



## High Temperature Geophones

- Operating temperature range of  $-40^{\circ}\text{C}$  to  $200^{\circ}\text{C}$
- Nickel plated case and special high temperature coils and end plates
- Suitable for use in VSP and downhole array applications, also for industrial vibration monitoring
- Vertical and horizontal versions of most types for 3-component configurations



I/O Sensor offers a selection of geophones capable of working reliably in the most hostile temperature environments. High temperature versions of the SM-4 and SM-6 geophones capable of withstanding temperatures ranging from  $-40^{\circ}\text{C}$  to  $200^{\circ}\text{C}$ . These geophones are manufactured for use in VSP tools and for use in industrial vibration monitoring where bearing temperatures may exceed the  $100^{\circ}\text{C}$  operational limit of standard geophones.

**SM-4 High Temperature Geophones**

Natural frequency	6.5 Hz	10 Hz	10 Hz
Frequency tolerance up to 0.5mm p.p. movement	0.5 Hz	5%	5%
Coil resistance	400 $\Omega$	400 $\Omega$	3,500 $\Omega$
Tolerance	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$
Sensitivity	24.4 V/m/s	24.4 V/m/s	80 V/m/s
Tolerance	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$
Open circuit damping	0.634	0.412	0.356
Tolerance	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$
Moving mass	8.3 g	8.3 g	9.6 g
RtBcFn	5,710 $\Omega$ Hz	5,710 $\Omega$ Hz	53,050 $\Omega$ Hz
Coil movement p.p.	2 mm	2 mm	2 mm
Diameter	25.4 mm	25.4 mm	25.4 mm
Height	32 mm	32 mm	32 mm
Weight	74 g	74 g	74 g
Operating temperature	-40°C to 200°C	-40°C to 200°C	-40°C to 200°C
Available working positions	vertical horizontal	vertical horizontal	vertical horizontal

All parameters are specified at 20°C

**SM-6 High Temperature Geophones**

Natural frequency	8 Hz	10 Hz	10 Hz	14 Hz
Frequency tolerance up to 0.5 mm p.p. movement	0.5 Hz	5%	5%	5%
Coil resistance	900 $\Omega$	400 $\Omega$	900 $\Omega$	400 $\Omega$
Tolerance	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$
Sensitivity	42.8 V/m/s	24.4 V/m/s	42.8 V/m/s	24.4 V/m/s
Tolerance	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$
Open circuit damping	0.407	0.398	0.326	0.284
Tolerance	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$
Moving mass	10.5 g	8.6 g	10.5 g	8.6 g
RtBcFn	13,880 $\Omega$ Hz	5,500 $\Omega$ Hz	13,880 $\Omega$ Hz	5,500 $\Omega$ Hz
Coil movement p.p.	4 mm	4 mm	4 mm	4 mm
Diameter	25.4 mm	25.4 mm	25.4 mm	25.4 mm
Height	36 mm	36 mm	36 mm	36 mm
Weight	81 g	81 g	81 g	81 g
Operating temperature	-40°C to 200°C	-40°C to 200°C	-40°C to 200°C	-40°C to 200°C
Available working positions	vertical horizontal	vertical horizontal	vertical horizontal	vertical horizontal

All parameters are specified at 20°C

**Specifications (cont.)**

INPUT/OUTPUT, INC.

**SM-6 High Temperature Geophones**

Natural frequency	14 Hz	15 Hz	15 Hz	15 Hz
Frequency tolerance				
up to 0.5mm p.p. movement	±5%	±5%	±5%	±5%
Coil resistance	900 Ω	400 Ω	900 Ω	3,500 Ω
Tolerance	±5%	±5%	±5%	±5%
Sensitivity	42.8 V/m/s	24.4 V/m/s	42.8 V/m/s	80 V/m/s
tolerance	±5%	±5%	±5%	±5%
Open circuit damping	0.233	0.265	0.217	0.226
Tolerance	5%	5%	5%	5%
Moving mass	10.5 g	8.6 g	10.5 g	10.1 g
RtBcFn	13,880 ΩHz	5,500 ΩHz	13,880 ΩHz	50,400 ΩHz
Coil movement p.p.	4 mm	4 mm	4 mm	4 mm
Diameter	25.4 mm	25.4 mm	25.4 mm	25.4 mm
Height	36 mm	36 mm	36 mm	36 mm
Weight	81 g	81 g	81 g	81 g
Operating temperature	-40°C to 200°C	-40°C to 200°C	-40°C to 200°C	-40°C to 200°C
Available working positions	vertical	vertical	vertical	vertical
	horizontal	horizontal	horizontal	horizontal

All parameters are specified at 20°C

**Ordering Information**

Please contact I/O Sales for ordering information

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