

ROTARY ACTUATOR

Series A1R

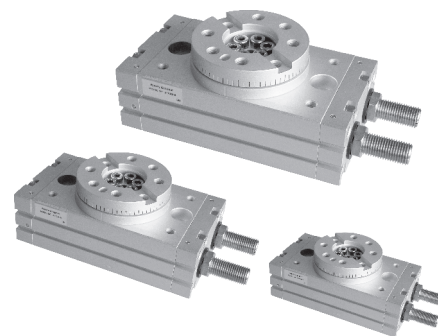
Cat No A1R - 01 - 01 - A

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

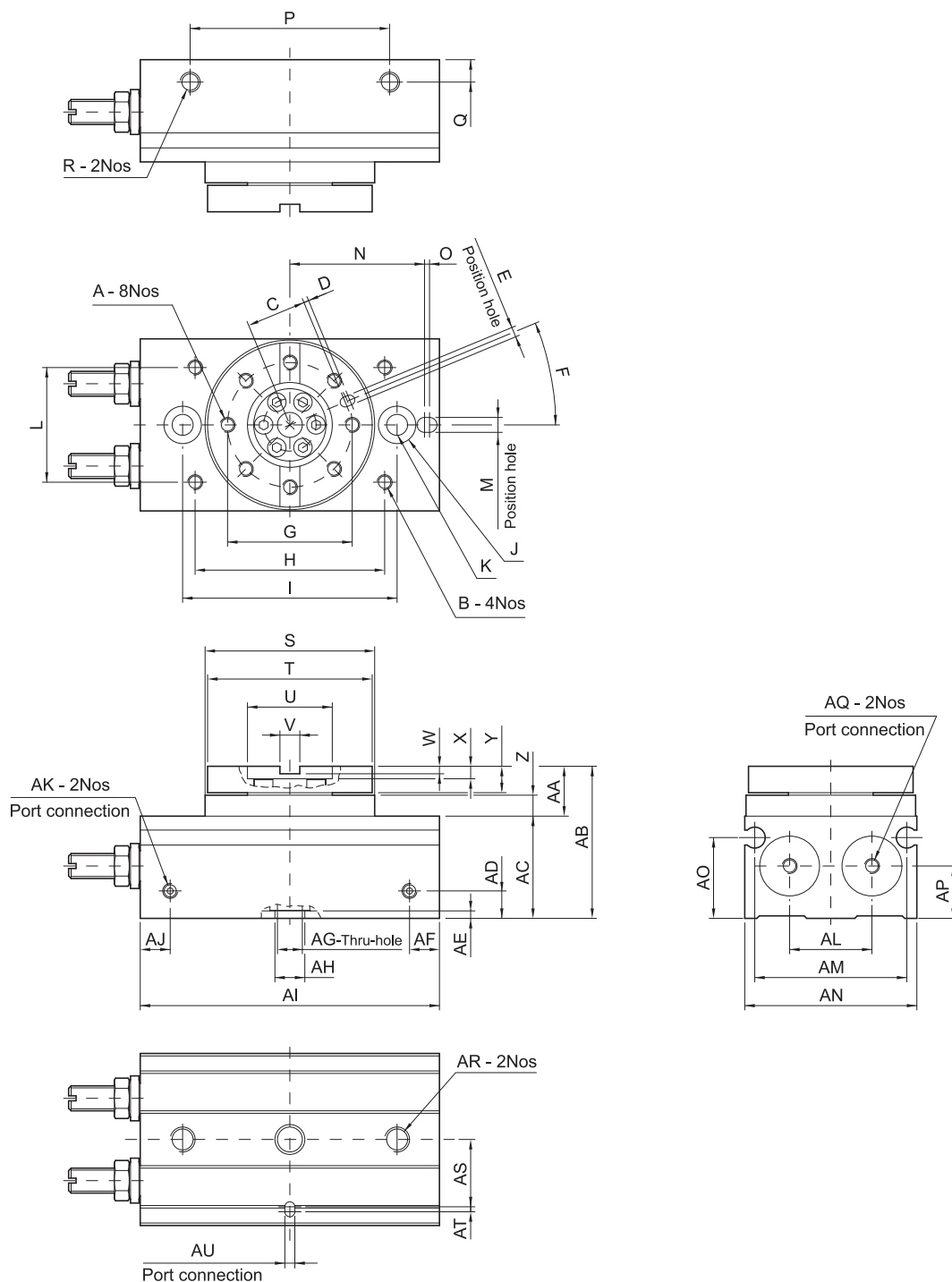
Model		A1R-10	A1R-12	A1R-15	A1R-18	A1R-20	A1R-25	A1R-28	A1R-32	A1R-40	A1R-50	A1R-63
Bore size Ø mm		10	12	15	18	20	25	28	32	40	50	63
Port size		M3x0.5P	M5x0.8P			1/8"						
Fluid		Air										
Type of operation		Double acting										
Range of pressure		1.5 - 7 bar										
Range of service temperature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

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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

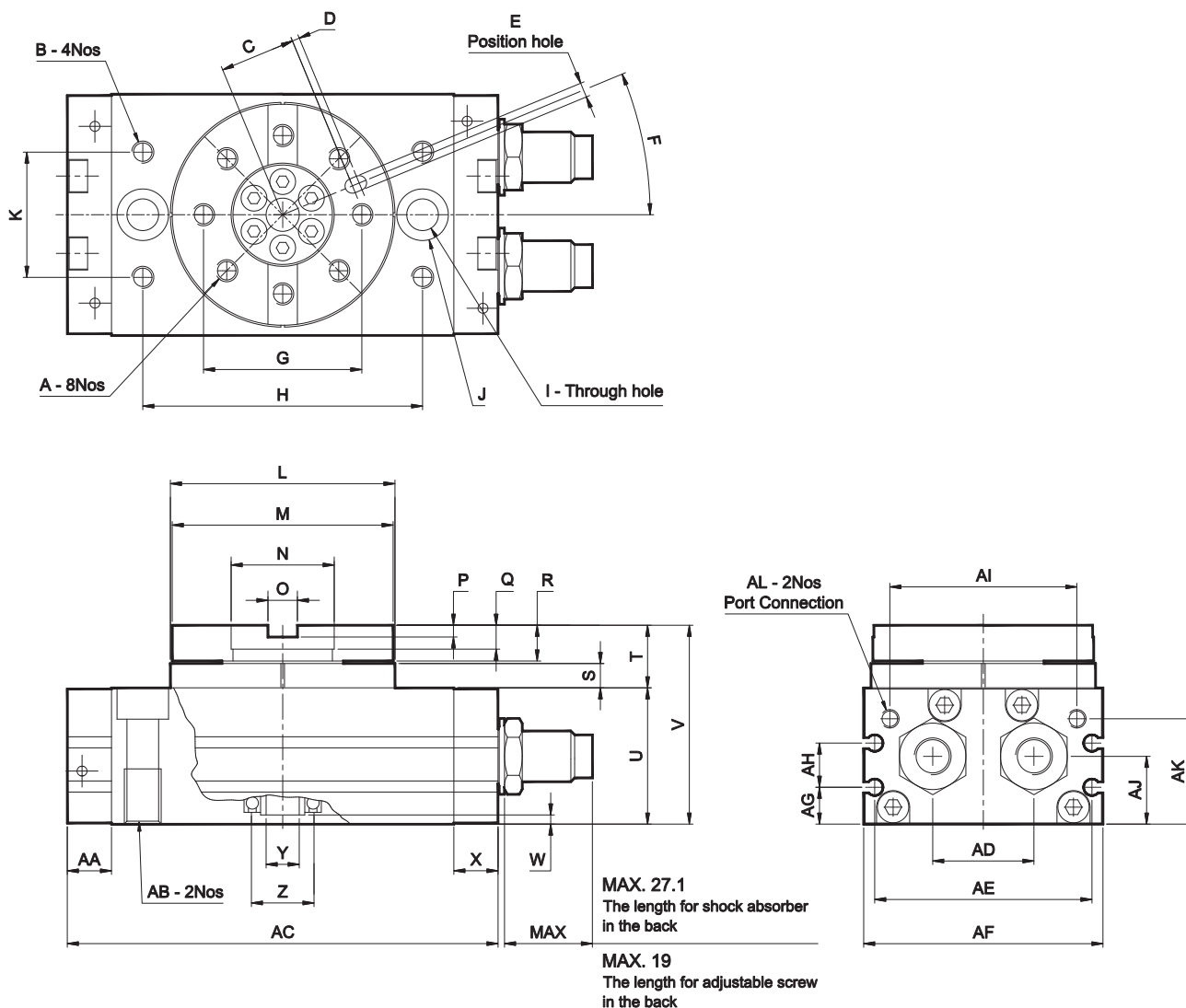
Model	X	Y	Z	AA	AB	AC	AD	AE	AF	ØAG	ØAH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU
A1R- 10	2.5	5.3	4.2	10	30.5	20.5	5.5	1.2	6	5	6	60	6	M3x0.5P	16.5	30.5	34.5	16.2	10.5	M3x0.5P	M5x0.8Px6dp	13.5	1	2x2dp
A1R- 12	2.5	6.5	4.5	11.5	34.5	23	5.5	1.2	9	6	7	73.5	9	M5x0.8P	19.2	37	41	17	12.5	M5x0.8P	M5x0.8Px6dp	15.5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

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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

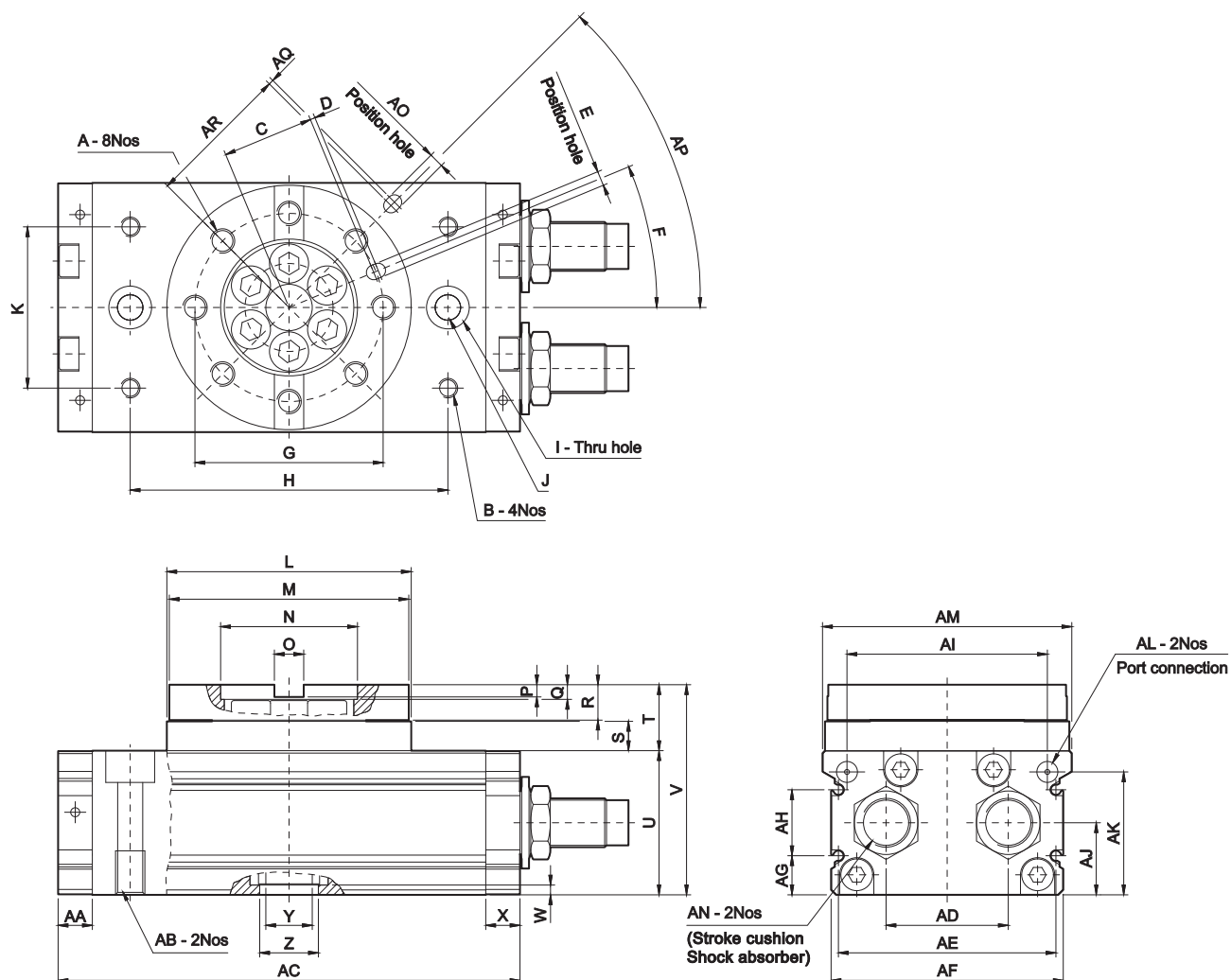
Model	T	U	V	W	X	ØY	ØZ	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL
A1R- 15	13	34	47	2.5	9.5	5	15	9.5	M8x1.25Px12dp	92	18	44	50	9	13	35	15.5	28.2	M5x0.8P
A1R- 18	17	37	54	2.5	12	9	17	12	M10x1.5Px15dp	117	27.5	59	65	10	12	50.8	16	28.6	M5x0.8P
A1R- 20	17	40	57	3	12	9	22	12	M10x1.5Px15dp	127	29	64	70	11.5	14	52	18.5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

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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

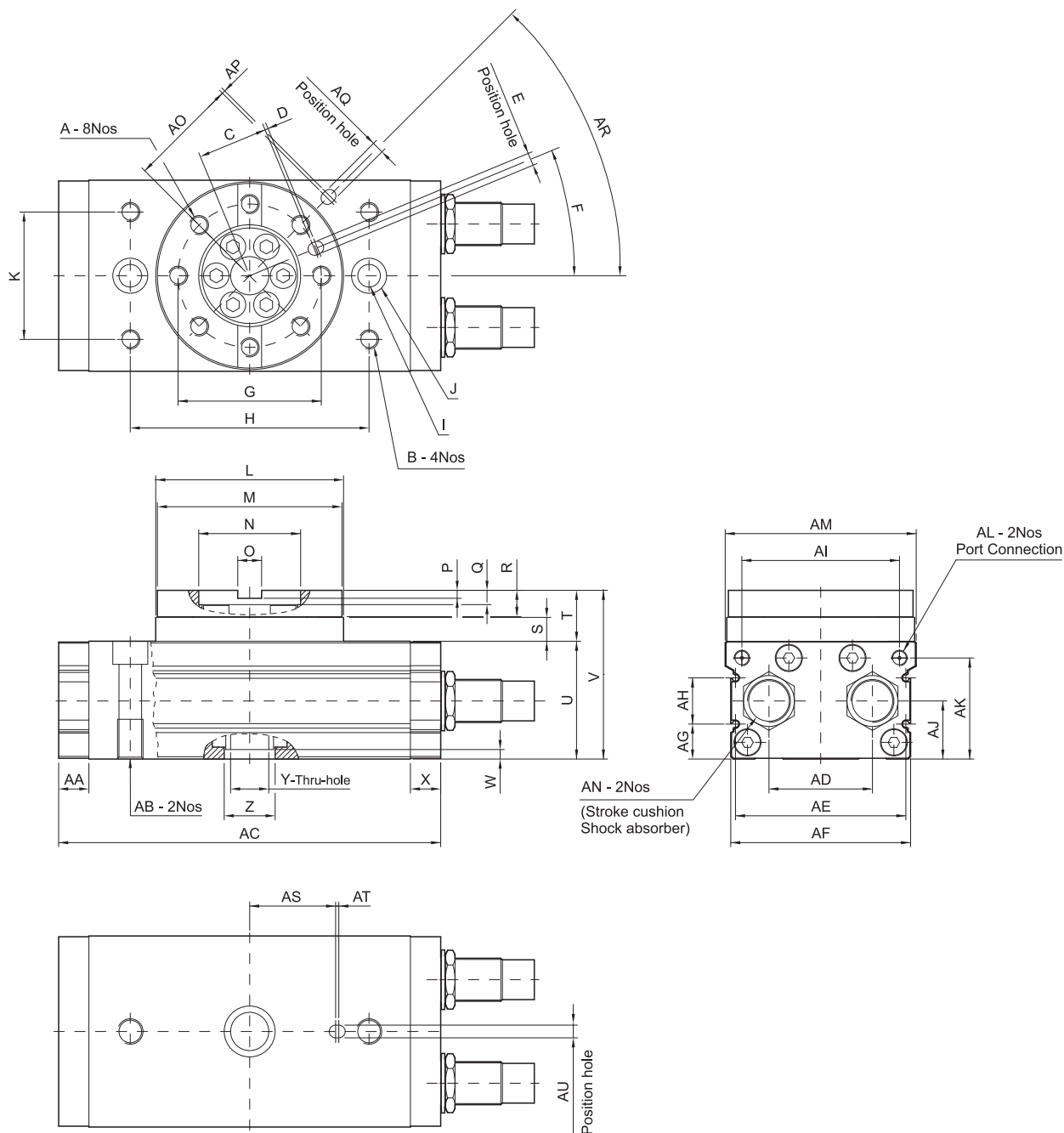
Model	V	W	X	ØY	ØZ	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP°	AQ	AR
A1R- 28	75	4	17	16	22	17	M12x1.75Px18dp	170	43	78	84	14.5	24	70	26.5	46.7	1/8"	92	M20x1.5P	5x3.5dp	45	2	54
A1R- 32	86	4	14	19	24	14	M12x1.75Px18dp	189	50	89	95	16	27	82	29.5	50.3	1/8"	102	M20x1.5P	6x4.5dp	45	2	59

ROTARY ACTUATOR

Series A1R

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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

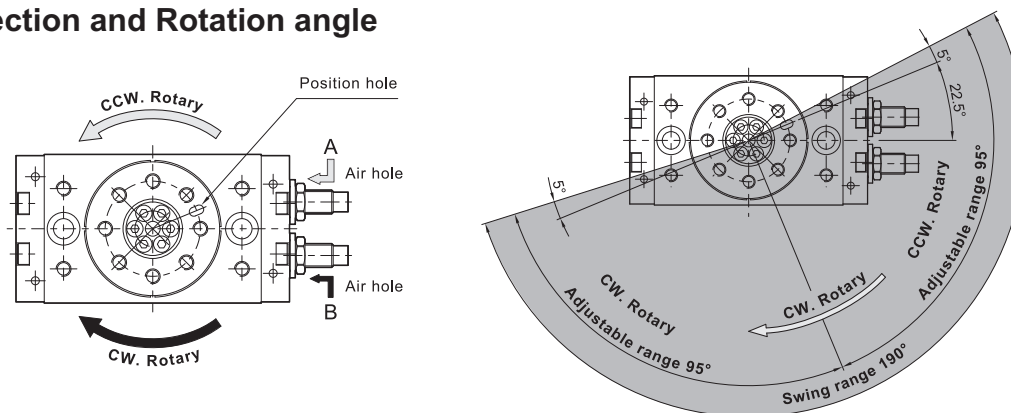
Model	X	ØY	ØZ	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR°	AS	AT	AU
A1R - 40	19	24	32	19	M16x2Px25dp	240	65	107	113	21.5	29	99	36.5	63.5	1/8"	120	M27x1.5P	69	2	8x4dp	45	54	2	8x6.5dp
A1R - 50	25	26	36	25	M20x2.5Px25dp	280	77	130	136	24.5	34	115	41.5	73.5	1/4"	---	M27x1.5P	75	2	8x4dp	45	69	2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

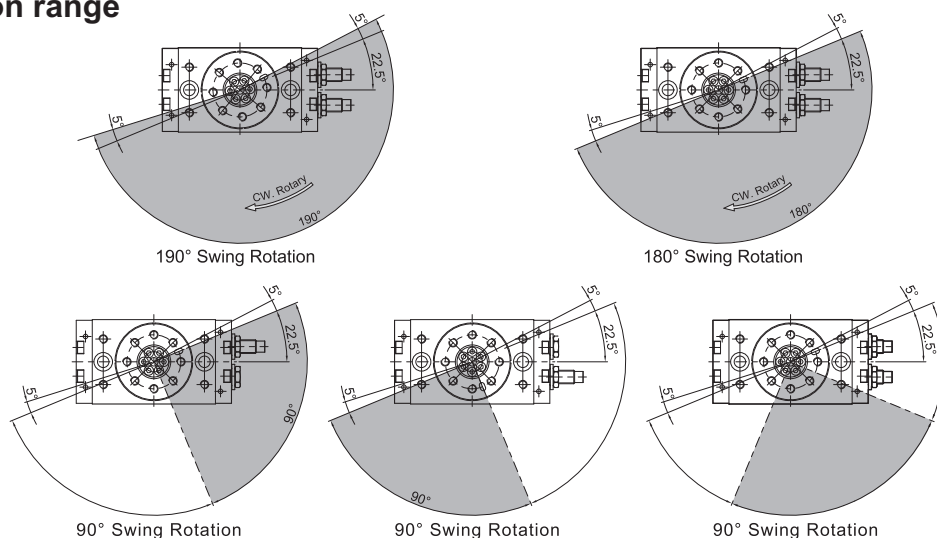
Series A1R

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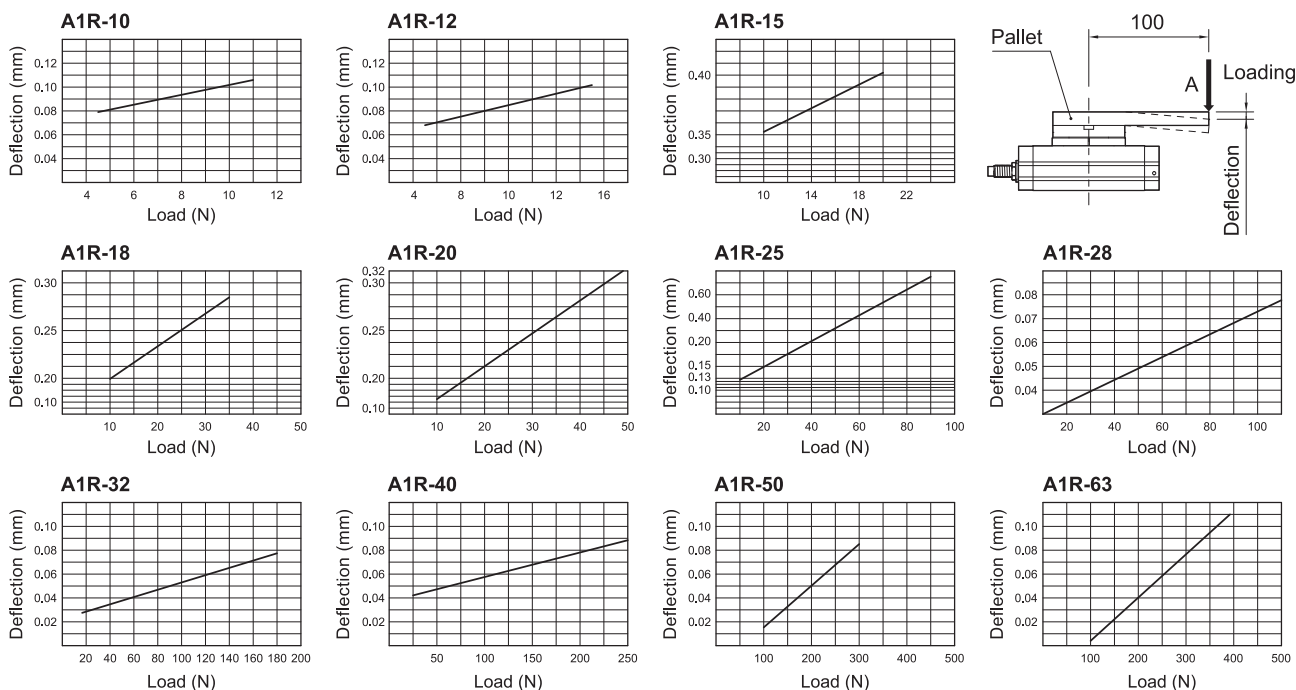
Rotary direction and Rotation angle



Set of Rotation range



Transverse load and Deflection

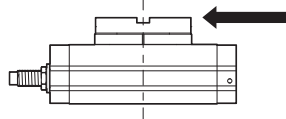
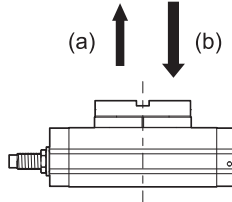
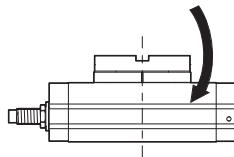


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Cat No A1R - 01 - 01 - A

Allow load

Loading way				
		Table load (N)		
Load	Slide load	(a)	(b)	Allow torque (N.m)
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)		
		010	- Ø10	
		012	- Ø12	
		015	- Ø15	
		018	- Ø18	
		020	- Ø20	
		025	- Ø25	
		028	- Ø28	
		032	- Ø32	
		040	- Ø40	
		050	- Ø50	
		063	- Ø63	
		Mountings		
		B	- Basic	

Ordering Example:

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

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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

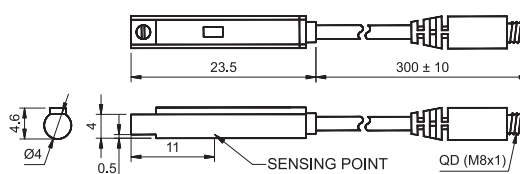
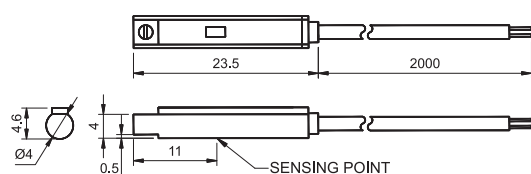
Function

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.

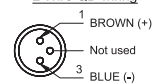
Technical Specifications

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		

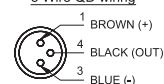
AM090



2 Wire QD wiring



3 Wire QD wiring

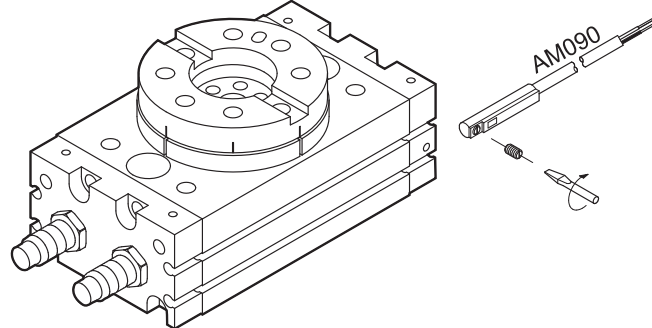


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Sensor switch installing and Position



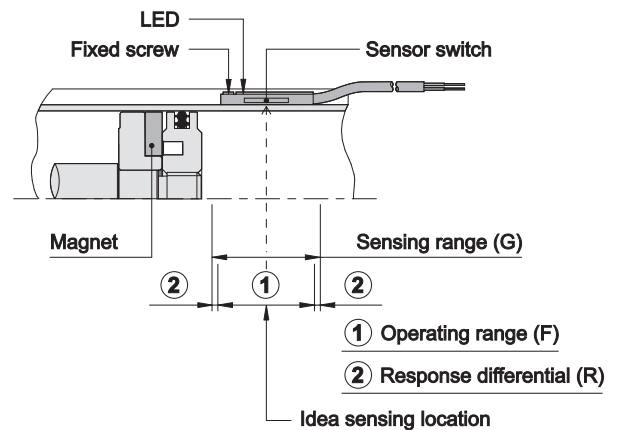
Sensing range

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

AM090	—	0	FL-04	S
Switch type		End connection		Connection type
0 - Reed switch 2 wire type 2 - Solid state type, current sourcing (PNP) 3 - Solid state type, current sinking (NPN)		FL - 04 (Flying lead with 2 meter cable length) QD - 02 (Quick disconnecter with 300 mm cable length)		S - Straight type L - Angle type

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

Subject to change