ULTRALONG LIFETIME SERIES COMPENSATOR 200 L

PRODUCT SHEETS

The ultralong lifetime series:
a compensator range designed for
20 years uninterrupted seafloor
performance.

UNDERWATER SPECIALISTS

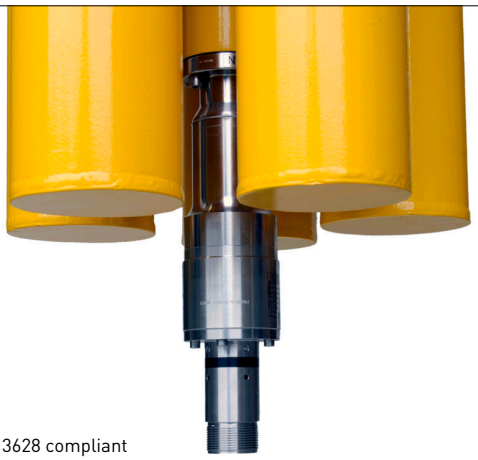
OPTION LIST

The standard version is designed for hydraulic oil and is delivered without level measurement. It has following features:

- SAE connections
- Blind plug and drain
- Bare Duplex housing

The following items are optional:

- **Hydraulic connections**
  Standard hydraulic connections are SAE. However, other types of connector threads are available on request.
- **Pressure relief valve**
  The compensator can be equipped with a safety valve for protection against internal pressure peaks.
- **Oil level measurement**
  For oil level measurement three different options exist:
  - Precise oil level measurement executed with ISO-13628 compliant sensor and connector including full ISO 13628-6:2006 Environmental Stress Screening (ESS).
  - Precise oil level measurement executed with industrial grade sensor.
  - Empty detection Signals that the compensator is (close to) empty. Cost effective alternative for the precise oil level measurement options.
- **Strain relief**
  Protects the connectors of the level measurement / empty detection sensors from mechanical strain on the cable.
- **Surface treatment**
  All surfaces of the compensators which are in contact with seawater can be coated in accordance with NORSOK M-501, coating system 7.
- **Protection cover**
  In order to protect the rubber bellows a stainless steel 316 protection cover can be delivered. Protection cover is executed with hoisting points and can be delivered with NORSOK surface treatment.



ISO-13628 compliant level sensor

TYPICAL APPLICATIONS

This compensator is specifically designed for pressure compensation of (semi-) permanently installed subsea equipment, including:

- Subsea Control Module SHPU
- Subsea switch gear
- Subsea slip rings
- Underwater instrumentation
- Suction tube pump motors

Ultralong lifetime compensator applied to subsea instrumentation

COMPENSATOR 200 LITRES SPECIFICATIONS[1]

GENERAL	METRIC	IMPERIAL
Compensation volume [2]	200[2] liters	52.8[2] US gallons
Main dimensions	See detailed drawings	
Stroke	280 mm	11 inch
Weight in air excl. oil (approx.)	630 kg	1389 lbs
Metals (in contact with seawater)	Duplex	

[2] The ultralong lifetime compensator range is also available in 20, 60, 100, 250 liters versions.

OPERATIONAL	METRIC	IMPERIAL
Maximum operating depth	5000[3] m	16404[3] feet
Operating temperature range (water)	-18°C – +40°C	-0.4°F – +104°F
Storage temperature range (air)	-25°C – +50°C	-13°F – +122°F
Pre pressure (min. stroke)	0.15 bar (+/- 0.1 bar)	2.18 psi (+/- 1.45 psi)
Full pressure (max. stroke)	0.8 bar (+/- 0.1 bar)	11.6 psi (+/- 1.45 psi)
Working angle	-30°... +30°	

[3] The indicated maximum operating depth is valid for a compensator without level measurement.
Depending on the selected level measurement sensor the depth rating might be limited.

HYDRAULIC	METRIC	IMPERIAL
Hydraulic connections for hydraulic system[4]	2 x SEA 1 1/2 " 3000 psi	
Hydraulic connection for oil drain[4]	1 x (internal) G 1/2"	
Hydraulic connection for air bleed[4]	1 x (internal) G 1/2"	
Maximum operating pressure	1.5 bar	21.8 psi

[4] Compensator can be delivered in with other hydraulic connections

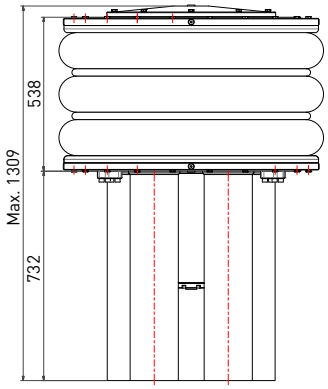
ELECTRICAL – OIL LEVEL SENSORS

			CONNECTOR TYPE
ISO-13628 compliant level sensor	Operating voltage	+24 VDC	
	Output signal	4 – 20 mA	
	Interface	SIIS 2	Various options
Industrial grade level sensor	Operating voltage	+21 VDC ... + 28 VDC	
	Max. current consumption	110 mA typical	
	Output signal:	3 wires mode, analog 4 – 20 mA	3 pin Subconn connector or more
		CANbus	5 pin Subconn connector or more
		EtherCAT	6 pin Subconn connector or more
		Profibus	5 pin Subconn connector or more
		Profinet	6 pin Subconn connector or more
		SSI	6 pin Subconn connector or more
Empty detection	Operating voltage	24 VDC	
	Max. current consumption	200 mA typical	
	Output signal:	Normally Closed 24 VDC	3 pin Subconn micro connector or more

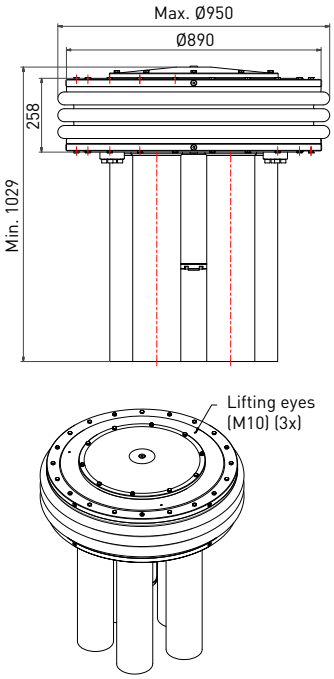
[1] All specifications are indicative. Please contact our sales department for more information.

DIMENSIONS

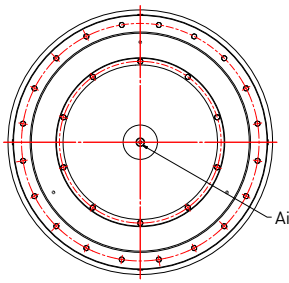
FRONT VIEW-FULL



FRONT VIEW-EMPTY

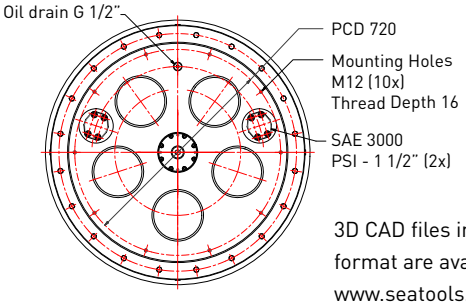


TOP VIEW



Dimensional drawings based on compensator without level measurement.

BOTTOM VIEW



3D CAD files in STEP format are available on www.seatools.com

RELATED SERVICES

Client advisory

To ensure that the right size and type of compensator is selected, we advise our clients during the selection process. We do so, taking temperature ranges, pressure ranges, filling levels, entrapped air, fluid behaviors, and other factors into account. In addition, we provide advice regarding the installation and use of a compensator in a subsea hydraulic system.

Advanced testing programs

Normal factory testing procedures include internal pressure testing, leakage testing, and functional testing. In addition, we also offer more extensive factory testing and qualification programs including external pressure testing, fatigue and life cycle testing, temperature range testing, and contamination testing. In addition, the compensator can be delivered flushed to a pre-defined cleanliness level class.

Custom-made versions

Next to our standardized series, Seatools offers custom-made hydraulic compensators that are tailored to your specifications. Please contact our sales department to request a customized compensator.

Subsea hydraulic systems

Because of our subsea hydraulic engineering capabilities we are able to fully unburden our customers by delivering complete tailor-engineered subsea hydraulic systems. This includes all related systems such as mechanics, software, electronics, and controls.

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Version 1.0