

Intelligent Pump Control – PC (Electric) Release Notes

Version 3.5.28 2-5-2024

- **Uninstall previous version of IPC-PC. The IPC-PC installer has changed, upgrading will not work.**
- Added Fix for MQTT auto reconnect logic.
- IPC-PC will now stream MQTT data under Data-van Asset ID and Data-van Side.
- Added MQTT connection lost notification.
- Added Multi-Group settings screen button on the Group Panel. This screen displays relevant pump group information in one location and enables group name and color modification.
- Added PMCS Feeder ID and Feeder Name to MQTT Pump Live Data.
- Fix for Power/Fluid End Strokes Text boxes not showing full value.
- Fixed MQTT Pump live data not showing full value for Power End Strokes.
- **REQUIRES eFrac STW Version 3.39 or later.**

Version 3.5.13 11-21-2023

- Added MQTT auto reconnect logic. When connection is lost for 5 seconds, IPC-PC will attempt to reconnect to MQTT every 5 mins until a connection is successful.
- **REQUIRES eFrac STW Version 3.38 or later.**

Version 3.5.12 11-15-2023

- Fixed for MQTT broker settings causing UI the Freeze when clicking the Apply button.

Version 3.5.11 11-15-2023

- Fixed speed command pop-up value to match request speed.
- Changed “Oil F/C” on Pump details to “Tank Oil F/C”

Version 3.5.10 11-14-2023

- Fix for being able to increment the speed command before the AFE pre-charges and starts running.
- Fix for Loss of charge pressure does not reset speed status bar.

Version 3.5.9 11-13-2023

- Fix for Speed command response slowness.

Version 3.5.8 11-10-2023

- MQTT changes: Data-van side topic removed. Job name will update automatically, no user input needed.
- MQTT is enabled by default on new clean installations.

Version 3.5.7 11-8-2023

- Fixed – “The speed command status bar does not reset to zero when there is a INU fault”. **NOTE:** The speed request will now match what the STW is seeing. There will be a slight delay, around a half second, when clicking the speed request button to when you see the speed command status bar update.

Version 3.5.6 11-7-2023

- Fixed – “Cannot enable other pump drives if using the pump selector in a single opened detailed screen.”
- Fixed – “Red Tank temp alarm on detailed show up in the inlet oil numerical display.” The new alarm message will be "Lube pump oil (Tank/ Inlet) temperature out of range." This will show when either the tank or inlet temperature is high and which ever temperature is in Red on the detail screen will be the temperature it is referring too.
- Fixed – “Discharge red alarm turns on when the charge pressure red alarm is triggered.”
- Fixed – “Low voltage reset does not work for IPC-PC.”
- Fixed – “IPC-PC does not clear the speed status bar in the digital RPM box.”

Version 3.5.5 11-2-2023

- **REQUIRES eFrac STW Version 3.33 or later.**
- Communication improvements with eFrac STW.
- Fix for recordings not recording when no pumps are added. A pump will now need to be added before a NEW recording can start. Auto recording will work more reliably now.
- Removed the ability to add duplicate pumps in Frac Pump Network Settings.
- Added ‘Other Side Disconnect’ and ‘Other Side Version Mismatch’ MQTT Alarms
- Added ‘Job center Job Name’ and ‘Datavan Side’ MQTT Topic Selections to MQTT Broker Setting.

Version 3.5.3 10-17-2023

- **REQUIRES eFrac STW Version 3.32 or later.**
- Performance improvements with eFrac STW communications.
- Fix for Pump group colors not working.

Version 3.4.32 10-16-2023

- Fix for trailer billing hours bug.

Version 3.4.31 9-27-2023

- Fixed Network settings combo boxes showing blanks.
- Fixed Trip conditions charge under pressure setpoint not loading after saving.
- Removed new recordings file naming ability. Renaming will have to be done post recording.

- Added user settable field for Target Oil Temperature and Thermostat Temperature to Lube Pump speed calibration.
- Removed Pause, Stop and Resume recording buttons.
- Undid label text change for Inlet oil on pump details screen.
- Changed the lube oil inlet temperature label to Tank temperature in pump alarm calibration.

Version 3.4.30 9-22-2023

- Fix for pump tripped alarm not clearing.
- Made Frac pump network settings screen single instance.
- Made performance improvements to Frac pump network settings.
- Updates made to the Pump controller IP address database screen will now notify the user to close and reopen the Frac pump network settings screen to see their latest changes.
- Removed IPC-PC Splash screen on Application Start. The version number will not be displayed next the Application Title at the Top of the main screen. For e.g. Intelligent Pump Control v3.4.30.
- Made performance improvements to the multi pump screen.

Version 3.4.27 9-18-2023

- Fix for Alarms not clearing on Multi pump screen.
- Fix for Oil Inlet Temp showing as 0.0.
- Fix for Charge pressure Full count display the current measured counts after a calibration.
- Fix for Inlet oil temp panel not turning red for alarm.
- Fix for pump panel not clearing alarmed state.

Version 3.4.27 9-15-2023

- Fix for IPCPC not recordings every second.
- Fix for Discharge pressure test running without charge pressure.
- Fix for oil flow rate panel not showing alarmed state.
- Fix for pump speed request not resetting to 0 after pump is tripped.
- Performance improvements.

Version 3.4.26 9-12-2023

- Fix for 'Motor NDE/DE bearing temperature high...' Alarms not clearing.
- Added AccuFrac Pump Billing to MQTT.
- Added all Ic7 channels to MQTT
- Added 1 click calibrate to Discharge pressure calibration.

9-8-2023

- MQTT AccuFrac billing bug fix.
- Fixed Pump details not live updating for On Battery Only alarm.

9-7-2023

- Added new AccuFrac/Frac/PumpID/Ebilling Topic to MQTT.
- Added new On Battery Only alarm and Led on Pump details.
- Added ability to Set STW Date and Time when pump comes online.
- Memory Optimizations.

8-31-2023

- Fix for Acknowledged alarms stay in acknowledged state and never clear when alarms are not active.
- Fix for Multi pump panel not refreshing and clearing alarmed state.
- Removed Confirm dialog when Acknowledging Alarms. (Matches HMI).
- All alarms in Alarm History will reset on IPC-PC start. (Matches HMI) So Acknowledged alarms will need to be Acknowledged again if they are still active when you restart IPC-PC.

8-25-2023

- Made Pump Details single instance. Only 1 pump details screen per pump can be open.
- Fixed Configuration screen(s) with full and min scale counts live updating after pressing "Set".
- Fixed Discharge Pressure value and psi text vanishing when pump is tripped on the Multi Pump screen.
- IPC-PC memory optimizations.
- Fix for new alarms not turning on the pump details alarm LED.

8-22-2023

- Optimizations for Alarm History.
- Fixed MQTT disconnect pop-up showing 3 times when adding pumps.
- Fixed Alarm header widths.

8-21-2023

- Fixed multiple 'Pump running slow for too long' alarm.
- Fix for PumpPanel border not turning red for active alarm.
- Fix for Detail screen Alarm not turning red for oil tank temp alarm
- Updated Alarms Verbiage to match HMI.
- Fix for Discharge pressure low alarm not going away.
- Alarm states have changed to match the HMI. Acknowledged Alarms won't come back as Active but will stay as Acknowledged.

8-20-2023

- Fix for Alarm LEDs not lighting on the Multi-Pump and Details screen.
- Fix for Acknowledging all open pumps alarms when you only meant to acknowledge.

- Changed the way Alarm viewer works to match the HMI. Only 'Normal' state Alarms will be able to be cleared. An alarm will change to
- Normal when the controller turns off an Alarm. Acknowledge will just turn and 'Active' state Alarm to 'Inactive' state.

Version 3.27e (2/09/21)

- Restored shutdown override functionality. A zero-speed command on shutdown was introduced in version 3.26 that occurred regardless of the shutdown override setting.
- VFD cooling system display items are now updated dynamically. In version 3.26 it was possible for the VFD liquid coolant controls to be hidden, even when the VFD was liquid cooled.

Version 3.26e (1/29/21)

- Added DC control voltage display.

Version 3.25.1e (1/18/21)

- Stroke counts, fluid end lube pressure switch status, and other additional grease system data are now retrieved from first-generation electric pumps (Toshiba VFDs).
- Removed a reference to several unused graphics resources that could cause loading errors when opening multiple operator panel windows.
- Added “Please wait, loading...” indicators as user feedback when opening additional operator panel or pump detail views.

Version 3.25e (1/12/21)

- VFD coolant pressure and temperature are now always populated in ComHub if the values are sourced from discrete sensors. Previously, the values were populated only when the VFD was online.
- Compatible with all current and prior generations of IPC electric fracturing pumps.

Version 3.24e (9/9/20)

- Added pump lube oil pressure, pump lube oil temperature, VFD coolant pressure, hydraulic horsepower, and discharge total to data transmitted to Com Hub for Fleet Center application.

Version 3.22e (8/27/20)

- Added winding A, winding B, winding C, DE bearing, NDE bearing, and VFD coolant temperatures to data transmitted to Com Hub for Fleet Center application.

Version 3.21e (8/20/20)

- Added ability to add new pumps while a recording is in progress.
- Added watchdog timeout.
- Lube oil temperature high and low alarm limits have now changed to lube oil temperature alarm and lube oil temperature shutdown.
- Added Grease level alarm, Coolant pressure shutdown, Coolant recirculation shutdown, Coolant temperature shutdown, Drive coolant shutdown, Lube oil temperature shutdown, CDC temperature, IGBT 1,2,3 temperatures, Max CDC temperature, Active current amps, Reactive current amps to recordings.

Version 3.20.1e (6/9/20)

- Added backwards compatibility for IPC Electric controller versions 2.10, 2.6.3, 2.4.2, 2.3.4, and 2.3.3.
- Added pump database which stores IPC controller and drive IP addresses for each pump. Pumps and their addresses can now be selected from a list. The previous method of entering IP addresses directly is also available.
- Improved reconnection times after hot-swapping ethernet cables or reassigning pumps between lanes.
- Added ability to select Comm Hub and/or AccuFrac PC as IPC data recipients (both can be selected simultaneously).
- Added ability to select between Comm Hub or AccuFrac PC as the inline pressure data source (one or the other can be selected).

- Improved Fluid End Lube control UI and added fluid end stroke count display.
- Improved loading times when opening new windows or switching skins.
- Fixed UI skinning engine, broken in version 3.19.
- Other UI improvements.

Version 3.19e (5/22/20)

- Improved Comm Hub connectivity and error detection. Comm Hub server and client connections, including inline pressure and pump data broadcasts, are now automatically restored after connection loss.
- Added Comm Hub state indicator(s) to main operator panel to display connection status of Job Center inline pressure and IPC pump data broadcasts.
- Added send and received real time data display to Comm Hub client dialog for easier/faster user verification if needed.

Version 3.18.4e (5/5/20)

- Rescaled the following VFD parameters by a factor of 0.1 and added one decimal of precision

P11.05	IGBT Bridge 1 Temperature
P11.06	IGBT Bridge 2 Temperature
P11.07	IGBT Bridge 3 Temperature
P11.08	Rectifier Bridge Temperature

Version 3.18.3e (5/2/20)

- Fixed communication issue with new VFD process data added in version 3.18e.
- Added additional diagnostic information in the application's error log.,
- Fixed the application's shortcut title on the desktop.

Version 3.18.1e (4/24/20)

- Fixed the application's shortcut title in the program menu.

Version 3.18e (4/23/20)

- Added additional VFD process data for each pump to the drive monitor window, data recorder, serial output, and Communication Hub interface.

Version 3.17e (12/13/19)

- Added fluid end low lube level indicator
- Improved Communication Hub support

Version 3.16e (8/22/19)

- Added 25 additional process variables to data recorder, including diagnostic VFD information.

Version 3.15e (8/05/19)

- Updated Power Center and Communication Hub support.

Version 3.14e (5/01/19)

- Added skip speed control, which enables up to two skip speed rpm bands to be specified, in order to minimize system operation at resonant frequencies.
- Added generator load shedding support when used with AccuFrac Power Center and Communication Hub.
- Added pump rate reference display to throttle increment/decrement buttons.
- Corrected typo that prevented recall of saved throttle steps for pump 16.

Version 3.11.3e (3/04/19)

- Added individually assignable pump RPM step sizes.

Version 3.10.8e (1/29/19)

- Improves network throughput of global commands (reset all discharge totals, zero all discharge pressures, acknowledge all alarms).
- Corrects memory constraint associated with multithread attempts to establish network connections with offline equipment.

Version 3.10.7e (1/17/19)

- VFD speed set point is now reset to zero if a VFD fault occurs, matching behavior of previous IPC PC version(s) 2.x and HMI.

Version 3.10.6e (1/02/19)

- Restored ability to set individual pump over pressure trip set points.
- Pump controller IP address changes are now immediately reflected on the user interface.
- Added “OK” and “Cancel” buttons to the Ethernet communication settings dialog.
- Fixed nuisance thread exception that could occur on application exit.
- Motor winding phase A alarm limits are now labeled as °F or °C instead of RPM.
- Cosmetic improvements.

Version 3.9e (12/04/18)

- Project ported to Microsoft .NET (4.6.1).
- Maximum number of pumps increased to 24.

Version 2.11e (8/11/15)

- Added drive end bearing temperature, non-drive end bearing temperature, winding A temperature, winding B temperature, and winding C temperature to recorded data files.

Version 2.10.1e (7/23/15)

- Corrected the column header of recorded files.
- Fixed a format error which caused one column in recorded files to be unreadable.

Version 2.10e (7/07/15)

- Added support for 16 pump groups.
- Added ability to reset VFD faults.
- Added auto pressure and rate feature.
- Added ability to change the selected pump on the monitor screen without having to close and reopen the window.

Version 2.9.2e (5/13/14)

- Initial release for electric fracs. Adapted from IPC PC for conventional fracs version 2.8.7.