

# Compact Limit Switches

## AEM2G Series (Lever with Roller 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 25 mm 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
- N.C. contacts are positive-opening operated unless otherwise noted. →

AEM2G Series Compact Limit Switches Selection Chart									
Part Number	Price	Actuator Type	Max. Actuation Speed (m/s)	Min. Actuation Force (N)/ Torque (Nm)	Min. Positive Opening Force (N)/ Torque (Nm)	Head Dimensions	Contact Config. Diagram	Connection Type	Photo
<b>AEM2G41Z11-3</b>	\$26.00	side rotary lever with 14mm nylon roller	1.5	0.08	0.28	Figure 10	Diagram 1	Cable Out (Bottom)	A
<b>AEM2G41X11-3</b>	\$26.00						Diagram 2		
<b>AEM2G4120Z11-3R</b>	\$23.50						Diagram 1	Cable Out (Right)	
<b>AEM2G4120Z11M</b>	\$21.50							5-Pin M12 Quick Disconnect (Bottom)	
<b>AEM2G4120Z11MR</b>	\$21.50							5-Pin M12 Quick Disconnect (Right)	
<b>AEM2G42Z11-3</b>	\$26.50	side rotary lever with 14mm metal roller	1.5	0.08	0.28	Figure 10	Diagram 1	Cable Out (Bottom)	B
<b>AEM2G42X11-3</b>	\$26.50						Diagram 2		
<b>AEM2G4220Z11-3R</b>	\$23.50						Diagram 1	Cable Out (Right)	
<b>AEM2G4220Z11M</b>	\$21.50							5-Pin M12 Quick Disconnect (Bottom)	
<b>AEM2G4220Z11MR</b>	\$21.50							5-Pin M12 Quick Disconnect (Right)	
<b>AEM2G43Z11-3</b>	\$27.00	side rotary lever with 14mm ball bearing roller	1.5	0.08	0.28	Figure 10	Diagram 1	Cable Out (Bottom)	C
<b>AEM2G43X11-3</b>	\$27.00						Diagram 2		
<b>AEM2G4320Z11-3R</b>	\$24.50						Diagram 1	Cable Out (Right)	
<b>AEM2G4320Z11M</b>	\$21.50							5-Pin M12 Quick Disconnect (Bottom)	
<b>AEM2G4320Z11MR</b>	\$21.50							5-Pin M12 Quick Disconnect (Right)	
<b>AEM2G45Z11-3</b>	\$28.00	side rotary lever with 18mm nylon roller	1.5	0.08	0.28	Figure 11	Diagram 1	Cable Out (Bottom)	D
<b>AEM2G45X11-3</b>	\$28.00						Diagram 2		
<b>AEM2G4520Z11-3R</b>	\$24.50						Diagram 1	Cable Out (Right)	
<b>AEM2G4520Z11M</b>	\$22.50							5-Pin M12 Quick Disconnect (Bottom)	
<b>AEM2G4520Z11MR</b>	\$22.50							5-Pin M12 Quick Disconnect (Right)	



**A**



**B**



**C**



**D**



Cable Out (Bottom)



Cable Out (Right)



5-Pin M12 Quick Disconnect (Bottom)



5-Pin M12 Quick Disconnect (Right)

# Compact Limit Switches Dimensions

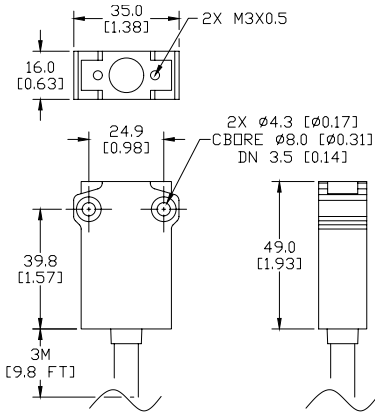
## AEM2G Series Bodies

### Dimensions

mm [inches]

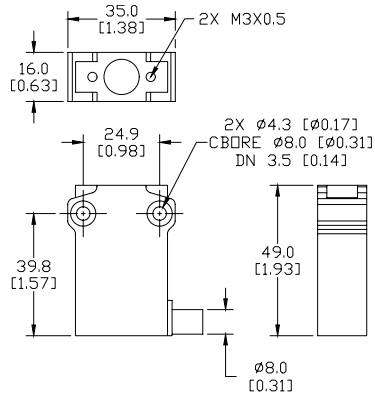
#### AEM2Gxxxx-3

##### Cable Out (Bottom)



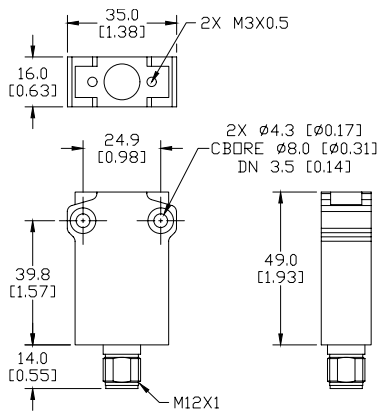
#### AEM2Gxxxx-3R

##### Cable Out (Right)



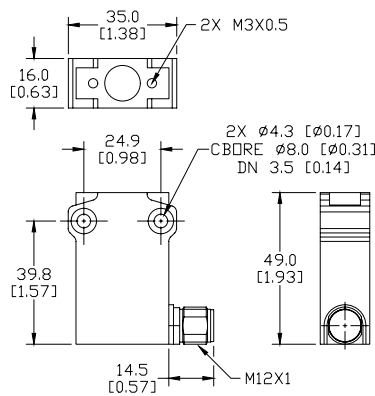
#### AEM2Gxxxx-M

##### 5-Pin M12 Quick Disconnect (Bottom)



#### AEM2Gxxxx-MR

##### 5-Pin M12 Quick Disconnect (Right)



See our website, [www.AutomationDirect.com](http://www.AutomationDirect.com), for complete Engineering drawings.

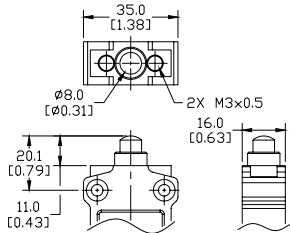
# Compact Limit Switches Dimensions

## Dimensions

mm [inches]

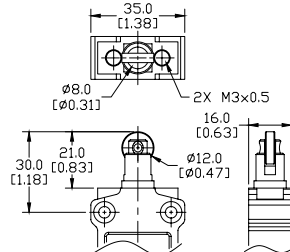
### AEM2G Series Heads

Figure 1



AEM2G11\*11\*

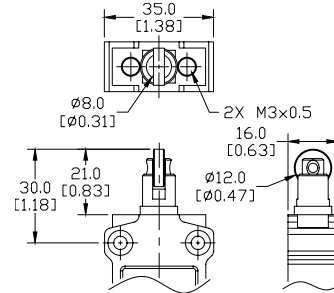
Figure 2



AEM2G12\*11-\*

AEM2G13\*11-\*

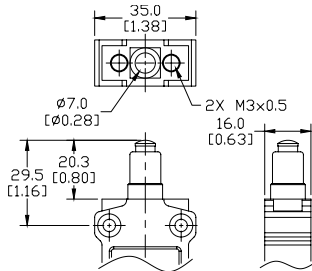
Figure 3



AEM2G14\*11-\*

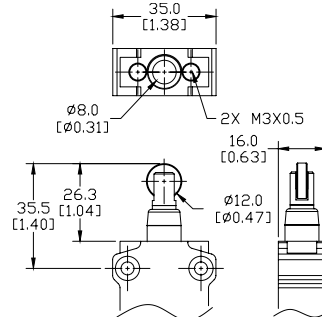
AEM2G15\*11-\*

Figure 4



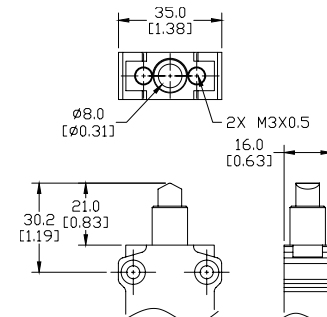
AEM2G16\*11-\*

Figure 5



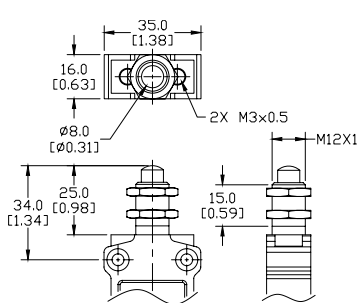
AEM2G17\*11-\*

Figure 6



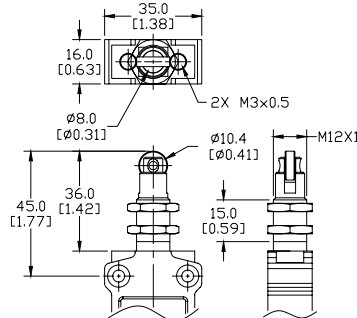
AEM2G18\*11-\*

Figure 7



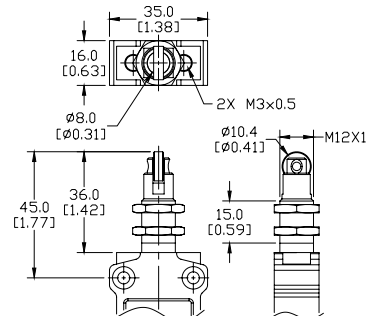
AEM2G21\*11-\*

Figure 8



AEM2G22\*11-\*

Figure 9



AEM2G24\*11-\*

AEM2G25\*11-\*

See our website, [www.AutomationDirect.com](http://www.AutomationDirect.com), for complete Engineering drawings.

# 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>	2.8A @ 24VDC; 0.55A @ 125VDC; 0.27A@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>	25 m Ω	
<b>Recommended Minimum Operating Speed</b>	With slow-action contacts: 500 mm 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 Nm (0.8 Nm max)	

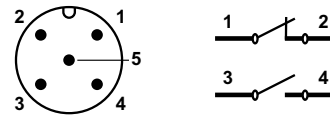
# Compact Limit Switches Contacts Configuration

## 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.

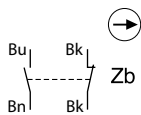
5-Pin M12 connector



## Contacts Configuration

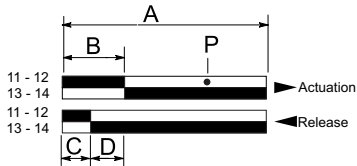
**Diagram 1**

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



### Bar Charts

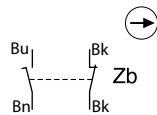
**Z11**



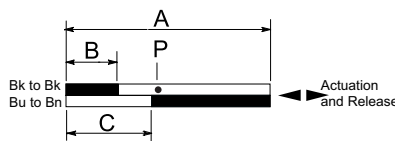
A = Max. travel of the operator in mm or degrees  
B = Tripping travel of both contacts on actuation  
C = Tripping travel of both contacts on release  
D = Differential travel (between actuation and release)  
P = Point from which positive opening is assured during actuation

**Diagram 2**

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



**X11**

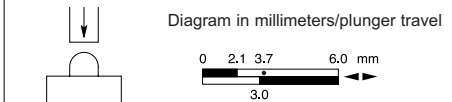
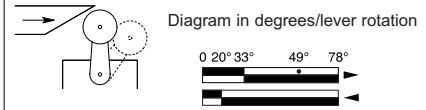
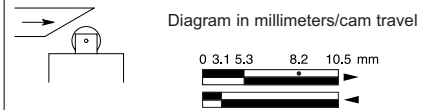


A = Max. travel of the operator in mm or degrees  
B = Tripping travel of the N.C. contact  
C = Tripping travel of the N.O. contact  
P = Point from which positive opening is assured during actuation

**Note: Green/yellow (Pin 5) wire is physical earth ground.**

□ = Contact open  
■ = Contact closed

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



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

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°	