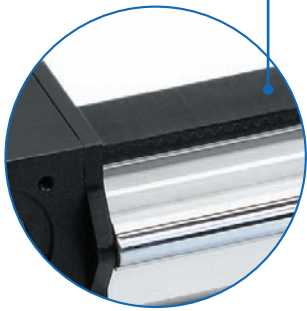


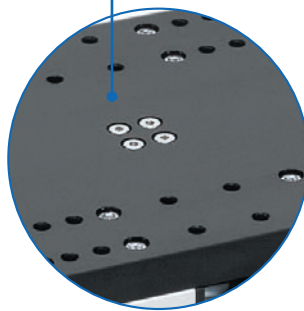
# Roller guide actuators/guides - LM/LMZ

Robust linear actuator that takes high moments and forces



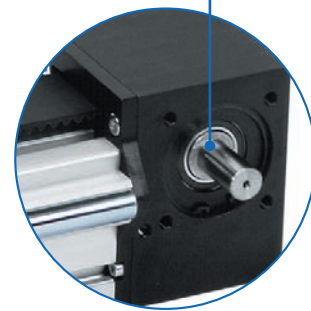
## Wide timing-belt

- ✓ Transmission of large axial forces



## Large fixing plate

- ✓ Simple connection of attachments
- ✓ Enables high moments



## Configuration of drive shaft

- ✓ Freely configurable acc. to your requirements

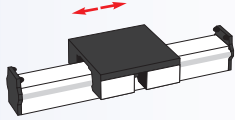
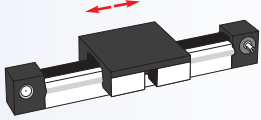
## Features:

- Simple, robust and cost-effective design
- Guide shafts diam. 20 mm
- Guide profile from BLOCAN® F-100 x 100
- Roller modules with external lubrication and wipers
- Timing-belt with a width of 50 mm

## Options:

- Second non driven carriage
- Longer stroke lengths

**LM/LMZ - Table of contents**

<b>Properties/Technical data</b>		<ul style="list-style-type: none"> <li>■ General information/operating conditions... 438</li> <li>■ Load data..... 439</li> </ul>
<b>Versions</b> (Dimensions, order numbers)		<ul style="list-style-type: none"> <li>■ LM guide unit..... 440 - 441</li> </ul>
		<ul style="list-style-type: none"> <li>■ LMZ timing-belt unit..... 442 - 443</li> </ul>
<b>Accessories</b>	<b>Fixing</b>	<ul style="list-style-type: none"> <li>■ Slot stones ..... 444</li> </ul>
	<b>Drive</b>	<ul style="list-style-type: none"> <li>■ Transmission unit..... 445</li> <li>■ Motor adaptor/couplings ..... 446 - 447</li> </ul>
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## General information/operating conditions

Design	Aluminium profile, timing-belt drive
Guide	Roller with individual modules, external
Installation position	Any position
Repeat accuracy	0.05 mm
Ambient temperature	0°C to +60°C
Protection class	IP 20

Type	Toothed belt	Pitch/ width	Eff. diam pulley [mm]	Max. input torque [Nm]	Max. speed [m/s]	Max. acceleration [m/s <sup>2</sup> ]
LMZ 100	GT 8MR	8/50	61.12	90	10	20

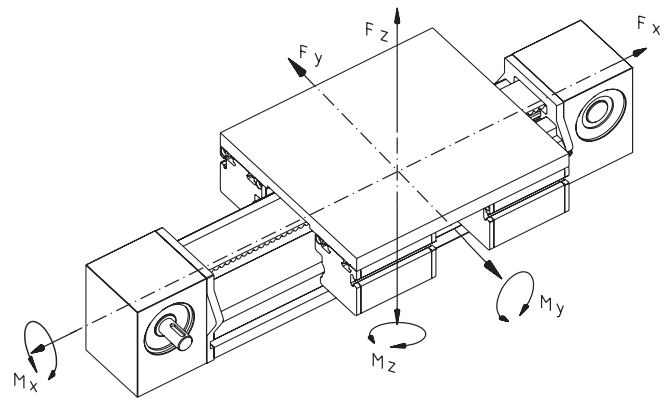
## No-load torque

[Nm]

Type	No-load torque
LMZ 100	1.20

**LM/LMZ - Technical data**
**Load data\***

- F Force [N]
- M Moment [Nm]
- I Geometric moment of inertia [cm<sup>4</sup>]



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

	$F_x^{**}$	$F_y^{***}$	$F_z^{***}$	$M_x$	$M_y$	$M_z$
<b>LM (guide roller unit)</b>						
LM 100	–	7000	7000	441	609	609
<b>LMZ with external timing-belt</b>						
LMZ 100	3400	7000	7000	441	609	609

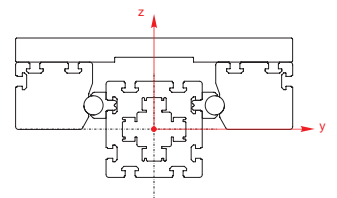
\*\* The design should incorporate appropriate safety factors for these values, depending on application

\*\*\* Force evenly distributed on the carriage and fixed

**Geometric moment of inertia**

Type	$I_y$	$I_z$
LMZ 100	304	304

[cm<sup>4</sup>]



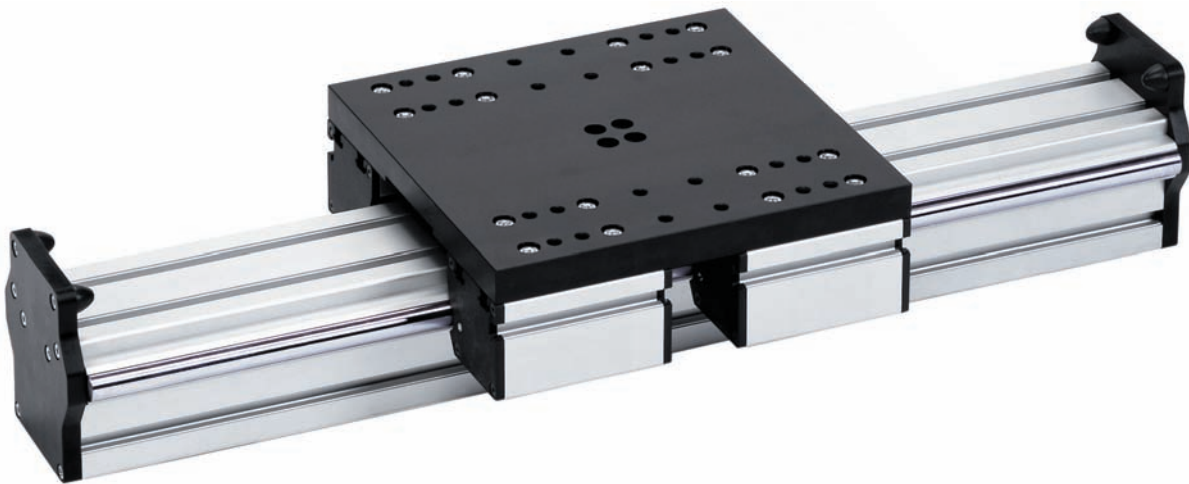
# LM - Versions

## Order information:

- Longer travel lengths on request
- Second carriage available

Version

■ Guide

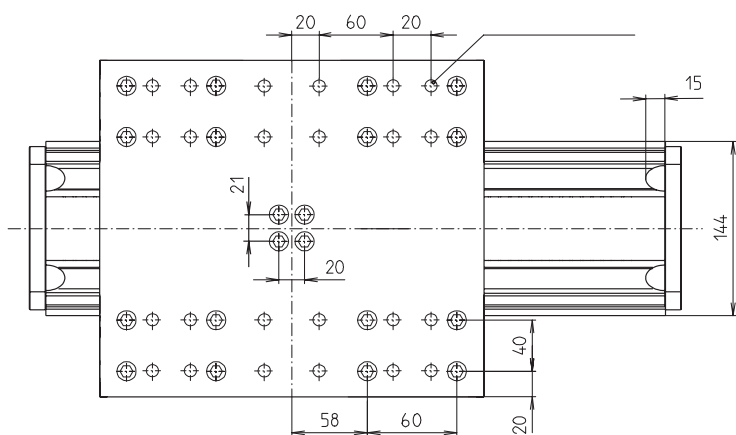
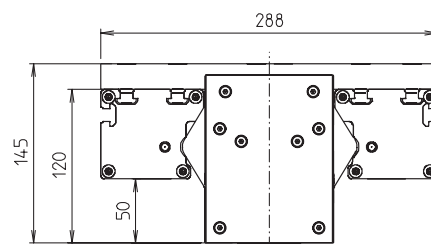
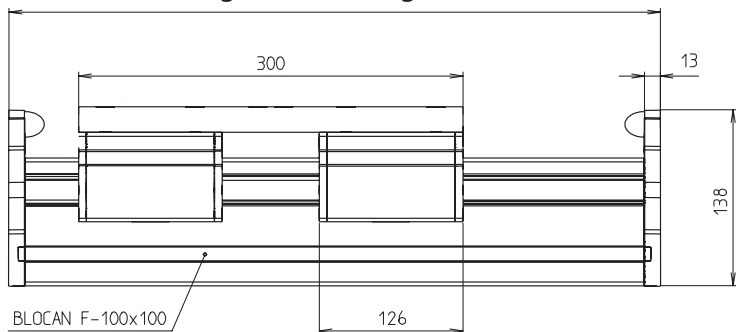


[mm]

Code No.	Type	Basic length	Max. travel	Mass [kg]	
				Basic length	per 100 mm travel
MNA1010AL	LM 100	356	5670	16.4	3.11

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

Total length = basic length + travel



# LMZ - Versions

## Order information:

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

Version

■ Timing-belt unit

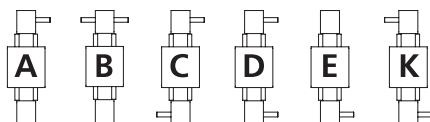


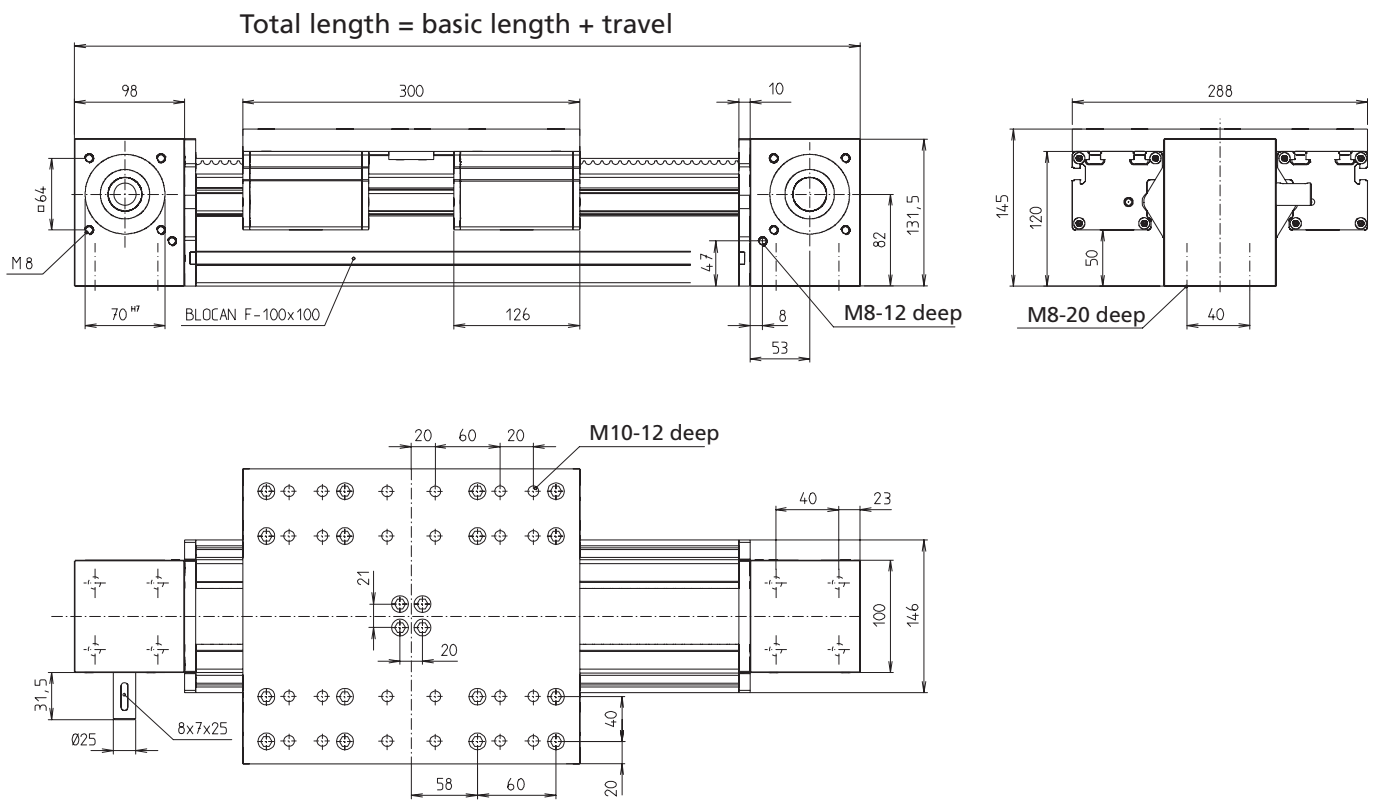
[mm]

Code No.	Type	Timing-belt	Basic length	Max. travel	Mass [kg]	
					Basic length	per 100 mm travel
FDA1010_L	LMZ 100	GT8 MR-50	516	5700	22.8	1.47

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

Configuration of drive shaft







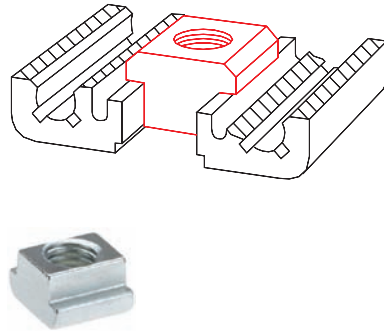
# LMZ – Fixing/Drive

## Slot stones

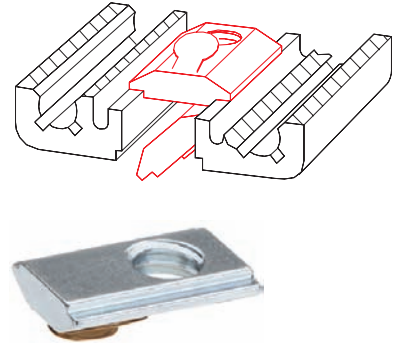
- Slot stones can be inserted and positioned at the guide profile and guide carriage

**Material:** galvanised steel

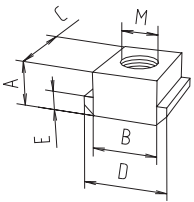
**Slot stone -N-**  
can be slid into the slot



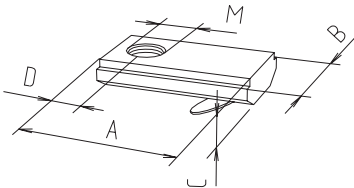
**Slot stone -K-**  
can be swivelled into the slot



### Slot stone -N-



### Slot stone -K-

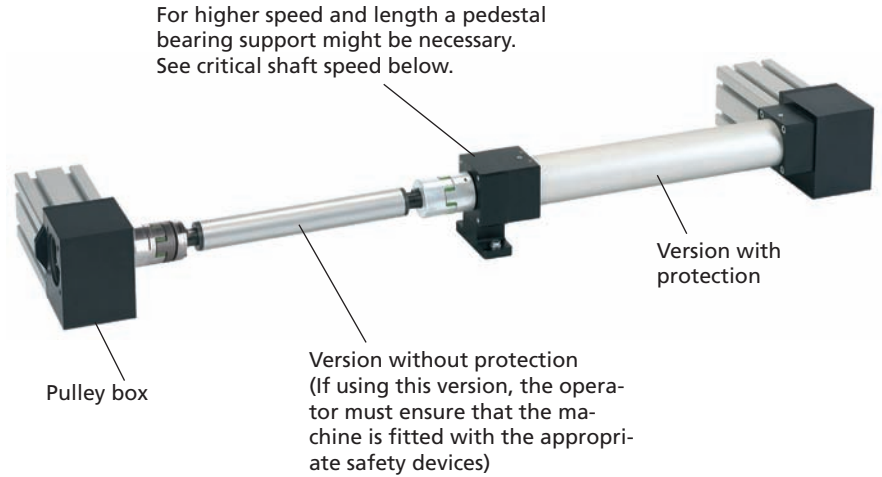
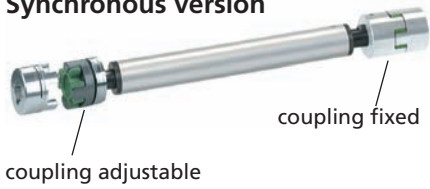


Code No.	Version	A	B	C	D	E	M	F [N]
<b>Slot stone -N-</b>								
4026207	M5	8	10	13	15	4	M5	4000
4026203	M6	8	10	13	15	4	M6	9000
4026206	M8	8	10	13	15	4	M8	9000
<b>Slot stone -K-</b>								
4006211	M5	21	12	4	7	M5	5000	5000
4006212	M6	21	12	4	7	M6	5000	5000
4006213	M8	21	12	4	7	M8	5000	5000
4016212	M6	21	14	4	7	M6	5000	5000
4016213	M8	21	14	4	7	M8	8000	8000

**Transmission unit 60-80**

- Transmission of high torques up to 120 Nm on parallel linear units
- Synchronisation of carriages via zero point alignment

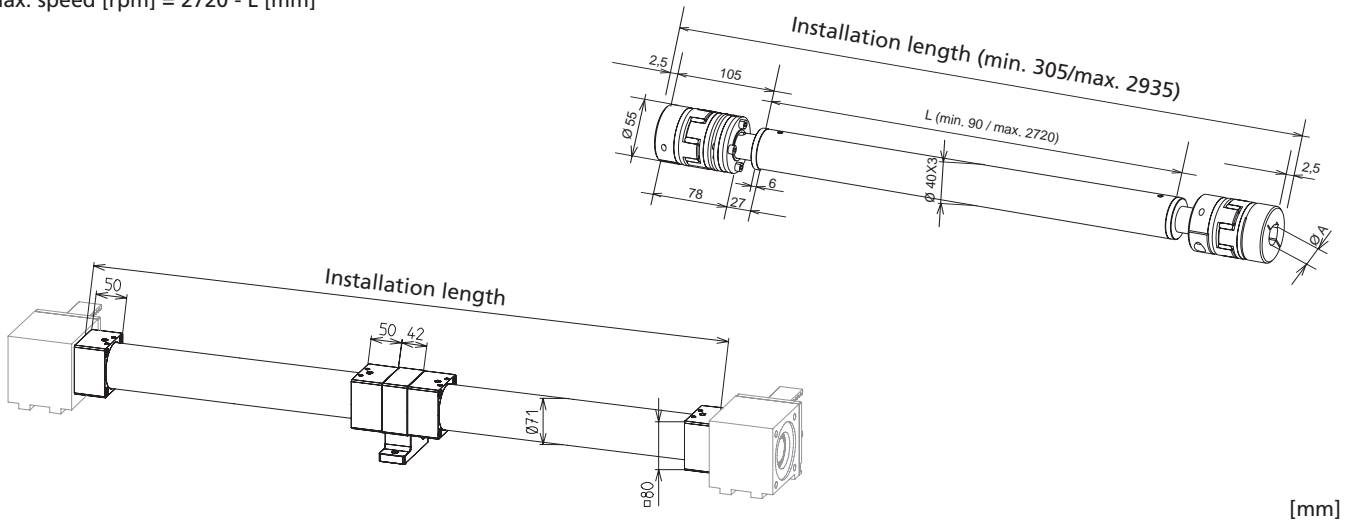
**Synchronous version**



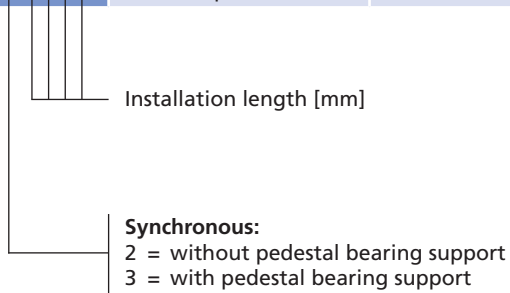
**Critical shaft speed:**

max. unsupported length [mm] = (2720 - speed [rpm]) + 2 x 107.5

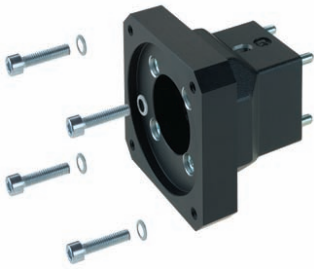
max. speed [rpm] = 2720 - L [mm]



Code No.	Version	for linear unit	A [mm]	Weight [g]		
				1000 mm	/100 mm	Pedestal bearing support
9252011	Without protection	LMZ	25	5.23	230	1700
9252111	With protection	LMZ	25	8.56	400	1700



## Selection table motor adaptor/coupling



Type	Servomotor								Three-phase motor	
	RK-AC 112	RK-AC 118	RK-AC 240		RK-AC 260	RK-AC 345	RK-AC 210/470		90/120 W	180/250 W
	Gear unit	Gear unit		Gear unit	Gear unit	Gear unit		Gear unit		
LMZ	949449	949411	949037	949309	949450	949451	949038	949318	949039	949114
	912855 1425	912855 1625	912855 1425	912855 2025	912855 2025	912855 2525	912855 1925	912855 2525	912855 1225	912855 1425

↓

Code No. Motor adaptor:  
**949411**

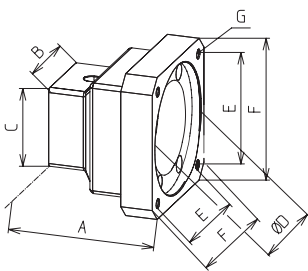
Code No. Coupling with  
specification of shaft  
diameter  
1st end = 16 mm  
2nd end = 25 mm:  
**912855 1625**

**Note:**  
For further details on motor versions,  
please refer to the chapter "Motors and  
controls"

### Motor adaptor

- Simple assembly
- Exact fit due to centering shoulders

**Material:**  
Aluminium, black anodised



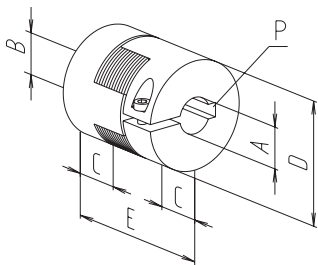
Code No.	A	B	C	D	E	F	G
949449	102	80	80	40	53	70	Ø 5.5
949411	89	80	80	60	53	70	M5
949037	86	80	80	80	70.7	90	M6
949309	102	80	80	80	70.7	90	M6
949450	96	80	80	60	70.7	90	Ø 6.6
949451	111	80	80	80	91.9	115	Ø 9
949038	96	80	80	95	81.3	115	M8
949318	112.5	80	80	110	91.9	115	M8
949039	86	80	80	50	65	80	M5
949114	86	80	80	80	100	Ø 120	Ø 6.6



### Coupling

- Shaft connection without backlash
- Easy plug-in assembly

**Material:** Aluminium hub, polyurethane gear ring



[mm]

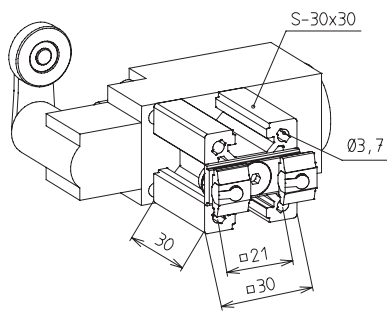
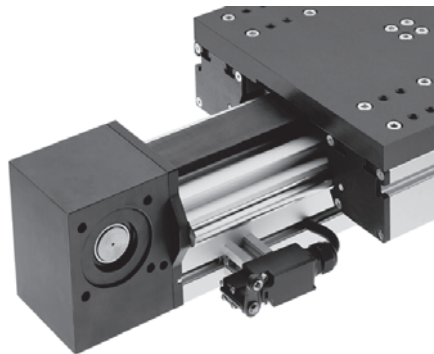
Code No.	Ø A	Ø B	C	D	E	P	Torque [Nm]	
							with feather key	without feather key
9128559525	9.5	25	30	55	78	-/8 x 7	60	35
9128551225	12	25	30	55	78	4 x 4/8 x 7	60	35
9128551425	14	25	30	55	78	5 x 5/8 x 7	60	35
9128551625	16	25	30	55	78	5 x 5/8 x 7	60	35
9128551925	19	25	30	55	78	6 x 6/8 x 7	60	35
9128552025	20	25	30	55	78	6 x 6/8 x 7	60	35
9128552525	25	25	30	55	78	8 x 7/8 x 7	60	35

# LMZ– Position determination

## Bracket for mechanical limit switch

- Limit switch with angle lever
- Compact design

**Material:** limit switch housing made of thermoplastic, self-extinguishing, bracket made of aluminium profile



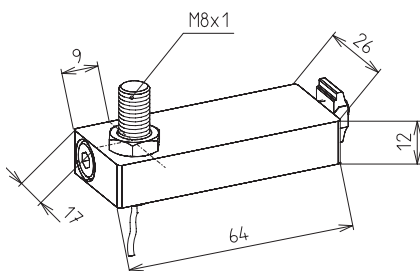
Max. voltage	230 V AC
Max. switching current	4 A
Max. starting current	10 A
Operating cycles	Max. 5,000/h
Mechanical lifetime	20 x 10 <sup>6</sup> switching cycles
Axis lever adjustment	locking by 360°
Protection class	IP 67
Ambient temperature	-30°C to +80°C

Code No.	Type
92710	Limit switch NC/NO with bracket

## Bracket for inductive limit switch

- Fixing in the profile slot of the guide profile
- Function indicator
- Maintenance-free

**Material:** Limit switch housing made of stainless steel, bracket made of aluminium



Voltage	10-30 V DC
Max. switching current	200 mA
Max. starting current	200 mA
Operating frequency	700 Hz (DIN EN 50010)
Mechanical lifetime	independent of operating cycles
Operating distance	1.5 mm (steel), 0.75 (aluminium)
Protection class	IP 65
Ambient temperature	-25°C to +70°C

Code No.	Type
92910	Limit switch NC, with bracket
92920	Limit switch NO, with bracket

