Downhole Monitoring Solutions

No-Electronics GEOTRU

GEOTRU Gauge

Traditional Digital Gauge

No-Electronics
Removal of PCB allows for maximum reliability and high-temp performance

PCB
Processes raw transducer signal downhole before transmitting to surface

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No-Electronics GEOTRU Monitoring

Downhole Monitoring Solutions

Industry leading solutions featuring no electronics downhole dramatically increasing reliability and longevity.

GEOTRU Monitoring Solutions

Our exclusive GEOTRU gauges are ultra-reliable downhole tools that are designed specifically to provide accurate long-term data in high-temperature wellbores. Due to the use of quality materials, and the use of a groundbreaking internal design, this gauge can survive in downhole environments where many other gauges would fail.

Removing All Downhole Electronics

Our GEOTRU technology removes all electronics from the gauge itself and transfers them to the T6 gauge controller at surface. By removing the most vulnerable component of a gauge and moving it to surface not only do we dramatically increase reliability and maximum operating temperature, it also increases serviceability. Any troubleshooting related to electronics can now be done at surface without any need to pull and re-run the gauge. This breakthrough technology takes our already industry leading reliability to the next level.

Intrinsically Safe Certified

Safety is critical for various pressure and temperature monitoring applications such as natural gas and propane storage, mining, shipping, and other industrial or chemical process environments. GEOTRU gauges with proper installation are certified as intrinsically safe, offering premium capability and safety for even the most unique applications.

System Specifications

Gauge Type	No-Electronics (GEOTRU)
Measurement	Pressure & Temperature
Gauge Sensing Option	Single Gauge
Gauge Sensing Location	Tubing or Annular
Gauge Carrier Test Functionality	Pressure Testable
Tubing Size	2-3/8" to 7"
Carrier Type	Welded & Non-Welded
Connection Type	Premium & Non-Premium
Maximum Pressure	Up to 30,000 psi
Maximum Temperature	Up to 300°C (572°F)
Compatible TEC	Quadline
Metallurgy	Sweet & Sour Compatible
Installation Experience	50+ Systems
Intrinsically Safe Certification	Ex ia IIA T4...T1 Ga

Features & Benefits

- No electronics downhole dramatically increasing reliability and enabling on surface troubleshooting
- The dual sealing Pressure Testable design ensures that rig floor workmanship is correct before tool is deployed downhole
- Durable Stainless Steel 316L or Inconel 718 construction
- Fully welded construction ensures maximum protection against gas and / or fluid invasion
- Designed to endure vibration an shock associated with various artificial lift system including Progressive Cavity Pumps, Electrical Submersible Pumps, Gas Lift, and Rod Pumps
- Certified Intrinsically Safe
- Cloud based data-to-desktop visualization available via the GEO AI platform

Applications

- SAGD
- Pump Intake Pressure & Temperature
- Reservoir Evaluation
- Artificial Lift Optimization
- Mining
- Natural Gas and Propane Storage Caverns
- Hazardous Area Environments
- Offshore

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Common Equipment Used

For reliable pressure and temperature measurement we offer a wide variety of products to serve different downhole applications, conditions, and budgets. Below is a list of products most commonly used for GEOTRU systems:

Downhole Gauges

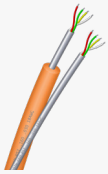

GEOTRU 125


GEOTRU 200


GEOTRU 260


GEOTRU 300

Downhole Cable (TEC)


Quadline 4mm TEC

Protectors & Carriers


Cast Clamp

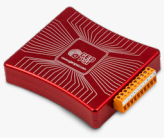

Stamped Clamp


Solid Body Carrier


Welded Carrier


Ported Collar

Surface Electronics


T6 Interface Card (GEOTRU)


GEOTRU Data Acquisition Cabinet

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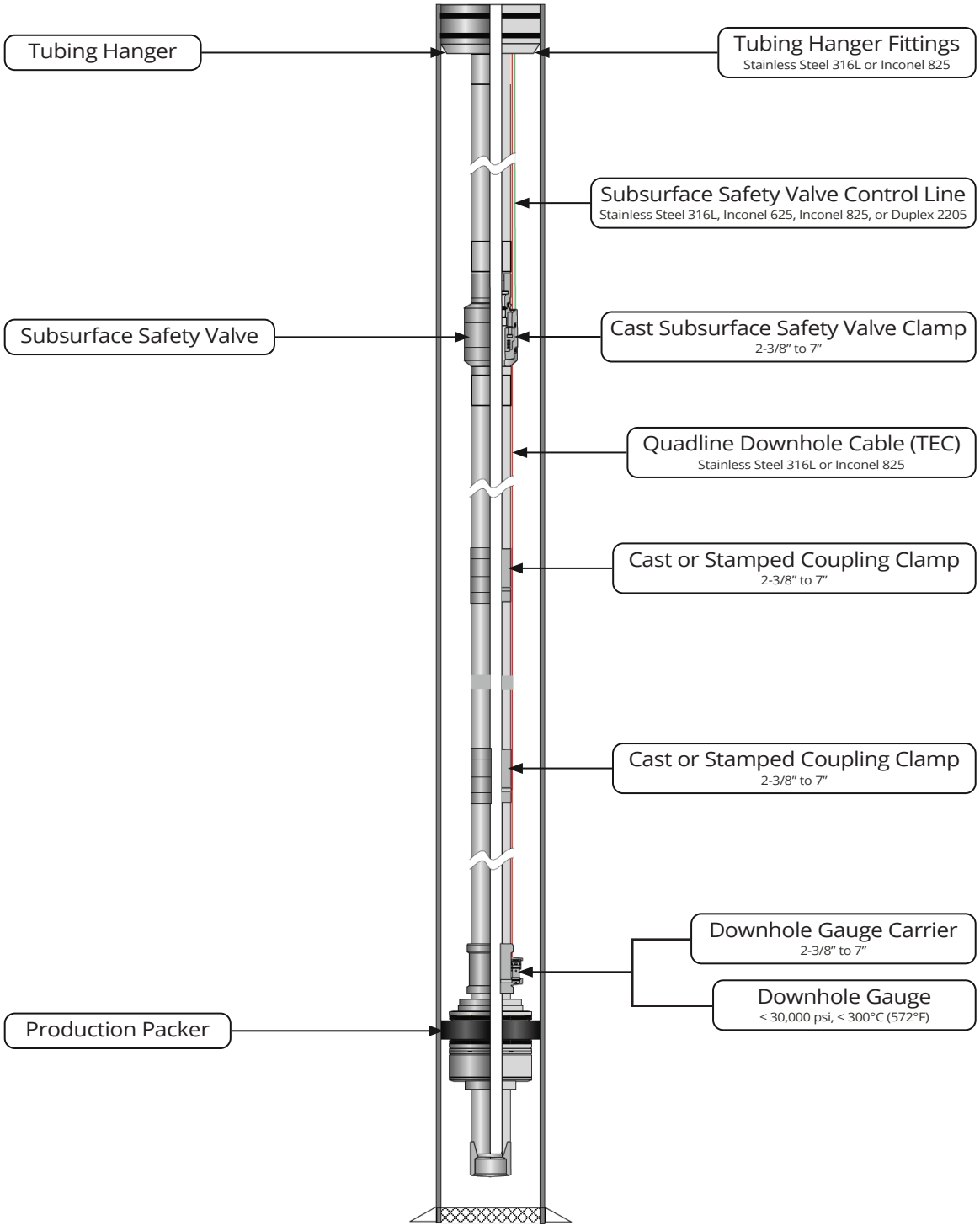
Common GEOTRU Completion

Below is a diagram showing the typical components of a GEOTRU system. While each system may vary, this represents how our components tie into a well.



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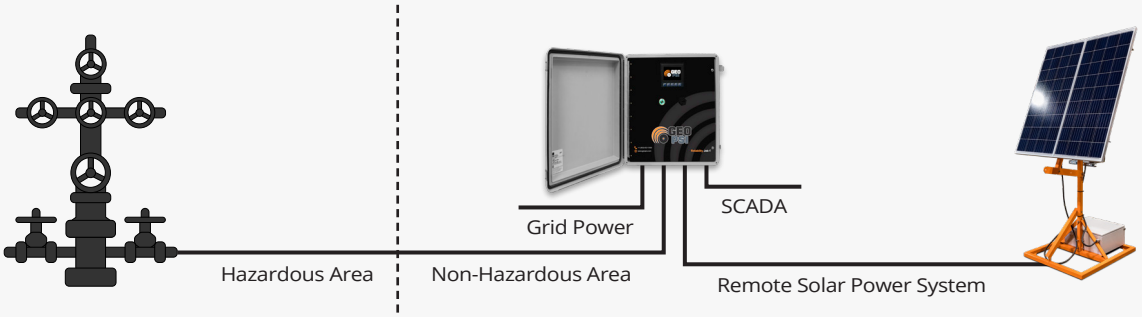
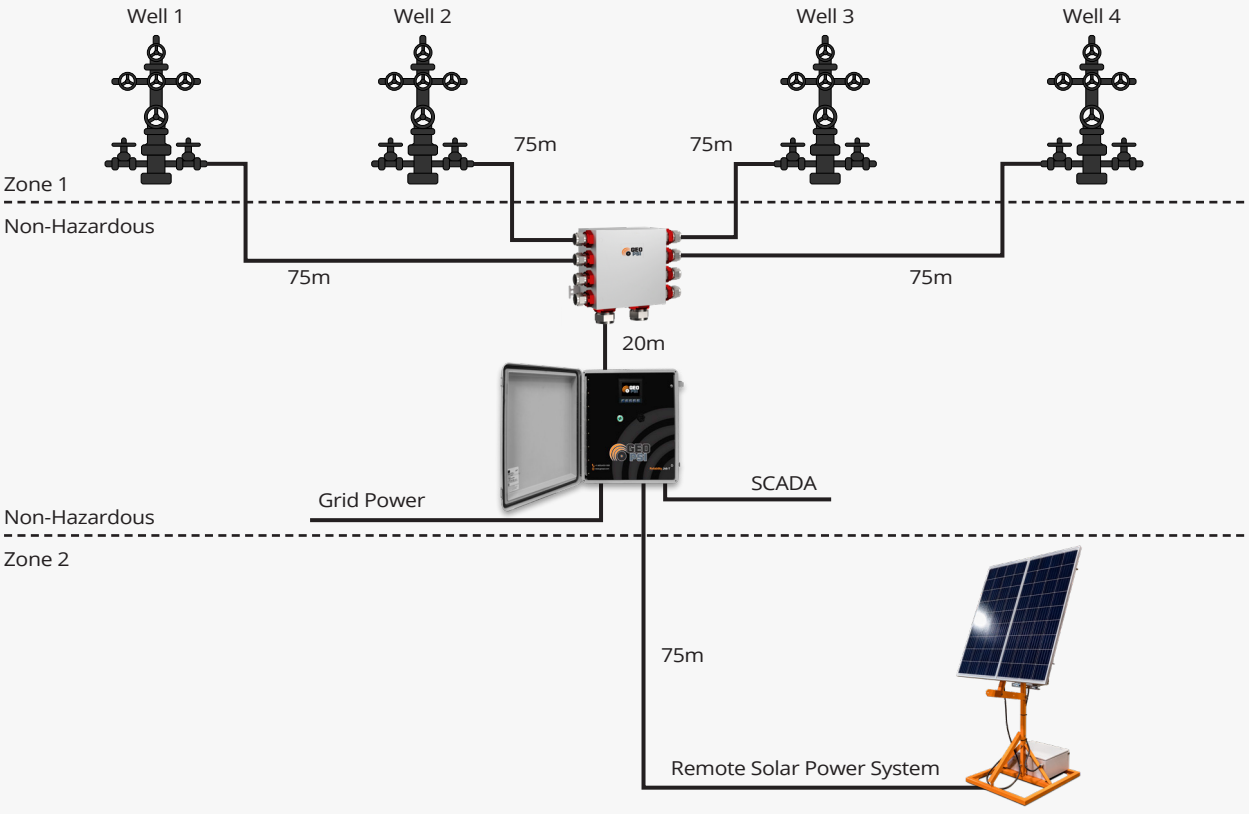
Surface Data Acquisition Setups

Below are diagrams showing the typical components of a GEOTRU surface data acquisition setup. While each system may vary, this represents how users can expect to tie the monitoring system into their well.

Single Well Data Acquisition Setup



Multi-Well Data Acquisition Setup



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Global Track Record

The GEOTRU case history and track record below highlights the installations that have been successfully completed since the GEOTRU platform was commercialized.

Well Designation	Install Date	Operating Days	Completion Type	Install Depth (mRKB)	BHP (psi)	BHT (°C)	Vibration Exposure
Well 1	6/12/2016	1764	ESP	750	3000	245	Normal
Well 2	13/10/2017	1453	ESP	1200	2500	190	Normal
Well 3	22/09/2018	548	Free Flow	4000	15000	220	Normal
Well 4	15/10/2018	525	Free Flow	4000	15000	220	Normal
Well 5	22/10/2018	1079	ESP	1300	2500	240	Normal
Well 6	4/11/2018	505	Free Flow	4000	15000	220	Normal
Well 7	13/05/2019	876	PCP	800	700	47	High
Well 8	20/05/2019	869	PCP	800	700	47	High
Well 9	22/05/2019	867	PCP	800	700	47	High
Well 10	25/05/2019	864	PCP	800	700	47	High
Well 11	28/05/2019	861	PCP	800	700	47	High
Well 12	30/05/2019	859	PCP	800	700	47	High
Well 13	15/02/20	598	Observation	750	2500	260	Low
Well 14	20/02/20	593	Observation	750	2500	260	Low
Well 15	22/02/2020	591	Observation	2200	2350	285	Low
Well 17	29/02/2020	584	Observation	2200	2350	285	Low
Well 18	4/03/2020	580	Free Flow	4600	12000	180	Normal
Well 19	4/03/2020	19(1)	Well Test	3650	16000	160	High
Well 20	18/06/2020	474	Free Flow	4530	12000	180	Normal
Well 21	26/07/20	436	Observation	1000	2500	265	Low
Well 22	30/07/20	432	Observation	1000	2500	265	Low
Well 23	09/08/20	422	Observation	1000	2500	265	Low
Well 24	11/11/2020	328	ESP	750	3000	245	Normal
Well 25	11/12/2020	298	Observation	110	300	20	Low
Well 26	3/03/2021	216	ESP	750	3000	245	Normal
Well 27	6/03/2021	213	ESP	750	3000	245	Normal
Well 28	12/03/2021	207	ESP	750	3000	245	Normal
Well 29	22/06/21	105	Observation	400	2500	115	Low
Well 30	12/08/2021	54	ESP	750	3000	245	Normal
Well 31	14/08/2021	52	Gas Lift	3500	3700	155	Low
Well 32	15/08/2021	51	ESP	750	3000	245	Normal
Well 33	21/08/2021	45	ESP	750	3000	245	Normal
Well 34	18/09/2021	17	Gas Lift	3500	3700	155	Low

Notes.

The GEOTRU solution utilities the mechanical design of our digital gauge platform which has delivered thousands of successful GEOP and GEOQ installations.
The GEOTRU solutions are 100% electronic free and can operate up to their maximum temperature specification. GEOTRU 125, 200, 260 and 300 Degree Celsius variants have been successfully deployed onshore and offshore.

(1) Offshore Well Test operations were 19 days for 2 tested zones. GEOTRU was run in tandem with GEOQ Quartz gauges and delivered 100% success.

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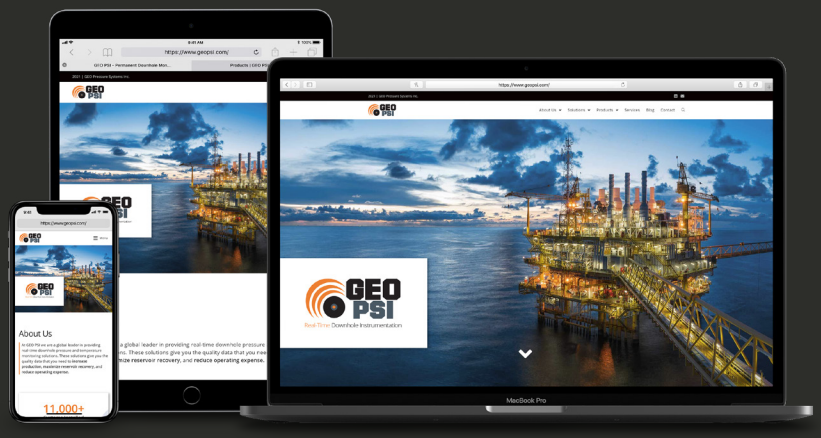

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