ILS OPL

Pumpbox Button Programming

Beta

Scope of Presentation

- Programming options: computer vs. direct with pumpbox buttons
- Programming ILS OPL compared to Summit E
- Loop summary (sticker on dispenser lid)
- Loop logic: Run, Print, Interrogation, Pump Setup, Washer Setup
- Pump setup sub loop
- Washer setup sub loop
- Troubleshooting

Programming: Computer vs. Pumpbox Buttons

The ILS OPL is programmed either at the pumpbox, or from a computer PC using Beta software. We recommend programming using a computer if you want to offer your customer detailed report printouts, since it's faster to enter the information using a keyboard. Please refer to the main installation presentation for a basic guide to programming via a computer. This presentation reviews how to program at the pumpbox without using a computer.

Many installers use the data features with ILS Max and ILS, but don't with ILS OPL, since the accounts are often smaller. For these installers, programming via the pumpbox screens and buttons is simple and fast, because they don't need to program in formula names, chemical costs, and other data which is used in reports.

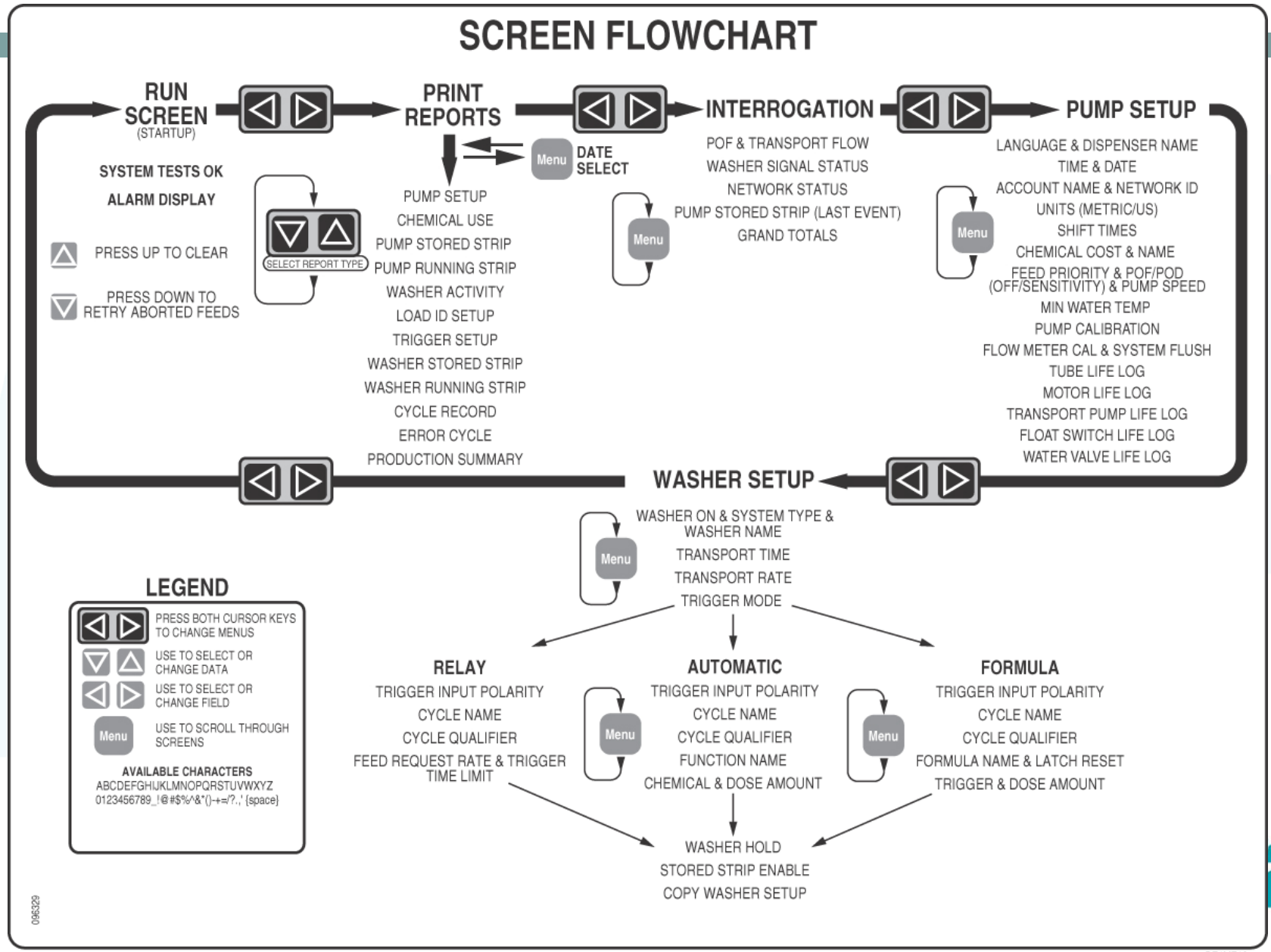
This presentation details how to quickly program an ILS Max to run in the basic modes, formula and relay. We recommend learning these basic modes, which are very similar to our other dispensers such as Summit E and Summit XL, before learning any advanced modes such as PDCI, enhanced relay, or automatic.

Many screens are "optional, needed only if you'll print out reports later." If you avoid programming this optional data, you'll finish programming quickly. The ability to input this data directly was included since you could also print reports directly from the pumpbox via a briefcase printer, which became obsolete several years ago.

Comparison with Summit E

- Programming
  - Summit E is programmed using the programmer/formula selector. Since Summit E only serves one washer, you program the dispenser for each washer seperately. It is possible to program one dispenser, make a copy of the program, and then copy it onto other dispensers
  - ILS OPL can be programmed either direct from the pumpbox, or by PC software.
- Loops
  - Summit E has one menu “loop”. If you scroll through the menus, you see them all and return to the first menu, so you can scroll through them repeatedly.
  - ILS OPL uses 5 menu “subloops”. You press the left and right arrows on the front of the dispenser to switch from 1-5. You have to also be holding down the blue button on the main PCB (ensuring you have a key to access unit) to access 4 & 5
    1. *Run screen*
    2. *Print reports*
    3. *Interrogation (check washer/POF status)*
    4. *Pump setup*
    5. *Washer setup*
  - Use the menu button to go through the various screens in each ILS Max subloop
  - A programming screen flowchart is located under the dispenser lid, and is shown on the next page

Loop Summary Sticker



Menu Loop Logic

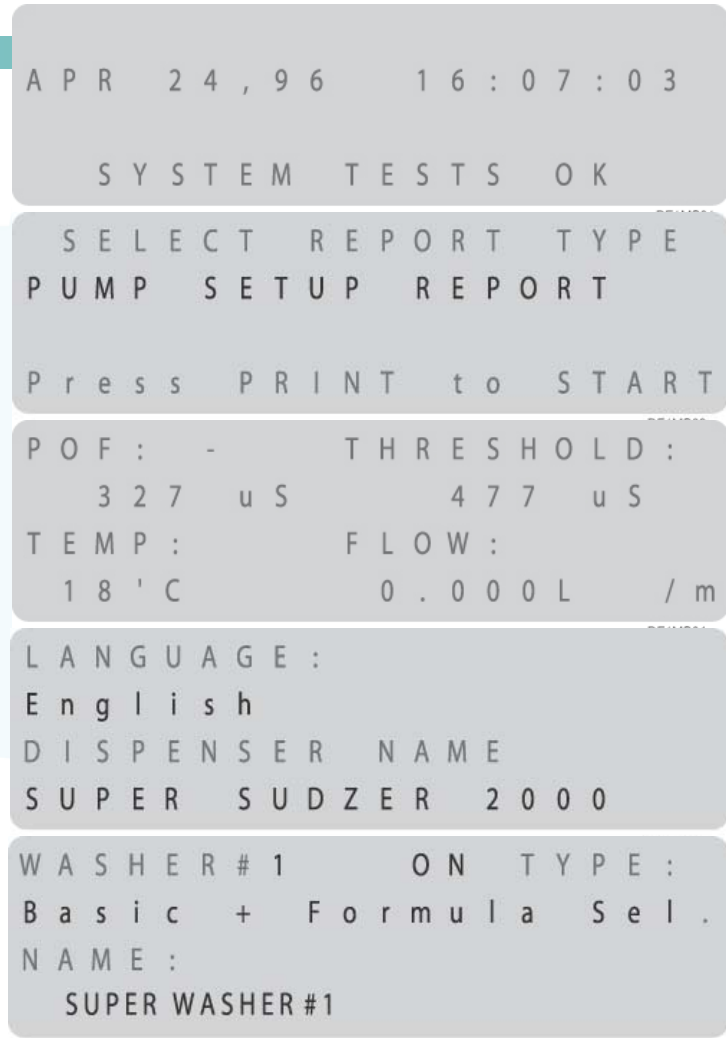
1.Run screen: Displayed in normal operation

2.Print reports: This function isn't used much; printing is done from DNet instead of direct from the ILS OPL USB port.

3.Interrogation: Used to check system status. Can be accessed without using a key to the dispenser.

4.Pump setup: Programs settings for the pumps, which are applicable for all washers, such as chemical cost, chemical names, & POF calibration.

5.Washer setup: Washer specific info such as washer name, trigger mode per washer, transport time to each washer

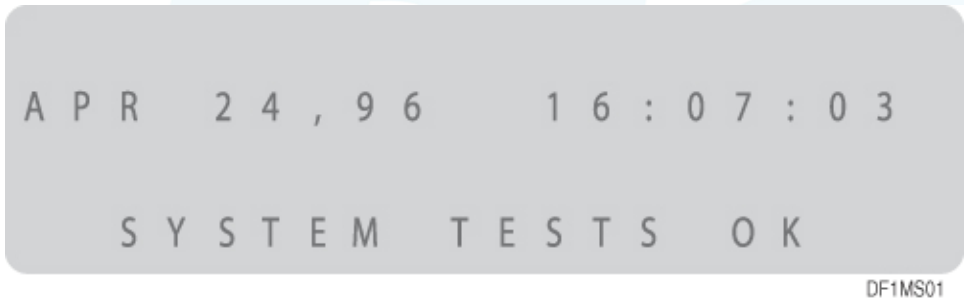


To go from loop to loop, press the left and right arrows simultaneously.

*Note that you have to open the dispenser lid with a key and hold down the **blue button** on the PCB while pushing the left and right arrows to get into the pump setup and washer setup screens. Once you've reached one of these screens, you cycle through the sub loop of menus with the menu button.*

Menu Loop Logic: Run Screen

Run screen: Displayed in normal operation



Menu Loop Logic: Print Reports

Print reports:

- This function isn't used; printing is done from DNet instead of direct from the ILS OPL USB port.

Menu Loop Logic: Interrogation

Interrogation:

- Used to check system status. Can be accessed without using a key to the dispenser.
- Interrogation is used principally for troubleshooting, and will be covered in the troubleshooting section of this presentation.

Pump Setup

Pump setup: Loop begins with the language screen

- Programs settings for the pumps, which are applicable for all washers, such as chemical cost, chemical names, & POF calibration.
- Use the menu key to cycle through the screens
- Entering the dispenser name is optional, only needed if you'll be creating report printouts later

DF1MS05

- On the next screen, set the time and date. It's vital to have this info correctly set so you can track parts life and perform troubleshooting

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- Select whether you want liters or US gallons as the unit of measurement by using the up or down arrow to **make your selection flash on/off**

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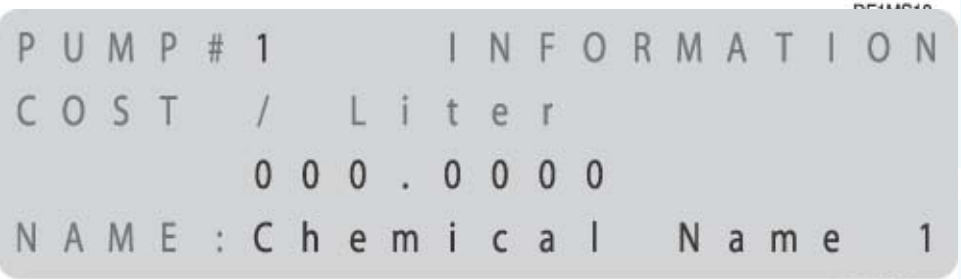
Pump Setup 2



- Setting shift times is optional, needed only if you'll print out data later for the account
- Setting chemical cost is optional, needed only if you'll print out chemical cost reports later

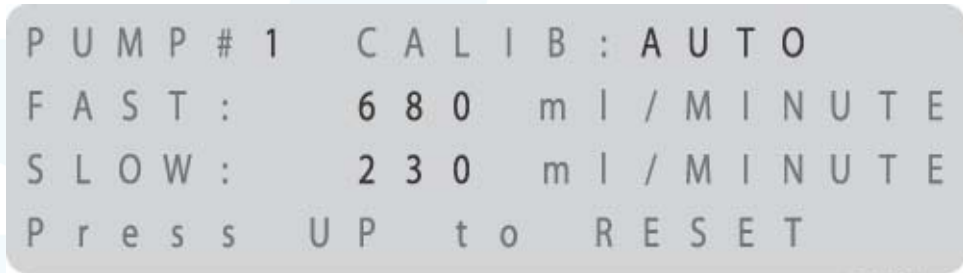
Low = 150 uS over baseline: softener, starch, non-built det
Medium = 5,000 uS over baseline: built detergent, sour/soft
High=30,000 uS over baseline: alkali, bleach, sour

- POF & Pump Speed
  - It's critical to turn POF (proof of flow) off for non conductive chemicals such as hydrogen peroxide, or the system will report "POF failure"
  - Keep POF on low, medium, or high for all other chemicals (Highlight OFF & press up arrow to change to these settings)
  - **When in doubt, set to LOW, with OFF for peroxide**

Pump Setup 3

Pump setup calibration

- You can pick auto calibration or manual
- Select auto calibration so the system will constantly auto-calibrate, boosting accuracy and performance
- When set to ‘auto’ the screen shows the most recent values
- The manual calibration screen appears when doing a manual calibration from the screen above; the need to manually calibrate is rare, and occurs when dose sizes are under the minimum for autocal, chem is very very thick, and/or delivery distances are extremely long



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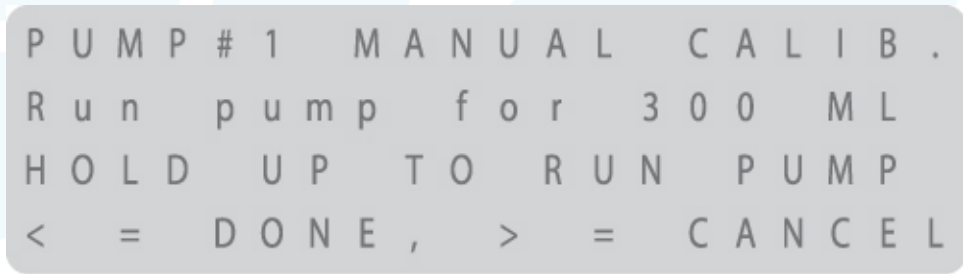

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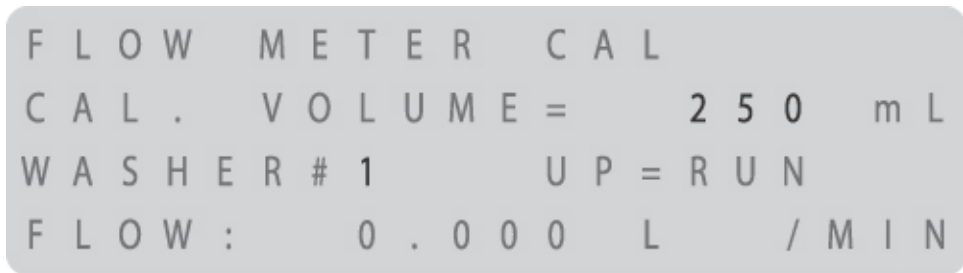
Flow meter calibration:

- Enter the value in ml on the tag from the flow meter manufacturer, located on the break tank bracket
- Generally you only have to recalibrate when replacing a float switch, which is rare



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Pump Setup 4: System component life tracking

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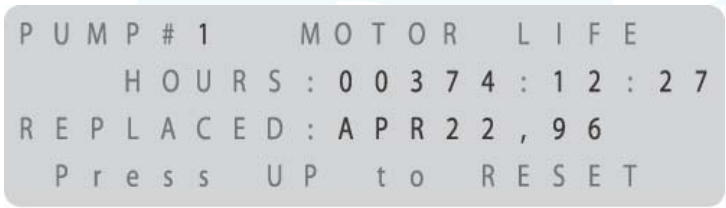

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DF1MS20

DF1MS21

These screens let you track component life.

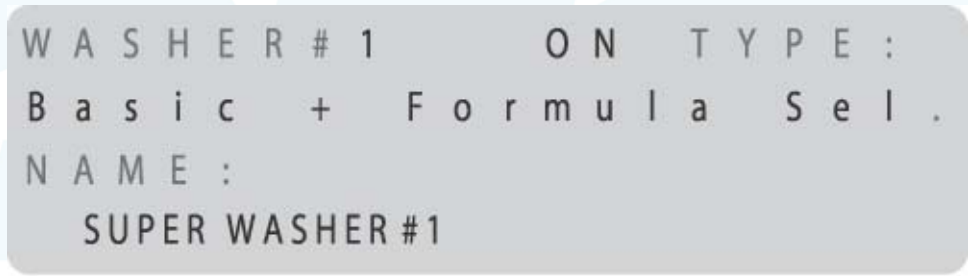
- The factory programming date is automatically logged as the initial “replaced” date
- Tracking life on motors and tubes will let you establish a maintenance schedule, so you can replace parts before failure and thereby reduce system downtime and trouble calls
- After replacing a part, push the up arrow to reset the date

Washer Setup

Washer setup screens: These are for programming washer specific info such as washer name, trigger mode per washer, transport time to each washer

First screen

- Turn each washer you'll pump to on
- Select trigger module configuration:
  - **Basic**= Single trigger module for relay mode
  - **Basic+ Formula Sel**: Single trigger module for formula mode
  - **Washer interface:** Used in ILS Max emulation mode to allow POD, or Proof of Delivery
- Washer name: entering this is only needed if you'll be using data to print reports



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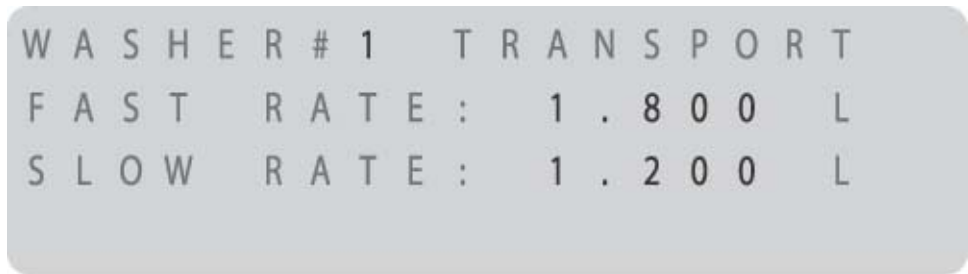
Transport time screen: enter a transport time in seconds for each washer

Transport rate screen: leave the default settings on this screen as-is, unless you're doing advanced programming or troubleshooting



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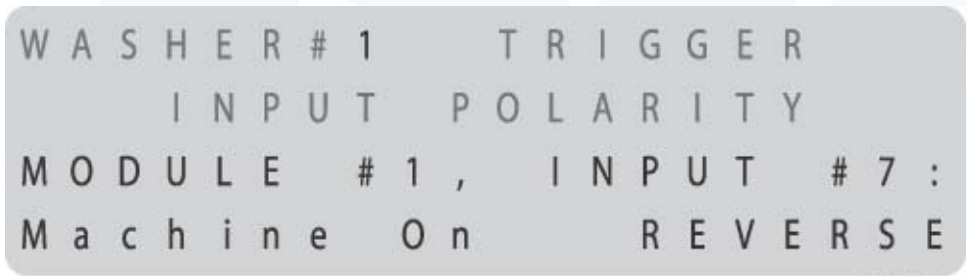
Washer Setup

DF1MS25



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DF1MS27

Mode screen: Select the dose mode for each washer. This presentation provides an introduction to the basic two modes only:

- –Formula
- –Rely

Trigger polarity: Generally you don't need to alter trigger polarity. Exceptions:

- –Using a drain signal
- –No washer on signal available, so you set washer on input to "Reverse", so that signal isn't required

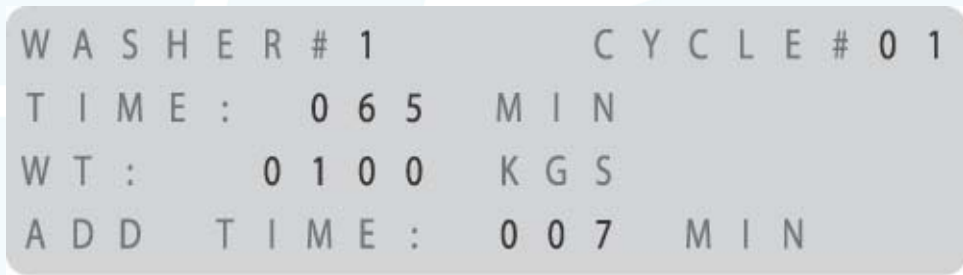
Cycle name: entering this is only needed if you'll be using data to print reports *(reports will use the cycle name, not the formula name when they print)*

Washer Setup

Cycle qualifiers: Optional screen, allows system to identify cycle names for reporting

DF1MS28

Cycle time & weight: Optional, only required for reports.



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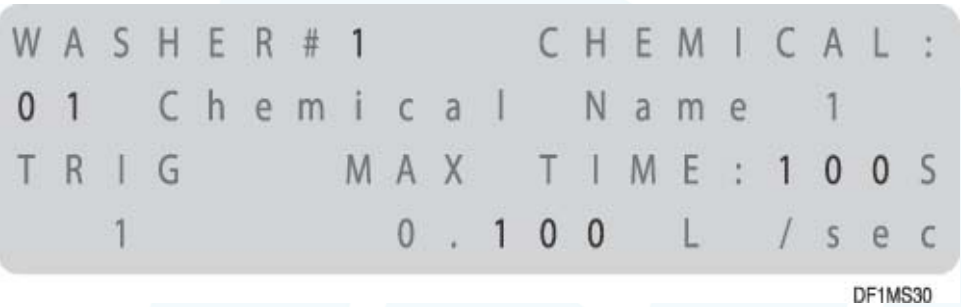
Washer Setup: Relay Mode



Smart relay mode reduces installation time vs. normal relay mode which just runs the pump while the trigger is on, by allowing the installer to program in target volumes, rather than check flow rates for each pump and then calculate the trigger times they need per pump per formula.

Call Rate & Time Limit:

- Relay mode on ILS OPL is the same as Summit E:
- **Chemical dose size=trigger seconds x call rate**
- So, for a 0.5 liter dose using the 0.1 L/sec call rate shown in the example on the right, you'd use a 5 second trigger.
- For USA users, note the call rate will be in oz/sec if you've picked "US Gal & oz" instead of liters
- Set time limit for the trigger, so if it's stuck on the dispenser will limit the dose amount and trigger an error message

Washer Setup: Formula Mode

Formula name: Optional screen only required for reports. *(if you enter cycle names and formula names, keep them the same to avoid confusion, and not the cycle names will show up on reports)*

DF1MS33

Formula programming screen:

- Program up to three doses per trigger
- Select trigger number, then pump number (shown as 00 no selection in the example), and then the dose volume in liters or oz on the bottom line
- If you want more than one dose for the trigger, change to “Dose #2” and program the second dose
- Repeat for all triggers, for all formula mode washers

DF1MS34

Washer Setup

DF1MS35

DFMS36

DF1MS37

Washer Hold: This screen is only used in ILS Max emulation mode:

- Normal=Hold until other doses complete
- Hold until POD=Hold until confirmation of chemical delivery
- Hold until alarm=Puts any washer experiencing an alarm on hold until the error is fixed

Strip Chart:

- Holds 1400 lines of even data for all washers.
- Keep this on for all washers during installation.
- If you have trouble with any washer(s), turn it off for those which are not having trouble, so more data can be stored on the washers needing troubleshooting

Copy Washer Setups: This screen allows you to copy setups from one washer to another. So, if you're setting up 3x100 lbs machines in formula mode, you can just set up one and make two copies, to reduce programming time by 2/3.

ILS OPL

Troubleshooting without a Computer

Beta

Troubleshooting

We've reviewed programming, and hopefully taken the mystery out of how to quickly program an ILS Max without using a computer. Computers can also be useful for viewing a lot of system performance data quickly, for troubleshooting. It's important to know a few troubleshooting tips, though, so you can troubleshoot without having to pack a laptop.

The interrogation menus, which we skimmed over without reviewing in learning programming, are your troubleshooting tools. As with the other subloops, you pick the first screen shown below with the left and right arrow keys, and then use the menu button to cycle through the sub loop.

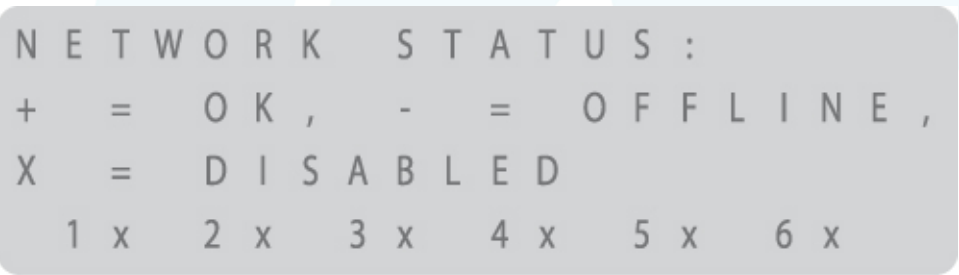
POF Status & Flow Rate:

- This screen allows you to monitor the "uS" (or conductivity in microsiemens).
- For best results, the minimum conductivity reading during the feed should be at least 10% higher than the threshold setting for the particular chemical.
- When the conductivity exceeds the level programmed, such that proof of flow is positive, the "POF: -" will change to "POF: +"

DF1MS04

Troubleshooting

DF1MS39



DF1MS41

Washer Status:

- Line 2 shows whether POD is on or off
- Line 3 shows TR7 #1 is online, all triggers off "-"
- Line 4 shows
  - bleach defeat (BD) off
  - Formula selected: If none shown and you're in formula mode, reset FS1600 address to ensure it's set correctly
  - Sequence start light on or off

Network status:

The bottom line shows which washers are on and communicating with the pumpbox.

- If "X", enable the washer in the setup screen
- If "-", the washer's enabled, but the modules aren't communicating, so check TR7 module addressing and wiring
- If "-" for a non-existent washer, turn the washer off in the setup screen to prevent error messages

Troubleshooting

Pump Stored Strip:

- Use the up and down arrows to scroll through washer events.
- These allow you to see a record trigger events and error messages, to verify correct system operation and see history for troubleshooting purposes.
- The next screen shows the messages, which are displayed on the screen during operation, and logged as data on the pump stored strip

DF1MS42

Troubleshooting Status Messages

Message	Meaning
Cycle Start Ignored	A Cycle Start code was received while a cycle was already running. This is normal with some chart-driven washers which have multiple start points for some cycles.
Feed Request Fixed Dose Mode Feed Request Relay Mode Feed Request from Network	The dispenser is acknowledging a chemical feed request. Messages include requesting washer, amount and type of chemical.
Proof of Flow Confirmed Proof of Flow Assumed Proof of Delivery Confirmed Proof of Delivery Assumed	Indicate normal feed and delivery events that occur during all chemical feeds. An assumed message indicates that the POF/POD feature is disabled for the indicated chemical, or that no POD cell is present.
Feed Retry, Manual	A feed retry after a feed error is the source of the chemical request. The operator has pressed the ▼ key to retry a failed feed and clear an alarm.
System Power On System Power Off	These messages indicate the date and time power was turned off or on to the dispenser pump box.
Washer Hold Set Washer Hold Released	These messages indicate when the specified washer was placed on hold or when the hold signal was released.
Auto Cal Status Manual Cal Status	Indicate when either manual or auto-calibration of a chemical pump has occurred.
Manual Memory Purge Logged Data Cleared (or) Setup Data Cleared	A memory purge occurred. Memory is purged at the factory before shipment. It may also be purged at installation by trained service personnel.
Error Reset	The operator reset a system error by pressing the ▲ or ▼ keys.
Manual Flush Started Manual Flush Stopped	Indicates when a manual transport flush occurs. The washer number is included in the message.
Washer Network Link Established	Indicates, at power up, that the selected washer networks are communicating with the pump box.
System Check OK	Normal status when power is turned on at the pump box.

Be sure to fix the source of an alarm before clearing the alarm; clearing the alarm first may result in missed chemical feeds or compromised system performance. ***To clear an alarm, press the up arrow.***

Troubleshooting

Problem	Solution
Pumpbox fails to autoprime	It is possible that a chemical pump will fail to auto-prime if the chemical supply tube is too long. If the pump fails the first time, it is best to wait for a second chemical call. If the pump fails to auto-prime again: 1. Check to see that POF for the pump is set on. *Note: A chemical pump will not auto-prime if the POF feature is off.* 2. Check for air or air leaks in the uptake lines. 3. Check for air leaks in the fittings from the break tank to the chemical pump(s). 4. Check for empty chemical drum. 5. Too long a length or too large a diameter chemical supply tube may require several prime attempts when starting a new system. 6. Pumps running at slow speed take longer to prime than pumps running at fast speed.
Transport System Error	This indicates that the level in the break tank did not go from the upper to lower level (float switch setpoints) within the specified maximum time. If the inflow to the break tank is too low, the message may also say Water Supply Problem. 1. Check that the transport pump is operating and that there are no flow restrictions in the transport tubing. 2. Check the manifold filter. Clean if necessary. 3. Check for air leaks in the suction side of the transport pump. 4. Check the entire manifold for suction leaks.
Communication problems	This is indicated on the washer status interrogation screen or by repeated Communication Link error alarms. Check for duplicate module addresses or loose BetaLink connections on the affected washer.
No flow to all washers	The level of water in the break tank varies during operation. However, it should not go below the lower float switch. 1. If break tank is empty, check for: • Water source turned off. • Stuck/misadjusted float switch. • Solenoid valve inoperative/failed. - Check solenoid valve. - Check filter built in to the solenoid valve. - Check circuit board connections and solenoid drive. 2. If break tank is full, check for: • Stuck/misadjusted float switch. • Failed chemical pump tube. Check for cracks or leaks. • Clogged manifold filter. Check and Clean if necessary • Broken manifold. Check for cracks or leaks.

Troubleshooting “Feed Rejected” Messages

Message	Meaning	Action Required
Feed Rejected Pump Box Offline	The pump box will not feed chemicals during a manual chemical pump calibration.	Do not perform a manual calibration while the wash aisle is active.
Feed Rejected Washer Drain Open	Drain status has changed.	Check washer setup drain polarity.
Feed Rejected Washer Off	Washer status has changed.	Check washer setup machine on polarity.
Feed Rejected Washer Not Selected	Network error.	Check pump setup.
Feed Rejected Data Link Erratic	Unreliable communication to washer	Check BetaLink cable and washer module connections.
Feed Rejected Transport Pump Error	Pump did not run, or current is too high.	Check pump motor, PCB, wiring and connections.
Feed Rejected Transport System Error	Transport system flow rate is below limits prior to a chemical feed.	Check the transport tube for blockage or air leaks.
Feed Rejected Unknown Formula	A chemical request has been received in PDCI formula mode, but the dispenser doesn’t know what type of cycle is running.	Check washer setup. May be caused by operator error or power outage.
Feed Rejected Low Water Temperature	The water supply is too cold for the selected chemical.	Check the hot water supply temperature valve setting and temperature probe at POF.
Feed Rejected Water Supply Problem	Transport water flow failed or the break tank is empty during a chemical feed.	Check the break tank, water supply pressure, float switches, inlet valve, filter, transport pump, motors and chemical pumps.

Troubleshooting Other Messages

Message	Meaning	Action Required
Proof of Flow Failure	Chemical not detected at pump box	Check supply drums for chemical level. Check suction tube, uptake hose and pump tube for air leaks and blockage.
Proof of Delivery Failed	Chemical not detected at washer. Applies only to ILS Max emulation systems.	Check transport tube for leaks or breaks. Check POD cell for air. Clean POD cell.
Relay Mode Trigger Time Limited Exceeded	Too much chemical requested.	Check washer control and washer setup.
Feed Rejected High Water Temperature	Water temperature is > 150°F or 70°C.	Check cold water supply and temperature valve setting.
Delivery: Transport System Error	Transport system flow rate below limits after a chemical feed.	Check transport tube for air leaks and blockage. Check the manifold filter and transport pump.
Delivery: Water Supply Problem	Transport water flow failed or the break tank is empty after a chemical feed.	Check break tank, water supply pressure, float switches, inlet valve and filter.
Feed Aborted Water Supply Problem	Transport water flow failed or the break tank is empty during a chemical feed.	Check the break tank, water supply pressure, float switches, inlet valve and filter.
Feed Aborted Transport System Error	Transport system flow rate below limits during chemical feed.	Check transport tube for blockage or air leaks. Check manifold filter and transport pump.
Feed Aborted Chemical Pump Error	Pump did not run, or current is too high.	Check pump motor, PC board, wiring and connections.
Worn Chemical Pump Tube	Caution only.	Replace pinch tube and reset date changed.
Washer Network Link Lost	Unable to communicate with washer.	Check BetaLink wires, remote modules, connections, network and setup.

ILS OPL

Programming without computer software