

106G Series Submersible GPS



The 106G is an additional GPS receiver designed to survive immersion that complements the operation of a nearby standard subsea positioning beacon.

This arrangement is suited to coastal construction tasks where submersible vehicles may periodically break the surface.

Whilst submerged, positioning data is provided by a standard positioning beacon but once the vehicle breaks the surface the 106G takes over to provide the information required, typically cabled to the vessel based positioning system via the vehicle umbilical system.

Key Features

- L1 + L2 band antenna
- Submersible GPS receiver with integrated antenna
- 2000m rated.
- Begins positioning <30s after surfacing.
- Easytrak Nexus compatible
- Receives wide area corrections or accepts external corrections
- Internal batteries assist in the case of temporary power failure.

Applications

- Transition zone operations, trenching and construction. Sandbank UXO crawlers
- Surface positioning for vehicle recovery operations
- Navigation and positioning of seismic sources; tail and head buoys

Technical Specification

MODEL TYPES – PHYSICAL SPECIFICATION

Housing material: Hard anodised aluminium, with durable clear protection sleeve and glass hemisphere.

	Survival Depth	Diameter	Length	Weight air/water
106G	2000m	150mm/203mm	295mm	7.9kg/5.2kg

ELECTRICAL SPECIFICATION

Battery

Battery type	Rechargeable. NiMH.
Battery life	4 hours

Configuration

Receiver type	GNSS Multi-frequency L1 & L2, RTK with carrier phase.
GNSS compatibility	GPS, GLONASS & GALILEO.
Channels	372
SBAS tracking	3 channel parallel tracking.

Horizontal Accuracy (RMS 67%)

Dependent on corrections:

RTK	10mm + 2ppm
SBAS (WAAS)	0.3m
Unaided	1.2m
Atlas H10	0.04m
Atlas H30	0.15m
Atlas H100	0.50m

Accuracies dependent on multi-path environment, number of satellites in view, geometry and ionospheric conditions

Warm up time (typical)

From cold	<60s	(No almanac or real time clock).
Warm start	<30s	(Almanac & RTC, no position.)
Hot start	<10s	

Connectivity

Connector	16 pin MCBH connector (male)
Power	24V 350mA nominal.
Communication	RS232 (4 x bi-directional ports) RS485 (2 x bi-directional ports)
Position Protocol	NMEA 0183 protocols supported
Correction I/O Protocol	Hemisphere GNSS proprietary, ROX Format, RTCM v2.3, RTCM v3.2, CMR, CMR+
Refresh rate	1Hz standard, 10Hz, 20Hz optional
IPPS	5V, 1ms pulse width, 20mA
Input	Differential only port
Protocol	NMEA 0183 protocols supported
Diagnostics	Status LED's; power, lock & differential lock.

Safety and management:

- Spring return PRV valve
- External on/off switch

Options:

- Extended depth rating
- Remote antenna
- RF Modem