

Enbase® Chemical Automation System

Introduction

Enbase® Chemical Automation System (CAS) remotely monitors and controls oil and gas production chemical systems. Certified by CSA for hazardous locations, this rugged and powerful system based on our flagship Enbase® Hub edge device provides operators and chemical providers with state-of-the-art capabilities to remotely monitor production chemical tank levels, track inventory, spot problems, and importantly adjust chemical injection rates. Additionally, the Enbase® CAS includes a web application for remote monitoring of tank levels and adjustment of pump duty cycles.

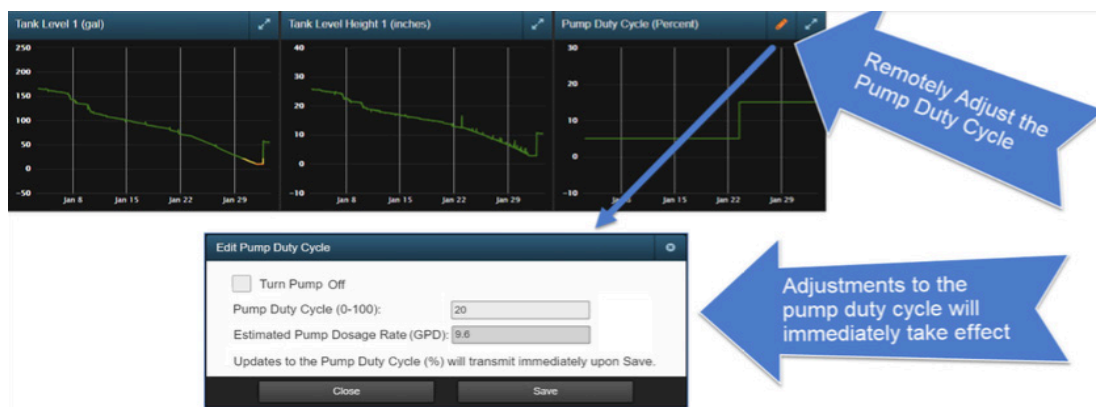
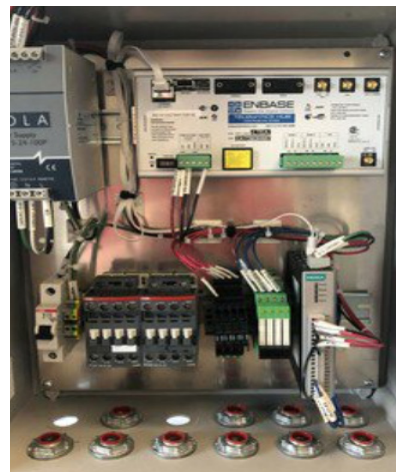
Tank Level Monitoring

- Monitors up to four (4) tank levels using hydrostatic pressure transducer
- Sensor mounts easily on existing chemical tank plumbing and is not impacted by vapor or foaming
- Patent-pending algorithm eliminates impact on tank readings by pump stroking
- Does not require drilling a hole in the top of the tank
- Works on all sizes, shapes and types of chemical tanks
- Detects and alarms on low tank levels, dosage rates, tank fills, leaks, air locks, and more
- View and trend tank level data and alarms remotely in the Enbase® Dashboard



Chemical Injection Pump Control

- Remotely stop and start up to four (4) chemical injection pumps through the Enbase® Dashboard
- Remotely adjust the pump duty cycle
- Track performance against volumetric and PPM target dosage rates based on actual oil, gas and water production volumes
- Create additional local pump control logic and edge analytics with Lua, an open source scripting language



The Enbase® Chemical Automation System (CAS) contains the following components:

Enbase® Hub

The Enbase® Telematics Hub is the heart of CAS. It is a general-purpose, microprocessor-based remote monitoring and control device designed for industrial equipment. The Enbase® Hub contains the following features:



Specifications

- (1) Ethernet port
- (1) USB Host port
- (1) USB Device port
- (1) CAN bus port
- (2) RS 485 ports
- (1) RS232 DB9 port
- (1) Console DB9 port
- (1) Male DB25 expansion port
- (1) Female DB25 expansion port
- 4GB SD Card for local data storage (expandable to 32GB) for storing monitored data and control logic
 - Wi-Fi radio for local wireless communications with smartphones, tablets, PCs
 - GPS Module for geo-location and asset tracking
 - Cellular/GSM, Cellular/CDMA, or Satellite Remote Communications Modem
- Power Input 10-30 VDC, 3.0A max.
- Operating Temp -40 to 80 C
- Dimensions: 8 in x 4 in x 1 1/4 in

- CSA Class I Division 2, Groups A, B, C, and D; T5
- 1 Year Warranty
- Designed, engineered, and manufactured by Detection in the U.S.A.

I/O

- (4) Analog inputs
- (4) Digital outputs

Pressure Transducer (AST4510)

The hydrostatic pressure transducer provides a cost-effective system for measuring the level in a chemical tank. That level is converted into volume through the use of strapping tables and specific gravity inputs. The Pressure Transducer has the following specifications:

Specifications

- Performance at 25C
- Accuracy: $\pm 0.25\%$ BFS
- Stability (1 year) $\pm 0.25\%$ FS, typical
- Zero Offset: $\pm 1\%$ of FS
- Span Tolerance: $\pm 2.0\%$ of FS
- Thermal Limits
 - TC Zero: $\pm 1\%$ of FS
 - TC Span: $\pm 1\%$ of FS
- Total Error Band $\pm 2.67\%$
- Wetted parts for installation outside of tank: 304 and 316L SS
- CSA Class 1 Division 1 intrinsically safe certification Groups C and D

Note that many factors can contribute additional error beyond the above-stated performance including: ambient temperature swings, incomplete/insufficient tank strapping data, error in volume interpolation of strapping data, changes in specific gravity of the chemical between batches and at varying temperatures, improper calibration during installation, lack of ongoing calibration, movement/repositioning of the tank, debris in the piping, closing of main valve on outlet (for out-of-tank installations).

International Headquarters

8 Greenway Plaza, Suite 1300
Houston, TX 77046

Telephone: 713.492.0008

www.detection.com

Canadian Headquarters

1100 – 8th Avenue S.W.
Suite #277
Calgary, AB T2P 3T8

Telephone: 403.250.9220

Australia – Brisbane

Level 54, ONE ONE ONE Eagle Street
111 Eagle Street
Brisbane, Queensland 4000

Telephone: +61 (0) 417.897.717