**GPL** Odorizers

# Software Release Notes

For GPL750 (XL4) Version 5

Harrison Baer 4-30-2025



## Version 5.0

## New:

• Home Screen: Added a status bar to the top of the home screen and the main menu that includes the software version, time, date, and a help button that directs users to our 24/7 service line.

Ver. 5.0 00:00:00 04/0 System Alarm Solenoid SD ( OFF) () () () () () () () () () () () () ()	AR/25 HELP Card Inject Rate (#/MMCF) 0.00	Wer. 5.0 00:00 Gas	Odor	Alarms
Gas Rate (MCFH) 0.000 Sec Since Last Drop	° 0.0	Tank	1/0	Maint
Volume 0.000 Efficiency	0.00			
Alarms	Usage	User	Home	Config

Figure 1 & 2: Home Screen & Main Menu with Status Bar

• Alarms Page: Now has arrow buttons to scroll between Active Alarms, Alarm History, and Alarms Config.

Active Alarms		Alarm History			Alarm Config				
Auto Clears Used			7 1001111	. notory		Alarm Tes Alarm Out Alarm Pol Standby F Standby A Autoclears Inj Alarm I HiHi Injecti Hi Injectio	t iput arity Volarity Narm S Allowed Delay ion	Not Testing On Shutdown NO Enabled 0 0 Cycles 0.00 #/MMCF 0.00 #/MMCF	
Menu Hon			Menu	Home	2		Menu	Home	

Figure 3-5: Active Alarms, Alarm History, and Alarm Config

- **Usage Page:** Enhanced on-screen usage tracking to show more comprehensive data.
  - The usage page includes the gas volume, and the pounds of odorant used for the current and previous time periods, including hour, day, week, month, year, and total. The period displayed is selected at the top of the page in Figure 6.



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Figure 6: Usage Page (1/3)

• **Daily Usage Page:** Introduced a new page for tracking daily usage over the past week, complete with date stamps.



Figure 7: Usage Page (2/3)



• Monthly Usage Page: Added a year indicator for clarity.



Figure 8: Usage Page (3/3)

- Tank Settings:
  - Relocated to a dedicated "Tank Page," accessible from the main menu.
  - Added a "Fill Date" (reset date) indicator.
  - Included a navigation button for accessing the tank level graph.



Figures 9 & 10: Tank Page and Trend Graph



- **Config Page:** Added a new Config page (Figure 11) accessible from the main menu.
  - Enables users to save the odorizer's settings to a CSV file on the SD card for easy backup and restoration during software updates.
  - Introduced save files for maintenance data, on-screen usage trackers, and I/O assignments.



Figure 11: Config Page

- SD Storage Features:
  - Added weekly and annual logs automatically saved to the SD card.
  - Implemented an SD Low Storage alarm (noncritical) triggered when storage exceeds 80% capacity.
- Tank Signal:
  - Incorporated analog input assignments for tank level within the I/O page.
  - Added an auto-enable/disable function for the tank signal alarm.
- Upstream Odorant Concentration:
  - o Added analog input assignment for upstream odorant analyzers.
  - An analog input is automatically assigned when enabling upstream odorant.



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Figure 12: I/O Page (Analog Inputs)

• Expanded the odor page to allow toggling and span configuration for the upstream odorant signal.



Figure 13: Upstream Odorant Page (Accessed from Odor Page)



• The home screen indicators change to reflect upstream odor concentration and total injection rate (injection + upstream).

Ver. 5.0	00:00:00		04/08/25	5 HELP	Ver. 5.0	00:00:00		04/08/25	HELP
System	Alarm	Solenoid	SD Card	Total (#/MMCF) 0.00	System	Alarm	Solenoid	SD Card	Inject Rate (#/MMCF) 0.00
Gas Rate (MCFH)	0.0	00 Sec	Since Drop	0.0	Gas Rate (MCFH)	0.0	100 Sec Last	Since Drop	0.0
Volume Until Batch	0.0	00 In 0.0	jection 0 #/MM	Upstream 0.00 #/MM	Volume Until Batch	0.0	100 Effic	iency	0.00
Alarm	s	Menu		Usage	Alarm	s	Menu		Jsage

Figures 14 & 15: Home Screen (Upstream Odor Enabled vs. Disabled)

- Added an upstream signal alarm (critical) that is automatically enabled/disabled and triggered by signal loss.
- o Added "Upstream Shutdown" to the alarm config:
  - Enabled: an upstream signal alarm will shut down the system.
  - Disabled: the system will still inject during an upstream signal alarm based on an average of the signal from the last hour. The alarm output will still indicate a critical alarm either way.
- **OSC-I/O Expansion Module Support:** Adds I/O functionality upon customer request.
  - Implemented an I/O Expansion Error Alarm that is automatically enabled when connecting an expansion module and triggered by disconnecting the module. This alarm will not turn off the system, but it will activate the Alarm Out signal.
- Gas Signal Redundancy:
  - Added analog input assignment for "Gas 2" (refer to Figure 12).
    - The system automatically assigns the first available analog input to "Gas 2" upon enabling gas signal redundancy.
  - Expanded the gas page to support toggling and span configuration for the redundant gas signal.



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Figure 16: Gas Signal Redundancy Page (Accessed from Gas Page)

 The redundant gas signal has its own target injection rate and span. The odor page changes to allow separate injection targets when the gas signal redundancy is enabled.



Figure 17: Odor Page with "Gas 2" Enabled



• Added indicators to the home screen to display the active gas signal when redundancy is enabled



Figure 18: Home Screen with "Gas 2" Indicators

- When the redundant gas signal is enabled, the Gas Signal Shutdown is set to Disabled automatically.
  - If both gas signals are lost, the system will shut down. See the "Gas Signal Alarm Enhancements" section below for further details.

## Changes:

- Alarm Polarity: The default setting is now configured to "normally closed" (NC).
- Hi Gas Alarm Behavior:
  - If the Hi Gas Alarm persists for three consecutive minutes, the system will shut down.
  - If the gas rate drops below the Hi Gas Setpoint, the Hi Gas Alarm will clear itself. However, the system will now track the number of Hi Gas Alarm occurrences. If three Hi Gas Alarms are triggered within a one-hour period, the system will shut down.



#### • Gas Signal Alarm Enhancements:

- Expanded the coverage of the Gas Signal Alarm to include the Pulses gas source.
  - Added a gas pulse timeout setting to the alarm config. This setting determines:
    - The duration the system can go without receiving pulses before the Gas Signal Alarm is triggered.
    - how long the system can go without batching before the gas rate resets to zero.
- Alarm Configuration: The Gas Signal Standby setting has been replaced with Gas Signal Shutdown.
  - **Enabled:** The Gas Signal Alarm will shut down the system rather than putting it in standby mode.
  - **Disabled:** the behavior varies based on the gas configuration:
    - 4-20mA or Pulses: The system will wait for the signal to return.
    - **Dual 4-20mA Signals (Redundancy):** The System will continue operating with the redundant gas signal. If signal is lost from both, the system will shut down.
  - Regardless, the Gas Signal Alarm will activate the Alarm Out signal.

#### Fixes:

- Resolved an issue that prevented usernames from logging properly to the SD card's login log when multiple users accessed WebMI. Now, the logs will record a new entry whenever the user count changes.
- Fixed a bug that caused excessive usage pulses for drops before the system was activated after a power cycle. Drip mass is now calculated regardless of the system's on/off status.
- Updated the Hi Gas Alarm to prevent batches when using the Pulses gas source.
- The Gas Rate is now reset to zero when manual gas is selected as the gas source, but the override is turned off.