Polarization Positioners - Light Duty

AL-061-1P • AL-161-1P • AL-360-1P • AL-360-1P15 • AL-360-1P30 • AL-360-1P60 • AL-461-1P • AL- 560-1P • AL- 560-1P15 • AL- 560-1P30 • AL-560-1P60 • AL- 760-1P • AL- 760-1P15 • AL- 760-1P30 • AL- 760-1P60

The MVG-Orbit/FR Legacy Series Light Duty Polarization Positioners provide accurate, balanced rotation, and controllable velocity for the positioning of light devices in test configurations. Their rugged yet straight-forward construction ensures maximum reliability and trouble-free operation, yielding the best size and weight/performance ratio.

Typically, the unit includes the body, precise slew bearings, a DC motor, gear reducer, encoder/synchro, and limit switch assemblies. The turntable surface is designed with a threaded mounting hole pattern for ease of use. A Safe/Operate switch is included to ensure safety.

AL-360-1P

Applications

- General Purpose Positioning Subsystems
- Far-Field & Near-Field Antenna Measurements
- Indoor & Outdoor Use[1]

Product Highlights

- Broad Selection – 14 Models
- Operating Loads Ranging from 10 to 2,000 lbs (4.5 to 910 kg)
- Turntable Diameters Ranging from 2.6 to 12.6 in (66 to 320 mm)
- Excellent Angular Position Accuracy
- Low Backlash Design
- Precision Bearings
- Closed Loop Servo Control
- Industry-Standard Wiring
- Tachometers for Optimum Speed Regulation & Control
- Wide Operating Temperature Range: - 4° F to 140° F (- 20°C to 60° C)
- Fully Enclosed Design of Drive Gear Train & Data Take-Off
- Wide Variety of Available Options

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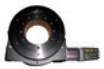
Specifications - Legacy Series Polarization Light Duty Positioners

PARAMETER	UNITS	POSITIONER MODEL														
		 AL-061 -1P	 AL-161- 1P	 AL-461 -1P	 AL-360- 1P	 AL-360- 1P15	 AL-360- 1P30	 AL-360- 1P60	 AL- 560- 1P	 AL- 560- 1P15	 AL- 560- 1P30	 AL-560- 1P60	 AL- 760- 1P	 AL- 760- 1P15	 AL- 760- 1P30	 AL- 760- 1P60
Dimensional Drawing Number	DCD	215-0350	215-0230	214-0430	07-0221	07-0221	07-0221	07-0221	05-0092	05-0092	05-0092	05-0092	05-0614	05-0614	05-0614	05-0614
OPERATIONAL																
Bending Moment	ft-lbs	1.5	100	300	300	300	300	300	800	800	800	800	3,000	3,000	3,000	3,000
	kg-m	2	14	41	41	41	41	41	111	111	111	111	415	415	415	415
Operating Load	lbs	12	50	100	150	75	66	44	600	300	150	75	2,000	1,000	500	250
	kg	5	23	45	68	34	30	20	272	136	68	34	907	454	227	113
Delivered Torque	ft-lbs	7.2	50	40	90	18	9	4.5	150	20	10	5	500	50	25	12
	kg-m	1	7	6	12.4	2.5	1.2	0.6	20.7	2.8	1.4	0.7	69.1	6.9	3.5	1.7
Withstand Torque	ft-lbs	35	75	60	120	120	–	–	210	210	–	–	600	600	–	–
	kg-m	5	10	8	16.6	16.6	–	–	29	29	–	–	83	83	–	–
Drive Power	hp	1/20	1/20	1/20	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	1/3	1/3	1/3
Nominal Speed	rpm	1	1.5	1.25	2.6	15	30	60	2	15	30	60	1.5	15	30	60
Standard Angle Transducer Format		Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder
Standard Accuracy	deg	± 0.03	± 0.03	± 0.03	± 0.04	± 0.04	± 0.25	± 0.25	± 0.03	± 0.04	± 0.25	± 0.25	± 0.03	± 0.04	± 0.25	± 0.25
Maximum Backlash	deg	0.06	0.06	0.06	0.06	0.2	0.2	0.3	0.05	0.08	0.2	0.3	0.05	0.08	0.2	0.3
PHYSICAL																
Height	in	2.8	6	4.1	12.3	12.3	12.3	12.3	14.6	14.6	14.6	14.6	20.8	20.8	20.8	20.8
	mm	71	155	105	313	313	313	313	372	372	372	372	528	528	528	528
Weight	lbs	11	22	33	40	40	40	40	80	80	80	80	140	140	140	140
	kg	5	10	15	18	18	18	18	36	36	36	36	64	64	64	64
Turntable Diameter	in	3.6	5.9	9	10.3	10.3	10.3	10.3	12.5	12.5	12.5	12.5	12.6	12.6	12.6	12.6
	mm	90	150	228	262	262	262	262	318	318	318	318	320	320	320	320

PARAMETER		UNITS	POSITIONER MODEL														
			AL-061 -1P	AL-161- 1P	AL-461 -1P	AL-360- 1P	AL-360- 1P15	AL-360- 1P30	AL-360- 1P60	AL- 560- 1P	AL- 560- 1P15	AL- 560- 1P30	AL-560- 1P60	AL- 760- 1P	AL- 760- 1P15	AL- 760- 1P30	AL- 760- 1P60
ENVIRONMENTAL																	
Operating Temperature			- 4° F to 140° F (- 20° C to 60° C)														
OPTIONS																	
EN001	Incremental Encoder (Standard Accuracy)		–	–	–	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
	Accuracy	deg	–	–	–	± 0.03	± 0.04	± 0.25	± 0.25	± 0.03	± 0.04	± 0.25	± 0.25	± 0.04	± 0.04	± 0.25	± 0.25
EN002	Direct Incremental Encoder (High Accuracy)		–	–	–	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
	Accuracy	deg	–	–	–	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005
EN003[1]	Direct Absolute Encoder (High Accuracy)		–	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
	Accuracy	deg	–	Opt	–	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005
EN004	Absolute Encoder (Standard Accuracy)		–	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
	Accuracy	deg	–	Opt	Opt	± 0.04	± 0.04	± 0.04	± 0.04	± 0.03	± 0.03	± 0.03	± 0.03	± 0.03	± 0.04	± 0.25	± 0.25
SR	Slip Ring[2]		–	–	–	SR051L SR101L	SR051L SR101L	SR051L SR101L	SR051L SR101L	SR051L SR101L SR201L	SR051L SR101L SR201L	SR051L SR101L SR201L	SR051L SR101L SR201L	SR051L SR101L SR201L SR301L	SR051L SR101L SR201L SR301L	SR051L SR101L SR201L SR301L	SR051L SR101L SR201L SR301L
RJ	Rotary Joint[2]		RJ18L RJ26L RJ40L RJ50L	RJ12UL RJ18L RJ26L RJ40L RJ50L	RJ12UL RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L	RJ12L RJ18L RJ26L RJ40L RJ50L
TH	Central Thru-Hole Inner Diameter		S	S	S	TH002 TH003	TH002 TH003	TH002 TH003	TH002 TH003	TH002 TH003	TH002 TH003	TH002 TH003	TH002 TH003	TH002 TH003	TH002 TH003	TH002 TH003	TH002 TH003
		in	0.78	1.8	3.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.0	3.0	3.0	3.0
		mm	20	44.5	90	57.15	57.15	57.15	57.15	57.15	57.0	57.0	57.0	76.0	76.0	76.0	76.0
EX	Internal Harnessing		–	–	–	–	–	–	–	EX002	EX002	EX002	EX002	EX002	EX002	EX002	EX002
CF	Connector Format		–	–	–	CF001 CF002	CF001 CF002	CF001 CF002	CF001 CF002	CF001 CF002	CF001 CF002	CF001 CF002	CF001 CF002	CF001 CF002	CF001 CF002	CF001 CF002	CF001 CF002
LS	Leveling Screw (set)		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MM	Mounting Thread		MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003

(-) N/A Opt Optional

Supplied Accessories

Digital Documentation Set

User Manual (Installation, Setup, Operation & Maintenance)

Technical Notes

1 EN003: With absolute encoder, positioner size might be increased. Please consult MVG-ORBIT/FR for details.

2 Slip Ring & Rotary Joint Option:
- Certain slip ring options may require an extension cap that protrudes above the turntable surface. Positioner height may increase. Consult MVG-ORBIT/FR
- Slip ring contacts are provided with dedicated connectors
- When rotary joint and/or slip ring options are specified, no central thru-hole is available to the user. Option TH002 and TH003 are available in lieu of rotary joint and/or slip ring options
- Slip ring option in the smallest models (AL-061-1,161-1,461-1) are unique and need special attention. Please consult MVG-Orbit/FR

3 AL-061-1P, AL-161-1P, and AL-461-1P models:
- Contain restricted limit travel settings of ± 200°, consult MVG-Orbit/FR for details.
- Rated for indoor use only
- Interface readout - incremental encoder (synchro not available) interfaces with AL-4160 series motion control systems only

4 Indoor and outdoor use for models above AL-360-P, for smaller models, consult your MVG-Orbit/FR contact

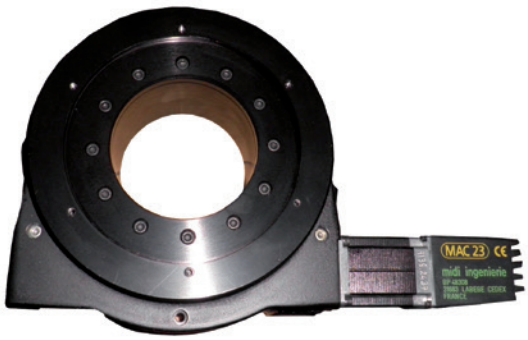
5 All accuracy data is based on no-load conditions. Contact MVG-Orbit/FR for accuracy under load conditions

6 AL-360-1P and larger models are equipped with adjustable limit switches capable of approx 20° to 900° total travel. When rotary joint and slip ring options are specified, limit switches remain but are electrically disabled. Single-axis positioners are factory-set at:
- Polarization Axis: 400° (± 200°)

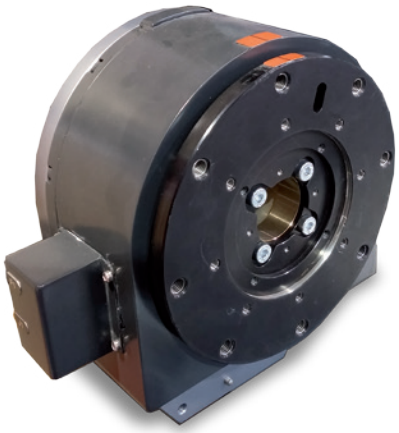
7 All models are delivered standard with incremental encoder

8 Other STD turntables with interface for feed are available. Consult MVG-Orbit/FR for details.

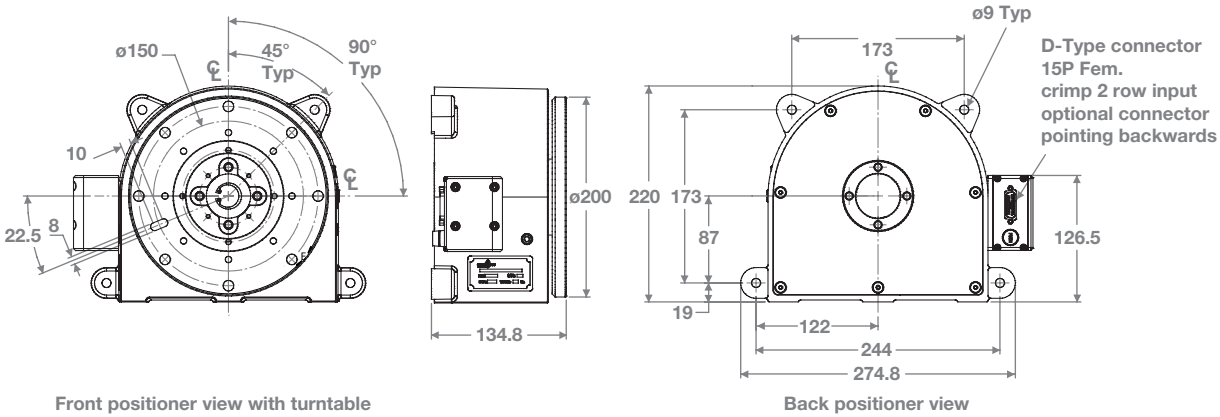
AL-461-1P



AL-161-1P



Dimensional drawing - AL-161-1P*



Front positioner view with turntable

Back positioner view

* Example drawing for general reference, please consult MVG-Orbit/FR for ICD.

Contact your local sales representative for more information
salesteam@mvg-world.com
www.mvg-world.com/positioners