

Applications

Easy to use, electromechanical limit switches offer specific qualities:

- Visible operation.
- Able to switch strong currents (10 A conventional thermal current).
- Electrically separated contacts.
- Precise operating points (consistency).
- Immune to electromagnetic disturbances.

They are purpose-built detection devices thanks to these characteristics:

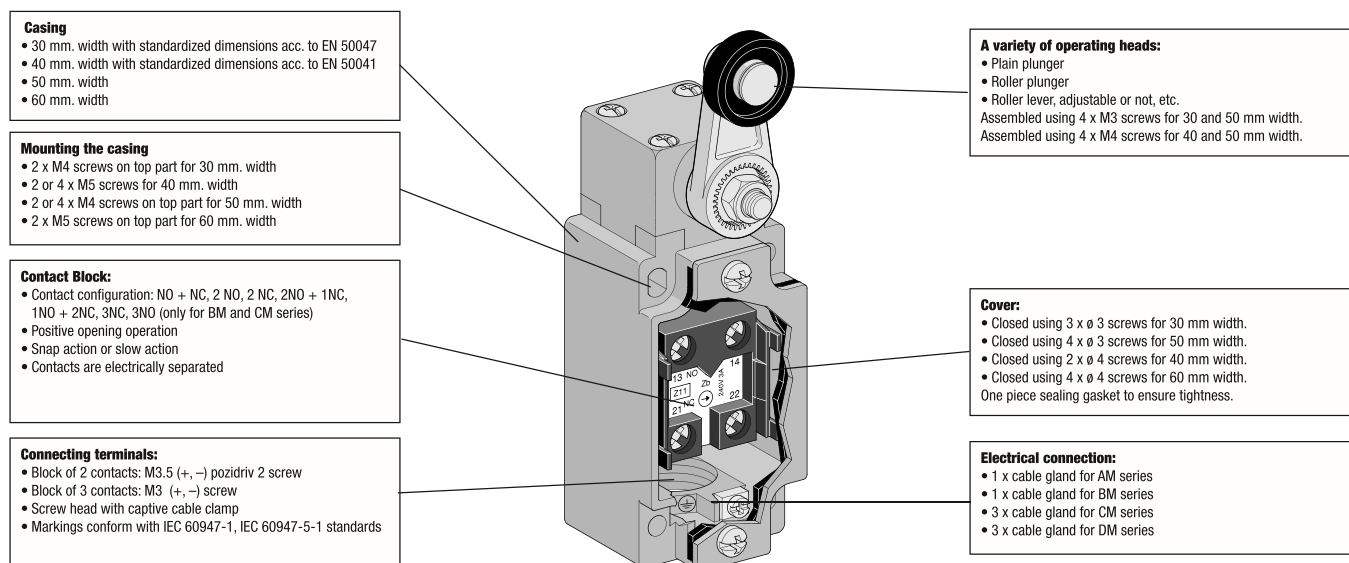
- Presence/absence.
- Positioning and travel limit.
- Objects passing/counting.

Description

The AM... and DM... series are made of zinc alloy (Zamak). The limit switches BM... and CM... series are realized in aluminium material, therefore they are mechanically more resistant and three times lighter than the ones in zinc alloy. All metal limit switches have a degree protection of IP 66.

The casing come in 4 dimension:

– AM... 30 mm. width	– BM... 40 mm. width
– DM... 50 mm. width	– CM... 60 mm. width



Symbols

Example: B M 1 E 41 Z 1 1

Structure:

	B	M	1	E	41	Z	1	1
		M						

Casing width: A = 30 mm width + 1 cable inlet B = 40 mm width + 1 cable inlet D = 50 mm width + 3 cable inlets C = 60 mm width + 3 cable inlets	
Metal casing	
Electrical connection 1: cable inlets for PG13.5 cable gland 2: cable inlets for 1/2 NPT cable gland 3: cable inlets for PG11 cable gland (only for AM and DM series) 4: cable inlets for M16 x 1,5 cable gland (only for AM and DM series) 5: cable inlets for M20 x 1,5 cable gland	
Operating heads T: plastic heads F: metal heads ... (AM and DM series) P: plastic heads E: metal heads ... (BM and CM series)	
Operating heads: codes 10 - 99	
Contact block 11: 1 NO + 1 NC contacts 20: 2 NO contacts 02: 2 NC contacts 12P: 1 NO + 2 NC contacts 21P: 2 NO + 1 NC contacts 03P: 3 NC contacts Only for BM and CM series: 12: 1 NO + 2NC contacts 21: 2 NO + 1 NC contacts 03: 3 NC contacts 30: 3 NO contacts Z: Snap action W: Slow action (contact dependent) X: Slow action non-overlapping late make Y: Slow action overlapping early make	

General Technical Data

Standards	Metal Casing	
	Devices conform with international IEC 60947-5-1 and European EN 60947-5-1 standards	
Certifications - Approvals	UL - CSA - IMQ - EAC	
Air temperature near the device		
– during operation	°C	– 25 ... + 70
– for storage	°C	– 30 ... + 80
Climatic withstand	According to IEC 60068-2-3 and salty mist according to IEC 60068-2-11	
Mounting positions	All positions are authorised	
Shock withstand (according to IEC 60068-2-27 and EN 60068-2-27)	50g* (1/2 sinusoidal shock for 11 ms) no change in contact position	
Resistance to vibrations (acc. to IEC 60068-2-6 and EN 60068-2-6)	25g (10 ... 500 Hz) no change in position of contacts greater than 100 µs	
Protection against electrical shocks (acc. to IEC 60536)	Class I	
Degree of protection (according to IEC 60529 and EN 60529)	IP 66**	
Consistency (measured over 1 million operations)	0.05 mm (upon closing point)	
Minimum actuation speed	m/s	Slow action contacts 0.060 / Snap action contacts 0.001

Electrical Data

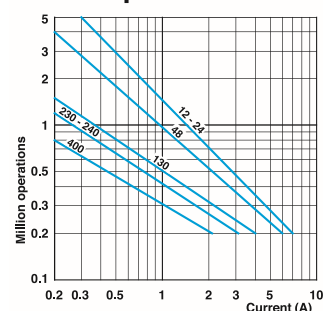
Rated insulation voltage U_i - according to IEC 60947-1 and EN 60947-1 - according to UL 508 and CSA C22-2 n° 14			500 V (degree of pollution 3) (400 V for contacts type Z02, X12P, X21P, W03P) A 600, Q 600 (A 300, Q 300 for AM... and DM... series and contacts type X12P, X21P, W03P)													
Rated impulse withstand voltage U_{imp} (according to IEC 60947-1 and EN 60947-1)			kV	6 (4kV for contacts type X12P, X21P, W03P)												
Conventional free air thermal current I_{th} (according to IEC 60947-5-1) $\theta < 40$ °C			A	10												
Short-circuit protection $U_e < 500$ V a.c. - gG (gl) type fuses			A	10												
Rated operational current I_e / AC-15 (according to IEC 60947-5-1)	24 V - 50/60 Hz	A	10													
	120 V - 50/60 Hz	A	6													
	400 V - 50/60 Hz	A	4													
I_e / DC-13 (according to IEC 60947-5-1)	24 V - d.c.	A	6													
	125 V - d.c.	A	0.55													
	250 V - d.c.	A	0.4													
Switching frequency			Cycles/h	3600												
Load factor				0.5												
Resistance between contacts			mΩ	25												
Connecting terminals			M3.5 (+, -) pozidriv 2 screw with cable clamp (M3 for 3 poles contacts type)													
Terminal for protective conductor			M3.5 (+, -) pozidriv 2 screw with cable clamp													
Connecting capacity			1 or 2 x mm ²	0.75 ... 2.5 (0.34... 1.5 for 3 poles contact type)												
Terminal marking			According to IEC 60947-5-1													
Mechanical durability			Millions of operations	<table><tr><td>15</td><td rowspan="3">} AM•F/T { 11; 12; 30...34; 38</td><td rowspan="3">} 30</td><td rowspan="3">} BM•E { 11...13; 21...23; 31...33</td></tr><tr><td>10</td><td rowspan="2">} DM•F/T { 41...46; 51...55; 61...75</td><td rowspan="2">} 25</td><td rowspan="2">} CM•E { 41...44; 51...54; 61...75</td></tr><tr><td>>5</td><td rowspan="2">} 14; 35; 36; 39; 91...93; 98</td><td rowspan="2">} 10</td><td rowspan="2">} 91...93; 99</td></tr></table>	15	} AM•F/T { 11; 12; 30...34; 38	} 30	} BM•E { 11...13; 21...23; 31...33	10	} DM•F/T { 41...46; 51...55; 61...75	} 25	} CM•E { 41...44; 51...54; 61...75	>5	} 14; 35; 36; 39; 91...93; 98	} 10	} 91...93; 99
15	} AM•F/T { 11; 12; 30...34; 38	} 30	} BM•E { 11...13; 21...23; 31...33													
10				} DM•F/T { 41...46; 51...55; 61...75	} 25				} CM•E { 41...44; 51...54; 61...75							
>5						} 14; 35; 36; 39; 91...93; 98	} 10	} 91...93; 99								
Electrical durability (according to IEC 60947-5-1)			Utilization categories AC-15 and DC-13 (Load factor of 0.5 according to curves below)													

* except for AM/DM•F42, F52, F55: 25 g. - ** except for AM/DM•F52, F55, F73, F74, T92, T93 and BM/CM•E54, P92, P93, E92, E93, P92, P93: the degree of protection is IP65

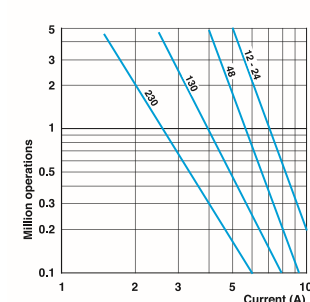
IMQ listed values

For the complete list of approved products, contact our technical department

AC-15 - Snap action



AC-15 - Slow action



DC-13	Snap action	Slow action
	Power breaking for a durability of 5 million operating cycles	
Voltage 24 V	9.5 W	12 W
Voltage 48 V	6.8 W	9 W
Voltage 110 V	3.6 W	6 W

Electrical Connection

BM1: one cable inlet for PG 13,5 Cable Gland

BM2: one cable inlet for 1/2" NPT Cable Gland

BM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

P11 - Plain plunger

P92 - Multidirectional nylon actuator with stainless steel spring

P93 - Stainless steel spring multidirectional actuator

Conformity / (N.C. contact with positive opening operation)
Max actuation speed [m/s]
Min. force [N] or torque [Nm]: actuation / positive opening operation

0,5
30 / 45

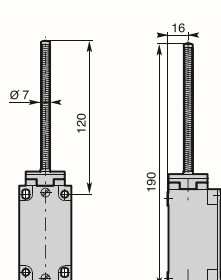
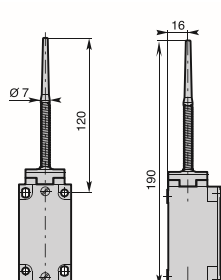
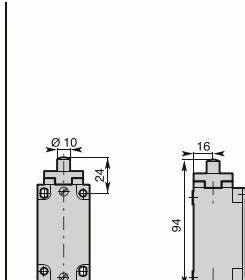
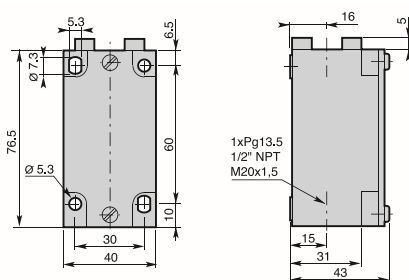
1,0
0,18 / -

1,0
0,18 / -

Additional Technical Datas

Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•P11Z11 	BM•P92Z11 	BM•P93Z11
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•P11X11 	BM•P92X11 	BM•P93X11
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•P11Y11 	BM•P92Y11 	BM•P93Y11
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram	BM•P11W02 	BM•P92W02 	BM•P93W02
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram	BM•P11W20 	BM•P92W20 	BM•P93W20
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram	BM•P11Z02 	BM•P92Z02 	BM•P93Z02
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram	BM•P11X12 	BM•P92X12 	BM•P93X12
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram	BM•P11X21 	BM•P92X21 	BM•P93X21
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram	BM•P11W03 	BM•P92W03 	BM•P93W03
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram	BM•P11W30 	BM•P92W30 	BM•P93W30
Weight (packing per unit)	[kg]		0,220	0,210	0,215

Dimensions (in mm)



Electrical Connection

BM1: one cable inlet for PG 13,5 Cable Gland

BM2: one cable inlet for 1/2" NPT Cable Gland

BM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

M13 - Steel roller plunger

M14 - Plain steel plunger with dust protection cup

M19 - Steel roller plunger with dust protection cup

Conformity / $\rightarrow$ (N.C. contact with positive opening operation)
Max actuation speed [m/s]
Min. force [N] or torque [Nm]: actuation / positive opening operation

EN 50041

0,5
22 / 40

EN 50041

0,5
30 / 45

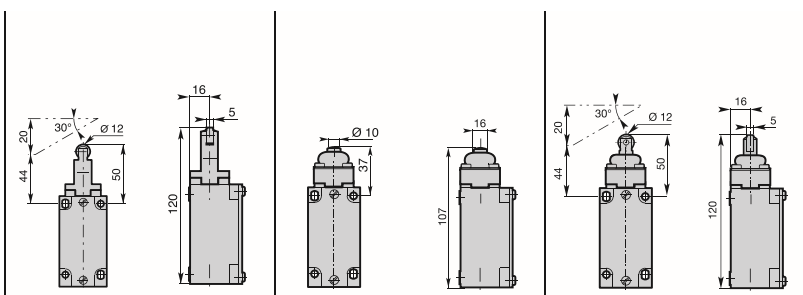
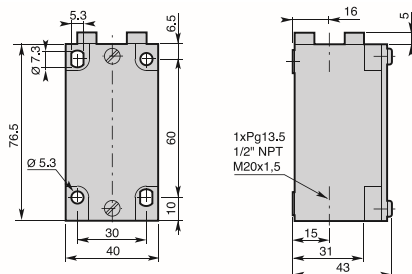
EN 50041

0,5
22 / 40

Additional Technical Data

Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM-M13Z11 	BM-M14Z11 	BM-M19Z11
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM-M13X11 	BM-M14X11 	BM-M19X11
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM-M13Y11 	BM-M14Y11 	BM-M19Y11
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram	BM-M13W02 	BM-M14W02 	BM-M19W02
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram	BM-M13W20 	BM-M14W20 	BM-M19W20
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram	BM-M13Z02 	BM-M14Z02 	BM-M19Z02
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram	BM-M13X12 	BM-M14X12 	BM-M19X12
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram	BM-M13X21 	BM-M14X21 	BM-M19X21
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram	BM-M13W03 	BM-M14W03 	BM-M19W03
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram	BM-M13W30 	BM-M14W30 	BM-M19W30
Weight (packing per unit)	[kg]		0,265	0,255	0,265

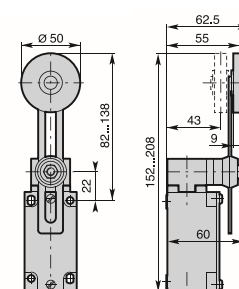
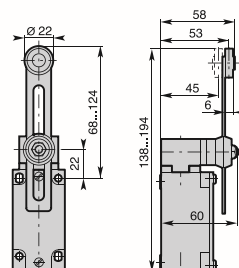
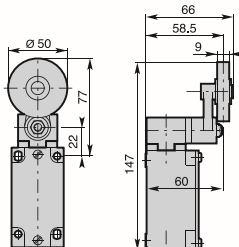
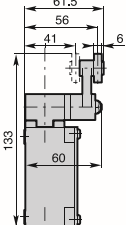
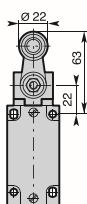
Dimensions (in mm)





M4 - Ø 22 roller lever M41: nylon roller M42: stainless steel roller M43: steel ball bearing	M44 - Ø 50 rubber roller lever	M5 - Adjustable Ø 22 roller lever M51: nylon roller M52: stainless steel roller M53: steel ball bearing	M54 - Adjustable Ø 50 rubber roller lever	M61 - Nylon actuator with stainless steel spring
EN 50041				
1,5 0,15 / 0,30	1,5 0,15 / 0,30	1,5 0,15 / 0,30	1,5 0,15 / 0,30	1,5 0,15 / -

BM-M4-Z11 0 20° 33° 49° 78° 21-22 13-14 21-22 13-14 21-22 13-14	BM-M44Z11 0 20° 33° 49° 78° 21-22 13-14 21-22 13-14 21-22 13-14	BM-M5-Z11 0 20° 33° 49° 78° 21-22 13-14 21-22 13-14 21-22 13-14	BM-M54Z11 0 20° 33° 49° 78° 21-22 13-14 21-22 13-14 21-22 13-14	BM-M61Z11 0 20° 33° 49° 78° 21-22 13-14 21-22 13-14 21-22 13-14
BM-M4-X11 0 22° 38° 78° 21-22 13-14 33°	BM-M44X11 0 22° 38° 78° 21-22 13-14 33°	BM-M5-X11 0 22° 38° 78° 21-22 13-14 33°	BM-M54X11 0 22° 38° 78° 21-22 13-14 33°	BM-M61X11 0 22° 78° 21-22 13-14 33°
BM-M4-Y11 0 37° 53° 78° 21-22 13-14 21°	BM-M44Y11 0 37° 53° 78° 21-22 13-14 21°	BM-M5-Y11 0 37° 53° 78° 21-22 13-14 21°	BM-M54Y11 0 37° 53° 78° 21-22 13-14 21°	BM-M61Y11 0 37° 78° 21-22 13-14 21°
BM-M4-W02 0 21° 37° 78° 11-12 21-22 21-22	BM-M44W02 0 21° 37° 78° 11-12 21-22 21-22	BM-M5-W02 0 21° 37° 78° 11-12 21-22 21-22	BM-M54W02 0 21° 37° 78° 11-12 21-22 21-22	BM-M61W02 0 21° 78° 11-12 21-22 21-22
BM-M4-W20 0 20° 78° 13-14 23-24 23-24	BM-M44W20 0 20° 78° 13-14 23-24 23-24	BM-M5-W20 0 20° 78° 13-14 23-24 23-24	BM-M54W20 0 20° 78° 13-14 23-24 23-24	BM-M61W20 0 20° 78° 13-14 23-24 23-24
BM-M4-Z02 0 20° 32° 48° 78° 11-12 21-22 11-12 21-22	BM-M44Z02 0 20° 32° 48° 78° 11-12 21-22 11-12 21-22	BM-M5-Z02 0 20° 32° 48° 78° 11-12 21-22 11-12 21-22	BM-M54Z02 0 20° 32° 48° 78° 11-12 21-22 11-12 21-22	BM-M61Z02 0 20° 32° 78° 11-12 21-22 11-12 21-22
BM-M4-X12 0 18° 35° 78° 21-22 13-14 37°	BM-M44X12 0 18° 35° 78° 21-22 13-14 37°	BM-M5-X12 0 18° 35° 78° 21-22 13-14 37°	BM-M54X12 0 18° 35° 78° 21-22 13-14 37°	BM-M61X12 0 18° 78° 21-22 13-14 37°
BM-M4-X21 0 19° 36° 78° 31-32 13-14 23-24 37°	BM-M44X21 0 19° 36° 78° 31-32 13-14 23-24 37°	BM-M5-X21 0 19° 36° 78° 31-32 13-14 23-24 37°	BM-M54X21 0 19° 36° 78° 31-32 13-14 23-24 37°	BM-M61X21 0 19° 78° 31-32 13-14 23-24 37°
BM-M4-W03 0 18° 35° 78° 11-12 31-32 31-32	BM-M44W03 0 18° 35° 78° 11-12 31-32 31-32	BM-M5-W03 0 18° 35° 78° 11-12 31-32 31-32	BM-M54W03 0 18° 35° 78° 11-12 31-32 31-32	BM-M61W03 0 18° 78° 11-12 31-32 31-32
BM-M4-W30 0 23° 78° 13-14 23-24 23-24	BM-M44W30 0 23° 78° 13-14 23-24 23-24	BM-M5-W30 0 23° 78° 13-14 23-24 23-24	BM-M54W30 0 23° 78° 13-14 23-24 23-24	BM-M61W30 0 23° 78° 13-14 23-24 23-24
0,300	0,310	0,320	0,325	0,325



Electrical Connection

BM1: one cable inlet for PG 13,5 Cable Gland

BM2: one cable inlet for 1/2" NPT Cable Gland

BM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

M62 - Stainless steel spring actuator

M7 - Adjustable rod lever

M7 - Adjustable Ø 6 rod lever

M71: stainless steel rod Ø3
M73: fiberglass rod Ø3
M75: square steel rod 3x3

M72: nylon rod
M74: fiberglass rod

Conformity / (N.C. contact with positive opening operation)
Max actuation speed [m/s]
Min. force [N] or torque [Nm]: actuation / positive opening operation

1,5
0,15 / -

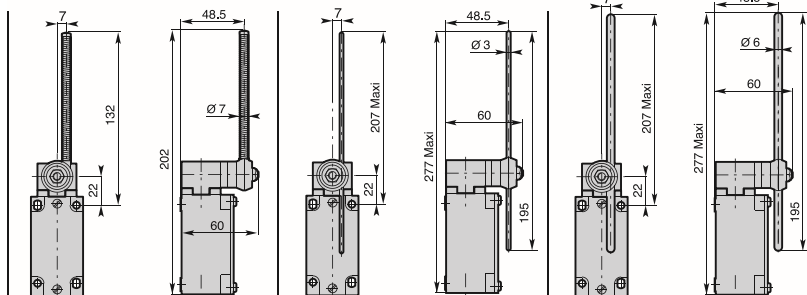
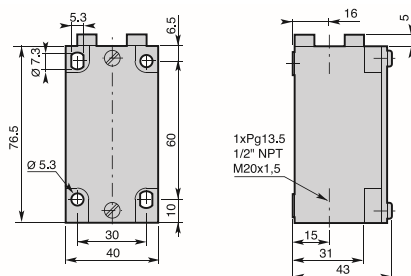
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1,5
0,15 / 0,30

EN 50041
1,5
0,15 / 0,30

Additional Technical Datas

Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•M62Z11 	BM•M7•Z11 	BM•M7•Z11
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•M62X11 	BM•M7•X11 	BM•M7•X11
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•M62Y11 	BM•M7•Y11 	BM•M7•Y11
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram	BM•M62W02 	BM•M7•W02 	BM•M7•W02
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram	BM•M62W20 	BM•M7•W20 	BM•M7•W20
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram	BM•M62Z02 	BM•M7•Z02 	BM•M7•Z02
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram	BM•M62X12 	BM•M7•X12 	BM•M7•X12
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram	BM•M62X21 	BM•M7•X21 	BM•M7•X21
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram	BM•M62W03 	BM•M7•W03 	BM•M7•W03
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram	BM•M62W30 	BM•M7•W30 	BM•M7•W30
Weight (packing per unit)	[kg]		0,325	0,325	0,325

Dimensions (in mm)



Electrical Connection

BM1: one cable inlet for PG 13,5 Cable Gland

BM2: one cable inlet for 1/2" NPT Cable Gland

BM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

E11 - Stainless steel plain plunger

E12 - Stainless steel ball plunger

E13 - Stainless steel Ø 12 roller plunger

Conformity / (N.C. contact with positive opening operation)
Max actuation speed [m/s]
Min. force [N] or torque [Nm]: actuation / positive opening operation

EN 50041

0,5
30 / 45

EN 50041

0,5
30 / 45

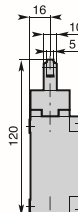
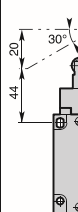
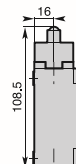
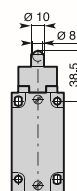
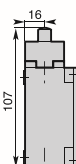
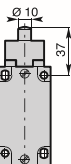
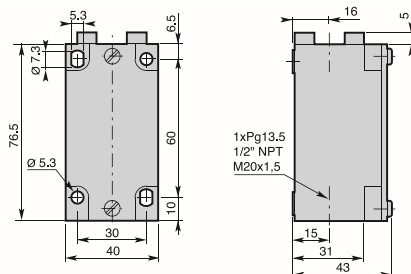
EN 50041

0,5
22 / 40

Additional Technical Data

Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•E11Z11 	BM•E12Z11 	BM•E13Z11
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•E11X11 	BM•E12X11 	BM•E13X11
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•E11Y11 	BM•E12Y11 	BM•E13Y11
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram	BM•E11W02 	BM•E12W02 	BM•E13W02
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram	BM•E11W20 	BM•E12W20 	BM•E13W20
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram	BM•E11Z02 	BM•E12Z02 	BM•E13Z02
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram	BM•E11X12 	BM•E12X12 	BM•E13X12
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram	BM•E11X21 	BM•E12X21 	BM•E13X21
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram	BM•E11W03 	BM•E12W03 	BM•E13W03
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram	BM•E11W30 	BM•E12W30 	BM•E13W30
PWeight (packing per unit)	[kg]		0,240	0,240	0,245

Dimensions (in mm)



Electrical Connection

BM1: one cable inlet for PG 13,5 Cable Gland

BM2: one cable inlet for 1/2" NPT Cable Gland

BM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

E21 - Stainless steel lateral plain plunger

E22 - Stainless steel lateral plunger with Ø 12 vertical roller

E23 - Stainless steel lateral plunger with Ø 12 horizontal roller

Conformity /  (N.C. contact with positive opening operation)
Max actuation speed [m/s]
Min. force [N] or torque [Nm]: actuation / positive opening operation

EN 50041

0,5
30 / 50



EN 50041

0,5
30 / 50

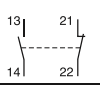
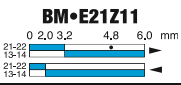
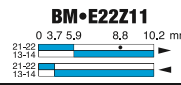
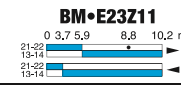
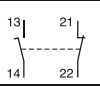
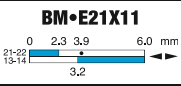
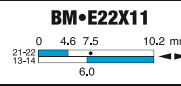
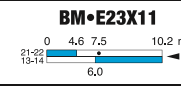
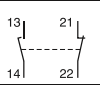
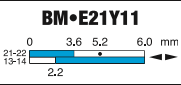
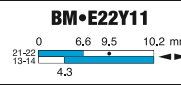
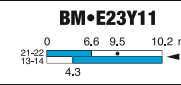
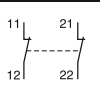
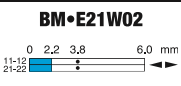
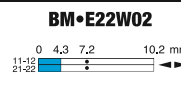
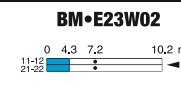
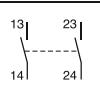
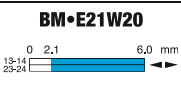
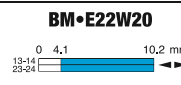
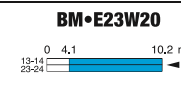
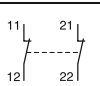
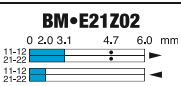
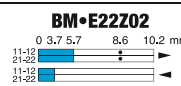
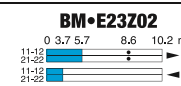
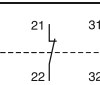
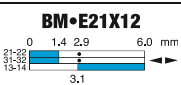
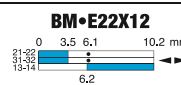
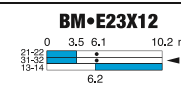
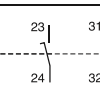
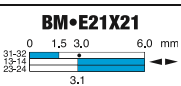
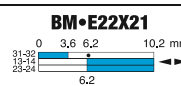
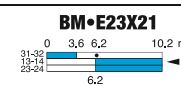
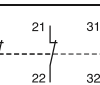
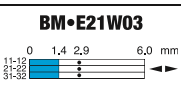
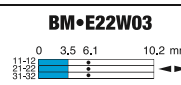
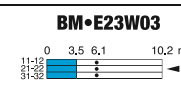
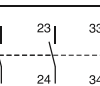
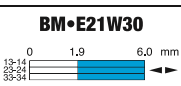
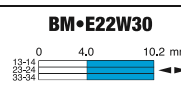
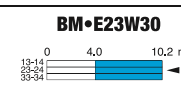


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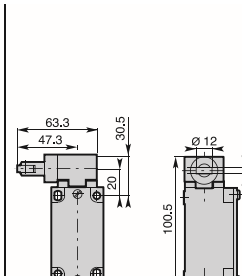
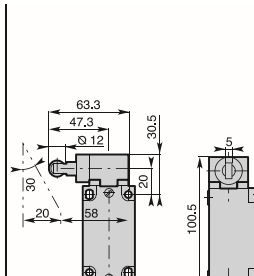
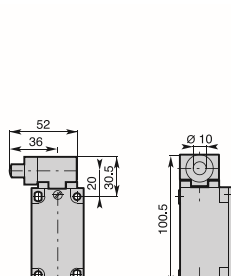
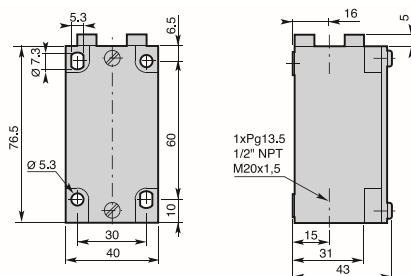
0,5
30 / 50



Additional Technical Datas

Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•E21Z11 	BM•E22Z11 	BM•E23Z11 
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•E21X11 	BM•E22X11 	BM•E23X11 
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•E21Y11 	BM•E22Y11 	BM•E23Y11 
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram	BM•E21W02 	BM•E22W02 	BM•E23W02 
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram	BM•E21W20 	BM•E22W20 	BM•E23W20 
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram	BM•E21Z02 	BM•E22Z02 	BM•E23Z02 
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram	BM•E21X12 	BM•E22X12 	BM•E23X12 
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram	BM•E21X21 	BM•E22X21 	BM•E23X21 
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram	BM•E21W03 	BM•E22W03 	BM•E23W03 
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram	BM•E21W30 	BM•E22W30 	BM•E23W30 
Weight (packing per unit)	[kg]		0,260	0,265	0,265

Dimensions (in mm)





E3 - One way lever

E31: Ø22 nylon roller
E32: Ø22 stainless steel roller
E33: Ø22 steel ball bearing

1,5
12 / 40



E4 - Ø 22 roller lever

E41: nylon roller
E42: stainless steel roller
E43: steel ball bearing

EN 50041

1,5
0,15 / 0,30



E44 - Ø 50 rubber roller lever

1,5
0,15 / 0,30



**E5 - Adjustable
Ø 22 roller lever**

E51: nylon roller
E52: stainless steel roller
E53: steel ball bearing

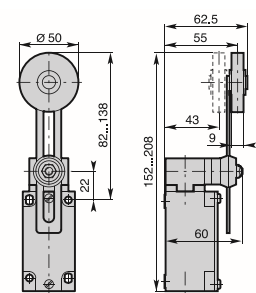
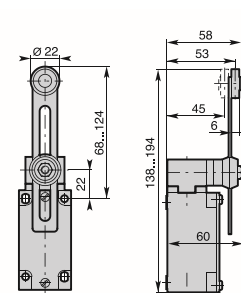
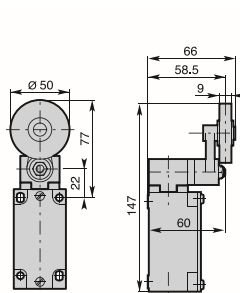
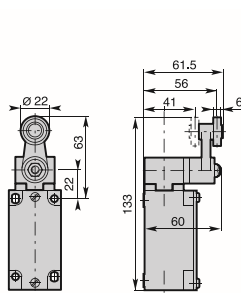
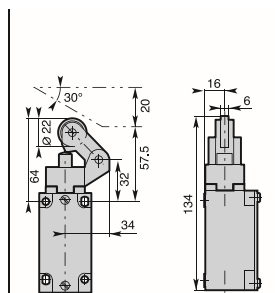
1,5
0,15 / 0,30



**E54 - Adjustable
Ø 50 rubber roller lever**

1,5
0,15 / 0,30

BM•E3•Z11 0 3,1 6,3 10,8 15,5 mm 21-22 13-14 21-22 13-14	BM•E4•Z11 0 20° 33° 49° 78° 21-22 13-14 21-22 13-14	BM•E44Z11 0 20° 33° 49° 78° 21-22 13-14 21-22 13-14	BM•E5•Z11 0 20° 33° 49° 78° 21-22 13-14 21-22 13-14	BM•E54Z11 0 20° 33° 49° 78° 21-22 13-14 21-22 13-14
BM•E3•X11 0 4,5 9,0 15,5 mm 21-22 13-14 6,1	BM•E4•X11 0 22° 38° 78° 21-22 13-14 33°	BM•E44X11 0 22° 38° 78° 21-22 13-14 33°	BM•E5•X11 0 22° 38° 78° 21-22 13-14 33°	BM•E54X11 0 22° 38° 78° 21-22 13-14 33°
BM•E3•Y11 0 7,2 11,7 15,5 mm 21-22 13-14 4,0	BM•E4•Y11 0 37° 53° 78° 21-22 13-14 21°	BM•E44Y11 0 37° 53° 78° 21-22 13-14 21°	BM•E5•Y11 0 37° 53° 78° 21-22 13-14 21°	BM•E54Y11 0 37° 53° 78° 21-22 13-14 21°
BM•E3•W02 0 4,0 9,5 15,5 mm 11-12 21-22	BM•E4•W02 0 21° 37° 78° 11-12 21-22	BM•E44W02 0 21° 37° 78° 11-12 21-22	BM•E5•W02 0 21° 37° 78° 11-12 21-22	BM•E54W02 0 21° 37° 78° 11-12 21-22
BM•E3•W20 0 3,6 15,5 mm 13-14 23-24	BM•E4•W20 0 20° 78° 13-14 23-24	BM•E44W20 0 20° 78° 13-14 23-24	BM•E5•W20 0 20° 78° 13-14 23-24	BM•E54W20 0 20° 78° 13-14 23-24
BM•E3•Z02 0 3,1 6,1 10,6 15,5 mm 11-12 21-22 21-22	BM•E4•Z02 0 20° 32° 48° 78° 11-12 21-22 21-22	BM•E44Z02 0 20° 32° 48° 78° 11-12 21-22 21-22	BM•E5•Z02 0 20° 32° 48° 78° 11-12 21-22 21-22	BM•E54Z02 0 20° 32° 48° 78° 11-12 21-22 21-22
BM•E3•X12 0 4,6 8,4 15,5 mm 21-22 13-14 8,6	BM•E4•X12 0 18° 35° 78° 21-22 13-14 37°	BM•E44X12 0 18° 35° 78° 21-22 13-14 37°	BM•E5•X12 0 18° 35° 78° 21-22 13-14 37°	BM•E54X12 0 18° 35° 78° 21-22 13-14 37°
BM•E3•X21 0 4,7 8,5 15,5 mm 31-32 13-14 23-24 8,6	BM•E4•X21 0 19° 36° 78° 31-32 13-14 23-24 37°	BM•E44X21 0 19° 36° 78° 31-32 13-14 23-24 37°	BM•E5•X21 0 19° 36° 78° 31-32 13-14 23-24 37°	BM•E54X21 0 19° 36° 78° 31-32 13-14 23-24 37°
BM•E3•W03 0 4,6 8,4 15,5 mm 11-12 31-32 31-32	BM•E4•W03 0 18° 35° 78° 11-12 31-32 31-32	BM•E44W03 0 18° 35° 78° 11-12 31-32 31-32	BM•E5•W03 0 18° 35° 78° 11-12 31-32 31-32	BM•E54W03 0 18° 35° 78° 11-12 31-32 31-32
BM•E3•W30 0 4,9 15,5 mm 13-14 23-24 23-24	BM•E4•W30 0 23° 78° 13-14 23-24 23-24	BM•E44W30 0 23° 78° 13-14 23-24 23-24	BM•E5•W30 0 23° 78° 13-14 23-24 23-24	BM•E54W30 0 23° 78° 13-14 23-24 23-24
0,280	0,300	0,315	0,320	0,325



Electrical Connection

BM1: one cable inlet for PG 13,5 Cable Gland

BM2: one cable inlet for 1/2" NPT Cable Gland

BM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

E61 - Nylon actuator with stainless steel spring

E62 - Stainless steel spring actuator

E7 - Adjustable rod lever

E71: stainless steel rod Ø3
E73: fiberglass rod Ø3
E75: square steel rod 3x3

Conformity / (N.C. contact with positive opening operation)
Max actuation speed [m/s]
Min. force [N] or torque [Nm]: actuation / positive opening operation

1,5
0,15 / -

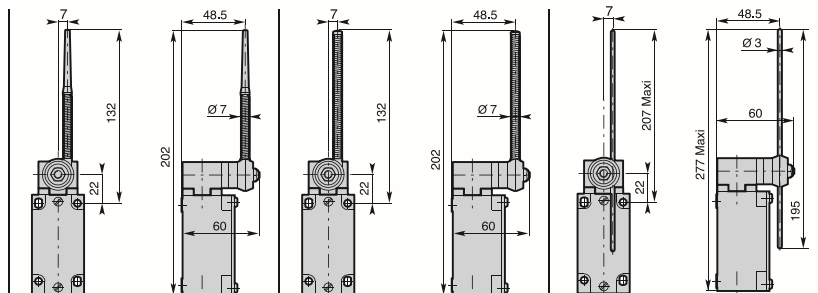
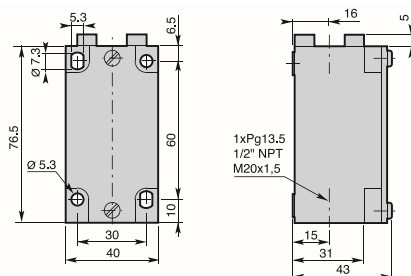
1,5
0,15 / -

EN50041
1,5
0,15 / 0,30

Additional Technical Datas

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X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•E61X11 	BM•E62X11 	BM•E7•X11
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM•E61Y11 	BM•E62Y11 	BM•E7•Y11
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram	BM•E61W02 	BM•E62W02 	BM•E7•W02
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram	BM•E61W20 	BM•E62W20 	BM•E7•W20
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram	BM•E61Z02 	BM•E62Z02 	BM•E7•Z02
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram	BM•E61X12 	BM•E62X12 	BM•E7•X12
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram	BM•E61X21 	BM•E62X21 	BM•E7•X21
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram	BM•E61W03 	BM•E62W03 	BM•E7•W03
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram	BM•E61W30 	BM•E62W30 	BM•E7•W30
Weight (packing per unit)	[kg]	0,305	0,310	0,305	

Dimensions (in mm)





E7 - Adjustable rod lever

E72: nylon rod
E74: fiberglass rod



E91 - Stainless steel spring multidirectional actuator



E92 - Multidirectional nylon actuator with stainless steel spring



E93 - Stainless steel spring multidirectional actuator



E99 - Pull action with ring

EN 50041

1,5
0,15 / 0,30



1,0
0,18 / -

1,0
0,18 / -

1,0
0,18 / -

0,5
25 / -

BM-E7-Z11 	BM-E91Z11 	BM-E92Z11 	BM-E93Z11 	BM-E99Z11A
BM-E7-X11 	BM-E91X11 	BM-E92X11 	BM-E93X11 	BM-E99X11A
BM-E7-Y11 	BM-E91Y11 	BM-E92Y11 	BM-E93Y11 	BM-E99Y11A
BM-E7-W02 	BM-E91W02 	BM-E92W02 	BM-E93W02 	BM-E99W02A
BM-E7-W20 	BM-E91W20 	BM-E92W20 	BM-E93W20 	BM-E99W20A
BM-E7-Z02 	BM-E91Z02 	BM-E92Z02 	BM-E93Z02 	
BM-E7-X12 	BM-E91X12 	BM-E92X12 	BM-E93X12 	BM-E99X12A
BM-E7-X21 	BM-E91X21 	BM-E92X21 	BM-E93X21 	BM-E99X21A
BM-E7-W03 	BM-E91W03 	BM-E92W03 	BM-E93W03 	BM-E99W03A
BM-E7-W30 	BM-E91W30 	BM-E92W30 	BM-E93W30 	BM-E99W30A
0,300	0,230	0,230	0,235	0,245

