

Tank Supervisor Library

Overview

The Beyond HMI Tank Supervisor Library (BhiLibTank) for Wago e!COCKPIT provides a number of common functions inherent to oilfield stock tank monitoring and control.

Features including:

- Calculating oil and water heights and volumes
- Incorporation of tank strapping tables
- Filtering of tank gauger inputs to reduce impact of spurious gauger readings
- Automatic detection of withdrawals from tanks (loadouts)
- Simple pump controller blocks to control product transfer to a pipeline

The BhiLibTank library uses runtime licensing. A license is required for each PLC which executes the library code. The program will run for approximately 4 days in trial mode before a license is required. Licenses must be purchased from Beyond HMI, Inc.

Library Features

Fluid Height Calculations	Configurable Inputs	Accepts "top only" or "top + interface" gaugers
	Conversion to trucker units	Converts decimal feet to feet/inches/quarters and feet/inches/eighths
Fluid Volume Calculations	Supports linear conversion	bbl/ft factor
	Supports tank strapping tables	Up to ten (10) strapping tables.
	Supports multiple instances	Multiple, equalized instances can be treated as a single "Tank"
Strapping tables	User-created	Create in EXCEL and save as .csv
	Load onto PLC	Use free BLT software to load strapping table onto PLC
Gauger Reading Filters	Statistical	Minimizes impact of spurious gauger readings
	Configurable	Filter time window is adjustable depending upon gauger update rate (e.g., wireless)
Automatic Loadout Detection	Configurable filtering	Specify minimum loadout volume and minimum outflow rate
	Loadout history archived on PLC	Each completed loadout is stored in persistent file system
		Automatic data retention feature maintains history for user-specified number of days
	Loadout Accumulations	Loadout Volume Today, Yesterday, Current Month, Previous Month - per tank
		Global, configurable gauge-off hour applies to all tanks
	Loadout Summary	Use free BLT software to copy loadout files from PLC and build a summary file (on a PC) of loadouts from history

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Pump Controllers	Interface Support	Works in conjunction with HOA switch and (optional) permissive
	Control Algorithm (HOA)	HAND=on, OFF=off, AUTO=automatic algorithm
	Automatic Algorithm	Pump latched on when high threshold is exceeded. Pump stops when low threshold is crossed.
	Configurable	Dynamic configuration of high threshold, low threshold, and source tank
Library Capacity	Configured through host program (to minimize memory footprint)	Up to 254 tanks, up to 254 controllers
		Up to 10 tank strapping tables (fixed maximum)
		Configurable number of tank strapping table rows (for optimum memory use)
Licensing	Free for developer	Library file is free and can be added to any Wago e!COCKPIT instance
	Runtime Licensed	Library generates a site code
		Beyond HMI, Inc. generates a license file from site code
		License file is installed on the PLC. License is perpetual but only usable on that PLC.
		Library features will execute for about 4 days after restart in <i>trial mode</i> . License must be installed before this period expires or processing will cease.