

# EL/AZ Positioners - Medium Duty

AL- 4271-1 • AL- 4272-1 • AL- 4273-1 • AL- 4274-1 • AL- 4275-1 • AL- 4275-1SP

The MVG-Orbit/FR Legacy Series EL/AZ Positioners provide accurate, balanced rotation, and controllable velocity of 2 axes, for the positioning of medium sized 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 assembly. 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-4272-1



## Applications

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

## Product Highlights

- Broad Selection – 6 Models
- Vertical Loads Ranging from 1,000 to 10,000 lbs (450 to 4,540 kg)
- Platform Sizes Ranging from 12.6 x 13.3 in to 28 x 28 in (320 x 339 mm to 711 x 711 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

## Specifications - Legacy Series EL/AZ Medium Duty Positioners

PARAMETER	UNITS	POSITIONER MODEL					
							
		AL- 4271-1	AL- 4272-1	AL- 4273-1	AL- 4274-1	AL- 4275-1	AL- 4275-1SP
Dimensional Drawing Number	DCD	10-0445	09-1220	10-1936	10-1822	10-1823	19-6292

### OPERATIONAL

Bending Moment	ft-lbs	600	2,000	4,200	7,500	12,000	12,000	
	kg-m	80	280	580	1,040	1,660	1,660	
Vertical Load	lbs	1,000	1,250	3,000	5,000	10,000	10,000	
	kg	450	570	1,360	2,270	4,540	4,540	
Delivered Torque	Azimuth	ft-lbs	500	500	1,200	1,200	2,800	10,000
		kg-m	70	70	170	170	390	1,380
	Elevation	ft-lbs	500	1,200	2,800	5,000	10,000	10,000
		kg-m	70	170	390	690	1,380	1,380
Withstand Torque	Azimuth	ft-lbs	600	600	2,000	2,000	4,200	12,000
		kg-m	80	80	280	280	580	1,660
	Elevation	ft-lbs	600	2,000	4,200	7,500	12,000	12,000
		kg-m	80	280	580	1,040	1,660	1,660
Drive Power	Azimuth	hp	1/3	3/4	3/4	3/4	3/4	
	Elevation	hp	1/3	1/3	3/4	3/4	3/4	
Nominal Speed	Azimuth	rpm	1.5	1.3	1.3	1.3	0.5	0.9
	Elevation	deg/min	540	470	180	72	55	54
Standard Angle Transducer Format		Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	Incremental encoder	
Standard Accuracy	Azimuth	deg	± 0.03	± 0.03	± 0.03	± 0.03	± 0.03	
	Elevation	deg	± 0.03	± 0.03	± 0.03	± 0.03	± 0.03	
Maximum Backlash	Azimuth	deg	0.05	0.05	0.05	0.05	0.05	
	Elevation	deg	0.05	0.05	0.05	0.05	0.05	
Elevation Limit-to-Limit Travel	deg	± 95	± 95	± 95	± 95	± 95	± 95	
Lower Azimuth Moment Bearing Capacity (Static)	ft-lbs	3,000	10,000	22,000	22,000	35,000	35,000	
	kg-m	415	1,380	3,040	3,040	4,840	4,840	

### PHYSICAL

Height at 0° Elevation	in	39.4	40.7	46.5	46.9	49.8	53.8
	mm	1,000	1,033	1,182	1,190	1,264	1,367
Weight	lbs	510	630	950	1,150	1,350	1,430
	kg	231	286	431	522	612	649
Platform Size	in	12.6 x 13.3	24 x 24	24 x 24	28 x 28	28 x 28	28 x 28
	mm	320 x 339	610 x 610	610 x 610	711 x 711	711 x 711	711 x 711

### ENVIRONMENTAL

Operating Temperature	- 4° F to 140° F (- 20° C to 60° C)
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## OPTIONS

EN002	Direct Incremental Encoder (High Accuracy)		Opt	Opt	Opt	Opt	Opt	Opt
	Accuracy – Azimuth	deg	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005
	Accuracy – Elevation	deg	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005
EN003	Direct Absolute Encoder (High Accuracy)		Opt	Opt	Opt	Opt	Opt	Opt
	Accuracy – Azimuth	deg	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005
	Accuracy – Elevation	deg	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005	± 0.005
EN004	Absolute Encoder (Standard Accuracy)		Opt	Opt	Opt	Opt	Opt	Opt
	Accuracy – Azimuth	deg	± 0.03	± 0.03	± 0.03	± 0.03	± 0.03	± 0.03
	Accuracy – Elevation	deg	± 0.03	± 0.03	± 0.03	± 0.03	± 0.03	± 0.03
SR	Slip Ring <sup>3</sup>		SR051L SR101L SR201L SR301L SR402L	SR051L SR101L SR201L SR301L SR402L	SR051L SR101L SR201L SR301L SR402L	SR051L SR101L SR201L SR301L SR402L SR502L	SR051L SR101L SR201L SR301L SR402L SR502L	
RJ	Rotary Joint		RJ12U RJ18U RJ26U RJ40U RJ50U	RJ12U RJ18U RJ26U RJ40U RJ50U	RJ12U RJ18U RJ26U RJ40U RJ50U	RJ12U RJ18U RJ26U RJ40U RJ50U	RJ12U RJ18U RJ26U RJ40U RJ50U	
EX	Internal Harnessing		EX002	EX002	EX002	EX002	EX002	
CF	Connector Format		-	-	-	-	-	
LS	Leveling Screw (set)		LS001-3	LS001-3	LS001-3	LS001-3	LS001-6	
ST	Stow Lock <sup>4</sup>		Opt	Opt	Opt	Opt	Opt	
MM	Mounting Thread		MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003	
IC	Interlock Circuit		IC001	IC001	IC001	IC001	IC001	

(-) N/A    S Standard    Opt Optional

## Supplied Accessories

### Digital Documentation Set

User Manual (Installation, Setup, Operation & Maintenance)

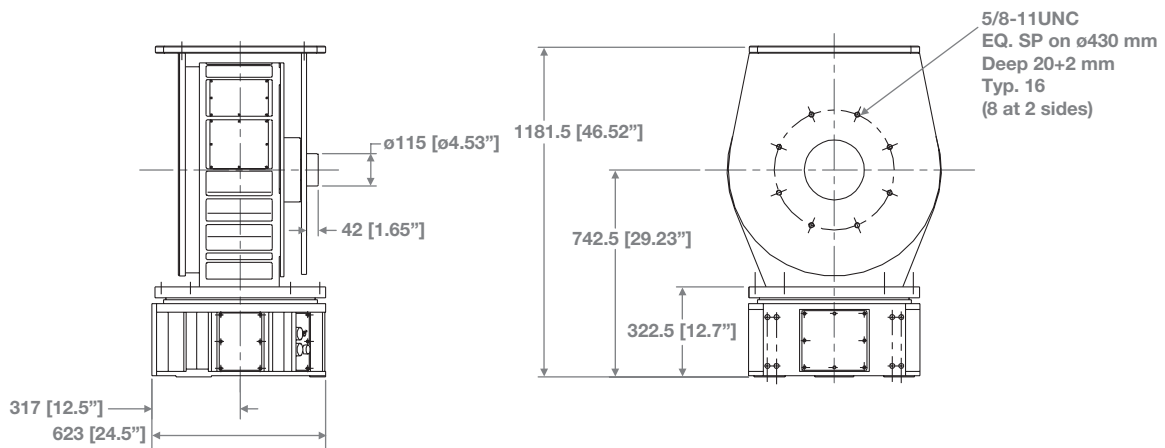
### Technical Notes

- 1** All accuracy data is based on no-load conditions.  
Contact MVG-ORBIT/FR for accuracy under load conditions
- 2** All models are equipped with adjustable limit switches capable of approx 20° to 900° total travel in AZ axis. When rotary joint and slip ring options are specified, limit switches remain but are electrically disabled. Limit switches are factory-set at:
  - Elevation Axis: 190° (± 95°)
  - Azimuth Axis: 400° (± 200°)
- 3** Slip Ring 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
- 4** For EL axis : SL001EL; for AZ axis : SL002AZ

AL- 4275-1



Dimensional drawing - AL-4273-1\*



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



Contact your local sales representative for more information  
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[www.mvg-world.com/positioners](http://www.mvg-world.com/positioners)