



Measurement Products - Upstream Onshore Oil and Gas

Helping you produce more oil and gas
Measurement made easy

Expertise in technology

Delivering increased productivity

As a world leading supplier to the oil and gas industry, ABB provides customers with solutions to manage operations safely, productively and profitably. As a true global supplier, ABB provides expertise wherever in the world it is needed. Customers investing in ABB's upstream products and solutions receive the best technology and application expertise in the business.

Research and development is a vital source of ABB's technology leadership. ABB constantly builds on the foundation of existing technologies for new applications, and continues to develop the breakthrough technologies needed to meet the challenges of the future. ABB and its heritage companies have been leaders in innovation and technology for more than 100 years.

Aztec

Bailey

BOMEM

Bush Beach Engineering
Limited

FISCHER
PORTER 

Hartmann & Braun

K-TEK

Kent

Pressductor®

 **SENSYCON**

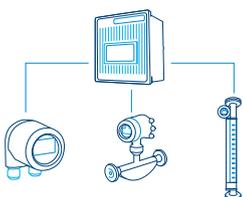
Schoppe & Faeser

Taylor

TBI-Bailey

TORBAR
FLOWMETERS LTD

TOTALFLOW
MEASUREMENT & CONTROL SYSTEMS



Did you know?

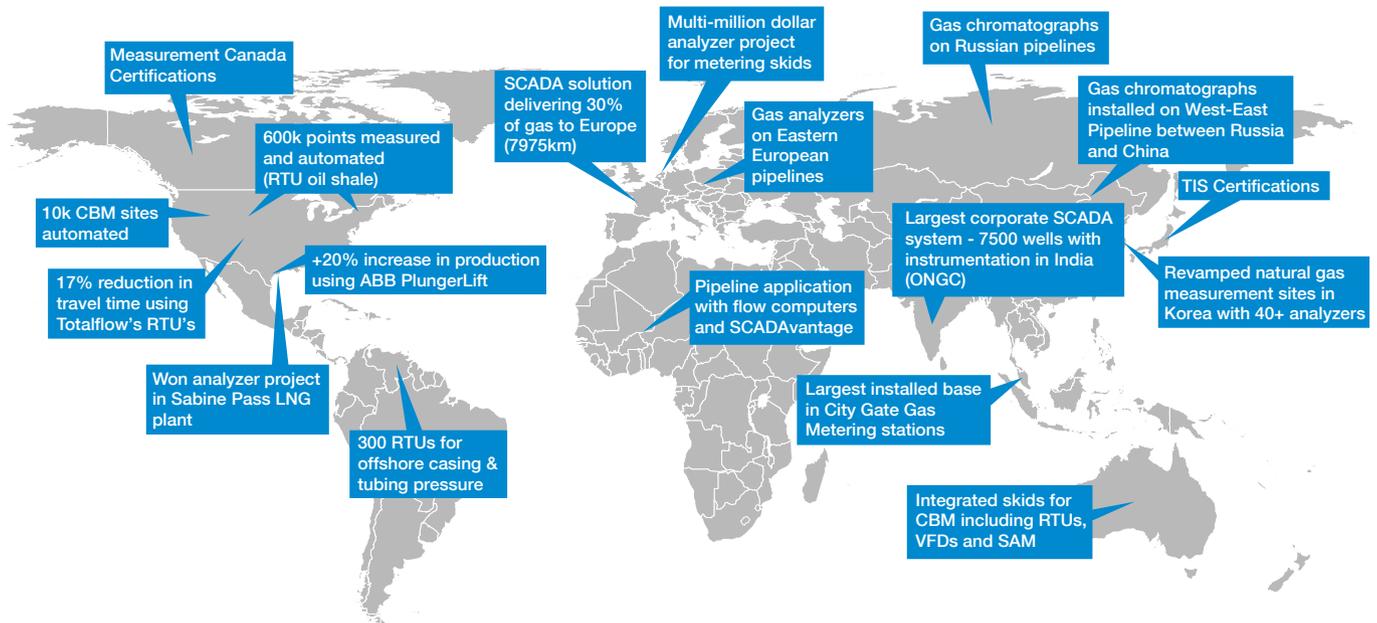
ABB is one of the **largest automation suppliers** to the oil and gas industry in the world.

Comprehensive solutions

Serving your industry

ABB's upstream oil and gas solutions include instrumentation, analyzers and control systems designed to meet all your automation challenges. Whether your applications are in coal bed methane (CBM), shale gas, conventional oil & gas or SAGD (steam assisted gravity drainage), ABB has the solutions you need to run your operation more efficiently, productively, sustainably and safely.

Our proven portfolio of technology and global service network is designed to make field management easy for you, no matter how difficult the application. To learn more about our extensive portfolio visit www.abb.com/measurement.



Did you know?

ABB has over **300,000 flow computers** and RTUs installed in oil & gas worldwide.

ABB products and software combined

The complete solution for oil and gas

Fracking Fluid/ Produced Liquids

- Flow Meters
- Level
- Liquid Analyzers
- Pressure
- RTU/Controller

Gas/Liquid Separator

- Flow Meters
- Gas Analyzers
- Level
- Pressure
- Temperature
- Valve Control

Pad Site Control

- RTU/Controllers
- Valve Control
- Wireless Mesh Networks
- Automation Software

Remote Gas Wellhead

- Flow Meters
- Pressure
- Valve Control

Pumpjack

- Annulus Pressure
- Flow Meters
- Pressure
- RTU/Controller

LACT Control

- Flow Computers
- Flow Meters
- Level
- Pressure
- Temperature
- Valve Control

To Liquid Storage Facility

- Flow Computers
- Flow Meters
- Gas Analyzers
- Liquid Analyzers
- Pressure
- Temperature
- Valve Control



Did you know?

ABB has thousands of coriolis meters installed in the oil and gas industry throughout the world.

Tank Storage

- Flow Meters
- Level
- Pressure
- Tank Tickets
- Valve Control

Gas Plant

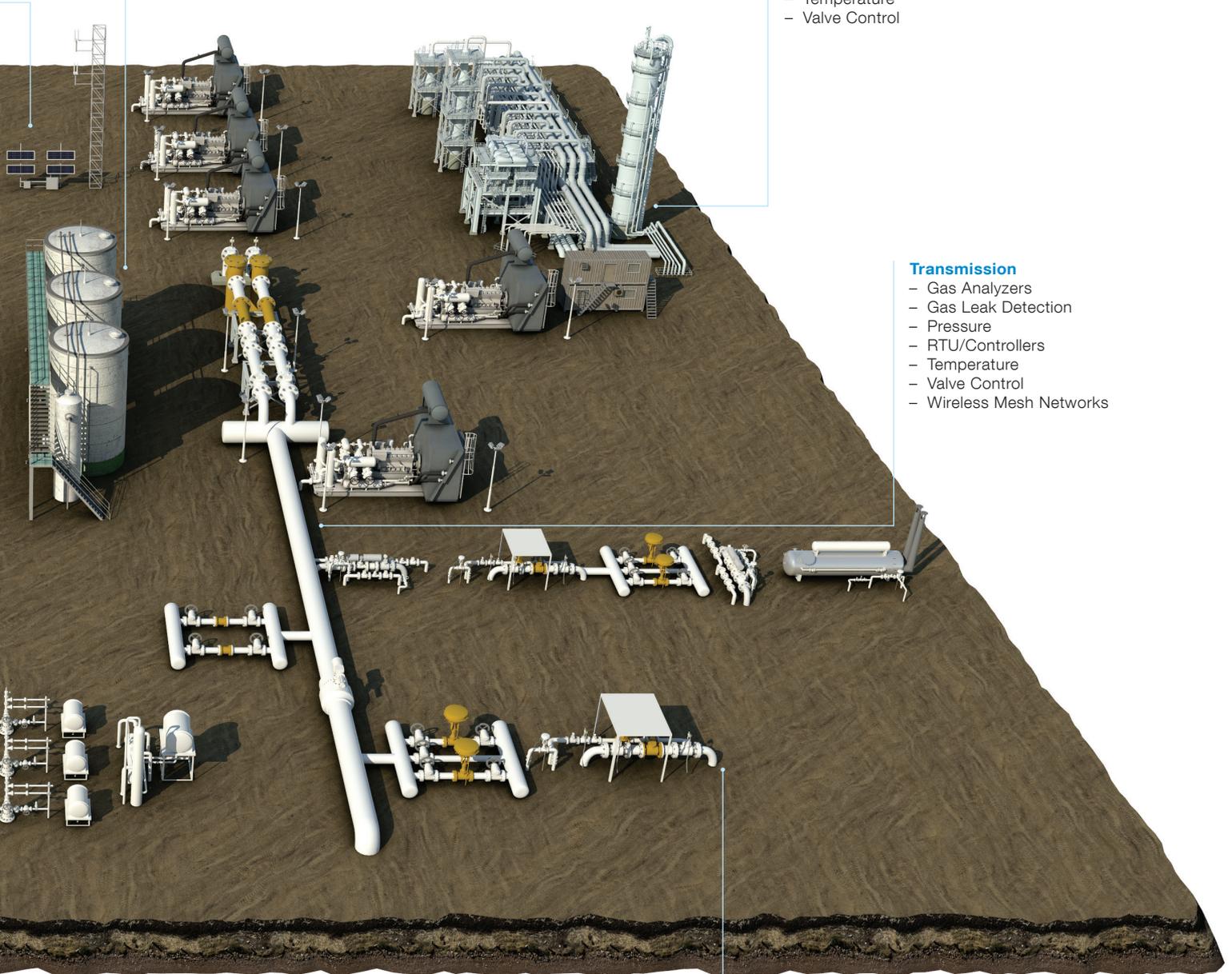
- Flow Computers
- Flow Meters
- Gas Analyzers
- Level
- Liquid Analyzers
- Pressure
- RTU/Controller
- Temperature
- Valve Control

Transmission

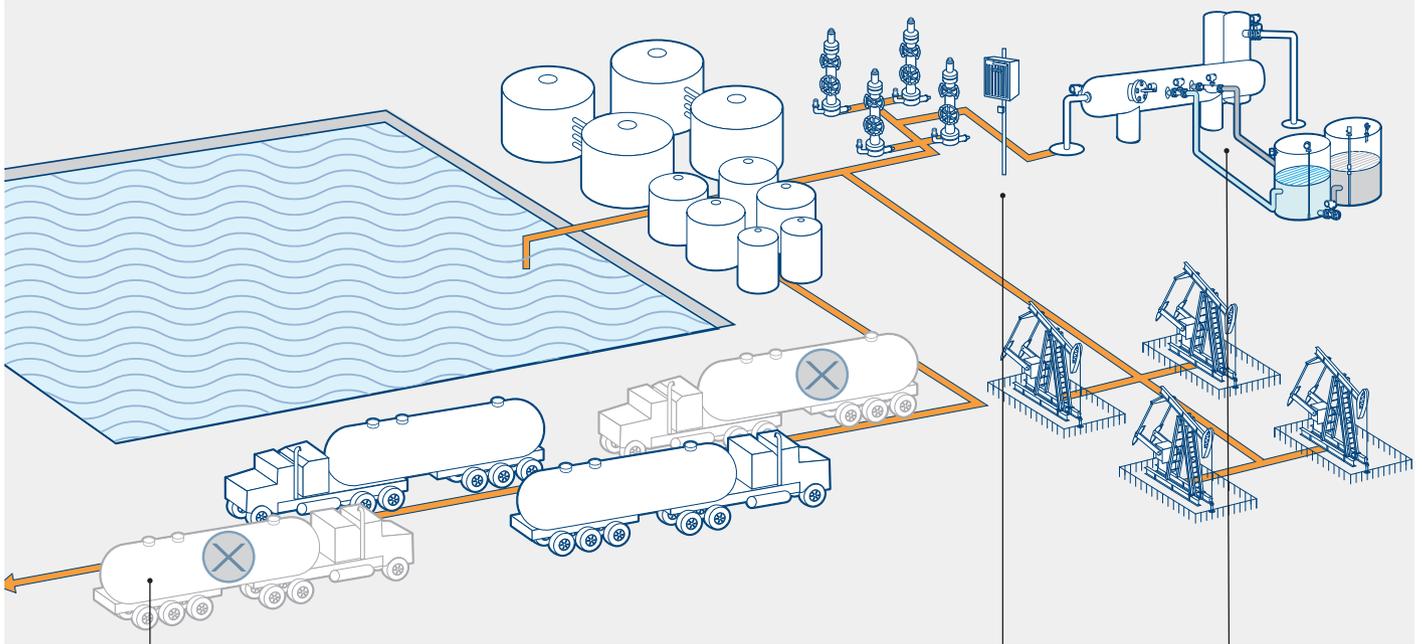
- Gas Analyzers
- Gas Leak Detection
- Pressure
- RTU/Controllers
- Temperature
- Valve Control
- Wireless Mesh Networks

To Gas Storage Facility

- Flow Computers
- Flow Meters
- Gas Analyzers
- Pressure
- Temperature
- Valve Control



Optimized performance Increased profitability with ABB devices



Did you know?
ABB Magmeters are a great replacement for turbine meters, saving \$1,000's in maintenance per year.



Did you know?
ABB RTUs have proven to increase profits by as much as \$5M per year through automation.



Did you know?
ABB's Coriolis meter is less affected by entrained gas in fluids, saving you time and money.

Exploration and drilling

Using ABB technology you can operate your field smarter and safer than ever before. For example, replacing turbine meters with electromagnetic flowmeters saves thousands of dollars in maintenance costs. Other brands of magmeters cannot be used in many on-shore oil and gas applications due to interference caused by process noise. The high frequency of ABB magmeters increases signal strength, combatting the high level noise caused by the frac fluid, sand, gel and/or water. A key benefit they have over turbine meters is no moving parts so crews spend less time maintaining equipment.

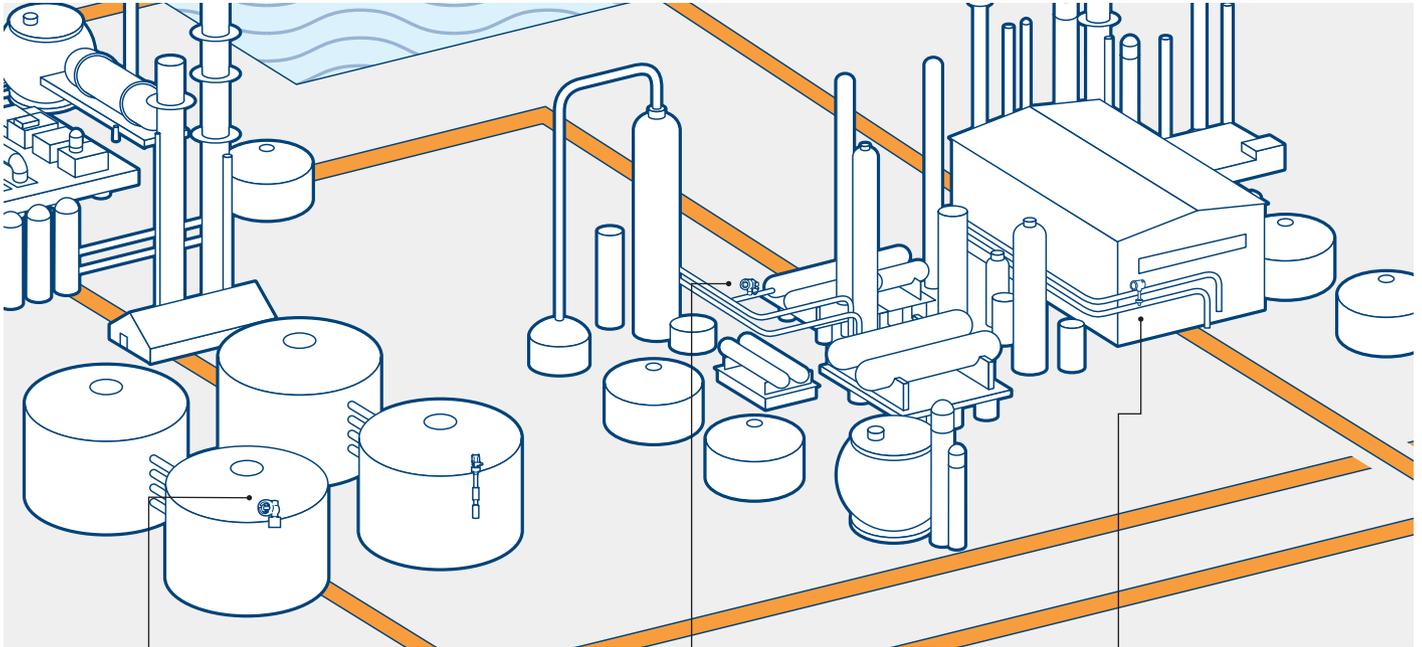
Surface Production (Wellhead & Pumpjack)

With the dramatic increase in complex multiple well pads, the need for control and monitoring has never been more critical. ABB's wellhead monitoring solutions allow for maximized production while ensuring the safe and proper operation of the pad. This is accomplished through the gathering and processing of quality input data from various ABB primary meters, tank level systems and Instrumentation over wireless or hard-wired paths. The processing and control of this data is handled

through our pre-programmed or user-designed applications contained in ABB's industry approved RTUs with AGA calculations. The results are logged, trended and transmitted through both traditional and IP meshed networks back to either an ABB host system or a third party host/SCADA system. The conclusion is a smart well pad that provides the customer with real-time information that is both safe, predictive and diagnostic.

Inlet of primary separator

Effective separation results in selling more oil and gas. ABB can help you separate more effectively and reliably, while at the same time, sustaining you and the environment. ABB's Coriolis meter with its state of the art, partially bent tube geometry affords less pressure drop in smaller line sizes without sacrificing fluid velocity. This allows for less "decoupling" and "hold up" within the flow tube due to any residual entrained gas in the liquid phase. In addition, ABB Coriolis employs enhanced algorithms yielding better accuracy and less sensitivity to gas void fraction (GVF) upsets.



Did you know?
 ABB's K-TEK guided wave radar solutions help producers discover hidden profit through simple installation and higher accuracy level measurement.



Did you know?
 ABB has installed over 4,000 natural gas chromatographs worldwide.



Did you know?
 ABB swirl meters are the best gas flow measurement solution for short upstream and downstream piping applications.

Tank Storage

When measuring level and interface in a tank, accuracy is important. ABB's K-TEK guided wave radar technology has successfully uncovered hidden profit for production companies around the world. With the easy installation, high accuracy and added diagnostics, downtime is reduced and profitability is increased.

Gas Plant

ABB's line of custody transfer Gas Chromatographs (GC) and process analyzers offer a low cost and high accuracy solution to measuring composition, heating value and process efficiency. ABB Continuous Gas Analyzers (CGA) provide an optimal portfolio for gas emission monitoring according to local legislations. Furthermore, CGAs allow for real time and continuous measurements of O₂, SO₂, H₂S, and CO₂ for enhanced safety purposes and fast gas quality controls. Our low-powered, modular NGC and PGC offer unrivalled flexibility and performance to increase the overall measurement accuracy while not increasing the technical burden on operators. From wellhead to burner tip, ABB's analytical products will enhance the efficiency and accuracy of your business.

Transmission to Storage

The higher the accuracy measurement, the more you can detect slight leaks. Unbox your pre-assembled orifice plate/pressure transmitter, insert it into your pipeline, configure and calibrate within minutes, and you're done! ABB's pressure transmitters offer a high maximum working pressure and the ability to detect blockages in impulse lines. ABB provides a complete solution for controlling allocations/nominations as well as run switching and station totalizations with our instrumentation and software applications for the RTU.

LACT

In addition to offering all the instrumentation and valve control on a LACT unit, ABB now offers pre-configured RTUs for LACT control and measurement. The average customer can save 20-30% by using our pre-configured unit instead of paying an engineer to create applications within a PLC and purchasing both a controller and a measurement device. ABB's new RTU for LACT meets all custody transfer requirements.

A comprehensive portfolio

Covering onshore applications

Product category		Fracking fluid	Oil/Pump-jack	Remote gas wellhead	Gas/liquid separator	Pad site control	Tank storage
Flow							
Diff. pressure	OriMaster	X	X	X	X		X
	WedgeMaster	X	X	X	X		X
	Orifice Fitting (Meter ² di)	X	X	X	X		X
Flow Computers	microFLO						
	XFC ^{G4}						
Coriolis	CoriolisMaster	X	X	X	X		X
Vortex	FV4000	X	X	X	X		X
Swirl	FS4000	X	X	X	X		X
	FAM3200	X	X	X	X		X
Electromagnetic	ProcessMaster	X			X		X
Controller/RTU							
	XRC ^{G4}	X	X	X	X	X	X
Pressure							
	266 & 261	X	X	X	X		X
Temperature							
	TTF300				X		X
	TTH300				X		X
Sensor Assemblies	V10186				X		X
	TSP 411				X		X
Level							
Interface	LevelMaster & MT5100	X			X		X
Magnetic	KM26/Magwave	X			X		X
Radar	MT5100	X			X		X
Valve control							
Positioners	EDP300			X	X	X	X
	TZIDC			X	X	X	X
I/P Converter	TEIP-11-PS			X	X	X	X
Gas Analyzers							
Hydrocarbons	NGC 8206				X		
Sampler Replacement	NGC 8106				X		
Light hydrocarbons	PGC1000				X		
Gas Leak Detection	LGR Portable gas analyzer						X
Liquid Analyzers							
Heavy hydrocarbons	PGC5000	X					
	FTPA2000-HP260X	X					
Water pH	TB (X)5	X					
Continuous Analyzers							
	AO2000/EL3060				X		X
Wireless Communications							
	Wireless mesh network					X	

Product category						
Area of measurement and corresponding product line		Gas plant	Transmission	To gas storage facility	To liquid storage facility	LACT control
Flow						
Diff. pressure	OriMaster	X		X	X	X
	WedgeMaster	X		X	X	X
	Orifice Fitting (Meter ² di)	X		X	X	X
Flow Computers	microFLO	X		X	X	X
	XFC ^{G4}	X		X	X	X
Coriolis	CoriolisMaster	X		X	X	X
Vortex	FV4000	X		X	X	X
Swirl	FS4000	X		X	X	X
	FAM3200	X		X	X	X
Electromagnetic	ProcessMaster	X		X	X	X
Controller/RTU						
	XRC ^{G4}	X	X	X	X	X
Pressure						
	266 & 261	X	X	X	X	X
Temperature						
	TTF300	X	X	X	X	X
	TTH300	X	X	X	X	X
Sensor Assemblies	V10186	X	X	X	X	X
	TSP 411	X	X	X	X	X
Level						
Interface	LevelMaster & MT5100	X				X
Magnetic	KM26/Magwave	X				X
Radar	MT5100	X				X
Valve control						
Positioners	EDP300	X	X	X	X	X
	TZIDC	X	X	X	X	X
I/P Converter	TEIP-11-PS	X	X	X	X	X
Gas Analyzers						
Hydrocarbons	NGC 8206	X	X	X	X	
Sampler Replacement	NGC 8106	X	X	X	X	
Light hydrocarbons	PGC1000	X	X	X	X	
Gas Leak Detection	LGR Portable gas analyzer		X	X		
Liquid Analyzers						
Heavy hydrocarbons	PGC5000	X			X	
	FTPA2000-HP260X	X			X	
Water pH	TB (X)5	X			X	
Continuous Analyzers						
	AO2000/EL3060	X	X	X		
Wireless Communications						
	Wireless mesh network		X			

A comprehensive portfolio

Efficient and enhanced production



1 Computer interface | 2 RTU | 3 Communications | 4 Pressure & Temperature | 5 Level | 6 Flow | 7 DP flow | 8 Flow computer | 9 Analyzers | 10 Control

Computer interface	Production automation	Instrumentation	Analyzers	Control
SCADAventure	Software Applications	Multivariable	Gas Analyzers	Valve positioner
TF.net	Chemical inject	269CS	NGC	I/P converter
WinCCU	Plunger lift	Pressure	PGC1000	Flow computer
PCCU	Gas lift	266	LGR Portable Gas Analyzer	XFC
Tropos control	Valve control (AO/DO)	261	AO2000	MicroFLO
Network wireless	PID loop	Temperature	EL3060	Tube switching
Tropos gateway	IsaGraf custom logic	TTH300	Liquid Analyzers	Station totalization
Tropos radio	LACT control	TTF300	PGC5000	RTU
WellTell wireless	Pump control	TSP411	TB (X)5	XRC
	Emergency shutdown (ESD)	V10186 Sensor Assembly	FTPA2000-HP260X	
	Fire and Gas (F&G)	Level		
		MT5000 K-TEK GWR		
		Levelmaster		
		High level switch		
		Vibrating fork		
		KM26		
		Magwave		
		Flow		
		CoriolisMaster		
		ProcessMaster		
		Vortex		
		Swirl		
		DP flow		
		Meter ² di		
		WedgeMaster		
		OriMaster		

Service and other solutions

Unlimited support

Measurement made easy with life-cycle services

Dedicated to optimizing your productivity and performance, ABB's services enable improved utilization and performance of your automation equipment, processes, and personnel.

ABB provides comprehensive support from planning and commissioning to complete life-cycle services for all of its measurement solutions, including: flow, DP flow, pressure, temperature, level, valve automation, liquid and gas analyzers.

In addition, ABB fully supports products from all of its heritage companies such as Bailey, Fischer & Porter, Taylor Instruments, Hartmann & Braun etc. **To see all of the heritage brands supported, please visit www.abb.com/heritage.**



Service options:

- Regional automation partners
- Technical support
- E-learning
- Classroom training, hands-on, and customized classes
- Call out, consultancy, and studies
- Condition based monitoring and maintenance management

Large control systems

In addition to measurement products, ABB delivers other comprehensive solutions to upstream oil and gas producers. Our system 800xA large-scale distributed control system (DCS)

delivers enterprise-wide automation improvements for productivity and efficiency at large production plants. As the largest DCS supplier in the world, our experience helping companies improve their business is unmatched. In addition, we also supply terminal automation, SCADA, and safety systems to many of the largest oil and gas companies in the world. **To learn more please visit www.abb.com/oilandgas.**

Motors and Drives

ABB is pleased to offer the broadest range of industrial AC and DC electric motors to value-minded customers. Motors range from 1/50th through 100,000 horsepower. Our Super-E® motors are optimized for efficiency, ensuring the lowest operating costs for the customer. ABB Baldor can offer custom motors to meet specific requirements. Custom motors are manufactured to the shortest lead times in the industry. The variety of industrial adjustable speed drives range includes AC inverters and vector controls, DC SCR controls, servos and positioning products. Customers can now create packaged solutions of industrial motors and drives for most industrial applications. **To learn more please visit www.abb.com/motors and www.abb.com/drives.**

Other relevant ABB products:

- Automated robotic pigging
- Transformers
- LV/MV and HV to switch gear
- Large scale project management and execution
- Drilling drives
- Distributed control system
- E-house solutions for electrical distribution
- Electric motors
- Variable speed drives



Contact us

To find your local ABB contact visit:

www.abb.com/contacts

For more information visit:

www.abb.com/measurement

Note:

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