

AZ/EL Positioners - Heavy Duty

AL-4386-1 • AL-4387-1 • AL-4388-1 • AL-4389-1

The Performance Series AZ/EL positioners represent the latest generation of multi-axis rotary positioning subsystems. They offer enhanced capabilities and improved performance relative to size and incorporate new engineering advances.

These positioners provide accurate, balanced rotation, and controllable velocity. 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, 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-4387-1 (Shown with optional counterweights & base riser)



Applications

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

Product Highlights

- Vertical Loads Ranging from 28,000 to 40,000 lbs (12,970 to 18,140 kg)
- Turntable Diameters Ranging from 30.0 to 48.0 in (762 to 1,219 mm)
- Optimum Performance Relative to Size
- 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
- Compact Counterweight Options
- Wide Variety of Available Options

Specifications - Performance Series AZ/EL Heavy Duty Positioners

PARAMETER	UNITS	POSITIONER MODEL			
		AL-4386-1	AL-4387-1	AL-4388-1	AL-4389-1
Dimensional Drawing Number		DCD27-6170	DCD27-6170	DCD28-6509	DCD28-6502

OPERATIONAL

Bending Moment	ft-lbs	40,000	40,000	75,000	150,000	
	kg-m	5,530	5,530	10,370	20,740	
Vertical Load	lbs	28,600	28,600	40,000	40,000	
	kg	12,970	12,970	18,140	18,140	
Delivered Torque	Azimuth	ft-lbs	2,850	5,000	18,000	30,000
		kg-m	390	690	2,490	4,150
	Elevation	ft-lbs	20,000	20,000	75,000	100,000
		kg-m	2,765	2,765	10,370	13,830
Withstand Torque	Azimuth	ft-lbs	4,300	6,000	18,000	35,000
		kg-m	590	830	2,490	4,840
	Elevation	ft-lbs	23,500	23,500	75,000	150,000
		kg-m	3,250	3,250	10,370	20,740
Drive Power	Azimuth	hp	3/4	3/4	5	5
	Elevation	hp	3/4	3/4	5	5
Nominal Speed	Upper Azimuth	rpm	0.5	0.3	0.3	0.3
	Elevation	deg/min	25	25	25	20
Standard Angle Transducer Format			Absolute Encoder	Absolute Encoder	Absolute Encoder	Absolute Encoder
Standard Accuracy	Azimuth	deg	± 0.03	± 0.03	± 0.02	± 0.02
	Elevation	deg	± 0.03	± 0.03	± 0.03	± 0.03
Maximum Backlash	Azimuth	deg	0.05	0.05	0.05	0.04
	Elevation	deg	0.05	0.05	0.04	0.04
Elevation Limit-to-Limit Travel	deg	± 92	± 92	± 92	± 92	

PHYSICAL

Height at 0° Elevation	in	51.6	51.6	66.1	66.1
	mm	1,310	1,310	1,679	1,679
Weight	lbs	4,075	4,295	19,824	20,925
	kg	1,848	1,948	8,992	9,491
Turntable Diameter	in	30.1	30.1	47.2	48.0
	mm	765	765	1,199	1,219

ENVIRONMENTAL

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

EN001	Incremental Encoder (Standard Accuracy)		Opt	Opt	Opt	Opt
	Accuracy – Azimuth	deg	± 0.03	± 0.03	± 0.02	± 0.02
	Accuracy – Elevation	deg	± 0.03	± 0.03	± 0.03	± 0.03
EN002	Direct Incremental Encoder (High Accuracy)		Opt	Opt	Opt	Opt
	Accuracy – Azimuth	deg	± 0.005	± 0.005	± 0.005	± 0.005
	Accuracy – Elevation	deg	± 0.005	± 0.005	± 0.005	± 0.005
EN003	Direct Absolute Encoder (High Accuracy)		Opt	Opt	Opt	Opt
	Accuracy – Azimuth	deg	± 0.005	± 0.005	± 0.005	± 0.005
	Accuracy – Elevation	deg	± 0.005	± 0.005	± 0.005	± 0.005
SR	Slip Ring ³		SR051U SR101U SR201U SR301U SR402U SR502U	SR051U SR101U SR201U SR301U SR402U SR502U	SR051U SR101U SR201U SR301U SR402U SR502U SR602U	SR051U SR101U SR201U SR301U SR402U SR502U SR602U
RJ	Rotary Joint ³		RJ12U RJ18U RJ26U RJ40U RJ50U	RJ12U RJ18U RJ26U RJ40U RJ50U	RJ12U RJ18U RJ26U RJ40U RJ50U	RJ12U RJ18U RJ26U RJ40U RJ50U
TH	Central Thru-Hole Inner Diameter		TH002-HD TH003-HD	TH002-HD TH003-HD	TH002-HD TH003-HD	TH002-HD TH003-HD
		in	4.0	4.0	4.0	4.0
		mm	101.6	101.6	101.6	101.6
EX	Internal Harnessing		EX002	EX002	EX002	EX002
CF	Connector Format		–	–	–	–
LS	Leveling Screw (set)		LS002-6	LS002-6	LS002-8	LS002-8
ST	Stow Lock		ST002U ST002E	ST002U ST002E	ST002U ST002E	ST002U ST002E
MM	Mounting Thread		MM002 MM003	MM002 MM003	MM002 MM003	MM002 MM003
IC	Interlock Circuit		IC002	IC002	IC002	IC002

(-) N/A Opt Optional

Supplied Accessories

Digital Documentation Set

User Manual (Installation, Setup, Operation & Maintenance)

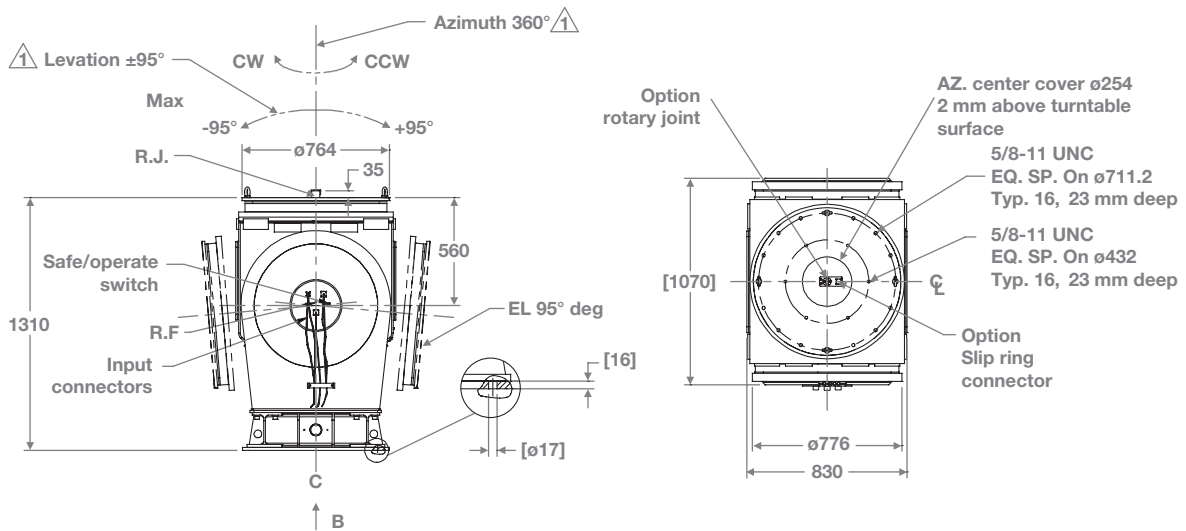
Technical Notes

- 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. When rotary joint and slip ring options are specified, limit switches remain but are electrically disabled.
Multi-axis positioners are factory-set at:
- Azimuth Axis: 400° (± 200°)
 - Elevation Axis: 184° (± 92°)
- 3** Slip Ring & Rotary Joint Option Notes:
- 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 for customer use 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-HD and TH003-HD are available in lieu of rotary joint and/or slip ring options

AL-4388-1 (Shown with optional counterweights & base riser)



Dimensional drawing - AL-4386-1*



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



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