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Find the *Parker 890CA/5/0080B/N/00/N/EN* at our website: *Click HERE*

Modular Systems Drives

AC890 Systems Drive

Features

Range of feedback options

- Incremental encoder
- EnDat® 2.1 (SinCos) encoder
- Resolver

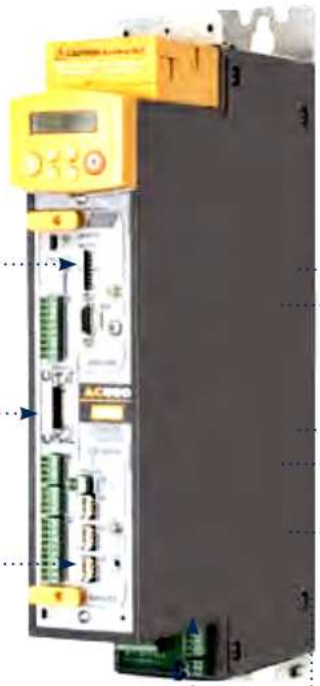


Versatile communications

- Ethernet/IP
- Modbus/TCP
- CANopen
- Profibus-DP
- Profinet/IO
- EtherCAT
- RS485
- DeviceNet
- ControlNet
- FireWire IEEE 1394
- USB port

Ultra-fast control loops

- Torque loop: 62.5µs
- Speed loop: 62.5µs
- Position loop: 62.5µs



Serves the most demanding applications

Taking advantage of leading edge control algorithms running on a fast 150 Mhz microprocessor, the AC890 drive can achieve very high bandwidth control loops. This allows you to use the drive for the most demanding industrial applications e.g. printing, registration, cut-to-length, position synchronization, rotary shear, converting and slitting.

Benefits

Integrated safety functionality

The integrated Safe Torque Off (STO) functionality offers protection against unexpected motor start-up, in accordance to EN13849-1 PLe, SIL 3 as standard.

Minimal delay between fieldbus setpoints and the control loops

Designed to integrate in existing automation systems, the AC890 features high performance ports linked directly to the fast control loops of the drive. Minimum delay exists between your digital setpoint sent through a fieldbus and the control loops.

Replacement of analog solutions

Your existing analog setpoint-based solutions can be replaced by a digital fieldbus-based solution with minimum bandwidth loss.

Flexible feedback options

The AC890 offers system designers complete flexibility in their choice of feedback technology to best suit the needs of their application.

Open standards for protection of investment

The AC890 has been specifically designed to integrate seamlessly into your automation network. To connect to your PLC or fieldbus network you can simply choose from the wide range of communication technology boxes.

Two performance levels to suit all applications :

Advanced Performance

Motion control with position control, Motion control function blocks: incremental move, absolute move, move home Section Control : line drive master ramp, winder blocks (speed and current winder), PID process, sequencer, more...

High Performance

All "Advanced Performance" features PLUS: Library of pre-engineered application specific LINK VM function blocks such as: Shaftless printing, cut-to-length, advanced winding, advanced traversing and others.

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Modular Systems Drives

AC890 Systems Drive

Space saving compact footprint thanks to modular design concept

Stand Alone version (SD)



The Complete Drive

The AC890SD series Stand Alone version provides a complete AC input to AC motor output drive, with keypad and display included. Perfect solution for single motor applications where line regeneration is not required.

Characteristics of the AC890SD include:

- Power output up to 1500 HP
- 208-500 VAC input supply
- Compatibility with all feedback and networking options
- Built-in dynamic brake switch with provision to add external braking resistor
- 24VDC control board supply for programming without power
- Torque and speed signal outputs
- USB programming port
- Operator keypad/display for programming, status, and diagnostics

Common Bus System (CS+CD)



Common Bus System

The AC890 is also available in a common bus platform, where multiple motor output drives (CD) are easily connected to a common DC bus supply (CS).

Characteristics of the common bus drive (AC890CD) :

- Power output to 150 HP in 5 frame sizes
- Power Supply : 320 to 705 VDC
- Compatibility with all feedback and networking options
- 24VDC control board supply for programming without power
- Torque and speed analog outputs
- USB programming port

Characteristics of the common bus supply module (AC890CS):

- Power output 25 to 135 HP
- Power Supply : 208-500 VAC
- Built-in dynamic braking unit (external braking resistor required)
- Operator display
- Up to 162A output per module

Removable terminal block connections for easier installation and maintenance



Reduced dimensions, compact footprint

The AC890 has been designed to be compact and require the minimum possible cabinet space. Boasting the latest innovations in semiconductor cooling, the AC890 is a class leader in terms of its size.

The control terminals are plug-in style, simplifying connection to the drive during installation and allowing a fast swap-out for maintenance purposes.

The Common DC bus also helps to keep the overall size of the system to a minimum. Simply open the bus terminal cover, connect the bus bars and close.

Fast connection of the common DC busbars



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Modular Systems Drives

AC890 Systems Drive



Technical Specification

Power Supply	890CS : 208 - 500 VAC +/- 10 % 890CD : 320/560 - 705 VDC 890SD : 380 - 500 VAC +/- 10 % Frames E/F/G/H/J/K : 380 - 460 VAC +/- 10 %
Operating Temperature	0°-45°C (32°-113° F) - Frame B-F 0°-40°C (32°-104° F) - Frame G and above (derate by 2% per degree C up to 50°C maximum)
Altitude	Up to 1000m ASL (derate 1% per 100m to 2000m max)
Protection	IP20 (Frames G/H/J: IP00)
Humidity	Maximum 85% Non-Condensing
Analog Inputs	4; 12 bit, Configurable 2 x 0-10V, +/-10V, 0-20mA, 4-20mA and 2 x 0-10V, +/-10V (High resolution 15 bit plus sign analog input available with addition of 8903/AI option)
Analog Outputs	2; 12 bit, Configurable 0-10V, +/- 10V
Digital Inputs	7 ; Configurable 24VDC
Digital Output	2; Configurable 24VDC
Digital Relay Output	1; Configurable
Communications Options	EtherNet/IP, Modbus/TCP, CANopen, PROFIBUS, PROFINET, DeviceNet, ControlNet, FireWire, EtherCAT, Peer to peer, RS485/Modbus
Axis Synchronisation	Internally via Firewire IEEE1394
Overload	Constant Torque Ratings: 150% for 60 sec Variable Torque Ratings: 110% for 60 sec Servo Mode: 200% for 4 sec
Output Frequency	0-1000 Hz - Volts/Hertz Mode 0-350 Hz - Closed Loop Vector Mode 0-120 Hz - Sensorless Vector Mode
Switching Frequency	Size B-D - 3 kHz (4 kHz or 8 kHz in servo mode) Size E - 3 kHz or 6 kHz Size F - 3 kHz Size G-H - 2.5 kHz Size J - 2 kHz Some exceptions may apply - see manual
Atmosphere	Non flammable, non corrosive and dust free

Safe Torque Off - STO

The AC890 features Safe Torque Off functionality **as standard**, offering users protection against unexpected motor start-up in accordance with EN18849-1 PL-e or SIL3. STO connections are made to X11 terminals per installation manual.

To ensure a high degree of safety, two independent STO control channels are implemented in hardware. The circuit is designed such that a fault in one control channel will not affect the other channel's ability to prevent the drive from starting, i.e. the STO function of the is tolerant to any single fault. It may not be tolerant to an accumulation of faults. This is in keeping with its declared safety ratings.

STO always overrides any attempt to start the drive. If one or both STO control inputs is requesting the STO function, the drive will not start, even if for example, the drive's software malfunctions and tries to cause the motor to turn. The STO function is implemented in hardware; it overrides all software activities. The only software involvement is to report STO status to the user via an MMI, serial communications link or user terminal on the AC890 control board as defined by the drive configuration.

Note: STO is an electronic inhibit intended for use during normal operation of the machine. It is not intended for use during machine maintenance, repair, replacement or other similar activities. For these activities recognized electrical power isolation devices and lock-out procedures must be used.

Conformal Coating

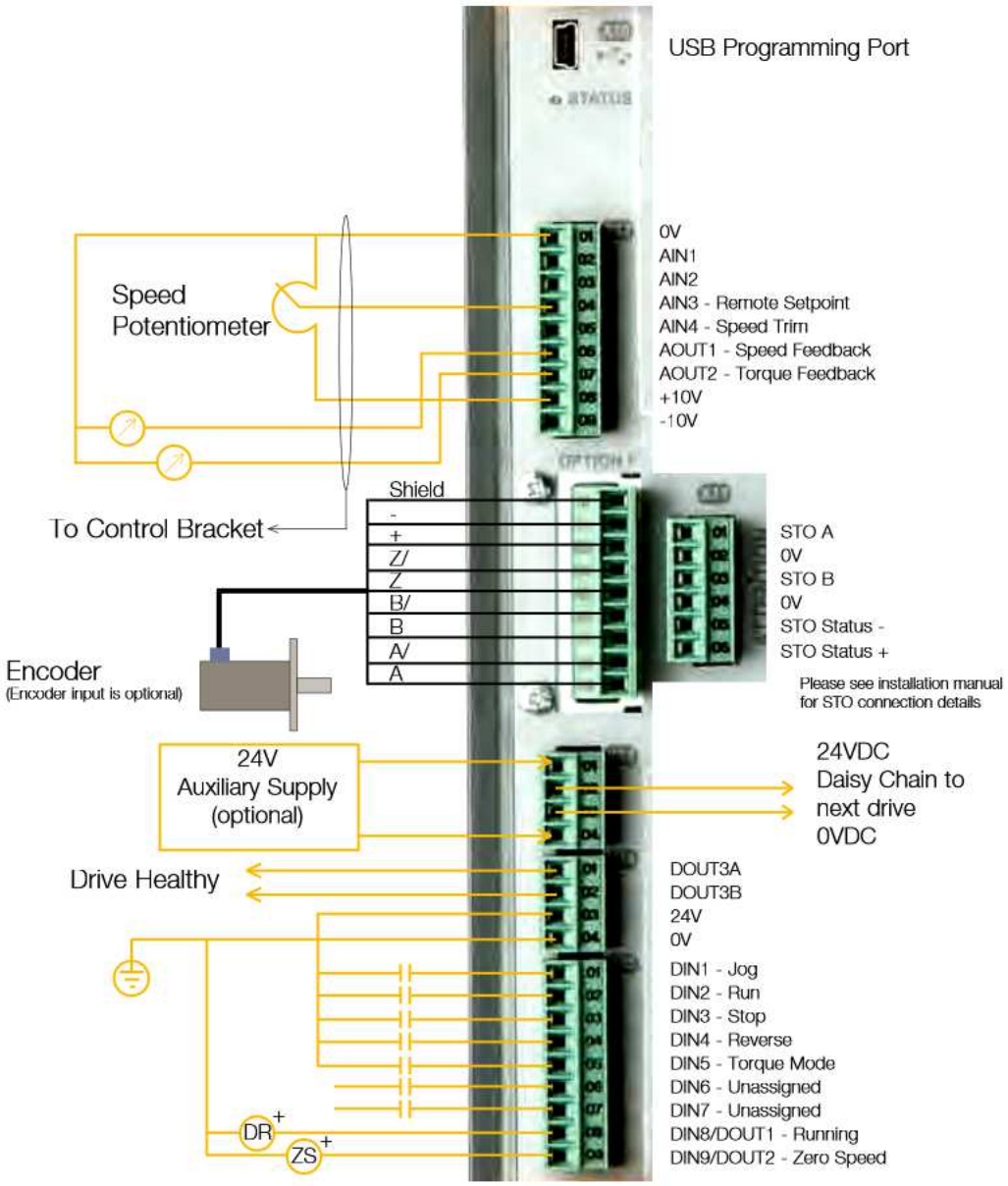
For environments that have dusty, humid or corrosive atmospheres, the AC890 can optionally be supplied with conformally coated circuit boards that improve the drives resistance to corrosion, thereby increasing reliability and service life. Environments that would typically benefit from conformal coating could include:

- Water and wastewater treatment plants
- Paper and pulp processing mills
- Steel mills
- Marine and offshore
- Outdoor cranes
- Wind, solar, and wave power generation (Grid tie configuration)
- Food and chemical processing plants

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Connection Diagram



This diagram shows examples of some basic user connections to the Control Module. It is not intended to be a substitute for the installation manual which is provided with each drive and available for download on the website.

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Modular Systems Drives

AC890 Systems Drive

Active Front End



4 Quadrant active front-end power supply with regeneration to the grid

By specifying an AFE supply, AC890 common bus systems can be configured to feed energy back into the grid supply with sinusoidal currents and unity power factor; with very low levels of harmonic current distortion. Use the AFE with AC890CD modules for a complete system.

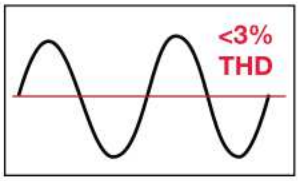
Required Parts (Provided with AFE package)

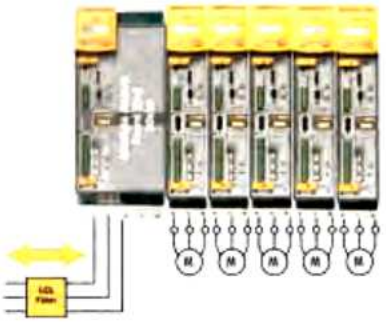
Pre-charge circuit
LCL Filter

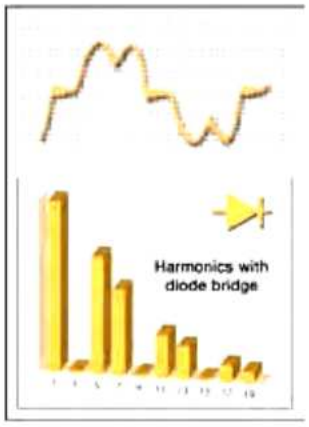
FULLY BIDIRECTIONAL POWER FLOW
150% OVERLOAD FOR 60 SEC
SINUSOIDAL INPUT CURRENT
HARMONIC LEVELS MEET REQUIREMENTS OF IEEE 519

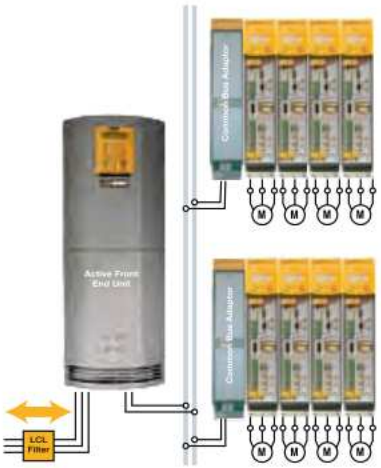
Note :

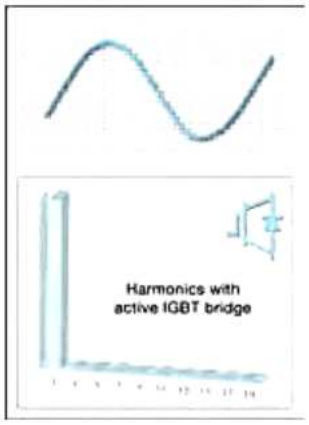
It is possible to use a larger separate active front-end module for higher power AC890 systems. In this case, several AC890's can be connected to the AFE using the AC890CA common bus adapter.











AFE Part Number	Sub-panel Part Number	Power (HP)	Current (A)	Notes
890CD/5/0016B/N/00/A/US	AFE-13-890	13	12	Sub-panel includes line synch module, pre-charge circuit, and LCL filter.
890CD/5/0030C/N/00/A/US	AFE-26-890	26	25	
890CD/5/0059D/N/00/A/US	AFE-45-890	45	45	
AFE-85-890	N/A	85	80	AFE includes AC890 drive configured as AFE, line synch module, pre-charge circuit, and LCL filter, provided on open panel
AFE-125-890		125	120	
AFE-167-890		167	160	
AFE-200-890		200	194	AFE includes AC890 drive configured as AFE, line synch module, pre-charge circuit, and LCL filter, provided in enclosure.
AFE-300-890		300	284	
AFE-350-890		350	325	
AFE-400-890		400	378	
AFE-500-890		500	468	

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