
Degree of protection	IP 67
cULus recognized Component, E196161	UL 61800-5-1 CSA C22.2 number 274-13
UL-data: Degree of protection	Type 1
UL-data: Ambient temperature	0 °C to +55 °C / 32 °F to 131 °F
Certification	cURus
RoHS complaint product	Yes

PRODUCT INFO



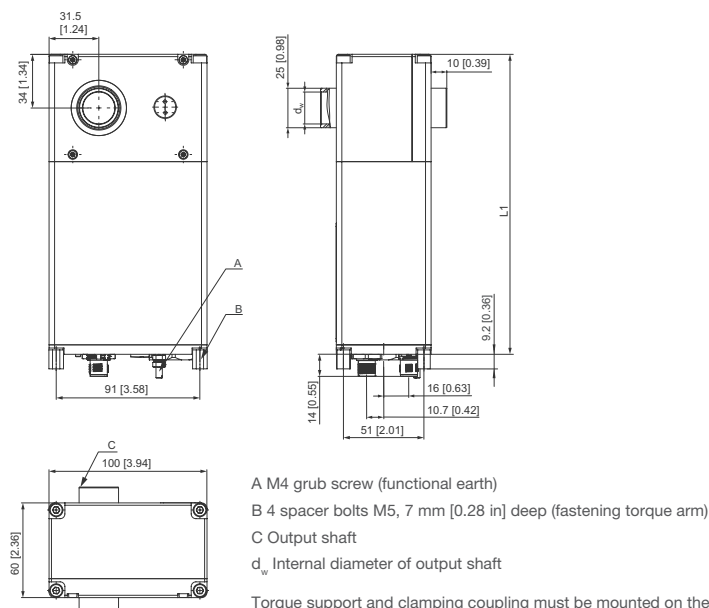
The GEL 6113 positioning drive with through hollow shaft allows direct replacement of handwheels for format linear. The positioning drive requires only a little more space on the machine shaft than a standard handwheel. With a mounting depth of 90 mm in axial direction, this is an extremely compact positioning drive. This dimension already takes into account the clamping ring for connection to the machine shaft.

The positioning drive requires two supply voltages of 24 V to 30 V DC. The logic circuit supply voltage supplies the control electronics and the power circuit supply voltage supplies the power electronics for the motor. As a standalone device with integrated fieldbus interface, it is connected directly to the higher level control system. For this purpose, two fieldbus cables and a power supply cable are connected to the drive. The rigid aluminum housing has a degree of protection IP 67. The drive can be configured with an integrated holding brake as an option.

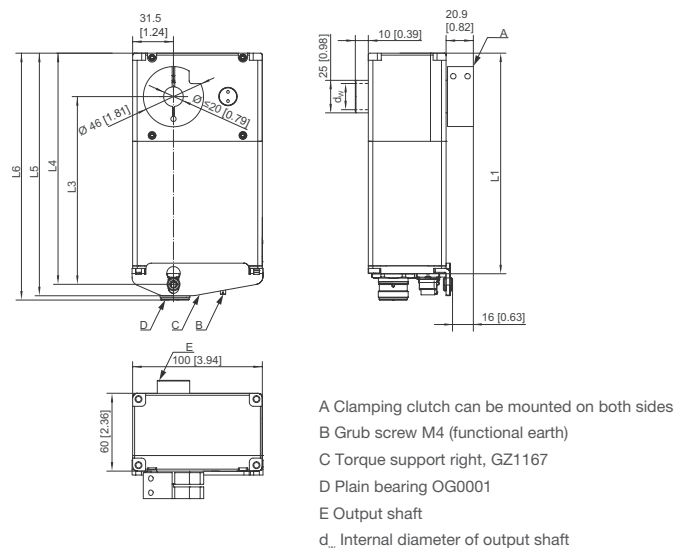
A magnetic absolute multturn encoder makes reference search routines superfluous after a power failure or "EMERGENCY STOP". After the power is switched on, the positioning drive detects its position via the batteryless encoder and is ready for operation directly. The absolute rotary encoder withstands high shock/vibration loads.

All dimensions in millimeters [inch]; general tolerance DIN ISO 2768 -mK

GEL 6113, connection technology SL, option 0 or 1



GEL 6113, connection technology ST, option R



Installation dimensions

Nominal torque	Construction type	Option Torque arm	Dimensions					
			L1	L2	L6	L3	L4	L5
05, 07	S	L, R	170 (6,96)	153 (4,92)	190,3 (7,49)	145 (5,71)	178,5 (7,03)	187 (7,36)
10	L		164 (6,46)	163 [6,42]				
Nominal torque	Construction type	Option Spacer bolt	L1	L2	L6	L3	L4	L5
05, 07	S	0	170 (6,69)	153 (6,02)	190,3 (7,49)	158,5 (6,24)	192 (7,56)	200,5 (7,89)
10	L	0	190 (7,48)	173 (6,81)	210,3 (8,28)	178,5 (7,03)	212 (8,35)	220,5 (8,68)
05, 07	S	1 (with holding brake)	195 (7,68)	178 (7,01)	215,3 (8,48)	183,5 (7,22)	217 (8,54)	225,5 (8,88)
10	L	1 (with holding brake)	215 (8,46)	198 (7,8)	235,3 (9,26)	203,5 (8,01)	237 (9,33)	245,5 (9,67)

Technical data

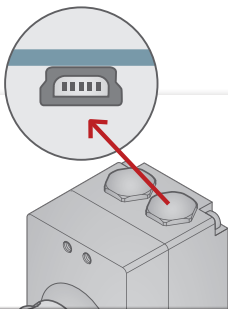
Supply voltage	24 V to 30 V DC
Nominal current consumption	4,1 A (max. 10 A) at 24 V DC
Duty cycle (DuCy) in % (load-dependent)	Duty cycle = 25 % at 100% load torque Duty cycle ≤ 50 % at reduced load torque
Communication interfaces: Fieldbus	CANopen (CiA 402); PROFIBUS-DP (V0/V1); IO-Link
Communication interfaces: Industrial Ethernet	sercos III; POWERLINK; PROFINET IO/RT; EtherCAT; EtherNet/IP; Modbus/TCP
Nominal torque output shaft	5 Nm – 10 Nm at 55 r.p.m.
Output shaft	Through hollow shaft $d_w = 20$ mm
Housing material	Aluminum
Weight	≈ 3,50 kg / 123,46 oz
Operating temperature range	-10 °C to +60 °C / 14 °F ... 140 °F
Degree of protection	IP 67
cULus recognized Component, E196161	UL 61800-5-1 CSA C22.2 number 274-13
UL data: Degree of protection	Typ 1
UL-data: Ambient temperature	0 °C to +55 °C / 32 °F to 131 °F
UL-data: Operating temperature range	-10 °C to +55 °C / 14 °F to 131 °F
Certification	cURus
RoHS complaint product	Yes

Positioning drives for feed axes are often equipped with a hollow shaft which is slid directly onto the machine shaft and fastened using a clamping ring. It forms the fixed bearing. The positioning drive is prevented from rotating by means of a torque support. This moving bearing compensates for axial or radial backlash of the machine shaft. The positioning drive “rides” on the machine shaft and makes a minimum oscillating motion. The torque support can easily be adapted to the respective installation space.

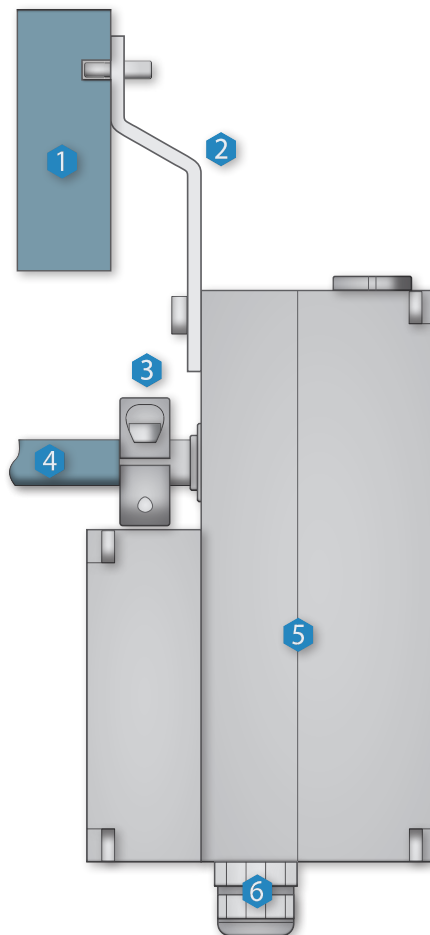
Assembly example

- 1 Machine housing
- 2 Torque support
- 3 Clamping ring
- 4 Machine shaft
- 5 SeGMo-Positioning
- 6 Connection SeGMo-Connect

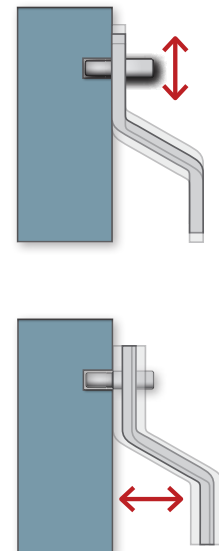
USB service access



A service connector (mini USB) is accessible behind one of the blanking plugs.



Torque support as moving bearing



The form and design of the torque support depend on the application.

Various accessories are available for mounting.

inocon.de



Besides all **product information** you will find **free CAD data** of all products and further information about Inocon.

For **linear units** you can use our convenient **online configurator** to select the right components.

Innovative assembly components



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