



Geophones

SEISMIC SENSORS





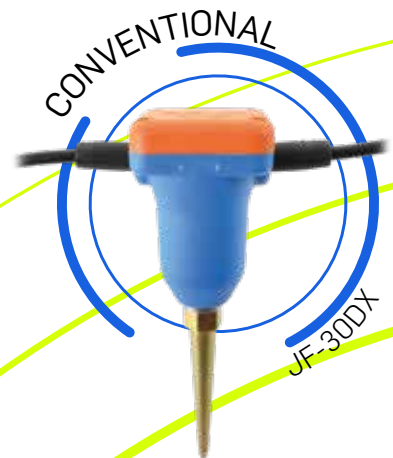
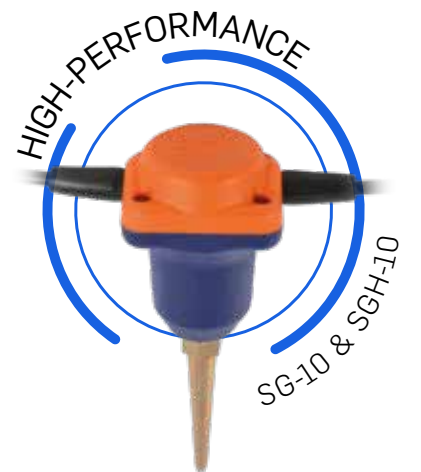
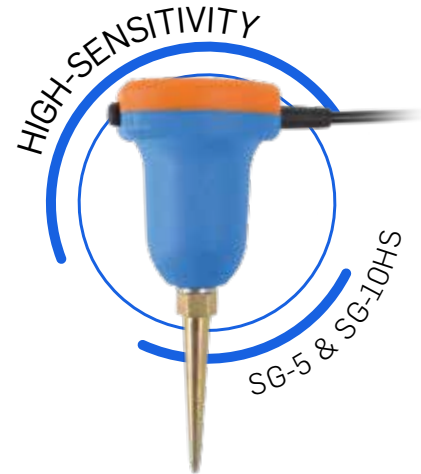
GEOPHONES

A COMPLETE PRODUCT LINE

Sercel has a long history in being at the forefront of developing new cutting-edge technology. Setting new standards for sensors is no exception. Our advanced recording systems are capable of precision measurement for all of today's seismic requirements for the highest reliability, consistent quality and robust operational field efficiency.

In addition to design and manufacturing of seismic sensors, Sercel is committed to testing all products to maximize quality control. We ensure that every sensor is tested and qualified to meet the requirements for each specific project.

As the leading designer and manufacturer of precision sensors, Sercel provides a diversified sensor portfolio of field-proven sensor equipment for any environment and any project condition.



ANY SURVEY CONDITION



ANY ACQUISITION SYSTEM



HIGH-SENSITIVITY

SG-5, SG-10HS & SG-10HS 3C



BETTER PERFORMANCE

High sensitivity
Low distortion

IMPROVED OPERATIONAL EFFICIENCY

Lighter and easier to deploy than an array of geophones

EXTREME WORKING CONDITIONS

Operating temperature : -40°C / +80°C

SG-5 & SG-10HS feature a high sensitivity comparable to a string of multiple geophones.

Especially designed for single sensor applications, they enable fast field deployment with lighter weight and full compatibility with 508^{XT} land acquisition systems.

A 3-C version, SG-10HS 3C, is also available.

At 22°C	SG-5	SG-10HS	SG-10HS 3C
Operating position	1-C vertical		3-C
Natural frequency	5Hz ± 7.5%	10 Hz (± 3.5%)	
Distortion	≤0.075%	≤0.1%	
Sensitivity	80 V/m/s ± 5%	85.8 V/m/s (± 3.5%)	
Operating Temperature	-40°C to +80°C		

Specifications subject to change without notice



HIGH-PERFORMANCE

SG-10 & SGH-10



SG-10

CLEARER IMAGE

Very Low distortion: $< 0.075\%$

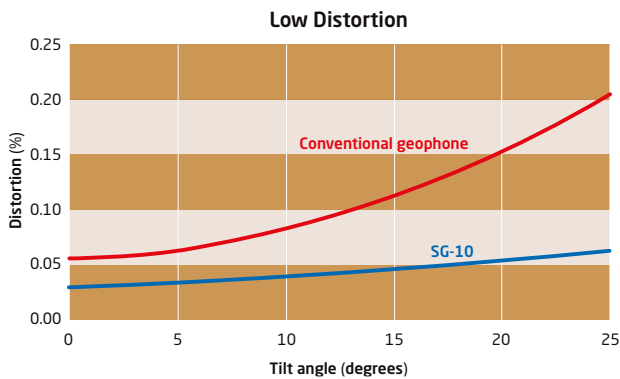
HIGHEST RELIABILITY

Demanding Validation Process

EXTREME WORKING CONDITIONS

Operating Temperature: $-40^{\circ}\text{C} / +70^{\circ}\text{C}$

The SG-10 was developed utilizing rare-earth magnet technology to achieve very low distortion and the highest tilt tolerance in the industry. This technology, coupled with a specific magnetic geometry, results in one of the most advanced geophones in the seismic industry.



	SG-10	SGH-10
Operating position	Vertical	Horizontal
Natural frequency	10 Hz ($\pm 2.5\%$)	
Distortion	$< 0.075\%$	
Intrinsic sensitivity	22.8 V/m/sec ($\pm 2.5\%$)	
Operating temperature	$-40^{\circ}\text{C} / +70^{\circ}\text{C}$	



CONVENTIONAL

JF-30DX



JF-30DX

BETTER PERFORMANCE

Low distortion geophone

HIGH RELIABILITY

Strict quality process

CUSTOMER FOCUSED

Fully customizable sensor array

The 30DX is a highly reliable geophone suited for any type of land or marsh seismic applications. Developed using rare-earth magnet technology the 30DX features a low distortion and a high spurious frequency providing high data quality recording capabilities.

The new 30DX is manufactured using Sercel-Junfeng know-how under strict quality control processes well beyond specifications requirements, to ensure the best performance in the toughest environments.

FULLY CUSTOMIZABLE

	<p>Land strings</p>		<p>Marsh strings</p>	
CASE	<p>Steel spike</p>	<p>Tripod</p>	<p>Standard conditions</p>	
	Dry \varnothing 5.3mm		Waterproof \varnothing 5.8mm for assembled T-junction	
LINE CABLE	Waterproof \varnothing 5.3mm		Waterproof High protection \varnothing 6.35mm for overmoulded T-junction	
DROP CABLE	NA		Waterproof \varnothing 7.9mm	
Land strings connectors		Land & Marsh strings connectors		
<p>SH2M</p>		<p>SH2M WCR</p>	<p>SH2F</p>	<p>WPC-2A</p>
<p>SH17</p>		<p>SH17 WCR</p>	<p>SH2F WRC</p>	

OMNI-TILT HT

SGHT-15



GeoWave® II

CLEARER IMAGE

Very Low distortion: < 0.075%

HIGHEST RELIABILITY

Demanding Validation Process

EXTREME WORKING CONDITIONS

Operating Temperature: -40°C / +70°C

The SGHT-15 is a new high temperature omni-tilt geophone. Qualified up to 205°C, it is compatible with all vsp tools in the market.

Its high sensitivity specifications make it also well adapted to microseismic and hydraulic fracturing monitoring surveys.

	Nominal	Horizontal	0° to 180°
Natural frequency	15 Hz	± 5%	-5% to +15%
Coil resistance	2350 Ω	± 5%	± 5%
Sensitivity	52.0 V/m/s (1.32 V/in/s)	-15% to +5%	-15% to +5%
Open circuit damping (without damping resistance)	0.50	-15% to +15%	-20% to +15%
Distortion (@ 15 hz & 1.8 cm/s pk-pk) (@ 15 hz & 0.7 in/s pk-pk)		≤ 0.2%	≤ 0.9%
Spurious frequency		≥ 365 Hz	≥ 280 Hz
Coil excursion pk-pk		<3.0 mm (<0.118 in)	<0.6 mm (<0.024 in)
Moving mass	7.4 g		




Note: Sercel reserves the right to change its specifications without prior notice.
All specifications are typical at 20°C

LAND STRINGS




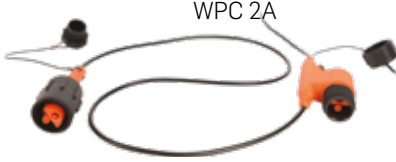
Exceeding today's operational field requirements and meeting customer demands, our strings are custom-built to fit any project, when you need it, where you need it, at anytime. Our high-performance cases are designed to withstand a wide range of environmental conditions are functional in diverse land areas such as desert, urban, forest and arctic regions.



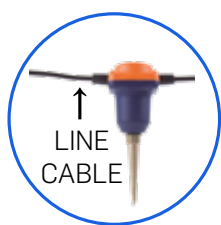
STRING TYPES

Standard (male)		
Reversible (male/male)		The reversible string gives the ability to connect from any side providing more flexibility during deployment.
Extension (male/female)		The extension string enables to connect strings to each others to an unlimited number as to adapt for any configuration.

CONNECTOR TYPES

	Water-resistant	Waterproof (-15m) or Cold weather (<-10°C)
Single (male)	SPC 2AM 	WPC 2AM 
Double (male/female)	SPC 2A 	WPC 2A 

LINE CABLE TYPES



	Diameter	Breaking strength	Spec. weight
Dry	Ø 5.3 mm	90 daN	34 kg/km
Waterproof (-15m)	Ø 5.3 mm	90 daN	34 kg/km
Waterproof High protection (-15m)*	Ø 6.35 mm	90 daN	44 kg/km

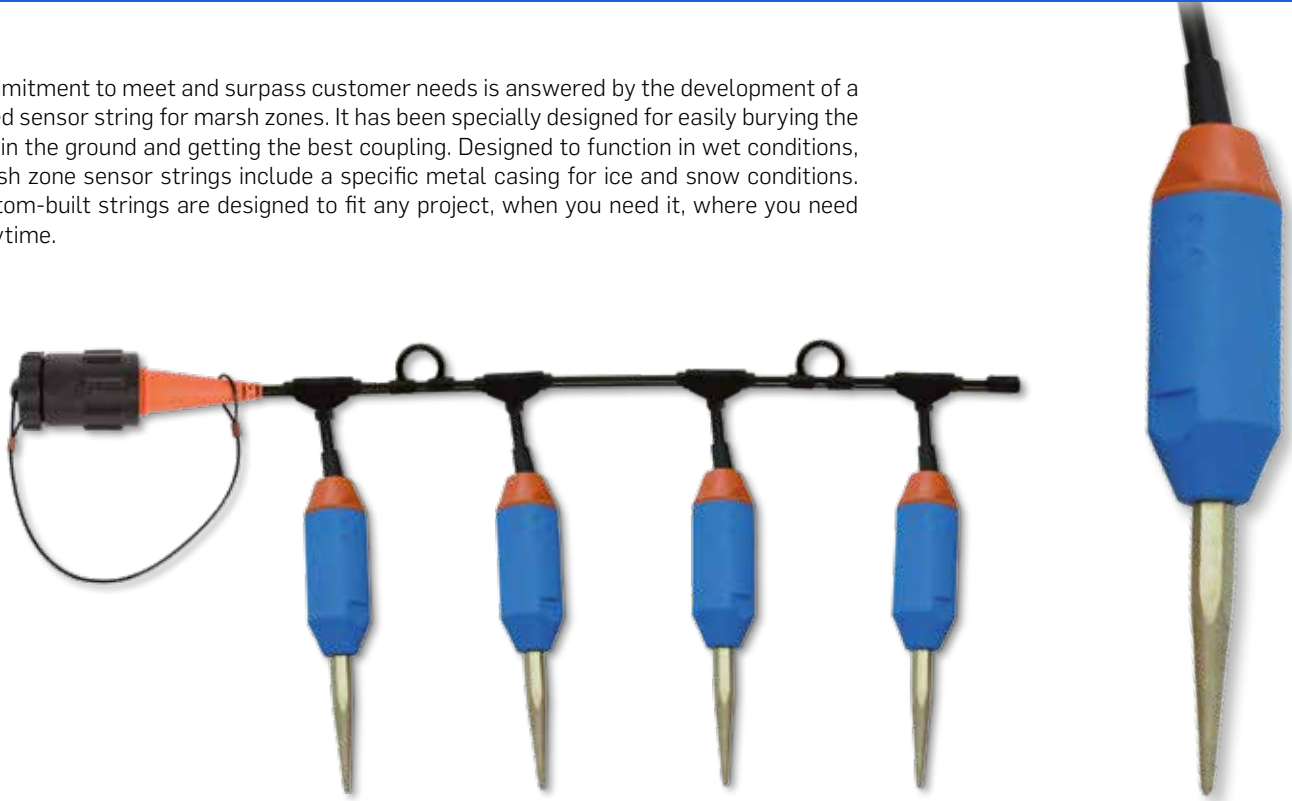
* with BG4 case type only

CASE TYPES

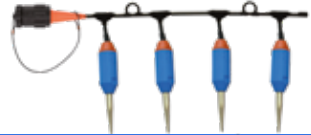

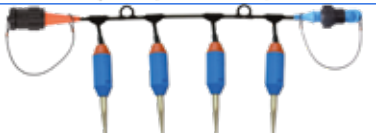
	Tripod	Steel spike	Brass spike	
BG3				Compatible with JF-20DX sensors and SG-10 sensors
BG4				Reinforced case type Specially designed for SG-10 sensors

MARSH STRINGS


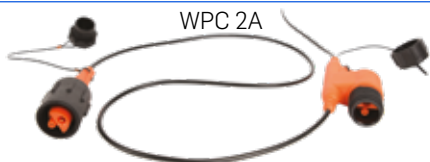
Our commitment to meet and surpass customer needs is answered by the development of a dedicated sensor string for marsh zones. It has been specially designed for easily burying the sensors in the ground and getting the best coupling. Designed to function in wet conditions, our marsh zone sensor strings include a specific metal casing for ice and snow conditions. Our custom-built strings are designed to fit any project, when you need it, where you need it, at anytime.



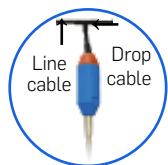
STRING TYPES

Standard (male)		
Reversible (male/male)		The reversible string gives the ability to connect from any side providing more flexibility during deployment.
Extension (male/female)		The extension string enables to connect strings to each others to an unlimited number as to adapt for any configuration.

CONNECTOR TYPES

		Waterproof (-15 m)
Single (male)	 <p style="text-align: center;">WPC 2AM</p>	
Double (male/female)	 <p style="text-align: center;">WPC 2A</p>	

CABLE TYPES



	Diameter	Breaking strength*	Weight
LINE CABLE	Ø 5.3 mm	90 daN	34 kg/km
DROP CABLE	Ø 7.9 mm	110 daN	68 kg/km

* Bulk Only

JUNCTION TYPE



Molded

The T-junction is overmolded on the line and drop cable



Assembled

The T-Junction is an assembly enabling easy repair of the line or the drop cable

CASE TYPES



Marsh conditions

Standard casing



Snow and ice conditions

Casing reinforced with a metal sleeve

GEOPHONE TESTER SGT-II



HIGH ACCURACY

Temperature correction factor

IMPROVED ERGONOMICS

Sunlight & backlight LCD

PC connection capability

Simple user interface

ERROR PROOFING

Green or Red LED status

Sound & LCD text results

Automatic upload/download

SGT-II is the new portable and universal geophone string tester. Equipped with a temperature sensor, as to apply correction factors for the highest accuracy. Designed for in-field testing, this rugged generation integrates new error proofing features & improved ergonomics.



CAPABILITIES

- Natural frequency
- Coil resistance
- Damping
- Sensitivity
- Harmonic distortion
- Dynamic impedance
- Leakage

SGT-II	
Battery autonomy	14h @ 25°C
Storage capacity	20 000 + records
Operating temperature	-20°C / +50°C
Protection	IP67

SEISMOMETERS

L-4 High-Sensitivity Seismometer



The L-4 is designed specifically for scientific studies, yet has the ruggedness required for small petroleum exploration work. L-4 is available with or without calibration coils and may be obtained as a single element or as a 3D package. It is also available either in vertical or horizontal version.

Natural frequency	
L-4C	1 Hz
L-4C 3D	
L-4A	2 Hz
L-4A 3D	

L-10 Digital Grade Industrial Subminiature geophone



The L-10 geophone is a small rugged unit with a high output. It is packaged in a high strength Nylon case for the lowest weight specifications.

Natural frequency	
L-10 AR	10 Hz
L-10 AR	14 Hz
L-10 B	4.5 Hz

L-22 Miniaturized Seismometer



The L-22 unit is a miniature, low frequency, land seismometer which is available in a 2.0 Hz model. It is a precise instrument, and maintains close frequency tolerance with tilt and temperature variation. L-22 is available as a single or 3D unit.

Natural frequency	
L-22	2 Hz
L-22 3D	

L-28 Low distortion, Long-Travel geophone



The L-28 geophone features the highest fidelity available in low-frequency velocity type transducers. The high quality long travel geophone is available either in vertical or horizontal version.

Natural frequency	
L-28 LB	4.5 Hz

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