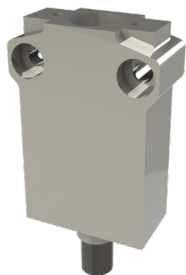


# Compact Limit Switches

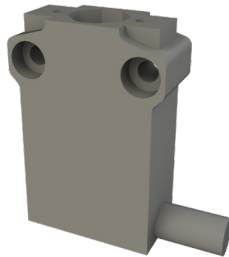
## AEM2G Series (360 Degree Spring Actuator)

- Die-cast metal housings
- 3m cable/5-pin M12 quick-disconnect (center and right)
- 1 N.O. and 1 N.C. contact on all units
- Compact size with standard 25mm hole spacing
- Wide offering of head actuators
- Epoxy resin-filled for IP67 rating
- Both snap-action (Z11) and slow-make/slow-break (X11) contacts available

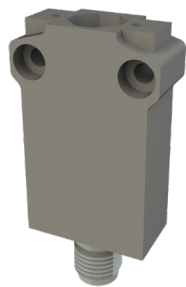
AEM2G Series Compact Limit Switches Selection Chart									
Part Number	Price	Drawing Link	Actuator Type	Max. Actuation Speed (m/s)	Min. Actuation Force (N) Torque (N•m)	Min. Positive Opening Force (N) Torque (N•m)	Contact Configuration	Connection Type	Photo
<a href="#">AEM2G92Z11-3</a>		<a href="#">PDF</a>	360 degree stainless steel spring with nylon tip	0.1	10	30	Diagram 1	Cable Out (bottom)	A
<a href="#">AEM2G9201Z11-3R</a>		<a href="#">PDF</a>						Cable Out (right)	
<a href="#">AEM2G9201Z11M</a>		<a href="#">PDF</a>						5-pin M12 quick-disconnect (bottom)	
<a href="#">AEM2G9201Z11MR</a>		<a href="#">PDF</a>						5-pin M12 quick-disconnect (right)	
<a href="#">AEM2G93Z11-3</a>		<a href="#">PDF</a>	360 degree stainless steel spring	1.0	0.10	—	Diagram 1	Cable Out (bottom)	B
<a href="#">AEM2G9301Z11-3R</a>		<a href="#">PDF</a>						Cable Out (right)	
<a href="#">AEM2G9301Z11M</a>		<a href="#">PDF</a>						5-pin M12 quick-disconnect (bottom)	
<a href="#">AEM2G9301Z11MR</a>		<a href="#">PDF</a>						5-pin M12 quick-disconnect (right)	



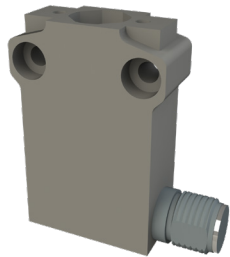
Cable Out (bottom)



Cable Out (right)



5-pin M12 quick-disconnect (bottom)



5-pin M12 quick-disconnect (right)



A



B

# Compact Limit Switches

Compact Limit Switches Specifications		
<b>Approvals</b>	UL file E191072, CE	
<b>Environmental</b>		
<b>Degree of Protection</b>	IP67 according to IEC 60529	
<b>Temperature Range</b>	Storage: -40 to 70°C (-40 to 158°F). Operating: -25 to 70°C (-13 to 158°F)	
<b>Mechanical Ratings</b>		
<b>Mechanical Life</b>	10 million operations. Models G16, G92, G93: 5 million operations.	
<b>Enclosure Material</b>	ZAMAK (zinc alloy)	
<b>Contact Blocks Rating</b>		
<b>Positive Opening</b>	Yes, except G61, G92, G93	
<b>Electrical Ratings</b>	<b>AC15</b>	Make: 100A @ 24VAC; 60A @ 120VAC; 30A @ 240VAC Break: 10A @ 24VAC; 6A @ 120VAC; 3A @ 240VAC
	<b>DC13</b>	2.8 A @ 24VDC; 0.55 A @ 125VDC; 0.27 A @ 250VDC
<b>Maximum Switching Frequency</b>	Contact blocks: all one cycle per second	
<b>Repeat Accuracy</b>	0.05 mm on the operating points at 1 million operations	
<b>Short-Circuit Protection</b>	10A @ <500V	
<b>Contact Resistance</b>	25mΩ	
<b>Recommended Minimum Operating Speed</b>	With slow-action contacts: 500mm per minute	
<b>Rated Insulation Voltage</b>	B300, R300 according to UL508; 400V (degree of pollution: 3) according to IEC 60947-1	
<b>Connection Type</b>	Cable: 3m PVC cable, 5 x 0.75mm <sup>2</sup> (18 AWG). Overall cable diameter: 8.20 mm (0.32 in.) Connector: 5-pin M12 quick-disconnect	
<b>Wiring Terminal Markings</b>	According to CENELEC EN50013	
<b>Electrical Protection</b>	Class I according to IEC60536-1	
<b>Contact Blocks Performance</b>		
<b>Operation Frequency</b>	3600 ops/h	
<b>Electrical Durability (according to IEC 947-5-1)</b>	Utilization categories AC-15 and DC-13; load factor of 0.5.	
<b>Torque</b>	All: 0.5 N•m (0.8 Nm max)	

# Compact Limit Switches

## Contacts Configuration

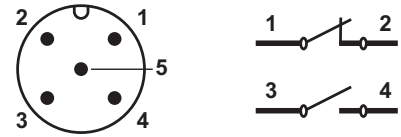
### Limit switch types

**Snap-action contact:** A contact element in which the contact motion is independent of the speed of the actuator. This feature ensures reliable electrical performance even in applications involving very slow moving actuators.

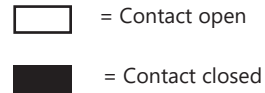
**Slow-make/slow-break contacts:** A contact element in which the contact motion is dependent on the actuator speed.

### Contacts Configuration

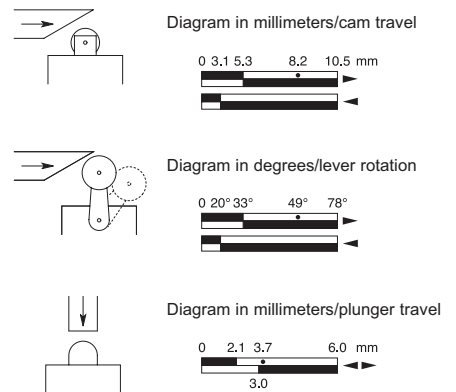
#### 5-Pin M12 connector



Note: Green/yellow wire is physical earth ground.



#### Bar Chart Examples (cam angle is 30 degrees)



Note: Values represent travel of cam in direction of arrow.

**Diagram 1**  
Z11 Snap-action contacts  
1 N.O. and 1 N.C.

#### Bar Charts

**Z11**

A = Max. travel of the operator in mm or degrees  
 B = Tripping travel of both contacts on actuation  
 C = Tripping travel of both contacts on release  
 D = Differential travel (between actuation and release)  
 P = Point from which positive opening is assured during actuation

**Diagram 2**  
X11 Slow-make/slow-break contacts  
1 N.O. and 1 N.C.

**X11**

A = Max. travel of the operator in mm or degrees  
 B = Tripping travel of the N.C. contact  
 C = Tripping travel of the N.O. contact  
 P = Point from which positive opening is assured during actuation

Part Series	Contact Configuration	Displacement Values mm [in] or degrees			
		A	B	C	P
AEM2G11, AEM2G16, AEM2G18, AEM2G21	Z11	5.0 [0.20]	2.2 [0.09]	1.4 [0.06]	4.3 [0.17]
AEM2G11, AEM2G16, AEM2G21	X11	5.0 [0.20]	1.9 [0.07]	3.2 [0.13]	3.4 [0.13]
AEM2G12, AEM2G13, AEM2G14, AEM2G15, AEM2G17, AEM2G18, AEM2G22, AEM2G23, AEM2G24, AEM2G25	Z11	8.7 [0.34]	3.8 [0.15]	2.4 [0.09]	7.5 [0.30]
AEM2G12, AEM2G13, AEM2G14, AEM2G15, AEM2G22, AEM2G23, AEM2G24, AEM2G25	X11	8.7 [0.34]	3.3 [0.13]	5.7 [0.22]	5.9 [0.23]
AEM2G41, AEM2G42, AEM2G43, AEM2G45, AEM2G51, AEM2G71, AEM2G72, AEM2G73, AEM2G74, AEM2G75	Z11	74°	32°	21°	65°
AEM2G41, AEM2G42, AEM2G43, AEM2G45, AEM2G51, AEM2G71, AEM2G72, AEM2G73, AEM2G74, AEM2G75	X11	74°	28°	48°	50°
AEM2G61	Z11	74°	32°	21°	Not positive-opening
AEM2G61	X11	74°	28°	48°	
AEM2G92	Z11		20°	10°	
AEM2G93	Z11		20°	10°	