Measurement Solutions Norway AS
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Norway

GUIDANT

CERTIFIED
ISO 9001 · ISO 14001
ISO 45001

RFQ No.: GM-8501-1447

Project: Snorre A

RFQ: Small Volume Prover, Rev. A

23.02.2026

Measurement Solutions Norway AS

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1 SCOPE OF SUPPLY

Supply one (1) small volume prover (SVP) including SVP controller, for proving crude-oil ultrasonic flowmeters (USMs) on Equinor's Snorre A platform, Norway.

Supply of one (1) certified Seraphin can for water draw calibration of the SVP. The certification shall be performed by Justervesenet. The Seraphin shall be delivered inside a suitable SS316 cabinet for protection, transportation and storage offshore.

Water Draw kit, including solenoid valve and manual instrument valves for conducting water draw calibration of the SVP.

It shall also include split of the SVP into necessary modules according to requirements in section 1.5.3. The proposal shall include vendors disassembly and packing for transportation of the SVP at an onshore fabrication facility in Norway and re-assembly of the SVP again at the Snorre platform in the North Sea. The warranty of the SVP shall be valid from the date that the vendor of the SVP has fully assembled and released the SVP for use on site.

CE marking according to PED and ATEX.

1.1 STANDARDS & REQUIREMENTS

Relevant standards & requirements for the operational destination must be fulfilled and marked accordingly.
Delivery to be according to latest issue of:

- API MPMS Chapter 4, Proving Systems
  - Chapter 4.2, Displacement Provers
- Forskrift om fiskal måling i petroleumsvirksomheten (Måleforskriften)
- Pressure Equipment Directive 2014/68/EU
- ATEX Directive 2014/34/EU
- Machinery Directive 2006/42/EC
- EMC Directive 2014/30/EU

- TR2000 Piping and Valve Material Specification (Link to Equinor's TR2000)
- TR0042 Surface preparation and protective coating
- TR1427 Positive Materials Identification
- TR1824 Welding and Inspection of Piping Systems
- TR3023 Electrical, instrument and telecommunication installations, offshore units
- TR3032 Field Instrumentation
- NORSOK E-001 Electrical systems
- NORSOK L-004 Piping fabrication, installation, flushing and testing
- NORSOK M-101 Structural steel fabrication
- NORSOK M-501 Surface preparation and protective coating

- NORSOK M-601 Welding and inspection of piping
- NORSOK M-630 Piping Material Data Sheets
- NORSOK R-002 Lifting equipment

1.2 AREA CLASSIFICATION

- ATEX Certified for Zone 1, IIA T3 as a minimum
- Ingress Protection: min. IP66

1.3 PROCESS & DESIGN DATA:

SVP to be sized for a flow rate of 67 - 750 m^3/h and a minimum stroke time between the switches of 1 second.

Vendor to confirm and document in a report noise, sizing and pressure drop based on given process data.

Flow meter to be calibrated is Krohne Altosonic 5, 8" cl300, or similar.

Process data sheet: S1-AA-PDE-0219, rev. 02S.

PDS states a maximum flow rate of 1453 m3/h. This flowrate will be divided into two streams, meaning the SVP will see a maximum flow rate of 750 m3/h.

Repeatability: ≤ 0.020 % (or better) in accordance with API MPMS 4.2; to be demonstrated at FAT.

1.4 AMBIENT CONDITIONS

The ambient conditions are related to Snorre A/B location in the Norwegian Sector of the North Sea.

- Ambient air temperatures:
  - Extreme maximum: 25 °C
  - Extreme minimum: −7 °C
- Relative Humidity: 100%
- Ambient atmosphere: Highly saline and corrosive.
- Wind loads: N/A
- Snow and icing: N/A

1.5 MOTOR

Power:	230 VAC, 3phase, 60Hz
Type:	Vendor to confirm
Electrical entry:	ATEX EX de or EX e, entry to the motor

1.6 CONNECTIONS

1.6.1 Piping Connections

Inlet / Outlet nozzles:	12” ANSI B16.5 CL600 RTJ, Sch. 40S
Drain / Vent nozzles:	1” ANSI B16.5 CL600 RTJ, Sch. 160
Orientation of inlet / outlet:	Upward / Upward
Tubing/fitting/instrument valves:	Metric, VTA mm, Hoke Gyrolok

1.6.2 Instrument Connections

Three (3) Process Thermowells (TW):	½” NPTF for temperature element. Internal bore dia 6.5mm, length of TW to be specified. Material to be according to Equinor TR2000, PCS BD20X (Plant SNA).
One (1) Rod Thermowell:	½” NPTF for temperature element. Internal bore dia 6.5mm, length of TW to be specified.
One (1) off Process Pressure take-off:	1/2” DB&B isolation valve acc. to VDS-MHBD102R according to Equinor TR2000, PCS BD20X (Plant SNA).

Prover to be delivered without pressure transmitters. These will be installed by Guidant.

Guidant will free issue the Temperature elements and transmitters. These shall be installed by vendor.

1.7 ENVELOPE

Vendor to split the prover in modules so that any single transportable module does not exceed a maximum of **W 1.4 m × L 2.56 m × H 2.2** m for access within Snorre A; modules approaching limits shall be split and engineered for safe handling. Lifting points and handling description to be provided on each module.

Vendor shall inform in their bid the size and weight of the biggest and heaviest module to be delivered. This info to be presented in a drawing.

1.8 MATERIAL

Materials exposed to process medium and pressure containing parts like bolts/nuts, etc. shall be according to Equinor TR2000, PCS BD20X (Plant SNA).
Exception: Flow tube material shall be minimum SS316. Material shall be according to a MDS in NORSOK M-630. Vendor to confirm MDS.

Wetted parts shall be suitable for sour service to NACE MR0175 / ISO 15156-3.

All other material exposed to atmosphere shall be minimum SS316.
Structural frame: SS316L

The Controller / Interface box shall be SS316.

Dissimilar material shall be separated with PTFE plates, or similar.

Cable glands material: SS 316 or nickel-plated brass

Tubing and fittings: 6Mo acc. to TR2000 MDS ST701 and SF712.

Instrument valves: SS316

Positive Material Identification to be according to TR1427:

- Min. 10% is required for wetted and pressure containing parts in SS316.
- 100% for Duplex and 6Mo

1.9 PAINTING

All surface preparation and protection shall comply with TR0042 and NORSOK M-501.

Flow tube material and all materials exposed to process medium: System 6C
Stainless Steel Structure: N/A

Approved coating brands are listed in TR0042.

1.10 ELECTRICAL REQUIREMENTS

Cable glands shall be according to NORSOK E-001 and TR3023.
Cables to be BFOU type and halogen-free.

1.11 FABRICATION

Welding shall be according to TR1826 and NORSOK M-601 Welding and inspection of piping and NORSOK L-004 Piping fabrication, installation, flushing and testing (latest revision).
Structural fabrication shall comply with NORSOK M-101.

Procedures and qualifications to be approved by Guidant prior to fabrication.

The SVP shall be prepared for min. 100mm insulation.

E&I installation to be according to TR 3023, NORSOK I-001 and NORSOK E-001.

1.12 TESTING PROVER

Prover to be tested according to applicable standards and regulations, with the following additional requirements:

- Gravimetric calibration performed at vendor factory. Volume to be calculated from the gravimetric calibration. Test to be witnessed by Buyer, Contractor, End client and Norwegian Authorities.
- Water draw test to be performed at factory together with the seraphine can.
- Repeatability test: ≤ 0.020 % in accordance with API MPMS 4.2.
- Test on Snorre A platform after re-assembly: Water draw test to be performed together with the seraphine can, as a minimum.
- Hydrostatic: 1,5 times the max design pressure of PCS BD20X

1.13 LIFTING

Lifting lugs / points shall comply with NORSOK R-002.

1.14 INSTRUMENT TAGGING

SS 316 nameplate with CE marking and tag.
Individual instruments /equipment shall have separate SS316 tag signs.

1.15 SPARE PARTS

An option of commissioning and 2-year operation spares shall be included in the proposal.

1.16 DOCUMENTS REQUIRED WITH ORDER; SMALL VOLUME PROVER

Documents	Delivery time.
Production plan and progress report	2WAO
Quality & Inspection plan	2WAO
Vendor document schedule	2WAO
All GA drawings and split-module drawings showing dimensions, dry/operating weights, and COGs, lifting drawings, with interface list. 3D-model to sent for the SVP.	4 WAO
GA drawing, Water draw panel	4 WAO
GA drawing, Seraphine can including cabinet	4 WAO
Surface treatment procedure	4WAO
NORSOK datasheet (Prover, Thermowells, Motor, Switches)	4WAO
Wake Frequency Calculations for process thermowells	4WAO
Wiring diagram	4WAO
NDE operators certificate	4WAO
Progress Report (Monthly)	4WAO
NDE procedure	8WAO
FAT / Calibration procedure	8WAO
SAT / Water draw procedure	8WAO
Pressure test procedure	8WAO
ATEX certificates (Mechanical and Electrical)	8WAO
Welders certificates	8WAO
WPS and WPQ	8WAO
Weld record sheet	8WAO
SPIR w/prices and delivery time, including cross references to the GA drawing.	8WAO
Operating manual	WD
Maintenance manual	WD
EC Declaration of Conformity	WD
EN 10204:2004 3.1 material certificate	WD
PMI report	WD
NDE reports	WD
FAT / Calibration test report at factory	WD
SAT / Water draw test report after reassembly at Snorre A platform	WD
Pressure test report	WD
Surface treatment and coating report	WD
Weighing report	WD
Preservation Report	WD

WD - With delivery
WAO – Weeks after Order

1.17 ATTACHMENTS:

1.17.1 General Terms & Conditions for Goods & Ancillary Services, PP-PS-13 Rev 00.

1.17.2 Process datasheet S1-AA-PDE-0219, Rev. 02S