

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 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

| 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 |
| AEM2G92Z11-3 | \$27.00 | 360 degree stainless steel spring with nylon tip | 0.1 | 10 | 30 | Figure 16 | Diagram 1 | Cable Out (Bottom) | A |
| AEM2G9201Z11-3R | \$24.00 | | | | | | | Cable Out (Right) | |
| AEM2G9201Z11M | \$21.00 | | | | | | | 5-Pin M12 Quick Disconnect (Bottom) | |
| AEM2G9201Z11MR | \$21.00 | | | | | | | 5-Pin M12 Quick Disconnect (Right) | |
| AEM2G93Z11-3 | \$27.00 | 360 degree stainless steel spring | 1.0 | 0.10 | — | Figure 17 | Diagram 1 | Cable Out (Bottom) | B |
| AEM2G9301Z11-3R | \$24.00 | | | | | | | Cable Out (Right) | |
| AEM2G9301Z11M | \$22.00 | | | | | | | 5-Pin M12 Quick Disconnect (Bottom) | |
| AEM2G9301Z11MR | \$22.00 | | | | | | | 5-Pin M12 Quick Disconnect (Right) | |



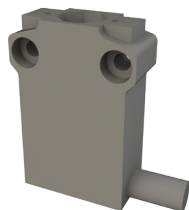
A



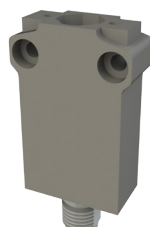
B



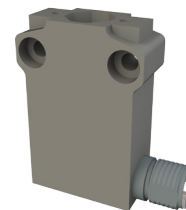
Cable Out (Bottom)



Cable Out (Right)



5-Pin M12 Quick Disconnect (Bottom)



5-Pin M12 Quick Disconnect (Right)

Compact Limit Switches Dimensions

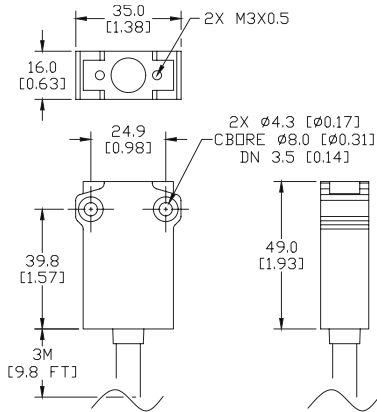
AEM2G Series Bodies

Dimensions

mm [inches]

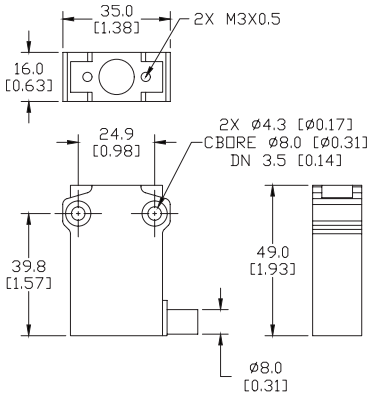
AEM2Gxxxx-3

Cable Out (Bottom)



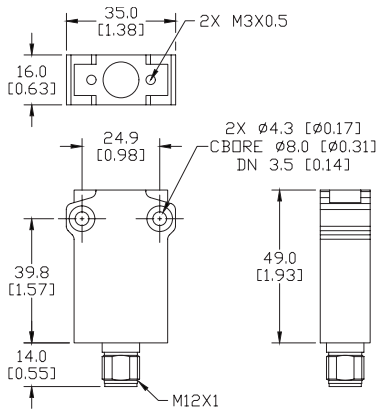
AEM2Gxxxx-3R

Cable Out (Right)



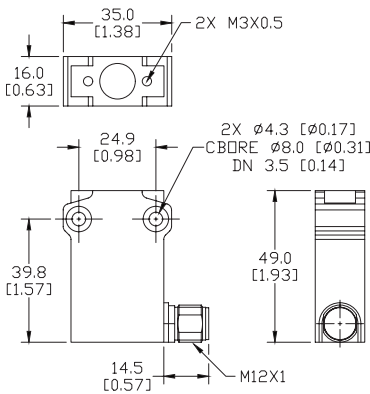
AEM2Gxxxx-M

5-Pin M12 Quick Disconnect (Bottom)



AEM2Gxxxx-MR

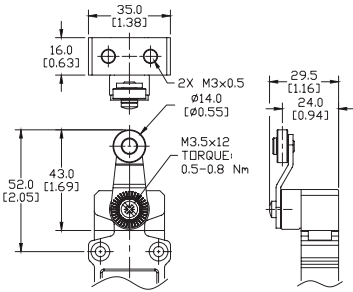
5-Pin M12 Quick Disconnect (Right)



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

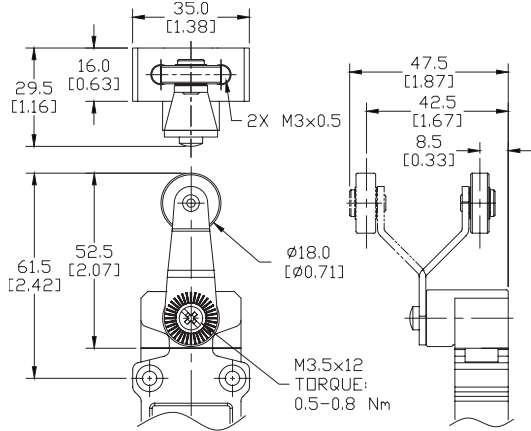
Compact Limit Switches Dimensions, cont.

Figure 10



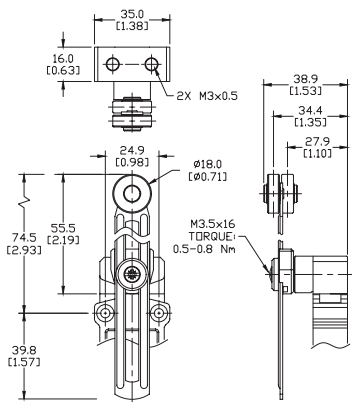
**AEM2G41*11-3 AEM2G42*11-3
AEM2G43*11-3**

Figure 11



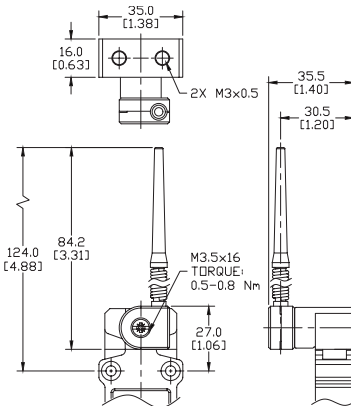
AEM2G45*11-*

Figure 12



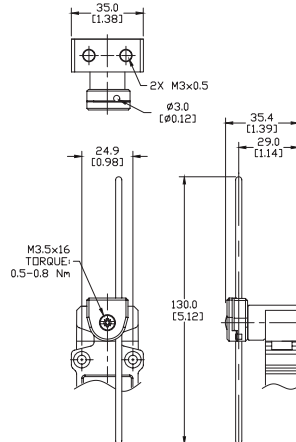
AEM2G51*11-*

Figure 13



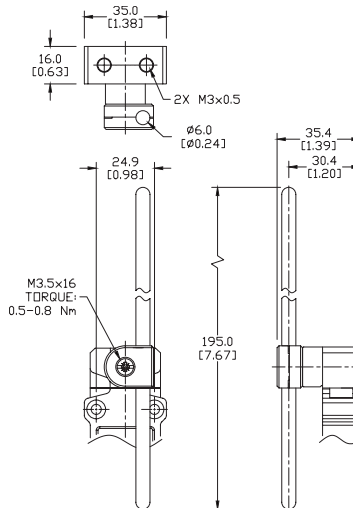
AEM2G61*11-*

Figure 14



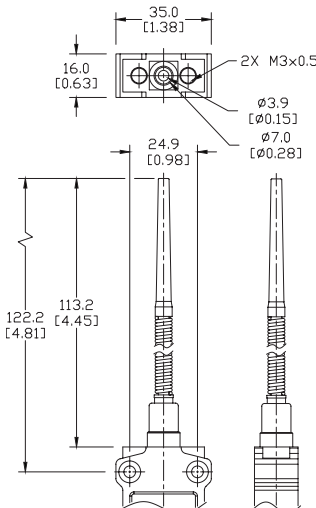
AEM2G71*11-* AEM2G75*11-*
AEM2G72*11-*

Figure 15



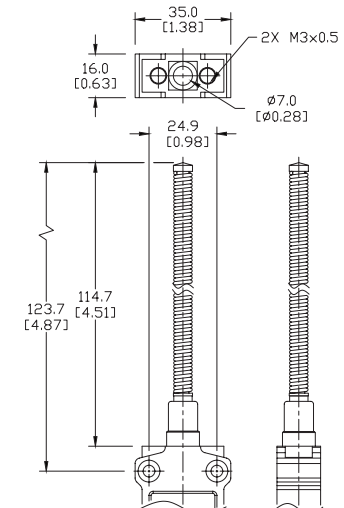
AEM2G73*11-*
AEM2G74*11-*

Figure 16



AEM2G92*11-*

Figure 17



AEM2G93*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) | |

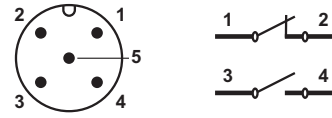
Compact Limit Switches Contacts Configuration

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.

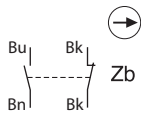
5-Pin M12 connector



Contacts Configuration

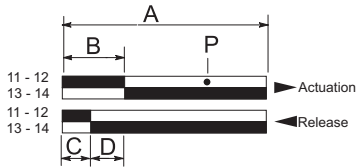
Diagram 1

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



Bar Charts

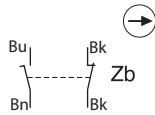
Z11



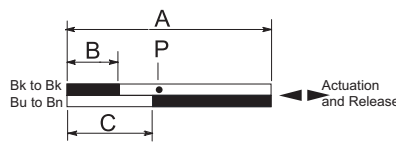
A = Max. travel of the operator in mm or degrees
B = Tripping travel of both contacts on actuation
C = Tripping travel of both contacts on release
D = Differential travel (between actuation and release)
P = Point from which positive opening is assured during actuation

Diagram 2

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



X11

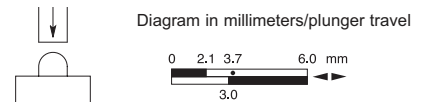
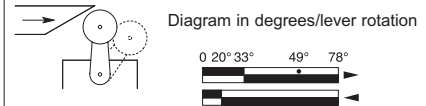
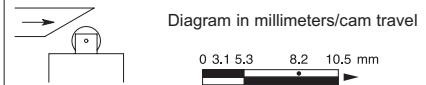


A = Max. travel of the operator in mm or degrees
B = Tripping travel of the N.C. contact
C = Tripping travel of the N.O. contact
P = Point from which positive opening is assured during actuation

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



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° | |