



Filter Control – Connection Guide

support.epiloglaser.com/laser-machine/fusion-ascent/system-requirements-setup/filter-control-connection-guide

July 11, 2025

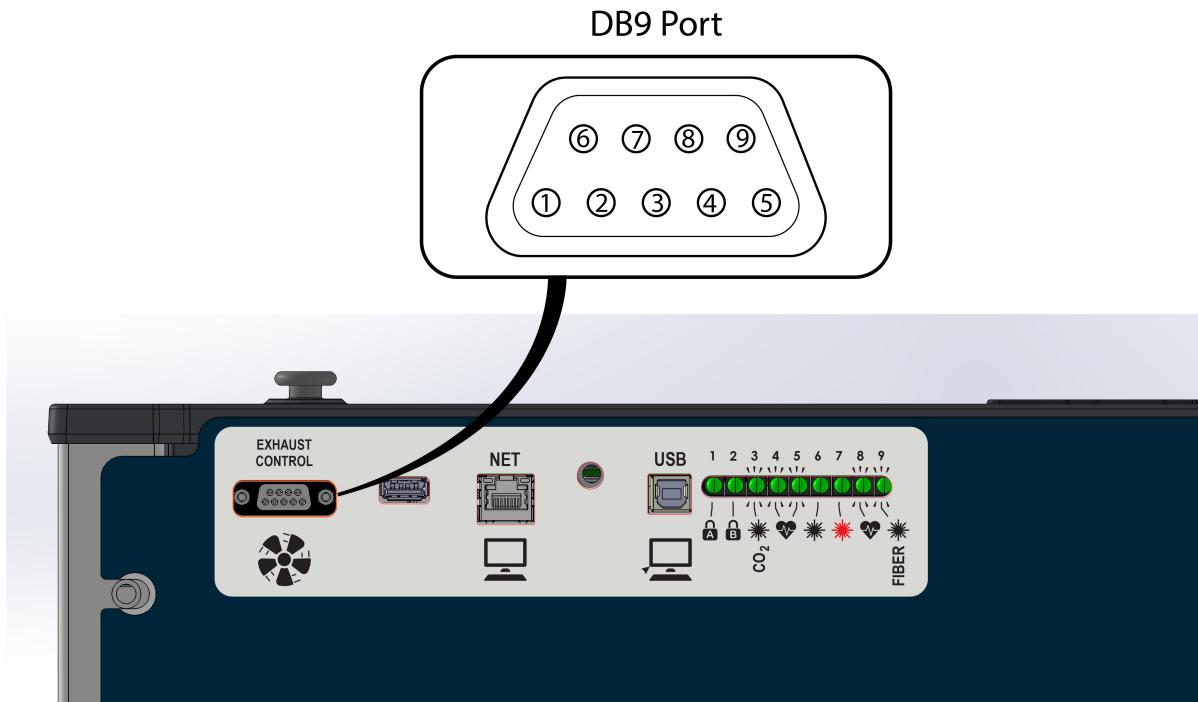
Introduction

Epilog Fusion Maker, Edge, Pro, and Galvo laser systems include a DB9 port on the right side of the control panel for managing external filtration systems. These signals are automatically assigned based on the selected filter type in the Epilog control panel.

Currently, Epilog officially supports two filtration systems: **Filtrabox** and **BOFA**. Other filter systems may be compatible as long as you know the pin requirements and wiring logic of the unit you're integrating.

Connector Pinout and Layout

Each pin on the DB9 port is labeled 1–9, with functions that change based on the selected filter type.



DB9 Pin Reference Table (General)

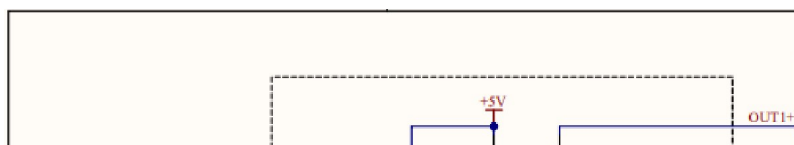
Pin	Signal Name	Type	Typical Usage (Varies by Configuration)
1	Input 1 (IN1+)	Input	Critical Error or “System Failure” input from filter (e.g. BOFA)
2	Input 1 Return (IN1–)	Input GND	Return for Input 1
3	N/C	Reserved	Do Not Connect
4	Output 1 (OUT1+)	Output	Start filter signal (e.g. Filtrabox / BOFA start command)
5	Output 1 Return (OUT1–)	Output GND	Return for Output 1
6	Output 2 (OUT2+)	Output	Optional/custom use output
7	Output 2 Return (OUT2–)	Output GND	Return for Output 2
8	Input 2 (IN2+)	Input	Low Pressure Detected or “Check Filter” signal (e.g. Filtrabox / BOFA)
9	Input 2 Return (IN2–)	Input GND	Return for Input 2

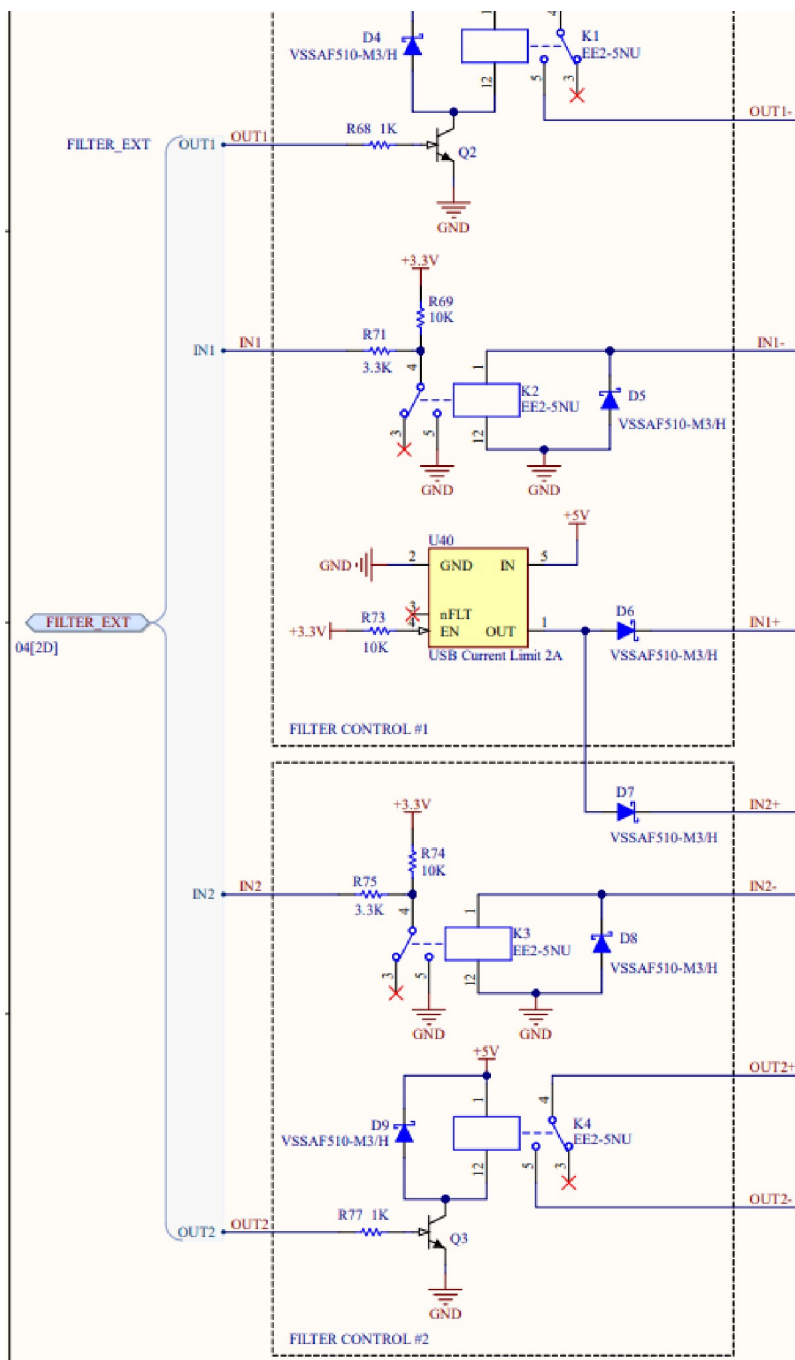
Note: Signal directions are relative to the Epilog system. Assignments change based on the selected filter type.

Warning: Do not apply voltage to any of the **input pins** on the DB9 connector. These are monitored by the laser system using low-current sensing circuits. Applying external voltage may cause permanent damage.

The **output pins** are controlled by internal relay contacts (EE2-5NU). These contacts are rated for low-voltage control signals. To prevent damage and ensure reliable operation, do not exceed **24V AC/DC** and **100 mA** across any output pin pair.

Wiring Diagram – Epilog Controller



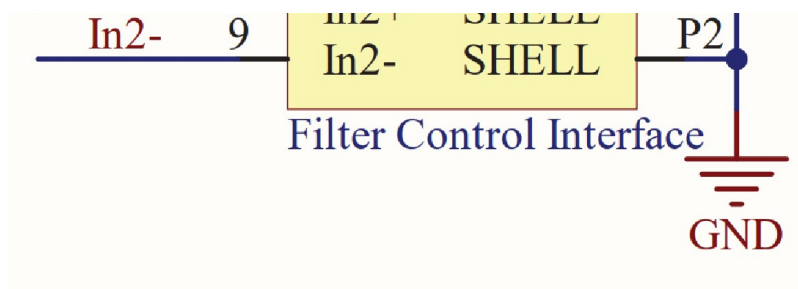


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In1+	1	In1+
In1-	2	In1-
Out1+	3	NC
Out1-	4	Out1+
Out2+	5	Out1-
Out2-	6	Out2+
In2+	7	Out2-
	8	In2+

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Filter-Specific Pin Configurations

Filtrabox and BOFA

Both Filtrabox and BOFA filtration systems use the same pin assignments for filter activation and status monitoring.

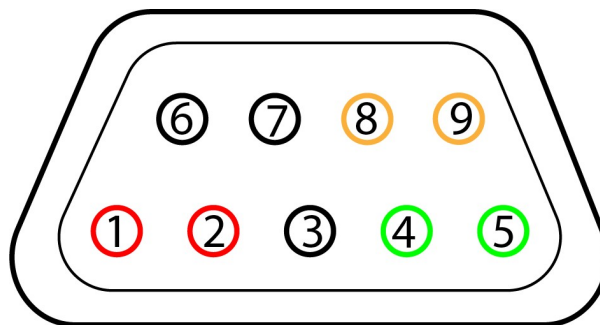
Pin Pair	Function
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1 & 2	“Critical Error” signal to Epilog (connected together when filter needs attention)
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4 & 5	Start filter (closed when job begins)
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6 & 7	Reserved output pins (not used by BOFA or Filtrabox systems)
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8 & 9	“Low Pressure” signal to Epilog (connected together when filter needs attention)
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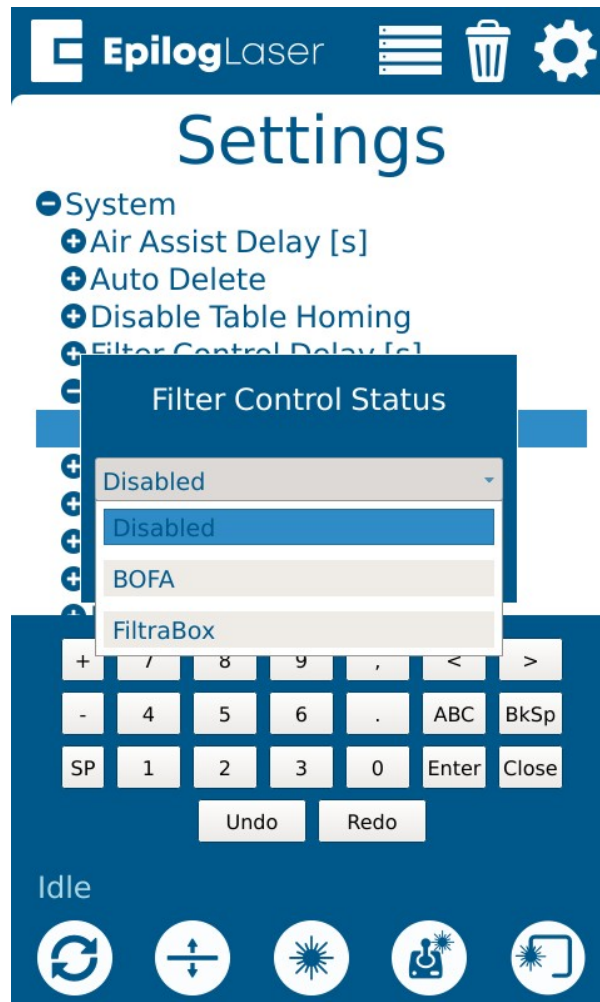


Selecting Filter Type in the Epilog Control Panel

Follow these steps to configure your machine for external filter control:

1. From the home screen, tap the **Gear** icon  to open Settings.
2. Select the **Gear + Wrench**  icon.
3. Select **System**.

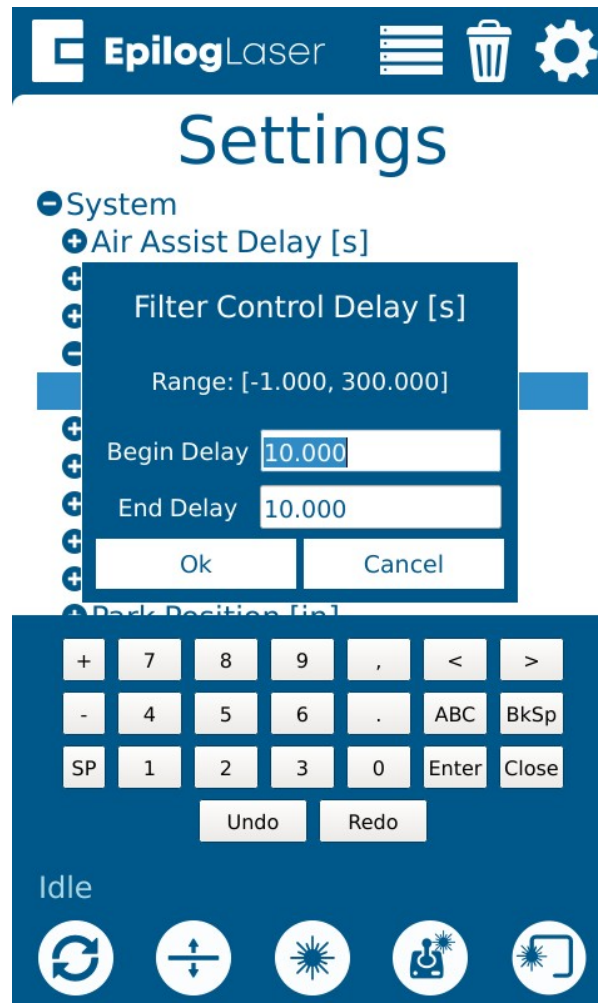
4. Select **Filter Control Status**.
5. Select **Disabled**.
6. Select **Filter Type** from the list of options.
7. The system will apply the correct pin configuration for the selected model.



Behavior and Timing

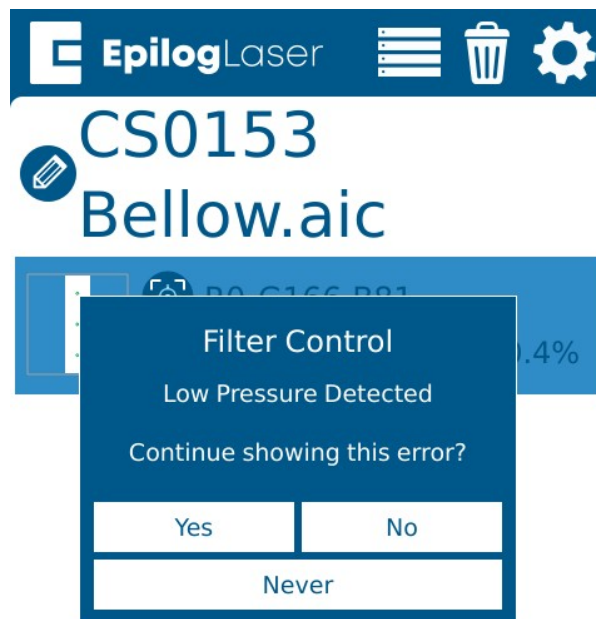
- When a job starts, pins 4 & 5 close to start the filter.
- When the job ends or is canceled, the connection opens to shut the filter off.

- In the same settings menu, you can configure a **Filter Control Delay** to run the filter before/after jobs.



- When a filter issue is detected, the filtration unit will connect pins 8 & 9, triggering a "Low Pressure Detected" message on the Epilog UI.

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- When a filter failure is detected, the filtration unit will connect pins 1 & 2, triggering a “Critical Error” message on the Epilog UI.

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