



### General Technical Data

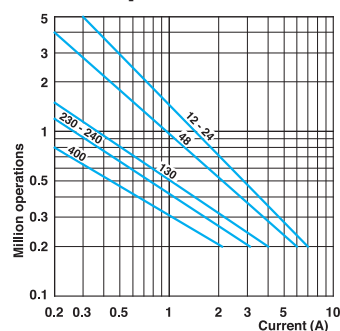
Standards		Metal Casing	
		Devices conform with international IEC 60947-5-1 and European EN 60947-5-1 standards	
<b>Certifications - Approvals</b>			
<b>Air temperature</b> near the device			
- during operation	°C	- 25 ... + 70	
- for storage	°C	- 30 ... + 80	
<b>Climatic withstand</b>		According to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

### Electrical Data

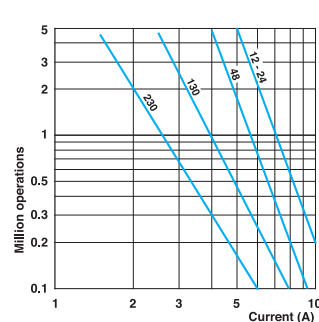
<b>Rated insulation voltage <math>U_i</math></b>		500 V (degree of pollution 3) (400 V for contacts type Z02, X12P, X21P, W03P)	
- according to IEC 60947-1 and EN 60947-1		A 600, Q 600 (A 300, Q 300 for AM... and DM... series and contacts type X12P, X21P, W03P)	
<b>Rated impulse withstand voltage <math>U_{imp}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

- DM1:** three cable inlets for PG 13,5 Cable Gland
- DM2:** three cable inlets for 1/2" NPT Cable Gland
- DM3:** three cable inlets for PG11 Cable Gland
- DM4:** three cable inlets for M16 x 1,5 Cable Gland
- DM5:** three cable inlets for M20 x 1,5 Cable Gland



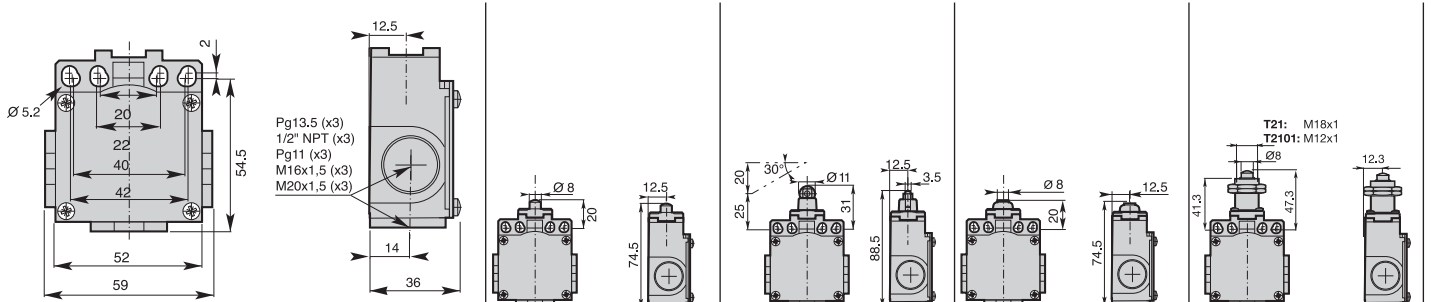
### Operating Head Type

	F11 - Plain Metal plunger	F12 - Metal roller plunger	T14 - Metal plunger with dust protection cup	T21 - Plain plunger with M18x1 fixing nuts T2101 - Plain plunger with M12x1 fixing nuts
Conformity /  (N.C. contact with positive opening operation)				
Max actuation speed [m/s]	0,5	0,3	0,5	0,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	15 / 30	12 / 30	15 / 30	15 / 30

### Additional Technical Datas

Order Code	DM-F11Z11	DM-F12Z11	DM-T14Z11	DM-T21Z11
<b>Z11</b> Snap Action Contacts (1NO + 1NC)				
<b>X11</b> Non overlapping Slow Action Contacts (1NO + 1NC)				
<b>Y11</b> Overlapping Slow Action Contacts (1NO + 1NC)				
<b>W02</b> Slow Action Contacts (2NC)				
<b>W20</b> Slow Action Contacts (2NO)				
<b>Z02</b> Snap Action Contacts (2NC)				
<b>X12P</b> Non overlapping Slow Action Contacts (1NO + 2NC)				
<b>X21P</b> Non overlapping Slow Action Contacts (2NO + 1NC)				
<b>W03P</b> Slow Action Contacts (3NC)				
<b>Weight (packing per unit) [kg]</b>	<b>0,270</b>	<b>0,280</b>	<b>0,255</b>	<b>0,265</b>

### Dimensions (in mm)



### Electrical Connection

- DM1:** three cable inlets for PG 13,5 Cable Gland
- DM2:** three cable inlets for 1/2" NPT Cable Gland
- DM3:** three cable inlets for PG11 Cable Gland
- DM4:** three cable inlets for M16 x 1,5 Cable Gland
- DM5:** three cable inlets for M20 x 1,5 Cable Gland



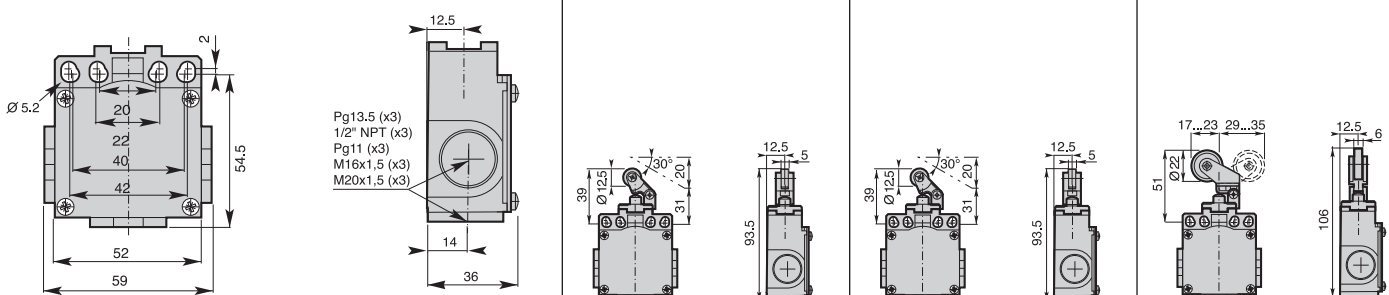
### Operating Head Type

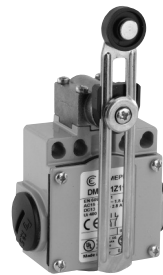
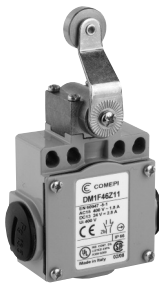
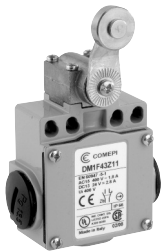
	<b>T3• - Plastic roller lever</b> T30: on plastic plunger T31: on metal plunger	<b>T35 - Plastic roller lever on metal plunger with dust protection cup</b>	<b>T38 - Adjustable plastic roller lever on metal plunger</b> T39 - Same as above with dust protection cup
Conformity /  (N.C. contact with positive opening operation)			
Max actuation speed [m/s]	1,0	1,0	1,0
Min. force [N] or torque [Nm]: actuation / positive opening operation	7 / 24	7 / 24	7 / 24

### Additional Technical Datas

		<b>DM•T3•Z11</b>	<b>DM•T35Z11</b>	<b>DM•T3•Z11</b>
<b>Z11</b> Snap Action Contacts (1NO + 1NC)				
<b>X11</b> Non overlapping Slow Action Contacts (1NO + 1NC)				
<b>Y11</b> Overlapping Slow Action Contacts (1NO + 1NC)				
<b>W02</b> Slow Action Contacts (2NC)				
<b>W20</b> Slow Action Contacts (2NO)				
<b>Z02</b> Snap Action Contacts (2NC)				
<b>X12P</b> Non overlapping Slow Action Contacts (1NO + 2NC)				
<b>X21P</b> Non overlapping Slow Action Contacts (2NO + 1NC)				
<b>W03P</b> Slow Action Contacts (3NC)				
<b>Weight (packing per unit)</b> [kg]		<b>0,260</b>	<b>0,260</b>	<b>0,265</b>

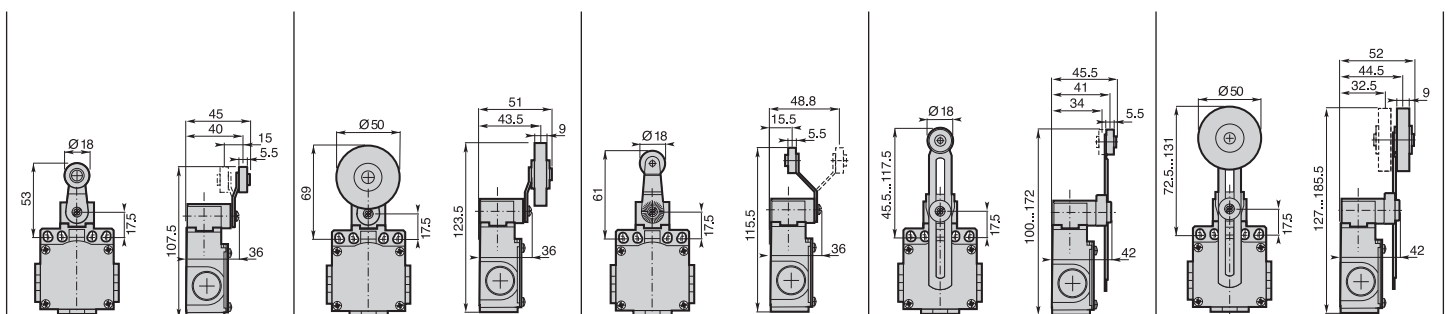
### Dimensions (in mm)





<b>F4• - Ø 18 roller lever</b> F41: nylon roller F43: metal roller	<b>F42 - Ø 50 rubber roller lever</b>	<b>F4• - Ø 18 roller lever</b> F45: nylon roller F46: metal roller	<b>F5• - Adjustable lever with Ø 18 roller</b> F51: nylon roller F53: metal roller	<b>F52 - Adjustable lever with Ø 50 rubber roller</b>
1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32

<b>DM•F4•Z11</b> 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	<b>DM•F4Z211</b> 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	<b>DM•F4•Z11</b> 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	<b>DM•F5•Z11</b> 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	<b>DM•F5Z211</b> 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14
<b>DM•F4•X11</b> 0 21° 37° 74° 21-22 13-14 30°	<b>DM•F4X211</b> 0 21° 37° 74° 21-22 13-14 30°	<b>DM•F4•X11</b> 0 21° 37° 74° 21-22 13-14 30°	<b>DM•F5•X11</b> 0 21° 37° 74° 21-22 13-14 30°	<b>DM•F5X211</b> 0 21° 37° 74° 21-22 13-14 30°
<b>DM•F4•Y11</b> 0 35° 51° 74° 21-22 13-14 18°	<b>DM•F4Y211</b> 0 35° 51° 74° 21-22 13-14 18°	<b>DM•F4•Y11</b> 0 35° 51° 74° 21-22 13-14 18°	<b>DM•F5•Y11</b> 0 35° 51° 74° 21-22 13-14 18°	<b>DM•F5Y211</b> 0 35° 51° 74° 21-22 13-14 18°
<b>DM•F4•W02</b> 0 19° 37° 74° 11-12 21-22	<b>DM•F4W02</b> 0 19° 37° 74° 11-12 21-22	<b>DM•F4•W02</b> 0 19° 37° 74° 11-12 21-22	<b>DM•F5•W02</b> 0 19° 37° 74° 11-12 21-22	<b>DM•F5W02</b> 0 19° 37° 74° 11-12 21-22
<b>DM•F4•W20</b> 0 18° 74° 13-14 23-24	<b>DM•F4W20</b> 0 18° 74° 13-14 23-24	<b>DM•F4•W20</b> 0 18° 74° 13-14 23-24	<b>DM•F5•W20</b> 0 18° 74° 13-14 23-24	<b>DM•F5W20</b> 0 18° 74° 13-14 23-24
<b>DM•F4•Z02</b> 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	<b>DM•F4Z202</b> 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	<b>DM•F4•Z02</b> 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	<b>DM•F5•Z02</b> 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	<b>DM•F5Z202</b> 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22
<b>DM•F4•X12P</b> 0 24° 40° 74° 11-12 21-22 33-34 38°	<b>DM•F4X212P</b> 0 24° 40° 74° 11-12 21-22 33-34 38°	<b>DM•F4•X12P</b> 0 24° 40° 74° 11-12 21-22 33-34 38°	<b>DM•F5•X12P</b> 0 24° 40° 74° 11-12 21-22 33-34 38°	<b>DM•F5X212P</b> 0 24° 40° 74° 11-12 21-22 33-34 38°
<b>DM•F4•X21P</b> 0 24° 40° 74° 11-12 21-22 33-34 38°	<b>DM•F4X21P</b> 0 24° 40° 74° 11-12 21-22 33-34 38°	<b>DM•F4•X21P</b> 0 24° 40° 74° 11-12 21-22 33-34 38°	<b>DM•F5•X21P</b> 0 24° 40° 74° 11-12 21-22 33-34 38°	<b>DM•F5X21P</b> 0 24° 40° 74° 11-12 21-22 33-34 38°
<b>DM•F4•W03P</b> 0 24° 40° 74° 11-12 21-22 33-34	<b>DM•F4W03P</b> 0 24° 40° 74° 11-12 21-22 33-34	<b>DM•F4•W03P</b> 0 24° 40° 74° 11-12 21-22 33-34	<b>DM•F5•W03P</b> 0 24° 40° 74° 11-12 21-22 33-34	<b>DM•F5W03P</b> 0 24° 40° 74° 11-12 21-22 33-34
<b>0,325</b>	<b>0,345</b>	<b>0,340</b>	<b>0,335</b>	<b>0,355</b>



### Electrical Connection

**DM1:** three cable inlets for PG 13,5 Cable Gland

**DM2:** three cable inlets for 1/2" NPT Cable Gland

**DM3:** three cable inlets for PG11 Cable Gland

**DM4:** three cable inlets for M16 x 1,5 Cable Gland

**DM5:** three cable inlets for M20 x 1,5 Cable Gland



### Operating Head Type

**F55 - Adjustable lever with adjustable Ø 50 rubber roller**

**F61 - Nylon actuator with stainless steel spring**

**F7• - Adjustable rod lever**  
 F71: stainless steel rod Ø3  
 F72: fiberglass rod Ø3  
 F75: 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  
 0,10 / 0,32

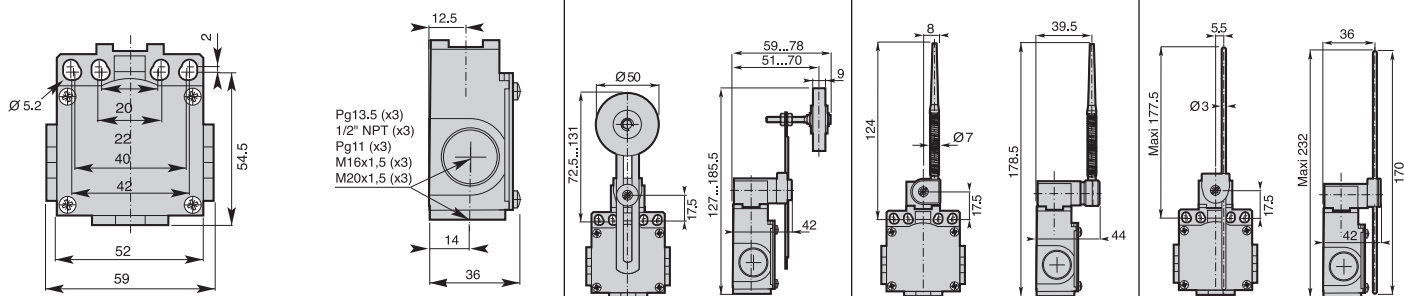
1,5  
 0,10 / -

1,5  
 0,10 / 0,32

### Additional Technical Datas

Order Code	Operation Diagram	DM-F55Z11	DM-F61Z11	DM-F7•Z11
<b>Z11</b> Snap Action Contacts (1NO + 1NC)				
<b>X11</b> Non overlapping Slow Action Contacts (1NO + 1NC)				
<b>Y11</b> Overlapping Slow Action Contacts (1NO + 1NC)				
<b>W02</b> Slow Action Contacts (2NC)				
<b>W20</b> Slow Action Contacts (2NO)				
<b>Z02</b> Snap Action Contacts (2NC)				
<b>X12P</b> Non overlapping Slow Action Contacts (1NO + 2NC)				
<b>X21P</b> Non overlapping Slow Action Contacts (2NO + 1NC)				
<b>W03P</b> Slow Action Contacts (3NC)				
<b>Weight (packing per unit)</b>	<b>[kg]</b>	<b>0,355</b>	<b>0,305</b>	<b>0,380</b>

### Dimensions (in mm)





**F7• - Adjustable  
Ø 6 rod lever**

F73: nylon rod  
F74: fiberglass rod



**T91: Stainless steel spring multidirectional actuator**



**T92: Multidirectional nylon actuator with stainless steel spring**



**T93: Stainless steel spring multidirectional actuator**



**T98: Pull action with ring**

1,5 0,10 / 0,32	1,0 0,12 / -	1,0 0,12 / -	1,0 0,12 / -	0,5 30 / -
--------------------	-----------------	-----------------	-----------------	---------------

<p><b>DM•F7•Z11</b></p>	<p><b>DM•T91Z11</b></p>	<p><b>DM•T92Z11</b></p>	<p><b>DM•T93Z11</b></p>	<p><b>DM•T98Z11A</b></p>
<p><b>DM•F7•X11</b></p>	<p><b>DM•T91X11</b></p>	<p><b>DM•T92X11</b></p>	<p><b>DM•T93X11</b></p>	<p><b>DM•T98X11A</b></p>
<p><b>DM•F7•Y11</b></p>	<p><b>DM•T91Y11</b></p>	<p><b>DM•T92Y11</b></p>	<p><b>DM•T93Y11</b></p>	<p><b>DM•T98Y11A</b></p>
<p><b>DM•F7•W02</b></p>	<p><b>DM•T91W02</b></p>	<p><b>DM•T92W02</b></p>	<p><b>DM•T93W02</b></p>	<p><b>DM•T98W02A</b></p>
<p><b>DM•F7•W20</b></p>	<p><b>DM•T91W20</b></p>	<p><b>DM•T92W20</b></p>	<p><b>DM•T93W20</b></p>	<p><b>DM•T98W20A</b></p>
<p><b>DM•F7•Z02</b></p>	<p><b>DM•T91Z02</b></p>	<p><b>DM•T92Z02</b></p>	<p><b>DM•T93Z02</b></p>	
<p><b>DM•F7•X12P</b></p>	<p><b>DM•T91X12P</b></p>	<p><b>DM•T92X12P</b></p>	<p><b>DM•T93X12P</b></p>	
<p><b>DM•F7•X21P</b></p>	<p><b>DM•T91X21P</b></p>	<p><b>DM•T92X21P</b></p>	<p><b>DM•T93X21P</b></p>	
<p><b>DM•F7•W03P</b></p>	<p><b>DM•T91W03P</b></p>	<p><b>DM•T92W03P</b></p>	<p><b>DM•T93W03P</b></p>	
<b>0,390</b>	<b>0,265</b>	<b>0,270</b>	<b>0,275</b>	<b>0,300</b>

