



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **D-5378**

This is to certify that the
Miscellaneous

with type designation(s)
Wellbore Sensor Assembly, Models: 219063, 219065, 234969

Issued to

Stellar Technology, Inc.
Amherst NY, United States

is found to comply with
DNV-OS-E101 Drilling Plant October 2009
and Det Norske Veritas AS' understanding of the implementation and interpretation of:
PSA's "Regulations relating to design and outfitting of the facilities etc. in the petroleum activities" (THE FACILITIES REGULATIONS), January 2011, Ch.VIII

Application
See Page 2

This Certificate is valid until **2016-12-31**.

Issued at **Houston, TX** on **2013-11-21**

DNV local station: **New York**

for **Det Norske Veritas AS**

Approval Engineer: **Mark Miser**

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Brandon D Caraway
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

Product description

This device mounts in the wellbore stream and monitors the wellbore medium – specifically drilling mud pressure and temperature.

The following part numbers are included:

- 219063-20000G-001 Rev. B	3 1/16 x 15M, AX-6S Hub
- 219063-20000G-002 Rev. B	3 1/16 x 15M, AX-6S Hub
- 219065-7500BD-002 Rev. A	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-003 Rev. C	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-004 Rev. B	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-005 Rev. B	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-006 Rev. A	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-007 Rev. B	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-008 Rev. B	3 1/16 x 15M, AX-154 Hub
- 234969-20000G-000 Rev. B	4 1/16 x 15M, BX-155 Hub
- 219063-20000G-101 Rev. A	3 1/16 x 15M, AX-6S Hub
- 219063-20000G-102 Rev. A	3 1/16 x 15M, AX-6S Hub
- 219065-7500BD-102 Rev. A	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-103 Rev. A	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-104 Rev. A	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-105 Rev. A	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-106 Rev. A	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-107 Rev. A	3 1/16 x 15M, BX-154 Hub
- 219065-20000G-108 Rev. A	3 1/16 x 15M, AX-154 Hub

Application/Limitation

Working Pressure: 15,000 psi
Test Pressure: 22,500 psi
Service: Internal H₂S
Minimum Design Temp: -20 deg. F

Type Approval documentation

Tests carried out

Reference DNV's Type Approval Certification Report, dated 2012-05-29

Marking of product

NV D-5378
Serial Number
Manufacturer's name or trademark
Marking as specified in API 6A
Additional marking at manufacturer's option

Certificate Retention Survey

For retention of the Type Approval, DNV's surveyor shall perform a survey every second year in accordance with DNV Standard for Certification No. 1.2.