

November 2013

ECOsine® Active 690 V  
The power quality solution  
for heavy industrial loads  
[www.mycosine.com](http://www.mycosine.com)

**SCHAFNER**  
energy efficiency and reliability





## 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**

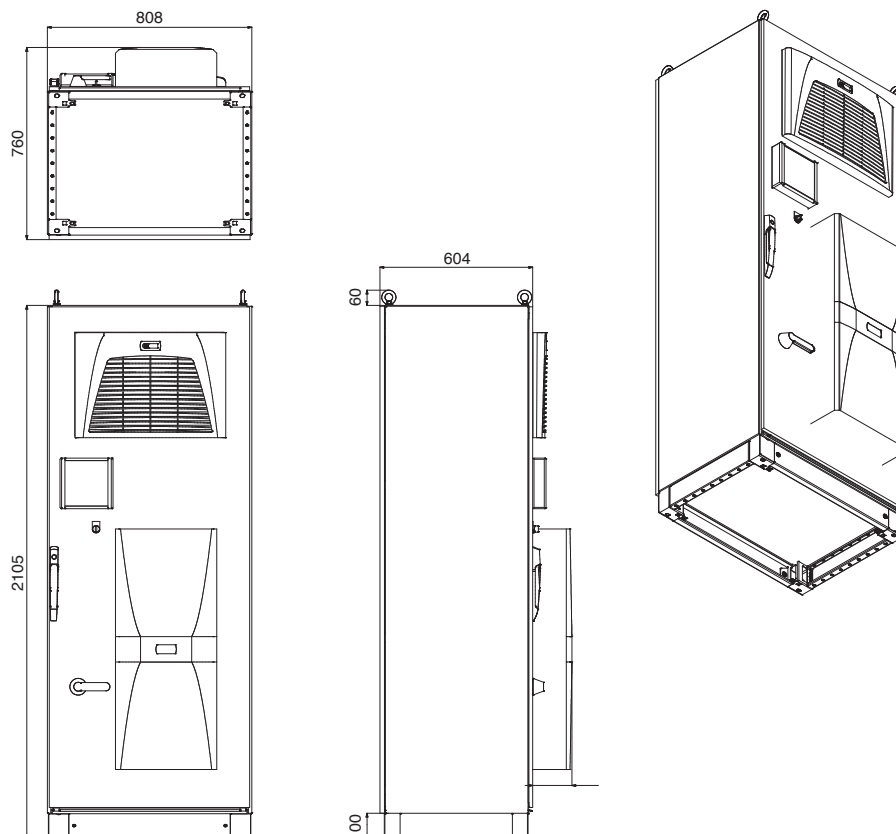
## ECOsine® Active uses intelligent digital technology



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 $\pm$ 3 Hz
Filter performance:	Up to the 50th order
Parallel operation:	Up to 10 units
Response time:	300 $\mu$ s
Overload capability (peak value):	2.5x 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: (EN 50178)	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

Filter Type:	FN 3420-200-690-3	FN 3420-200-690-3-UL
Rated comp. current (3-wire):	200 A	200 A
Mains voltage:	500 V, 525 V, 575 V, 600 V, 660 V, 690 V $\pm$ 10%	500 V, 525 V, 575 V, 600 V $\pm$ 10%
Approvals:*	CE	UL (pending)

\*Marine approvals in preparation

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