

Miniature rotary actuators**Double acting****Magnetic piston****Ø 12 & 20 mm****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:

1 to 7 bar

Operating temperature:

+ 5°C to + 60°C

* Air supply must be dry enough to avoid ice formation at temperatures below +2°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

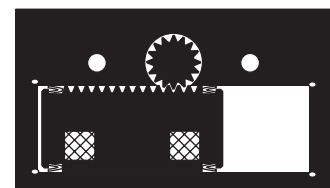
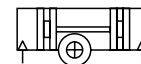
To order a rotary actuator with torque up to 0,23 Nm at 6 bar and a 180° rotation quote:

M/60215/M/180

To order a rotary actuator with torque up to 1,0 Nm at 6 bar and a 90° rotation quote:

M/60216/M/90**Accessories**

Switch M/345 or M/346

See page**3**



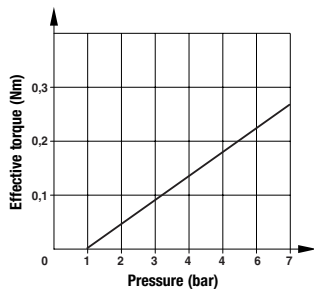
Standard models • Effective torque • Angle of rotation • Permissible forces • Air consumption

Model	Effective torque (Nm) at 6 bar	Angle of rotation	Permissible forces (N)		Air consumption (cm ³) at 6 bar *
			Axial	Radial	
M/60215/M/90	0,23	90°	1,47	2,94	1,6
M/60215/M/180	0,23	180°	1,47	2,94	3,0
M/60216/M/90	1,0	90°	1,96	4,90	6,0
M/60216/M/180	1,0	180°	1,96	4,90	12,0

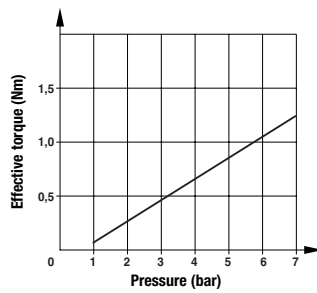
* per cycle

Effective torque

M/60215/M



M/60216/M

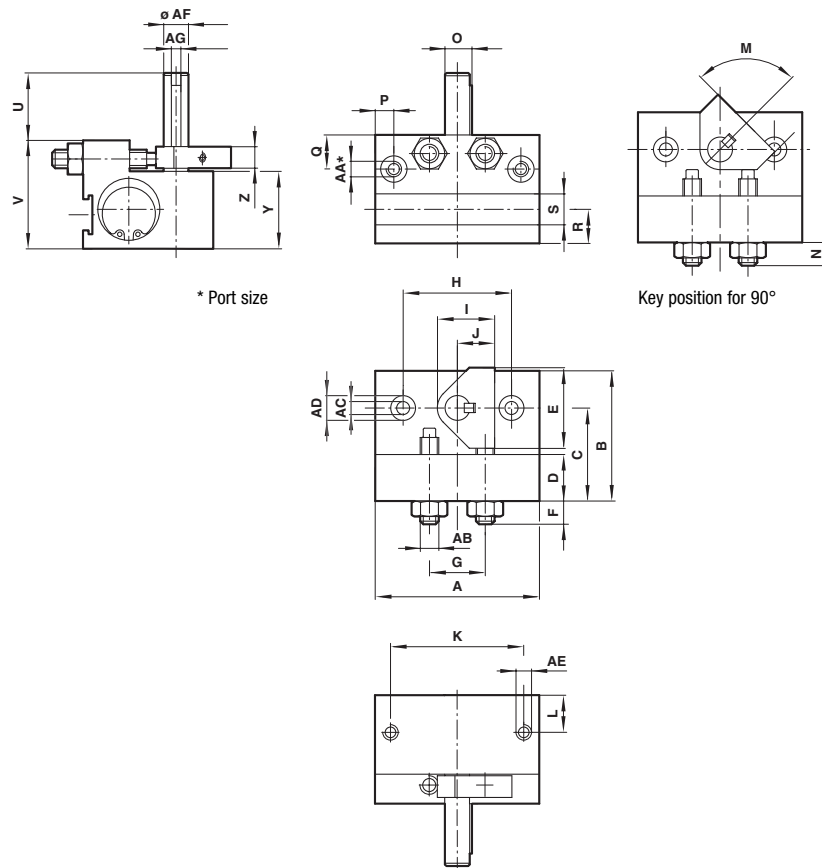


Switches with LED indication

Model	Reed	2-wire solid state	3-wire solid state	Voltage		Current max.	Temperature °C	LED	Features	Cable length	Cable type	Straight cable connection	90° elbow cable connection
				V d.c.	V a.c.								
M/346/LAU/1PV				12 ... 100	12 ... 125	50 mA	0° ... +60°	●	–	1,5 m	PVC	●	–
M/346/LAU/5PV				12 ... 100	12 ... 125	50 mA	0° ... +60°	●	–	5 m	PVC	●	–
			M/346/EAU/1APV	10 ... 28	–	70 mA	0° ... +60°	●	–	1,5 m	PVC	–	●
			M/346/EAU/5APV	10 ... 28	–	70 mA	0° ... +60°	●	–	5 m	PVC	–	●
			M/345/EAU/1PV	10 ... 28	–	40 mA	0° ... +60°	●	–	1 m	PVC	●	–
			M/345/EAU/3PV	10 ... 28	–	40 mA	0° ... +60°	●	–	3 m	PVC	●	–
			M/345/EAN/1PV	4,5 ... 28	–	100 mA	0° ... +60°	●	NPN	1 m	PVC	●	–
			M/345/EAN/3PV	4,5 ... 28	–	100 mA	0° ... +60°	●	NPN	3 m	PVC	●	–



Dimensions



	Ø	A	B	C	D	E	F	G	H	I	J	K	L	M	N
M/60215/M/90	12	42	30	20	7,5	22	6	14	24	15,3	10	34	8	90°	5,5
M/60215/M/180	12	55	30	20	7,5	22	6	14	24	15,3	10	34	8	90°	5,5
M/60216/M/90	20	53	42	30	15	26	8	18	35	18,5	12	43	12	90°	6,5
M/60216/M/180	20	20	72	42	30	15	26	8	18	35	18,5	12	43	12	90°
	Ø	O	P	Q	R	S	U	V	Y	Z	AA	AB	AC		
M/60215/M/90	12	7,2	6	8	8	10	15	28	20	7	M5 x 0,8	M5 x 0,8	Ø 3,3		
M/60215/M/180	12	7,2	6	8	8	10	15	28	20	7	M5 x 0,8	M5 x 0,8	Ø 3,3		
M/60216/M/90	20	9,2	6	11	11	10	20	35	25,5	7	M5 x 0,8	M6 x 1	Ø 4,2		
M/60216/M/180	20	9,2	6	11	11	10	20	35	25,5	7	M5 x 0,8	M6 x 1	Ø 4,2		
	Ø	AD	AE	AF	AG	kg									
M/60215/M/90	12	Ø 6,5 deep 3,5 (M4 x 0,7 deep 10 on rear face)	M4 x 0,7 deep 8	Ø 6 + 0,01/- 0,03	3 - 0,025	0,11									
M/60215/M/180	12	Ø 6,5 deep 3,5 (M4 x 0,7 deep 10 on rear face)	M4 x 0,7 deep 8	Ø 6 + 0,01/- 0,03	3 - 0,025	0,14									
M/60216/M/90	20	Ø 8 deep 3,5 (M5 x 0,8 deep 15 on rear face)	M5 x 0,8 deep 10	Ø 8 + 0,01/- 0,03	3 + 0,03	0,25									
M/60216/M/180	20	Ø 8 deep 3,5 (M5 x 0,8 deep 15 on rear face)	M5 x 0,8 deep 10	Ø 8 + 0,01/- 0,03	3 + 0,03	0,32									

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.