

Compact Linear Axes GKS 2040

Materiál: ocel.

The GKS 2040 compact linear axis is a flexible positioning module with a steel profile. The carriage is moved by a recirculating ball screw drive, mounted at the drive flange. Due to the recirculating ball bearing guide of the carriage and the integrated ball screw nut, the linear axis achieves very high nominal loads and high rigidity with minimal friction and idle torque.

Zdvih: 30mm až 130mm.

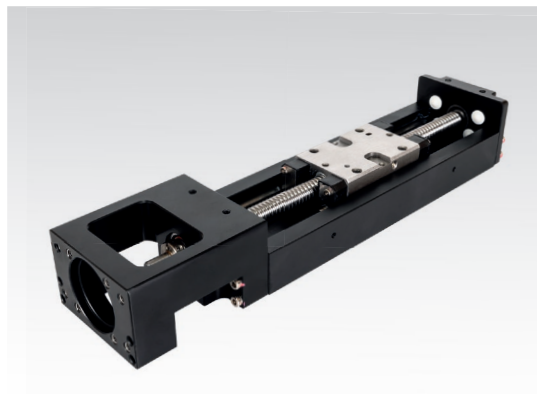
Dĺžka vedenia L: 100mm až 200mm.

Presnosť opakovania: $\pm 5\mu\text{m}$.

Presnosť polohovania: $60\mu\text{m}$.

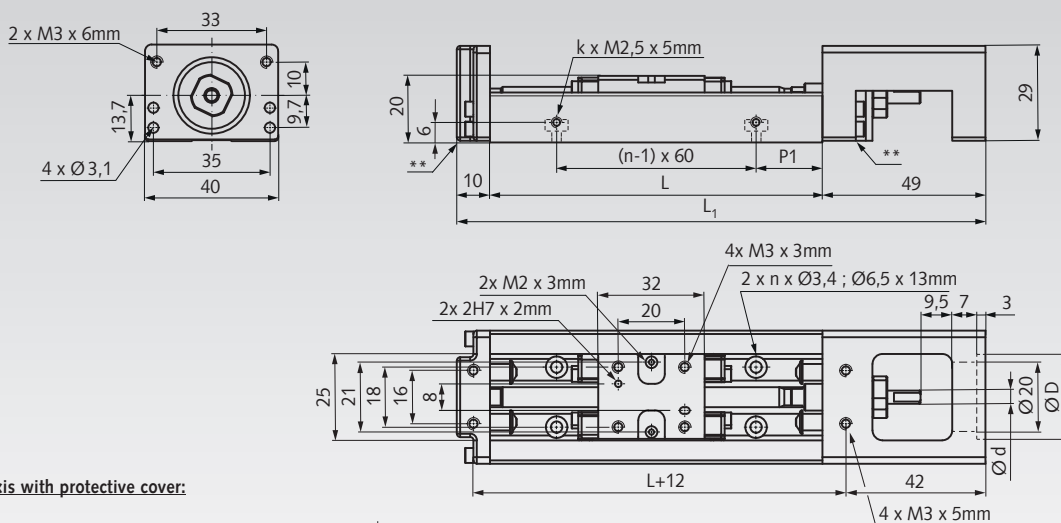
Povolená rýchlosť: max. 100mm/s.*

Teplotná škála: +0°C až +70°C.

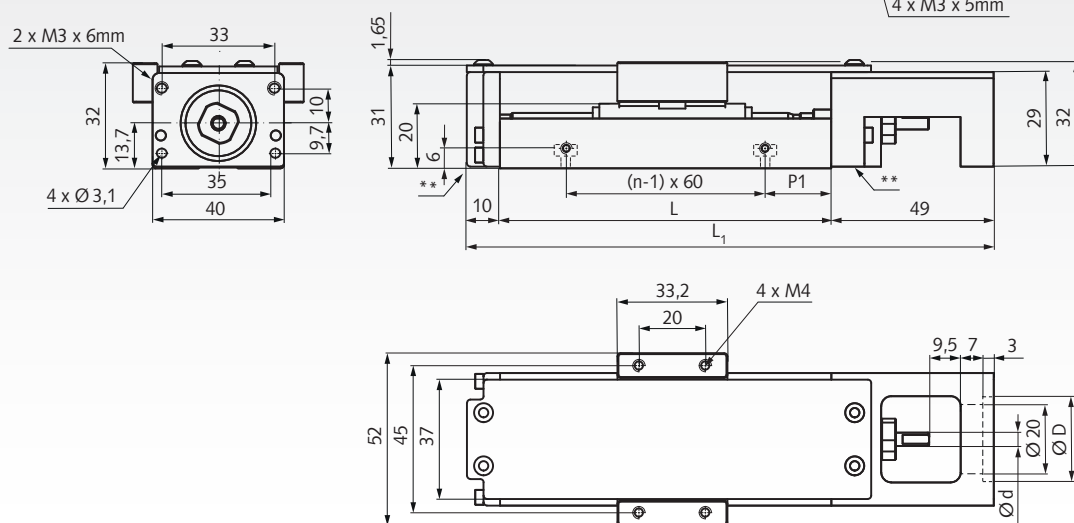


Informácie potrebné na objednanie: napr.: Produkt č. GKS2040-30-12N-P2, kompaktná lineárna os GKS 2040

Compact linear axis without protective cover:



Compact linear axis with protective cover:



Construction Dimensions

Produkt č.	Stúpanie mm	Zdvih mm	D ^{+0,01/+0,03} mm	d _{h7} mm	L mm	L ₁ mm	n Pcs.	k Pcs.	P ₁ mm	Hmot. kg
GKS2040-30-12N-P2	2	30	23	4	100	159	2	2	20	0,5
GKS2040-80-12N-P2	2	80	23	4	150	209	3	3	15	0,6
GKS2040-130-12N-P2	2	130	23	4	200	259	3	3	40	0,8

Poznámka:

Other versions in steel and aluminium as well as axes with higher accuracy class and motor on request.

*The permissible speed depends on the motor type (stepper motor max. 40 mm/s or servo motor max. 100 mm/s).

** The marked attachment parts are 0.5 mm higher than the contact surface of the axis (dimension L).

Compact Linear Axes GKS 2650

Materiál: ocel.

The GKS 2650 compact linear axis is a flexible positioning module with a steel profile. The carriage is moved by a recirculating ball screw drive, mounted at the drive flange. Due to the recirculating ball bearing guide of the carriage and the integrated ball screw nut, the linear axis achieves very high nominal loads and high rigidity with minimal friction and idle torque.

Zdvih: 60mm až 210mm.

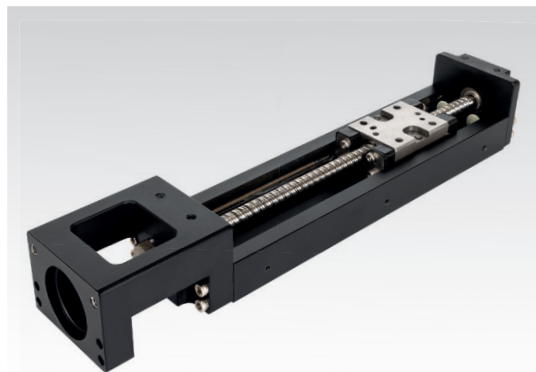
Dĺžka vedenia L: 150mm až 300mm.

Presnosť opakovania: $\pm 5\mu\text{m}$.

Presnosť polohovania: $60\mu\text{m}$.

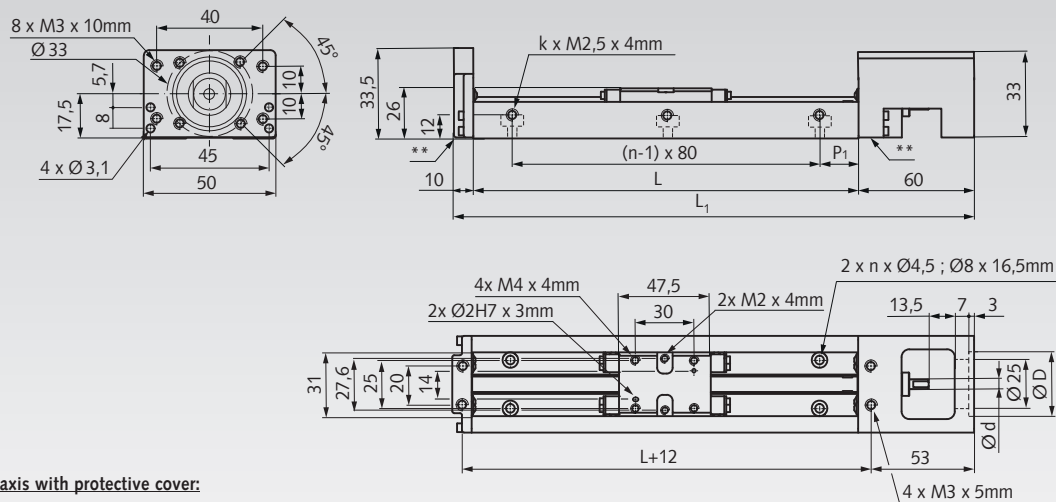
Povolená rýchlosť: max. 100mm/s.*

Teplotná škála: +0°C až +70°C.

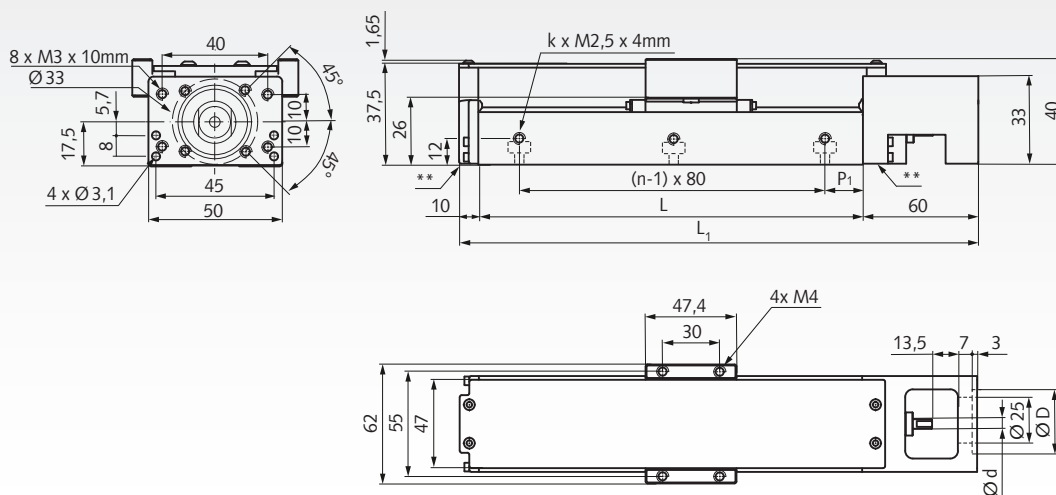


Informácie potrebné na objednanie: napr.: Produkt č. GKS2650-60-12N-P2, kompaktná lineárna os GKS 2650

Compact linear axis without protective cover:



Compact linear axis with protective cover:



Construction Dimensions

Produkt č.	Stúpanie mm	Zdvih mm	D ^{+0,02/+0,05} mm	d _{h7} mm	L mm	L ₁ mm	n Pcs.	k Pcs.	P ₁ mm	Hmot. kg
GKS2650-60-12N-P2	2	60	28	5	150	220	2	2	35	1,2
GKS2650-110-12N-P2	2	110	28	5	200	270	3	3	20	1,4
GKS2650-160-12N-P2	2	160	28	5	250	320	3	3	45	1,6
GKS2650-210-12N-P2	2	210	28	5	300	370	4	4	30	1,8

Poznámka:

Other versions in steel and aluminium as well as axes with higher accuracy class and motor on request.

*The permissible speed depends on the motor type (stepper motor max. 40 mm/s or servo motor max. 100 mm/s).

** The marked attachment parts are 0.5 mm higher than the contact surface of the axis (dimension L).

Compact Linear Axes GKS 3060

Materiál: ocel.

The GKS 3060 compact linear axis is a flexible positioning module with a steel profile. The carriage is moved by a recirculating ball screw drive, mounted at the drive flange. Due to the recirculating ball bearing guide of the carriage and the integrated ball screw nut, the linear axis achieves very high nominal loads and high rigidity with minimal friction and idle torque.

Zdvih: 50mm až 500mm.

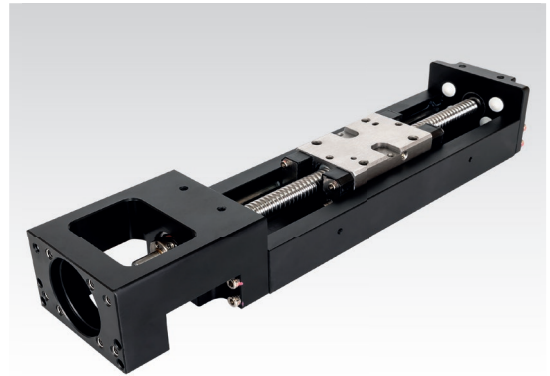
Dĺžka vedenia L: 150mm až 600mm.

Presnosť opakovania: $\pm 5\mu\text{m}$.

Presnosť polohovania: $60\mu\text{m}$ až $100\mu\text{m}$.

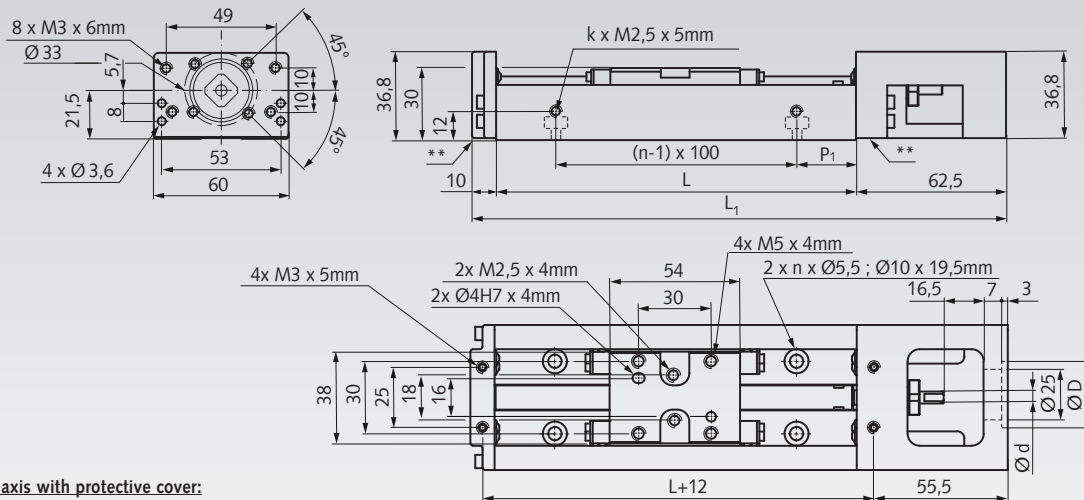
Povolená rýchlosť: max. 250mm/s.*

Teplotná škála: $+0^\circ\text{C}$ až $+70^\circ\text{C}$.

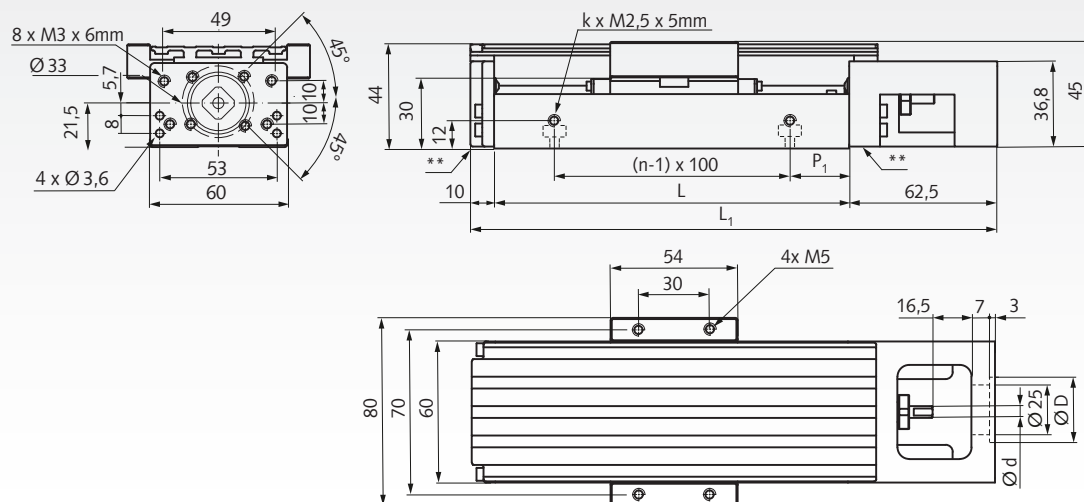


Informácie potrebné na objednanie: napr.: Produkt č. GKS3060-50-12N-P5, kompaktná lineárna os GKS 3060

Compact linear axis without protective cover:



Compact linear axis with protective cover:



Construction Dimensions

Produkt č.	Stúpanie mm	Zdvih mm	D ^{+0,01/+0,03} mm	d _{h7} mm	L mm	L ₁ mm	n Pcs.	k Pcs.	P ₁ mm	Hmot. kg
GKS3060-50-12N-P5	5	50	28	5	150	222,5	2	2	25	1,5
GKS3060-100-12N-P5	5	100	28	5	200	272,5	2	2	50	1,9
GKS3060-150-12N-P5	5	150	28	5	250	322,5	3	3	25	2,3
GKS3060-200-12N-P5	5	200	28	5	300	372,5	3	3	50	2,6
GKS3060-300-12N-P5	5	300	28	5	400	472,5	4	4	50	3,2
GKS3060-400-12N-P5	5	400	28	5	500	572,5	5	5	50	3,9
GKS3060-500-12N-P5	5	500	28	5	600	672,5	6	6	50	4,6

Poznámka:

Other versions in steel and aluminium as well as axes with a higher accuracy class and motor on request.

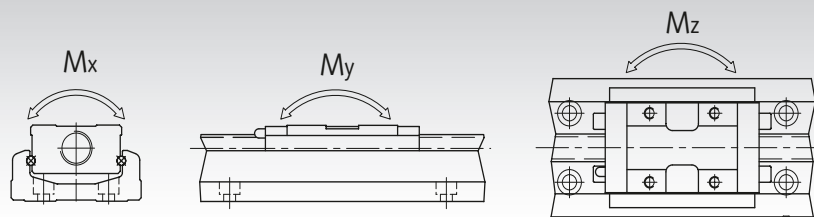
*The permissible speed depends on the motor type (stepper motor max. 100 mm/s or servo motor max. 250 mm/s).

** The marked attachments are 0.8 mm higher than the contact surface of the axis (dimension L).

Accuracy and Maximum Values

Produkt č.	Stúpanie mm	Zdvih mm	L1 mm	maximálna rýchlosť mm/s	max. Zrýchlenie m/s ²	Presnosť polohovania mm	Presnosť opakovania mm	Paralelnosť vodiacich dráh mm	max. Odtrhávaci moment Ncm
GKS2040-30-12N-P2	2	30	159	100	5	0,06	± 0,005	0,025	0,5
GKS2040-80-12N-P2	2	80	209	100	5	0,06	± 0,005	0,025	0,5
GKS2040-130-12N-P2	2	130	259	100	5	0,06	± 0,005	0,025	0,5
GKS2650-60-12N-P2	2	60	220	100	5	0,06	± 0,005	0,025	1,5
GKS2650-110-12N-P2	2	110	270	100	5	0,06	± 0,005	0,025	1,5
GKS2650-160-12N-P2	2	160	320	100	5	0,06	± 0,005	0,025	1,5
GKS2650-210-12N-P2	2	210	370	100	5	0,06	± 0,005	0,025	1,5
GKS3060-50-12N-P5	5	50	222,5	250	15	0,06	± 0,005	0,025	7
GKS3060-100-12N-P5	5	100	272,5	250	15	0,06	± 0,005	0,025	7
GKS3060-150-12N-P5	5	150	322,5	250	15	0,06	± 0,005	0,025	7
GKS3060-200-12N-P5	5	200	372,5	250	15	0,06	± 0,005	0,025	7
GKS3060-300-12N-P5	5	300	472,5	250	15	0,06	± 0,005	0,025	7
GKS3060-400-12N-P5	5	400	572,5	250	15	0,1	± 0,005	0,035	7
GKS3060-500-12N-P5	5	500	672,5	250	15	0,1	± 0,005	0,035	7

Load Ratings, Moments and Moments of Inertia



Produkt č.	Guide Elements					Gulôčkový skrutkový pohon				Nosnosť		Plošné momenty zotrvačnosti	
	Dynamické zaťaženie N	Statické zaťaženie N	Statický moment M _x Nm	M _y Nm	M _z Nm	Vretno-Ø mm	Stúpanie mm	dyn. C N	stat. C ₀ N			I _x mm ⁴	I _y mm ⁴
GKS2040-30-12N-P2	2872	5040	66,4	24,8	24,8	6	2	550	920			5970	65832
GKS2040-80-12N-P2	2872	5040	66,4	24,8	24,8	6	2	550	920			5970	65832
GKS2040-130-12N-P2	2872	5040	66,4	24,8	24,8	6	2	550	920			5970	65832
GKS2650-60-12N-P2	5792	9720	166,4	67,2	67,2	8	2	1700	3200			14924	159494
GKS2650-110-12N-P2	5792	9720	166,4	67,2	67,2	8	2	1700	3200			14924	159494
GKS2650-160-12N-P2	5792	9720	166,4	67,2	67,2	8	2	1700	3200			14924	159494
GKS2650-210-12N-P2	5792	9720	166,4	67,2	67,2	8	2	1700	3200			14924	159494
GKS3060-50-12N-P5	9280	16160	342,4	132,8	132,8	10	5	2730	4440			31840	340116
GKS3060-100-12N-P5	9280	16160	342,4	132,8	132,8	10	5	2730	4440			31840	340116
GKS3060-150-12N-P5	9280	16160	342,4	132,8	132,8	10	5	2730	4440			31840	340116
GKS3060-200-12N-P5	9280	16160	342,4	132,8	132,8	10	5	2730	4440			31840	340116
GKS3060-300-12N-P5	9280	16160	342,4	132,8	132,8	10	5	2730	4440			31840	340116
GKS3060-400-12N-P5	9280	16160	342,4	132,8	132,8	10	5	2730	4440			31840	340116
GKS3060-500-12N-P5	9280	16160	342,4	132,8	132,8	10	5	2730	4440			31840	340116

Note on Calculation

The maximum load capacity of the linear axis results from the dynamic and static loads on the guide elements. The maximum torque depends on the loads on the ball screw drive. If the axis is used vertically, we recommend checking the basic load of the ball screw in advance. The load capacity of the linear axis is often limited by the screw connection used and not by the load capacity of the axis components. The maximum permissible load capacity of the screw connection should therefore be checked in accordance with VDI 2230.

Definitions of Terms

Repeatability is specified as the maximum deviation of an actual position approached several times from any direction.

Positioning accuracy is the maximum deviation between the actual and target position. Disturbance variables such as lead errors of the spindle, the accuracy of the gearbox or the motor have a negative influence on the system.

The **breakaway torque** is the torque required to overcome the static friction.

Requirements for Mounting and Installation Location

The following requirements must be observed when installing and operating the linear axis:

- Temperature range +0°C to +70°C.
- Dry.
- Not potentially explosive.
- Flatness of the mounting surface: 0.03 mm over 300 mm.

Vertical Mounting

The linear axis can be installed vertically, but the load capacity is reduced to approx. one third. We recommend the use of a motor with brake function, as there is no mechanical brake function. Motors on request.

Cross Tables / XY Assembly

XY-Combinations are possible as long as the maximum torque is not exceeded. An adapter plate may be required. We generally recommend using two axes with synchronised control as a basis or, for short systems, a driven master axis and a passive axis. We can put these systems together for you if required.

Levelling Edge

In principle, both sides can be used as a levelling edge. If a particularly precise alignment of the axis is required, we recommend measuring the surface and grinding it if needed to avoid unevenness caused by the anodising. If required, we also offer high-precision linear axes on request.

Lubricants

Lubricant ball screw drive: Liplux H-1/2S.
Guide lubricant: Beslux-Plex.

Equipment and Mounting Parts

Our linear axes can also be equipped with motor adapter flange, coupling, motor, protective cover and sensor rail with three sensors. As standard, the linear axis is equipped without these additional parts. We can offer suitable motor adapter flanges for different motor variants. The scope of delivery of the motor adapter flange includes screws for attaching the flange to the axis.

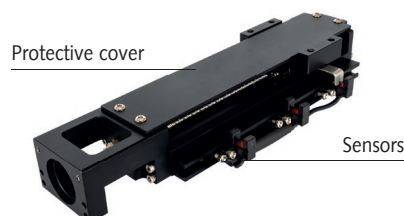


Produkt č. Compact Axes	Produkt č. Motor Adapter Flange	Produkt č. Spojka	Produkt č. Motor	Produkt č. Protective Cover + Body	Produkt č. Sensors + Rail
GKS2040-30-12N-P2	see selection table	see selection table	Motor on request	GK2040-30-C	GK2040-30-SP
GKS2040-80-12N-P2	see selection table	see selection table	Motor on request	GK2040-80-C	GK2040-80-SP
GKS2040-130-12N-P2	see selection table	see selection table	Motor on request	GK2040-130-C	GK2040-130-SP
GKS2650-60-12N-P2	see selection table	see selection table	Motor on request	GK2650-60-C	GK2650-60-SP
GKS2650-110-12N-P2	see selection table	see selection table	Motor on request	GK2650-110-C	GK2650-110-SP
GKS2650-160-12N-P2	see selection table	see selection table	Motor on request	GK2650-160-C	GK2650-160-SP
GKS2650-210-12N-P2	see selection table	see selection table	Motor on request	GK2650-210-C	GK2650-210-SP
GKS3060-50-12N-P5	see selection table	see selection table	Motor on request	GK3060-50-C	GK3060-50-SP
GKS3060-100-12N-P5	see selection table	see selection table	Motor on request	GK3060-100-C	GK3060-100-SP
GKS3060-150-12N-P5	see selection table	see selection table	Motor on request	GK3060-150-C	GK3060-150-SP
GKS3060-200-12N-P5	see selection table	see selection table	Motor on request	GK3060-200-C	GK3060-200-SP
GKS3060-300-12N-P5	see selection table	see selection table	Motor on request	GK3060-300-C	GK3060-300-SP
GKS3060-400-12N-P5	see selection table	see selection table	Motor on request	GK3060-400-C	GK3060-400-SP
GKS3060-500-12N-P5	see selection table	see selection table	Motor on request	GK3060-500-C	GK3060-500-SP

Selection table for Motor Adaptation and Coupling

Velkost	Motor type	Flange type	Motor Adapter Fl.	Spojka
GKS2040	Stepper motor	NEMA11	GK20-G28	FACHS19-4-5
GKS2040	Stepper motor	NEMA17	GK20-G42	FACHS19-4-5
GKS2040	Servo motor	PC Ø46	GK20-E05	FACHS19-4-8
GKS2040	Servo motor	PC Ø45	GK20-M05	FACHS19-4-8
GKS2650	Stepper motor	NEMA11	GK26-G28	FACCL21-5-5
GKS2650	Stepper motor	NEMA17	GK26-G42	FACCL21-5-5
GKS2650	Servo motor	PC Ø46	GK-H10	FACCL21-5-8
GKS2650	Servo motor	PC Ø45	GK-M10	FACCL21-5-8
GKS3060	Stepper motor	NEMA11	-	-
GKS3060	Stepper motor	NEMA17	GK-G42	FACCL21-5-5
GKS3060	Servo motor	PC Ø46	GK-H10	FACCL21-5-8
GKS3060	Servo motor	PC Ø45	GK-M10	FACCL21-5-8

Assembly Example



Information on the Sensors

- Scope of delivery: Sensor rail with 3 sensors.
- Brand: Panasonic.
- Type: PM-F25.
- Voltage: 5~24V DC $\pm$ 10% (with P-P ripple below 10%).
- Current consumption: less than 15mA.
- Light barrier sensor: NPN type.

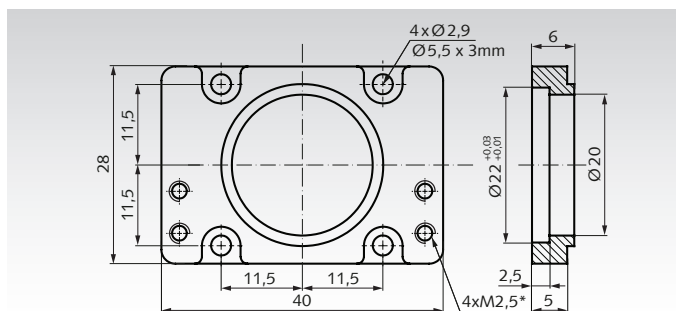
Please refer to the operating instructions for the GKS linear axis for installation instructions and a circuit diagram of the sensor system.

Output status:
Black: ON when light is received.
White: ON when light is blocked.

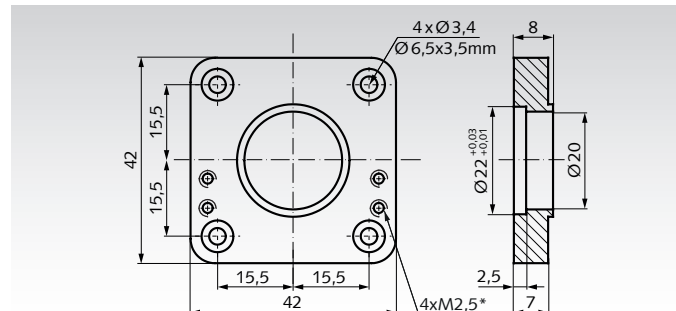
Response time:
Light receiving condition: Less than 20 μ s.
Light interrupted condition: max. 80 μ s
(response frequency above 3kHz).

Motor Adapter Flanges

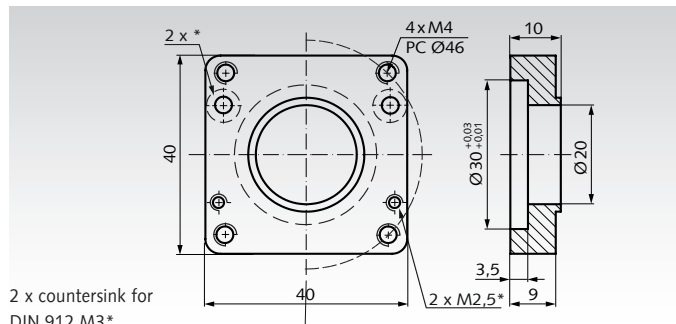
Flange for GKS2040, Stepper Motor, NEMA11, GK20-G28



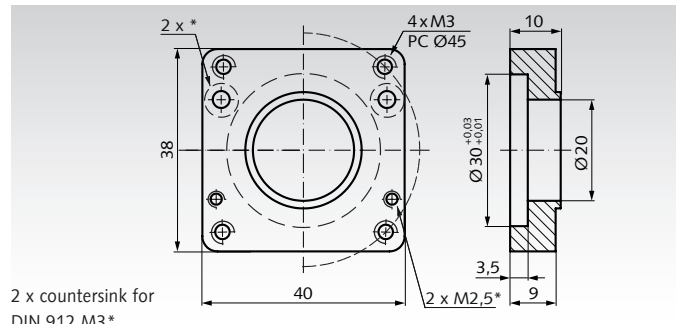
Flange for GKS2040, Stepper Motor, NEMA17, GK20-G42



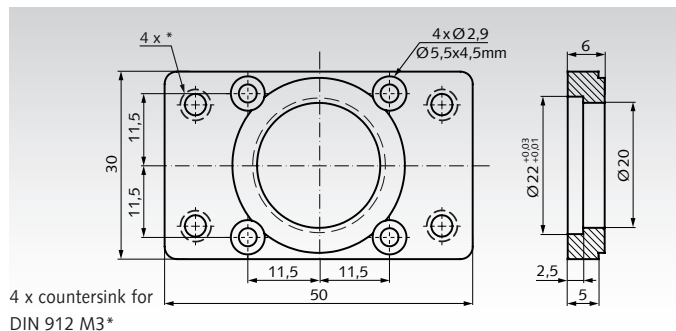
Flange for GKS2040, Servo Motor, PCØ 46mm, GK20-E05



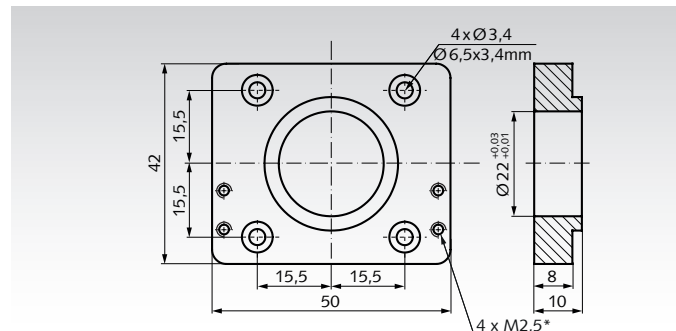
Flange for GKS2040, Servo Motor, PCØ 45mm, GK20-M05



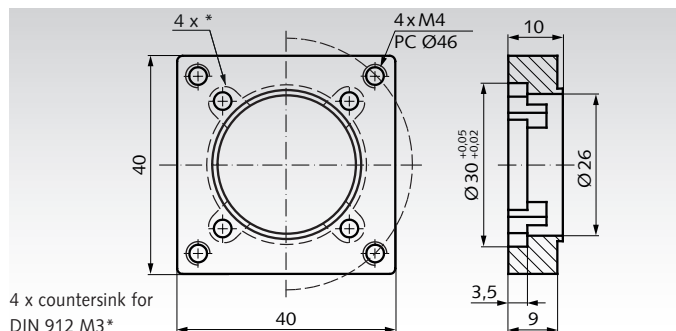
Flange for GKS2650, Stepper Motor, NEMA11, GK26-G28



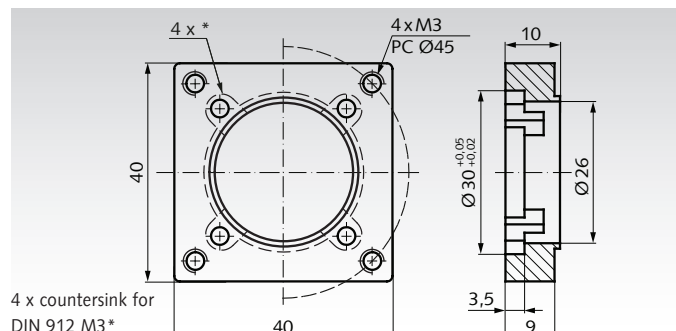
Flange for GKS2650, Stepper Motor, NEMA17, GK26-G42



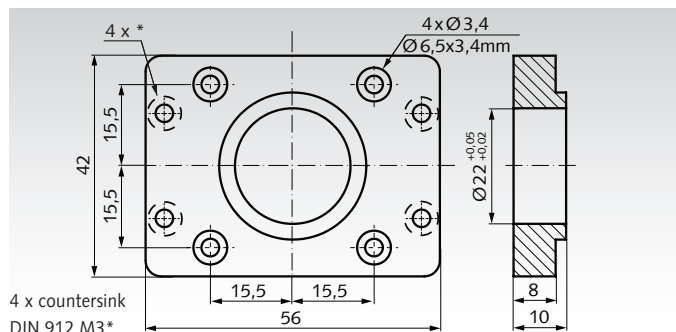
Flange for GKS2650, GKS3060, Servo Motor, PCØ 46mm, GK-H10



Flange for GKS2650, GKS3060, Servo Motor, PCØ 45mm, GK-M10



Flange for GKS3060, Stepper Motor, NEMA17, GK-G42



Poznámka:

The dimensions marked with * refer to the screw connection of the flange to the axis and are not relevant for mounting the motor. The screws for fastening to the axis are included in the scope of delivery of the motor adapter flange.