

ABB MEASUREMENT & ANALYTICS | DATA SHEET

# Plunger Analysis Software (PAS)

## System software products

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**ABB** Support

### ABB Plunger Analysis System

Optimizes plunger, Detects faults, Improves well production.

Login

**FaultDetection**  
Detects the faults present in the plunger in order to optimize the well production.  
More Information

**Optimization**  
Optimizes the well production by analyzing the plunger and displaying averages of critical fields.  
More Information

**Operator\_Training**  
Provides a training simulation for the users to understand the ecosystem of plunger analysis.  
More Information

# Introduction

ABB has worked with several plunger lift experts in the industry to develop an extremely powerful software aide for optimizing the performance of plunger-based artificial lift systems in natural gas production wells.

The plunger application in an XSeries RTU or flow computer has many available parameters that can be tuned to optimize the production of a well. Our advanced control system, based on pressures and rates, can be applied to a broad range of well conditions to get the most out of a well. Once the parameters are set, the control system will continue to operate at or near an optimum condition without the need for adjustment for a significant period of time.

ABB's optimization software takes the complexity out of tuning these parameters by processing relevant trend data and showing the key areas that need adjusting. This software can help you deploy better plunger controls and make you the expert.

# Key benefits

- Increase gas production volumes
- Reduce extended shut-ins due to liquid loading
- Lower operating costs
- Characterize well conditions to optimize liquid production

Name	Event ID	Date and Time (UTC)	Severity	Feature	Mode	API	GUI	Download Input Data	Download Report
GULIA R. BEHEL	GULIA R. BEHEL@ABB.COM	10-24-21 01:52:25	OFFRADIATION	QUA	ABB	ABB	ABB	ABB	ABB
SHAN BOOD	SHAN BOOD@ABB.COM	11-24-21 11:39:49	FAULT DETECTION	QUA	ABB	ABB	ABB	ABB	ABB
SHAN BOOD	SHAN BOOD@ABB.COM	11-24-21 11:39:56	OFFRADIATION	QUA	ABB	ABB	ABB	ABB	ABB
SHAN BOOD	SHAN BOOD@ABB.COM	11-24-21 15:11:36	FAULT DETECTION	QUA	ABB	ABB	ABB	ABB	ABB
SHAN BOOD	SHAN BOOD@ABB.COM	11-24-21 15:03:37	FAULT DETECTION	QUA	ABB	ABB	ABB	ABB	ABB
SHAN BOOD	SHAN BOOD@ABB.COM	11-24-21 15:03:07	OFFRADIATION	QUA	ABB	ABB	ABB	ABB	ABB
ON_PUBLIC_KEY_CERTIFICATE_TEST	PAS_APL_CALL_ON_PUBLIC_KEY_CERTIFICATE_TEST@ABB.COM	11-24-21 14:48:02	OFFRADIATION	APR	ABB	ABB	ABB	ABB	ABB
ON_PUBLIC_KEY_CERTIFICATE_TEST	PAS_APL_CALL_ON_PUBLIC_KEY_CERTIFICATE_TEST@ABB.COM	11-24-21 14:48:03	FAULT DETECTION	APR	ABB	ABB	ABB	ABB	ABB
SHAN BOOD	SHAN BOOD@ABB.COM	11-24-21 14:14:26	FAULT DETECTION	QUA	ABB	ABB	ABB	ABB	ABB
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SHAN BOOD	SHAN BOOD@ABB.COM	11-24-21 15:06:34	FAULT DETECTION	QUA	ABB	ABB	ABB	ABB	ABB
SHAN BOOD@BENT.COM	SHAN BOOD@BENT.COM	11-24-21 11:15:07	OFFRADIATION	QUA	ABB	ABB	ABB	ABB	ABB
SHAN BOOD@BENT.COM	SHAN BOOD@BENT.COM	11-24-21 11:12:19	FAULT DETECTION	QUA	ABB	ABB	ABB	ABB	ABB
ON_PUBLIC_KEY_CERTIFICATE_TEST	PAS_APL_CALL_ON_PUBLIC_KEY_CERTIFICATE_TEST@ABB.COM	11-24-21 14:36:33	OFFRADIATION	APR	ABB	ABB	ABB	ABB	ABB
ON_PUBLIC_KEY_CERTIFICATE_TEST	PAS_APL_CALL_ON_PUBLIC_KEY_CERTIFICATE_TEST@ABB.COM	11-24-21 14:36:34	FAULT DETECTION	APR	ABB	ABB	ABB	ABB	ABB

# Maximize well production

Trend file data from PCCU or WinCCU software from ABB are opened and processed by the Plunger Analysis Software. Depending on the results and how the well is controlled, recommendations can be provided for certain parameters such as:

- Critical flow rate
- Differential pressure settings
- Foss & Gaul



Before optimization



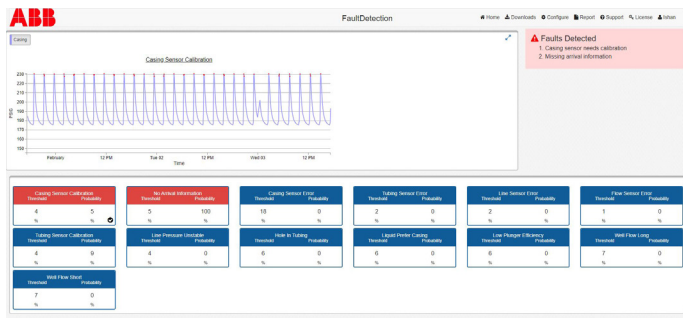
After optimization

Not only can you get more out of your well today, by managing the control parameters carefully, the overall life of the well can be extended. Cumulative production output can be increased in some cases by 3-5% with effective control.

## Minimize operational costs

From equipment failures due to liquid loading to fines and taxes for venting to atmosphere, plunger control needs to be performed correctly. With a little analysis, the well can be setup and maintained remotely to reduce vehicle travel and workforce costs for managing your wells. Better understanding means better well performance.

### Liquid buildup example



By viewing the liquid data, the operator can identify that the well needs adjusting and can either:

- Lower the differential set-point to open the well
- Increase after-flow to accumulate more fluids and slow the plunger down

## System requirements

### Client

Software for installation on PCs with the following:  
Windows 2000 SP4 or higher, XP SP2 or higher

- Memory: 96 MB
- Hard Drive space: 280 MB (32 bit machine or x86)  
610 MB (64 bit machine or x64)
- I.E 5.01 or later must be installed for .NET framework 2.0

### Server (Optional)

For use with batch version that processes multiple wells in a batch operating mode.

- .NET 2.0 or higher on Windows Server

### Data

The data gathered is typically every 3 to 5 minutes and consists of 5 variables:

- Casing, tubing, and line pressures
- Flow rate
- Arrival time

Additional well geometry data is also necessary:

- Well depth (to bottom hole spring)
- Tubing Interior Diameter (ID)
- Average surface temperature
- Plunger type (custom types can be defined)

Recommended only for use with ABB’s plunger control application.

## Ordering

The software is available from ABB and authorized resellers for use as a standalone package. For integration of the analysis software with 3rd party SCADA solutions, please contact your SCADA provider or ABB.



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