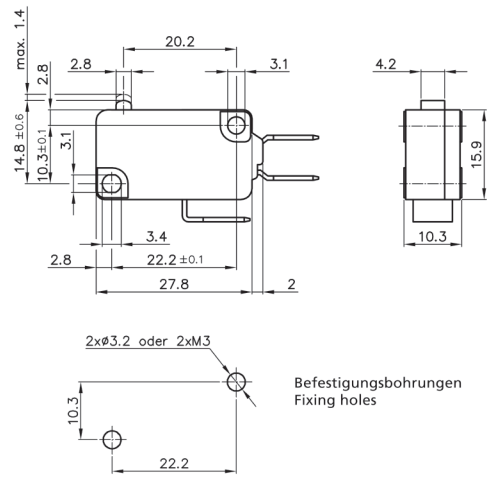


# 1 MAB1 Plunger



## Leaf spring mechanism

- Micro switches design A acc. to DIN 41635
- functional final inspection and testing
- solid design
- high-quality materials
- very exact switching position
- special version 3.5N fulfils glow wire testing GWT750°C/2s acc. DIN EN6335-1 (household appliance standard)

Micro switches, also known as snap action switches, are primarily used as limit switches, but are also suitable for many other industry applications. The actual switching speed is completely independent from the speed of operation. ISO 9001:2000 approved production together with 100% functional final inspection and testing guarantee reliable operation. These products reflect our long standing experience in design and production of high quality switches.

### MECHANICAL DATA

Mech. lifetime	2 000 000 actuations
Special version 3.5N	10 000 000 actuations
Electrical lifetime	min. 50 000 actuations
depending on switching capacity	
Movement differential	≤ 0,4mm
Pretravel	≤ 1,4mm
Overtravel	0,75 - 1,5mm
Operating position	14,8 ±0,6mm
Contact opening	<3mm (μ)

### OTHER DATA

Approvals	ENEC-VDE, cULus
-----------	-----------------

### MATERIAL

Housing	PBT/PET (UL94-V0)
Cover	PBT/PET (UL94-V0)
Actuator	Phenolic (UL94-V0)
Terminals	CuZn Ag plated
Contacts	AgNi
Contact spring	CuBe

# MAB1 Plunger

## 2 RATING

	cULus		Code: MAB1	01	3	4	5	6	7	8	9
1(0,3)A 250VAC	1A 125VAC		MAB1	01	3	4	5	6	7	8	9
5(2)A 250VAC	5A 125VAC		MAB1	02	3	4	5	6	7	8	9
10(3)A 250VAC	10A 125VAC		MAB1	03	3	4	5	6	7	8	9
16(4)A 250VAC	16A 125VAC		MAB1	04	3	4	5	6	7	8	9

## 3 OPERATING FORCE

0,8N		Code: MAB1	2	A	4	5	6	7	8	9
1,0N		Code: MAB1	2	B	4	5	6	7	8	9
1,5N		Code: MAB1	2	C	4	5	6	7	8	9
2,0N		Code: MAB1	2	D	4	5	6	7	8	9
2,5N		Code: MAB1	2	E	4	5	6	7	8	9
3,0N		Code: MAB1	2	F	4	5	6	7	8	9
3,5N		Code: MAB1	2	G	4	5	6	7	8	9
4,0N		Code: MAB1	2	H	4	5	6	7	8	9

## RECOMMENDED COMBINATIONS

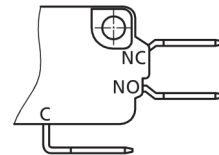
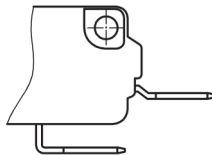
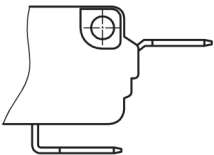
	0,8N	1,0N	1,5N	2,0N	2,5N	3,0N	3,5N	4,0N
1(0,3)A 250VAC	■	■	■	■	■	■		■
5(2)A 250VAC	■	■	■	■	■	■		■
10(3)A 250VAC		■	■	■	■	■		■
16(4)A 250VAC			■	■	■	■	■	■

## 4 AMBIENT TEMPERATURE

-40...+105°C		Code: MAB1	2	3	01	5	6	7	8	9
-40...+125°C		Code: MAB1	2	3	02	5	6	7	8	9

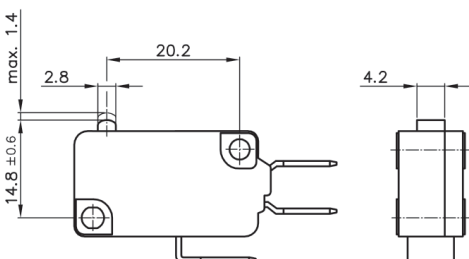
## 5 CONTACT ARRANGEMENT

Normally closed		Code: MAB1	2	3	4	A	6	7	8	9
Normally open		Code: MAB1	2	3	4	B	6	7	8	9
Change-over		Code: MAB1	2	3	4	C	6	7	8	9



## 6 ACTUATOR

Plunger	Code: MAB1	2	3	4	5	01	7	8	9
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## 7 FIXING POSITION

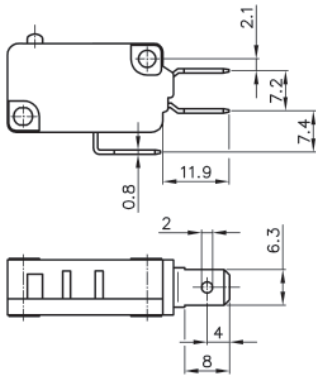
No additional actuator	Code: MAB1	2	3	4	5	6	X	8	9
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# MAB1 Plunger

## 8 TERMINALS

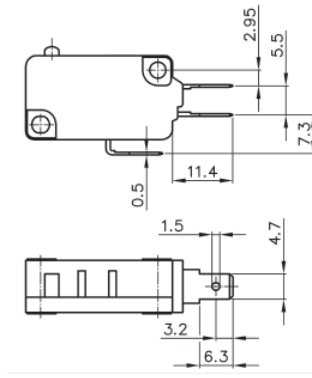
0,8x6,3mm / Plug connection

Code: MAB1 2 3 4 5 6 7 01 9



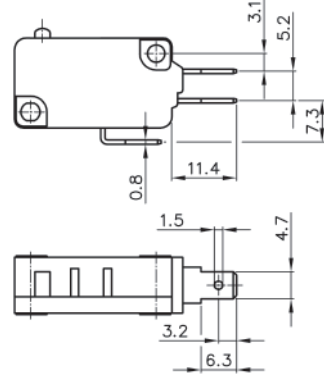
0,5x4,7mm / Plug connection

Code: MAB1 2 3 4 5 6 7 02 9



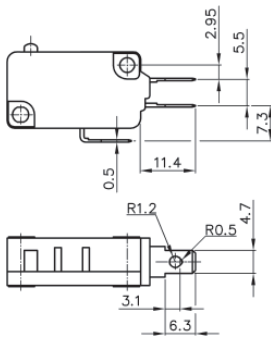
0,8x4,7mm / Plug connection

Code: MAB1 2 3 4 5 6 7 03 9



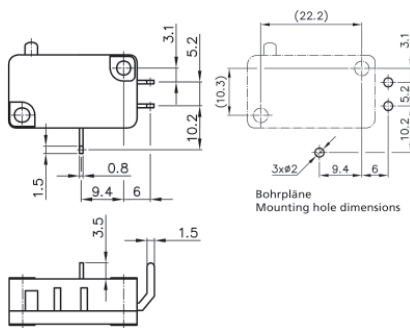
Plug/solder terminal

Code: MAB1 2 3 4 5 6 7 04 9



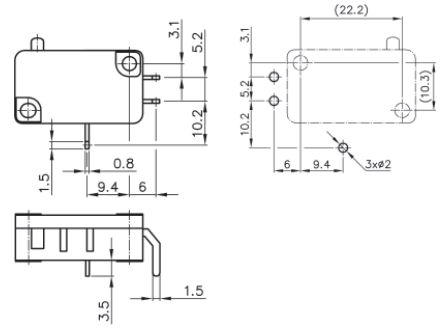
PCB terminal left

Code: MAB1 2 3 4 5 6 7 05 9



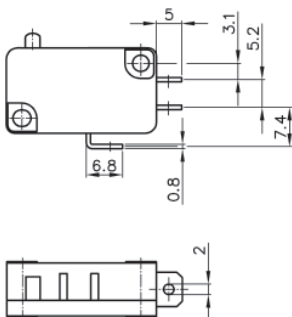
PCB terminal right

Code: MAB1 2 3 4 5 6 7 06 9



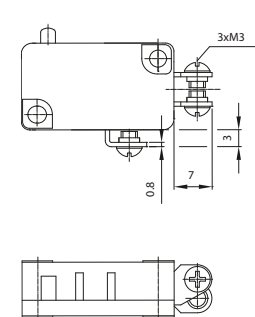
Solder terminal

Code: MAB1 2 3 4 5 6 7 07 9



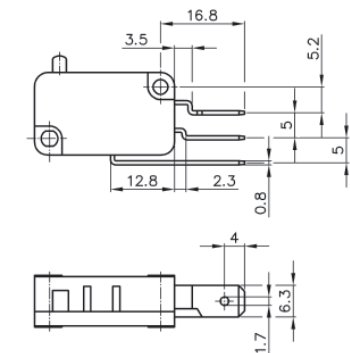
Screw terminal

Code: MAB1 2 3 4 5 6 7 08 9



Pin spacing 5

Code: MAB1 2 3 4 5 6 7 09 9



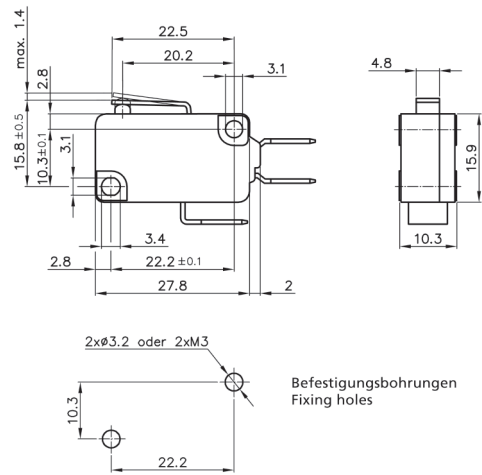
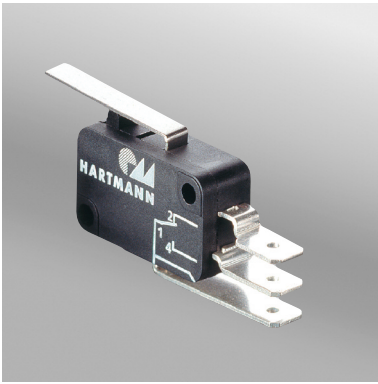
## 8 CONTACT GAP

<3mm (Standard)

Code: MAB1 2 3 4 5 6 7 8 A



# 1 MAB1 Hinge lever



## Leaf spring mechanism

- Micro switches design A acc. to DIN 41635
- functional final inspection and testing
- solid design
- high-quality materials
- very exact switching position
- special version 3.5N fulfils glow wire testing GWT750°C/2s acc. DIN EN6335-1 (household appliance standard)

Micro switches, also known as snap action switches, are primarily used as limit switches, but are also suitable for many other industry applications. The actual switching speed is completely independent from the speed of operation. ISO 9001:2000 approved production together with 100% functional final inspection and testing guarantee reliable operation. These products reflect our long standing experience in design and production of high quality switches.

### MECHANICAL DATA

Mech. lifetime	2 000 000 actuations
Special version 3.5N	10 000 000 actuations
Electrical lifetime	min. 50 000 actuations
depending on switching capacity	
Movement differential	please see overview next page
Pretravel	please see overview next page
Overtravel	please see overview next page
Operating position	please see overview next page
Contact opening	<3mm (µ)

### OTHER DATA

Approvals	ENEC-VDE, cULus
-----------	-----------------

### MATERIAL

Housing	PBT/PET (UL94-V0)
Cover	PBT/PET (UL94-V0)
Actuator	Phenolic (UL94-V0)
Terminals	CuZn Ag plated
Contacts	AgNi
Contact spring	CuBe

# MAB1 Hinge lever

## 2 RATING

	cULus		Code: MAB1	01	3	4	5	6	7	8	9
1(0,3)A 250VAC	1A 125VAC		MAB1	01	3	4	5	6	7	8	9
5(2)A 250VAC	5A 125VAC		MAB1	02	3	4	5	6	7	8	9
10(3)A 250VAC	10A 125VAC		MAB1	03	3	4	5	6	7	8	9
16(4)A 250VAC	16A 125VAC		MAB1	04	3	4	5	6	7	8	9

## 3 OPERATING FORCE

0,8N		Code: MAB1	2	A	4	5	6	7	8	9
1,0N		Code: MAB1	2	B	4	5	6	7	8	9
1,5N		Code: MAB1	2	C	4	5	6	7	8	9
2,0N		Code: MAB1	2	D	4	5	6	7	8	9
2,5N		Code: MAB1	2	E	4	5	6	7	8	9
3,0N		Code: MAB1	2	F	4	5	6	7	8	9
3,5N		Code: MAB1	2	G	4	5	6	7	8	9
4,0N		Code: MAB1	2	H	4	5	6	7	8	9

## RECOMMENDED COMBINATIONS

	0,8N	1,0N	1,5N	2,0N	2,5N	3,0N	3,5N	4,0N
1(0,3)A 250VAC	■	■	■	■	■	■		■
5(2)A 250VAC	■	■	■	■	■	■		■
10(3)A 250VAC		■	■	■	■	■		■
16(4)A 250VAC			■	■	■	■	■	■

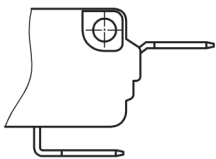
## 4 AMBIENT TEMPERATURE

-40...+105°C		Code: MAB1	2	3	01	5	6	7	8	9
-40...+125°C		Code: MAB1	2	3	02	5	6	7	8	9

## 5 CONTACT ARRANGEMENT

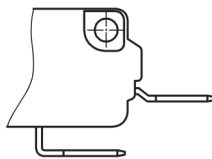
Normally closed

Code: MAB1 2 3 4 **A** 6 7 8 9



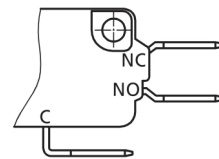
Normally open

Code: MAB1 2 3 4 **B** 6 7 8 9



Change-over

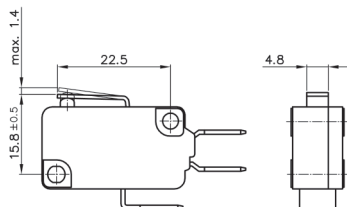
Code: MAB1 2 3 4 **C** 6 7 8 9



## 6 ACTUATOR

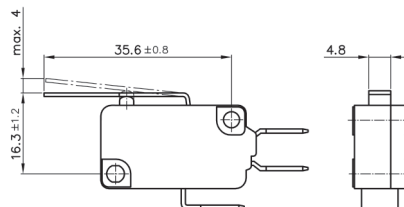
Hinge lever short

Code: MAB1 2 3 4 5 **03** 7 8 9



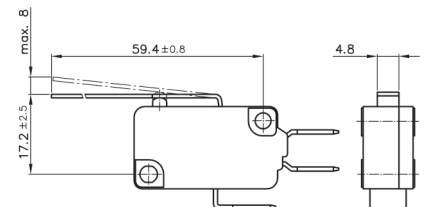
Hinge lever medium size

Code: MAB1 2 3 4 5 **04** 7 8 9



Hinge lever long

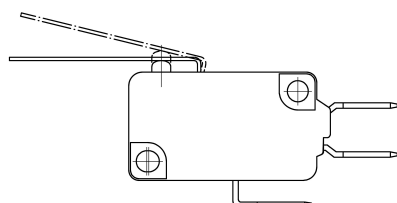
Code: MAB1 2 3 4 5 **05** 7 8 9



## 7 FIXING POSITION

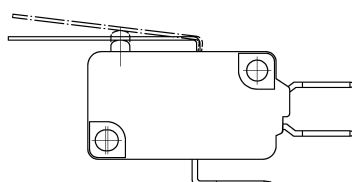
front

Code: MAB1 2 3 4 5 6 **A** 8 9



rear

Code: MAB1 2 3 4 5 6 **B** 8 9



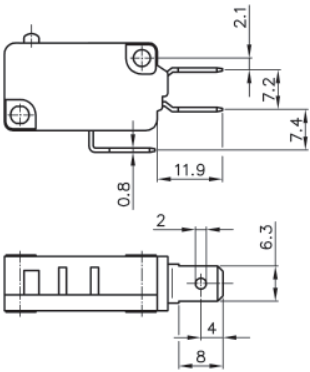
= UPON REQUEST

# MAB1 Hinge lever

## 8 TERMINALS

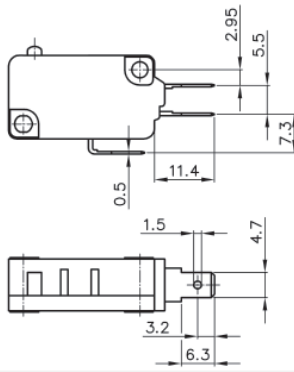
0,8x6,3mm / Plug connection

Code: MAB1 2 3 4 5 6 7 01 9



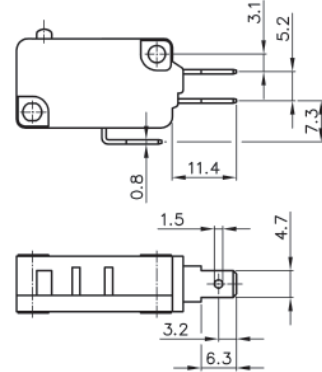
0,5x4,7mm / Plug connection

Code: MAB1 2 3 4 5 6 7 02 9



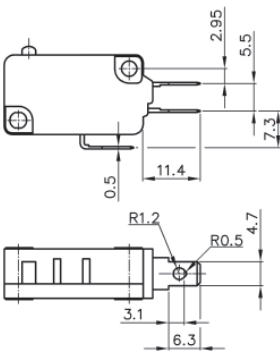
0,8x4,7mm / Plug connection

Code: MAB1 2 3 4 5 6 7 03 9



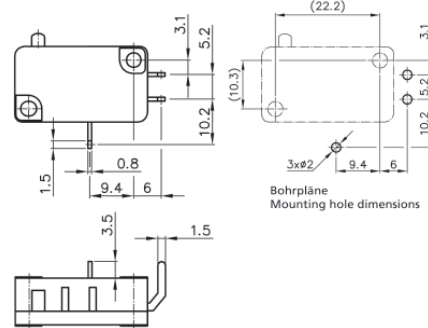
0,5x4,7mm / Plug/solder terminal

Code: MAB1 2 3 4 5 6 7 04 9



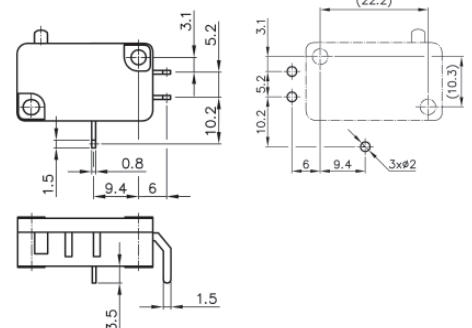
PCB terminal left

Code: MAB1 2 3 4 5 6 7 05 9



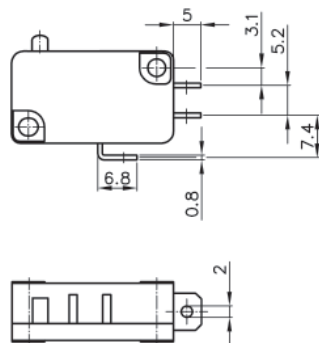
PCB terminal right

Code: MAB1 2 3 4 5 6 7 06 9



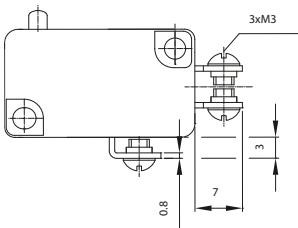
Solder terminal

Code: MAB1 2 3 4 5 6 7 07 9



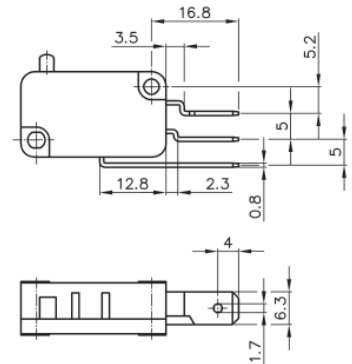
Screw terminal

Code: MAB1 2 3 4 5 6 7 08 9



Pin spacing 5

Code: MAB1 2 3 4 5 6 7 09 9



## 8 CONTACT GAP

<3mm (Standard)

Code: MAB1 2 3 4 5 6 7 8 A

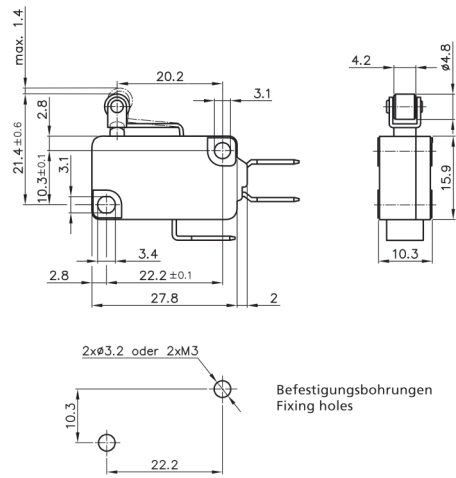
# MAB1 Hinge lever

OVERVIEW ACTUATORS / TRAVEL / FORCES

Fixing position front	Code	Actuator length		Operating force on plunger		Pretravel	Overtravel	Movement differential	Free position	Operating position
		mm	≤ N	Code	≤ N					
Hinge lever short	03	28,2	0,8	A	0,65	3,2	1,5	0,8	19,7	16,4±1
			1,0	B	0,79					
			1,5	C	1,20					
			2,0	D	1,60					
			2,5	E	2,00					
			3,0	F	2,40					
			3,5	G	2,80					
			4,0	H	3,20					
Hinge lever medium size	04	41,2	0,8	A	0,45	6,2	3,0	1,2	26	17,8±1,5
			1,0	B	0,54					
			1,5	C	0,85					
			2,0	D	1,10					
			2,5	E	1,38					
			3,0	F	1,70					
			3,5	G	1,95					
			4,0	H	2,20					
Hinge lever long	05	64,9	0,8	A	0,28	11,7	4,5	2,0	34,7	20,5±2,5
			1,0	B	0,35					
			1,5	C	0,52					
			2,0	D	0,70					
			2,5	E	0,87					
			3,0	F	1,05					
			3,5	G	1,22					
			4,0	H	1,40					
Fixing position rear	Code	mm	≤ N	Code	≤ N	≤ mm	min. mm	≤ mm	≤ mm	mm
Hinge lever short	03	22,5	0,8	A	0,80	1,4	1,0	0,5	17,7	15,8 ±0,5
			1,0	B	1,00					
			1,5	C	1,50					
			2,0	D	2,00					
			2,5	E	2,50					
			3,0	F	3,00					
			3,5	G	3,50					
			4,0	H	4,00					
Hinge lever medium size	04	35,6	0,8	A	0,36	4,0	2,0	1,0	21,5	16,3 ±1,2
			1,0	B	0,45					
			1,5	C	0,70					
			2,0	D	0,90					
			2,5	E	1,15					
			3,0	F	1,30					
			3,5	G	1,60					
			4,0	H	1,80					
Hinge lever long	05	59,4	0,8	A	0,20	8,0	4,0	2,0	27,7	17,2 ±2,5
			1,0	B	0,25					
			1,5	C	0,37					
			2,0	D	0,50					
			2,5	E	0,62					
			3,0	F	0,75					
			3,5	G	0,88					
			4,0	H	1,00					



# 1 MAB1 Roller lever



## Leaf spring mechanism

- Micro switches design A acc. to DIN 41635
- functional final inspection and testing
- solid design
- high-quality materials
- very exact switching position
- special version 3.5N fulfils glow wire testing GWT750°C/2s acc. DIN EN6335-1 (household appliance standard)

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### MECHANICAL DATA

Mech. lifetime	2 000 000 actuations
Special version 3.5N	10 000 000 actuations
Electrical lifetime	min. 50 000 actuations
depending on switching capacity	
Movement differential	please see overview next page
Pretravel	please see overview next page
Overtravel	please see overview next page
Operating position	please see overview next page
Contact opening	<3mm

### OTHER DATA

Approvals	ENEC-VDE, cULus
-----------	-----------------

### MATERIAL

Housing	PBT/PET (UL94-V0)
Cover	PBT/PET (UL94-V0)
Actuator	Phenolic (UL94-V0)
Terminals	CuZn Ag plated
Contacts	AgNi
Contact spring	CuBe

# MAB1 Roller lever

## 2 RATING

	cULus		Code: MAB1	01	3	4	5	6	7	8	9
1(0,3)A 250VAC	1A 125VAC		Code: MAB1	02	3	4	5	6	7	8	9
5(2)A 250VAC	5A 125VAC		Code: MAB1	03	3	4	5	6	7	8	9
10(3)A 250VAC	10A 125VAC		Code: MAB1	04	3	4	5	6	7	8	9
16(4)A 250VAC	16A 125VAC		Code: MAB1	04	3	4	5	6	7	8	9

## 3 OPERATING FORCE

			Code: MAB1	2	A	4	5	6	7	8	9
0,8N		Code: MAB1	2	B	4	5	6	7	8	9	
1,0N		Code: MAB1	2	C	4	5	6	7	8	9	
1,5N		Code: MAB1	2	D	4	5	6	7	8	9	
2,0N		Code: MAB1	2	E	4	5	6	7	8	9	
2,5N		Code: MAB1	2	F	4	5	6	7	8	9	
3,0N		Code: MAB1	2	G	4	5	6	7	8	9	
3,5N		Code: MAB1	2	H	4	5	6	7	8	9	
4,0N		Code: MAB1	2	H	4	5	6	7	8	9	

## RECOMMENDED COMBINATIONS

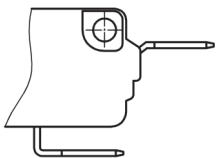
	0,8N	1,0N	1,5N	2,0N	2,5N	3,0N	3,5N	4,0N
1(0,3)A 250VAC	■	■	■	■	■	■	■	■
5(2)A 250VAC	■	■	■	■	■	■	■	■
10(3)A 250VAC		■	■	■	■	■	■	■
16(4)A 250VAC			■	■	■	■	■	■

## 4 AMBIENT TEMPERATURE

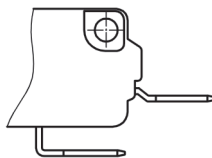
-40...+105°C		Code: MAB1	2	3	01	5	6	7	8	9
-40...+125°C		Code: MAB1	2	3	02	5	6	7	8	9

## 5 CONTACT ARRANGEMENT

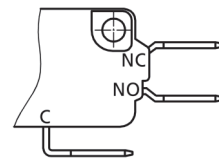
Normally closed  
 Code: MAB1 2 3 4 A 6 7 8 9



Normally open  
 Code: MAB1 2 3 4 B 6 7 8 9

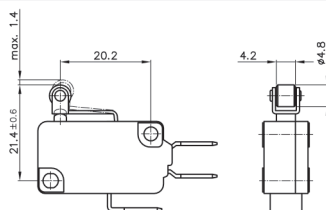


Change-over  
 Code: MAB1 2 3 4 C 6 7 8 9

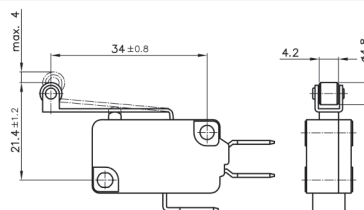


## 6 ACTUATOR

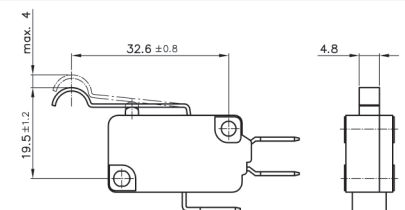
Roller lever short  
 Code: MAB1 2 3 4 5 06 7 8 9



Roller lever long  
 Code: MAB1 2 3 4 5 07 7 8 9

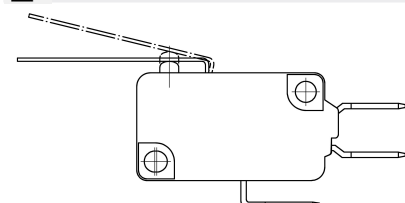


Simulated roller  
 Code: MAB1 2 3 4 5 08 7 8 9

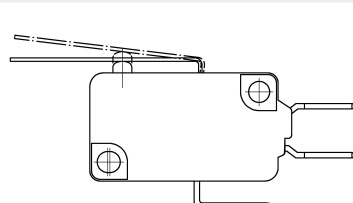


## 7 FIXING POSITION

front  
 Code: MAB1 2 3 4 5 6 A 8 9



rear  
 Code: MAB1 2 3 4 5 6 B 8 9

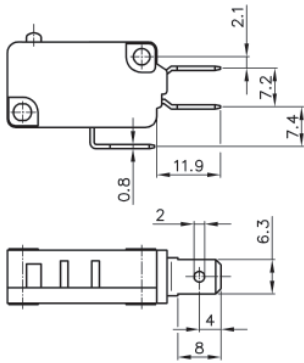


# MAB1 Roller lever

## 8 TERMINALS

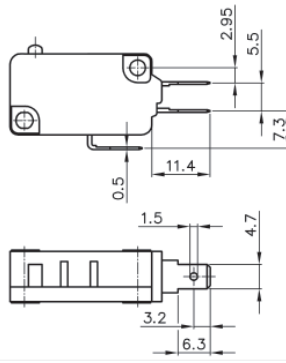
0,8x6,3mm / Plug connection

Code: MAB1 2 3 4 5 6 7 01 9



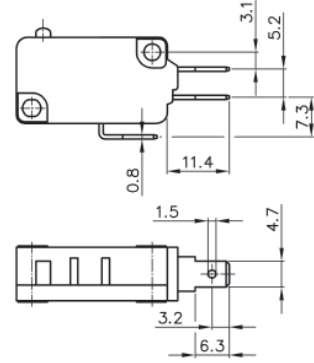
0,5x4,7mm / Plug connection

Code: MAB1 2 3 4 5 6 7 02 9



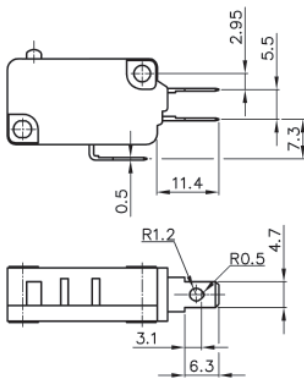
0,8x4,7mm / Plug connection

Code: MAB1 2 3 4 5 6 7 03 9



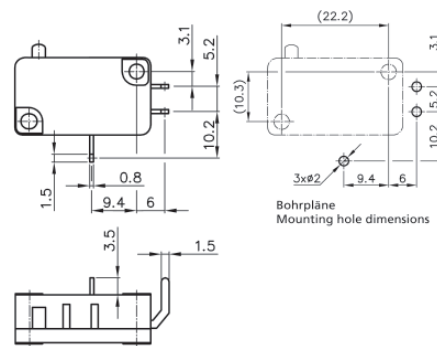
0,5x4,7mm / Plug/solder terminal

Code: MAB1 2 3 4 5 6 7 04 9



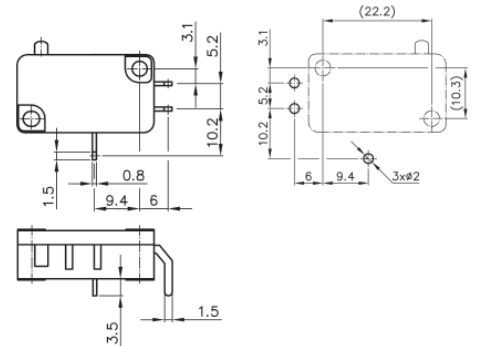
LP-Anschluss links / PCB terminal left

Code: MAB1 2 3 4 5 6 7 05 9



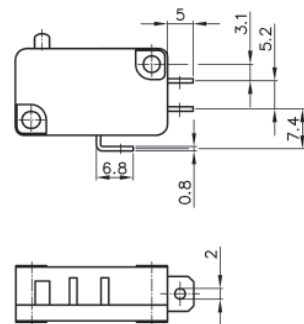
LP-Anschluss rechts / PCB terminal right

Code: MAB1 2 3 4 5 6 7 06 9



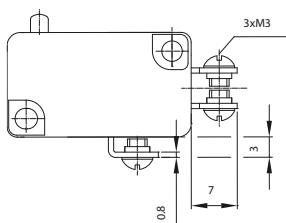
Solder terminal

Code: MAB1 2 3 4 5 6 7 07 9



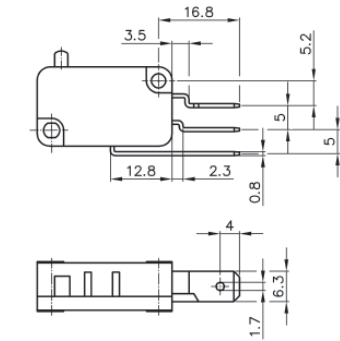
Screw terminal

Code: MAB1 2 3 4 5 6 7 08 9



Pin spacing 5

Code: MAB1 2 3 4 5 6 7 09 9



## 8 CONTACT GAP

<3mm (Standard)

Code: MAB1 2 3 4 5 6 7 8 A

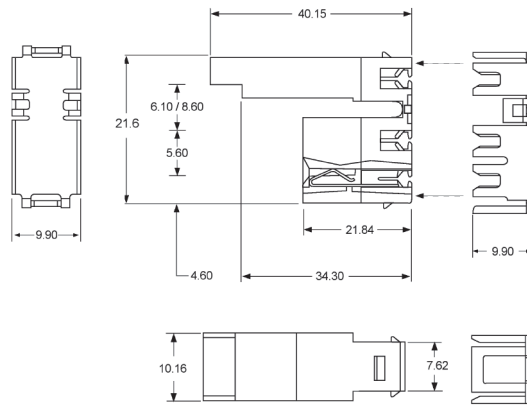
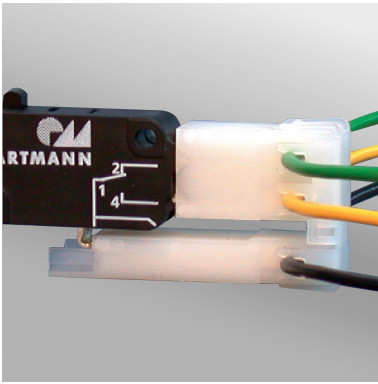
# MAB1 Roller lever

## OVERVIEW ACTUATORS / TRAVEL / FORCES

Fixing position front	Code	Actuator length			Operating force on plunger		Operating force on lever		Pretravel	Overtravel	Movement differential		Free position	Operating position
		mm	≤ N	Code	≤ N	≤ mm	min. mm	≤ mm			≤ mm	mm		
Roller lever short	06	25,6	0,8	A	0,69	2,4	1,5	0,8	25,5	22,5±0,6				
			1,0	B	0,87									
			1,5	C	1,30									
			2,0	D	1,74									
			2,5	E	2,17									
			3,0	F	2,60									
			3,5	G	3,00									
			4,0	H	3,48									
Roller lever long	07	39,4	0,8	A	0,45	5,6	2,5	1,2	30,8	24,0±1,2				
			1,0	B	0,56									
			1,5	C	0,84									
			2,0	D	1,12									
			2,5	E	1,40									
			3,0	F	1,68									
			3,5	G	0,95									
			4,0	H	2,25									
Simulated roller lever	08	38,2	0,8	A	0,47	5,6	2,5	1,2	27,6	20,8±1,2				
			1,0	B	0,59									
			1,5	C	0,88									
			2,0	D	1,18									
			2,5	E	1,47									
			3,0	F	1,76									
			3,5	G	2,06									
			4,0	H	2,35									
Fixing position rear	Code	mm	≤ N	Code	≤ N	≤ mm	min. mm	≤ mm	≤ mm	mm				
Roller lever short	06	20,2	0,8	A	0,90	1,4	1,0	0,4	23,4	21,4 ±0,6				
			1,0	B	1,10									
			1,5	C	1,60									
			2,0	D	2,20									
			2,5	E	2,66									
			3,0	F	3,20									
			3,5	G	3,72									
			4,0	H	4,25									
Roller lever long	07	34	0,8	A	0,40	4,0	2,0	1,0	26,6	21,4 ±1,2				
			1,0	B	0,50									
			1,5	C	0,80									
			2,0	D	1,00									
			2,5	E	1,30									
			3,0	F	1,60									
			3,5	G	1,87									
			4,0	H	2,14									
Simulated roller lever	08	32,6	0,8	A	0,43	4,0	2,0	1,0	24,7	19,5 ±1,2				
			1,0	B	0,54									
			1,5	C	0,81									
			2,0	D	1,08									
			2,5	E	1,35									
			3,0	F	1,62									
			3,5	G	1,89									
			4,0	H	2,16									

## 1

# Accessories



## Connector for Plug Connection 0.5x4.7mm

- alternative solution to discrete wiring
- for end- and feed-through connections
- reliable and fast IDC connection
- strain relief cap available
- easy on and easy off maintenance

### MECHANICAL DATA

Ambient temperature	-55...+85°C
Approvals	UL

### ELECTRICAL DATA

Current rating	
for AWG18 (approx. 0.8mm <sup>2</sup> )	10A
for AWG20 (approx. 0.5mm <sup>2</sup> )	6,5A
for AWG22 (approx. 0.3mm <sup>2</sup> )	6,5A
Test voltage	3,8kVAC
Insulation resistance	>5000MΩ

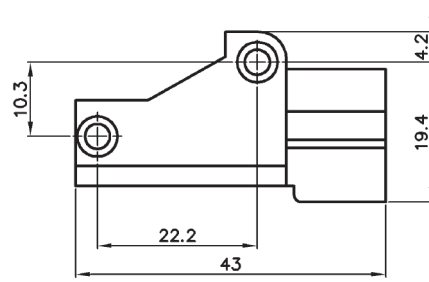
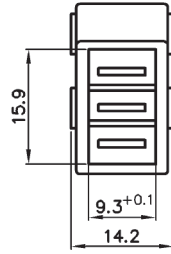
### MATERIAL

Housing	PA(UL94-V2)
Contacts	Phosphor Bronze
Plating	Tin over Nickel

### ORDER CODE

Connector for AWG18	Code: <b>SMA02 180301</b>
Connector for AWG20	Code: <b>SMA02 200301</b>
Connector for AWG22	Code: <b>SMA02 220301</b>
Cap for AWG18	Code: <b>ZMA02 18</b>
Cap for AWG20, 22	Code: <b>ZMA02 20</b>
Manual fitting tool	Code: <b>WMA02 M</b>

# 1 Accessories



## Adapter element for Rast5-plug-connection

- reliable joining of switch and adapter element by fixing holes

### MATERIAL

Housing	PBT
Color	black

### ORDER CODE

Adapter element

Code: **Adapter element**