



PERFORMANCE SERIES AZ/EL/AZ

AZ/EL/AZ Positioners

MEDIUM DUTY



AL-4582-1

AL-4582-1 • AL-4583-1 • AL-4584-1 • AL-4585-1

The MVG-Orbit/FR performance series has recently been expanded to include the AL-458x series of medium-duty, tri-axes positioners. Thanks to their low profile design and advanced drive mechanism, these symmetrical AZ/EL/AZ positioners ensure accurate, balanced rotation, and controllable velocity.

Their rugged and straightforward construction ensures maximum reliability and trouble-free operation, yielding the best size and weight / performance ratio. This series includes a counter weight option which improves overall system stability and accuracy while allowing for higher DUT loads.

Typically, the unit includes the main body, precise slew bearings, DC motors, gear reducers, encoder and limit switch assemblies. The turntable surface is designed with a threaded mounting hole pattern for ease of use.

A large variety of options is available for this ORBIT/FR standard product family. See the Options pages in the Positioners Overview or on the website for slip rings, rotary joints, high precision encoders, speed options and more.

APPLICATIONS

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

PRODUCT HIGHLIGHTS

- Broad selection – 5 models
- Operating Loads Ranging from 600 to 13200 lbs (270-6000 kg)
- Turntable Diameters Ranging from 12.5 to 24.1 in (318-612 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 - Performance Series AZ/EL/AZ Medium Duty Positioners

PARAMETER	UNITS				
		AL-4582-1	AL-4583-1	AL-4584-1	AL-4585-1
Dimensional Drawing Number	DCD	215-0420	215-0400	213-1210	28-6508

OPERATIONAL

Bending Moment	ft-lbs	4200	4200	7520	16275	
	kg-m	580	580	1050	2250	
Vertical Load (maximum)	lbs	2200	4400	6600	13200	
	kg	1000	2000	3000	6000	
Delivered Torque	Upper Azimuth	ft-lbs	500	868	1200	2820
		kg-m	70	120	165	390
	Elevation	ft-lbs	1250	2170	5000	11000
		kg-m	170	300	690	1500
	Lower Azimuth	ft-lbs	1200	1200	1200	2800
		kg-m	170	170	170	390
Withstand Torque	Upper Azimuth	ft-lbs	1800	1800	2000	4200
		kg-m	250	250	280	580
	Elevation	ft-lbs	4200	4200	7500	16270
		kg-m	580	580	1040	2250
	Lower Azimuth	ft-lbs	2000	2000	2000	4200
		kg-m	280	280	280	580
Drive Power	Upper Azimuth	hp	1/3	3/4	3/4	3/4
	Elevation	hp	3/4	3/4	3/4	3/4
	Lower Azimuth	hp	3/4	3/4	3/4	3/4
Nominal Speed	Upper Azimuth	rpm	1.3	1.3	1.3	0.5
	Elevation	deg/min	180	90	108	40
	Lower Azimuth	rpm	180	1.3	1.3	0.5
Standard Angle Transducer Format ¹			INC Encoder	INC Encoder	INC Encoder	INC Encoder
Standard Accuracy	Upper Azimuth	deg	± 0.03	± 0.03	± 0.03	± 0.03
	Elevation	deg	± 0.03	± 0.03	± 0.03	± 0.03
	Lower Azimuth	deg	± 0.03	± 0.03	± 0.03	± 0.03
Maximum Backlash	Upper Azimuth	deg	0.05	0.05	0.05	0.05
	Elevation	deg	0.05	0.05	0.05	0.05
	Lower Azimuth	deg	0.05	0.05	0.05	0.05
Elevation Limit-to-Limit Travel (Adjustable)		deg	± 92	± 92	± 92	± 92
Counter Weight Option Balanced EL Torque (Maximum) ²	ft-lbs	1080	1810	3615	8680	
	kg-m	150	250	500	1200	

PHYSICAL

Height at 0° Elevation	in	49.5	49.5	49.5	51.2
	mm	1256	1256	1256	1300
Weight	lbs	1330	1330	1375	1760
	kg	605	605	625	800
Turntable Diameter	in	24.1	24.1	24.1	24.1
	mm	612	612	612	612

ENVIRONMENTAL

Operating Temperature	- 4° F to 140° F (- 20° C to 60° C)
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PARAMETER	UNITS					
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AL-4582-1

AL-4583-1

AL-4584-1

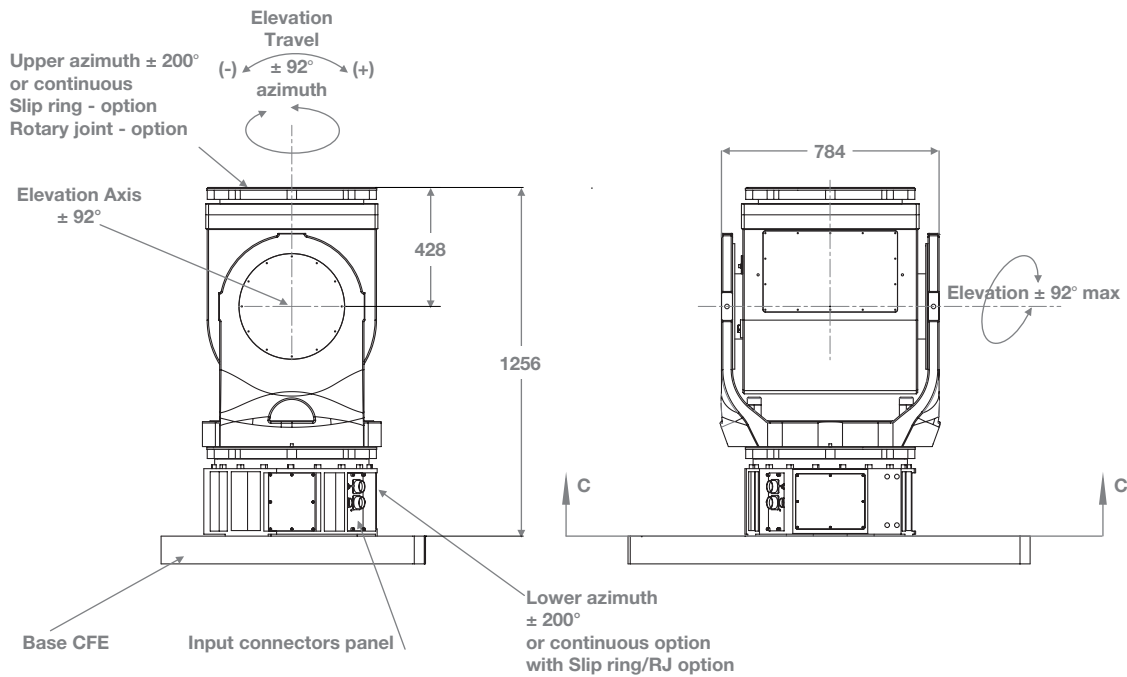
AL-4585-1

OPTIONS

EN001	Incremental Encoder (Standard Accuracy)		Opt	Opt	Opt	Opt
	Accuracy – Azimuth	deg	± 0.03	± 0.03	± 0.03	± 0.03
	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
EN004	Absolute Encoder (Standard Accuracy)		Opt	Opt	Opt	Opt
	Accuracy – Azimuth	deg	± 0.03	± 0.03	± 0.03	± 0.03
	Accuracy – Elevation	deg	± 0.03	± 0.03	± 0.03	± 0.03
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-U-E	TH002-U-E	TH002-U-E	TH002-U-E
		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		–	–	–	–
ST	Stow Lock		ST002U ST002E	ST002U ST002E	ST002U ST002E	ST002U ST002E
MM	Mounting Thread		MM002	MM002	MM002	MM002
IC	Interlock Circuit		IC002	IC002	IC002	IC002
WG	Wedge ⁴		WG001	WG001	WG001	WG001

(-) N/A Opt Optional

Dimensional drawing - AL-485-1



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

Supplied Accessories

Digital Documentation Set - USB key

User Manual (Installation, Setup, Operation & Maintenance)

Technical Notes

- 1** Incremental encoders are standard. Other encodes/synchros are optional. See OPTIONS page
- 2** Base riser shall be applied with counter-weight option to avoid collision with the floor (options BR001 and CW001)
- 3** Please consult the OPTIONS page at www.mvg-world.com/positioners to select standard options available: slip rings, RJ, etc.
- 4** Wedge option: allows for 5 - 30 deg in 5 deg intervals to allow tilt below horizontal plane