EL/AZ Positioners - Medium Duty

AL-4282-1 • AL-4283-1 • AL-4284-1 • AL-4285-1

The MVG-Orbit/FR performance series has recently been expanded to include the AL-428X series of medium-duty, two axes positioners. Thanks to their low profile design and advanced drive mechanism, these symmetrical 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 antenna interface mounting plate 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 – 4 models
- Operating Loads Ranging from 2200-13200 (1000-6000 kg)
- 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 - Performance Series EL/AZ Medium Duty Positioners

PARAMETER		UNITS	POSITIONER MODELS			
			AL-4282-1	AL-4283-1	AL-4284-1	AL-4285-1
Dimensional Drawing Number		DCD	218-1350	218-1351	218-1352	218-1353
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	Elevation	ft-lbs	1250	2170	5000	11000
		kg-m	170	300	690	1500
	Azimuth	ft-lbs	1200	1200	1200	2800
		kg-m	170	170	170	390
Withstand Torque	Elevation	ft-lbs	4200	4200	7500	16270
		kg-m	580	580	1040	2250
	Azimuth	ft-lbs	2000	2000	2000	4200
		kg-m	280	280	280	580
Drive Power	Elevation	hp	3/4	3/4	3/4	3/4
	Azimuth	hp	3/4	3/4	3/4	3/4
Nominal Speed	Elevation	deg/min	180	90	108	40
	Azimuth	rpm	1.3	1.3	1.3	0.5
Standard Angle Transducer Format[1]			INC Encoder	INC Encoder	INC Encoder	INC Encoder
Standard Accuracy	Elevation	deg	± 0.03	± 0.03	± 0.03	± 0.03
	Azimuth	deg	± 0.03	± 0.03	± 0.03	± 0.03
Maximum Backlash	Elevation	deg	0.05	0.05	0.05	0.05
	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	1210	1210	1265	1630
		kg	550	550	575	740
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)				

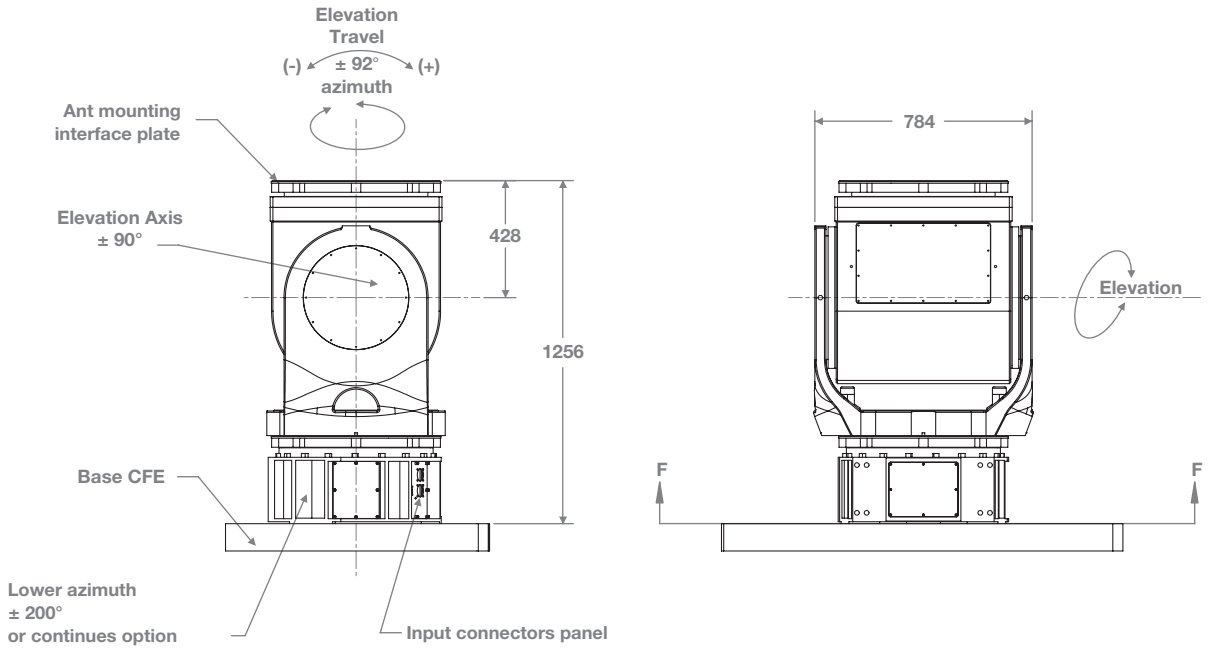
PARAMETER		UNITS	POSITIONER MODELS			
			AL-4282-1	AL-4283-1	AL-4284-1	AL-4285-1

OPTIONS

EN001	Incremental Encoder (Standard Accuracy)		STD	STD	STD	STD
	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]		SR051L SR101L SR201L SR301L SR402L SR502L	SR051L SR101L SR201L SR301L SR402L SR502L	SR051L SR101L SR201L SR301L SR402L SR502L SR602L	SR051L SR101L SR201L SR301L SR402L SR502L SR602L
RJ	Rotary Joint[3]		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		TH002+L-E	TH002+L-E	TH002+L-E	TH002+L-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		ST002L ST002E	ST002L ST002E	ST002L ST002E	ST002L 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-4285-1



* 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 EL tilt below horizontal plane
5. Speed & power changes are standard. Please consult sales representative for more information

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