



## SS109 Pan & Tilt Device



**Sidus Solutions' SS109** underwater pan and tilt assembly is a robotic positioning device which improves the versatility and reliability of video inspection systems. The dependability and ease of maintenance of this robust pan and tilt are achieved through the integration of reversible synchronous motors, low backlash harmonic drives and precision ball bearings into an unique modular motor assembly. These unitized motor modules develop an impressive ten foot pounds of torque and are securely locked into the corrosion resistant one-piece underwater housing.

The distinctive modular design, found only in the SS109 assembly, simplifies field repair to using only small hand tools. No soldering is required and can be customer serviced if necessary. In addition to the standard 120 volt and 24 volt AC configurations, additional versions include 24 volt DC utilizing stepper motors, are also available. Modifications can be made to include feedback circuits and limit switches for applications where position information is vital.

Sidus Solutions supplies complete turnkey inspection system equipment and services. Ask your representative today about other Sidus Solutions product offerings and services

## Specifications

Dimensions:	
Height	8.2 in. / 208 mm
Width	6.6 in. / 168mm
Depth	3.3 in. / 81 mm
Weight:	9.3 pounds / 4.22 kilograms (in air) 5.9 pounds / 2.68 kilograms (in water)
Housing:	Hard anodized aluminum
Connector:	Customer selectable
Operating Depth:	100 feet / 30.48 meters (air filled) 10,000 feet / 3,048 meters (oil filled)
Power:	120 VAC, 24 VAC & 24 VDC
Torque:	10 foot pounds / 13.6 Nm (each axis)
Rotation Speed:	Up to 10 deg per second
Gear Backlash:	36 arc minutes
Scan Range:	360 degrees both axis 180 degrees tilt axis with yoke
Communication:	Analog, RS232, RS422 or RS485

Design and Specifications are subject to change.

P O Box 60767  
**San Diego, CA 92166**  
619.275.5533 phone  
619.275.5544 fax

P O Box 925006  
**Houston, TX 77292**  
281.596.7568 phone  
281.596.7578 fax

[info@sidus-solutions.com](mailto:info@sidus-solutions.com)  
[www.sidus-solutions.com](http://www.sidus-solutions.com)



## Technical Specifications: SS109 Pan & Tilt Device

### MODELS

SS109 pan & tilt hard-anodized 6061 T6 aluminum  
SS120 pan & tilt 6Al4V titanium  
SS110 pan & tilt 316 stainless steel

### ELECTRICAL

Input voltage: 120VAC 24VAC 24VDC  
50/60Hz 50/60Hz N/A

Power

Requirements: .15A .75A .13A  
Pan & Tilt

Connectors: Seacon (mate supplied) or customer specified

Motors: Reversible Stepper

Optional: Preset internal mechanical or software controlled limit switch.

Conductor Requirements: 5 or 6

Digital feedback option requires 2 additional conductors

DC brake option for analog configuration requires additional conductor

### MECHANICAL

Pan: 0-360° (internal hard-stops available both axes)

Tilt: 0-360° (0-180° with yoke)

Speed: 3-10° per second (serial),  
4° analog

Torque: 13 ft. lbs. AC / 10 ft. lbs. DC

Gear backlash: 36 arc minutes

Gearing: Harmonic drive gears

Bearings: Heavy duty bearings

Duty Cycle: 100% unlimited rating when operated below max torque.

Gear life: 15,000 hours @ 75% of rated torque

### GENERAL

Construction: 6061-T6-billet aluminum  
Optional: 316 stainless steel or titanium  
Finish: aluminum mil spec anodized, stainless steel electroplate, titanium

Environment: 10° to 120° F (-23° to 49°C)

Unit weight: 9.3lbs./4.2kg (in air)  
5.9lbs / 2.6kg (in water)

### RECOMMENDED CONTROLS

SS201 Series Desktop/Flush Mount  
SS202 Serial Control RS485/232/422

Laptop/PC

Optional integrated functions, Pelco-D, GE, Other protocols available upon request.

### RECOMMENDED MOUNTS

907 series: standard base plates for mounting in any position

CS series: custom specified mounting plates

### OPTIONS

Oil compensated for 6.5km depth rating

Digital feedback readings

Sidus GUI

Key board, mouse or joystick control

HT model option: up to 20° per second (14 ft. lbs max, 24 VDC only)

### ACCESSORIES

907 series: bracketry & mounts

902 series: lighting

904 series: cameras