ABB industrial drives for HVACR
ACS880 ultra-low harmonic drives, 55 to 3200 kW

ACS880-37 ultra-low harmonic drives offer an easy harmonic reduction method which is incorporated in the drive. No additional filters or special transformers are needed. This compact, cost-effective solution ensures smooth, energy-efficient operation of your HVACR systems in normal and mission-critical situations.

Keeps the network clean

- **Clean supply network**
  The drive produces exceptionally low harmonic content and exceeds the requirements of harmonic recommendations, such as IEEE 519 and G5/4. The total harmonic current distortion is typically <3% in nominal situation and undistorted network.

- **Scalable functionality**
  ACS880-37 drives offer a complete HVAC functionality for controlling fans, pumps and compressors as well as complex equipment like air-handling units and chillers. All this comes with a great scalability in terms of power range, ingress protection, construction and harmonics performance.

- **Reliability and quality**
  Product features, such as coated boards, earth fault protection, undervoltage or overcurrent control, ensure process reliability. Every drive is factory-tested, verifying its performance and all protective functions. The drive also offers immunity to network disturbances.

- **Maximized motor performance and efficiency**
  ABB’s direct torque control (DTC) provides precise speed and torque control for maximum motor performance and efficiency. The drive’s voltage boost capability also improves motor efficiency – with a higher voltage, the same power is achieved with less current.
All-in-one concept
ACS880 ultra-low harmonic (ULH) drives have a built-in active front end reducing THDi to a level below 3%, so there is no need for external filters, which increase installation complexity and space.

Saving capital and operating costs
ACS880 ULH greatly reduces the cost of a project eliminating the need for oversized transformers, generators, cables and other equipment. Power factor unity helps to avoid penalties for reactive power from utilities.

Easy commissioning
No need to set extra parameters for the active supply unit.

Low harmonic content
Total harmonic current distortion is typically <3% in nominal situation and undistorted network.

Unity power factor
Possibility also for network power factor correction.

Voltage boost
Guarantees full motor voltage in all conditions and can also be utilized to overcome a voltage drop caused by long supply or motor cables or output filters. Voltage boost capability may allow a smaller motor to be used.

Nine-year maintenance interval
Factory-tested solution for high reliability
All ACS880 drives are tested at maximum temperature with nominal loads.

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**Technical data**

**ACS880-37 cabinet-built ultra-low harmonic drives**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power range</td>
<td>45 to 3200 kW</td>
</tr>
<tr>
<td>Voltage range</td>
<td>3-phase, 380 to 690 V</td>
</tr>
<tr>
<td>Enclosure</td>
<td>IP22 (as standard), IP42 and IP54 for different environments, with option for air intake through bottom of the cabinet and channeled air outlet on the top of the cabinet</td>
</tr>
<tr>
<td>Frequency</td>
<td>50/60 Hz ±5%</td>
</tr>
<tr>
<td>Power factor</td>
<td>cos ϕ 1 (fundamental)</td>
</tr>
<tr>
<td>Ambient conditions</td>
<td>0 to +40 °C as standard +40 to +50 °C with derating of 1%/1 °C</td>
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<tr>
<td>Efficiency</td>
<td>97%</td>
</tr>
</tbody>
</table>

**Main optional built-in features**

- Cabling: Solutions for bottom and top entry and exit
- TÜV certified functional safety: STO (as standard), Optional SS1-t, SS1-r, SLS, SBC, SMS, SSE, POUS, SDI, SSM
- Filters: Du/dt, common mode and sine filters
- ATEX: ATEX-certified safe disconnection function, thermistor and PT100 protection functions, Ex II (2) GD

**Connectivity**

- Bluetooth: Bluetooth panel
- Communication protocols: DeviceNet™, PROFIBUS, CANopen®, Modbus, ControlNet, EtherCAT®, POWERLINK, Modbus/TCP, PROFINET, EtherNet/IP, PROFIsafe
- Remote monitoring: Wired monitoring with NETA-21
- PC tools: Drive Composer entry & pro Drive Application builder

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Harmonic content reduction up to 97%
Harmonic distortion typically 3%