



## AEC series: Regenerative Inverter

### **Bonfiglioli Active Regenerative System.** The innovation that regenerates energy.

Decades of experience in electronic industrial drives and renewable energy have enabled Bonfiglioli Vectron to offer an effective solution for recovering braking energy.

This solution comes in the form of the new Active Regenerative System inverters (AEC). In a large number of electrically controlled industrial applications, inertia in moving mechanisms can drive electrical motors as they act as brakes. They convert kinetic energy into electrical energy. In a regenerative process, this energy is returned to the grid.

Machines like winders and rewinders, flywheels, presses, turntables, lifting equipment and centrifuges all cyclically generate electricity for their motors from the kinetic energy accumulated during their main movement. This energy has to be properly controlled and managed.

Conventional systems based on braking resistors simply dissipate regenerated energy in heat sinks, with an obvious impact on economy and ecology. Today, the need to save energy is making it essential for industry to use control technology that is able to recover braking energy effectively and redistribute it for use by other power users. AEC regenerative inverters comprise an active-front-end AC/DC converter and a special impedance adaptor stage.

They can provide a continuous feed in parallel with the mains power supply, and act either as the system's main bidirectional sine wave inverter or as a square wave unidirectional regenerating inverter.

### **Functional Scheme**

AEC regenerating inverters are based on Active technology and deliver the same excellent reliability and versatility as the latest generation of Bonfiglioli inverters.

Special set-up software allows users to select sine or square wave forms as required.

The system adapts automatically to grid conditions, ensuring perfectly synchronised feed.

In the event of a power failure and disconnection, AEC regenerating inverters can carry on controlling braking energy through optional resistive loads. The drive can therefore complete all the manoeuvres needed to stop the machine safely before shutting down.

Performance and load curves can be viewed and monitored using the most common industrial networks.

Power exchange, mains phase angle, DC link voltage and I/Os can all be configured by the user.

## Advantages for brake intensive applications

- Active feed back of brake energy
  - Saving of energy costs
  - No brake resistor necessary
  - Reduced heat dissipation
- Optimal operating point for synchronous motor
- Improved Power supply quality

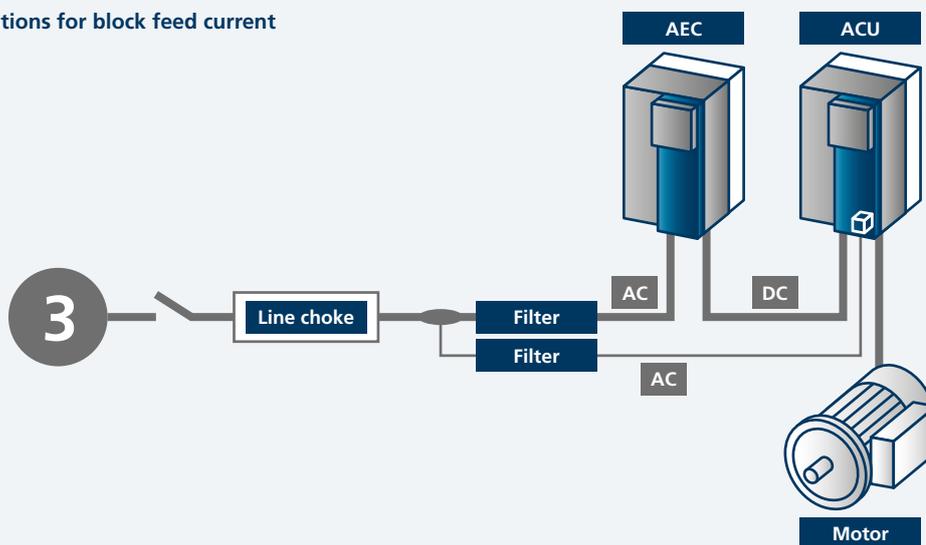
## Features

- Power range 160KW...400KW at 690VAC
- Power range 5.5kW ... 400kW at 400VAC
- 6 Frame sizes
- Multiple communication options
  - Profibus
  - Profinet
  - Etercat
  - Ethernet I/P
  - .....
- Sinusoidal or block feed back current configurable
- Optional water cooling

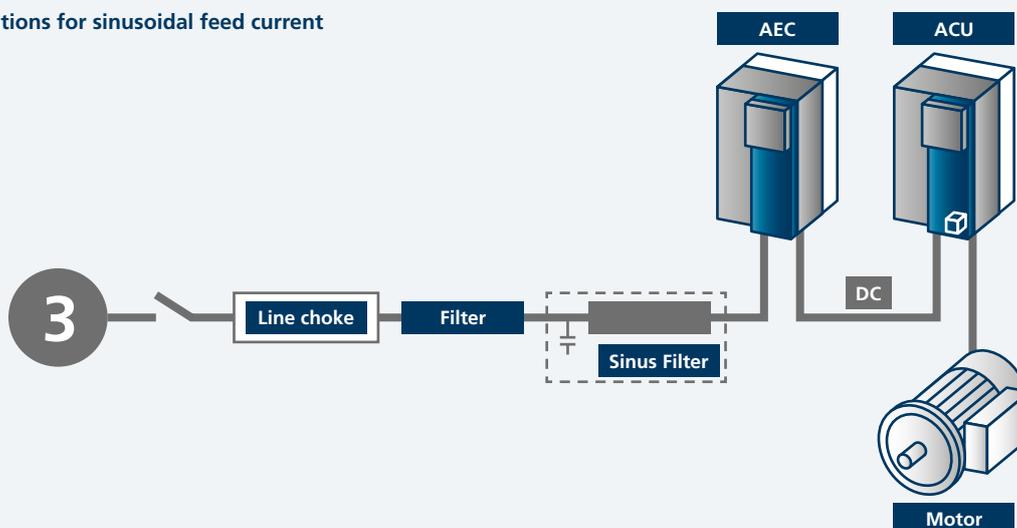
## Available products

Size	Power range (kW)
AEC401-19	5.5
3 AEC401-21	7.5
AEC401-22	9.2
4 AEC401-23	11
AEC401-25	15
AEC401-27	18.5
5 AEC401-29	22
AEC401-31	30
AEC401-33	37
AEC401-35	45
6 AEC401-37	55
AEC401-39	65
AEC401-43	75
7 AEC401-45	90
AEC401-47	110
AEC401-49	132

## Hardware configurations for block feed current



## Hardware configurations for sinusoidal feed current



## HEADQUARTERS

Bonfiglioli Riduttori S.p.A.  
Via Giovanni XXIII, 7/A  
40012 Lippo di Calderara di Reno  
Bologna (Italy)

tel: +39 051 647 3111  
fax: +39 051 647 3126  
bonfiglioli@bonfiglioli.com  
www.bonfiglioli.com

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