ECOsine® Active 690 V
The power quality solution for heavy industrial loads
www.myecosine.com
ECOsine® Active provides

- **Reliability**: Eliminates all relevant disturbance patterns in the power lines
- **Economy**: Lowers energy cost through reduced reactive power demand
- **Efficiency**: Prevents losses due to production downtimes
- **Flexibility**: Constantly adapts to the network topology
- **Fast response time**: Compensates disturbances before they can cause damage
- **Cost-savings**: Avoids/reduces wear on electrical loads and over-heating of cables and transformers
- **Compact dimensions**: Requires very little space compared to traditional solutions
- **Ruggedness**: Provides protection according to IP54
- **Plug-and-play**: Simple installation and intuitive operation

A powerful solution for demanding applications

The 690 V ECOsine® Active, based on state-of-the-art power electronics technology for active harmonic filters, fulfills all requirements for harmonic mitigation equipment in industrial power networks. With ECOsine® Active FN3420-200-690-3, Schaffner provides a powerful solution for all common industrial low voltage power networks in the range of 500 V–690 V. By the use of innovative 3-level IGBT-modules, a significant limitation of the power loss could be realized. With a mechanical protection class of IP54 the 690 V Active harmonic filters from Schaffner are best choice to avoid power quality problems in industrial and heavy duty applications.

- Automotive industry
- Machines and automation
- Variable-frequency drives
- Pulp and paper
- Water/wastewater treatment
- Chemical industry
- Cement industry
- Steel industry
- Heavy duty applications
- Tunnel ventilation
- Oil and gas industry
- Marine and offshore
- Mining

ECOsine® Active uses intelligent digital technology

ECOsine® Active uses intelligent digital technology. Its flexibility is obvious, as it can be connected to the power line on the load or grid side with numerous current transformer-ratios. Once configured with just a few clicks, the present line current will be permanently measured and all harmonics and phase displacements are actively compensated. To do this, ECOsine® Active calculates the appropriate compensation currents within microseconds, which are then generated and fed into the network. This is possible due to full digital control and fast high performance computing.
### Technical specifications

**ECOsine® Active FN 3420-200-690-3**

- **Mains frequency:** 50 / 60 Hz ± 3 Hz
- **Filter performance:** Up to the 50th order
- **Parallel operation:** Up to 10 units
- **Response time:** 300 µs
- **Overload capability (peak value):** 2.5× rated compensation current
- **Cooling Type:** Forced air cooling + internal liquid cooling
- **Ambient temperature:** 0 – 40 °C with derating up to 55 °C (2% / K)
- **Ambient conditions:** Pollution degree: 2; relative humidity: < 95 %, non-condensing, 3K3; Temperature: Storage –25 °C to 55 °C, 1K3, 1K4 – transportation –25 °C to + 70 °C, 2K3
- **Interfaces:** Modbus RTU (RS485), Modbus TCP / IP (Ethernet)
- **Altitude:** 1,000 m with derating up to 4,000 m, 1% / 100 m
- **Switching frequency:** 16 kHz
- **Controller topology:** Digital with FFT analysis
- **Current limitation:** Nominal current
- **Current transformer:** 50 : 5 to 50,000 : 5
- **Protection class:** IP54
- **Weight:** 520 kg
- **Network topologies:** TN, IT

<table>
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<th>Filter Type</th>
<th>FN 3420-200-690-3</th>
<th>FN 3420-200-690-3-UL</th>
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<tbody>
<tr>
<td>Rated comp. current (3-wire):</td>
<td>200 A</td>
<td>200 A</td>
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<tr>
<td>Mains voltage:</td>
<td>500 V, 525 V, 575 V, 600 V, 660 V, 690 V +/-10 %</td>
<td>500 V, 525 V, 575 V, 600 V +/-10 %</td>
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<td>Approvals:*</td>
<td>CE</td>
<td>UL (pending)</td>
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*Marine approvals in preparation
To find your local partner within Schaffner’s global network, please go to www.schaffner.com

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