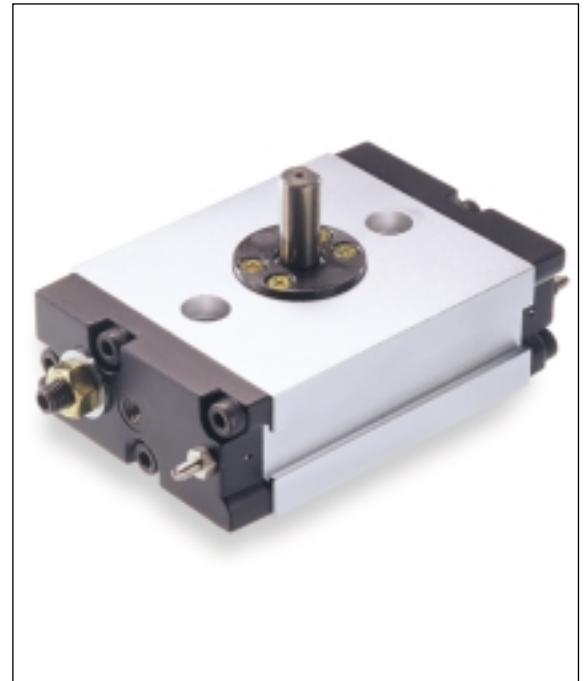


**High torque levels from a compact product**  
**Minimal radial or thrust shudder means smooth operation**  
**Adjustable angle of rotation**  
**Integral magnets for positional feedback**



### Technical data

Medium:  
Compressed air filtered, lubricated or non-lubricated  
Operating pressure:  
14,5 to 101,5 psig (1 to 7 bar)  
Operating temperature:  
32°F to 140°F (+ 0°C to + 60°C)  
Mounting:  
Mounting holes on three faces  
Rotation angle:  
90°, 180°  
Adjustable ± see table on page 2

### Materials

Body: aluminium alloy  
End covers: aluminium alloy  
Shaft: carbon steel  
External shaft cover and screws: mild steel  
External nuts: mild steel  
External screws: chrome molybdenum steel

### Ordering information

To order a compact rotary actuator with torque up to 23 in. lbs (2,6 Nm) at 87 psig (6 bar) and a 180° rotation quote: **M/60271/M/180**.

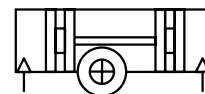
To order a compact rotary actuator with torque up to 65.5 in. lbs (7,4 Nm) at 87 psig (6 bar) and a 90° rotation quote: **M/60273/M/90**

### Accessories

Switch M/345 or M/346

See page

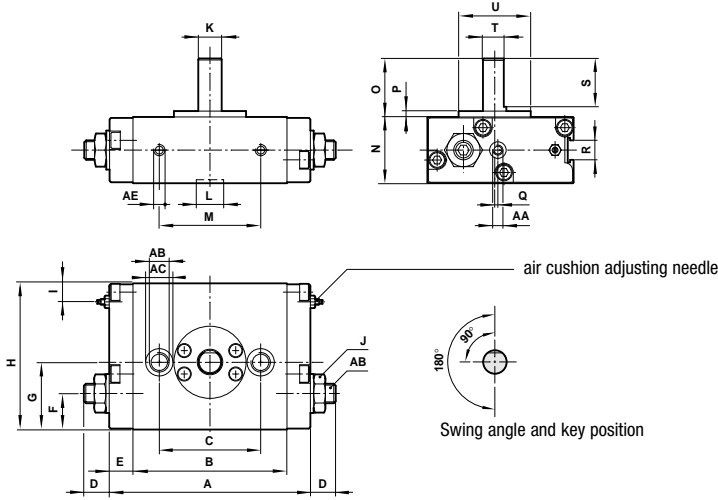
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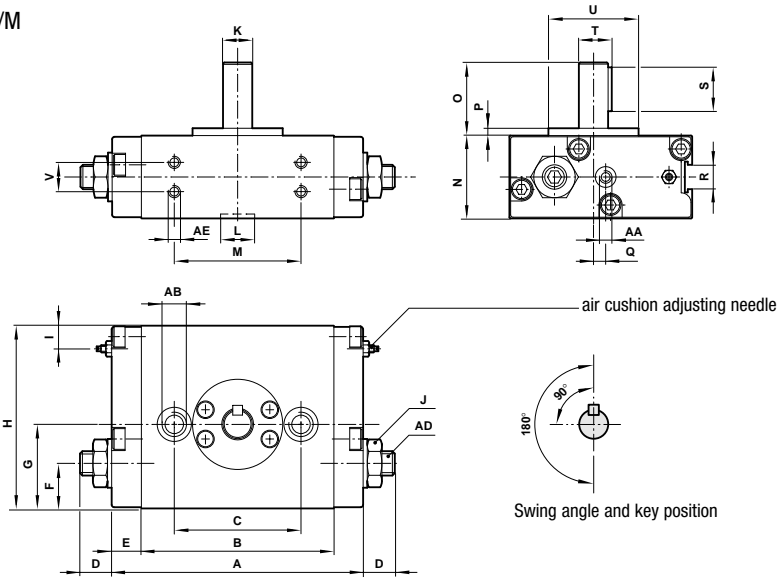
Basic dimensions

M/60270/M



	Ø	A	B	C	D	E	F	G	H	I	J	K	L				
M/60270/M*	14	3.46 (88)	2.68 (68)	1.89 (48)	0.43 (11)	0.39 (10)	0.67 (17)	1.14 (29)	2.36 (60)	0.31 (8)	0.39 A/F (10 A/F)	Ø 0,31h7 - 0,0006 (Ø8h7 - 0,015)	Ø 0,39 + 0,002 deep 0,06 (Ø10 + 0,05 deep 1,5)				
	Ø	M	N	O	P	Q	R	S	T	U	AA	AB	AC	AD	AE	lb	kg
M/60270/M*	14	1.77 (45)	1.10 (28)	0.79 (20)	0.08 (2)	0.06 (1,5)	0.39 (10)	0.63 (16)	0.28 (7)	Ø1,02 - 0,002 (Ø26 - 0,05)	M5 X 0,8	M6 X 1	Ø 0,37 deep 0,22 (Ø9,5 deep 5,5)	M6 X 1	M5 X 0,8 deep 0,24 (M5 X 0,8 deep 6)	0,92 (0,46)	

M/60271/M ... M/60273/M



	Ø	A	B	C	D	E	F	G	H	I	J
M/60271/M/90	16	3.86 (98)	2.91 (74)	1.77 (45)	0.30 (14)	0.47 (12)	0.69 (17,5)	1.22 (31)	2.68 (68)	0.37 (9,5)	0,51 A/F (13 A/F)
M/60271/M/180	16	4.37 (111)	3.43 (87)	1.77 (45)	0.30 (14)	0.47 (12)	0.69 (17,5)	1.22 (31)	2.68 (68)	0.37 (9,5)	0,51 A/F (13 A/F)
M/60272/M/90	18	4.06 (103)	3.11 (79)	2.05 (52)	0.55 (14)	0.47 (12)	0.73 (18,5)	1.36 (34,5)	2.95 (75)	0.37 (9,5)	0,67 A/F (17 A/F)
M/60272/M/180	18	5.31 (135)	4.37 (111)	2.05 (52)	0.55 (14)	0.47 (12)	0.73 (18,5)	1.36 (34,5)	2.95 (75)	0.37 (9,5)	0,67 A/F (17 A/F)
M/60273/M/90	22	4.53 (115)	3.43 (87)	2.36 (60)	0.59 (15)	0.55 (14)	0.87 (22)	1.61 (41)	3.44 (87,5)	0.39 (10)	0,67 A/F (17 A/F)
M/60273/M/180	22	6.22 (158)	5.12 (130)	2.36 (60)	0.59 (15)	0.55 (14)	0.87 (22)	1.61 (41)	3.44 (87,5)	0.39 (10)	0,67 A/F (17 A/F)
	Ø	K	L	M	N	O	P	Q	R	S	T
M/60271/M/90	16	Ø 0,39h7 - 0,0006 (Ø10h7 - 0,015)	Ø 0,47 + 0,002 deep 0,08 (Ø12 + 0,05 deep 2)	1.77 (45)	1.26 (32)	0.98 (25)	0.10 (2,5)	0.08 (2)	0.39 (10)	0.71 (18)	0,45 (11,5)
M/60271/M/180	16	Ø 0,39h7 - 0,0006 (Ø10h7 - 0,015)	Ø 0,47 + 0,002 deep 0,08 (Ø12 + 0,05 deep 2)	1.77 (45)	1.26 (32)	0.98 (25)	0.10 (2,5)	0.08 (2)	0.39 (10)	0.71 (18)	0,45 (11,5)
M/60272/M/90	18	Ø 0,47h7 - 0,001 (Ø12h7 - 0,018)	Ø 0,55 + 0,002 deep 0,07 (Ø14 + 0,05 deep 1,8)	2.05 (52)	1.34 (34)	1.18 (30)	0.12 (3)	0.20 (5)	0.39 (10)	0.71 (18)	0,53 (13,5)
M/60272/M/180	18	Ø 0,47h7 - 0,001 (Ø12h7 - 0,018)	Ø 0,55 + 0,002 deep 0,07 (Ø14 + 0,05 deep 1,8)	2.05 (52)	1.34 (34)	1.18 (30)	0.12 (3)	0.20 (5)	0.39 (10)	0.71 (18)	0,53 (13,5)
M/60273/M/90	22	Ø 0,59h7 - 0,001 (Ø15h7 - 0,018)	Ø 0,67 + 0,002 deep 0,08 (Ø17 + 0,05 deep 2)	2.36 (60)	1.54 (39)	1.38 (35)	0.12 (3)	0.20 (5)	0.39 (10)	0.79 (20)	0,67 (17)
M/60273/M/180	22	Ø 0,59h7 - 0,001 (Ø15h7 - 0,018)	Ø 0,67 + 0,002 deep 0,08 (Ø17 + 0,05 deep 2)	2.36 (60)	1.54 (39)	1.38 (35)	0.12 (3)	0.20 (5)	0.39 (10)	0.79 (20)	0,67 (17)
	Ø	U	V	AA	AB	AC	AD	AE	lb	kg	
M/60271/M/90	16	Ø1,26 - 0,002 (Ø32 - 0,05)	0.39 (10)	M5 X 0,8	M8 X 1,25	Ø 0,43 deep 0,26 (Ø11 deep 6,5)	M8 X 1,25	M4 X 0,7 deep 0,24 (M4 X 0,7 deep 6)	1,4	(0,7)	
M/60271/M/180	16	Ø1,26 - 0,002 (Ø32 - 0,05)	0.39 (10)	M5 X 0,8	M8 X 1,25	Ø 0,43 deep 0,26 (Ø11 deep 6,5)	M8 X 1,25	M4 X 0,7 deep 0,24 (M4 X 0,7 deep 6)	1,6	(0,8)	
M/60272/M/90	18	Ø1,46 - 0,002 (Ø37 - 0,05)	0.47 (12)	M5 X 0,8	M10 X 1,5	Ø 0,55 deep 0,33 (Ø14 deep 8,5)	M10 X 1,5	M5 X 0,8 deep 0,28 (M5 X 0,8 deep 7)	2,0	(1,0)	
M/60272/M/180	18	Ø1,46 - 0,002 (Ø37 - 0,05)	0.47 (12)	M5 X 0,8	M10 X 1,5	Ø 0,55 deep 0,33 (Ø14 deep 8,5)	M10 X 1,5	M5 X 0,8 deep 0,28 (M5 X 0,8 deep 7)	2,4	(1,2)	
M/60273/M/90	22	Ø1,73 - 0,002 (Ø44 - 0,05)	0.55 (14)	M5 X 0,8	M10 X 1,5	Ø 0,55 deep 0,33 (Ø14 deep 8,5)	M10 X 1,5	M6 X 1 deep 0,31 (M6 X 1 deep 8)	3,2	(1,6)	
M/60273/M/180	22	Ø1,73 - 0,002 (Ø44 - 0,05)	0.55 (14)	M5 X 0,8	M10 X 1,5	Ø 0,55 deep 0,33 (Ø14 deep 8,5)	M10 X 1,5	M6 X 1 deep 0,31 (M6 X 1 deep 8)	3,6	(1,8)	



**Standard models ● Theoretical torque ● Angle of rotation ● Angle adjustment range ● Permissible forces ● Air consumption**

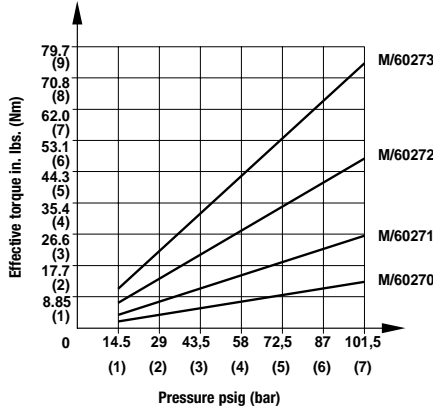
Model	Theoretical torque in. lb (Nm) at 6 bar	Angle of rotation	Angle adjustment range	Permissible forces lbs (N)		Air consumption in (cm <sup>3</sup> ) at 6 bar *
				Axial	Radial	
M/60270/M/90	13,3 (1,5)	90°	70° ... 95°	0,55 (2,45)	1,1 (4,90)	0.005 (0.09)
M/60270/M/180	13,3 (1,5)	180°	160° ... 185°	0,55 (2,45)	1,1 (4,90)	0.01 (0,18)
M/60271/M/90	23,0 (2,6)	90°	70° ... 95°	2,21 (9,81)	4,41 (19,6)	0.01 (0,17)
M/60271/M/180	23,0 (2,6)	180°	160° ... 185°	2,21 (9,81)	4,41 (19,6)	0.02 (0,33)
M/60272/M/90	40,7 (4,6)	90°	70° ... 95°	4,41 (19,6)	8,81 (39,2)	0.02 (0,27)
M/60272/M/180	40,7 (4,6)	180°	160° ... 185°	4,41 (19,6)	8,81 (39,2)	0.03 (0,55)
M/60273/M/90	65,5 (7,4)	90°	70° ... 95°	6,61 (29,4)	13,2 (58,8)	0.03 (0,44)
M/60273/M/180	65,5 (7,4)	180°	160° ... 185°	6,61 (29,4)	13,2 (58,8)	0.05 (0,89)

\* per cycle

**Switches**

Model Reed	Two wire solid state	Three wire solid state	Voltage		Current Max.	Temperature °C	LED	Features	Cable Length	Cable		
			V d.c.	V a.c.						Type	Straight	90°
M/346/LAU/1PV	-	-	12 ... 100	12 ... 125	50mA	32° ... 140° (0° ... +60°)	●	-	4.92 ft. (1,5m)	PVC	●	
M/346/LAU/5PV	-	-	12 ... 100	12 ... 125	50mA	32° ... 140° (0° ... +60°)	●	-	16.40 ft. (5m)	PVC	●	
-	M/346/EAU/1APV	-	10 ... 28	-	70mA	32° ... 140° (0° ... +60°)	●	-	4.92 ft. (1,5m)	PVC		●
-	M/346/EAU/5APV	-	10 ... 28	-	70mA	32° ... 140° (0° ... +60°)	●	-	16.40 ft. (5m)	PVC		●
-	M/345/EAU/1PV	-	10 ... 28	-	40mA	32° ... 140° (0° ... +60°)	●	-	3.28 ft. (1m)	PVC	●	
-	M/345/EAU/3PV	-	10 ... 28	-	40mA	32° ... 140° (0° ... +60°)	●	-	9.84 ft. (3m)	PVC	●	
-	-	M/345/EAN/1PV	4,5 ... 28	-	100mA	32° ... 140° (0° ... +60°)	●	NPN	3.28 ft. (1m)	PVC	●	
-	-	M/345/EAN/3PV	4,5 ... 28	-	100mA	32° ... 140° (0° ... +60°)	●	NPN	9.84 ft. (3m)	PVC	●	

**Theoretical torque**



**Warning**

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under 'Technical Data'.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

**System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.**

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

**Smooth operation with zero backlash**  
**Lightweight**  
**Compact envelope dimensions**  
**Integral magnets for positional feedback**



### Technical data

Medium:  
Compressed air, filtered, lubricated or non-lubricated  
Operating pressure:  
14,5 to 101,5 psig (1 to 7 bar)  
Operating temperature:  
32°F to 140°F (+ 5°C to + 60°C)  
Mounting:  
Mounting holes in body  
Rotation angle:  
90°, 180°  
Adjustable  $\pm 5^\circ$

### Materials

Body: aluminium alloy  
End covers: aluminium alloy  
Shaft: carbon steel  
External stop: carbon steel  
External nuts: mild steel  
External screws: chrome molybdenum steel  
Elastomers: nitrile

### Ordering information

To order a rotary actuator with torque up to 2,0 in lbs (0,23 Nm) at 87 psig (6 bar) and a 180° rotation quote: **M/60215/M/180**

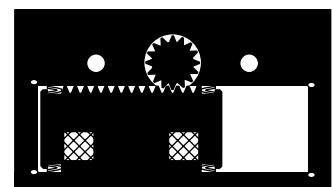
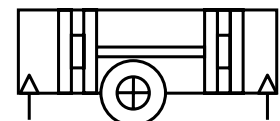
To order a rotary actuator with torque up to 8,9 in lbs (1,0 Nm) at 87 psig (6 bar) and a 90° rotation quote: **M/60216/M/90**

### Accessories

Switch M/345 or M/346

See page

3





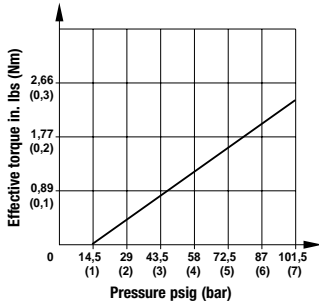
Standard models ● Theoretical torque ● Angle of rotation ● Permissible forces ● Air consumption

Model	Theoretical torque in. lbs (Nm) at 87 psig (6 bar)	Angle of rotation	Permissible forces lbs force (N)		Air consumption in <sup>3</sup> (cm <sup>3</sup> ) at 87 psig (6 bar)
			Axial	Radial	
M/60215/M/90	2,0 (0,23)	90°	0,3 (1,47)	0,7 (2,94)	0,10 (1,6)
M/60215/M/180	2,0 (0,23)	180°	0,3 (1,47)	0,7 (2,94)	0,18 (3,0)
M/60216/M/90	8,9 (1,0)	90°	0,4 (1,96)	1,1 (4,90)	0,37 (6,0)
M/60216/M/180	8,9 (1,0)	180°	0,4 (1,96)	1,1 (4,90)	0,73 (12,0)

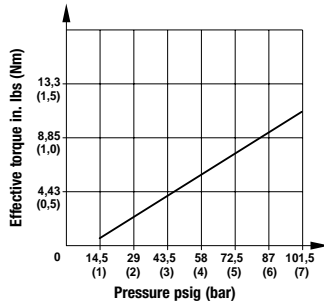
\* per cycle

## Theoretical torque

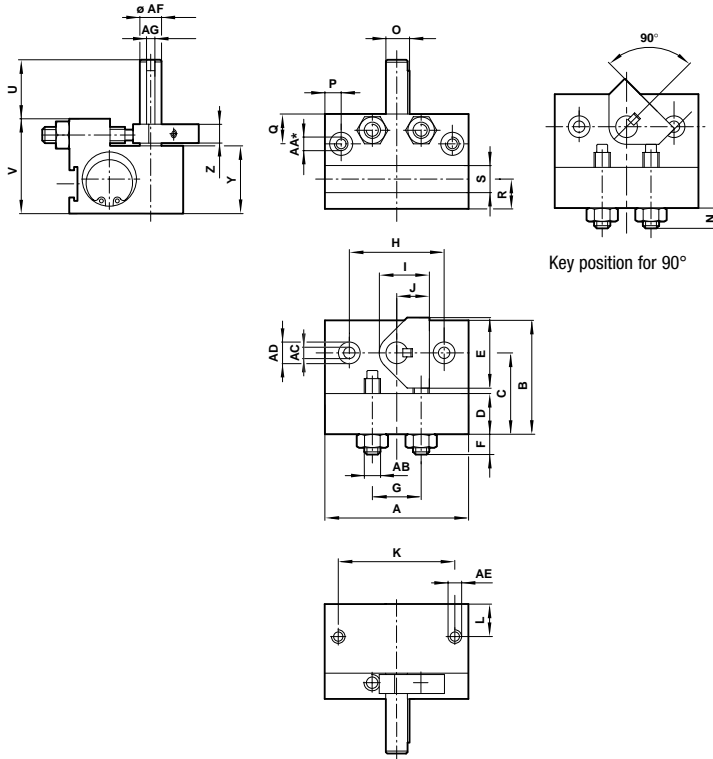
### M/60215/M



### M/60216/M



## Basic dimensions



	Ø	A	B	C	D	E	F	G	H	I	J	K	L	N
M/60215/M/90	12	1.65 (42)	1.18 (30)	0.79 (20)	0.30 (7,5)	0.87 (22)	0.24 (6)	0.55 (14)	0.94 (24)	0.60 (15,3)	0.39 (10)	1.34 (34)	0.31 (8)	0.22 (5,5)
M/60215/M/180	12	2.17 (55)	1.18 (30)	0.79 (20)	0.30 (7,5)	0.87 (22)	0.24 (6)	0.55 (14)	0.94 (24)	0.60 (15,3)	0.39 (10)	1.34 (34)	0.31 (8)	0.22 (5,5)
M/60216/M/90	20	2.09 (53)	1.65 (42)	1.18 (30)	0.59 (15)	1.02 (26)	0.31 (8)	0.71 (18)	1.38 (35)	0.73 (18,5)	0.47 (12)	1.69 (43)	0.47 (12)	0.26 (6,5)
M/60216/M/180	20	2.83 (72)	1.65 (42)	1.18 (30)	0.59 (15)	1.02 (26)	0.31 (8)	0.71 (18)	1.38 (35)	0.73 (18,5)	0.47 (12)	1.69 (43)	0.47 (12)	0.26 (6,5)

	Ø	O	P	Q	R	S	U	V	Y	Z	AA	AB	AC
M/60215/M/90	12	0,28 (7,2)	0,24 (6)	0,41 (10,5)	0,31 (8)	0,39 (10)	0,59 (15)	1,10 (28)	0,79 (20)	0,28 (7)	M5 X 0,8	M5 X 0,8	Ø 0,13 (Ø3,3)
M/60215/M/180	12	0,28 (7,2)	0,24 (6)	0,31 (8)	0,31 (8)	0,39 (10)	0,59 (15)	1,10 (28)	0,79 (20)	0,28 (7)	M5 X 0,8	M5 X 0,8	Ø 0,13 (Ø3,3)
M/60216/M/90	20	0,36 (9,2)	0,24 (6)	0,43 (11)	0,43 (11)	0,39 (10)	0,79 (20)	1,38 (35)	1 (25,5)	0,28 (7)	M5 X 0,8	M6 x 1	Ø 0,17 (Ø4,2)
M/60216/M/180	20	0,36 (9,2)	0,24 (6)	0,43 (11)	0,43 (11)	0,39 (10)	0,79 (20)	1,38 (35)	1 (25,5)	0,28 (7)	M5 X 0,8	M6 x 1	Ø 0,17 (Ø4,2)

	Ø	AD	AE	AF	AG	lb	kg
M/60215/M/90	12	Ø 0,26 deep 0,14 (M4 X 0,7 deep 0,39 on rear face)	Ø6,5 deep 3,5 (M4 X 0,7 deep 10 on rear face)	M4 X 0,7 deep 0,31 (8)	Ø 0,24 + 0,0004/- 0,002 (Ø6 + 0,01/- 0,03)	0,12 - 0,001 (3 - 0,025)	0,22 (0,11)
M/60215/M/180	12	Ø 0,26 deep 0,14 (M4 X 0,7 deep 0,39 on rear face)	Ø6,5 deep 3,5 (M4 X 0,7 deep 10 on rear face)	M4 X 0,7 deep 0,31 (8)	Ø 0,24 + 0,0004/- 0,002 (Ø6 + 0,01/- 0,03)	0,12 - 0,001 (3 - 0,025)	0,28 (0,14)
M/60216/M/90	20	Ø 0,31 deep 0,14 (M4 X 0,7 deep 0,59 on rear face)	Ø8 deep 3,5 (M5 X 0,8 deep 15 on rear face)	M5 X 0,8 deep 0,39 (10)	Ø 0,31 + 0,0004/- 0,002 (Ø8 + 0,01/- 0,03)	0,12 + 0,001 (3 + 0,03)	0,50 (0,25)
M/60216/M/180	20	Ø 0,31 deep 0,14 (M4 X 0,7 deep 0,59 on rear face)	Ø8 deep 3,5 (M5 X 0,8 deep 15 on rear face)	M5 X 0,8 deep 0,39 (10)	Ø 0,31 + 0,0004/- 0,002 (Ø8 + 0,01/- 0,03)	0,12 + 0,001 (3 + 0,03)	0,64 (0,32)



## Switches

Model Reed			Voltage		Current Max.	Temperature °C	LED	Features	Cable Length	Cable		
	Two wire solid state	Three wire solid state	V d.c.	V a.c.						Cable Type	Straight	90°
M/346/LAU/1PV	-	-	12 ... 100	12 ... 125	50mA	32° ... 140° (0° ... +60°)	●	-	4.92 ft. (1,5m)	PVC	●	
M/346/LAU/5PV	-	-	12 ... 100	12 ... 125	50mA	32° ... 140° (0° ... +60°)	●	-	16.40 ft. (5m)	PVC	●	
-	M/346/EAU/1APV	-	10 ... 28	-	70mA	32° ... 140° (0° ... +60°)	●	-	4.92 ft. (1,5m)	PVC		●
-	M/346/EAU/5APV	-	10 ... 28	-	70mA	32° ... 140° (0° ... +60°)	●	-	16.40 ft. (5m)	PVC		●
-	M/345/EAU/1PV	-	10 ... 28	-	40mA	32° ... 140° (0° ... +60°)	●	-	3.28 ft. (1m)	PVC	●	
-	M/345/EAU/3PV	-	10 ... 28	-	40mA	32° ... 140° (0° ... +60°)	●	-	9.84 ft. (3m)	PVC	●	
-	-	M/345/EAN/1PV	4,5 ... 28	-	100mA	32° ... 140° (0° ... +60°)	●	NPN	3.28 ft. (1m)	PVC	●	
-	-	M/345/EAN/3PV	4,5 ... 28	-	100mA	32° ... 140° (0° ... +60°)	●	NPN	9.84 ft. (3m)	PVC	●	

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