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- ↓ DOWNHOLE
- ☺ SEABED
- ≡ MARINE



# SGD-S

Shooting system



Ahead of the Curve<sup>SM</sup>

# SGD-S



## // CLEARER IMAGE

High accuracy of synchronization

## // IMPROVED PRODUCTIVITY

Shooter-driven operations compatibility

## // ENHANCED FLEXIBILITY

Standard or multi-recorder configurations

The SGD-S shooting system is designed to improve the productivity of dynamite seismic operations, providing each shooter in a multi-shooter mode the ability to let the Central Unit know where he is located and when he is ready to shoot.



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# SGD-SP CONTROLLER (Version V9.x)

## Specifications

Accuracy of synchronization	± 25 µs
Programmable delay value	from 200 to 1500 ms
Duration of analog signal	from 100 to 9999 ms
Operating temperature	- 40 to +60°C
Power supply voltage	between 10 and 15 V
Power supply current	< 0.3 A
Dimensions (WxLxH)	180 x 130 x 52 mm
Weight	0.65 kg



## Interfaces

- **Dedicated interface** for connection to 408UL, 428XL seismic recorders.
- **USB 2.0 interface DEVICE mode for pre-installed software update and data** read-out from the built-in storage by external computer.
- **ETHERNET 100 Mb/sec** for setting operation parameters of the controller.

## Additional features

Embedded non-volatile memory capable of saving up to 2048 files is intended for data record and storage, such as unit serial number, date and time, operational settings, data transferred to the recorder, as well as data transferred by the synchronizer (up-hole signal and value, borehole number, GPS co-ordinates, confirmed up-hole time values etc.). It allows simultaneous preview of stored data on an external computer monitor.

# SYNCHRONIZER SGD-SB (Version V7.3 and V9.x)

## Specifications

Charge voltage of the high-voltage capacitor	100, 150, 200, 250, 300, 350 and 400 V
Capacity of the high-voltage capacitor	100 µF
Charging time of the high-voltage capacitor	< 2 s
Energy of current pulse (R <118 Ω, U=400 V, T=1 msec)	> 7 A².ms
Range of measurement of the firing line resistance	from 0 to 255 Ω
Range of recording of the up-hole time values	from 1.5 to 199.9 ms
Range of measurement of geophone resistance	from 0 to 999 Ω
Embedded nonvolatile memory for storage of the up-hole geophone waveform and other data	up to 2048 files
Operating temperature	- 40 to +60°C
Power supply voltage	between 10 and 15 V
Power supply current	< 0.3 A at wait state < 2 A during charging of the high-voltage capacitor
Overall dimensions (WxLxH)	180x190x90 mm
Weight	2 kg
Weight in backpack	13 kg

## Interfaces

- **RS-232** for connection of GPS receiver with NMEA 0183 protocol.
- **USB 2.0 interface DEVICE mode for pre-installed software update and data** read-out from the built-in storage by external computer.\*
- **USB 2.0 interface HOST mode for copying data from the built-in storage** («black box») to a standard USB Flash-type external storage.\*

\* only for version V9.x

## Safety

Mechanical and electronic interlock of blasting command. Blasting command execution only with the synchronizer push-button in "ON" position and by remote control. For autonomous operation, the operator must additionally push the asterisk button(\*). Firing line and Uphole geophone resistance test current must not exceed 2.5mA.

## Additional features

Same features as SGD-SP





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