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Parker Hannifin
SSD Drives Division
9225 Forsyth Park Dr.
Charlotte, NC 28273

Phone: (704)588-3246

Click here for SSD Drives contact information

AC890 Modular AC Drive

From 1 to 1500 HP (2 to 1681A) Now including Safe Torque Off - Frames B-F!



AC890 System Drives are modular AC drive units that can be combined to form a complete multi-section drive system, saving space, reducing wiring, and providing unmatched system performance. Safe Torque Off feature (SIL3 or PLe level as per EN ISO13849 and EN61800-5-2) is provided in frames B-F.

The AC890 can control everything from induction motors to servo motors. AC890 provides V/F, sensorless vector, closed-loop flux vector and servo position control; from simple AC motor control sections to more demanding sections. The AC890 comes in a wide variety of sizes and ratings and input and output types, making it the right solution for virtually any motion control project.

5-Mode Frequency Converter:

- V/F, Sensorless Vector, Flux Vector, Servo Drive, Line Regenerative (AFE)
- Built-in EMC Filters
- 2 Performance Levels (Advanced and High Performance)
- COMMS Options Available

COMMON BUS Drives (CD) are individual motor output sections that easily connect to a **COMMON BUS Supply (CS)** with a unique, easy-to-install DC bus bar system (SSD Rail).

COMMON BUS Made Easy!
DC bus terminals are located at top of each drive section. Easy to use screw clamps secure the high power bus bars. This low cost, compact design significantly reduces wiring in common bus systems, saving time and material cost.

COMMON BUS Drives (CD)

- Have internal DC fuses
- Need no reactors
- Provide access to all feedback and networking options

STANDALONE Drives (SD)
The AC890 Standalone Drives are complete AC-input-to-AC motor output controller with power input and output terminals, and access to all feedback and networking options.

Technical Specifications

- **Power Supply**
  890CS:
  208–500Vac ±10%
- **Inverter(DC-AC)**
  890CD: 320/560–705Vdc
- **Converter (AC-AC)**
  890SD:
  380–500Vac ±10% (Frames E thru K: 380–460Vac ±10%)
- **Operating Temperature**
  0–45°C (Derate 2%/°C to 50°C max - Frame sizes G thru K: 0–40° C)
- **Maximum Humidity**
  85% non-condensing
- **Altitude**
  1000m ASL (Derate 1%/100m 1000–4000m max)
- **Degree of Protection**
  IP20:
  Frame sizes B,C,D, E, F

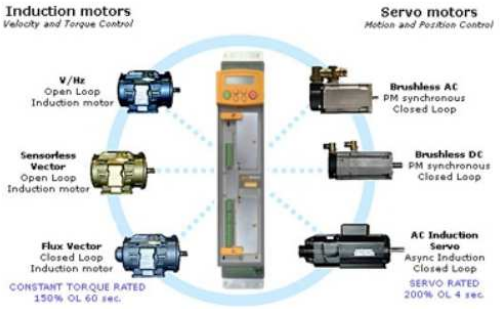
  IP00:
  Frame sizes G, H, J

  IP52:
  Frame size K

Inputs/Outputs

- **Analog Inputs:**
  4 total, 2 configurable (0-10V, ±10V, 0-20mA, 4-20mA), +2 configurable (0-10V, ±10V)
- **Analog Outputs:**
  2 configurable (0-10V, ±10V)
- **Digital Inputs:**
  7 configurable (24V)
- **Digital I/O:**
  2 configurable (24V)
- **Relay Digital Output:**
  1 configurable (24V)*
  *3 additional 230V rated dry contacts (frames E-K)

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AC890CD/AC890SD Control Board

- Programming Port (USB)
- Torque and Speed Analog Outputs
- Health Contact
- 24VDC Control Supply - Programming without Power Supply
- Digital I/O
- Motor Thermistor Input
- Running and Zero Speed Signal Output

Performance Levels
AC890 frequency converters offer the level of performance that best suits your application needs. With 2 different performance levels, AC890 system allows the maximum flexibility of use.

- **Advanced Performance**
  Basic LINK VM function blocks: math functions, Boolean logic, timers, counters, One shots, threshold comparators, latches, plus: motion control firmware with added position loop, motion control function blocks, move incremental, move absolute, move home, line drive master ramp and section control, winder blocks (SPW, CPW), full function PID, state machine, and others.
- **High Performance**
  All Advanced Performance features, plus: Library of pre-engineered application specific LINK VM function blocks such as: shaftless printing, cut-to-length, precision winding, traversing, and others.

Shaftless Registration Control Solutions for Printing
Mechanical line shafts for printing are easily replaced with individual AC890 drives, capable of precise synchronization and printing registration adjustment to each section, guaranteeing perfect alignment of each color. AC890 High Performance Level features a library of pre-engineered application specific LINK VM function blocks, including shaftless printing, cut-to-length, precision winding, traversing, and others.

FireWire protocol (IEEE1394) ensures data synchronization for the printing register control.

- 125µS Cycle time
- Time Synchronization
- Deterministic Network

International Standards

The AC890 complies to standard code when installed in accordance to manufacturers installation manual:

- **Includes Safe Torque Off (STO) feature (Frames B-F):**
  - SIL3 or PLe level as per EN ISO13849 and EN61800-5-2
- **Conforms to EC Directive 89/336/EEC in compliance with standard:**
  - EN61800-3 (Environment 2)
- **Conforms to EC Directive 73/23/EEC in compliance with standard:**
  - EN50178 (Low Voltage)
- **Complies with UL508C safety standard**
- **Complies with CE, UL e c-UL**

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Active Front End: Line Regenerative Systems
Common Bus Drive sections can also be configured as Active-Front-End Input Sections, providing true lineregenerative 4-quadrant control with no harmonics and 1.0 power factor. The AC890 with AFE can also be configured for grid-tie inverter applications.

Requirements

- Pre-charging Circuit
- LCL Filter

Performance

- Fully Bidirectional Power Flow
- Overload 150% for 60 secs
- Sinusoidal Input Current
- Complies with IEEE 519

Larger AC890 systems can be matched with separate higher power Active Front End units. Multiple rows of AC890 Common Bus Drives are bridged together using Common Bus Adapter modules.

AC890 Series CS/CD



AC890 Series CS/CD units provide a common bus solution for multi-section drive applications. Multiple AC890 Series CD Common Bus Drive inverter sections can be combined with a single AC890 Series CS Common Bus supply unit, achieving substantial space savings and peripheral component savings within the enclosure. Additional 890 Series CS supply units may be paralleled to provide greater DC bus supply amperage.

How to Pick a CS

- Select the AC890CD (common-bus drives), one for each section.
- Select the AC890CS (common-bus supply) module by adding the HP (or currents) of all the CD drives.
- Select a reactor and braking resistor kit
- Order the common bus bar and exhaust duct kit from the options section

AC890CS Power Supply Unit

- up to 162A
- Power Supply 208–500VAC
- Built-in Dynamic Braking Unit
- DC BUS Supply Output
- Diagnostic Operator Panel

AC890CS Control Board

- 24Vdc Supply Control
- HMI Interface Connection
- Three-phase Supply Selector

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- Configurable Analog Output
- Prewarning Output
- Alarm Output

AC890 Common Bus Supplies used with 230 - 500Vac (+/-10%) 3 phases				
Part Number	Frame	HP@ 460Vac	HP@ 230Vac	Input Amps
890CS/5/0032B/B/00/N/EN	B	25	10	32
890CS/5/0054B/B/00/N/EN		45	20	54
890CS/5/0108D/B/00/N/EN	D	75	40	108
890CS/5/0162D/B/00/N/EN		135	60	162

AC890CD Inverters
from 1.5 to 180A

- 320, 650, 705VDC Power Supply
- Standard Equipped Keypad
- Common Options with AC890SD
- COMMS Options Available

AC890 Common Bus Drives 208 - 230Vac (+/-10%)			
Part Number	Frame	HP@ 230Vac	Output Amps@ 230Vac
890CD/2/0003B/N/00/A/US	B	0.75	3
890CD/2/0005B/N/00/A/US		1.5	5.5
890CD/2/0007B/N/00/A/US		2	7
890CD/2/0011B/N/00/A/US		3	11
890CD/2/0016B/N/00/A/US		5	16.5
890CD/2/0024C/N/00/A/US	C	7.5	24
890CD/2/0030C/N/00/A/US		10	30

AC890 Common Bus Drives 380 - 500Vac (+/-10%)			
Part Number	Frame	HP@ 460Vac	Output Amps@ 460Vac
890CD/5/0002B/N/00/A/US	B	1	2
890CD/5/0003B/N/00/A/US		1.5	3.5
890CD/5/0004B/N/00/A/US		2	4.5
890CD/5/0006B/N/00/A/US		3	5
890CD/5/0010B/N/00/A/US		5	8
890CD/5/0012B/N/00/A/US		7.5	12
890CD/5/0016B/N/00/A/US		10	14
890CD/5/0024C/N/00/A/US	C	15	24
890CD/5/0030C/N/00/A/US		20	27
890CD/5/0039D/N/00/A/US	D	25	35
890CD/5/0045D/N/00/A/US		30	40
890CD/5/0059D/N/00/A/US		40	52
890CD/4/0073E/N/00/A/US	E	50	73
890CD/4/0087E/N/00/A/US		60	87
890CD/4/0105F/N/1F/A/US	F	75	100
890CD/4/0145F/N/1F/A/US		100	130
890CD/4/0156F/N/1F/A/US		125	156
890CD/4/0180F/N/1F/A/US		150	180

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AC890SD Series



from 1.5 to 1681A

AC890SD Series (Stand Alone) frequency converters are independent units that can be powered either with mains three phase voltage or via DC bus. 890SD Series comes in a wide choice of sizes, suitable for every type of application, from small industrial machines to high-powered large plants (e.g. rolling mills, paper mills). They are also ideal for applications where single units are machine mounted (e. g. printing units).

- Direct Mains Supply or Via DCBUS
- Built-in Dynamic Braking Unit
- Standard with Keypad
- Common Options with 890CD
- COMMS Options Available

AC890 Stand-alone Drives 208-240Vac (+/-10%) Input 3-phase			
Part Number	**Frame**	**HP@ 230Vac**	**Output Amps@ 230Vac**
890SD/2/0003B/B/00/A/US	B	0.75	3
890SD/2/0005B/B/00/A/US		1.5	5.5
890SD/2/0007B/B/00/A/US		2	7
890SD/2/0011B/B/00/A/US		3	11
890SD/2/0016B/B/00/A/US		5	16.5
890SD/2/0024C/B/00/A/US	C	7.5	24
890SD/2/0030C/B/00/A/US		10	30

Note: The AC890 comes in two performance level configurations, Advanced and High. The part #'s shown above 890SD/x/xxxxx/x/xx/A/xx are for Advanced models. For High Performance models, replace the Performance Level field designator with an H.

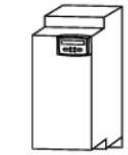
AC890 Stand-alone Drives 380 -500Vac (+/-10%) Input -3 Phase: Frames B thru D 380 -460Vac (+/-10%) Input -3 Phase: Frames E and Higher			
Part Number	**Frame**	**HP@ 460Vac**	**Output Amps@ 460Vac**
890SD/5/0002B/B/00/A/US	B	1	2
890SD/5/0003B/B/00/A/US		1.5	3.5
890SD/5/0004B/B/00/A/US		2	4.5
890SD/5/0006B/B/00/A/US		3	5
890SD/5/0010B/B/00/A/US		5	8
890SD/5/0012B/B/00/A/US		7.5	12
890SD/5/0016B/B/00/A/US		10	14

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890SD/5/0024C/B/00/A/US	C	15	24
890SD/5/0030C/B/00/A/US		20	27
890SD/5/0039D/B/00/A/US	D	25	35
890SD/5/0045D/B/00/A/US		30	40
890SD/5/0059D/B/00/A/US		40	52
890SD/4/0073E/B/00/A/US	E	50	73
890SD/4/0087E/B/00/A/US		60	87
890SD/4/0105F/B/1F/A/US	F	75	100
890SD/4/0145F/B/1F/A/US		100	130
890SD/4/0156F/B/1F/A/US		125	156
890SD/4/0180F/B/1F/A/US		150	180
890SD/4/0216G/ * /1F/A/US	G	175	216
890SD/4/0250G/ * /1F/A/US		200	250
890SD/4/0316G/ * /1F/A/US		250	316
890SD/4/0361G/ * /1F/A/US		300	361
890SD/4/0420H/ * /1F/A/US	H	350	420
890SD/4/0480H/ * /1F/A/US		400	480
890SD/4/0520H/ * /1F/A/US		450	520
890SD/5/0590J/ * /1F/A/US	J	500	590
890SD/5/0685K/ * /1F/A/US	K(2xG)	600	685
890SD/5/0798K/ * /1F/A/US	K(2xH)	700	798
890SD/5/0988K/ * /1F/A/US	K(2xH)	800	988
890SD/5/1028K/ * /1F/A/US	K(3xG)	900	1028
890SD/5/1120K/ * /1F/A/US	K(2xJ)	1000	1120
890SD/5/1197K/ * /1F/A/US	K(3xH)	1000	1197
890SD/5/1482K/ * /1F/A/US	K(3xH)	1300	1482
890SD/5/1681K/ * /1F/A/US	K(3xJ)	1500	1681

** The Braking switch is optional on these models–B is braking, N is no brake..*

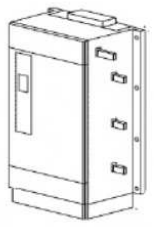
Note: The AC890 comes in two performance level configurations, Advanced and High. The part #'s shown above 890SD/x/xxxxx/x/xx/A/xx are for Advanced models. For High Performance models, replace the Performance Level field designator with an H.



Frame Sizes B/C/D



Frame Sizes E/F



Frame Sizes G/H/J

Dimensions			
Frame	**H**	**W**	**D**
AC890 Frame B		2.9 (72)	

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AC890 Frame C	17.1 (433)	4.6 (116)	10.2 (258)
AC890 Frame D		6.3 (160)	
AC890 Frame E	26.3 (668)	10.1 (257)	12.3 (312)
AC890 Frame F	28.3 (720)		13.4 (355)
AC890 Frame G	41.0 (1042)	17.9 (456)	18.3 (465)
AC890 Frame H	46.3 (1177)	22.5 (572)	
AC890 Frame J	50.7 (1.288)	26.6 (675)	
AC890 Frame K	For K Frame Dimensions- Consult Factory		

Cables and Connectors



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Cables	
Part Number	**Description**
CM471050	890 USB Programming Cable
8905/FWCBL200/00	200 mm FireWire Cable (B Frame to a B, C, and D Frame)
8905/FWCBL280/00	280 mm FireWire Cable (C, D Frame to a B, C, and D Frame)
8905/FWCBL1000/00	1000 mm FireWire Cable (Rack to Rack)
8905/FWCBL4500/00	4500 mm FireWire Cable (Rack to Enclosure)

Bus Bar System	
Part Number	**Description**
BH465850	1 m DC SSD Rail/Bus Bar 140A (UL)
BC465938U200	200 mm Insulator for DC Bus Bars
BA469216	Grounding Bus Bar 1m (CS/CD only)

Assembly Kit	
Part Number	**Description**
BA465900	Clips for Fitting on DIN rail
BA465887	Control Cable Support
BA465888	Supply Cable Support
LA471585	I/O Terminal Interface Module
CM471585U001, U002, U003	Drive to module cable for LA471585 (1 meter, 2 meter, 3 meter)
CM471592	Extended module to module cable for LA471585 (2 meter)

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8905/DUCTKIT/190	Duct Kit (1 m Exhaust Duct for Frames B, C, and D + 1 Fan Kit Rated at 190 CFM)

Options

Feedback and I/O	
Part Number	**Description**
8902/E1/00/FF	Abs Sin/Cos (Endat 2.1)
8902/EQ/00/FF	Encoder (Incremental Quadrature)
8902/M1/00/FF	Abs Sin/Cos (Endat 2.1) w. Registration
8902/RE/00/FF	Resolver
8903/EP/00/FF	Reference Encoder Input
8903/AI/00/FF	High Resolution Analog and Reference Encoder Input

Comms Options	
Part Number	**Description**
8903/FA/00/FF	FireWire 1394a Communication Module
8903/DN/00/FF	DeviceNet Communication Module
8903/PB/00/FF	ProfiBus Communication Module
8903/CN/00/FF	ControlNet Communication Module
8903/CB/00/FF	CanOpen Communication Module
8903/IP/00/FF	Ethernet/IP Communication Module
8903/IM/00/FF	Ethernet Modbus/TCPCommunication Module
8903/CT/00/FF	EtherCAT Communication Module
8903/PN/00/FF	Ethernet PROFINET Module

Keypads	
Part Number	**Description**
6901/00/G	Alphanumeric Multilingual Keypad
6502/00/G	Remote Mounting Kit for 6901 Keypad Including 3m Cable
6911	Enhanced alphanumeric keypad with Rotary Selector

Firewire Repeaters	
Part Number	**Description**
LA471480	Firewire Repeater 100Mb/100ft

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