

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 |
| AEM2G41Z11-3 | \$26.00 | side rotary lever with 14mm nylon roller | 1.5 | 0.08 | 0.28 | Figure 10 | Diagram 1 | Cable Out (Bottom) | A |
| AEM2G41X11-3 | \$26.00 | | | | | | Diagram 2 | | |
| AEM2G4120Z11-3R | \$23.00 | | | | | | Diagram 1 | Cable Out (Right) | |
| AEM2G4120Z11M | \$21.00 | | | | | | | 5-Pin M12 Quick Disconnect (Bottom) | |
| AEM2G4120Z11MR | \$21.00 | | | | | | | 5-Pin M12 Quick Disconnect (Right) | |
| AEM2G42Z11-3 | \$26.50 | side rotary lever with 14mm metal roller | 1.5 | 0.08 | 0.28 | Figure 10 | Diagram 1 | Cable Out (Bottom) | B |
| AEM2G42X11-3 | \$26.50 | | | | | | Diagram 2 | | |
| AEM2G4220Z11-3R | \$23.00 | | | | | | Diagram 1 | Cable Out (Right) | |
| AEM2G4220Z11M | \$21.00 | | | | | | | 5-Pin M12 Quick Disconnect (Bottom) | |
| AEM2G4220Z11MR | \$21.00 | | | | | | | 5-Pin M12 Quick Disconnect (Right) | |
| AEM2G43Z11-3 | \$27.00 | side rotary lever with 14mm ball bearing roller | 1.5 | 0.08 | 0.28 | Figure 10 | Diagram 1 | Cable Out (Bottom) | C |
| AEM2G43X11-3 | \$27.00 | | | | | | Diagram 2 | | |
| AEM2G4320Z11-3R | \$24.00 | | | | | | Diagram 1 | Cable Out (Right) | |
| AEM2G4320Z11M | \$21.00 | | | | | | | 5-Pin M12 Quick Disconnect (Bottom) | |
| AEM2G4320Z11MR | \$21.00 | | | | | | | 5-Pin M12 Quick Disconnect (Right) | |
| AEM2G45Z11-3 | \$28.00 | side rotary lever with 18mm nylon roller | 1.5 | 0.08 | 0.28 | Figure 11 | Diagram 1 | Cable Out (Bottom) | D |
| AEM2G45X11-3 | \$28.00 | | | | | | Diagram 2 | | |
| AEM2G4520Z11-3R | \$24.00 | | | | | | Diagram 1 | Cable Out (Right) | |
| AEM2G4520Z11M | \$22.00 | | | | | | | 5-Pin M12 Quick Disconnect (Bottom) | |
| AEM2G4520Z11MR | \$22.00 | | | | | | | 5-Pin M12 Quick Disconnect (Right) | |



A



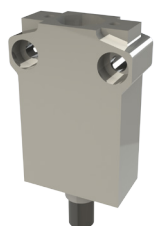
B



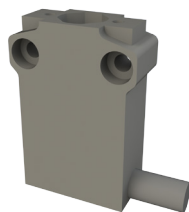
C



D



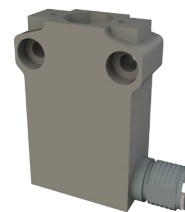
Cable Out (Bottom)



Cable Out (Right)



5-Pin M12 Quick Disconnect (Bottom)



5-Pin M12 Quick Disconnect (Right)

Compact Limit Switches Dimensions

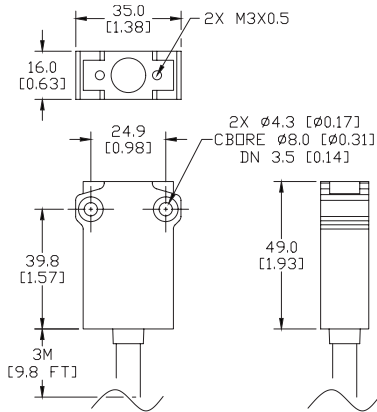
AEM2G Series Bodies

Dimensions

mm [inches]

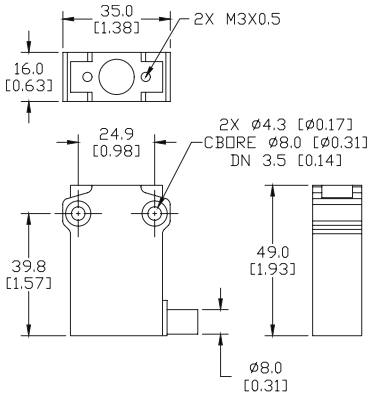
AEM2Gxxxx-3

Cable Out (Bottom)



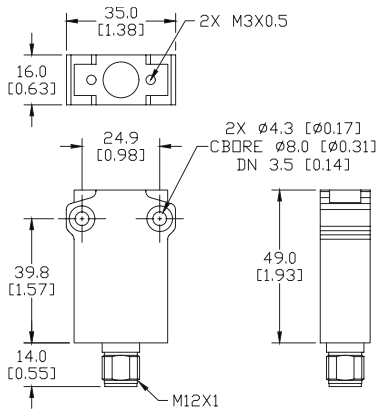
AEM2Gxxxx-3R

Cable Out (Right)



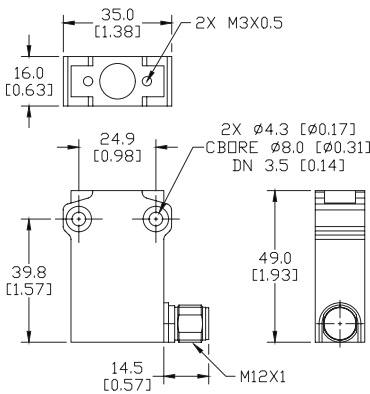
AEM2Gxxxx-M

5-Pin M12 Quick Disconnect (Bottom)



AEM2Gxxxx-MR

5-Pin M12 Quick Disconnect (Right)



See our website, www.AutomationDirect.com, for complete Engineering drawings.

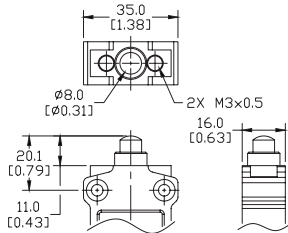
Compact Limit Switches Dimensions

Dimensions

mm [inches]

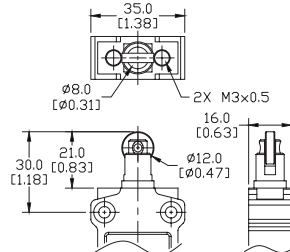
AEM2G Series Heads

Figure 1



AEM2G11*11*

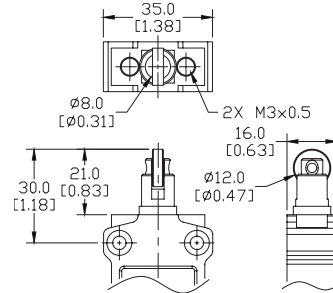
Figure 2



AEM2G12*11-*

AEM2G13*11-*

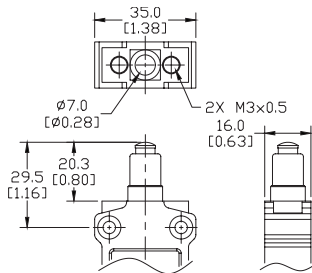
Figure 3



AEM2G14*11-*

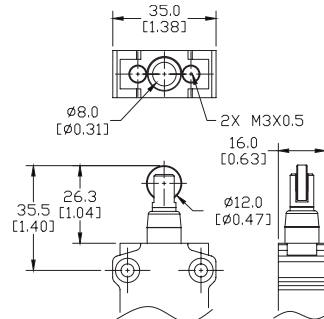
AEM2G15*11-*

Figure 4



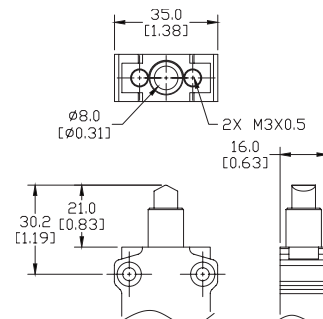
AEM2G16*11-*

Figure 5



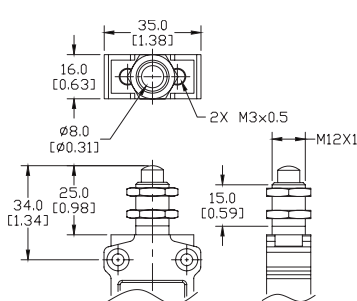
AEM2G17*11-*

Figure 6



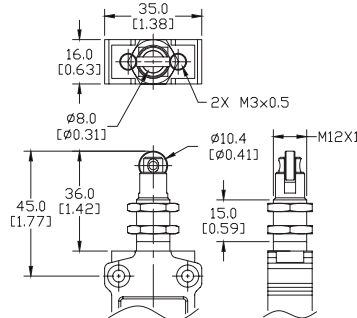
AEM2G18*11-*

Figure 7



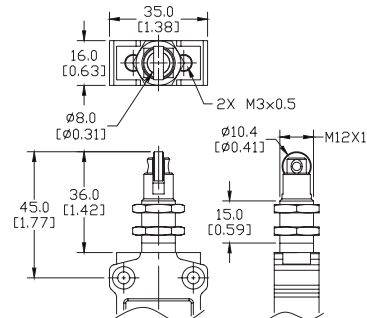
AEM2G21*11-*

Figure 8



AEM2G22*11-*

Figure 9



AEM2G24*11-*

AEM2G25*11-*

See our website, www.AutomationDirect.com, for complete Engineering drawings.

Compact Limit Switches

| Compact Limit Switches Specifications | | |
|---|--|--|
| Approvals | | |
| UL file E191072, CE | | |
| Environmental | | |
| Degree of Protection | IP67 according to IEC 60529 | |
| Temperature Range | Storage: -40° to 70°C (-40° to 158°F). Operating: -25° to 70°C (-13° to 158°F) | |
| Mechanical Ratings | | |
| Mechanical Life | 10 million operations. Models G16, G92, G93: 5 million operations. | |
| Enclosure Material | ZAMAK (zinc alloy) | |
| Contact Blocks Rating | | |
| Positive Opening | Yes, except G61, G92, G93 | |
| Electrical Ratings | AC15 | Make: 100A @ 24VAC; 60A @ 120VAC; 30A @ 240VAC Break: 10A @ 24VAC; 6A @ 120VAC; 3A @ 240VAC |
| | DC13 | 2.8A @ 24VDC; 0.55A @ 125VDC; 0.27A@250VDC |
| Maximum Switching Frequency | Contact blocks: all one cycle per second | |
| Repeat Accuracy | 0.05 mm on the operating points at 1 million operations | |
| Short-Circuit Protection | 10A @ \sim500V | |
| Contact Resistance | 25 m Ω | |
| Recommended Minimum Operating Speed | With slow-action contacts: 500 mm per minute | |
| Rated Insulation Voltage | B300, R300 according to UL508; 400V (degree of pollution: 3) according to IEC 60947-1 | |
| Connection Type | Cable: 3m PVC cable, 5 x 0.75mm ² (18 AWG). Overall cable diameter: 8.20 mm (0.32 in.) Connector: 5-pin M12 quick disconnect | |
| Wiring Terminal Markings | According to CENELEC EN50013 | |
| Electrical Protection | Class I according to IEC60536-1 | |
| Contact Blocks Performance | | |
| Operation Frequency | 3600 ops/h | |
| Electrical Durability (according to IEC 947-5-1) | Utilization categories AC-15 and DC-13; load factor of 0.5. | |
| Torque | All: 0.5 Nm (0.8 Nm max) | |

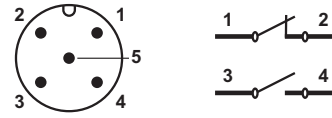
Compact Limit Switches Contacts Configuration

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.

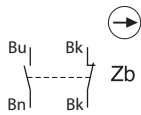
5-Pin M12 connector



Contacts Configuration

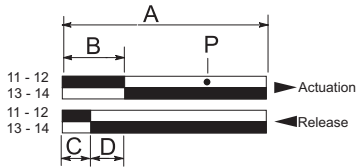
Diagram 1

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



Bar Charts

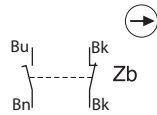
Z11



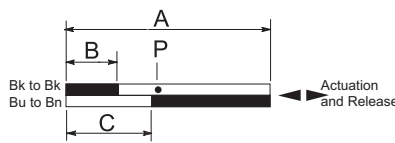
A = Max. travel of the operator in mm or degrees
 B = Tripping travel of both contacts on actuation
 C = Tripping travel of both contacts on release
 D = Differential travel (between actuation and release)
 P = Point from which positive opening is assured during actuation

Diagram 2

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



X11

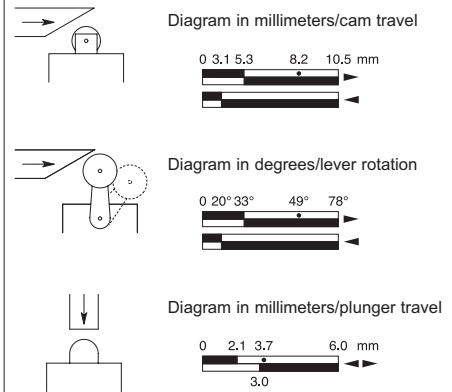


A = Max. travel of the operator in mm or degrees
 B = Tripping travel of the N.C. contact
 C = Tripping travel of the N.O. contact
 P = Point from which positive opening is assured during actuation

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° | |