FA28

PNEUMATIC MAGNETIC GRIPPER

Technical Specifications and Features

Max Hold Force (kgf)	16.5
Air Port Threads	2 x M5x1.0
Net Weight (kg)	0.2
Max Air Pressure (MPa)	0.7
Normal Actuation Pressure	0.2
ON/OFF Position Sensor	SMC C-Slot Magnetic Sensor, 3-Wire Pigtail, Discrete I/O, N.O. (Wiring diagram on Page 3)
ON/OFF Position Sensor Power Supply	40mA MAX @ 4.5-28V DC
ON/OFF Position Sensor Wire Length (m)	3
Maximum Operating Temperature	60 C
Actuation Time	0.1s
Fastest Complete Cycle Frequency	2 Hz

DISCLAIMERS AND WARRANTY

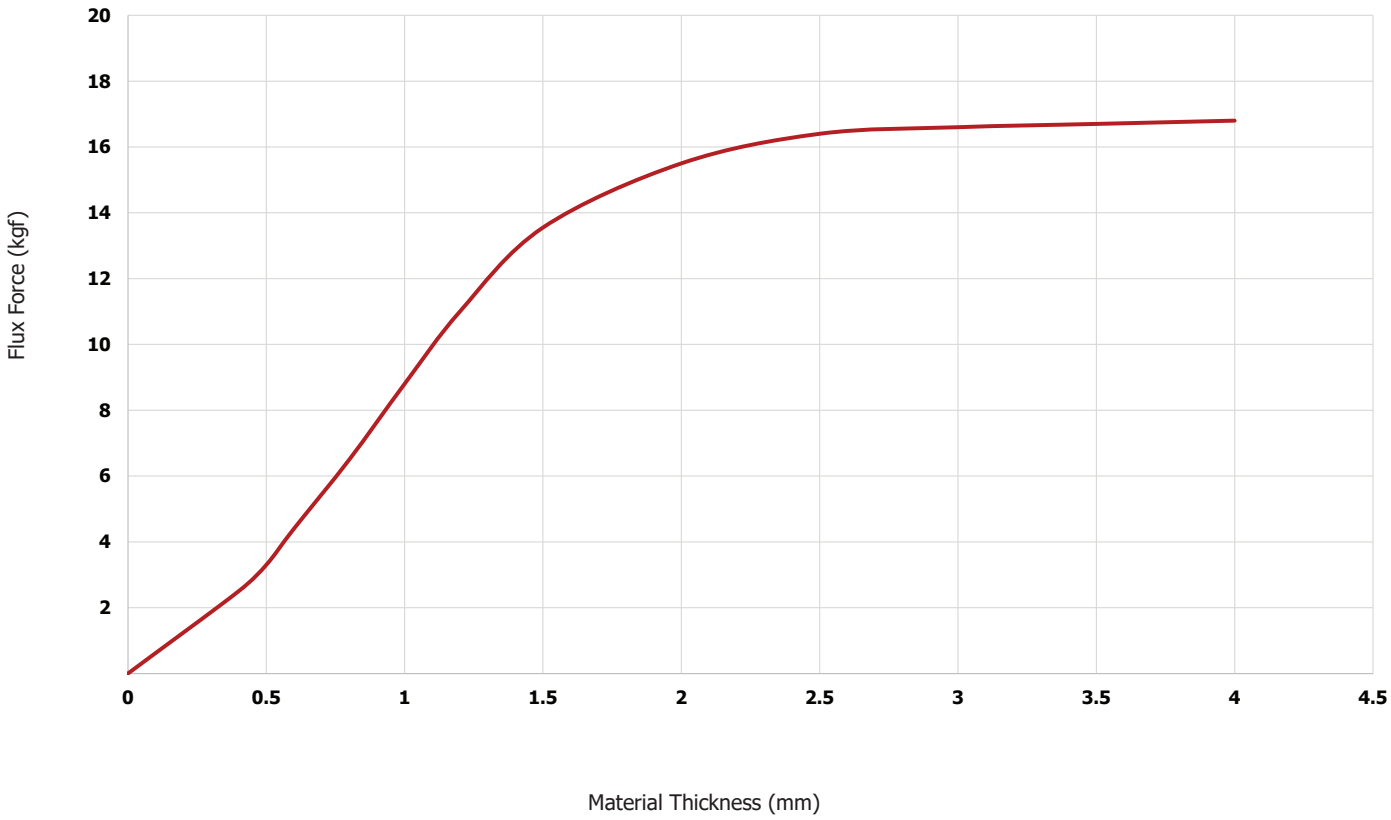
This product should be operated using clean air and under specified operating parameters. The product should only be actuated when in contact with a steel target. The product warranty is good for 1 year or 1.5 million cycles when operated following these guidelines.

Performance

Flux Force and Recommended Safe Working Loads

Target Thickness (mm)	0.4	0.5	0.6	0.8	1.0	1.2	1.5	2.0	2.5	3	3.5
Flux Force (kgf)	2.3	3.6	4.0	7.7	8.8	11	13.6	15.5	16.5	16.5	16.5
Normal Work Load (kg)	0.46	0.72	0.8	1.54	1.76	2.2	2.72	3.1	3.3	3.3	3.3
Shear Work Load (kg)	0.23	0.36	0.4	0.77	0.88	1.1	1.36	1.55	1.65	1.65	1.65

- Flux Force is the amount of gripping force generated by the product on a target part.
- Normal Work Load is the max target part weight reccomended for handling in the normal orientation.
- Shear Work Load is the max target part weight reccomended for handling in shear or perpendicular orientation.



Derating factors can be used to make simple calculations to choose the appropriate product for a given application.

Flux Force Deratings for Material and Contact

Condition	Derating Factor
Target Material - Low Carbon Steel	1.0
Target Material - High Carbon Steel	0.9
Target Material - Ferritic Stainless Steel	0.5
Target Material - Cast Iron	0.45
Contact - Perfect Flat	1.0
Contact - Imperfect Flat / Rough Surface	0.9
Contact - V Pole on Round	0.5
Contact - Multi-Point	0.5
Orientation - Normal	1.0
Orientation - Shear	0.5

Calculation Examples

Example A - FA46 with V poles handling a 2mm thick mild steel tube that weighs 3kg in normal orientation only.

(FA46 Flux Force on 2mm) x (V Pole on Round) x (Low Carbon Steel) = Estimated Flux Force

47.5 x 0.5 x 1.0 = 23.75kgf Flux Force

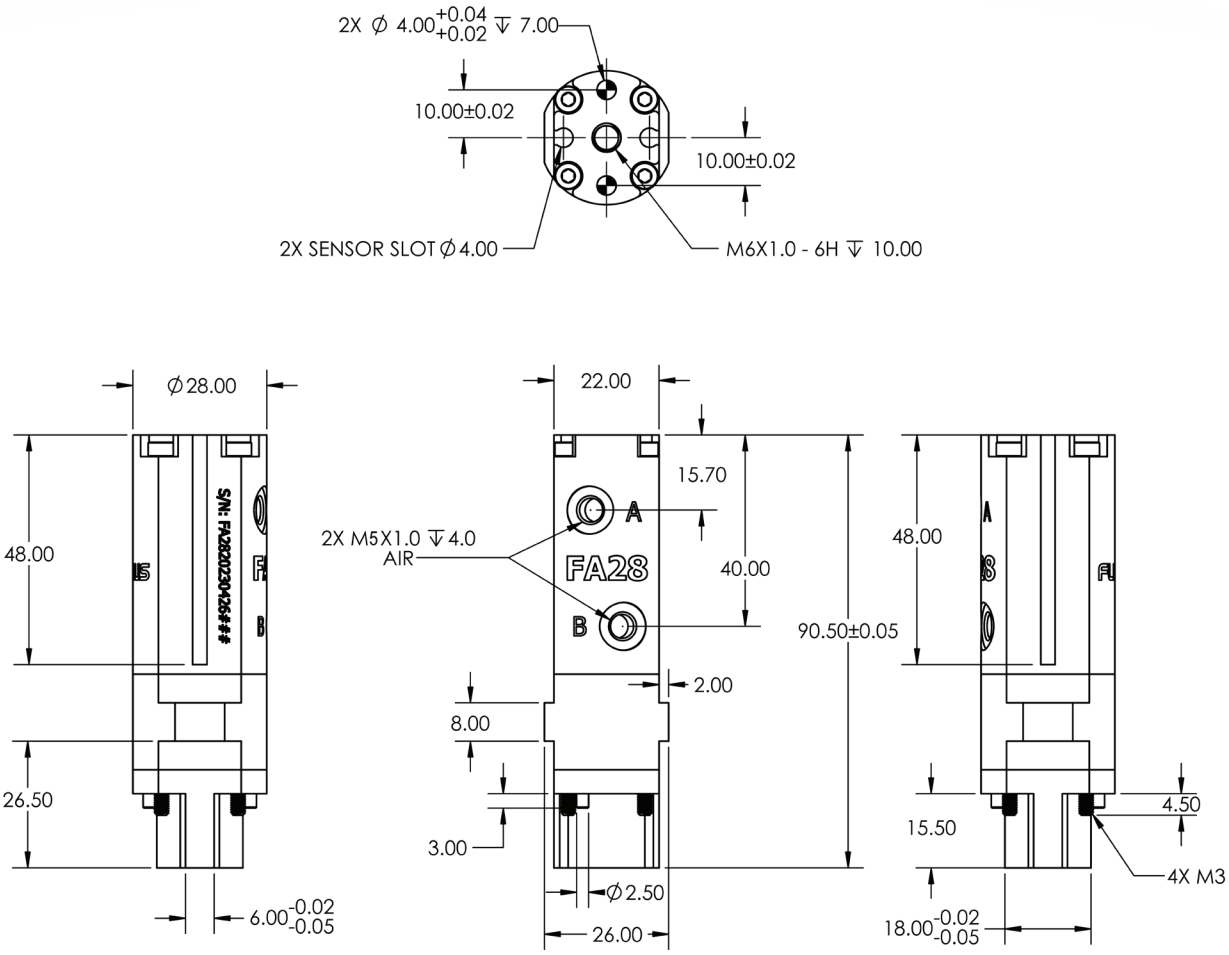
Example B - FA76 with flat poles handling a 10mm thick rough surface cast iron part that weighs 10kg in shear orientation.

(FA76 Flux Force on 10mm) x (Rough Surface) x (Cast Iron) x (Shear) = Estimated Flux Force

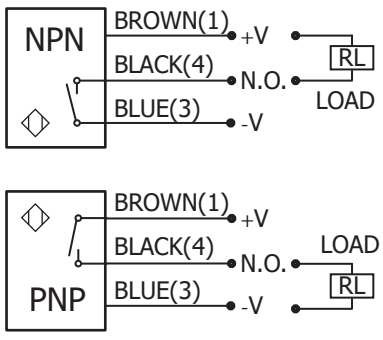
256.0 x 0.9 x 0.45 x 0.5 = 51.8kgf Flux Force

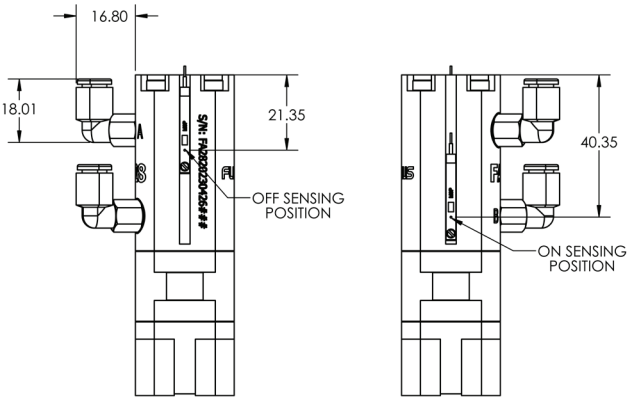
Dimensions

FA28 Base Dimensions with No Poles and No Sensors



FA28 Standard Sensor Dimensions

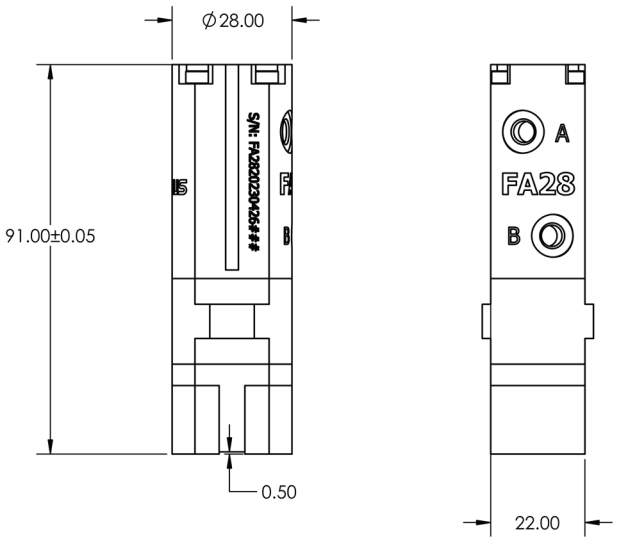




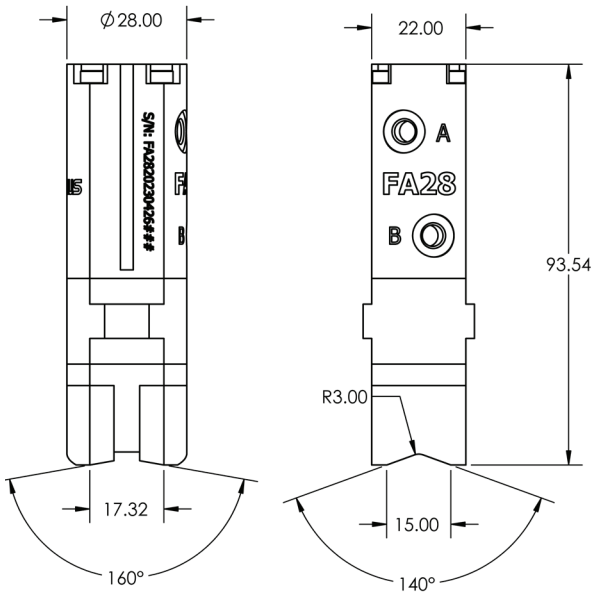
Lower sensor is for magnet ON.
Upper sensor is for magnet OFF.
Various sensor models could have slightly different mounting locations.

Dimensions

FA28 Standard Flat Pole



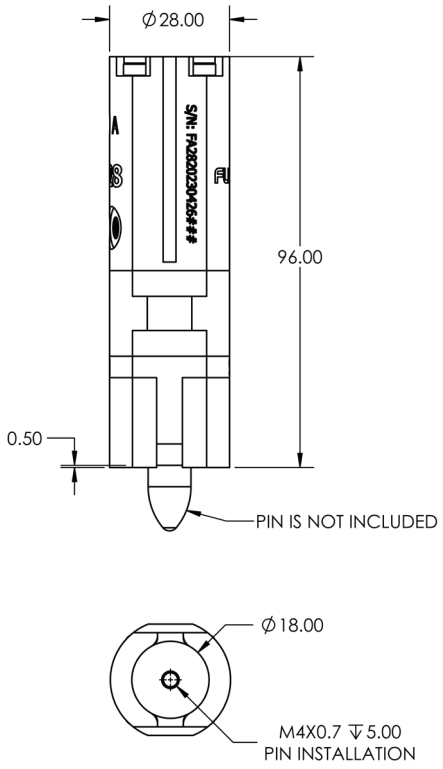
FA28 Standard V Pole



Optimized for round targets 35mm - 70mm OD

Optimized for round targets 6m - 35mm OD

FA28 Standard Pin Pole



FA28 Standard Blank Pole