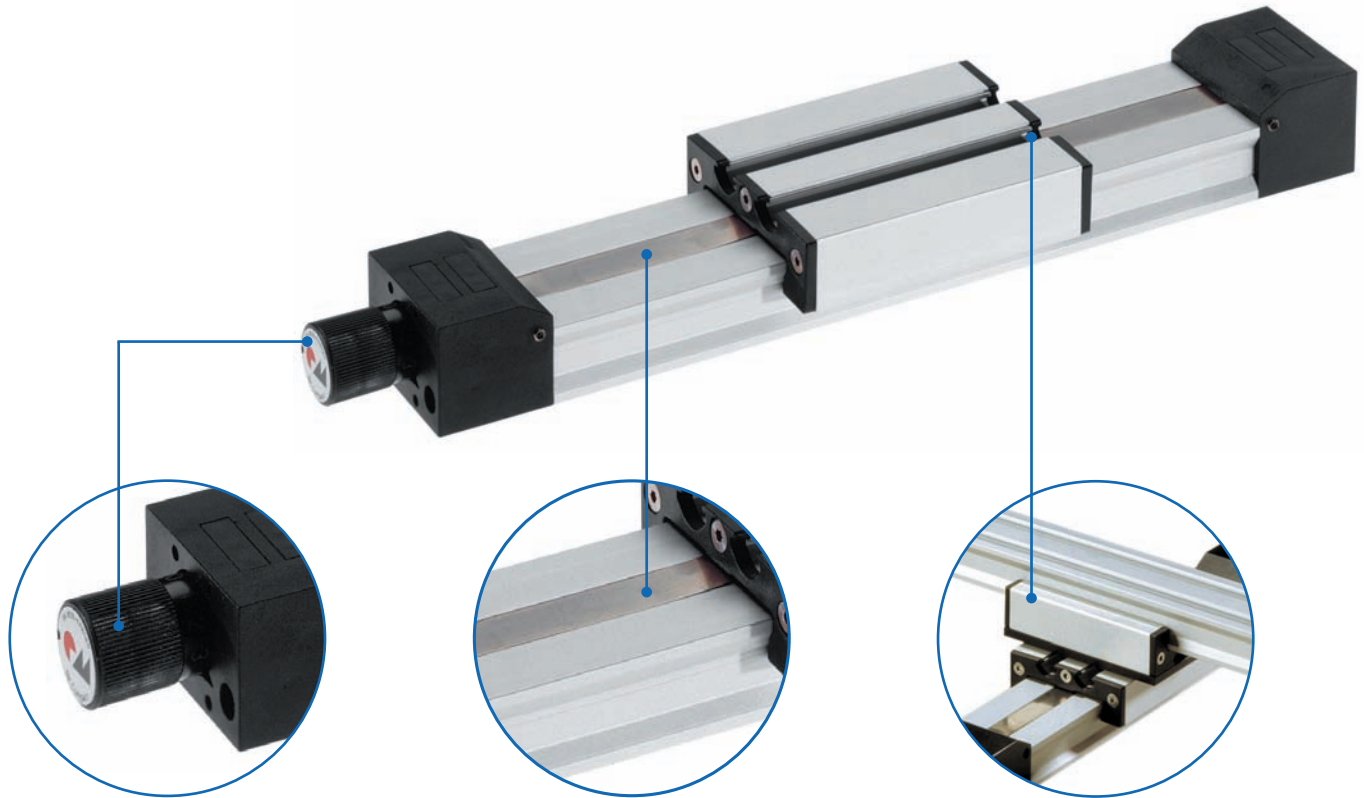


Profile guide/actuator - PLM

The small range for positioning small loads



Control knob with vernier

✓ Simple adjustment of carriage

Screw cover

✓ Protection of drive screw against contamination

Connecting plates

✓ Simple connection of 2-axis systems

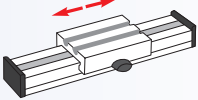
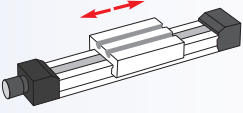
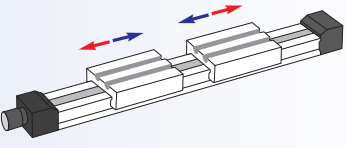
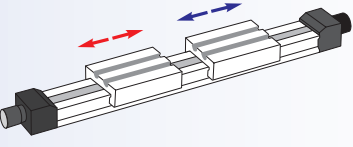
Features:

- Covered screw
- Sizes can be combined using standard accessories

Options:

- Second free-running carriage

PLM linear unit - Table of contents

Properties/Technical data		<ul style="list-style-type: none"> ■ General information/operating conditions..... 138 ■ Load data..... 139 ■ Geometric moments of inertia..... 139
Versions (Dimensions, order numbers)		<ul style="list-style-type: none"> ■ Guide 140 - 141
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	Drive	<ul style="list-style-type: none"> ■ Handwheel 151 ■ Motor adaptor/coupling..... 151
	Position determination	<ul style="list-style-type: none"> ■ Positioning indicator..... 152 ■ Limit switch 154 - 155

General information/operating conditions

Design	Profile linear unit, steel cover strip
Guide	Adjustable slide guide
Installation position	Any position
Lead accuracy	± 0.1 mm/300 mm travel
Self-locking	Yes
Ambient temperature	0°C to + 60°C

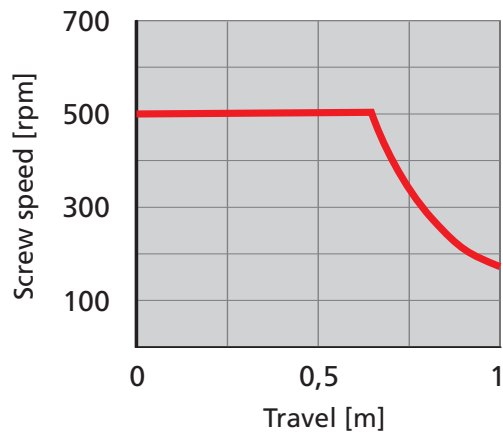
Screw lead

[mm]

Type	Screw lead
PLM 20 x 20	1
PLM 40 x 20	1

Required screw speed n [rpm] = $\frac{\text{speed [m/min]} \times 1000}{\text{screw lead [mm]}}$

Critical screw speed



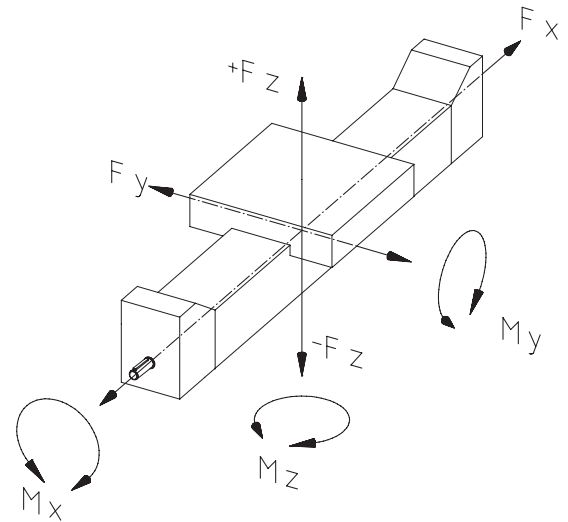
No-load torque

[Nm]

Type	No-load torque
PLM 20 x 20	0.20
PLM 40 x 20	0.20

Load data*

- F Force [N]
 M Moment [Nm]
 I Geometric moment of inertia [cm⁴]



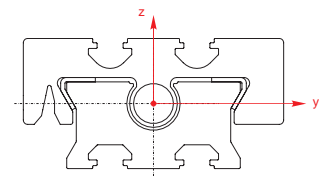
* With reference to carriage (static values, guide element resting on full surface)

Type	Fx	Fy	+Fz	-Fz	Mx	My	Mz
PLM 20 x 20	125	160	90	180	3	10	10
PLM 40 x 20	125	200	110	220	4	14	14

Geometric moment of inertia

 [cm⁴]

Type	Iy	Iz
PLM 20 x 20	0.64	0.74
PLM 40 x 20	1.32	5.01



PLM-G - Versions

Order information:

- Longer travel lengths on request
- Second carriage available on request

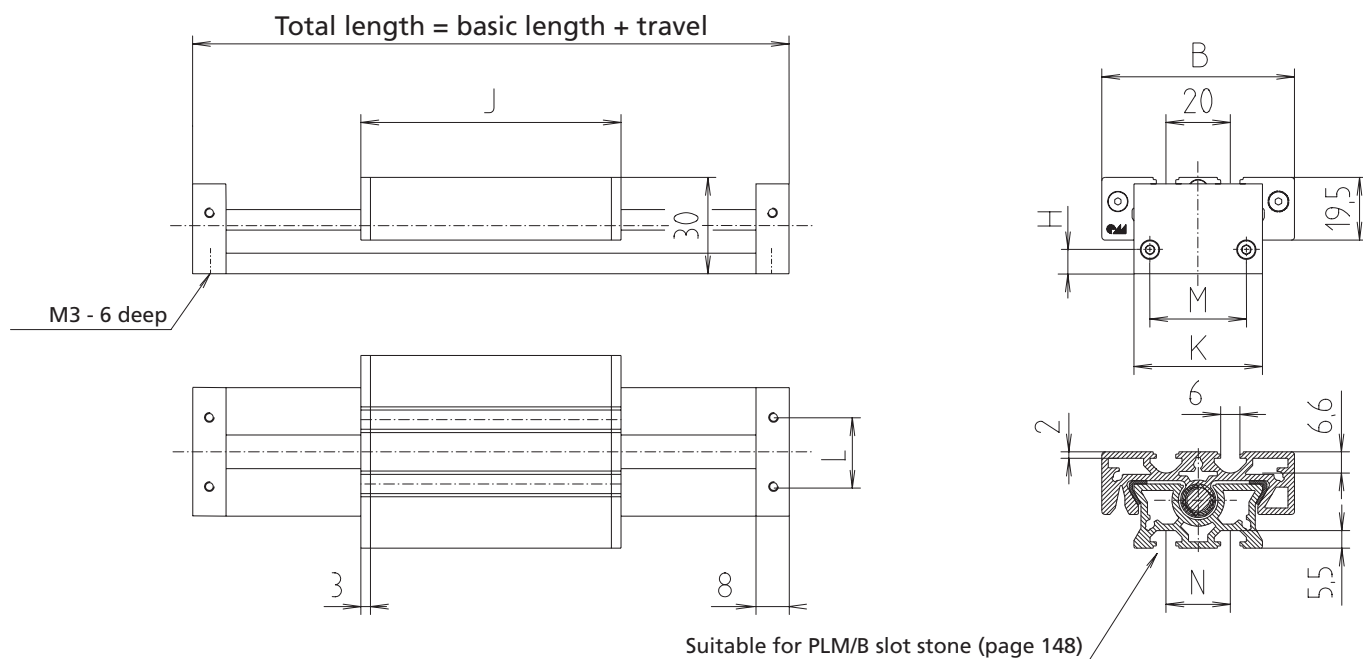
Version

■ Guide



Code No.	Type	Basic length	B	H	J	K	L	M	N
MKA2020AA	20	77	40	7.5	61	20	0	10	0
MKA4020AA	40 x 20	97	60	7.5	81	40	20	30	20

----- Total length = basic length + travel [mm]



[mm]

Max. travel	Mass [kg]	
	Basic length	per 100 mm travel
2935	0.09	0.03
2915	0.19	0.07

PLM - Versions

Order information:

- Longer travel lengths on request

Version

- Right or lefthand thread actuator



Code No.	Type	Screw	Basic length	B	D1	D2	J	K	L1	L2	N
FP_2020_A	20 x 20	M8 x 1	121	40	5	5	61	20	21	21	0
FP_4020_A	40 x 20	M8 x 1	141	60	5	5	81	40	21	21	20

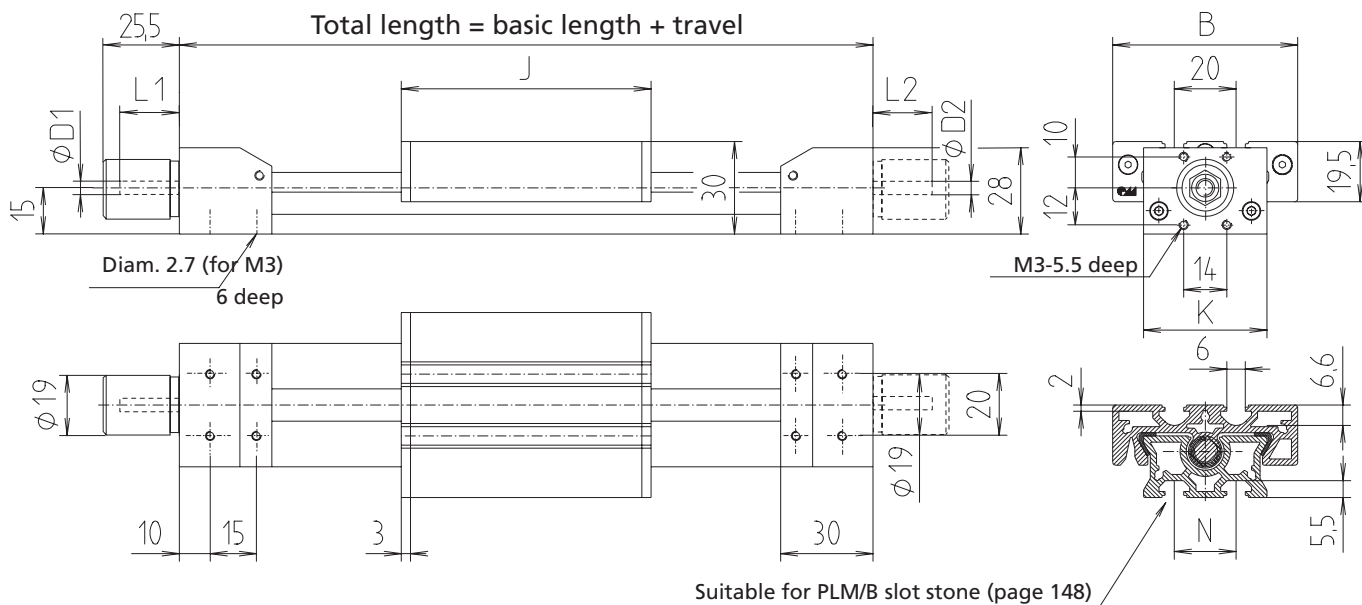
----- Total length = basic length + travel [mm]

Drive shafts:

- T = 1 drive shaft
- U = 2 drive shafts

Version:

- A = righthand thread
- H = lefthand thread



[mm]

Max. travel	Basic length	Mass [kg]	
		per 100 mm travel	
855	0.15	0.06	
855	0.27	0.10	

PLM - Versions

Order information:

- Please specify total travel when placing an order
- Longer travel lengths on request

Version

- Right and lefthand thread actuator

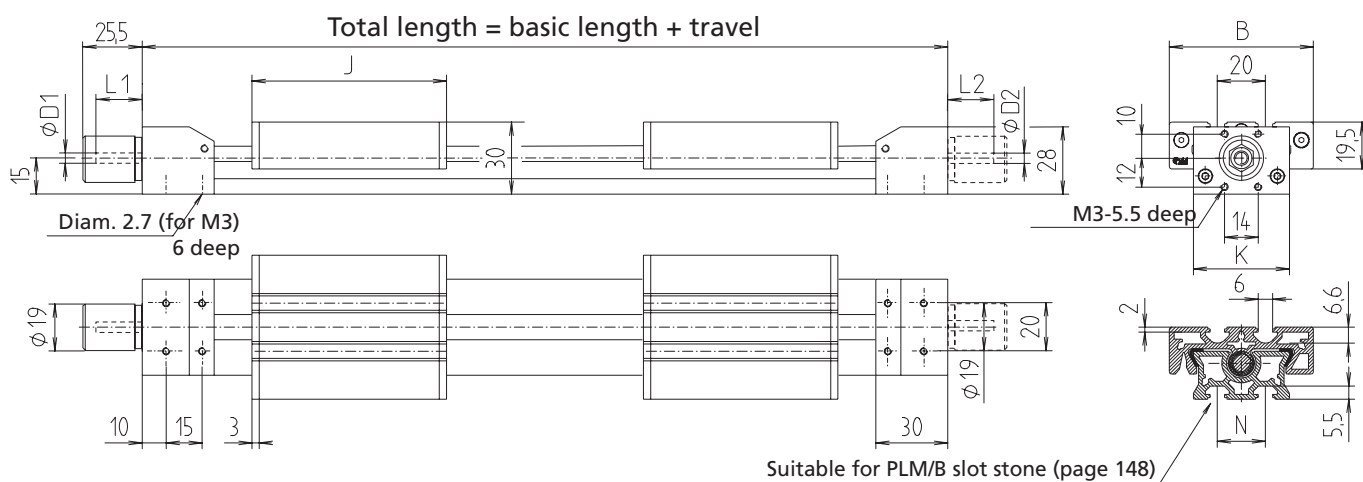


Code No.	Type	Screw	Basic length	B	D1	D2	J	K	L1	L2	N
FPC2020_A	20 x 20	M8 x 1	182	40	5	5	61	20	21	21	0
FPC4020_A	40 x 20	M8 x 1	222	60	5	6	81	40	21	21	20

----- Total length = basic length + travel [mm]

Version:

- S = 1 drive shaft at lefthand thread end
- T = 1 drive shaft at righthand thread end
- U = 2 drive shafts



[mm]

Max. travel	Basic length	Mass [kg]	
		per 100 mm travel	
795	0.32	0.05	
755	0.41	0.09	

PLM - Versions

Order information:

- Please specify total travel when placing an order
- Longer travel lengths on request

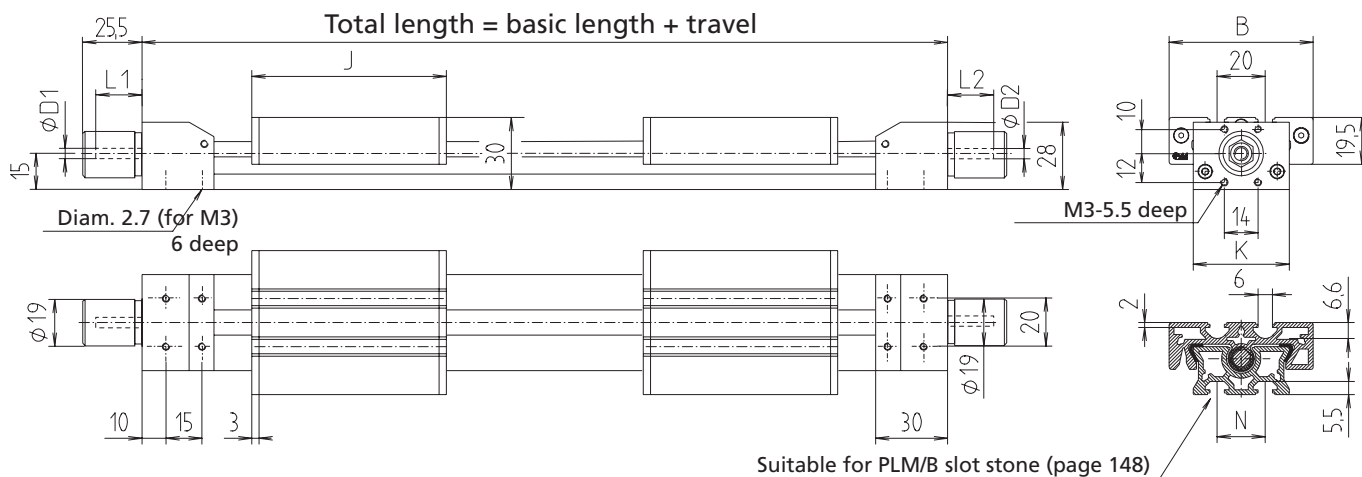
Version

■ *Split screw actuator*



Code No.	Type	Screw	Basic length	B	D1	D2	J	K	L1	L2	N
FPD2020UA	20 x 20	M8 x 1	182	40	5	5	61	20	21	21	0
FPD4020UA	40 x 20	M8 x 1	222	60	5	6	81	40	21	21	20

----- Total length = basic length + travel [mm]



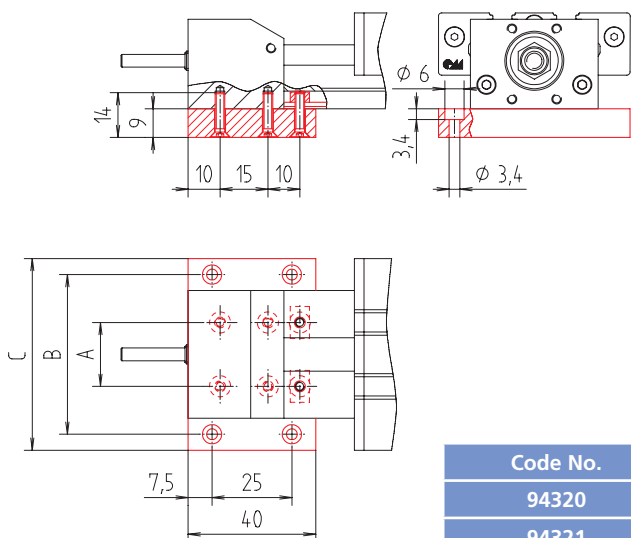
[mm]

Max. travel	Mass [kg]	
	Basic length	per 100 mm travel
795	0.32	0.05
755	0.41	0.09

Fixing plate

- Incl. fastenings
- Freewheel for limit switch holder

Material: AlMgSi, black anodised



Code No.	Type	A	B	C
94320	PLM 20 x 20	–	30	40
94321	PLM 40 x 20	20	50	60

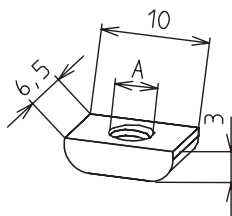
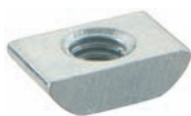
[mm]

Slot stones

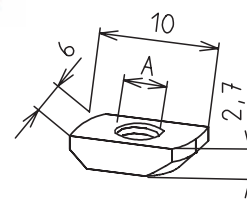
- Slot stones can be inserted and positioned on the guide profile and carriage

Material: Galvanised steel

Slot stone -PLM-
can be slid into the slot



Slot stone -B-
can be swivelled into the slot



Code No.	Type	A	Pack of
94319	-PLM-	M 3	1
94318	-PLM-	M 4	1
94317	-PLM-	M 5	1
E00017CEH	-B-	M 3	10
E00058CEH	-B-	M 4	10

[mm]



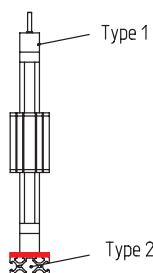
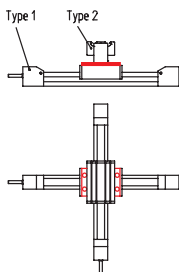
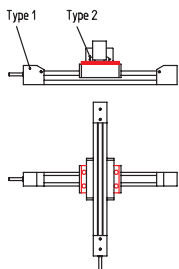
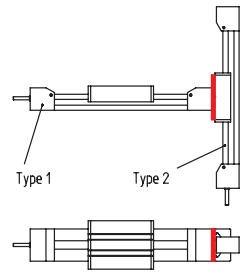
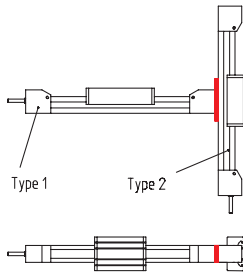
PLM - Fixing

Connecting plate



- Simple connection of 2-axis systems
- Incl. fastenings
- Thickness of connecting plates: 4 mm

Material: AlMgSi, black anodised
Steel parts galvanised



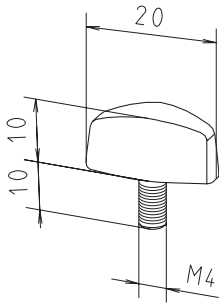
Code No.	Version	Type 1	Type 2
94331	Bearing element on carriage	PLM 20 x 20	PLM 20 x 20
94330		PLM 40 x 20	PLM 20 x 20
94334		PLM 40 x 20	PLM 40 x 20
94333	Bearing element on guide profile	PLM 20 x 20	PLM 20 x 20
94332		PLM 40 x 20	PLM 20 x 20
94335		PLM 40 x 20	PLM 40 x 20
94340	Carriage on carriage	PLM 20 x 20	PLM 20 x 20
94344		PLM 40 x 20	PLM 20 x 20
94342		PLM 40 x 20	PLM 40 x 20
94341	Carriage on guide profile	PLM 20 x 20	PLM 20 x 20
94345		PLM 40 x 20	PLM 20 x 20
94343		PLM 40 x 20	PLM 40 x 20
94350	Bearing element on guide profile	PLM 20 x 20	F-20 x 20
94351		PLM 20 x 20	F-40 x 20
94352		PLM 40 x 20	F-40 x 20

PLM – Fixing/Drive

Wing screw

- Slide clamp for PLM 20 x 20 and 40 x 20

Material: Polyamide
Galvanised thread



Code No.	Type
90291	PLM 20 x 20/40 x 20

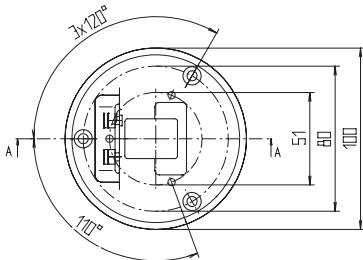
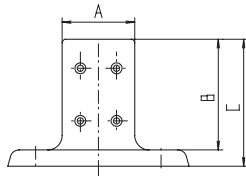
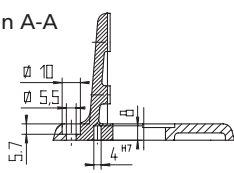
[mm]

Fixing element

- Element for vertical installation of PLM
- Fastenings for mounting on carriage is included in delivery

Material: Gk-ALSi 12 (Cu)
black powder-coating

Section A-A



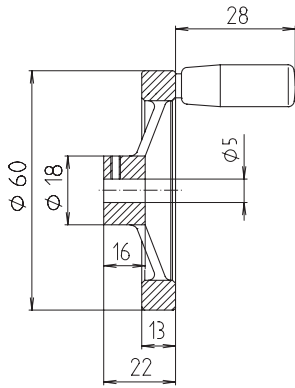
Code No.	Type	A	B	C
95520	PLM 20 x 20	40	61	70
95542	PLM 40 x 20	60	81	90

[mm]



Handwheel

Material: Aluminium die casting
Wheel body, plastic-coated

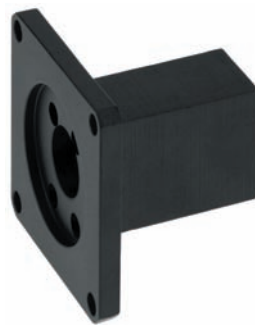
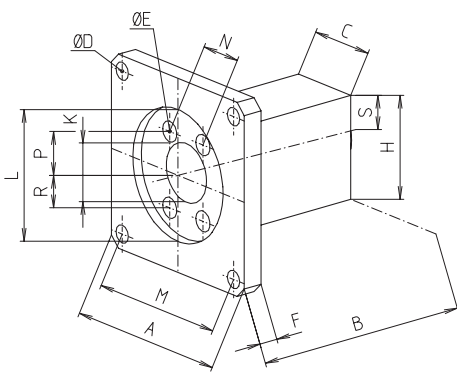


Code No.	Type
909200	PLM 20/40 x 20

Motor adaptor/coupling

- Motor adaptor for PD 42/56 stepper motor (see chapter "Controls and Motors")

Material: Aluminium, black anodised
Galvanised screws



Code No.	Type/motor	A	B	C	D	E	F	H	K	L	M	N	P	R	S
Motor adaptor															
91462	PLM/PD42	41	55.5	22	3.5	3.5/6	6	30	17	22 ^{H7/3} deep	31	14	10	12	14
91472	PLM/PD56	56	52	22	5.2	3.5/6	6	30	17	38, 1/3 deep	47	14	10	12	14
Coupling															
9107140505	For motor PD42, diam. 5/diam. 5														
9107140506	For motor PD56, diam. 5/diam. 6.3														

PLM – Position determination

Positioning indicator



Installation position:
horizontal



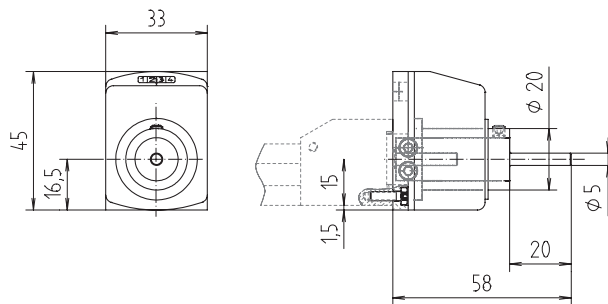
Installation position:
vertical

- Max ambient temperature +80°C
- Figure height 6 mm
- Reading accuracy ± 0.1 mm

Material: Housing made of polyamide 6
Orange RAL 2004
Steel parts galvanised

Scope of delivery: Positioning indicator, clamping ring, shaft extension and fastenings

Note: "rising" and "falling" versions refer to the clockwise rotation of the drive shaft.



Code No.	Type	Version	Installation position
9101000	PLM 20 x 20/40 x 20	1 mm rising	Horizontal
9101010		1 mm falling	Horizontal
9101020		1 mm rising	Vertical
9101030		1 mm falling	Vertical

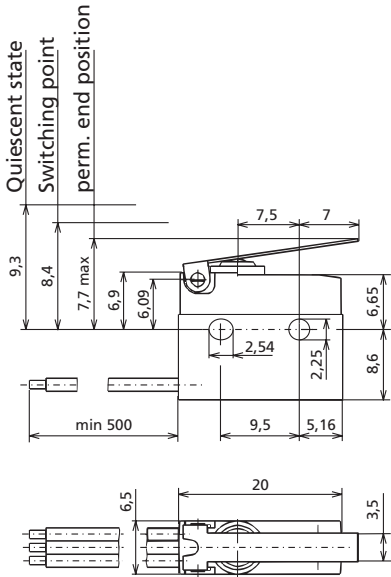


PLM – Position determination

Mechanical limit switch

- Single-pole changeover contact
- Compact design

Material: Housing, thermoplastic



Max. voltage	24 V (12 V)
Max. switching current	3 A (6 A)
Mechanical lifetime	1 x 10 ⁶ switching cycles
Protection class	IP 67
Ambient temperature	-40°C to +85°C
Connecting leads	0.75 mm ² , encapsulated in the switch

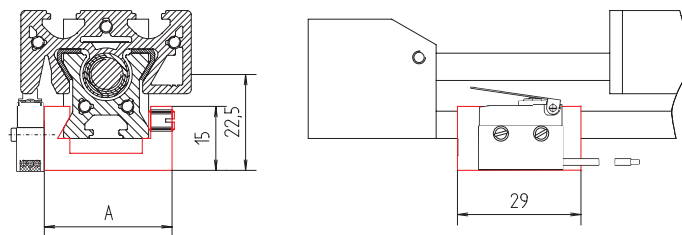
Code No.	Version
91923	PLM

Limit switch holder

- Holder for guide profile
- Can be moved and fixed axially

Material: AlMgSi, black anodised
Steel parts galvanised

Note: The Order No. does not include the limit switch!



Code No.	Type	A
92940	PLM 20 x 20	30
92941	PLM 40 x 20	50

[mm]

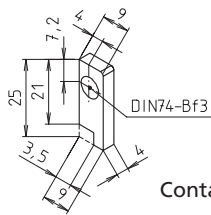
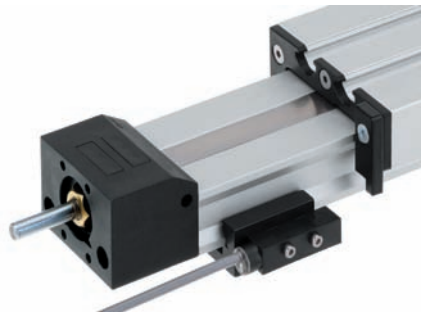


Inductive limit switch

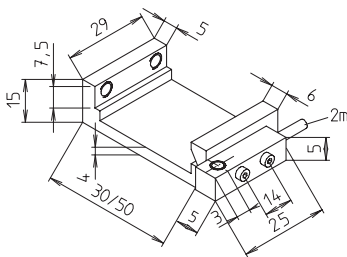
- The holder can be moved along the guide profile and fixed

Material: Holder and contact plate made of black anodised aluminium
Galvanised fastenings

Scope of delivery: 1 limit switch with complete holder, contact plate and fastenings



Contact plate



Operating distance	2 mm
Voltage range:	10/-30 V DC
Current consumption:	< 18 mA
Max. switching frequency:	5 khz
Output:	PNP NC contact
Ambient temperature:	-25°C to +75°C

Code No.	Type	Version
92812	PLM 20 x 20	Right
92822	PLM 20 x 20	Left
928142	PLM 40 x 20	Right
928242	PLM 40 x 20	Left

