



# DTA - Rotary Actuator Product Range



## *DTA - ROTARY ACTUATOR PRODUCT RANGE*

Sener has developed in a co-funded program with ESA a fully European family of rotary actuators for space applications, such as solar array drivers, optical mechanism drives, deployment mechanisms, antenna pointing mechanisms and Electrical Propulsion Modules (EPPM) actuation.

DTA product range are versatile components that can be used on applications as:

- Deployable radiator
- Electrical propulsion module
- Generic antenna mechanisms
- Antenna reflector boom without tracking
- Antenna reflector boom with tracking system
- Large deployable structures
- Reconfigurable appendages or payloads on board telecom platforms.

The space qualified DTA rotary actuators design is based on the heritage actuator concept developed by Sener and successfully flown on the European Space Agency missions SENTINEL-1, SENTINEL-2 and GAIA.

DTA product range main component are the Sener-developed SUM stepper motors family; with a large selection of options available. Different drive output, sensors and accessories are also available; like RF-waveguide, connectors and harness management hardware.

DTA 200 series is an enhanced evolution of the currently qualified DTA 100 series products, with improved technical performances for the most demanding applications on the space field.



CHARACTERISTIC	Unit	DTA 100 Series <b>DTA 12-120-1</b>	DTA 100 Series <b>DTA 12-100</b>	DTA 200 Series
Size	mm	133 x 120 (diam.)	110 x 120 (diam.)	110 x 120 (diam.)
Sensors	mm	Potentiometers	Hall effect contactless	Hall effect contactless
Electrical motor		SUM-88-160	SUM-88-360	SUM-88-160
Motor Step Angle	Deg	2,25	1	2,25
Reduction Ratio		160:1	160:1	Up to 400:1
Range		Full rotation	Full rotation	Full rotation
Resolution	Deg	0.014	0,00625	0,0056
Position accuracy	Deg	0.005	< 0,01	0.005
Repeatability	Deg	0.0021	< 0,01	0.0021
Torsional Stiffness	Nm/rad	15000 ON/OFF @ 7.5Nm 18500 ON/OFF @ 25Nm 28500 ON @ 50 Nm	15000 ON/OFF @ 7.5Nm 18500 ON/OFF @ 25Nm 28500 ON @ 50 Nm	>54000
Shaft Load Capability Axial	N	> 10500	> 10500	> 10500
Shaft Load Cap. Transverse	N	> 8 500	> 8 500	> 8 500
Shaft Load Capability Moment	Nm	277	277	277
Unpowered holding torque (detent)	Nm	29 (static,650 deg/s)	> 25	> 25
Powered holding torque	Nm	165 (2ph, full)	> 100	> 100
Running torque	Nm	79 (2ph ON, parallel)	> 60	> 60
Total Assembly Weight	Kg	2,2	2	2
Thermal range: Operating	°C	-45 to +105	-45 to +105	-45 to +105
Technology Research Level (TRL)		8	8 (Q12018)	6 (Q42018)