AUTOMATE OPERATIONS
EXTEND ASSET LIFE
SAVE TIME
REDUCE ENERGY CONSUMPTION
LOWER OPERATING EXPENSES
About ENVIRCO®

ENVIRCO® is a recognized worldwide leader in clean air products for the semi-conductor, microelectronics, medical device, pharmaceutical, biotechnology, hospital and laboratory markets. For more than 50 years, ENVIRCO® has been an innovator in clean air technology, enjoying a history of developing cutting-edge product breakthroughs that continues through today. Its reputation for product innovation and high quality has positioned ENVIRCO® to be at the forefront of many industry firsts, including the first low-power Fan Filter Unit (FFU) and the first commercial cleanroom. Whether an organization's needs involves the production of medical devices, pharmaceuticals, university research, nanotechnology science, semiconductors or other advanced technologies, ENVIRCO® products provide clean air environment that ensures the integrity of a sample or material. Within a medical and/or operating room setting, ENVIRCO® continues to build upon its reputation as the industry’s first manufacturer of a laminar flow surgical suite, providing infection control to hospital rooms and staff and preventing the spread of airborne contaminants.

ENVIRCO’s complete product line is rigorously tested and is renowned for providing an economical and energy efficient method for implementing a cleanroom environment, boasting ease of installation, operation and maintenance. Above all, ENVIRCO® products deliver high performance.

Service & Support

The ENVIRCO® combination of innovation and high quality clean air products is surpassed only by the company’s superior service it offers customers to ensure the ENVIRCO® product/system they purchase meets their needs. Highly trained and experienced engineers provide superior life cycle support, from system design and installation to final performance testing and follow up.

Learn how ENVIRCO® cleanroom products and air filtration systems can help companies improve their bottom line by maximizing product yield, improving patient care and hospital staff safety and ensuring the integrity of laboratory research. Call 1.800.884.0002, email info@envirco.com, or visit www.envirco.com for more information.
Introduction
ENVIRCO offers a complete family of control solutions providing machine intelligence to monitor and control clean room environments of all sizes - from small to very large.

Features
Various fan filter unit control options
- Single FFUs
- Multiple FFUs organized in a zone
- Multiple zones, each independently managed
- Animated ceiling grids with touchscreen displays

Simplified setup and more flexible cleanroom operation
- Automated room-side fan speed setup and control
- EC motor control with RPM monitoring
- Automatic controls with integrated clock calendar
- Closed-loop runtime fan speed monitoring and control
- Remote control from outside cleanroom or off-site

Lowers clean room energy cost and operating expense
- Clock calendar sequenced FFU power ON/OFF
- Monitor and adjust airflow as needed
- Asset life extension from smarter FFU use
- Central monitor of particle counters, pressure transducers

Expanded and extended cleanroom control
- Door interlocking
- Event logging and reporting
- Automatic occupancy sensing
- Automatic alarms from multiple causes and fault sensors
- Performance logging supports as-needed maintenance
- Connectable to overall building management systems

Advanced Controllers
ACC7152 Touchscreen
- 12.1" touchscreen display
- Controls up to 400 FFUs
- Ethernet option available
- Animated ceiling grid
- Closed Loop available
- Facility Optimization included
- Up to 24 PID loops

ACC7050/52/72 Touchscreen
- 5.7" - 7" touchscreen display
- Controls up to 400 FFUs
- Ethernet option available
- Animated ceiling grid
- Closed Loop available
- Facility Optimization included
- Up to 24 PID loops

Intermediate Controllers
ACC7030/31/32 Touchscreen
- 3.5" touchscreen display
- Supports eight groups
- Controls up to 100 FFUs
- Ethernet option available
- Communication, unit control, and system monitoring all in one

Extended Controllers
ACC7020/22 Consoles
- 2.4" monochrome display
- Supports 25 groups
- Controls up to 200 FFUs
- Ethernet option available
- Facility Optimization included

Small Auto Controllers
ACC7015/16/17 Consoles
- 2.4" LED display
- Supports five groups
- Controls up to 50 FFUs
- Designed for small systems
- Facility Optimization included

Small Manual Controllers
ACC1001 Panel Mount Console
- Mini environment single room FFU control
- Control and monitor up to 25 FFUs
- Audible alarm pressure sensor monitoring
- EC smart motor RPM monitoring

MDR16 Remote Mount
- Controls up to 16 FFUs
- Manual automatic control input
- LED provides visual feedback of FFU indexing as percentage of speed
- Internal jumper configurable control options
- Exclusively compatible with MAC10 IQ & LEDC FFUs

Single FFU Controllers
IR Remote
- Handheld controller for point and control - one FFU at a time
- Remotely adjusts outputs of ECM motor
- Maintains a constant airflow
- Lamps/sensors may be mounted or remoted
### Capabilities

<table>
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<th>ENVIRCO Controls Functional Matrix</th>
<th>Interfaces and FFU Capability</th>
<th>Most Popular Features</th>
<th>Remote &amp; Auto Control</th>
<th>Extended Features</th>
<th>Advanced Features</th>
<th>Building Management I/O</th>
<th>Closed Loop Auto Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Serial Interfaces MODBUS-RTU</td>
<td></td>
<td></td>
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<tr>
<td>Advanced Controllers</td>
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<td>Extended Controllers</td>
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<td>Small Auto Controllers</td>
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<td>ACC7017 2.4&quot; LED Display</td>
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<td>ACC7015 2.4&quot; LED Display</td>
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<td>Small Manual Controllers</td>
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<td>ACC1001</td>
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<td>MDR16</td>
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<tr>
<td>IR Remote</td>
<td>0</td>
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<td>N/A</td>
<td>✓</td>
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<td>✓</td>
<td>Handheld remote controller compatible with MAC 10 IQ &amp; LEDC FFUs</td>
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<tr>
<td>Remote DC CB</td>
<td>1</td>
<td>1</td>
<td>N/A</td>
<td>✓</td>
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<td>✓</td>
<td>Standalone control board and electrical control box for MAC10 IQ &amp; LEDC FFUs</td>
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<tr>
<td>Remote AC CB</td>
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<td>N/A</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>Standalone control board and electrical control box for MAC10 Original only FFUs</td>
</tr>
</tbody>
</table>
Smart Cleanroom Controls

**I/O Options**
ENVIRCO Consoles have multiple input and output options available for a cleanroom builder to implement at a low cost. The actual sensors are supplied by the customer.

- Room control
- Occupancy sensing
- Remote setback
- Remote shutdown
- Alarm output to BMS
- Door interlock
- Analog sensors
- 0-10VDC
- 4-20mA
- Lighting control
- Data logging
- Clock calendar

**Closed Loop Control Options**
ENVIRCO touchscreen consoles ACC7050/2 and ACC7152 can provide the following:

- Up to 24 Loops
- Input from either:
  - Analog sensor directly into the Console
  - 0-10VDC
  - 4-20mA
  - 0-20mA
- Connected to AirCare Motor controller
  - 0-5VDC

Typical sensors include but not limited to:

- Pressure
  - CLIMET CI-3100
- Temperature
  - TSI 7301 and 7501
- Humidity
  - LIGHTHOUSE 3104
- Particle count

Particle counters can also be tied using MODBUS RTU or MODBUS TCP (sensors supplied by others).

**Ethernet Options**
ENVIRCO Consoles allow several Ethernet options to integrate with building management systems.

- Modbus TCP/IP
- OPC Server
- Remote Operator
- BACnet I/P (requires ACGW003)

**Panel Box Options**

<table>
<thead>
<tr>
<th>Material</th>
<th>Item No.</th>
<th>Size</th>
<th>For Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polycarbonate Wall Mount</td>
<td>ACPNL01</td>
<td>10x8x2</td>
<td>ACC7020/22</td>
</tr>
<tr>
<td></td>
<td>ACPNL02</td>
<td>12x10x4</td>
<td>ACC7050/52</td>
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<td></td>
<td>ACPNL04</td>
<td>14x12x6</td>
<td>ACC7152</td>
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<tr>
<td>Steel Flush Mount</td>
<td>ACPNL03</td>
<td>16x12x4</td>
<td>ACC7050/52</td>
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<tr>
<td></td>
<td>ACPNL05</td>
<td>24x20x4</td>
<td>ACC7152</td>
</tr>
<tr>
<td>Stainless Steel Wall Mount</td>
<td>ACPNL06</td>
<td>14x12x6</td>
<td>All Consoles</td>
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<tr>
<td>( Pharma)</td>
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<tr>
<td>Stainless Steel Flush Mount</td>
<td>ACPNL07</td>
<td>20x14x4</td>
<td>All Consoles</td>
</tr>
</tbody>
</table>
Clean air solutions built for you.

MORE INFORMATION AVAILABLE AT WWW.ENVIRCO.COM

- **Industrial**
  - Cleanroom Products
    - MAC 10 Original
    - MAC 10 IQ
    - MAC 10 IQ LAF
    - MAC 10 LEAC
    - MAC 10 LEAC2
    - MAC 10 LEDC
    - MAC 10 RFAC
    - Ducted Ceiling Module: DCM & DCM-RSR
    - AC or DC Control Systems
    - MAC-T Ceiling Grid System

- **Hospital & Healthcare**
  - Hospital & Healthcare
    - IsoClean® and IsoClean with Ultraviolet Light
    - Hospi-Gard® AirCell®
    - Hospi-Gard Room Pressure Monitor

- **Pharmaceutical**
  - Pharmaceutical & Medical Device
    - Unimodule M2 Vertical Laminar Flow Workstation
    - METD 100% Exhausted Vertical Flow Workstation
    - Laminar Downflow Module

- **Laboratory & Research**
  - Laboratory & Research
    - Unidirectional Flow Horizontal Flow Bench (LF)
    - Table Top Horizontal Flow Clean Bench (TT)
    - EnviraLab Sterility Module (ESM)

**ENVIRCO® MAC 10™** is a registered trademark of ENVIRCO®, USA. Specifications subject to modifications or changes without notice. US patents 4,560,395 and 5,470,363. Other patents issued and pending in foreign countries.

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