



Connected Solutions

Donaldson iCue™ Connected Filtration Service Technical FAQ

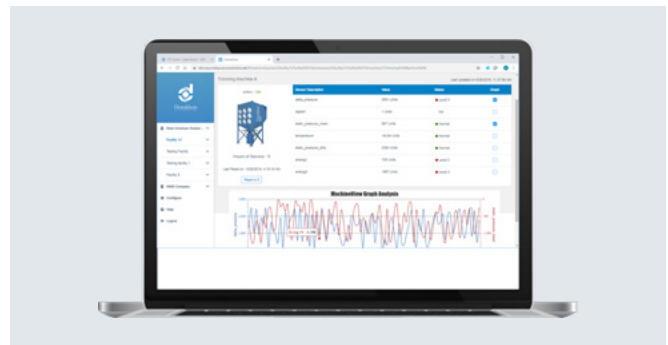
1. What is the iCue connected filtration service?

Donaldson's iCue connected filtration service monitors dust collectors, using industrial IoT technology. The service tracks dust collector status, stores historical data, and alerts you when an alarm is generated. The solution helps users better maintain and manage their dust collectors and automates data capture for compliance reporting.

2. How does the service work?

The iCue service for dust collectors is comprised of four key components that work together to deliver a comprehensive set of benefits:

- **Sensor-integrated gateway:** Captures sensor data from the collector and sends it to Donaldson's secure cloud, where our predictive analytics turn the data into actionable insights
- **Online dashboard:** Shows equipment status in near real-time, as well as historical trend data for each connected collector
- **Alarms and notifications:** Configured during set-up to alert you when maintenance actions may be required, based on deviations from pre-set parameters
- **Weekly status report:** Provides condition summaries of all connected dust collectors across your operation



3. Does the iCue service control the dust collector?

No, the iCue service is "read-only" and does not control any functions on your collector. It operates independently of your local control network (SCADA or DCS), so it does not compromise the security of control systems or internal data.

4. Can the service be customized for our operation?

Yes, the sensor-integrated gateway has four embedded sensors as well as ports to connect up to six additional sensors – four analog and two digital. Using the web-based dashboard, you set alarm thresholds based on the needs of your specific application or compliance requirements. When a data point crosses an alarm threshold, an email alert is sent out to all users of the application.

5. What are the standard embedded sensors?

These sensors are embedded in the gateway and are standard with all iCue service installations:

- **Differential Pressure (DP):** Tracks pressure drop across the filters
- **Relative Airflow:** Detects static pressure in the dirty air plenum to indicate relative changes in air velocity
- **Compressed Air Pressure:** Connected to the compressed air manifold to read the pressure of the compressed air cleaning mechanism
- **Gateway Temperature:** Reads the temperature inside the gateway, to ensure normal device function

6. How are the embedded sensors installed?

The iCue service internet gateway connects to air lines coming out of the clean and dirty air plenums in the dust collector. In most applications, these lines are already running to a dust collector controller or differential pressure gauge. The gateway taps off these lines to determine differential pressure and relative airflow. The compressed air pressure connects to the pressure manifold.

7. Are additional sensors available?

Yes, the following sensors can be added to your iCue service, depending on the needs in your process:

- **Internal Temperature/Humidity:** Mounted in the clean air side of the collector or exhaust venting, this pair of sensors records temperature and humidity inside the collector. Both sensors are built into the same sensor housing.
- **Point Level:** A rotating paddle sensor that sends an alert when particulate levels prevent the paddle from spinning. It is typically used in the hopper of a dust collector to detect plugs or bridging.
- **Particulate Monitor:** Detects particulate levels in the exhaust of the collector. The sensor can be used to send an alert when particulate levels rise due to aging filters or a tear in the filter.
- **Secondary Differential Pressure:** Tracks differential pressure across a secondary filtration stage, typically a HEPA filter.

8. How do the optional sensors connect to the gateway?

Optional sensors are wired to the gateway through a watertight cable grip at the bottom of the gateway. The sensor wires are connected to a screw terminal inside the gateway.

9. How is the gateway powered?

The gateway requires 24V DC power to operate. The installation kit includes an AC/DC converter so it can be powered from 120V AC sources. The components are designed for easy installation.

10. How is the wireless internet gateway mounted on the collector?

The gateway includes magnet mounts that enable it to easily attach to the dust collector wherever placement is most convenient.

11. Can I connect to sensors that are not on the list?

Compatibility depends on the type of sensor. The iCue service is not able to interpret data from analog sensors (4/20mA or 0-10V) not purchased from Donaldson. Some off-the-shelf digital sensors can be used with the iCue service. **Contact the iCue service support team for more information.**

12. How do I set alarm levels and what does each one mean?

You can set alarm thresholds through the dashboard on any data point tracked by the iCue service. These parameters can be configured as high- and/or low-level alarms. Each data point has two high-level and two low-level thresholds. The alarm levels serve as both a visual indication of severity and to also trigger notifications. You can disable alarm notifications, if you prefer.

13. How many users can have a login to the system?

Up to five users can have a login to the application. Exceptions can be made for operations with a large number of dust collectors.

14. Who can see my data?

Your data is secure. Each user you designate will receive a login to a private, secure dashboard. Donaldson administrators will be able to access your data for analytical purposes when needed.

15. Will the iCue service create security vulnerabilities in my control systems?

Donaldson provides the cellular communication to pass data from the gateway to the cloud. The data never touches any of your corporate networks or control systems, so it does not introduce any new vulnerabilities. Using the iCue service does not require any changes to your existing network infrastructure.

16. Can the data integrate with my SCADA or DCS system?

The iCue service uses a cloud and web-based dashboard that provides remote data access from anywhere. This is different architecture than a local control network, such as SCADA or DCS. In most cases it is not possible to import the data from the Donaldson cloud to a SCADA system, but it may be possible to manually import the data from a spreadsheet or similar file.

17. Is a mobile app available?

You can log in to the web-based dashboard from a browser on a mobile phone or tablet, but a dedicated mobile app is not part of the iCue service at this time.

18. Can the alarms be received as an email or text message?

Email is the method of alert available for all users. Text alerts are not part of the iCue service at this time.

Can I get data reports? Yes, a weekly status report showing weekly data trends and alarms is part of the iCue service.

19. Can I use the tool to get historical data?

Yes, the iCue service will store data for up to one year. This data can be graphed in the iCue application or exported to a spreadsheet.



Important Notice

Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, product specifications, availability and data are subject to change without notice, and may vary by region or country.



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