

# ROTARY ACTUATOR

## A1R Series

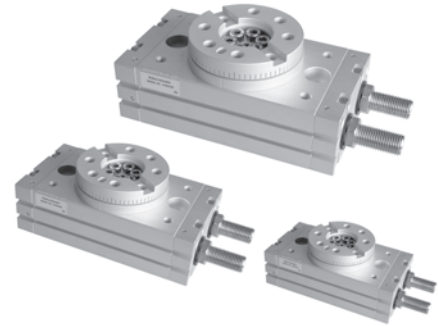
Cat No A1R - 01 - 01 - A

### 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

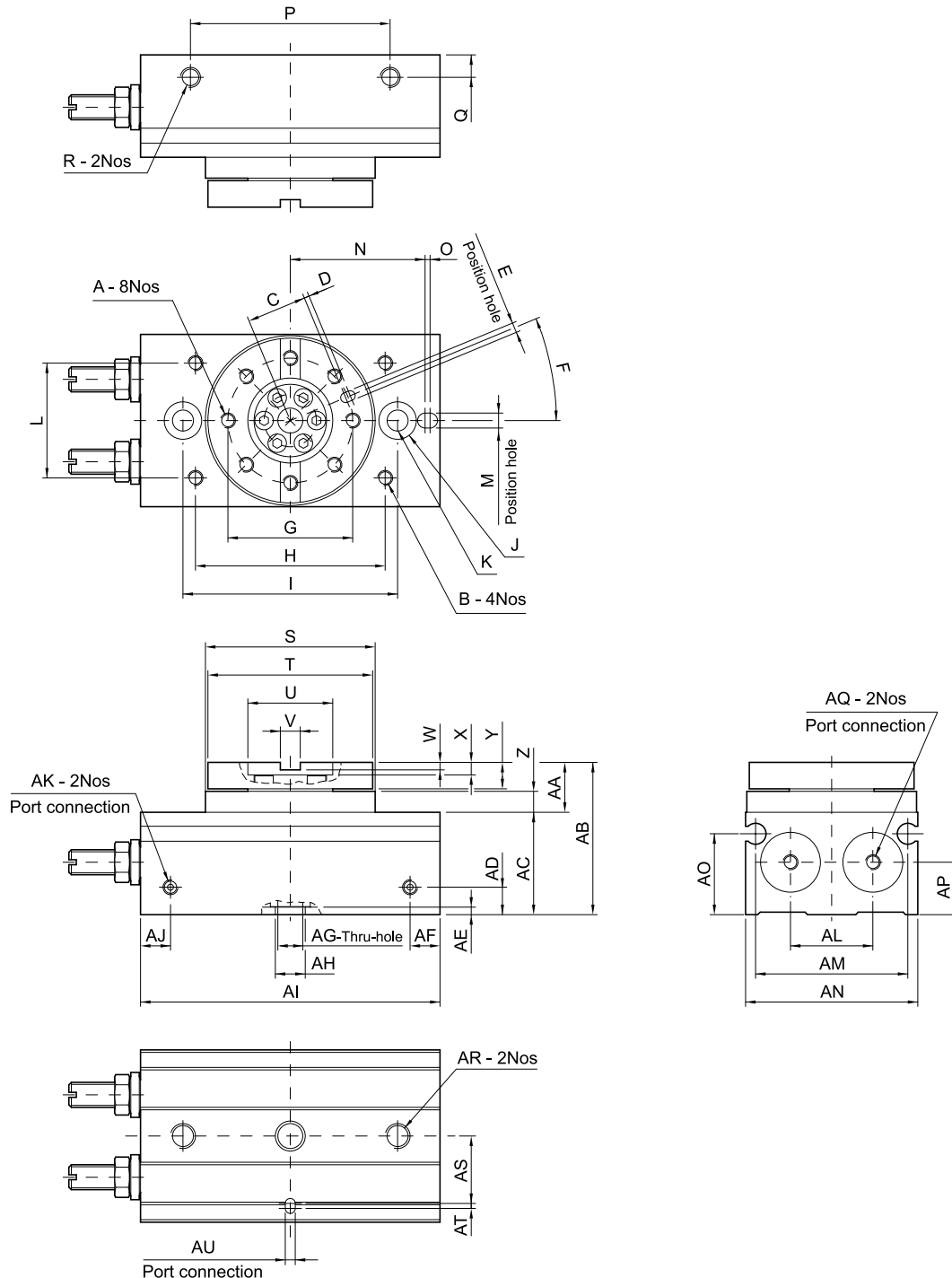
Model	A1R-10	A1R-12	A1R-15	A1R-18	A1R-20	A1R-25	A1R-28	A1R-32	A1R-40	A1R-50	A1R-63	
Bore size Ø mm	10	12	15	18	20	25	28	32	40	50	63	
Port size	M3x0.5P	M5x0.8P		1/8"								
Fluid	Air											
Type of operation	Double acting											
Range of pressure	1.5 - 7 bar											
Range of service temperature	0 to 50° 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

## A1R Series

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### 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

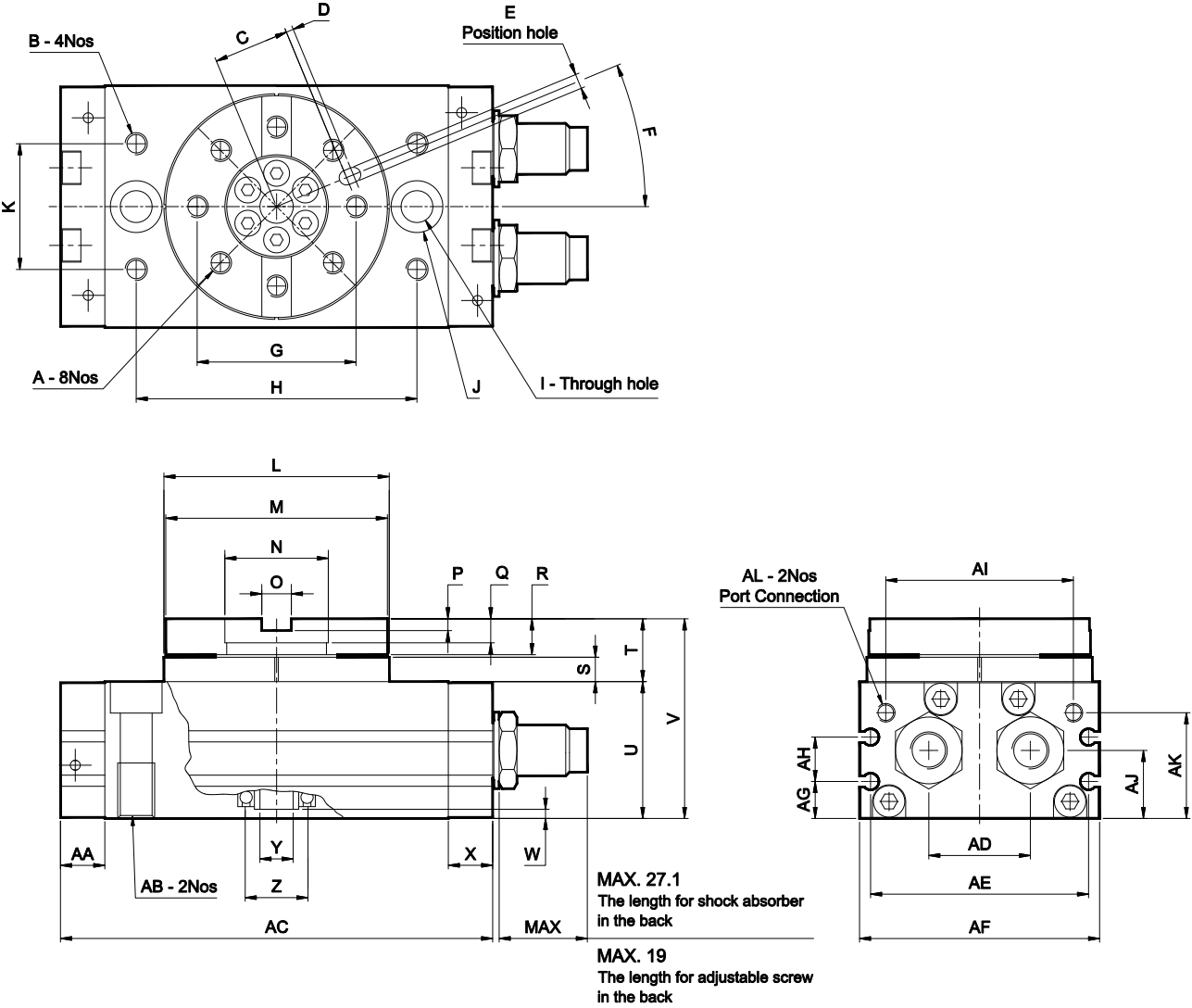
Model	X	Y	Z	AA	AB	AC	AD	AE	AF	ØAG	ØAH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU
A1R- 10	2.5	5.3	4.2	10	30.5	20.5	5.5	1.2	6	5	6	60	6	M3x0.5P	16.5	30.5	34.5	16.2	10.5	M3x0.5P	M5x0.8Px6dp	13.5	1	2x2dp
A1R- 12	2.5	6.5	4.5	11.5	34.5	23	5.5	1.2	9	6	7	73.5	9	M5x0.8P	19.2	37	41	17	12.5	M5x0.8P	M5x0.8Px6dp	15.5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

# ROTARY ACTUATOR

## A1R Series

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

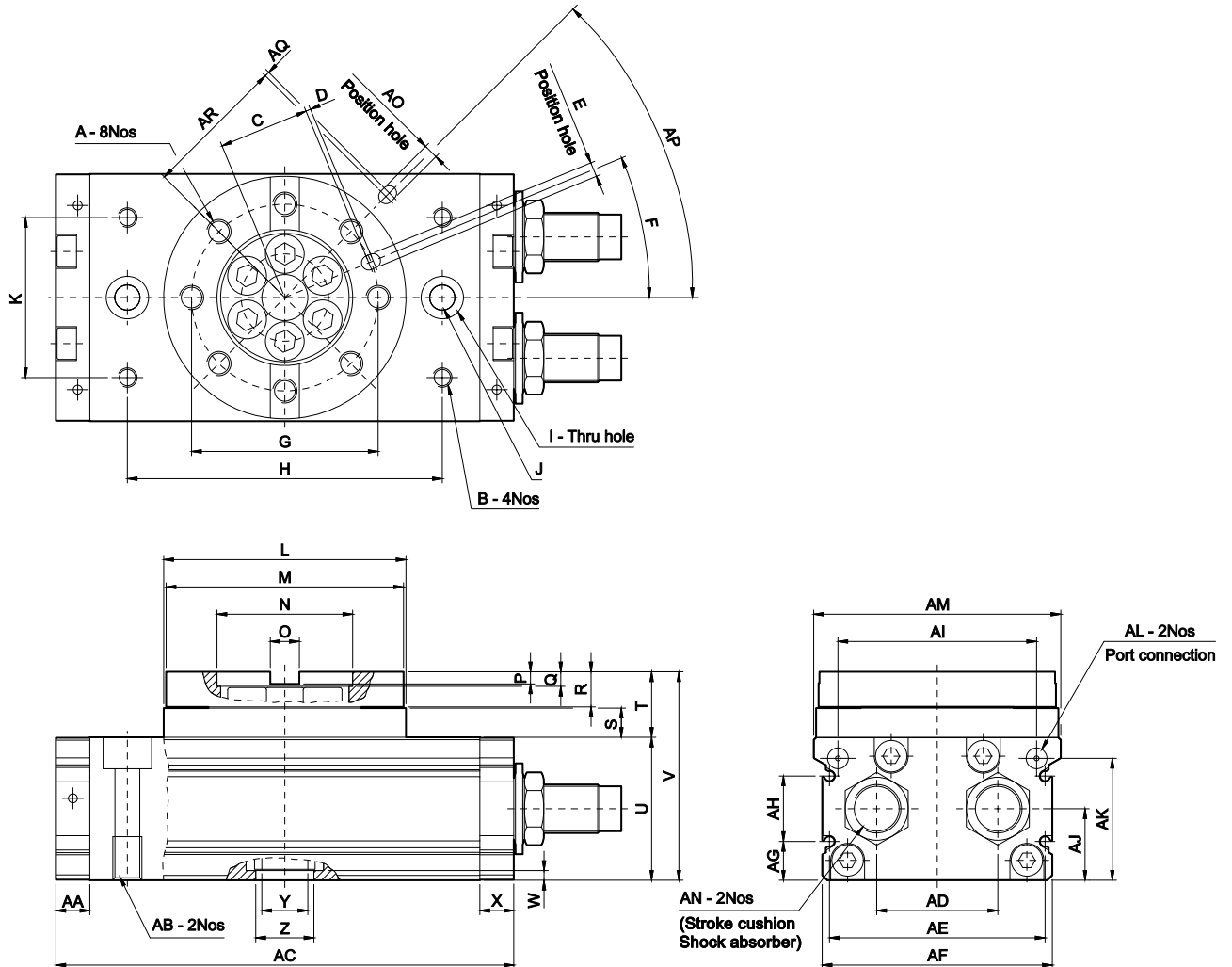
Model	T	U	V	W	X	ØY	ØZ	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL
A1R- 15	13	34	47	2.5	9.5	5	15	9.5	M8x1.25Px12dp	92	18	44	50	9	13	35	15.5	28.2	M5x0.8P
A1R- 18	17	37	54	2.5	12	9	17	12	M10x1.5Px15dp	117	27.5	59	65	10	12	50.8	16	28.6	M5x0.8P
A1R- 20	17	40	57	3	12	9	22	12	M10x1.5Px15dp	127	29	64	70	11.5	14	52	18.5	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

## A1R Series

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

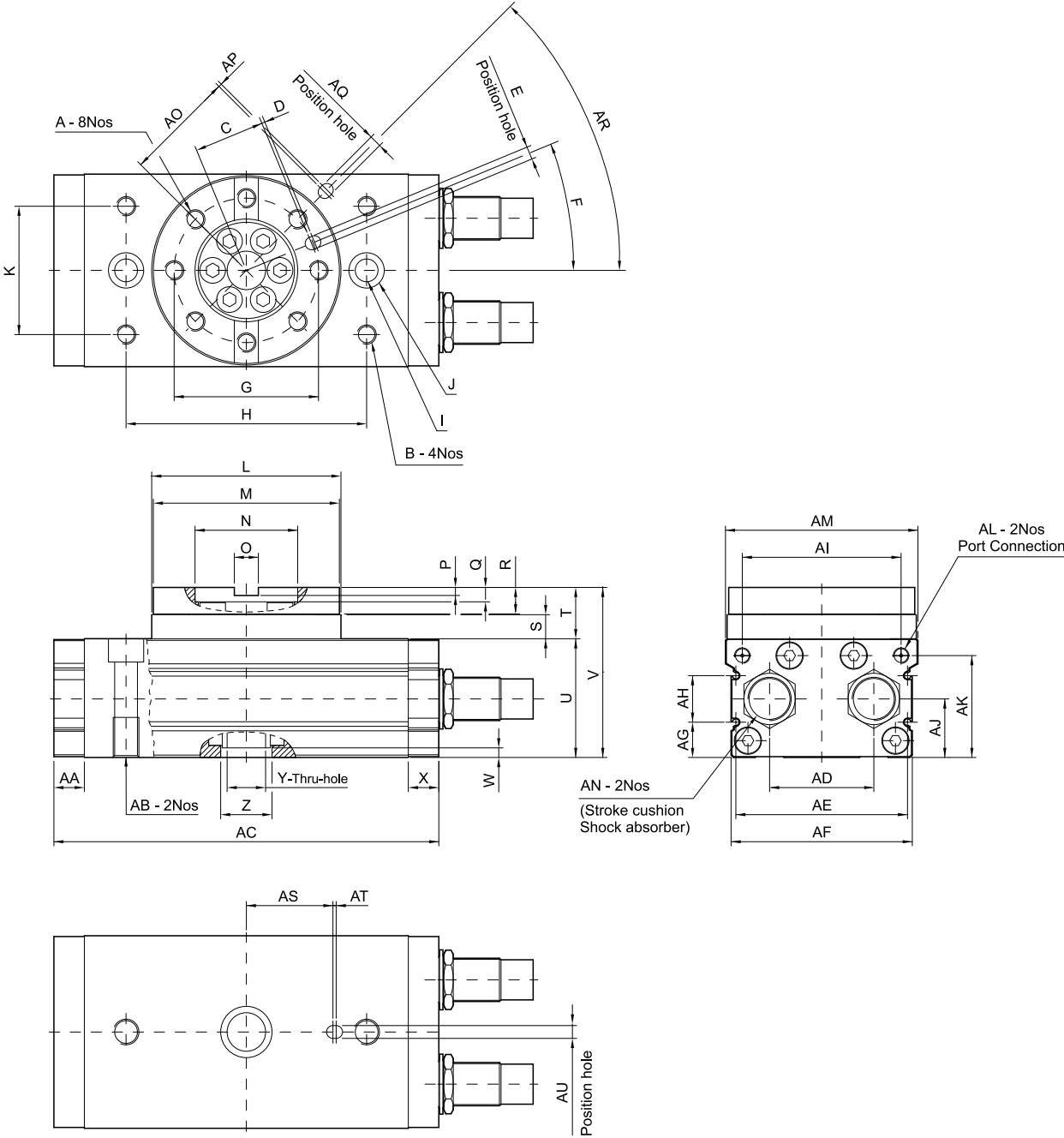
Model	V	W	X	ØY	ØZ	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP°	AQ	AR
A1R- 28	75	4	17	16	22	17	M12x1.75Px18dp	170	43	78	84	14.5	24	70	26.5	46.7	1/8"	92	M20x1.5P	5x3.5dp	45	2	54
A1R- 32	86	4	14	19	24	14	M12x1.75Px18dp	189	50	89	95	16	27	82	29.5	50.3	1/8"	102	M20x1.5P	6x4.5dp	45	2	59

# ROTARY ACTUATOR

## A1R Series

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

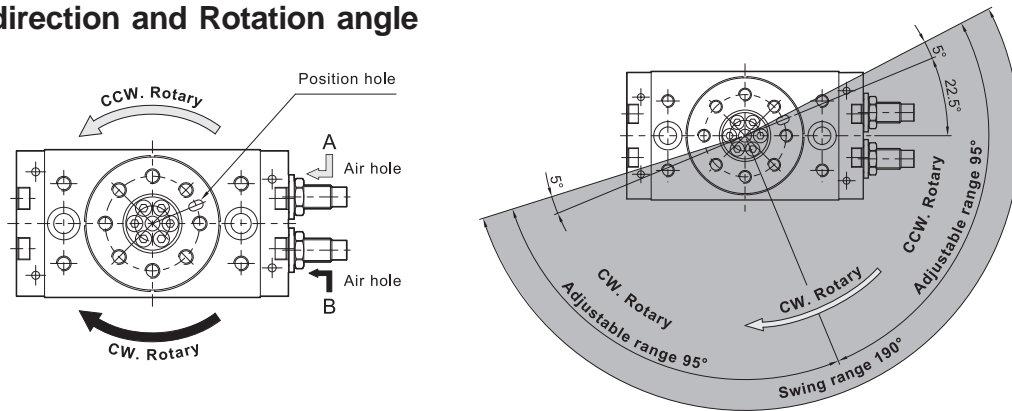
Model	X	ØY	ØZ	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR°	AS	AT	AU
A1R - 40	19	24	32	19	M16x2Px25dp	240	65	107	113	21.5	29	99	36.5	63.5	1/8"	120	M27x1.5P	69	2	8x4dp	45	54	2	8x6.5dp
A1R - 50	25	26	36	25	M20x2.5Px25dp	280	77	130	136	24.5	34	115	41.5	73.5	1/4"	---	M27x1.5P	75	2	8x4dp	45	69	2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

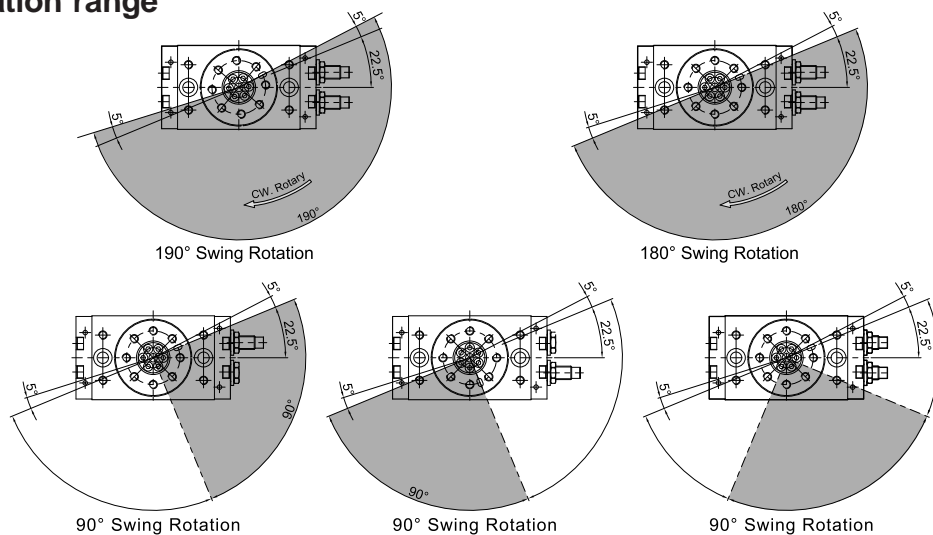
## A1R Series

Cat No A1R - 01 - 01 - A

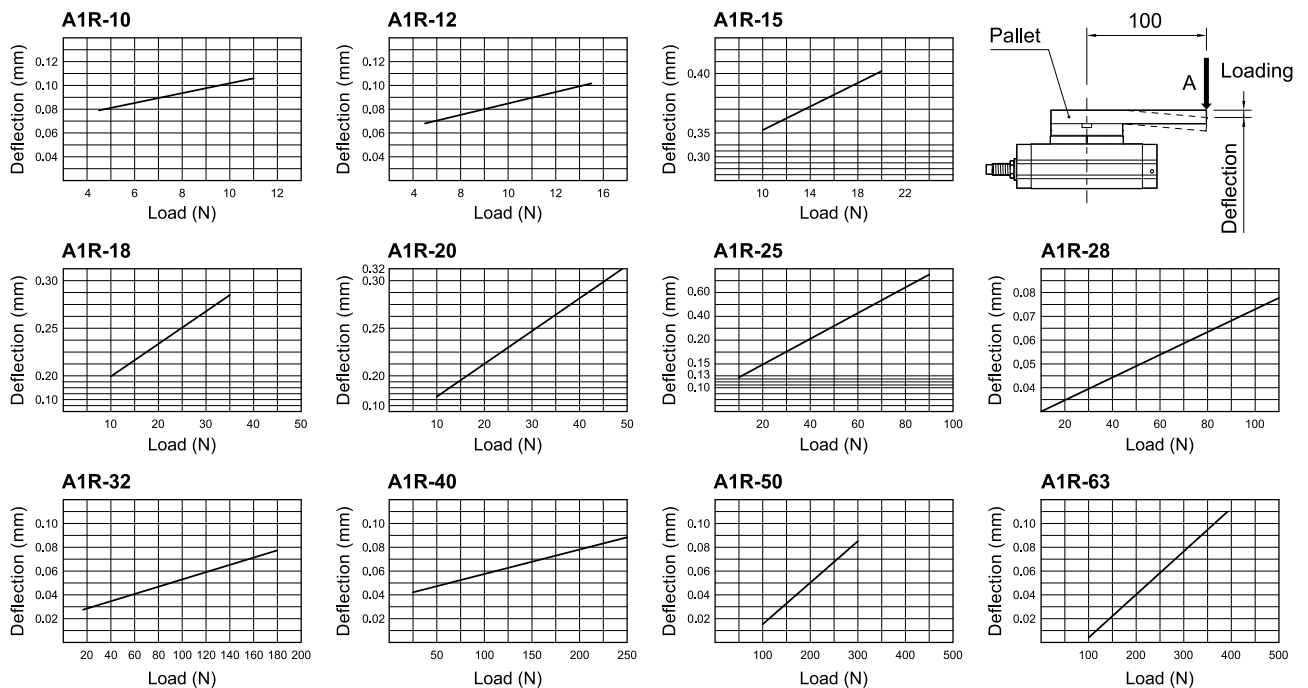
### Rotary direction and Rotation angle



### Set of Rotation range



### Transverse load and Deflection

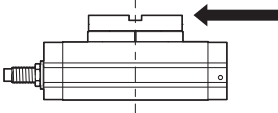
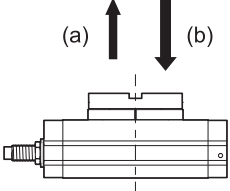
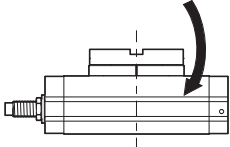


# ROTARY ACTUATOR

## A1R Series

Cat No A1R - 01 - 01 - A

### Allow load

Loading way					
		Table load (N)			Allow torque (N.m)
		(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

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**

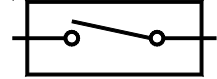
Subject to change

# ROTARY ACTUATOR

## A1R Series

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

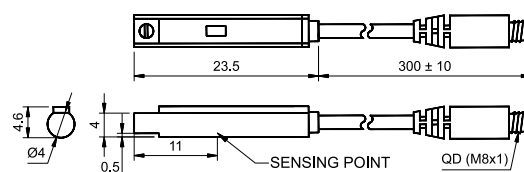
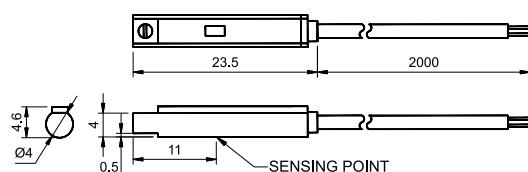
#### Function

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.

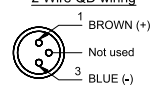
#### Technical Specifications

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

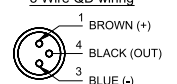
### AM090



#### 2 Wire QD wiring



#### 3 Wire QD wiring



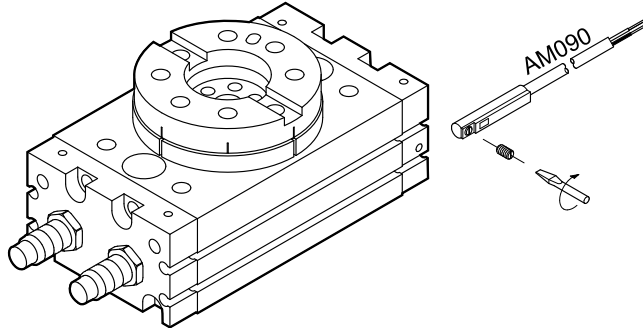


# ROTARY ACTUATOR

## A1R Series

Cat No A1R - 01 - 01 - A

### Sensor switch installation



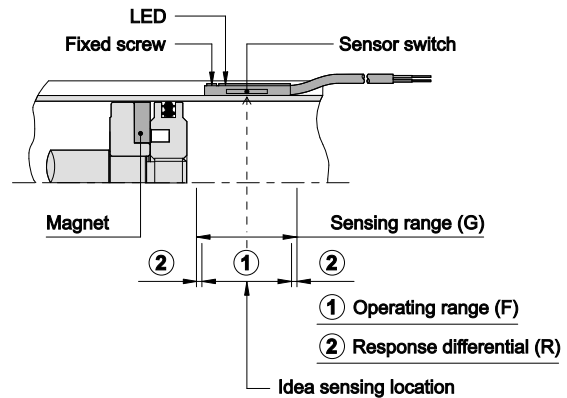
### Sensing range

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

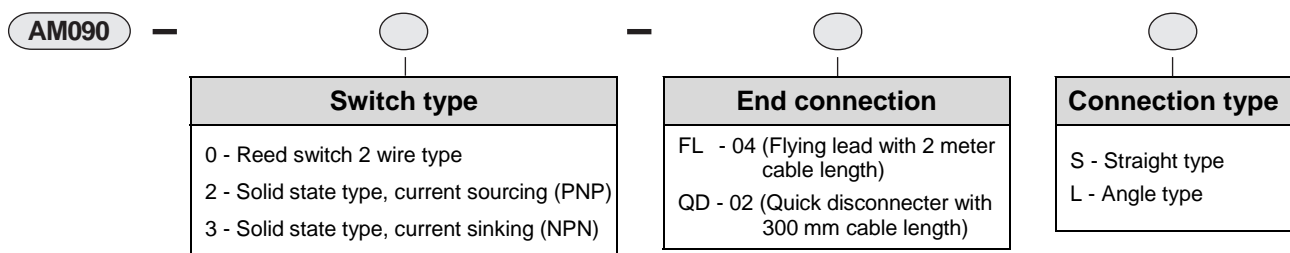
When piston head moves the switch setting and adjustment will be based on the responding range generated by the magnetic field and the switch. (Please refer to the below table)

### 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 : **AM090-0FL-04S**

Subject to change