

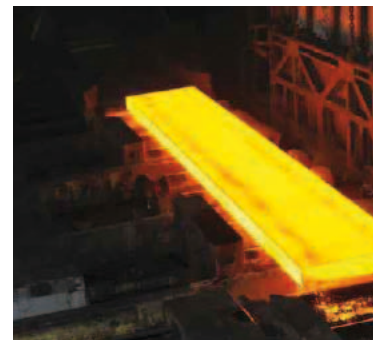


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climate control  
**electromechanical**  
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process control  
sealing & shielding



# AC890PX Modular Chassis Drive

High Power AC Drive 110 kW - 2000 kW



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- the global leader in motion and control technologies

A world class player on a local stage

## Global Product Design

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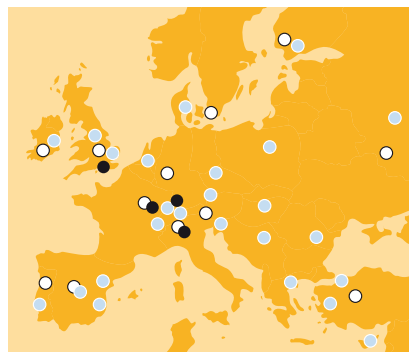
For contact information, please refer to the Sales Offices on the back cover of this document or visit [www.parker.com](http://www.parker.com)



Milan, Italy



Littlehampton, UK



- Manufacturing
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- Distributors



Dijon, France

# High Power AC Drive - AC890PX Modular Chassis Drive

## Overview

### Description

AC890PX Modular Chassis drive is supplied in a kit format for assembly into a standard Rittal TS range industrial enclosure. This enables system integrators and panel builders to add any number of drive sections into their standard electrical control systems, thereby reducing overall enclosure size and complexity.

The AC890PX Modular Chassis kit is supplied complete with all of the necessary individual components and fixings required to complete the assembly of the drive. It can easily be assembled by a technician with minimal drives technical knowledge

### Features

- AC Fed (SD) or DC Fed (CD) modular design configuration
- Power range 110 - 400 kW
- Sold in kit format for self-assembly
- Easy integration into power drive systems



Drive shown part assembled

## Technical Characteristics - Overview

The AC fed (SD) version of the AC890PX Modular Chassis drive is available with three AC input power supply options to suit individual requirements.

Version	400 V nominal	600 V nominal	700 V nominal
<b>Power Supply</b>	380...480 VAC kW ratings @400 VAC 50 Hz HP ratings @460 VAC 60 Hz	500...575 VAC HP ratings @575 VAC 60 Hz	600...690 VAC kW ratings @690Vac 50 Hz
<b>Heavy Duty</b>	110...315 kW, 215...580 A 150...500 HP, 200...580 A	110...315 kW, 160...410 A 200...400 HP, 160...410 A	110...315 kW, 130...340 A 200...400 HP, 130...340 A
150 % overload for 60 s			
<b>Normal Duty</b>	132...400 kW, 260...700 A 200...600 HP, 250...700 A	132...400 kW, 170 - 440 A 200...500 HP, 240 - 500 A	132...400 kW, 160 - 430 A 200...500 HP, 160 - 430 A
110 % overload for 60 s			

## Range Overview

The AC890PX Modular Chassis Drive is a high performance, high power modular drive designed to control 3-phase induction or permanent magnet AC motors, or to be used as an active front-end with power ratings ranging from 110 kW...2000 kW. It can be supplied either in modular kit form, or as a packaged drive system.

### AC890PX Modular Chassis High Power AC Drive: 110...400 kW

The AC890PX Modular Chassis drive has been designed to be sold in kit form for assembly by a system integrator or panel builder. The product is engineered for easy assembly into a standard industrial enclosure with all necessary fixing brackets supplied as part of the kit. The AC890PX Modular Chassis drive offers systems builders the flexibility to add all ancillary components in order to tailor the product to meet their customers needs.



## Packaged Drive Options - Factory Supplied



### AC890PX Modular FASTPACK simple packaged drive system: 110...400 kW

The AC890PX Modular FASTPACK provides users with a ready-to-install standalone drive in an industrial enclosure complete with all additional control equipment. FASTPACK delivers an integrated packaged solution for single motor applications on short lead times. A range of standard pre-engineered control and communications options can be specified to complete the package and provide the necessary control and feedback, whatever the application.



### AC890PX Modular Air-Cooled Parallel AC Systems Drive: 400...900 kW

Larger power paralleled drive solutions based on the AC890PX Modular Chassis drive can be supplied as a fully engineered solution direct from the factory. This allows up to three AC890PX Modular Chassis drives to be paralleled together to achieve control of motors with powers up to 900 kW. The air cooled solution provides a cost effective solution as the modular design of the product allows only the required power stages to be supplied to create a parallel solution.



### AC890PX Modular Advanced- Cooled AC Systems Drive: 500 kW...2 MW

Higher power ratings of up to 2 MW can be achieved using Parker's innovative advanced-cooled 'PowerPak' modules. These larger drives use the same modular construction as the rest of the AC890PX Modular Chassis drive range but are supplied with Parker's 2-phase advanced cooling system, which uses a non-conductive liquid refrigerant. This enables power density to be increased significantly, resulting in a significantly smaller footprint than can be achieved by air-cooling alone.

## Product Description

The AC890PX Modular Chassis is a modular high power AC drive platform designed for industrial applications with power requirements ranging from 110 kW up to 2000 kW. Available in kit form for integration into a standard control enclosure, or as a packaged standalone air-cooled or 2-phase liquid refrigerant cooled drive, AC890PX Modular Chassis drives can be configured for use in a wide range of applications and industries.

### Compact Modular Design

The plug-in modular nature of the AC890PX Modular Chassis makes it easy to configure the drive to suit a number of alternative input power configurations including 12/18 pulse and Active Front End (AFE). The 'PowerPak' phase modules, common supply modules, capacitor and control module can be arranged to suit the particular requirements of the application.



PowerPak Phase Module

### Low-maintenance ensures maximum machine up-time and productivity

Thanks to a plug-in design, the power modules of the AC890PX Modular Chassis drive has been designed to be replaceable in minutes by any technician, even a non-specialist. These lightweight, ship anywhere modules help to reduce machine or process downtime and lost productivity in the event of a fault occurring.

AC890PX Modular Chassis drives can be configured with different PowerPak module combinations dependant upon the application.

#### CP Module

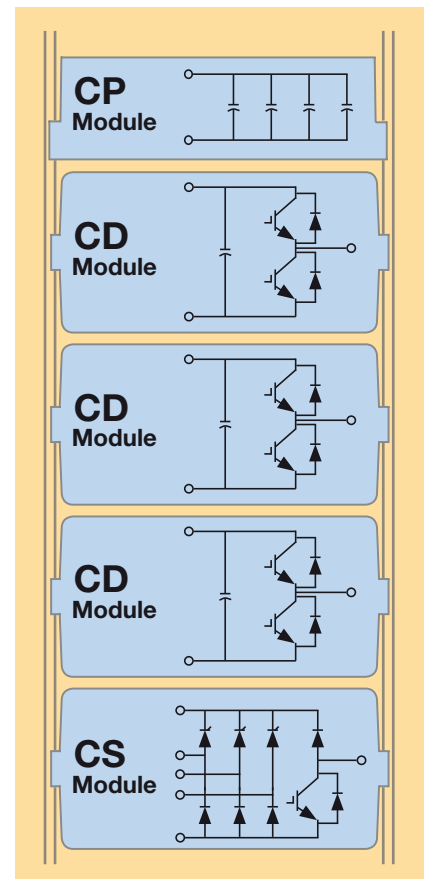
The capacitor module is only fitted to 400 kW drives and provides extra capacitance for the DC bus.

#### CD Module

These output modules each provide a single phase of the complete drive and can be interchanged with each other.

#### CS Module

A 3-phase input rectifier containing a half-controlled diode/thyristor bridge. This module supplies DC to the three CD modules and also includes an integral dynamic brake switch.



## Features and Benefits

**AC890PX Modular Chassis drive can be configured for five modes of operation allowing the appropriate level of control to be selected for the motor and application:**

- **Open-loop V/F speed control**  
This is the simplest form of control available and is ideal for motor speed control where an AC induction motor is controlled by varying the voltage and frequency supplied to the motor.
- **Sensorless flux vector control**  
A ultra high performance sensorless vector algorithm, delivers a combination of both high torque and close speed regulation without the need for any speed measuring transducer.
- **Closed-loop flux vector control**  
Full closed-loop flux vector performance can be achieved by simply adding an encoder feedback 'technology box'. This provides 100 % continuous full load standstill torque, plus a highly dynamic speed loop more than sufficient for the most demanding of applications.
- **Servo control**  
Extremely fast control loops and process bus make the AC890PX Modular Chassis drive ideal for single Permanent magnet AC motor control.
- **4 Quadrant active front-end power supply module**  
The drive is used to feed energy back into the mains supply with sinusoidal currents and unity power factor with very low levels of harmonic distortion.



### Suitable for use with AC induction and PMAC motors

AC890PX Modular Chassis drive can control any of the following motor types, offering total flexibility of motor selection, allowing the most suitable motor to be selected for the application:

- AC Induction motors
- PMAC servo motors
- Torque Motors
- High speed PMAC servo motors

### Compatible with a wide range of feedback options

Thanks to a range of optional feedback cards, AC890PX Modular Chassis drive works with all types of popular feedback systems providing greater flexibility during the design stage of a project:

- Incremental encoder
- Resolver
- SinCos (Endat 2.1) encoder
- Absolute encoder EnDat2.2 option 02



AC induction motors



PMAC brushless motors



Torque motors

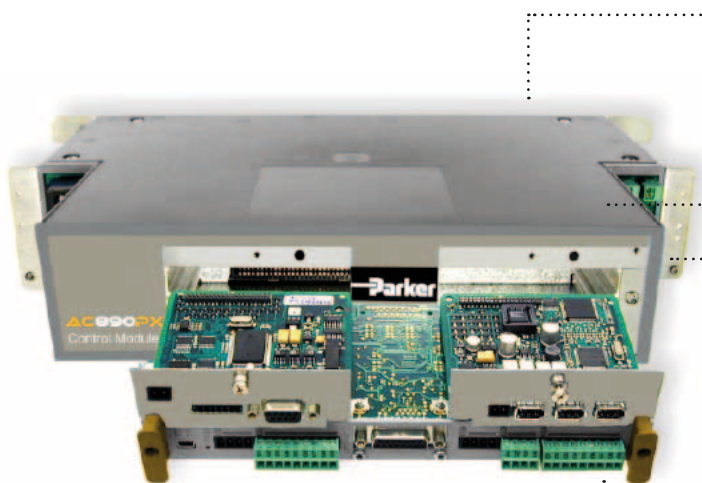


High speed PMAC motors



## AC890PX Control Module

At the heart of the AC890PX Modular Chassis drive is a highly advanced control module that manages all of the drives functions. Taking advantage of leading edge control algorithms running on a fast 150 MHz microprocessor, the drive can achieve very high-bandwidth control loops. This allows you to use the drive for the most demanding of industrial applications.



## Benefits

### Integrated safety functionality

The integrated Safe Torque Off (STO) functionality offers protection against unexpected motor start-up, in accordance to EN 13849-1 PLe, SIL 3 as standard.

### Minimal delay between fieldbus setpoints and the control loops

Designed to integrate in existing automation systems, the AC890PX Modular Chassis drive 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.

### Flexible feedback options

The AC890PX Modular Chassis drive 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 AC890PX Modular Chassis drive has been specifically designed to integrate seamlessly into your automation network with the addition of a communications interface.

## Features

### Support for popular industrial fieldbus networks



### Range of feedback options

- Incremental encoder
- EnDat® 2.2 option 02 (SinCos) encoder
- Resolver

### Ultra-fast control loops

- Torque loop: 62.5  $\mu$ s
- Speed loop: 62.5  $\mu$ s
- Position loop: 62.5  $\mu$ s

### Open FireWire IEEE 1394 Process Port

- 125  $\mu$ s cycle time
- Real-time synchronization between drives

## 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 control.

### High Performance

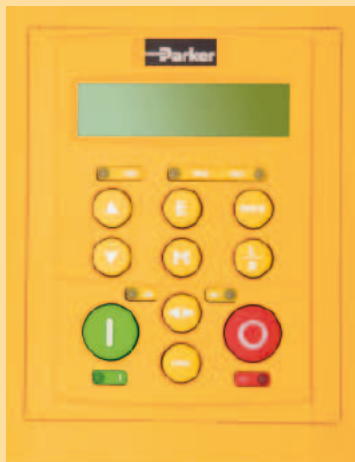
All advanced features plus:  
Library of pre-engineered application specific LINK VM function blocks such as:  
Shaftless printing, cut-to-length, advanced winding and advanced traversing.

## Tools

### Programming / Operator Controls

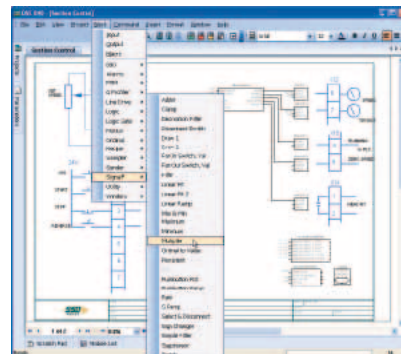
The AC890PX Modular Chassis drive operator keypad provides access to all of the drive's functions in a logical and intuitive manner. The backlit display presents all functions in plain language and engineering units. PLC-like function blocks for advanced applications.

- Multilingual
- Quick setup menu
- Auto-tuning
- Diagnostic messages
- Drive configuration



### Drive System Explorer (DSE)

DSE software allows users to program, configure, monitor and diagnose AC890PXM drives with the use of a PC. An easy to use interface guides the user through every step of project creation and implementation.



## Applications

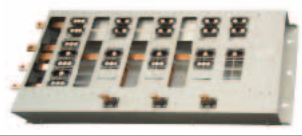









AC890PX Modular Chassis drives are suited to many different motor control and power conversion applications where power density and compactness are key design considerations:

- Fan and pump control
- Automotive test stands
- Extruders
- Decanter and batch centrifuges
- Hoists and cranes
- Winder/un-winder stands
- Ski-lifts and cable cars
- Wind turbine grid-tie
- Offshore and marine
- Solar energy capture
- Ocean / wave energy grid-tie



## Component List Overview

The following is an overview of the parts supplied as part of a AC890PX Modular Chassis kit. The actual contents will vary dependant upon the configuration and rating of the product ordered.

Qty	Description	
1	Backplate Busbar Assembly	
1	Pair of mounting rails	
	Set of TS8 mounting brackets and assembly screws	
	Vent hood	
1	AC890 series control module	
	AC890PX-Series STO card	
1	CS module (AC890PXS only)	
3	CD module	
1	CP module (400 kW only)	
1	Set of control cables	

# Technical Characteristics

## Power Ratings

Model Variant	Asynchronous motors				PMAC Servo motors	
	Heavy Duty [kW/HP]	Normal Duty [kW/HP]	Heavy Duty [A]	Normal Duty [A]	Heavy Duty [A]	Normal Duty [A]
Nominal 400 VAC modules / 565 VDC						
890PX**-43215..	110/147	132/177	215	260	155	190
890PX**-43260..	132/177	160/214	260	340	185	245
890PX**-43300..	160/214	200/268	300	390	210	285
890PX**-43420..	200/268	250/335	420	480	295	350
890PX**-43480..	250/335	315/422	480	600	340	435
890PX**-43520..	280/375	355/476		660	365	475
890PX**-43580..	315/422	400/536	580	720	410	520
Nominal 460 VAC modules / 650 VDC						
890PX**-43215..	112/150	149/200	200	250	140	180
890PX**-43260..	149/200	187/250	250	320	175	230
890PX**-43300..	187/250	224/300	300	380	210	275
890PX**-43420..	224/300	298/400	380	480	270	350
890PX**-43480..	298/400	298/400	460	590	325	425
890PX**-43580..	373/500	448/600	580	700	405	505
Nominal 575 VAC modules / 810 VDC						
890PX**-63160..	112/150	149/200	160	210	90	120
890PX**-63210..	149/200	187/250	210	250	115	145
890PX**-63260..	224/300	224/300	260	310	140	180
890PX**-63310..	112/150	298/400	310	420	170	240
890PX**-63410..	298/400	298/400	410	480	220	275
Nominal 690 VAC modules / 975 VDC						
890PX**-73130..	110/147	132/177	130	160	60	85
890PX**-73160..	132/177	160/214	160	190	75	105
890PX**-73190..	160/214	200/268	190	240	85	130
890PX**-73230..	200/268	250/335	230	280	105	150
890PX**-73280..	250/335	315/422	280	340	125	185
890PX**-73320..	280/375	355/476	320	390	145	210
890PX**-73340..	315/422	400/536	340	430	155	235

See Ordering Information for full order codes and description



## Electrical Characteristics

### AC890PX Modular Chassis Drive

#### Power Supply Requirements

Power Supply	400 V Nominal	600 V Nominal	700 V Nominal
Rated Input Voltage	3 Ø 300...460 VAC ±10 %	3 Ø 500...575 VAC ±10 %	3 Ø 600...690 VAC ±10 %
Input Frequency	45...65 Hz		
Maximum Switching Frequency	2 kHz (standard), adjustable to 4 kHz de-rating may apply		
Overload: Heavy Duty	150 % for 60 seconds		
Overload: Normal Duty	110 % for 60 seconds		
Output Frequencies	0...1000 Hz in V/Hz mode		
	0...350 Hz in Closed loop vector mode		
	0...120 Hz in Sensorless vector mode		
Earth Leakage Current	>100 mA		
Input Power Factor	0.94		

#### Auxiliary Supply Requirements

Auxiliary Voltage	24 VDC		
Control Module and Fans	30 W		
Tech Cards - Speed Feedback	8902/EQ: Encoder Quadrature Incremental - 8 W		
	8902/E1: Sin/Cos Encoder - 3.3 W		
	8902/M1: Mark Registration - 1 W +5 V plus upto 3 W +24 V supply		
	8902/RE: Resolver - 3.2 W		
	8902/RR: Resolver + Repeater - 4.4 W		
Tech Cards - Communications	8903/DN: Devicenet, 8903/CB: CANopen, 8903/CN: ControlNet, 8903/SP: Peer to peer	1.3 W	
	8903/PB: Profibus	2.3 W	
	8903/NIM: Modbus/TCP, 8903/IP: Ethernet IP, 8903/PB: Profinet	1.6 W	

## Environmental Characteristics

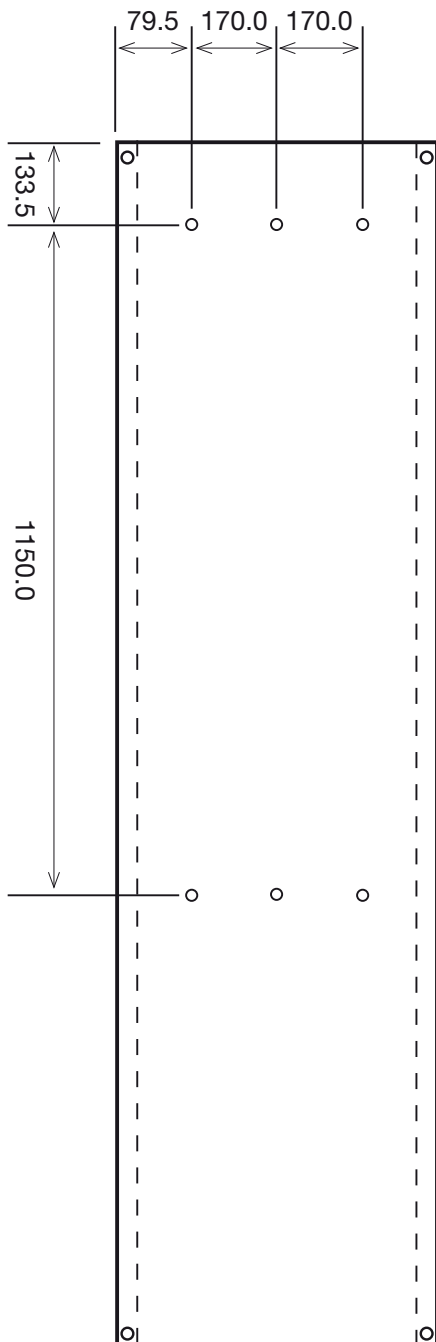
Operating Temperature	0 to +40 °C, derate up to a maximum of +50 °C
Storage Temperature	-25 to +55 °C
Shipping Temperature	-25 to +70 °C
Product Enclosure Rating	IP20/ NEMA 1 standard
Altitude	1000 m ASL. Derate output current by 1.5 % per 100 m to a maximum of 2000 m
Operating Humidity	Maximum 90 % relative humidity at 40 °C non-condensing
Climatic Conditions	Class 3k3, as defined by EN60721

## Standards and Conformance

Pollution Degree	Pollution degree II ( non-conductive pollution, except for temporary condensation)
Europe	This product conforms with the Low Voltage Directive 2006/95/EC
EMC Compatibility	CE Marked to EN618000-3 (EMC Directive)
Safety	SIL3 / PLe as per EN13849-1

## Dimensions

The AC890PX Modular Chassis Drive has been designed to mount in a standard 600 x 600 mm Rittal TS8 cubicle. The mounting system is sufficiently flexible to allow the AC890PXM to be installed in other floorstanding enclosure with minimal modification. If the product is to be mounted in a wider or deeper cubicle then additional brackets may be required to form a rigid frame. Refer to booklet HM501225U001 for detailed assembly and mounting instructions.



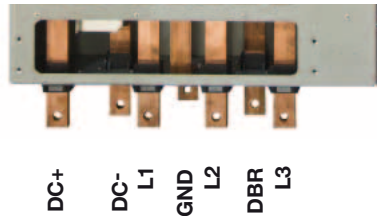
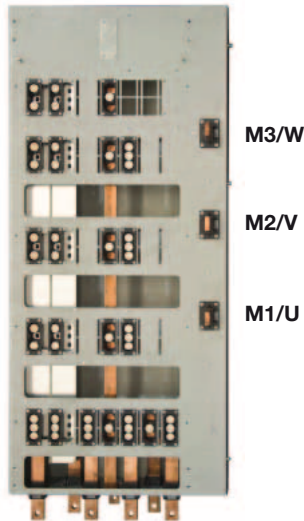
Power Rating	Length (mm)	Width (mm)	Depth (mm)	Weight
110 kW	1150	500	515	135 kg
132 kW	1150	500	515	135 kg
160 kW	1150	500	515	135 kg
200 kW	1150	500	515	135 kg
250 kW	1150	500	515	135 kg
280 kW	1150	500	515	155 kg
315 kW	1150	500	515	155 kg

Power Ratings are based on 400V nominal supply, constant torque ratings  
 All dimensions and weights are approximate.

Drawing shows TS8006 backplate

## Connections

### Power connectors



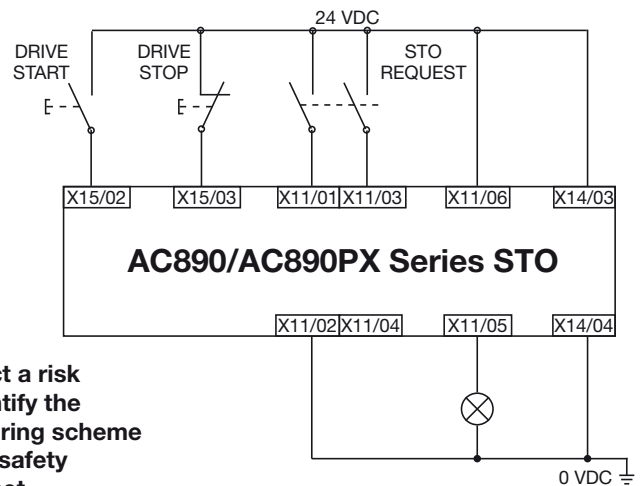
Term.	Description
DC+	DC Link Bus +Ve
DC-	DC Link Bus -Ve
L1	L1 AC Input Supply
GND	Earth
L2	L2 AC Input Supply
DBR	Dynamic Brake Resistor
L3	L3 Ac input Supply
M1/U	Motor Output U
M2/V	Motor Output V
M3/W	Motor Output W

### Safe Torque Off (STO)

The AC890 series features Safe Torque Off functionality as standard, offering users protection against unexpected motor start-up in accordance with EN 13849-1 PLe or SIL 3.

The STO functionality helps protect personnel and machinery by preventing the drive from restarting automatically. It disables the drive pulses and disconnects the power supply to the motor, so that the drive cannot generate any potentially hazardous movement. The state is monitored internally within the drive.

Term.	Label	Description
X11/01	STOA	To disable STO: connect to X14/03
X11/02	STO 0V	To disable STO: do not connect
X11/03	STO B	To disable STO: connect to X14/03
X11/04	STO 0V	To disable STO: connect to X14/04
X11/05	STATUS-	To disable STO: do not connect
X11/06	STATUS+	To disable STO: do not connect
X11/07	STO 0V	To disable STO: connect to X14/04



The example wiring diagram shows the minimum connections required to implement STO with the AC890PXM series AC drives.

**Users must conduct a risk assessment to identify the appropriate STO wiring scheme and ensure that all safety requirements are met.**

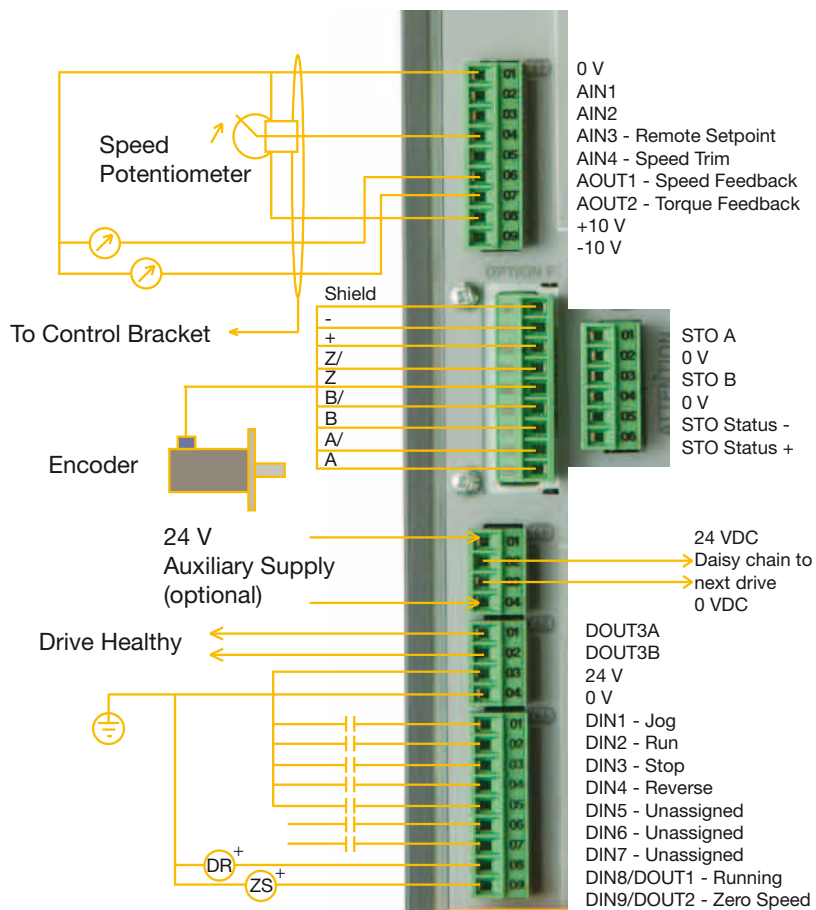


**It is the user's responsibility to ensure the safe and correct use of the STO function of the AC890PX-Series. User's should read and fully understand chapter 6 (Safe Torque Off) of the product user manual. Manual No. HA501299\_01**

**Non-power connectors**

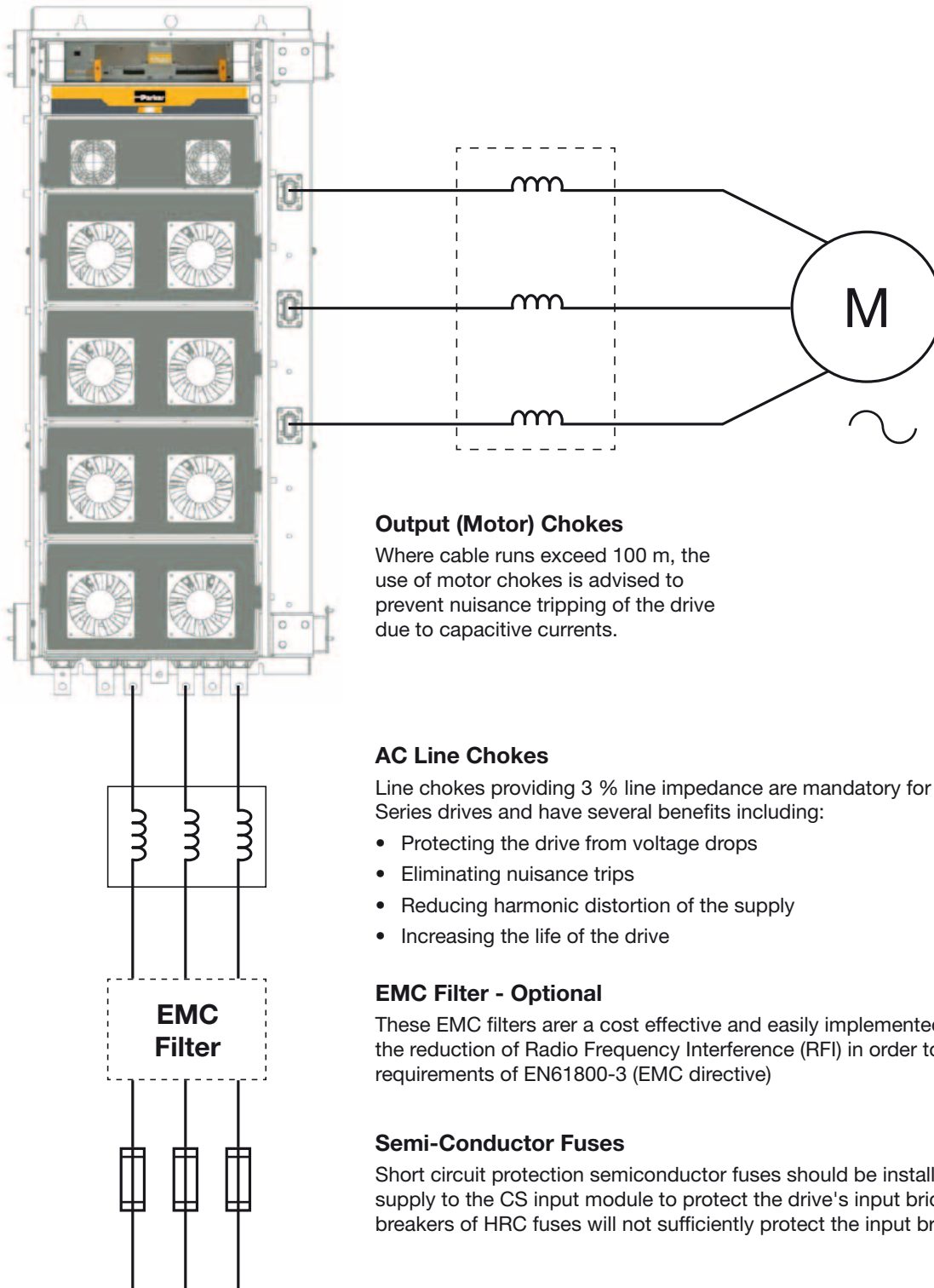
Term.	Label	Description
X10/		USB programming port
X12/01	0 V	0 V Reference Supply
X12/02	AIN1	Analogue Input 1
X12/03	AIN2	analogue Input 2
X12/04	AIN3	Analogue Input 3 - Remote setpoint
X12/05	AIN4	Analogue Input 4 - Speed Trim
X12/06	AOUT1	AOUT1 - Speed Feedback
X12/07	AOUT2	AOUT2 - Torque Feedback
X12/08	+10 V	+10 V Reference Supply
X12/09	-10 V	-10 V Reference Supply
X13/01	24 VDC	24 VDC - User Supplied
X13/02	24 VDC	24 VDC- Daisy chain out to next drive
X13/03	0 VDC	0 VDC - Daisy chain out to next drive
X13/04	0 V	0 V -User Supplied
X14/01	DOUT3A	Drive healthy relay output
X14/02	DOUT3B	Drive healthy relay output
X14/03	24 VDC	24 V DC Common supply
X14/04	0 V	0 V Reference

Term.	Label	Description
X15/01	DIN1	Digital Input 1 - (Jog)
X15/02	DIN2	Digital Input 2 - (Run)
x15/03	DIN3	Digital Input 3 - (Stop)
X15/04	DIN4	Digital Input 4 - (Reverse)
X15/05	DIN5	Digital Input 5 - (Unassigned)
X15/06	DIN6	Digital Input 6 - (Unassigned)
X15/07	DIN7	Digital Input 7 - (Unassigned)
X15/08	DINOUT1	Digital In/Out - (Running)
X15/09	DINOUT2	Digital In/Out - (Zero Speed)
X16/01	DOUT4A	Relay output 4
X16/02	DOUT4B	Relay output 4
X16/03	DOUT5A	Relay output 5
X16/04	DOUT5B	Relay output 5
X16/05	DOUT6A	Relay output 6
X16/06	DOUT6B	Relay output 6
X16/08	THERMB	Motor thermistor input B
X16/09	THERMA	Motor thermistor input A





## Standard Power Configurations



### Output (Motor) Chokes

Where cable runs exceed 100 m, the use of motor chokes is advised to prevent nuisance tripping of the drive due to capacitive currents.

### AC Line Chokes

Line chokes providing 3 % line impedance are mandatory for the AC890PX-Series drives and have several benefits including:

- Protecting the drive from voltage drops
- Eliminating nuisance trips
- Reducing harmonic distortion of the supply
- Increasing the life of the drive

### EMC Filter - Optional

These EMC filters are a cost effective and easily implemented solution for the reduction of Radio Frequency Interference (RFI) in order to meet the requirements of EN61800-3 (EMC directive)

### Semi-Conductor Fuses

Short circuit protection semiconductor fuses should be installed in the 3-phase supply to the CS input module to protect the drive's input bridge. Circuit breakers or HRC fuses will not sufficiently protect the input bridge.

**Versatile Power Configurations**

The AC890PX-Series can be configured to operate in a number of different power configuration modes to suit the exact requirements of your application. The modularity of the AC890PX-Series enables different combinations of PowerPak modules to be easily selected and installed to achieve these schemes without involving significant amounts of pre-engineering work.

**Building Blocks**

AC890PX-Series is available in two basic variants which can be combined to create a number of different input power configurations.

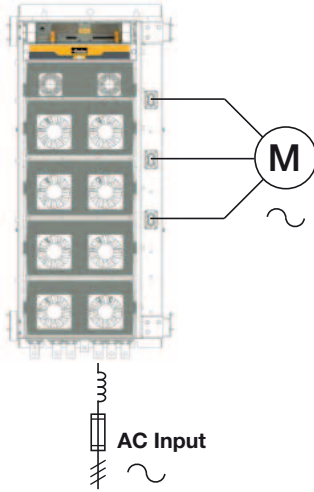
Both versions are available in power ratings of 110 kW...400 kW

**(SD) Standard Inverter**

An AC fed inverter suitable for use with a 400...690 VAC input. This can be used either as a standalone drive in its own right or as the AC input drive in a multi-drive application.

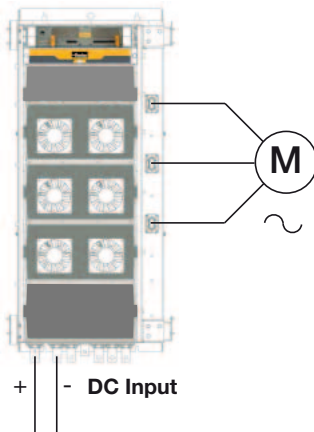
**(CD) DC Fed Inverter**

A DC fed inverter for use with a 500...1000 VDC input. As with the SD inverter this can be used as a standalone drive where a suitable DC supply is available, or more usually as part of a multi-drive system.



**Standard Inverter (SD)**

Standard inverter configuration for control of single motor applications in either open or closed loop mode.



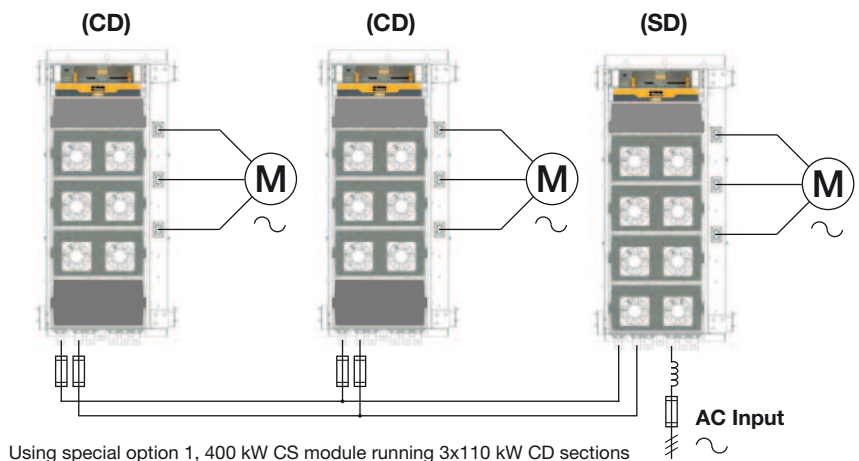
**DC Fed Inverter (CD)**

DC fed inverter for either single or multi-drive configurations where a suitable DC input supply is available.

**Common DC Bus System**

Common DC bus system using a standard (SD) inverter with a high power input stage to supply multiple (CD) common bus drives.

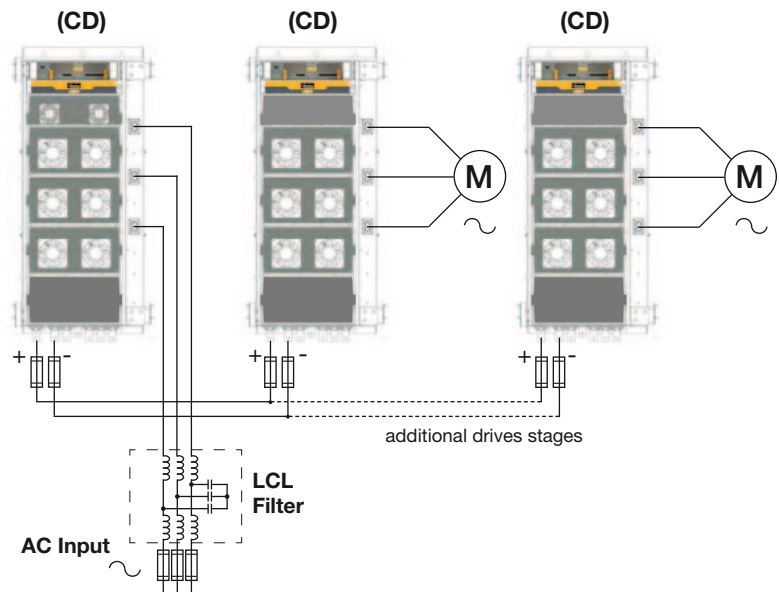
- Power range to 400 kW
- 400...700 VAC AC input
- Multi-motor applications
- Common DC bus power sharing



### Active Front End (AFE)

Regenerative drive solution for excess system energy and for regenerative applications. With active input for elimination of supply harmonics with unity power factor.

- Power range to 2 MW
- 4Q regenerative system
- Unity power factor

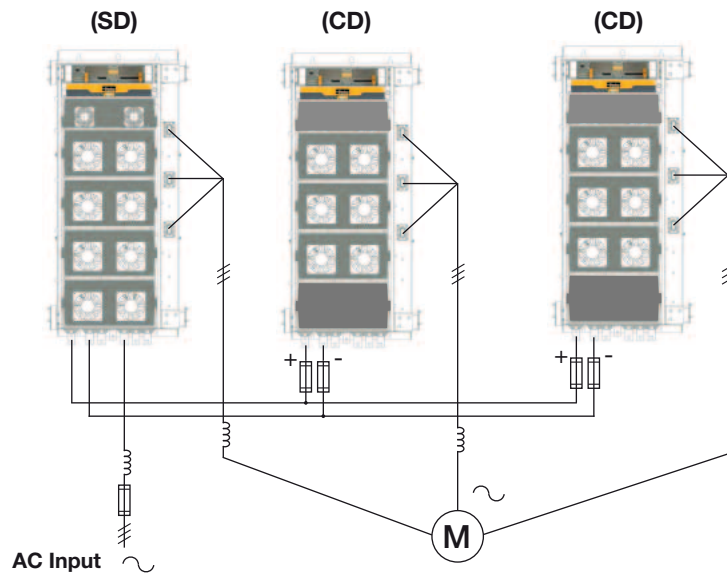


### Parallel (AC890PXP)

For power demands greater than 400 kW, offered as pre-built systems in either air or liquid cooled formats for single-, multi-motor, or AFE control.

AC890PX-Series control module can control up to 3x sections of power modules to achieve power ratings of up to 2000 kW.

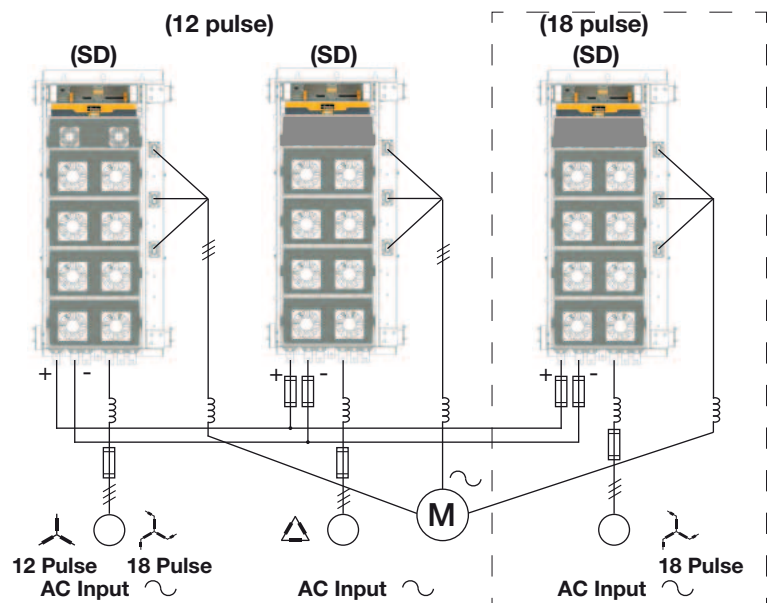
- AC or DC input supply
- Motor control or AFE configuration
- Air-cooled to 1200 kW, advanced-cooled to 2 MW



### 12/18 Pulse Configuration

Offered as a pre-built system, the 12/18 pulse configuration can be used in single-motor applications where power quality and minimal supply harmonic distortion is critical.

- 400..690 VAC AC input
- Power range to 1000 kW
- Minimised input harmonics



## Accessories and Options

### Communication Interfaces

<b>8903-IP-00</b>	<b>Ethernet IP communication interface</b>
<b>Supported Protocols</b>	Ethernet IP
<b>Communication Speed</b>	10/100 Mbits/s
<b>Station Address</b>	By Drive System Explorer software via RTNX protocol
<b>Suitable for firmware</b>	Version 3.2+

<b>8903-IM-00</b>	<b>Ethernet Modbus/TCP communication interface</b>
<b>Supported Protocols</b>	Modbus TCP
<b>Communication Speed</b>	10/100 Mbits/s
<b>Station Address</b>	By Drive System Explorer software via RTNX protocol
<b>Suitable for firmware</b>	Version 3.2+

<b>8903-DN-00</b>	<b>DeviceNet communication interface</b>
<b>Supported Protocols</b>	Supports the group 2 only slave subset of the DeviceNet protocol
<b>Communication Speed</b>	125 k, 250 k and 500 kbits/s
<b>Station Address (MACID)</b>	Dip switch or software setting of station address and network speed
<b>Supported Messages</b>	Polled I/O, Cyclic Outputs, Change of State (COS), Explicit Messaging
<b>Suitable for firmware</b>	Version 1.9+

<b>8903-CB-00</b>	<b>CANopen communication interface</b>
<b>Profile</b>	DS402
<b>Communication Speed</b>	20 k, 50 k, 125 k, 250 k, 500 k, 1 Mbits/s selectable by software or DIP switch setting
<b>Station Address</b>	DIP switch or software setting of station address and network speed
<b>Supported Messages</b>	SDO, PDO, NMT, SYNC
<b>Suitable for firmware</b>	Version 1.3+

<b>8903-CN-00</b>	<b>ControlNet communication interface</b>
<b>Communication Speed</b>	Selectable by software or DIP switch setting
<b>Station Address</b>	Software setting of station address
<b>Supported Messages</b>	Polled I/O
<b>Suitable for firmware</b>	Version 1.4+

<b>8903-PB-00</b>	<b>PROFIBUS-DP communication interface</b>
<b>Supported Protocols</b>	PROFIBUS-DP; Demand data and Data exchange
<b>Communication Speed</b>	Up to 12 Mbits/s; selected by the master
<b>Station Address</b>	DIP switch or software setting of station address
<b>Suitable for firmware</b>	Version 1.4+

<b>8903-FA-00</b>	<b>Firewire IEEE 1394 communication interface</b>
<b>Communication Speed</b>	Up to 400 MBaud
<b>Communication Supported</b>	Peer-to-peer communication between drives via IEEE 1394 standard
<b>Suitable for firmware</b>	Version 3.2+



## Communication Interfaces

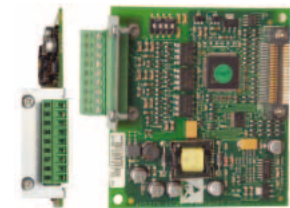
<b>8903-PN-00</b>	<b>PROFINET I/O communication interface</b>
<b>Supported Protocols</b>	PROFINET I/O Real-Time (RT) Protocol
<b>Communication Speed</b>	100 Mbits/s
<b>Station Address</b>	Software setting of station address via DSE
<b>Suitable for firmware</b>	Version 3.3+
<b>8903-SP-00</b>	<b>CAN peer to peer communication interface</b>
<b>Supported Protocols</b>	Peer to peer data exchange with other drives
<b>Communication Speed</b>	Up to 1 Mbits/s selectable by DIP switch
<b>Station Address</b>	Selected by DIP switch setting
<b>Suitable for firmware</b>	Version 3.3+
<b>8903-CT-00</b>	<b>EtherCAT communication interface</b>
<b>Supported Protocols</b>	CANopen over EtherCAT (CoE) DS301 compliant
<b>Communication Speed</b>	100 Mbits/s
<b>Suitable for firmware</b>	Version 3.7+
<b>8903-RS-00</b>	<b>RS485 / Modbus communication interface</b>
<b>Supported Protocols</b>	Modbus RTU only
<b>Communication Speed</b>	1200 to 115200 bits/s
<b>Station Address</b>	Selectable via software
<b>Suitable for firmware</b>	Version 3.7+



## Feedback Cards

### Incremental Quadrature Encoder Card 8902-EQ

<b>8902-EQ-00-00</b>	<b>Optional HTTL Incremental Encoder</b>
<b>Maximum pulse rate</b>	250 kHz (differential) 200 kHz (single ended)
<b>Receiver current</b>	≤10 mA per channel
<b>Input Format</b>	Two differential channels in quadrature (Clock/direction or clock only)
<b>Input Voltage</b>	±30 V (differential), 0...30 V (single-ended)
<b>Input Voltage Differential</b>	±30 V maximum
<b>Input Voltage Threshold dip switch settings</b>	3 V ±1 V (differential) 8 V ±1 V (single-ended)
<b>Encoder Power Supply</b>	Maximum load 200 mA or 2 W

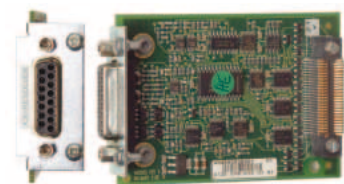


#### Description

The HTTL 8902-EQ speed feedback option allows incremental encoders to be connected directly to the drive to provide highly accurate speed feedback measurement. Supplies variable voltage isolated encoder power supply.

### Resolver Feedback Card 8902-RE

<b>8902-RE-00-00</b>	<b>Optional Resolver feedback card</b>
<b>Maximum Speed</b>	Up to 50 000 min <sup>-1</sup> (with 2 pole resolver)
<b>Carrier Output Signal</b>	7 V <sub>rms</sub> , 8 kHz
<b>Maximum Carrier Supply</b>	70 mArms
<b>Maximum Input Voltage</b>	±12 V <sub>peak</sub>
<b>Accuracy</b>	<5 minutes
<b>Resolution</b>	Equivalent to 16 bits in one revolution of resolver
<b>Inputs</b>	Differential inputs Z <sub>in</sub> ~2 kΩ
<b>Maximum Input Voltage</b>	12 V <sub>peak</sub>



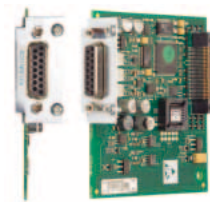
#### Description

The 8902-RE resolver speed feedback option allows the resolver to be connected directly to the drive to provide highly accurate speed feedback measurement. Contains a carrier output signal to power the resolver.

## Feedback Cards

### SinCos® EnDat2.1 Feedback Card 8902-E1

<b>8902-E1-00-00</b>	<b>Optional SinCos® encoder card</b>
<b>Maximum Pulse Rate</b>	250 kHz
<b>Receiver Impedance</b>	120 Ω
<b>Input Format</b>	two differential 1 V <sub>pp</sub> signals in quadrature
<b>Encoder Supply</b>	Maximum load 250 mA Adjustable Voltage 5 V/10 V

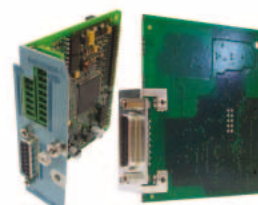


#### Description

The SinCos® speed feedback option 8902-E1 allows a 1 V<sub>pp</sub> SinCos® encoder to be connected directly to the drive to provide highly accurate speed feedback measurement. Decodes Heidenhain EnDat2.1 absolute position encoders and supplies 5 V or 10 V for the encoder.

### SinCos® registration position 8902-M1 and 8903-M1

<b>8902-M1-00</b>	<b>Slave SinCos® registration</b>
<b>8903-M1-00</b>	<b>Master SinCos® registration</b>
<b>Maximum Pulse Rate</b>	250 kHz
<b>Receiver Impedance</b>	120 Ω
<b>Input Format</b>	2 differential 1 V <sub>pp</sub> signals in quadrature
<b>Encoder Supply</b>	250 mA maximum load
<b>Supply Voltage</b>	5 V/10 V adjustable
<b>Terminal Type</b>	Sub-D15 connector
<b>Maximum Cable Length</b>	150 m screened cable
<b>Serial Protocol</b>	EnDat2.1



#### Description

- The 8903-M1-00 and 8902-M1-00 feedback cards allow operation without external registration position, thanks to the connection of the encoder to the drive. They provide highly accurate speed feedback measurement and registration. Nevertheless registration applications are best achieved when both cards are used.
- Interpolates each encoder line with 11-bit accuracy giving 4 million counts/rev. on a 2048 line encoder
- Supplies 5 V or 10 V to the encoder
- Decodes Heidenhain EnDat2.1 absolute position encoders
- Isolated digital inputs that can be used either for general purpose inputs, or for inputs from registration mark sensor (8903-M1 only)
- 3 non-isolated digital outputs that can be either for general purpose outputs or for synthesizing an encoder output (8903-M1 only)

### Approved Encoders

	1 V <sub>pp</sub>	EnDat2.1	Single turn ABS	Multi-turn ABS
<b>Heidenhain:</b>				
ECN113	√	√		√
ECN1113	√	√	√	
EQN425	√			
ECN413				
ERN480				
<b>Stegmann:</b>				
HG660 AKR (xxxx)S	√			
HG660 DKR (xxxx)S	√			
<b>Hengstler:</b>				
RIS58-H				

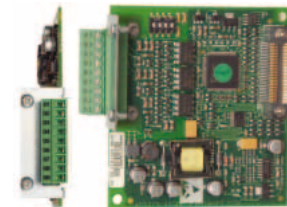
## Input and Output Cards

### Auxiliary digital input (8903-M1... only)

<b>Low Logic Level</b>	0 V to 5 V relative to X63 pin 5
<b>High Logic Level</b>	15 V to 26 V relative to X63 pin 5
<b>Maximum Input Voltage</b>	30 V relative to X63 pin 5
<b>Input Current</b>	Low logic level <1 mA High logic level >3 mA, <10 mA Typical input at 24 V: 7 mA
<b>Isolation withstand relative to drive chassis</b>	30 V
<b>Input Safety Category</b>	SELV
<b>Terminal Type</b>	6-way pluggable 3.5 mm terminal block
<b>Maximum Cable Length</b>	150 m screened cable is recommended for all lengths, but essential if over 30 m in order to comply with EMC regulations

### Auxiliary digital outputs (8903-M1... only)

<b>Input Voltage (VS)</b>	5 V to 24 V
<b>Maximum Input Voltage</b>	30 V
<b>Maximum Output Current</b>	±100 mA per output
<b>Output Voltage</b>	Low logic level <3 V to 100 mA High logic level >VS – 4 V to 100 mA
<b>Overload and short circuit duration</b>	Indefinite withstand
<b>Max. Output Frequency</b>	250 kHz per output
<b>Terminal Type</b>	8-way pluggable 3.5 mm terminal block
<b>Maximum Cable Length</b>	150 m screened cable is recommended for all lengths, but essential if over 30 m in order to comply with EMC regulations



### High Resolution Analogue Input 8903-AI and 8903-EP Encoder Card

<b>8903-AI-00-00</b>	<b>High Resolution Analogue Input Card</b>
<b>8903-EP-00-00</b>	<b>Encoder Card</b>
<b>Maximum pulse rate</b>	250 kHz
<b>Receiver current</b>	≤10 mA per channel
<b>Input Format</b>	Two differential channels in quadrature (Clock/direction or clock only)
<b>Input Voltage</b>	±30 V (differential), 0-30 V (single-ended)
<b>Input Voltage Threshold dip switch settings</b>	3 V ±1 V (differential) 8 V ±1 V (single-ended)
<b>Encoder Power Supply</b>	Maximum output current ±100 mA per output

#### Description

The high resolution Analog Input Option adds a sixth analogue input to the AC890PX Modular Chassis drive. This input can be used, as the other inputs, within a configuration or directly as the speed setpoint for a fast response time.

In addition to this Analog Input the 8903/AI option provides an incremental encoder input as well as an incremental encoder output.

The 8903/EP Encoder Option has the same functionalities of the 8903/AI except for the analogue input.

### High Resolution Analogue Input 8903-AI Only

<b>Analogue Input</b>	
<b>Resolution</b>	15 bits + sign bit
<b>Input Voltage Range</b>	±11 V
<b>Input Format</b>	Differential
<b>Input Impedance</b>	100 kΩ
<b>Input Low Pass Filter</b>	3 kHz
<b>Encoder Power Supply</b>	Maximum output current ±100 mA per output

## Anciliary Parts

### AC Input Chokes

Parker's range of AC input chokes have been especially selected to match the requirements of the Parker AC drive range and are used to reduce the harmonic content of the supply current.



#### Nominal 400 VAC

Model Number	[kW]	Input Current [A]	Inductance [ $\mu$ H]	Order code
890PXSA-43215	110	230	100	CO501691U411
890PXSA-43260	132	270	90	CO501691U413
890PXSA-43300	160	340	80	CO501691U416
890PXSA-43420	200	425	55	CO501691U420
890PXSA-43480	250	535	45	CO501691U425
890PXSA-43520	280	600	40	CO501691U428
890PXSA-43580	315	680	35	CO501691U431

For other voltages please contact your local sales office.

### Output Chokes

To limit capacitive currents and prevent nuisance tripping in installations with longer cable runs over 100 m, a choke may be fitted to the drives output. This limits the capacitive current and prevents overcurrent trips and excessive temperature rise in the motor. These may be used with 380/460 V and 500/575 VAC drives.



Motor Choke Maximum Current	Order Code
250 A	CO471702U250
320 A	CO471702U320
400 A	CO471702U400
500 A	CO471702U500
600 A	CO471702U600
700 A	CO471702U750

### Auxiliary Transformers

1 kVA 30 VAC control transformer for auxiliary power supply requirements.

Supply Voltage	Order Code
400-480 VAC	C0501514
500-690 VAC	C0501515





### EMC Filter

A range of custom designed optional EMC (Electromagnetic Compatibility) filters are available for use with Parker SSD Drives product range. They are used to help achieve conformance with the EMC directive BS EN 61800-3:2004 - "Adjustable speed electrical power drive systems - Part 3".



Rating	Order Code
Up to 132 kW	CO467843U340
Up to 315 kW	2-off CO467843U340

### AFE 4 Quadrant

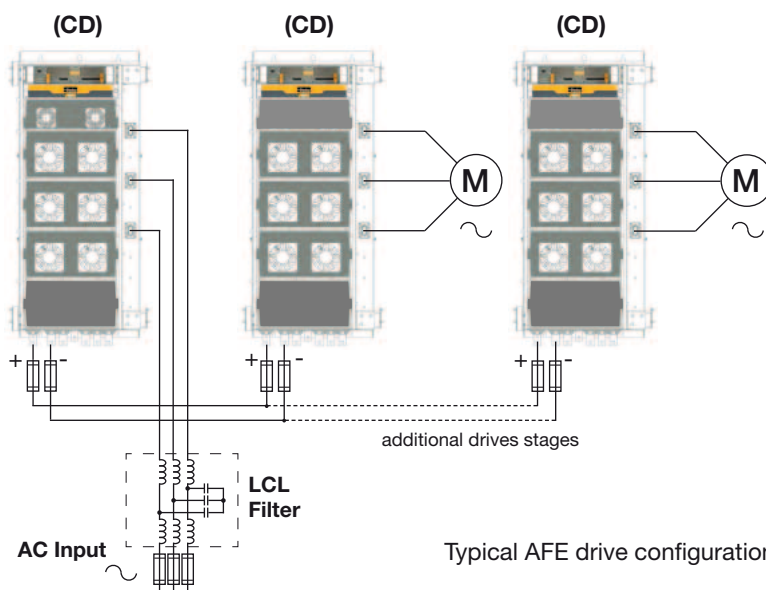
In many applications the overall power consumed by the system is less than the sum of power of the installed motors as some motors will be driven electrically while others are coasting, being driven by the momentum of the machine.

For such applications, it is beneficial to connect the drives of all sections of the machine to a common DC bus: the energy-generating sections are then fed into the energy-consuming sections, which reduces the overall energy consumption of the system.



Thanks to the 4 quadrant (4Q) functionality of the AC890PX-Series, excess energy in the system is returned to the network and not dissipated in the form of heat through braking resistors. The current waveforms are almost sinusoidal, which minimizes network harmonics

Rating	Filter Assembly 110 V fans & control	Filter Assembly 230 V fans & control	L1 (5 %)	L2 (3 %)
<b>Nominal 400 VAC</b>				
Up to 180 kW	LA482468U220	LA482471U220	CO468326U220	CO468325U220
Up to 280 kW	LA482468U315	LA482471U315	CO468326U315	CO468325U315
Up to 315 kW	LA482468U355	LA482471U355	CO468326U355	CO468325U355
<b>Nominal 500 VAC</b>				
Up to 180 kW	LA482469U220	LA482472U220	CO468326U220	CO468325U220
Up to 280 kW	LA482469U315	LA482472U315	CO468326U315	CO468325U315
Up to 315 kW	LA482469U355	LA482472U355	CO468326U355	CO468325U355



Typical AFE drive configuration

## Drive System Explorer (DSE) Software

### Description

DSE890 is the programming, monitoring and diagnostic software platform for AC890 and AC890PX series variable speed drives. Communication between the drive and PC is via a mini USB port located on the front of the drive.

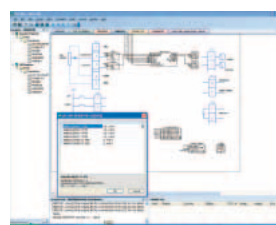
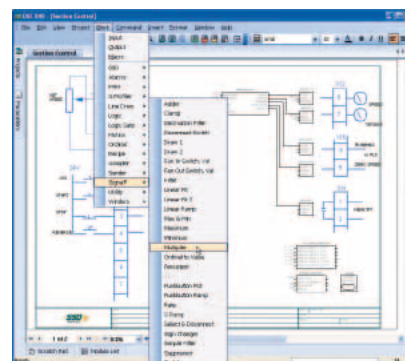
Thanks to the on-line help, users can achieve the optimum drive configuration without the need to navigate through complicated parameter menus.

Advanced programming is carried out through a set of pre-engineered templates in order to create the required configuration.

It is possible to monitor every parameter of the drive either as a digital value or as a function in the “chart recorder” during normal operation. Creates projects quickly and easily

- Graphical tool based on a block diagram approach
- Integrated digital oscilloscope
- On-line configuration and monitoring
- System identification tool

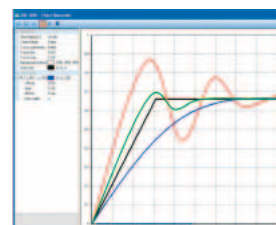
### DSE890 Programming Software



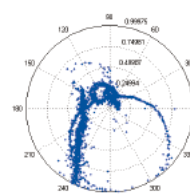
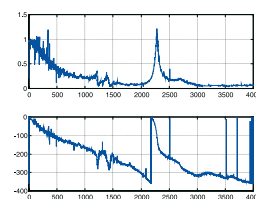
Parameter adjustment and project creation

### Product Codes

DSE Lite software (single axis) + USB cable	<b>8906-DSELITE-00</b>
DSE Development software + USB cable	<b>8906-DSEDEV-00</b>
DSE Runtime/Maintenance + USB cable	<b>8906-DSERUN-00</b>
DSD to DSE Development Upgrade + USB cable	<b>8906-DSEDE</b>
DSD Runtime to DSE Runtime Upgrade + USB cable	<b>906-DSERUNUPG-00</b>



real-time data acquisition oscilloscope



System identification tool

# Order Code

## AC890PX Modular Chassis Drive

	1	2	3		4	5	6		7	8	9		10	11	12	13	14
Order example	890PX	S	A	-	4	3215	M	-	B	0	0	-	1	A	0	0	0

<b>1 Drive family</b>	<b>890PX</b>	High Power Modular AC Drive Series
<b>2 Configuration</b>	<b>S</b>	Standalone Drive (SD)
	<b>C</b>	Common DC Bus Drive (CD)
<b>3 Cooling</b>	<b>A</b>	Air-Cooled
<b>4 Nominal voltage</b>	<b>4</b>	400/460 V Nominal Supply
	<b>6</b>	575 V Nominal Supply
	<b>7</b>	690 V Nominal Supply
<b>5 Power and current ratings (Constant, Variable Torque)</b>		
	<b>400/460 V Nominal Supply</b>	
	<b>3215</b>	110/132 kW, 150/200 HP
	<b>3260</b>	132/160 kW, 200/250 HP
	<b>3300</b>	160/200 kW, 250/300 HP
	<b>3420</b>	200/250 kW, 300/400 HP
	<b>3480</b>	250/280 kW, 400/500 HP
	<b>3520</b>	280/315 kW, 375/476 HP
	<b>3580</b>	315/400 kW, 500/600 HP
	<b>575 V Nominal Supply</b>	
	<b>3160</b>	112/149 kW, 150/200 HP
	<b>3210</b>	149/187 kW, 200/250 HP
	<b>3260</b>	187/224 kW, 250/300 HP
	<b>3310</b>	224/298 kW, 300/400 HP
	<b>3410</b>	298/373 kW, 400/500 HP
	<b>690 V Nominal Supply</b>	
	<b>3130</b>	110 kW/132 kW, 150/200HP
	<b>3160</b>	132 kW/160 kW, 200/250 HP
	<b>3190</b>	160 kW/200 kW, 250/300 HP
	<b>3230</b>	200 kW/250 kW, 300/400 HP
	<b>3280</b>	250 kW/280 kW, 400/500 HP
	<b>3320</b>	280 kW/315 kW, 375/476 HP
	<b>3340</b>	315 kW/400 kW, 500/600 HP
<b>6 Build Style</b>	<b>M</b>	Modular Chassis Drive
<b>7 Brake</b>	<b>0</b>	Brake not available for CD inverter
	<b>B</b>	Brake fitted as standard to SD inverter

<b>8 Enclosure</b>	<b>0</b>	No Enclosure (Frame M only)
<b>9 Documented special options (0-9)</b>	<b>0</b>	No special option
<b>10 Performance level</b>	<b>1</b>	Advanced
	<b>2</b>	High
<b>11 Supply Frequency</b>	<b>A</b>	50 Hz
	<b>B</b>	60 Hz
<b>12 Feedback Option - Slot F</b>	<b>0</b>	None
	<b>1</b>	SinCos encoder (Endat 2.1)
	<b>3</b>	Incremental quadrature encoder
	<b>5</b>	Resolver
	<b>6</b>	Resolver repeater
	<b>7</b>	Mark registration (Endat 2.1 encoder)
<b>13 Technology Option - Slot A</b>	<b>0</b>	None
	<b>N</b>	CANopen communications
	<b>C</b>	ControlNet communications
	<b>D</b>	DeviceNet communications
	<b>P</b>	Profibus communications
	<b>T</b>	Modbus TCP/IP
	<b>H</b>	Ethernet IP
	<b>F</b>	Profinet
	<b>7</b>	Mark registration (Endat 2.1 encoder)
	<b>S</b>	RS485 communications
	<b>E</b>	Encoder with repeater output
	<b>R</b>	High Resolution Analogue Input
<b>14 Option B</b>	<b>0</b>	Not fitted
	<b>A</b>	Firewire 1394A
	<b>X</b>	CAN peer-to-peer communications
	<b>E</b>	Encoder with repeater output
	<b>R</b>	High Resolution Analogue Input

# Packaged Drives Options - Factory Supplied

## High Power Packaged AC Drives

110 kW	400 kW	500 kW
AC890PX FASTPACK		
		AC890PX

### AC890PX FASTPACK Drive: 110 - 400 kW

In addition to being supplied in kit form, AC890PX Modular Chassis drives can be supplied as a FASTPACK free-standing drive complete with all necessary ancillary components to enable control of either an AC induction or Permanent Magnet AC motor.

Designed as a simple replacement to star/delta or soft start control of motors, FASTPACK can be configured to deliver complete control in a ready-to-install IP33 or IP54 enclosure.

Control options such as operator keypad, start/stop pushbuttons, emergency-stops and output contactors can all be selected from a list of standard options to meet a host of control requirements from simple motor speed control to more complex applications.



### AC890PX Modular Air-Cooled Parallel AC Drive Systems: 400 - 900 kW

For systems with higher power requirements, up to 900 kW, a maximum of three AC890PX Modular Chassis drives can be connected in parallel with the use of additional input and output chokes.

Parker is able to offer this solution as a turnkey fully integrated drive system with all necessary ancillary control hardware and software.

Alternatively a simple freestanding drive with or without AFE can be supplied up to 900 kW.

With cooling designed to meet specific requirements, we can offer any number of cooling methods including chillers, air/water heat exchangers, force/natural ventilation or water cooling.



900 kW

2000 kW

**Modular Air-Cooled Parallel**

**AC890PX Modular Advanced-Cooled Parallel**



**AC890PX Modular Advanced-Cooled Parallel AC Drive Systems:  
 500 - 2000 kW**

With the introduction of an innovative Parker-engineered cooling system, drive systems with increased power outputs can be created with an extremely compact footprint.

The award-winning, advanced cooling design draws from years of Parker experience in refrigeration technology combined with state of the art drive design to produce a truly high-performance AC drive range.

The hermetically sealed system has no compressor, requires no routine maintenance and uses a non-conductive, non-corrosive coolant.



# Related Products

## HMI Touchscreens

### TS8000 Series

TS8000 is a high performance HMI touchscreen range with powerful features that would normally only be found in PC-based displays.

The TS8000 is able to communicate with many different pieces of hardware through its 10/100Base-T Ethernet port.

Furthermore a USB programming port allows programs to be downloaded, or access to trending and data logging, while data can be collected and stored on a standard CompactFlash card, freeing up internal memory. Multi-lingual interface



- Built-in symbol library of common objects
- Built-in web server
- CompactFlash support
- Integrated automatic multiple protocol conversion
- Free programming software

### HMI specifications

Model	Screen	Colour	Number of Pixels
TS8003	32"/FSTN	2	128 x 64
TS8006	5.7"/TFT	256 QVGA	320 x 240
TS8008	7.7"/DSTN	256 VGA	640 x 480
TS8010	10.4"/TFT		
TS8015	15"/TFT	32 000 XGA	1024 x 768

### Technical specifications

<b>Power Supply</b>	24 VDC ±20 %
<b>Operating Temperature</b>	0...50 °C
<b>Relative Humidity</b>	80 % non-condensing
<b>Altitude</b>	2000 m
<b>Enclosure</b>	IP66 / Nema 4
<b>Keypads</b>	TS8003: 8 user assignable keys, 5 navigation keys, 12 numeric keys, 7 dedicated keys TS8006: 5 keys for on screen menus TS8008: 7 keys for on screen menus TS8010: 8 keys for on screen menus TS8015: 9 keys for on screen menus
<b>Memory</b>	CompactFlash slot
<b>Communication Ports</b>	Programming: USB 1.1 - connector type B, RS232 - via RJ12 Communication: RS232 - via RJ12, RS485 - via RJ45, Ethernet 10/100 Base T, - connector RJ45

## Features

### Pre-Engineered Projects

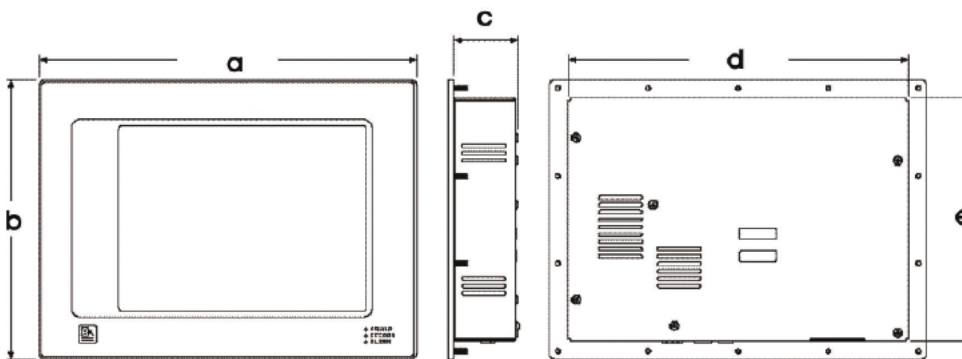
- Library with over 4000 symbols
- Support for BMP, JPG, WMF graphic files
- Database functionality
- Graphical Trend
- Alarm Logs
- Machine Drawings

## Multilingual Interface

Programming and Display in :		
Italian	German	English
Spanish	French	Dutch
Unicode Support for :		
Japanese	Chinese (traditional)	Chinese (simplified)
Thai	Korean	Others available

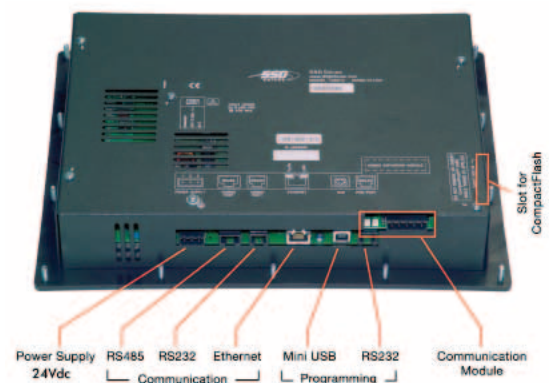
## Dimensions

Model	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	Weight [kg]
TS8003	189.2	148.6	52	153.4	112.8	0.89
TS8006	224.3	179.8	58.4	188.5	144	1.36
TS8008	262	207.8	56	226.3	172	1.74
TS8010	325.8	241.3	56	293.3	210.1	2.51
TS8015	406.4	330.2	78.6	370.6	294.4	5.17



## Options

Model	Description
8000/CB/00	CANopen fieldbus option card (master)
8000/DN/00	DeviceNet option card
8000/PB/00	Profibus option card
8000/LK/00	LINK fieldbus option card
8000/FA/00	FireWire fieldbus option card



## TMW Series Torque Motors 1200...22 100 Nm

### Description

Parker Torque Motors are complete and ready-to-use “direct drive” systems, specifically designed for use with AC890 and AC890PX Modular Chassis drives to fully and effectively respond to the specific needs of the Plastics and Rubber industries. Developed in collaboration with machine builders and end-users, a number of innovative, dedicated features have been integrated into the motors, such as; a generously sized, integrated thrust bearing to support back pressure from the screw, as well as specific mechanisms allowing quick and easy removal of the screw from the motor. Delivering torques up to 22 100 Nm, at speeds ranging from 50 to 500 min<sup>-1</sup>, Parker Torque Motors represent the perfect alternative to gearbox based systems, for extruders applications of power up to 400 kW.

- High power compact design
- Water or natural cooling
- Overtemperature protection built in
- Wide range of feedback devices
- Integrated thrust bearing
- Customizable shaft ends
- IP54 protection
- IMB3 mounting



## MGV High Speed, Low-Inertia Servo Motors

### Description

MGV Series servo motors are innovative direct drive solutions specially designed for applications that require high speeds and low inertias. MGV motors can be found in many automotive or aeronautical component test rigs (starters, pumps, alternators, gearboxes...). Highly responsive with exceptional dynamic performance, MGV motors are ideally suited to the needs of simulation testing: speed in urban cycle or motor racing, speed cycling of an internal combustion engine, etc.

- High maximum speeds avoid the need for mechanical gearing
- Low inertia allowing very fast acceleration / deceleration
- Constant power operation above nominal speed removes the requirement to oversize the drive
- Water cooling ensures compact size and low noise operation
- High dynamic capabilities allow the operating conditions of the tested product to be accurately reproduced





## Round Frame Asynchronous Vector Motors 0.18 kW...315 kW

### Description

These IE2 efficiency round frame asynchronous induction motors are suitable for use with the Parker SSD Drives AC650V, AC690+ and AC890PX Modular ranges of Inverters in closed-loop mode. Featuring a durable rigid construction, these motors are specially engineered for use in heavy industrial applications. Featuring axial, In-Line force ventilation fan and 2048 ppr incremental encoder, the round frame vector motor are suitable for general purpose closed-loop control applications. For applications requiring higher dynamic performance, such as in printing or test rig applications, the MA series square frame vector motors should be considered.

- Light Aluminium body up to and including 160 frame size. Cast Iron construction over 160 frame
- IP55 Protection as minimum
- Foot or flange mounting options
- Paint finished in Black
- Insulation Class F (IEC - EN60034-1))
- Auxiliary cooling fan allows low-speed operation
- 2048 ppr incremental encoder
- 3x PTC thermistors embedded in motor stator



### Options

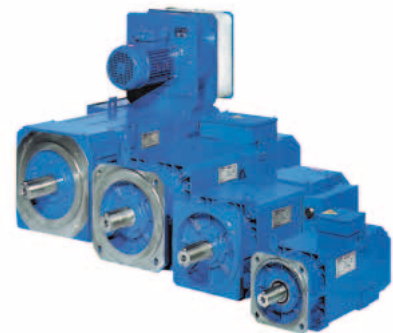
- Adjustable terminal box mounting position
- Holding brake
- IE3 efficiency
- Insulated bearings on 315 frame
- 8-Pole versions also available

## Square Frame Asynchronous Vector Motors 0.75 kW...314 kW

### Description

The MA series family of motors has been specially engineered to be suitable for high dynamic performance when used with a flux vector type controller - AC890PX Modular, AC690+ and AC650V. They permit operation in constant power at maximum speed up to 8000 min<sup>-1</sup>.

- Compact square frame format
- Same frame dimensions as DC motors of similar power rating
- Thermostat embedded in stator
- Incremental encoder
- IP23 or IP54 protection
- Insulation Class F (CEI - EN60034-1))
- Auxiliary cooling fan allows low-speed high-torque operation
- High overload capability
- Higher operating speeds



### Options

- Terminal box mounting on right or left
- PTC thermister
- S vibration class
- IP55 protection
- Roller bearing on frame 100
- Anti-condensation heater



# Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374.



## AEROSPACE

### Key Markets

- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

### Key Products

- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes



## CLIMATE CONTROL

### Key Markets

- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

### Key Products

- CO<sub>2</sub> controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves



## ELECTROMECHANICAL

### Key Markets

- Aerospace
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

### Key Products

- AC/DC drives & systems
- Electric actuators
- Controllers
- Gantry robots
- Gearheads
- Human machine interfaces
- Industrial PCs
- Inverters
- Linear motors, slides and stages
- Precision stages
- Stepper motors
- Servo motors, drives & controls
- Structural extrusions



## FILTRATION

### Key Markets

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

### Key Products

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators



## FLUID & GAS HANDLING

### Key Markets

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

### Key Products

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



## HYDRAULICS

### Key Markets

- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

### Key Products

- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



## PNEUMATICS

### Key Markets

- Aerospace
- Conveyor & material handling
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

### Key Products

- Air preparation
- Compact cylinders
- Field bus valve systems
- Grippers
- Guided cylinders
- Manifolds
- Miniature fluidics
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves and controls
- Rodless cylinders
- Rotary actuators
- Tie rod cylinders
- Vacuum generators, cups & sensors



## PROCESS CONTROL

### Key Markets

- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

### Key Products

- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds



## SEALING & SHIELDING

### Key Markets

- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

### Key Products

- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management

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Free phone: 00 800 27 27 5374

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### US Product Information Centre

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