Minimize Downtime with Condition-Based Instrument Diagnostics

Agilent CrossLab
Smart Alerts software
Regular maintenance keeps instruments performing at their peak—and keeps costly downtime in check.
However…

Many variables can drive the need for more frequent maintenance than the manufacturer recommends.

High sample loads  Multiple shifts  Harsh operating conditions
Knowing which instruments are functioning well—and which need immediate attention—can be challenging.
The Solution: Condition-Based Instrument Diagnostics

Agilent CrossLab Connect Smart Alerts software:

• Monitors actual instrument use.
• Sends you timely recommendations based on extensive Agilent experience and instrument testing, so you know when to replace consumables or schedule preventive maintenance.
• Gives you a lab-wide view of instrument status. You immediately know which instruments are available and which need attention.
• Direct from Smart Alerts you can quickly inform Agilent when you need service.
For LC maintenance, we have tested these solvent compositions:

- Reverse phase—routine
- Reverse phase—buffer + organic
- Reverse phase—high salt
- Normal phase
So, How Does It Work?
Smart Alerts: Easy as 1, 2, 3

1. Install the software on any PC in your lab in 10 minutes or less
   No Internet connection required

2. The software compares instrument-use data against application-based insights from Agilent (customizable)

3. Receive an email when recommended limits are reached
Smart Alerts Dashboard
Early maintenance feedback settings

Set preventive maintenance alerts:
• Use default
• Adjust based on experience
Choose from a wide range of consumable alerts

**Smart Alerts Dashboard**
Early maintenance feedback settings
Smart Alerts Dashboard
Early maintenance feedback settings

Choose between usage- and calendar-based alerts

Enable Schedule-based Alert
Consumable Alert Interval: Due 12 Months ▼ after last service
Warning Alert: Send 1 Months ▼ before scheduled service date

Enable EMF-based Alert

<table>
<thead>
<tr>
<th>Enable</th>
<th>EMF Name</th>
<th>Current Value</th>
<th>Units</th>
<th>Limit Threshold</th>
<th>Warning % of Limit</th>
<th>Warning Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front Inlet - Liner Injections</td>
<td>788</td>
<td>Injections</td>
<td>200</td>
<td>80%</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>Front Inlet - Liner Age</td>
<td>276</td>
<td>Days</td>
<td>90</td>
<td>80%</td>
<td>72</td>
</tr>
</tbody>
</table>

Last Service Date: 02-Sep-2019
Smart Alerts Emails
Consolidate data from all connected instruments

Receive alerts for:
- Preventive maintenance
- Consumable replacement
- “Past due” and “upcoming” actions
- Instrument faults
Smart Alerts Emails
Consolidate data from all connected instruments

Links make it easy to:
• Order parts
• Request preventive maintenance service

To order Agilent parts, go to [https://www.chem.agilent.com/store](https://www.chem.agilent.com/store).
To schedule a preventative maintenance, or other service, go [here](https://www.chem.agilent.com/store).

Request PM service [here](https://www.chem.agilent.com/store).
Order consumables [here](https://www.chem.agilent.com/store).

Smart Alerts
Maintenance Notification

April 14, 2020

Minimize Downtime with Condition-Based Instrument Diagnostics
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Smart Alerts Emails
Consolidate data from all connected instruments

Summary of all active alerts across your lab

Maintenance Status Summary

<table>
<thead>
<tr>
<th>System Name</th>
<th>Maintenance Past Due</th>
<th>Upcoming Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQ536 GCMS</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>AQ535</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

April 14, 2020
**Smart Alerts Emails**

Consolidate data from all connected instruments

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### System Details

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
<th>Status</th>
<th>Current Value</th>
<th>Limit</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>7890b</td>
<td>GC System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7893A</td>
<td>Autoinjector Module</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7890B</td>
<td>Chromatograph</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Needle - Front Injector** past due

- **EMF** Instr EMF: Needle Injections
  - Current Value: 138
  - Limit: 100
  - Progress: 138%

Order consumables [here](#).

**Column - Column 1**

- **EMF** Instr EMF: Injections
  - Current Value: 534
  - Limit: 600
  - Progress: 89%

Order consumables [here](#).

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Details grouped by instrument in a single email

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Smart Alerts Maintenance Notification

Once alerts are triggered, they can be reviewed and settings can be modified in the Instrument Management section of the Agilent CrossLab Dashboard. To set up and manage alerts, go to the Agilent CrossLab Dashboard.
Instrument Fault Alerts

Diagnose downtime and fix the problem faster.

<table>
<thead>
<tr>
<th>System Configuration</th>
<th>System Name</th>
<th>Fault Status</th>
<th>System Type</th>
<th>IP Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Venus 6690</td>
<td></td>
<td>LC System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC cap-63</td>
<td></td>
<td>LC System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TQ5MA</td>
<td>Fault</td>
<td>GC System</td>
<td>130.20.20</td>
</tr>
<tr>
<td></td>
<td>LC cap-13</td>
<td></td>
<td>LC System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC cap-13</td>
<td></td>
<td>LC System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agilent LC</td>
<td></td>
<td>LC System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TQ588 GC</td>
<td></td>
<td>GC System</td>
<td>130.20.20</td>
</tr>
<tr>
<td></td>
<td>LC cap-15</td>
<td></td>
<td>LC System</td>
<td></td>
</tr>
</tbody>
</table>

System Faults

<table>
<thead>
<tr>
<th>System Type</th>
<th>OC System</th>
<th>Module: BR40 Gas Chromatograph</th>
<th>Description</th>
<th>Fault Code</th>
<th>Fault Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>BR40 Gas Chromatograph Model: 62790A</td>
<td>Front Hal-Flow ShutDown</td>
<td>ANELT_3_1010_1010</td>
<td>14-Sep-20 13:45 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BR40 Gas Chromatograph Model: 62790A</td>
<td>Instrument - Column Flow ShutDown</td>
<td>BR124LUNICT_3317EM_COLUMN_FLOW_SHUTDOWN</td>
<td>14-Sep-20 13:45 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BR40 Gas Chromatograph Model: 62790A</td>
<td>Back Detector - Pneumatic 1 Mobile Communication Failure</td>
<td>DETECTOR_3_960_1000000_960</td>
<td>14-Sep-20 13:45 PM</td>
</tr>
</tbody>
</table>

Fault Status Summary

<table>
<thead>
<tr>
<th>System Name</th>
<th>Fault Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR40 GC</td>
<td>3</td>
</tr>
</tbody>
</table>
Instrument Fault Alerts (dashboard view)

- Notify you when your system goes down and tell you why.
- Help you save time and get your instrument running again quickly—with or without a service call.

### Fault Indicator

<table>
<thead>
<tr>
<th>Enabled</th>
<th>System Name</th>
<th>Fault Status</th>
<th>System Type</th>
<th>Last System Contact</th>
<th>Building</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>1250 laq01</td>
<td></td>
<td>LC System</td>
<td>25-Oct-2019 03:31:01 PM</td>
<td>B</td>
<td>204</td>
</tr>
<tr>
<td>+</td>
<td>1250-2 lap02</td>
<td></td>
<td>LC System</td>
<td>25-Oct-2019 03:31:23 PM</td>
<td>B</td>
<td>204</td>
</tr>
<tr>
<td>+</td>
<td>1250 laq03</td>
<td></td>
<td>LC System</td>
<td>25-Oct-2019 03:32:08 PM</td>
<td>B</td>
<td>204</td>
</tr>
<tr>
<td>+</td>
<td>1250-2 lap04</td>
<td></td>
<td>LC System</td>
<td>25-Oct-2019 03:29:29 PM</td>
<td>B</td>
<td>204</td>
</tr>
<tr>
<td>+</td>
<td>1250-3 lap11</td>
<td></td>
<td>LC System</td>
<td>25-Oct-2019 03:29:18 PM</td>
<td>B</td>
<td>204</td>
</tr>
<tr>
<td>+</td>
<td>1290 Infinity II multiple lap1 5</td>
<td>0</td>
<td>LC System</td>
<td>25-Oct-2019 03:29:30 PM</td>
<td>B</td>
<td>204</td>
</tr>
<tr>
<td>+</td>
<td>Intuvo AQ143</td>
<td></td>
<td>GC System</td>
<td>25-Oct-2019 03:31:40 PM</td>
<td>A</td>
<td>101</td>
</tr>
<tr>
<td>+</td>
<td>1250 multi-pump lap16</td>
<td>0</td>
<td>LC System</td>
<td>25-Oct-2019 03:29:28 PM</td>
<td>B</td>
<td>204</td>
</tr>
<tr>
<td>+</td>
<td>1250 Inf II lap-29</td>
<td></td>
<td>LC System</td>
<td>25-Oct-2019 03:31:13 PM</td>
<td>B</td>
<td>204</td>
</tr>
</tbody>
</table>
New: Remote Assist

Fault history

Pre-populated with system details

Pre-populated with latest instrument error (this is editable)
You Decide What to Do Next

**Consumables**
Replace them as you normally do.

**Preventive maintenance**
If you have an Agilent service agreement that includes preventive maintenance, call Agilent to schedule your service.
If not, consider purchasing on demand preventive maintenance from Agilent.

**Instrument fault alerts**
Solve instrument problems more quickly.
When a service call is needed, Remote Assist makes it fast and easy.
Which Instruments Can You Connect to Now?

- Agilent 7890 GC and GC/MS systems
- Agilent Intuvo 9000 GC and GC/MS systems
- Agilent 8860 GC and GC/MS systems
- Agilent 8890 GC and GC/MS systems
- Agilent Infinity and Infinity II 1260 LC systems
- Agilent Infinity and Infinity II 1290 LC systems
What Does the Future Look Like?
Here’s What’s in Store…

Smart Alerts will expand to other instruments:
• Agilent spectroscopy
• LC/MS systems, and more

Alerts will expand to other system diagnostics:
• Predictive alerts for critical instrument component failure
• Evaluation of chromatographic attributes, and more
Agilent CrossLab
From Insight to Outcome