

ROTARY ACTUATOR

Series A1R

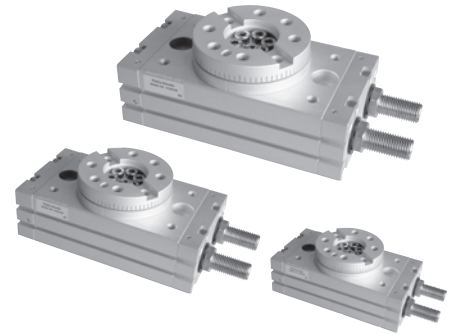
Cat No A1R - 01 - 01 - A

ROTARY ACTUATOR

A1R-10, A1R-12, A1R-15, A1R-18, A1R-20, A1R-25, A1R-28, A1R-32, A1R-40, A1R-50, A1R-63

Features

- Key slot type
- Sizes available - Ø10, 12, 15, 18, 20, 25, 28, 32, 40, 50, 63 mm
- Choice of 90° or 180° rotation options
- Angle of rotation adjustable by 45°
- Magnetic sensing as standard
- Compact design



Technical Specifications

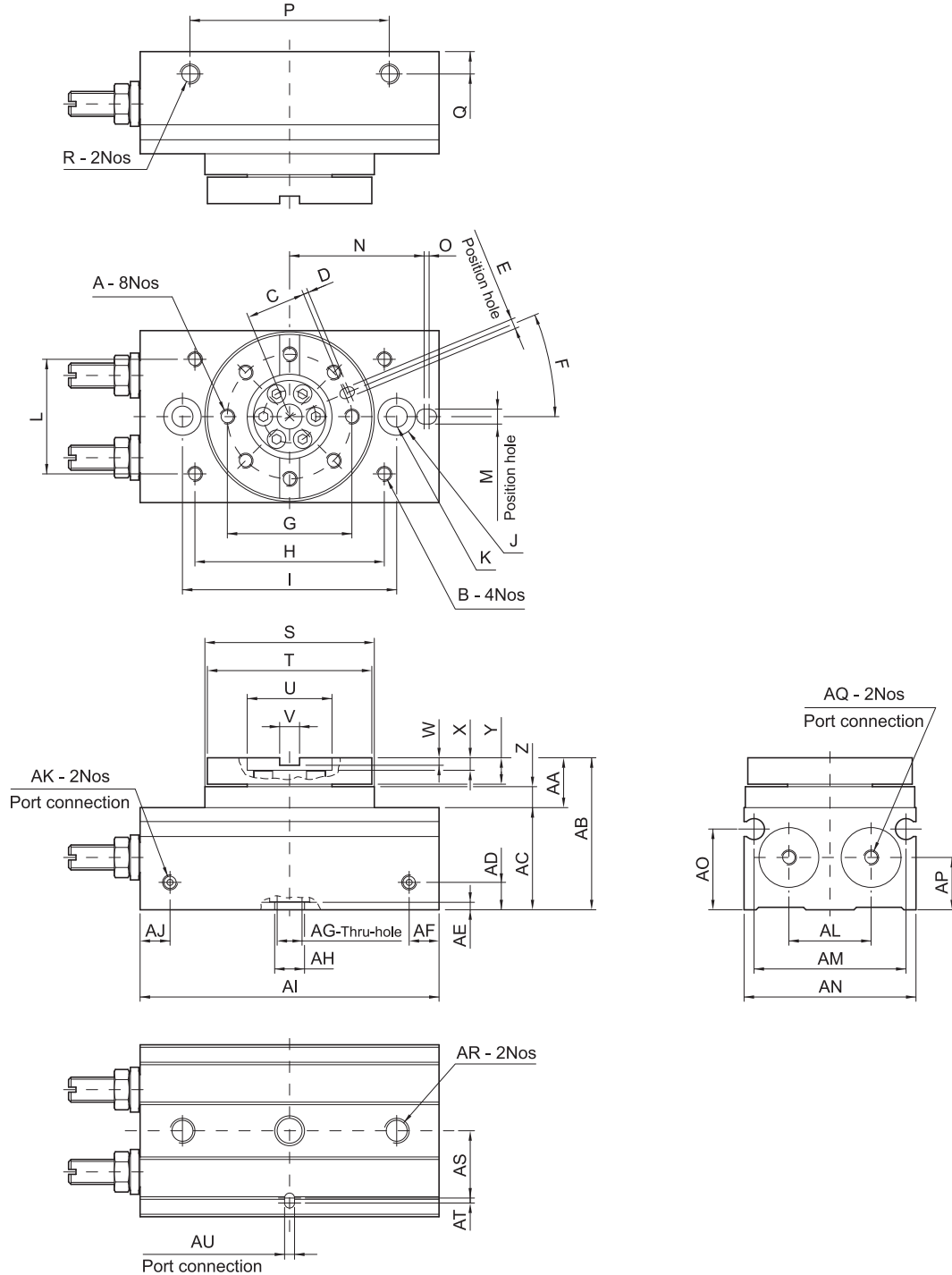
| Model | A1R-10 | A1R-12 | A1R-15 | A1R-18 | A1R-20 | A1R-25 | A1R-28 | A1R-32 | A1R-40 | A1R-50 | A1R-63 | |
|------------------------------|-----------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|
| Bore size Ø mm | 10 | 12 | 15 | 18 | 20 | 25 | 28 | 32 | 40 | 50 | 63 | |
| Port size | M3x0.5P | M5x0.8P | | | 1/8" | | | | | | | |
| Fluid | Air | | | | | | | | | | | |
| Type of operation | Double acting | | | | | | | | | | | |
| Range of pressure | 1.5 - 7 bar | | | | | | | | | | | |
| Range of service temperature | -10° to +60° C | | | | | | | | | | | |
| Torque N.m | 0.3 | 0.6 | 1.5 | 2.2 | 3.2 | 5.5 | 7.5 | 9.8 | 19 | 31 | 45 | |
| Rotation angle | 180° | | | | | | | | | | | |
| Adjustable angle | 0° to 190° | | | | | | | | | | | |
| Action capacity | Adjusting screw | 0.002 | 0.006 | 0.007 | 0.025 | 0.048 | 0.81 | 0.24 | 0.32 | 0.56 | 1 | 1.5 |
| | Shock absorber | — | — | 0.039 | 0.116 | 0.116 | 0.294 | 1.1 | 1.6 | 2.9 | 3.5 | 5.2 |
| Weight Kg | 0.150 | 0.250 | 0.530 | 0.990 | 1.290 | 2.100 | 2.890 | 4.100 | 7.650 | 8.960 | 11.170 | |

ROTARY ACTUATOR

Series A1R

Cat No A1R - 01 - 01 - A

Basic Dimensions - A1R-10, A1R-12



| Model | A | B | C | D | E | F° | G | H | I | ØJ | ØK | L | M | N | O | P | Q | R | ØS | ØT | ØU | V | W |
|---------|---------|---------------|----|---|-------|------|----|----|----|-----|-----------|----|-------|------|---|----|-----|-------------|----|----|----|---|-----|
| A1R- 10 | M3x0.5P | M3x0.5Px3.5dp | 12 | 1 | 2x2dp | 22.5 | 25 | 38 | 43 | 4.2 | 7.5x4.5dp | 23 | 2x2dp | 27 | 1 | 40 | 4.5 | M4x0.7Px4dp | 34 | 33 | 17 | 4 | 1.5 |
| A1R- 12 | M4x0.7P | M4x0.7Px4.5dp | 14 | 1 | 3x3dp | 22.5 | 29 | 45 | 50 | 4.2 | 7.5x4.5dp | 30 | 3x3dp | 32.5 | 1 | 50 | 5 | M5x0.8Px5dp | 40 | 39 | 20 | 5 | 2 |

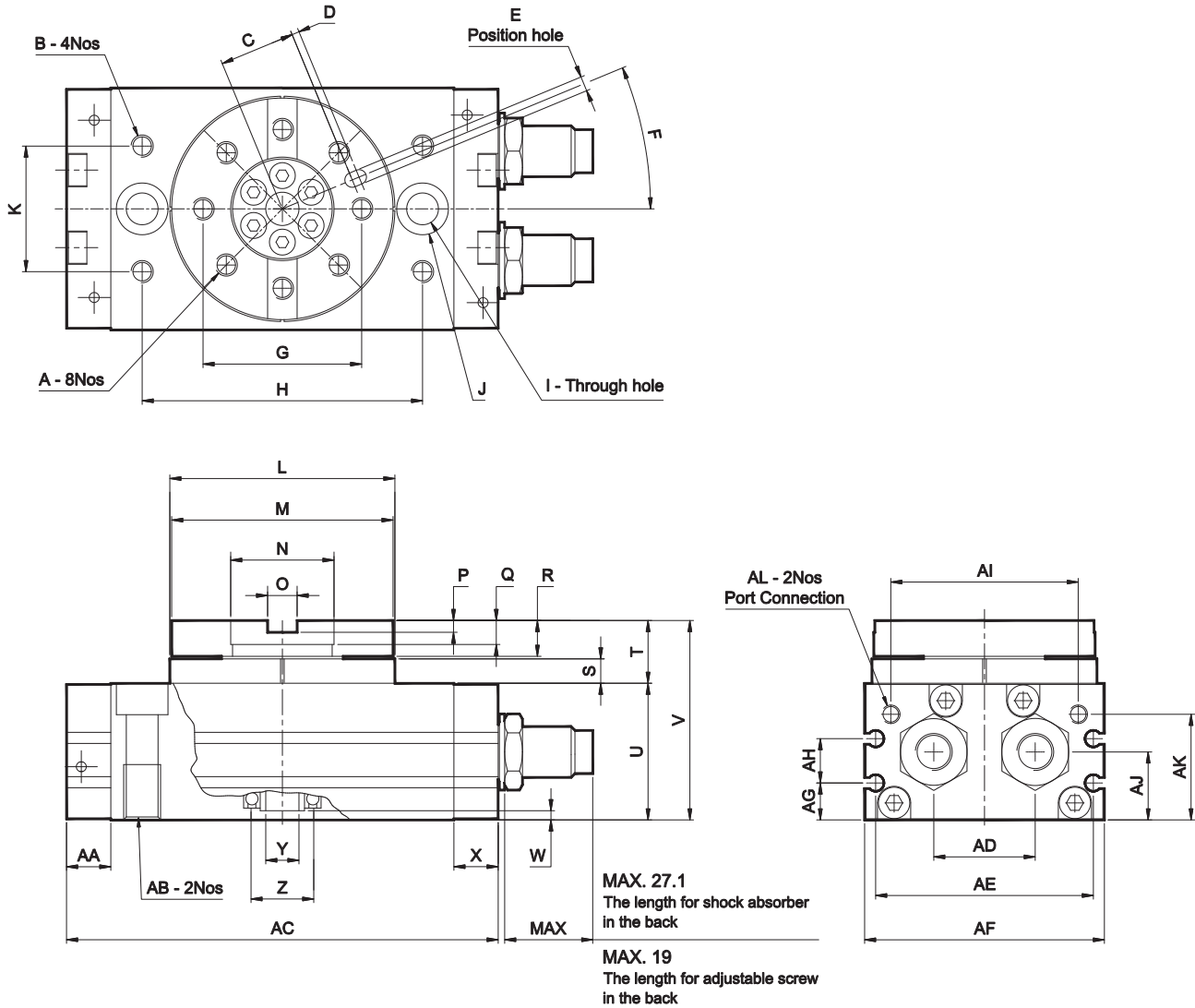
| Model | X | Y | Z | AA | AB | AC | AD | AE | AF | ØAG | ØAH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR | AS | AT | AU |
|---------|-----|-----|-----|------|------|------|-----|-----|----|-----|-----|------|----|---------|------|------|------|------|------|---------|-------------|------|----|-------|
| A1R- 10 | 2.5 | 5.3 | 4.2 | 10 | 30.5 | 20.5 | 5.5 | 1.2 | 6 | 5 | 6 | 60 | 6 | M3x0.5P | 16.5 | 30.5 | 34.5 | 16.2 | 10.5 | M3x0.5P | M5x0.8Px6dp | 13.5 | 1 | 2x2dp |
| A1R- 12 | 2.5 | 6.5 | 4.5 | 11.5 | 34.5 | 23 | 5.5 | 1.2 | 9 | 6 | 7 | 73.5 | 9 | M5x0.8P | 19.2 | 37 | 41 | 17 | 12.5 | M5x0.8P | M5x0.8Px6dp | 15.5 | 1 | 3x3dp |

ROTARY ACTUATOR

Series A1R

Cat No A1R - 01 - 01 - A

Basic Dimensions - A1R-15, A1R-18, A1R-20, A1R-25mm



| Model | A | B | C | D | E | F° | G | H | ØI | ØJ | K | ØL | ØM | ØN | ØO | P | Q | R | S |
|---------|----------|---------------|------|---|---------|------|----|-----|------|-----------|----|----|----|----|----|-----|-----|-----|-----|
| A1R- 15 | M5x0.8P | M5x0.8Px8dp | 15 | 2 | 3x3.5dp | 22.5 | 32 | 60 | 6.8 | 11x6.5dp | 27 | 46 | 45 | 20 | 6 | 2.7 | 4 | 8 | 4.5 |
| A1R- 18 | M6x1.0P | M6x1.0Px10dp | 20.5 | 2 | 4x5dp | 22.5 | 43 | 76 | 8.6 | 14x8.5dp | 34 | 61 | 60 | 28 | 8 | 3.2 | 6.5 | 9.7 | 6.6 |
| A1R- 20 | M6x1.0P | M6x1.0Px10dp | 23 | 2 | 4x4.5dp | 22.5 | 48 | 84 | 8.6 | 14x8.5dp | 37 | 67 | 65 | 32 | 8 | 3.7 | 4.5 | 10 | 6.5 |
| A1R- 25 | M8x1.25P | M8x1.25Px10dp | 26.5 | 2 | 5x5.5dp | 22.5 | 55 | 100 | 10.5 | 17x10.5dp | 50 | 77 | 75 | 35 | 10 | 4.2 | 5 | 12 | 7.5 |

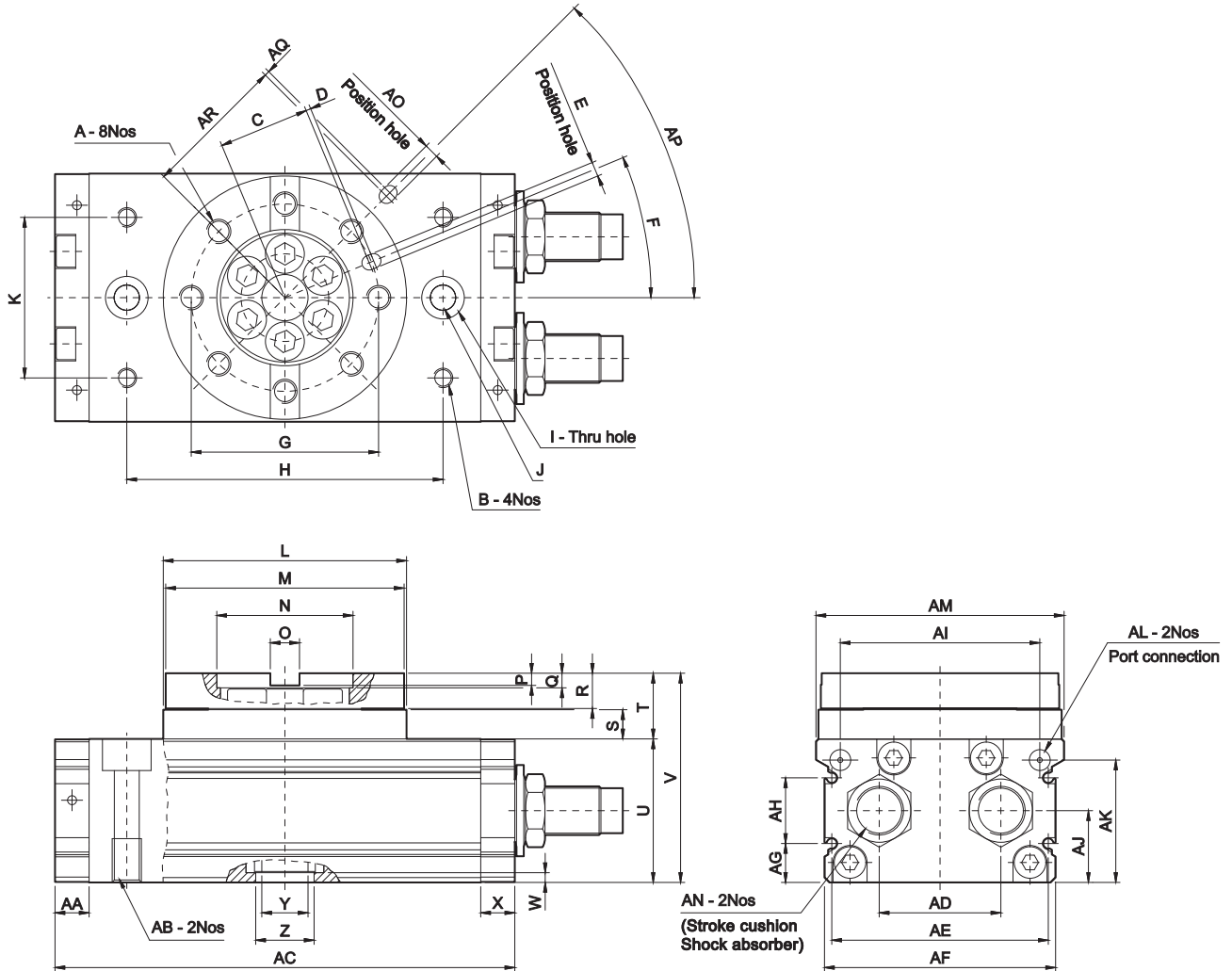
| Model | T | U | V | W | X | ØY | ØZ | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL |
|---------|----|----|----|-----|------|----|----|------|----------------|-----|------|----|----|------|----|------|------|------|---------|
| A1R- 15 | 13 | 34 | 47 | 2.5 | 9.5 | 5 | 15 | 9.5 | M8x1.25Px12dp | 92 | 18 | 44 | 50 | 9 | 13 | 35 | 15.5 | 28.2 | M5x0.8P |
| A1R- 18 | 17 | 37 | 54 | 2.5 | 12 | 9 | 17 | 12 | M10x1.5Px15dp | 117 | 27.5 | 59 | 65 | 10 | 12 | 50.8 | 16 | 28.6 | M5x0.8P |
| A1R- 20 | 17 | 40 | 57 | 3 | 12 | 9 | 22 | 12 | M10x1.5Px15dp | 127 | 29 | 64 | 70 | 11.5 | 14 | 52 | 18.5 | 33 | 1/8" |
| A1R- 25 | 20 | 46 | 66 | 2 | 15.5 | 10 | 26 | 15.5 | M12x1.75Px18dp | 152 | 38 | 74 | 80 | 14.5 | 15 | 62 | 22 | 37.5 | 1/8" |

ROTARY ACTUATOR

Series A1R

Cat No A1R - 01 - 01 - A

Basic Dimensions - A1R-28, A1R-32



| Model | A | B | C | D | E | F° | G | H | ØI | ØJ | K | ØL | ØM | ØN | ØO | P | Q | R | S | T | U |
|---------|----------|---------------|------|---|---------|------|----|-----|------|-----------|----|-----|----|----|----|-----|---|------|----|----|----|
| A1R- 28 | M8x1.25P | M8x1.25Px10dp | 32.5 | 2 | 5x3.5dp | 22.5 | 67 | 110 | 10.5 | 17x10.5dp | 57 | 90 | 88 | 46 | 10 | 4.2 | 5 | 12.5 | 9 | 22 | 53 |
| A1R- 32 | M10x1.5P | M8x1.25Px10dp | 37.5 | 2 | 6x4.5dp | 22.5 | 77 | 130 | 10.5 | 17x10.5dp | 66 | 100 | 98 | 56 | 12 | 5 | 6 | 14.5 | 12 | 27 | 59 |

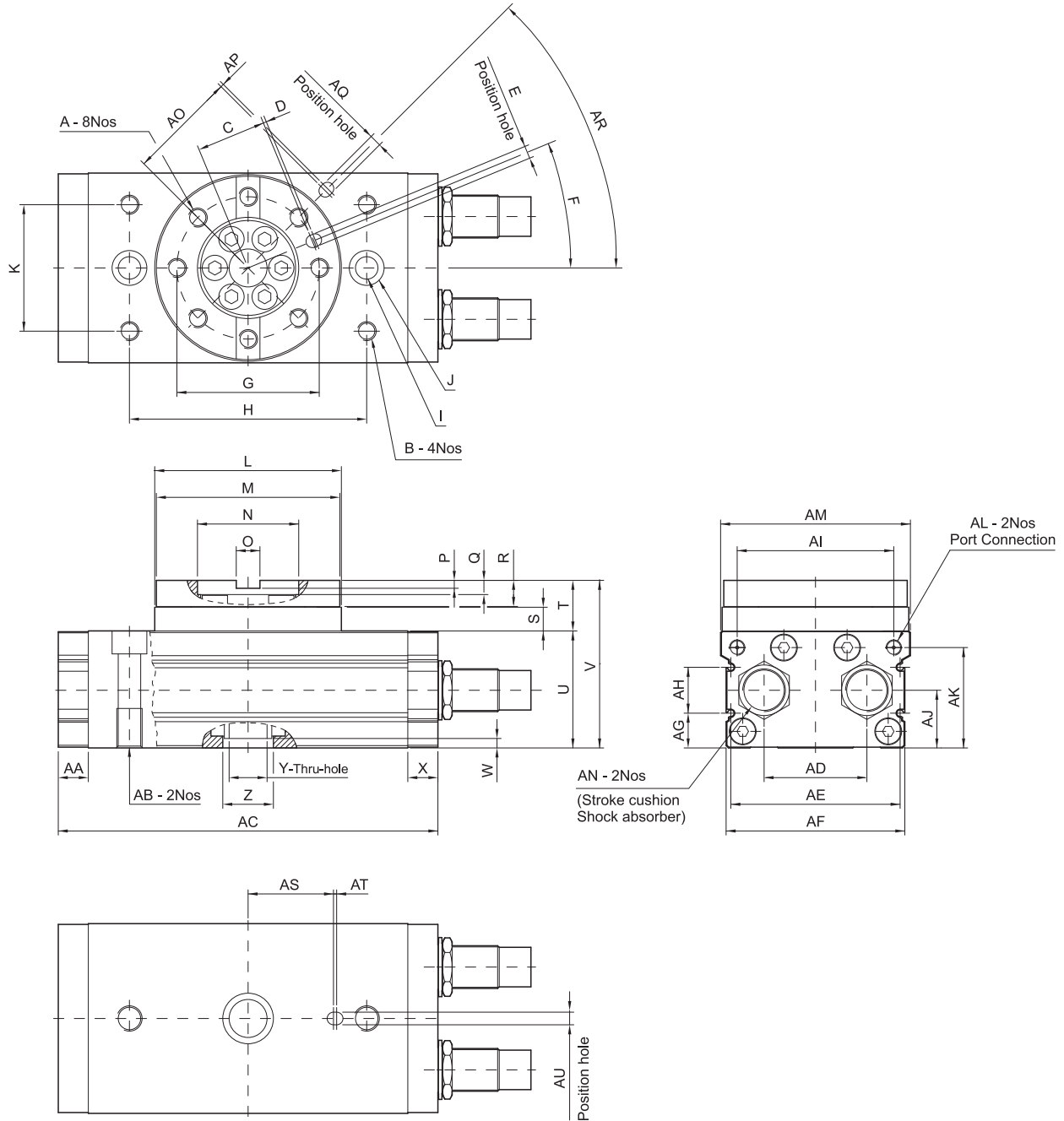
| Model | V | W | X | ØY | ØZ | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP° | AQ | AR |
|---------|----|---|----|----|----|----|----------------|-----|----|----|----|------|----|----|------|------|------|-----|----------|---------|-----|----|----|
| A1R- 28 | 75 | 4 | 17 | 16 | 22 | 17 | M12x1.75Px18dp | 170 | 43 | 78 | 84 | 14.5 | 24 | 70 | 26.5 | 46.7 | 1/8" | 92 | M20x1.5P | 5x3.5dp | 45 | 2 | 54 |
| A1R- 32 | 86 | 4 | 14 | 19 | 24 | 14 | M12x1.75Px18dp | 189 | 50 | 89 | 95 | 16 | 27 | 82 | 29.5 | 50.3 | 1/8" | 102 | M20x1.5P | 6x4.5dp | 45 | 2 | 59 |

ROTARY ACTUATOR

Series A1R

Cat No A1R - 01 - 01 - A

Basic Dimensions - A1R-40, A1R-50, A1R-63



| Model | A | B | C | D | E | F° | G | H | ØI | ØJ | K | ØL | ØM | ØN | O | P | Q | R | S | T | U | V | W |
|----------|-----------|----------------|----|---|----------|------|-----|-----|-----------|------|-----|-----|-----|----|----|---|----|------|----|------|------|-----|-----|
| A1R - 40 | M12x1.75P | M12x1.75Px13dp | 44 | 2 | 8x4.5dp | 22.5 | 90 | 150 | 22X14.5dp | 14.2 | 80 | 118 | 116 | 64 | 15 | 5 | 9 | 16.5 | 15 | 32 | 74 | 106 | 5.5 |
| A1R - 50 | M16x2P | M12x1.75Px13dp | 49 | 2 | 8x4.5dp | 22.5 | 100 | 180 | 26X16.5dp | 17.5 | 88 | 133 | 132 | 70 | 18 | 8 | 10 | 19.5 | 16 | 36.5 | 83.5 | 120 | 5.5 |
| A1R - 63 | M16x2P | M12x1.75Px13dp | 59 | 2 | 10x5.5dp | 22.5 | 120 | 220 | 26X16.5dp | 17.5 | 100 | 152 | 150 | 85 | 18 | 8 | 12 | 22 | 17 | 40 | 95 | 135 | 5.5 |

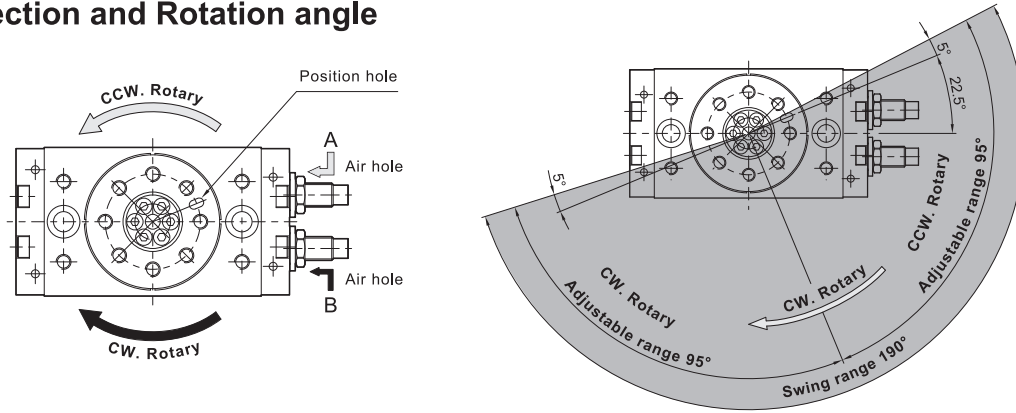
| Model | X | ØY | ØZ | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR° | AS | AT | AU |
|----------|----|----|----|----|---------------|-----|----|-----|-----|------|----|-----|------|------|------|-----|----------|----|----|----------|-----|----|----|----------|
| A1R - 40 | 19 | 24 | 32 | 19 | M16x2Px25dp | 240 | 65 | 107 | 113 | 21.5 | 29 | 99 | 36.5 | 63.5 | 1/8" | 120 | M27x1.5P | 69 | 2 | 8x4dp | 45 | 54 | 2 | 8x6.5dp |
| A1R - 50 | 25 | 26 | 36 | 25 | M20x2.5Px25dp | 280 | 77 | 130 | 136 | 24.5 | 34 | 115 | 41.5 | 73.5 | 1/4" | — | M27x1.5P | 75 | 2 | 8x4dp | 45 | 69 | 2 | 8x6.5dp |
| A1R - 63 | 25 | 26 | 36 | 25 | M20x2.5Px25dp | 320 | 85 | 150 | 156 | 28 | 38 | 129 | 47 | 84 | 1/4" | — | M27x1.5P | 88 | 2 | 10x4.5dp | 45 | 80 | 2 | 10x6.5dp |

ROTARY ACTUATOR

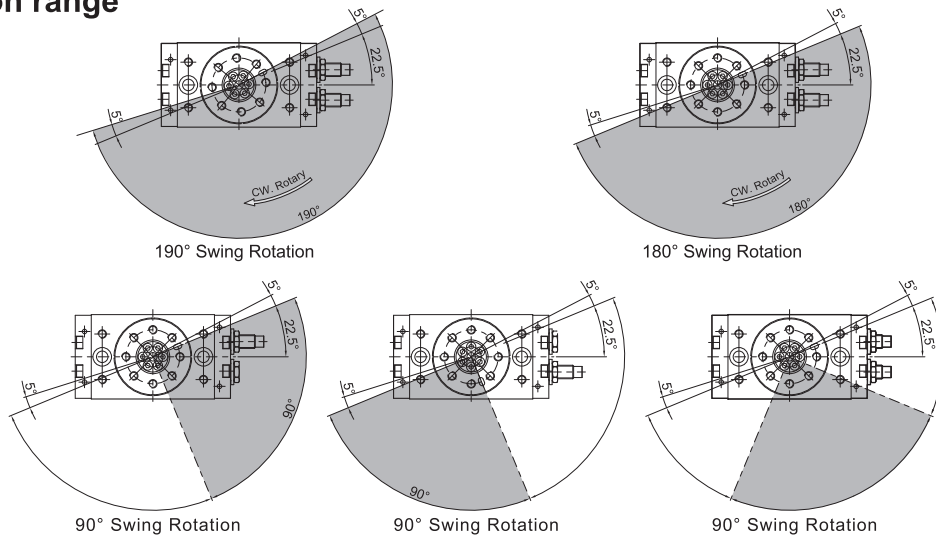
Series A1R

Cat No A1R - 01 - 01 - A

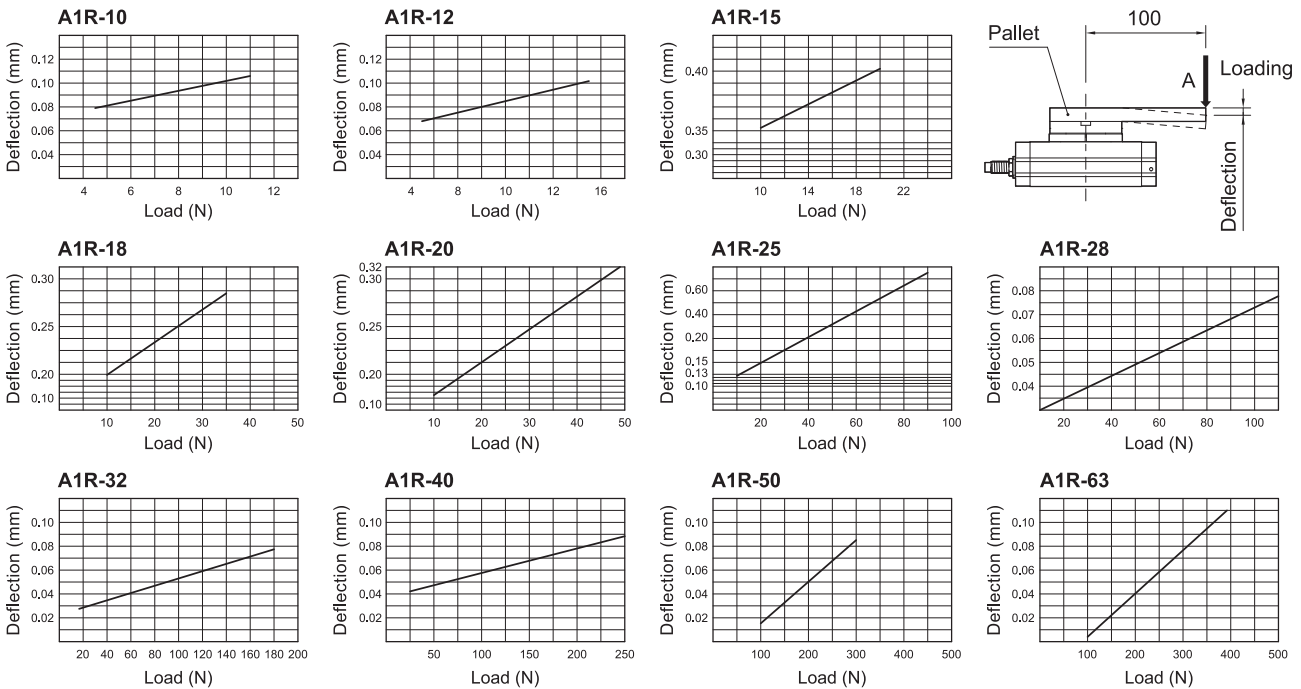
Rotary direction and Rotation angle



Set of Rotation range



Transverse load and Deflection

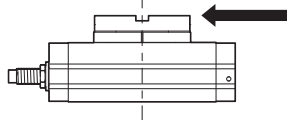
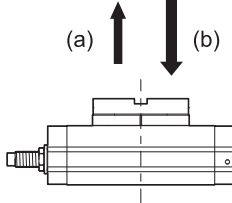
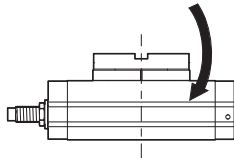


ROTARY ACTUATOR

Series A1R

Cat No A1R - 01 - 01 - A

Allow load

| Loading way |  |  | |  |
|-------------|---|--|------|---|
| | | Table load (N) | | |
| Load | Slide load | (a) | (b) | |
| A1R-10 | 33 | 48 | 48 | 1.1 |
| A1R-12 | 54 | 71 | 71 | 1.5 |
| A1R-15 | 70 | 78 | 74 | 2 |
| A1R-18 | 140 | 130 | 130 | 3.5 |
| A1R-20 | 185 | 188 | 358 | 4.8 |
| A1R-25 | 300 | 285 | 442 | 9 |
| A1R-28 | 333 | 296 | 476 | 12 |
| A1R-32 | 390 | 493 | 706 | 18 |
| A1R-40 | 543 | 740 | 1009 | 25 |
| A1R-50 | 850 | 950 | 1500 | 30 |
| A1R-63 | 1200 | 1400 | 2100 | 38 |

How to order

| | | | | |
|------------|---|-----------------------|------------------|----------|
| A1R | - | 025 | - | B |
| | | Bore size (mm) | Mountings | |
| 010 | - | Ø10 | B | - Basic |
| 012 | - | Ø12 | | |
| 015 | - | Ø15 | | |
| 018 | - | Ø18 | | |
| 020 | - | Ø20 | | |
| 025 | - | Ø25 | | |
| 028 | - | Ø28 | | |
| 032 | - | Ø32 | | |
| 040 | - | Ø40 | | |
| 050 | - | Ø50 | | |
| 063 | - | Ø63 | | |

Ordering Example:

Ordering no. for Rotary cylinder with 25 dia bore basic : **A1R025B**

ROTARY ACTUATOR

Series A1R

Cat No A1R - 01 - 01 - A

ACCESSORIES FOR ROTARY ACTUATOR

MAGNETIC SENSOR - AM090



Features

- Integrated LED
- Moulded cable with flying lead and Quick Disconnect (QD) connector versions
- Direct mounting, simple installation
- Reed contact type & Solid state type versions

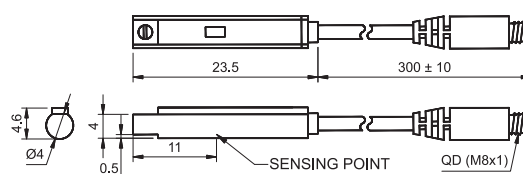
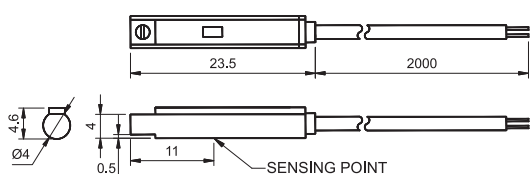
Function

The pistons of these cylinders are equipped with a permanent magnet, which activates the cylinder switches when it approaches these. The switch in question then outputs an electrical or pneumatic signal.

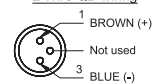
Technical Specifications

| | | | |
|--------------------------------|---|----------------------------------|-----------------------|
| Circuit and connection diagram | | | |
| Model | AM090 | | |
| Bore dia | 10, 12, 15, 18, 20, 25, 28, 32, 40, 50, 63 mm | | |
| Wiring system | Two lead wire type | Three lead wire type | |
| Switching voltage | DC: 5 ~ 120V AC: 5 ~ 120V | DC: 5 ~ 30V | |
| Switching current | 100mA max. | 200mA max. | |
| Contact capacity | 6W max. | 6W max. | |
| Delay time | < 2ms (500Hz) | < 1ms (500Hz) | |
| Contact | Normally open | NPN. Current sinking | PNP. Current sourcing |
| Production grade | IP-67 | | |
| Colour of LED | Red | Red | Green |
| Cable | Ø 2.8 wire cable, 2M | Ø 3.3, 3 single wire, 2M | |
| Voltage drop | 3.5 V max. | 1 V max. | |
| Voltage consumption | --- | OFF: 7mA (24V) ON: 8mA (24V) max | |
| Contact protective circuit | Non. | Yes | |
| Operating temperature | -10° to 70° C | | |

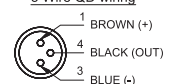
AM090



2 Wire QD wiring



3 Wire QD wiring

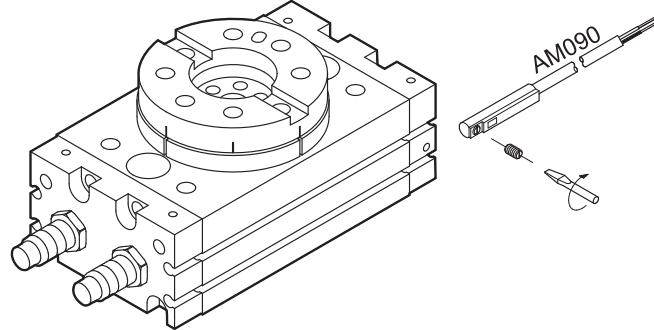


ROTARY ACTUATOR

Series A1R

Cat No A1R - 01 - 01 - A

Sensor switch installing and Position



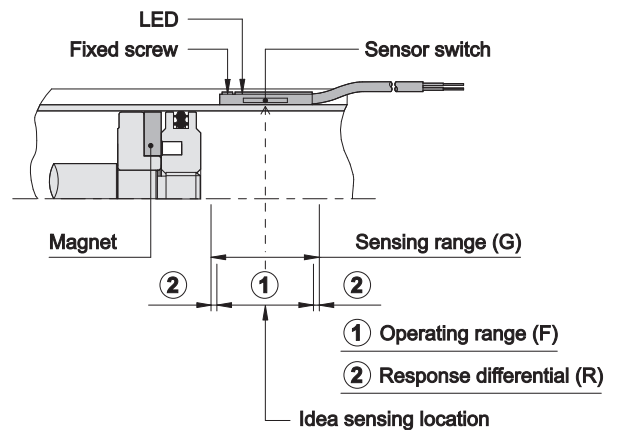
Sensing range

Sensor switch is fixed on the cylinder body. The magnetic piston head will activate the sensor switch when it enters the operating range. It has 0.5mm differential.

Operating range

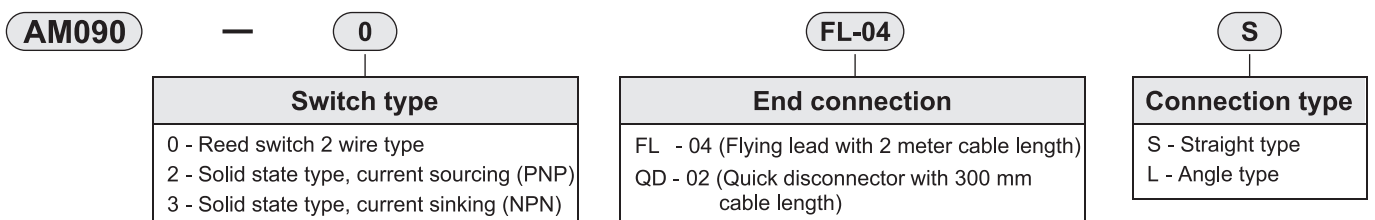
When piston head moves the switch setting and adjustment will be based on the responding range generated by the magnetic field and the switch. (Please refer to the table)

Sensor switch setting and Operating range



| Model | Bore size Ø (mm) | AM090 | |
|--------|---------------------|---------------------|---------------------------|
| | | Operating range (F) | Response differential (R) |
| A1R-10 | 10 | 7 (4) | 1 |
| A1R-12 | 12 | 7 (4) | 1 |
| A1R-15 | 15 | 7 (3) | 1 |
| A1R-18 | 18 | 10 (7) | 1 |
| A1R-20 | 20 | 12 (9) | 1 |
| A1R-25 | 25 | 14 (12) | 1 |
| A1R-28 | 28 | 14 (12) | 1 |
| A1R-32 | 32 | 14 (12) | 1 |
| A1R-40 | 40 | 14 (12) | 1 |
| A1R-50 | 50 | 14 (12) | 1 |
| A1R-63 | 63 | 14 (12) | 1 |

How to order



Ordering example :- Reed switch 2 wire type with Flying lead of 2 meter cable length, straight type connection : **AM090-0FL-04S**

Subject to change