

ANGULAR GRIPPERS

Series AG1A

Cat No AG1A - 01 - 01 - A

ANGULAR GRIPPERS - Ø10, 16, 20, 25, 32 mm

Features

- Suitable for handling small parts
- Hard anodised aluminium body
- Compact design
- Magnetic sensing as standard



Technical Specifications

Model	AG1A-10	AG1A-16	AG1A-20	AG1A-25	AG1A-32	
Bore size	Ø10	Ø16	Ø20	Ø25	Ø32	
Port size	M3 x 0.5	M5 x 0.8				
Fluid	Air					
Type of operation	Double acting					
Pressure range	1.5 - 7 bar					
Range of service temperature	0 to 60° C					
Max. operation frequency	80 min					
Lubrication	Cylinder	Lubrication free				
	Lever section	Required (Apply lubricating oil)				
Theoretical holding force (M) bar	Closed side	0.16 x P	0.8 x P	1.7 x P	3.4 x P	6.1 x P
	Opened side	0.26 x P	1.1 x P	2.3 x P	4.3 x P	8.1 x P
Length of maximum gripping point (L) mm	30	40	60	70	85	
Effective gripping force (F) * bar	F = M / L x 0.85					
Lever open/close angles	-10° ~ +30°					
Magnet	With magnet					

* F: Effective gripping force, L: Gripping point length, M: Theoretical holding force, P: Pressure bar

Operating type and Data

Operating Type	Model	Bore dia (mm)	Minimum operating pressure (bar)	Thread port (mm)	Effective gripping force Kgf (N)	
Double Acting	AG1A-10	10	2.2	M3x0.5 - 4nos	Open	0.3 (3.6)
					Close	0.2 (2.2)
	AG1A-16	16	1	M3x0.5 - 4nos	Open	1.5 (15.2)
					Close	1.1 (11.1)
	AG1A-20	20	1	M4x0.7 - 4nos	Open	3.2 (31.9)
					Close	2.4 (23.6)
	AG1A-25	25	1	M5x0.8 - 4nos	Open	6 (59.6)
					Close	4.8 (47.2)
	AG1A-32	32	1	M6x1.0 - 4nos	Open	11.4 (112.4)
					Close	8.6 (84.6)

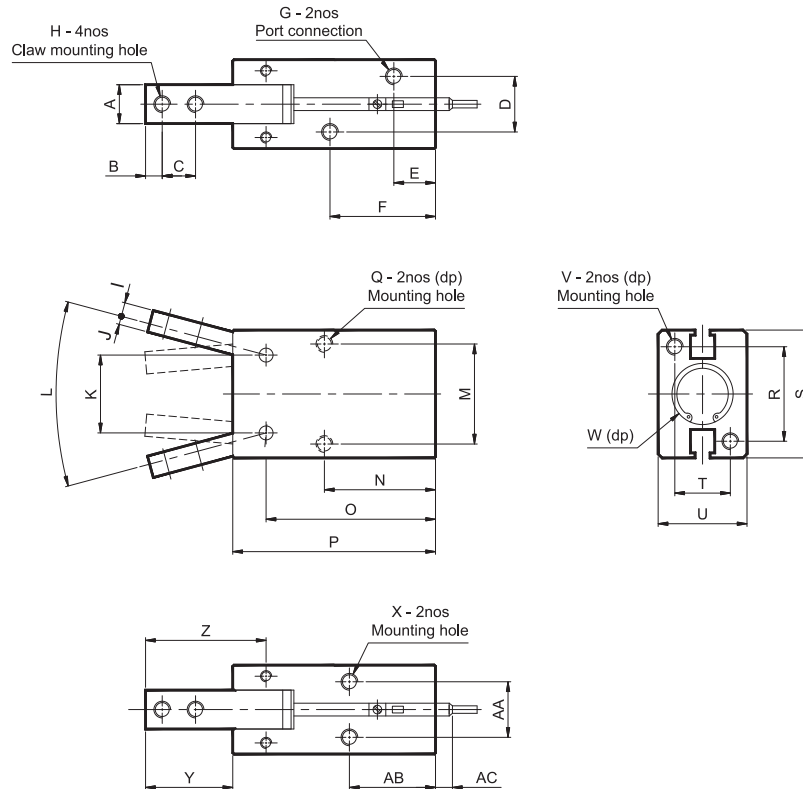
Note: The gripping force is the force of open and close gripper which is in the length of gripping point is 30mm and acting pressure is 5 bar

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Basic Dimensions



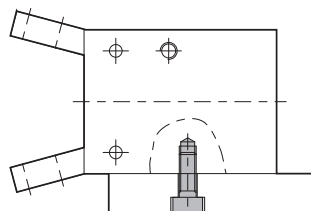
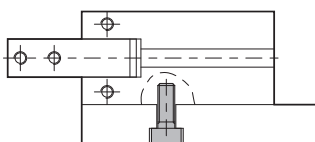
Bore dia (mm)	A ^{-0.01 -0.03}	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
AG1A- 10	7	3	6	10	7.5	19	M3x0.5P	M3x0.5P	2.2	1.8	14	-10 ~ +30	18	20	30.5	36.5
AG1A- 16	9	3	8	12	7.5	25.5	M5x0.8P	M3x0.5P	3	3	24	-10 ~ +30	24	25.5	38	45.5
AG1A- 20	12	4	10	13	8	28	M5x0.8P	M4x0.7P	3.5	3.5	30	-10 ~ +30	30	28	42.5	53
AG1A- 25	14	5	12	18	9	31	M5x0.8P	M5x0.8P	5	4	36	-10 ~ +30	36	31.5	48.5	61
AG1A- 32	18	6	14	24	10	33.5	M5x0.8P	M6x1.0P	5	5	42	-10 ~ +30	44	37.5	54	68

Bore dia (mm)	Q	R	S	T	U	V	ØW	X	Y	Z	AA	AB	AC max
AG1A- 10	M3x0.5Px7dp	17	23	10	16	M3x0.5Px5dp	11x1.3dp	M3x0.5P	15.7	21.7	10	15.5	2.5
AG1A- 16	M4x0.7Px11dp	26	34	14	22	M4x0.7Px7dp	17x1.5dp	M4x0.7P	17.5	25	14	21	2.5
AG1A- 20	M5x0.8Px13dp	35	45	16	26	M5x0.8Px8dp	21x1.5dp	M5x0.8P	22	32.5	16	22	2.5
AG1A- 25	M6x1.0Px16dp	40	52	20	32	M6x1.0Px10dp	26x1.5dp	M6x1.0P	26	38.5	20	24.5	2.5
AG1A- 32	M6x1.0Px16dp	46	60	26	40	M6x1.0Px10dp	34x2.0dp	M6x1.0P	30	44	26	30	2.5

Mounting type

1. Use the thread in the bottom

2. Use the thread in the side of body

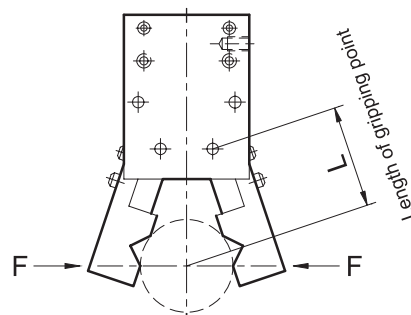
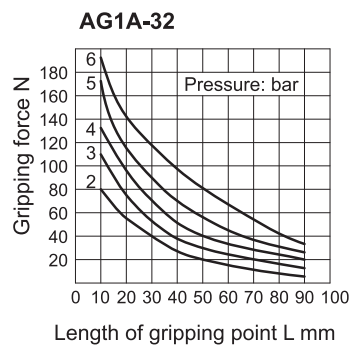
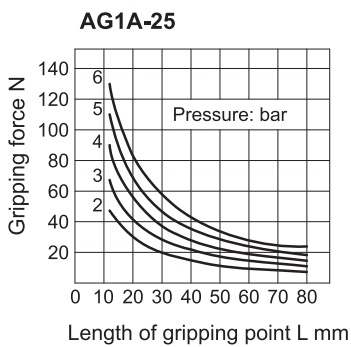
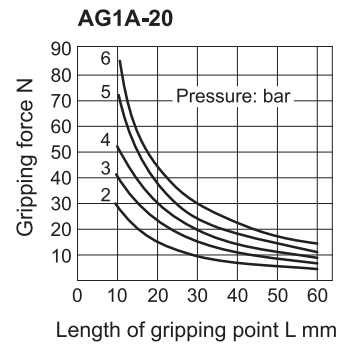
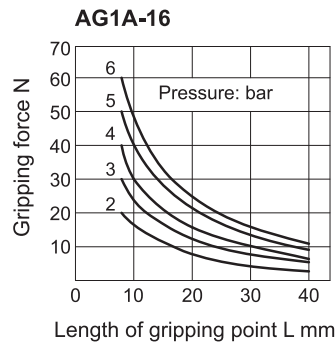
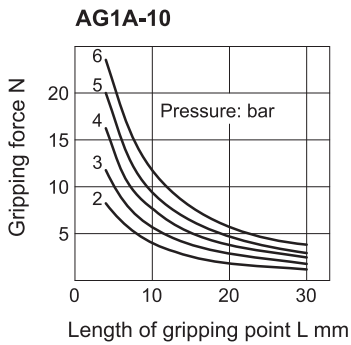


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Gripping force characteristic



How to order

AG1A01	040	B
Bore (mm)		Mountings
010	- Ø10	B - Basic
016	- Ø16	
020	- Ø20	
025	- Ø25	
032	- Ø32	

Ordering Example:

Ordering no. for angular gripper with 32 dia bore : **AG1A01032B**

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ACCESSORIES FOR ANGULAR GRIPPERS

MAGNETIC SENSOR - AM080



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

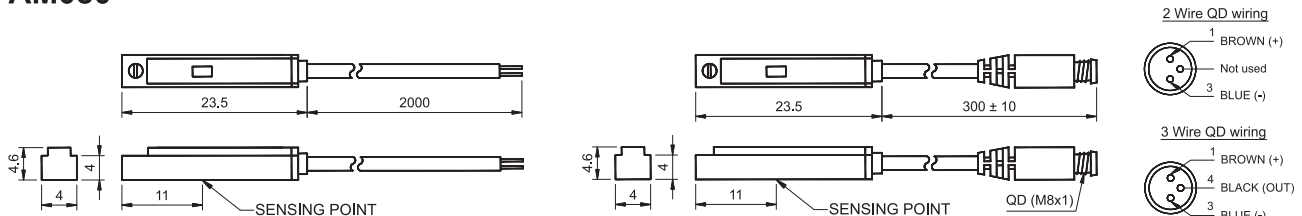
Function

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	AM080		
Bore dia mm	10, 16, 20, 25, 32		
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		

AM080

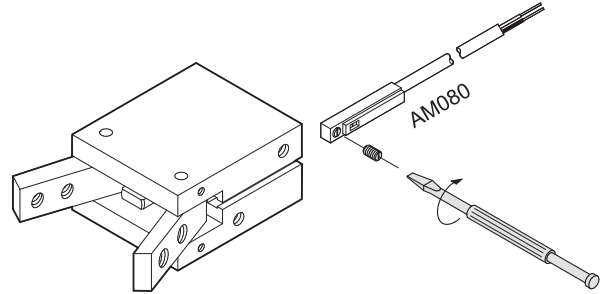
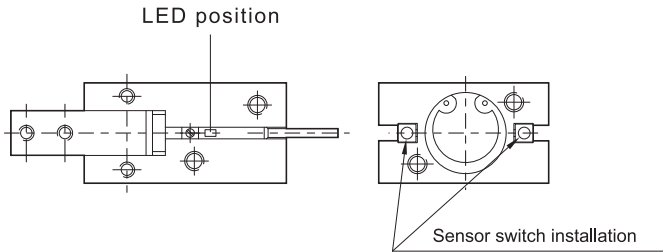


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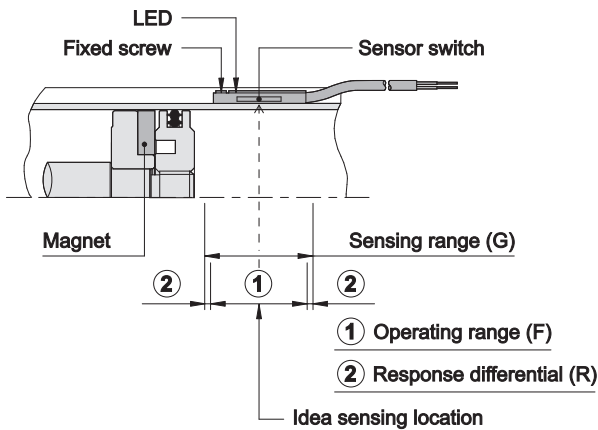
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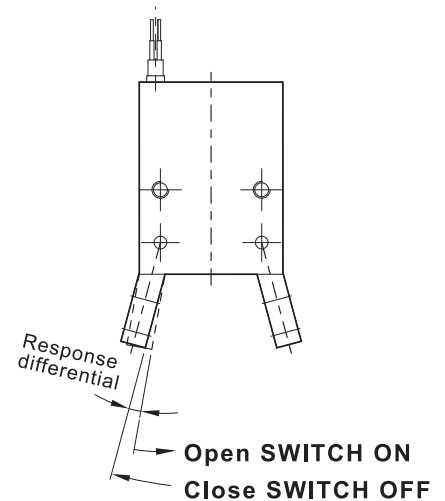
Sensor switch installing and Position



Sensor switch setting and Operating range



Response differential and Position adjustable



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)

Model	AM080	
Bore size	Operating range (F)	Response differential (R)
Ø10	3	1
Ø16	5	1
Ø20	8.5	1
Ø25	10	1.8
Ø32	10	2

How to order

AM080	—	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 : **AM080-0FL-04S**

Subject to change