SeGMo-Box Decentral control unit to control up to five SeGMo positioning drives

Technical information

General

The SeGMo-Box GEL 6505 is the decentral control unit of the SeGMo system. Up to five positioning drives of the SeGMo-Positioning product group can be connected directly using hybrid cables. Installation of the SeGMo system is costoptimized and very compact. The motor power of the connected positioning drives is monitored and switched by the power management system of the GEL 6505 Plug-in modules are available to communicate with the central control system. Using the SeGMo-Box, the positioning drives can also be commissioned without any higher level control system.

Features

- Configured for up to five SeGMo positioning drives
- Nominal supply voltage:
 24 V DC/maximum. 40 A (design C: maximum 27.5 A)
- Separate power supply connection of power and logic circuit is possible
- Plug-in modules for CANopen, PROFIBUS-DP, PROFINET IO / RT, EtherCAT, EtherNet/IP, sercos III, POWERLINK
- Degree of protection IP 20, IP 68 or IP 69K
- Depending on design, with cULus Component Recognition or cULus Listing as an option

Advantages

- Compact connection technology
- Electronic breakers (eFuse)
- Integrated power management
- Simple commissioning of positioning drives using automatic parameterization and configuration
- SeGMo-Support Tool for extended commissioning and configuration
- Maintenance-free

Fields of application

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



All trademarks/brands quoted in this document are the property of their respective owner. Protected trademarks/brands are not marked as such in this document.





Lenord, Bauer & Co. GmbH Dohlenstraße 32 46145 Oberhausen, Germany





Version 2024-11-27

SeGMo-System

The SeGMo-System is suitable for efficient integration of several positioning drives and positioning displays in a machine or a system. The system comprises the following components:

- SeGMo-Positioning:
- Positioning drive for fully automatic format settingSeGMo-Box:
- Decentral control unit for up to 5 positioning drives Modular SeGMo-Box:
- decentral control unit for up to 17 positioning drives or up to 48 positioning displays
- SeGMo-Assist: Position display for manual adjustment procedures
- SeGMo-Connect: Single cable concept (hybrid cable suitable for drag chain)
- SeGMo-Lib: Prefabricated function blocks for integration in the higher level control system
- SeGMo-Support Tool: Software for extended commissioning and configuration
 SeGMo-Web:
- Software for real-time transmission of the modular SeGMo-Box
- SeGMo-ImgConv Tool: Tool for converting image files into pictograms for SeGMo-Assist

SeGMo-Positioning:

The positioning drives are complete mechatronic systems with a batteryless multiturn encoder, gear and motor as well as integrated power and control electronics. We also offer these items for standalone use. With nominal torques of up to 18 Nm [13.28 ft•lbf], they cover the typical power range for secondary axes.

SeGMo-Box:

Up to 5 positioning drives can be connected to the SeGMo-Box. The connection of position displays is not provided. The SeGMo-Box supports all common fieldbus and Industrial Ethernet communication interfaces.

Modular SeGMo-Box:

Every modular SeGMo-Box comprises a basic housing with individually equippable plug-in modules. By combining basic housings, up to 17 positioning drives or up to 48 position displays can be connected. A combination of positioning drives and position displays on a modular SeGMo-Box is possible. The power supply can be provided separately for each equipped plug-in module. The modular SeGMo-Box supports all common Industrial Ethernet communication interfaces.

SeGMo-Assist:

The position displays facilitate manual adjustment procedures by displaying nominal and actual positions. Products are available for rotary and linear applications. Another product without a measuring system supports the operator, for example, when changing format parts or tools.

SeGMo-Connect:

By using the positioning drives with a SeGMo-Box the cabling effort is considerably reduced by SeGMo-Connect. Instead of the usual two separate cables for internal bus communication and a third cable for power supply to the positioning drives, only **ONE** hybrid cable is connected. In combination with the SeGMo-Box and 5 connected positioning drives, the SeGMo-Connect typically reduces the number of cables from 15 to 5.

The hybrid cable is designed for moveable use in drag chains. Its product variants are food grade quality, halogen-free and available as a cULus recognized component.



Description of SeGMo-Box

General description

The intelligent SeGMo-Box GEL 6505 is a component of the SeGMo system. The Box is used to easily network up to five positioning drives of the SeGMo-Positioning product group.

Each positioning drive is connected to the Box using a hybrid cable (SeGMo-Connect).

In general, the SeGMo system is configured via the higher level control system. Plug-in modules for all standard fieldbus and Industrial Ethernet communication interfaces are available for communication of the SeGMo-Box with the central control system. The plug-in modules can either be supplied pre-assembled according to the type code or can be ordered separately.

Housing variants

GEL 6505A

- Compact housing made of cast aluminum
- Mounted on top hat rails in switch cabinet
- Status displays and push buttons on cover

GEL 6505B

- Closed stainless steel housing
- Installation outside switch cabinet
- All connections, controls and indicators in housing

Power supply

Dimensioning of a power supply unit for operating the SeGMo-Box depends on the number and load of the connected positioning drives. To operate the SeGMo-Box with 5 positioning drives, we recommend a 24 V DC/40 A voltage-stabilized power supply unit, which is ideally mounted beside the SeGMo-Box.

Connections, controls and indicators

3 LEDs per positioning drive indicate the status of power supply and communication. In case of malfunction or during an inspection, the power supplies of the power circuits and communication can be switched ON or OFF using the buttons below the LEDs. Error acknowledgement and reset can also be performed using the pushbuttons.

For service purposes, some parameters can be read out and set using the SeGMo-Support Tool via the service connector on the SeGMo-Box.

The hybrid cables of the positioning drives are plugged directly onto the easily accessible and coded socket strips via spring-cage terminals. The hybrid cable screens are laid on a ground rail.

The integrated electronic breakers (eFuse) support safe operation of the SeGMo-Box.

The functional ground is via the top hat rail (GEL 6505A) or the mounting brackets (GEL 6505B) and the separately applied functional ground cable. We recommend a functional ground cable with a minimum cross section of 6 mm² [10 AWG].

Power supply and power management of positioning drives

The maximum power consumption of the positioning drives can be parameterized using the power management system.

After switching on the power supply, the SeGMo-Box checks the system parameters. After that, the positioning drives are automatically configured even without a connection to the higher level control system.

Power supply to the power circuits and logic circuits is either via a common connection element or via two separate connection elements.

In the case of separate power supply to the power circuits and logic circuits, the voltage for the positioning drive motors (power circuit) can be switched off without interrupting the internal communication, for example when "EMERGENCY STOP" is active.

The motor power of the positioning drives can be switched on the system side via certified safety relays. The condition monitoring of the positioning drives remains guaranteed, as the internal communication between positioning drive and SeGMo-Box is not affected. This ensures that the positioning drive can be switched off safely.

Technical data

	GEL 6505A	GEL 6505B	
Electrical data		1	
Supply voltage	Logic circuit ⁽¹⁾ : 20 to 30 V DC, 1 A, stabilized power circuit ⁽²⁾ : 24 to 30 V DC (depending on cable length), maximum 40 A ⁽³⁾ , stabilized Nominal supply voltage (logic circuit and power circuit): 24 V DC		
Breaker protection ⁽⁴⁾	Logic circuit ⁽¹⁾ : External breaker required power circuit ⁽²⁾ : electronic, programmable (provide external breaker)		
Communication interfaces	CANopen, PROFIBUS-DP, PROFINET IO / RT, EtherCAT, EtherNet/IP, sercos III, POWERLINK		
Mechanical data			
Assembly location	Top hat rail Wet area		
Housing material	Cast aluminum Stainless steel		
Housing dimensions (W×H×D)	188×120×56 mm 250×250×100 r		
Weight	1 kg 4.5 kg		
Connection elements			
Supply voltage	 Logic circuit⁽¹⁾2-pin socket strip: Core cross section spring-cage terminal: 0.5 mm² to 1,5 mm² [20 AWG to 16 AWG] Power circuit⁽²⁾2-pin connection terminal: Core cross section: 6 mm² to 10 mm² L0 AWG to 8 AWG1 ⁽⁵⁾ 		
Positioning drives	 2 x 4-pin socket strip Power supply positioning drives: Core cross section hybrid cable 0.5 mm²/1.5 mm² [20 AWG/16 AWG] Internal communication positioning drives: Core cross section hybrid cable 0.14 mm²/0.25 mm² [26 AWG/24 AWG] 		
Higher level control system (plug-in module)	Depending on the comm	unication interface used	
Service connector	USB port (female, type E	3)	
Controls			
Direct control of the positioning drives	1 push-button per position	oning drive	
Reset	1 reset push-button		
Upgrade mode	2-pin jumper		
Indicators			
Status displays per positioning drive	3 LEDs		
Status display Logic circuit	1 LED		

 $^{(5)}$ Maximum tensile force for connection cables with 6 (10) mm²: 80 (90) N

⁽¹⁾ Supplies the electronics of the SeGMo-Box (logic circuit) and the control electronics of the connected positioning drives (logic circuits) with (2) Supplies only the power electronics of the connected positioning drives (power circuits) with power when the power supply is isolated.

⁽³⁾ Maximum permissible continuous current of SeGMo-Box. The actual current consumption depends on the number and load of the connected positioning drives (see Technical Information GEL 6113/GEL 6110/GEL 6109).

⁽⁴⁾ Design C: Fit excess current protection in accordance with NFPA 79 "Electrical Standard for Industrial Machinery."

Technical data

	GEL 6505A	GEL 6505B	
Ambient data			
Operating temperature range	0 to +60 °C		
Condensation	not permitted		
Degree of protection ⁽¹⁾	IP 20, DIN EN 60529:2014-09	IP 69K, DIN EN 60529:2014-09	
Dielectric strength	$\sqrt{2 \times 500}$ V DC, DIN EN	61439-1:2012-06	
EMC ⁽²⁾	Electromagnetic immunity DIN EN 61000-6-1:2007-10, EN 61000-6-1:2007 DIN EN 61000-6-2:2006-03 + correction 1:2011-06, EN 61000-6-2:2005 + AC:2005 DIN EN 61000-4-5:1995 (1 kV surge on DC supply) Electromagnetic emission DIN EN 61000-6-3:2011-09 + correction 1:2012-11, EN 61000-6-3:2007 + A1:2011 + AC:2012 DIN EN 61000-6-4:2011-09, EN 61000-6-4:2007 + A1:2011		
Vibration resistance	50 ms ⁻² , 1 to 100 Hz, according to DIN EN 60068-2-6:2008-10		
Shock resistance	150 ms ⁻² , according to E	N 60068-2-27:2010-02	
UL data (version C): Electrical data			
Supply voltage	Logic circuit ⁽³⁾ : 20 to 30 V DC, 1 A, stabilized power circuit ⁽⁴⁾ : 24 to 30 V DC (depending on cable length), maximum 27.5 A ⁽⁵⁾ , stabilized		
UL data (version C): Connection elements			
Positioning drives	 2 x 4-pin socket strip Power supply positioning drives: Core cross section hybrid cable 0.5 mm²/2.5 mm² [20 AWG/14 AWG] Internal communication positioning drives: Core cross section hybrid cable 0.14 mm²/0.25 mm² [26 AWG/24 AWG] 		
UL data (version C): Ambient data			
Operating temperature range	0 to +55 °C	0 to +60 °C	
Degree of protection ⁽¹⁾	IP 20, EN 60529:2014-09	IP 68, EN 60529:2014-09	
UL enclosure type ⁽⁰⁾	-	Type 1 ⁽⁷⁾	

This housing variant is not suitable to connect rigid metal conduits.

⁽¹⁾ The degree of protection is only maintained if the cover/housing cover is mounted correctly and all unused connectors and housing openings are covered.

⁽²⁾ Use only screened cables.

⁽³⁾ Supplies the electronics of the SeGMo-Box (logic circuit) and the control electronics of the connected positioning drives (logic circuits) with power.

⁽⁴⁾ Supplies only the power electronics of the connected positioning drives (power circuits) with power when the power supply is isolated.

⁽⁵⁾ Maximum permissible continuous current of SeGMo-Box. The actual current consumption depends on the number and load of the connected positioning drives (→ Technical Information GEL 6113/GEL 6110/GEL 6109).

⁽⁶⁾ The enclosure type of protection is only maintained if the cover/housing cover is mounted correctly and all unused connectors and housing openings are covered.

⁽⁷⁾ Housing openings that are not sealed at the factory shall be sealed by the user as per the requirements of NFPA 79 "Electrical Standard for Industrial Machinery."

Technical data

	GEL 6505A	GEL 6505B	
Approvals			
European Economic Area	Conformity in accordance with EMC Directive 2014/30/EU CE		
USA and Canada	Certification for design C : GEL 6505A: cULus Recognized Component CNUS GEL 6505B: cULus Listed CULUS USTED		

Description of housing variants

Property	Degree of		Design
	protection	N and U	C
UL approval mark/UL enclosure type	Α	-	cULus Recognized Component / -
	В	-	cULus Listed / Type 1 ⁽¹⁾⁽²⁾
Degree of protection	Α	IP 20	IP 20
	В	IP 69K ⁽³⁾	IP 68 ⁽³⁾
Additional breaker protection of	Α	F1 to F5 (3.15 A)	F1 to F5 (3.15 A)
(positioning drive power circuits)	В	F1 to F5 (3.15 A)	F1 to F5 (3.15 A)
Power supply positioning drives (power circuit):	A	FK2039 1.5 mm ² [16 AWG]	FK20181 2.5 mm ² [14 AWG]
and core cross section	В	FK2039 1.5 mm ² [16 AWG]	FK20181 2.5 mm ² [14 AWG]
Cable entry for power supply and communication interface of SeGMo-Box	В	Cable glands	Through bores ⁽²⁾

⁽¹⁾ Housing openings that are not sealed at the factory shall be sealed as per the requirements of NFPA 79 "Electrical Standard for Industrial Machinery."

⁽²⁾ This housing variant is not suitable to connect rigid metal conduits.

 $^{^{(3)}}$ The degree of protection is only achieved once the housing has been sealed.

Housing variants

Exterior view GEL 6505A



Exterior views GEL 6505B



⁽¹⁾ Housing openings that are not sealed at the factory shall be sealed as per the requirements of NFPA 79 "Electrical Standard for Industrial Machinery."

⁽²⁾ This housing variant is not suitable to connect rigid metal conduits.



Internal views GEL 6505A and GEL 6505B for design N and U

The power supply of the power and logic circuits can be separate (items 5 and 6) or joint (item 6).

A

⁽¹⁾ Supplies the electronics of the SeGMo-Box (logic circuit) and the control electronics of the connected positioning drives (logic circuits) with power.

⁽²⁾ Item 6 supplies the power electronics of the connected positioning drives (power circuits) and the logic circuits of SeGMo-Box and positioning drives with power if terminal 5 is not connected or has insufficient power.

Logic circuit supply voltage

SeGMo-Box (plug-in view)	Mating connector (Connection view)	Pin designation	Core cross section	Signal identifier
Socket strip	Spring-cage terminal ⁽¹⁾ FK2033	1	0.5 mm ² to 1,5 mm ² [20 AWG to 16 AWG]	+24 V
12		2	0.5 mm ² to 1,5 mm ² [20 AWG to 16 AWG]	GND

Power circuit supply voltage

SeGMo-Box (plug-in view)	Mating connector	Pin Core cross section designation		Signal identifier
Connection terminal	Ferrule ⁽²⁾	+	6 mm ² to 10 mm ² [10 AWG to 8 AWG]	+24 V
		_	6 mm ² to 10 mm ² [10 AWG to 8 AWG]	GND

Internal communication positioning drives

SeGMo-Box	Mating connector	Pin	Hybri	d cable	Signal
(plug-in view)		designation	Core color	Core cross section	luentiner
Socket strip	Spring-cage terminal ⁽¹⁾ FK2039	1	black	0.14 mm ² [26 AWG]	CAN-GND
		2	yellow	0.25 mm ² [24 AWG]	CAN-High
		3	green	0.25 mm ² [24 AWG]	CAN-Low
		4	-	_	unallocated

Power supply positioning drives

SeGMo-Box	GeGMo-Box Mating connector Pin	Pin	Hybrid cable		Signal
	designation	Core color/ Core number	Core cross section		
Socket strip	Spring-cage terminal ⁽¹⁾ FK2039	1	red/2	1.5 mm ² [16 AWG]	+24 V power
		2	black/2	1.5 mm ² [16 AWG]	GND power
	3	red/1	0.5 mm ² [20 AWG]	+24 V logic	
		4	black/1	0.5 mm ² [20 AWG]	GND logic

Ready to assemble hybrid cables are available for connection , see "BZK Technical Information."

⁽¹⁾ The connection is made via ferrules (no connection accessories from Lenord+Bauer).

⁽²⁾ No connection accessories from Lenord+Bauer





The power supply of the power and logic circuits can be separate via items (5) and (6) or joint via item (6).

A

⁽¹⁾ Housing openings that are not sealed at the factory shall be sealed as per the requirements of NFPA 79 "Electrical Standard for Industrial Machinery."

This housing variant is not suitable to connect rigid metal conduits.

⁽²⁾ Supplies the electronics of the SeGMo-Box (logic circuit) and the control electronics of the connected positioning drives (logic circuits) with power.

⁽³⁾ Item 6 supplies the power electronics of the connected positioning drives (power circuits) and the logic circuits of SeGMo-Box and positioning drives with power if terminal 5 is not connected or has insufficient power.

Logic circuit supply voltage

SeGMo-Box (plug-in view)	Mating connector (Connection view)	Pin designation	Core cross section	Signal identifier
Socket strip	Spring-cage terminal ⁽¹⁾ FK2033	1	0.5 mm ² to 1,5 mm ² [20 AWG to 16 AWG]	+24 V
12		2	0.5 mm ² to 1,5 mm ² [20 AWG to 16 AWG]	GND

Power circuit supply voltage

SeGMo-Box	Mating connector	Pin Core cross section designation		Signal identifier
Connection terminal	Ferrule ⁽²⁾	+	6 mm ² to 10 mm ² [10 AWG to 8 AWG]	+24 V
		_	6 mm ² to 10 mm ² [10 AWG to 8 AWG]	GND

Internal communication positioning drives

SeGMo-Box	Mating connector	Pin	Hybri	d cable	Signal
(plug-in view)		designation	Core color	Core cross section	
Socket strip	Spring-cage terminal ⁽¹⁾ FK2039	1	black	0.14 mm ² [26 AWG]	CAN-GND
		2	yellow	0.25 mm ² [24 AWG]	CAN-High
		3	green	0.25 mm ² [24 AWG]	CAN-Low
		4	-	-	unallocated

Power supply positioning drives

SeGMo-Box Mating connector (plug-in view) (Connection view)	Pin	Hybri	d cable	Signal	
	designation	Core color/ Core number	Core cross section		
Socket strip	Spring-cage terminal ⁽¹⁾ FK20181	1	red/2	2.5 mm ² [14 AWG]	+24 V power
		2	black/2	2.5 mm ² [14 AWG]	GND power
	3	red/1	0.5 mm ² [20 AWG]	+24 V logic	
		4	black/1	0.5 mm ² [20 AWG]	GND logic

Ready to assemble hybrid cables are available for connection , see "BZK Technical Information."

⁽¹⁾ The connection is made via ferrules (no connection accessories from Lenord+Bauer).

⁽²⁾ No connection accessories from Lenord+Bauer

Functional ground

GEL 6505A GEL 6505B			
Functional ground at ground rail	Threaded bolt for functional ground		
	A Threaded bolt in housing cover		
	B Threaded bolt in housing		
Functional ground is via the functional ground connec- tion in the switch cabinet.	The functional ground cable can be connected via threaded bolts on the inside of the housing.		
Observe the functional ground and potential equalization of the machine or system.			

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

Dimensional drawing SeGMo-Box – GEL 6505A



Dimensional drawings

Dimensional drawing SeGMo-Box – GEL 6505B, design N/U



Number	Diameter	Clamping range ^(a)	Tightening torque	For entry of
3×	M16	4.5 to 10 mm	1.5 NmCommunication interface, supply voltage logic circuit, functional ground	
5×	M20 ^(b)	6 to 13 mm	3 Nm	Hybrid cables of positioning drives
1×	M25	9 to 17 mm	4 Nm	Supply voltage power circuit, functional ground

^(a) Reducer sealing inserts available as accessories

^(b) 1 × with pressure compensation element

Seal unused cable glands with a sealing plug (item number ZB65X05) to ensure degree of protection.

Dimensional drawings



Dimensional drawing SeGMo-Box – GEL 6505 B, design C⁽¹⁾

Seal unused cable glands with a sealing plug (item number ZB65X05) to ensure degree of protection.

Housing openings that are not sealed at the factory shall be sealed as per the requirements of NFPA 79 "Electrical Standard for Industrial Machinery."
 This housing variant is not suitable to connect rigid metal conduits.

Type code

Type code GEL 6505

		Deg	Degree of protection						
	Α	IP 2	IP 20						
	В	IP69K (design N/U)/IP68 (design C); only available with housing VA							
		Housing							
		TR	Ba	rrel-finished	l cast alum	ninum, brig	ht ⁽¹⁾		
		PB	Pc	wder-coate	d cast alur	ninum, bla	ck		
		PG	Po	wder-coate	d cast alur	ninum, gra	ay RAL 9006 ⁽¹⁾		
		VA	Sta	ainless stee	l (only ava	ilable with	degree of protection B)		
				Slot					
			-	without plug	g-in modul	е			
			1	Plug-in mod	dule with 1	× sub-D c	connection (for communication interface CO and DP)		
			2	Plug-in mod	dule with 2	× RJ45 co	onnections (for communication interface EC, IP, PL, RT, SC)		
					Commun	ication in	terface (plug-in module)		
					without				
				со	CANoper	ı (based oı	n CiA 402)		
				DP	PROFIBL	JS-DP (ba	sed on PROFIDRIVE)		
				EC	EtherCAT	(based or	n CiA 402)		
				IP	EtherNet/	EtherNet/IP (based on CiA 402)			
				PL	POWERL	INK (base	d on CiA 402)		
				RT	PROFINE	et IO/Rt (based on PROFIDRIVE)		
				SC	sercos III	(I/O profile	e based on PROFIDRIVE)		
						Connecti	ion accessories		
					0	No acces	sories		
			1 Accessory set for the electrical connection of five positioning drives						
		(also available separately, scope of supply see connection accessories)							
		Design							
				N TO AVVG Standard					
						C 14 AWC all us Personized Component (6505A) / all us listed			
				(6505B)					
5									
05	_				_	_			

Customized special designs

0

Customized special designs are assigned a Y-number. A positioning drive marked with Y (example: A 6505Yxxx) is a customized design with a special assembly and/or modified technical specifications. Depending on the customized modification, more or other documents may apply.

Connection accessories

Plug-in modules for GEL 6505A

Designation	Item number
PROFIBUS-DP plug-in module with 1 × sub-D connection, including fastening screws	BG5031
CANopen-DP plug-in module with 1 × sub-D connection, including fastening screws	BG5032
EtherCAT plug-in module with 2 × RJ45 connections, including fastening screws	BG5033
EtherNet I/P plug-in module with 2 × RJ45 connections, including fastening screws	BG5034
PROFINET IO/RT plug-in module with 2 × RJ45 connections, including fastening screws	BG5035
Sercos III plug-in module with 2 × RJ45 connections, including fastening screws	BG5036
POWERLINK plug-in module with 2 × RJ45 connections, including fastening screws	BG5037

Plug-in modules for GEL 6505B

Designation	Item number
PROFIBUS-DP plug-in module with 1 × sub-D connection, including fastening screws	BG5021
CANopen-DP plug-in module with 1 × sub-D connection, including fastening screws	BG5022
EtherCAT plug-in module with 2 × RJ45 connections, including fastening screws	BG5023
EtherNet I/P plug-in module with 2 × RJ45 connections, including fastening screws	BG5024
PROFINET IO/RT plug-in module with 2 × RJ45 connections, including fastening screws	BG5025
Sercos III plug-in module with 2 × RJ45 connections, including fastening screws	BG5026
POWERLINK plug-in module with 2 × RJ45 connections, including fastening screws	BG5027

Connection accessories

Accessory sets

Designation	Item number	
Accessory set GEL 6505 design N/U for connection of 5 positioning drives	89070	
Logic circuit supply voltage		
1 1x spring-cage terminal item number: FK2033		
Power supply positioning drives/internal communication positioning drives		
10x spring-cage terminal, item number: FK2039		
Functional ground		
 1× forked cable lug M4 for cable 2.5 mm² to 6 mm² [14 AWG to 10 AWG], itom number: L 71224 		
Hybrid cable screens		
1 ybru cable scieens		
1 x heatshrink sleeve Ø 15 min, item number: LZ 1225		
Accessory set GEL 6505 design C for connection of 5 positioning drives	ZB6505UL01	
Logic circuit supply voltage		
1× spring-cage terminal, item number: FK2033		
Internal communication positioning drives		
■ 5× spring-cage terminal, item number: FK2039		
Power supply positioning drives		
5 × spring-cage terminals with 2 equipped coding profiles each, item number: FK20181, FZ1090		
2 × coding profile for spring-cage terminal, item number: FZ1090		
Functional ground		
1× forked cable lug M4 for cable 2.5 mm ² to 6 mm ² [14 AWG to 10 AWG],		
item number: LZ1234		
Hybrid cable screens		
1 x heatshrink sleeve Ø 13 mm, item number: LZ1225		
1 x heatshrink sleeve Ø 6 mm, item number: LZ1231		
Accessory set for replacing a SeGMo-Box with design N/U with a SeGMo-Box with design C	ZB6505UL02	
Power supply positioning drives		
5 x spring-cage terminal with equipped coding profiles, item number: FK20181_F71090		
 2 × coding profile for spring-cage terminal, item number: FZ1090 		

General accessories

Designation	Item number
Power supply positioning drives/internal communication positioning drives for design N/U 5× spring-cage terminal, item number: FK2039	ZB65X03
Logic circuit supply voltage 5× spring-cage terminal, item number: FK2033	ZB65X02
 Functional ground 5× forked cable lug M4 for cable 2.5 mm² to 6 mm² [14 AWG to 10 AWG], item number: LZ1234 	ZB65X01
SeGMo-Connect Preassembled hybrid cable for connecting the positioning drive to the SeGMo-Box	BZK ⁽¹⁾
 Fuses (F1 to F5) 10 × series 391 TE5 fast acting, 65 V DC 3.15 A, manufacturer: Wickmann-Werke GmbH (Littelfuse), item number: SS1121 	ZB65X04

Connection accessories

Accessories for GEL 6505B, design N/U

Designation	Item number
Sealing plug for cable gland of SeGMo-Box GEL 6505B = 1× sealing plug, item number: VB1246	ZB65X05
Reducing seal insert for cable gland M16for reducing the inside diameter, clamping range 2 to 6 mm• 5 × reducing seal insert, item number: LZ1849	ZB65X06
Reducing seal insert for cable gland M20for reducing the inside diameter, clamping range 4 to 8 mm= 5 × reducing seal insert, item number: LZ1850	ZB65X07
Reducing seal insert for cable gland M25for reducing the inside diameter, clamping range 7 to 12 mm= 5 × reducing seal insert, item number: LZ1851	ZB65X08

Accessories for GEL 6505B, design C

Designation	Item number
Sealing plug for cable gland of SeGMo-Box GEL 6505B = 1× sealing plug, item number: VB1246	ZB65X05

SeGMo-Connect connection accessories

General information about SeGMo-Connect

The SeGMo-Connect hybrid cable is designed for moveable use in drag chains. Its variants are food grade quality, halogen-free and available as a cULus recognized component. The hybrid cable screen is under the outer sheath. The internal communication line is completely insulated and has multiple screening.

All positioning drives are available with hybrid cables and connectors and can be quickly and easily connected to the SeGMo-Box via the freely configurable and preassembled hybrid cables.

Quick disconnect connectors allow safe and quick disconnection from the power supply during maintenance and service work. Preassembled hybrid cables are available for connection, see "BZK Technical Information."



Plug-and-play and ready-to-use hybrid cable "BZK"⁽¹⁾

- 1 M17 connector or M23 connector with female contacts for connecting the positioning drives
- 2 4-pin spring-cage terminal for connecting the SeGMo-Box (internal communication positioning drives)
- 3 4-pin spring-cage terminal for connecting the SeGMo-Box (power supply positioning drives)

Property	Design N (food grade quality)	Design U (halogen-free)	Design C (cULus Recognized Compo- nent)
Sheath material	PUR, black, glossy	PUR, black, matte	PUR, black, matte
Cable properties	Screened	Screened	Screened
Suitable for drag chain	Yes	Yes	Yes
Food grade quality	Yes	No	No
Halogen-free	No	Yes	Yes
Cable diameter (d)	9.5 mm [0.37 in]	9.5 mm [0.37 in]	9.5 mm [0.37 in]
Bending radius	Permanently flexible: 10 × d Fixed: 5 × d	Permanently flexible: 15 × d Free-moving: 10 × d Fixed: 5 × d	Permanently flexible: 15 × d Free-moving: 10 × d Fixed: 5 × d
Maximum peak operating voltage	350 V CAN-Bus 30 V DC (logic/power)	350 V CAN-Bus 30 V DC (logic/power)	300 V CAN-Bus 30 V DC (logic/power)
Temperature range	-40 °C to +80 °C [-40 °F to +176 °F]	-40 °C to +80 °C [-40 °F to +176 °F]	-40 °C to +80 °C [-40 °F to +176 °F]

Technical data hybrid cable BZK (SeGMo-Connect)

⁽¹⁾ See separate Technical information

Notes for USA and Canada (design C)

The UL approval mark of the box also applies to the SeGMo if all individual components are marked with design **C**. Example: Approval mark "cULus Listed"

- Box: GEL 6505BVA2RT0C
- 5 positioning drives for direct connection to the box: GEL 61xxCO____VxC_3

Certification: cULus Recognized Component/cULus Listed (document E483619)

General

- Use of the SeGMo-Box is only permitted in industrial machines in accordance with the applicable regulations of NFPA 79 "Electrical Standard for Industrial Machines."
- Power supply Power circuits: Only flexible copper cables with a temperature resistance of at least 75 °C may be used for connection purposes.
- Connectors M17 and M23 (positioning drive, BZK) in use are not suitable for connection or disconnection under voltage.

Fit excess current protection in accordance with NFPA 79 "Electrical Standard for Industrial Machinery." Notes for GEL 6505 with degree of protection **B**

- Housing openings that are not sealed at the factory shall be sealed as per the requirements of NFPA 79 "Electrical Standard for Industrial Machinery."
- This housing variant is not suitable to connect rigid metal conduits.

This document and contents are the intellectual property of Lenord, Bauer & Co. GmbH. Without the written consent of Lenord, Bauer & Co. GmbH, the disclosure and forwarding to third parties as well as any exploitation of the contents, including the registration of intellectual property rights, is prohibited.



Dohlenstraße 32 46145 Oberhausen Germany Phone +49 (0)208 9963-0 www.lenord.de

Lenord, Bauer & Co. GmbH

Lenord+Bauer Italia S.r.I. Via Gustavo Fara, 26 20124 Milano Italy Phone +39 340 1047184 www.lenord.com

Lenord+Bauer USA Inc. 32000 Northwestern Highway Suite 150 Farmington Hills, MI 48334 USA Phone +1 248 446 7003 www.lenord.com

Lenord+Bauer Automation Technology (Shanghai) Co.,Ltd. Block 42, Room 302, No.1000, Jinhai Road 201206 Shanghai China Phone +86 21 50398270 www.lenord.cn