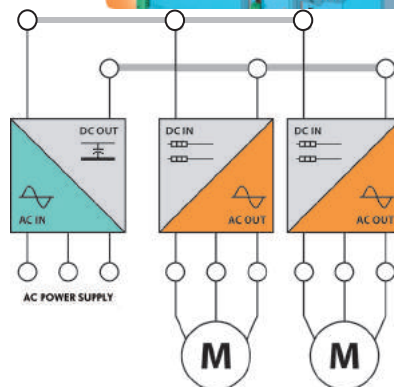
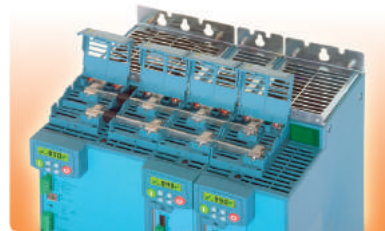


AC890**from 1.5 to 1681A****DESCRIPTION**

AC890 Drive System is a frequency converter purposely designed for industrial applications with any type of AC motors. A single control board enables to operate all types of motors, from induction to brushless motors. V/F, sensorless or closed-loop flux vector control operations are available on asynchronous induction motors while the servo control enables to operate all permanent magnet brushless AC motors. In addition to its modular structure and 5 operation modes, AC890 offers "DSE" advanced programming system and compatibility with all major fieldbus, including FireWire 1394. Most of speed/position feedback devices can be used including resolvers, HTTL, SinCos or EnDat encoders.

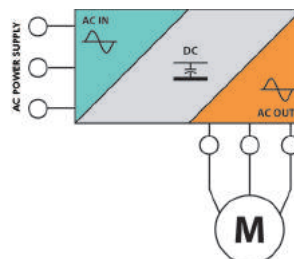
5-MODE FREQUENCY CONVERTER:
V/F, SENSORLESS VECTOR, CLOSED-LOOP FLUX VECTOR, SERVO DRIVE, LINE REGENERATIVE (AFE)
BUILT-IN EMC FILTERS
3 PERFORMANCE LEVELS (STANDARD, ADVANCED, HIGH PERFORMANCE)
EN954-1 Cat3 CERTIFIED OPTIONAL SAFE STOP
6 FIELDBUS AVAILABLE

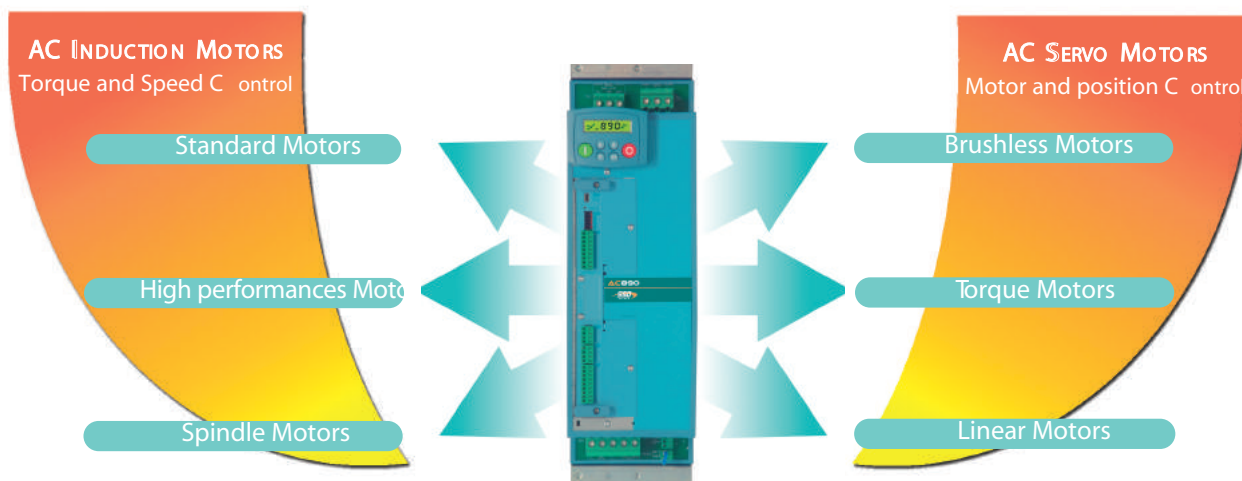
MODULE VARIATIONS**COMMON BUS 890 CS/CD**

The AC890 Common Bus solution is based on a power supply unit (Common Bus Supply) and an inverter module (Common Bus Drive) connected by bars on a common DC bus. The inverter module's power ranges between 0.75 and 90kW, with different frame sizes according to power requirements.

STAND ALONE 890 SD

AC 890 converter is directly connected to the mains, with supply voltage ranging from 230 to 480V. Powers from 0.25 to 1000kW can be accommodated; different frame sizes are available.





TECHNICAL SPECIFICATIONS

Power supply:

890CS : 208÷500V ac $\pm 10\%$

890CD : 320/560÷705Vdc

890SD : 380÷500V ac $\pm 10\%$ (Frame sizes E/F/G/H/J/K : 380÷460V AC $\pm 10\%$)

Operating temperature: 0÷45°C (Derate 2%/°C to 50°C max - Frame sizes G/H/J/K : 0÷40°C)

Maximum humidity: 85% non-condensing

Altitude : 1000m ASL (Derate 1%/100m - 1000 ÷ 4000m max)

Degree of protection IP20 (Frame sizes G/H/J/K : IP00)

Inputs/Outputs

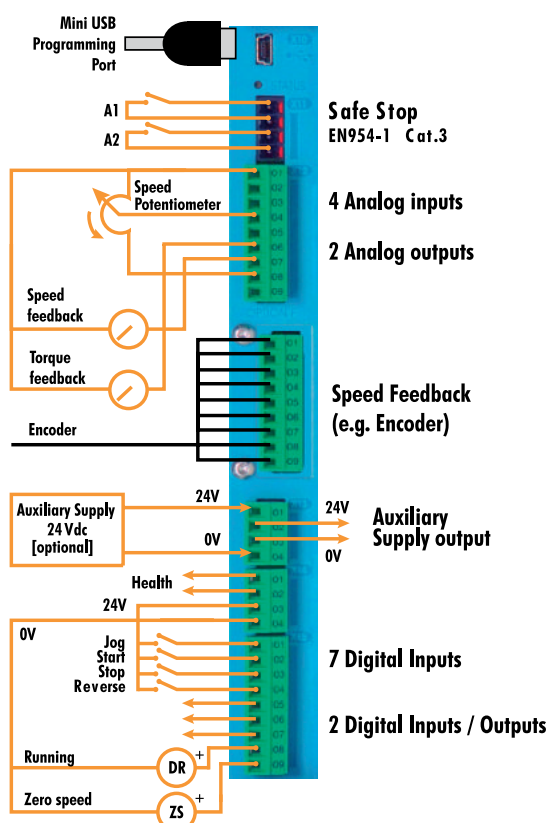
Analog inputs : 4 total, 2 configurable (0-10V , $\pm 10V$, 0-20mA, 4-20mA) + 2 (0-10V, $\pm 10V$)

Analog outputs: 2 free assignment (0-10V, $\pm 10V$)

Digital inputs: 7 free assignment (24V)

Digital I/O : 2 free assignment (24V)

Relay Digital Output: 1 free assignment



AC890 KEY POINTS

- :: Programming port mini USB
- :: Torque and speed analog outputs
- :: "Clean Health" Contact
- :: 24Vdc Control supply
- Programming without power supply
- :: PNP Logics
- :: Motor Thermistor Input
- :: "Running and Zero speed" signal Outputs

PERFORMANCE LEVELS

AC890 frequency converters can offer the level of performance matching your application. With 3 different performance levels, AC890 system allows the maximum flexibility of use.

LEVEL

1

STANDARD PERFORMANCE

Basic function blocks available: Math Functions, Boolean Logic, Timers, Counters, Threshold Comparators, and many more.

2

ADVANCED PERFORMANCE

Standard features, plus: Motion Control dedicated Firmware with added Position Loop, Function Blocks, Incremental Move, Absolute Move, Move Home, Master Ramp, Section Control, Speed or Current Window Control, advanced PID Function, Machine State, and many more.

3

HIGH PERFORMANCE

Advanced Performance features, plus: Library of pre-engineered Applications with specific Function Blocks such as Shaftless System, Precision Camming, Cut-to-Length, and many more.

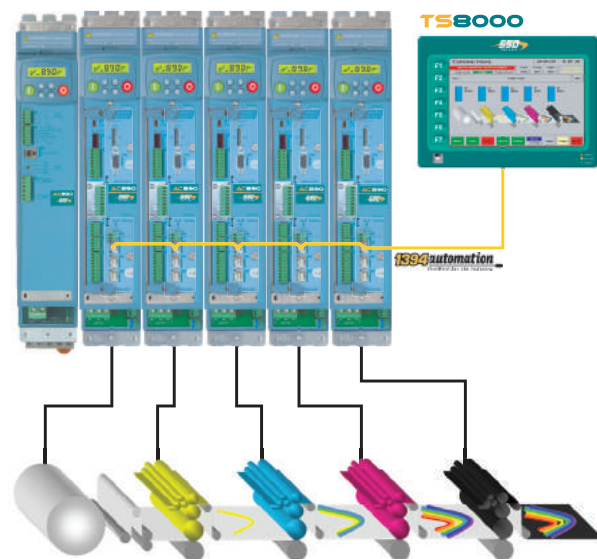
SHAFTLESS AND REGISTER CONTROL

In printing applications AC890 Drive System enables the replacement of mechanical shafts with their high performance electronic equivalent. AC890 with third level firmware can manage synchronization and printing register of each section with utmost precision, thus guaranteeing perfect alignment of each color.

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



- 125µS Cycle time
- Time Synchronization
- Deterministic Network



"ACTIVE FRONT END" : LINE REGENERATIVE SYSTEMS

890CD and 890SD modules can also be configured as Active Front End input sections, providing full 4-quadrant control and an almost harmonics-free line regeneration.

890 " ACTIVE FRONT END"

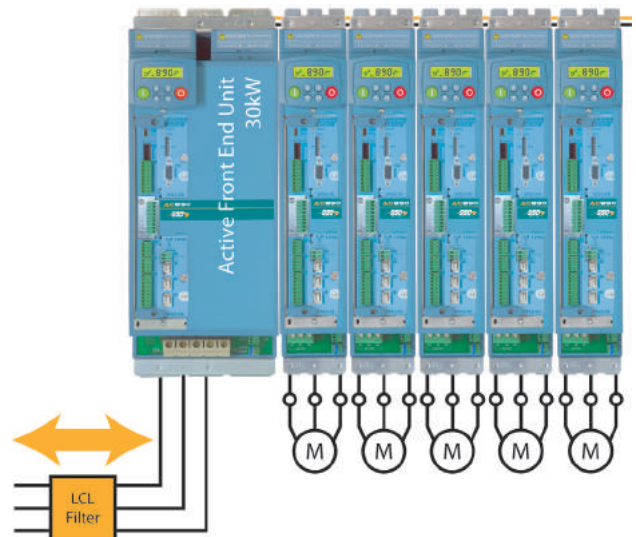
KEY POINTS

REQUIREMENTS

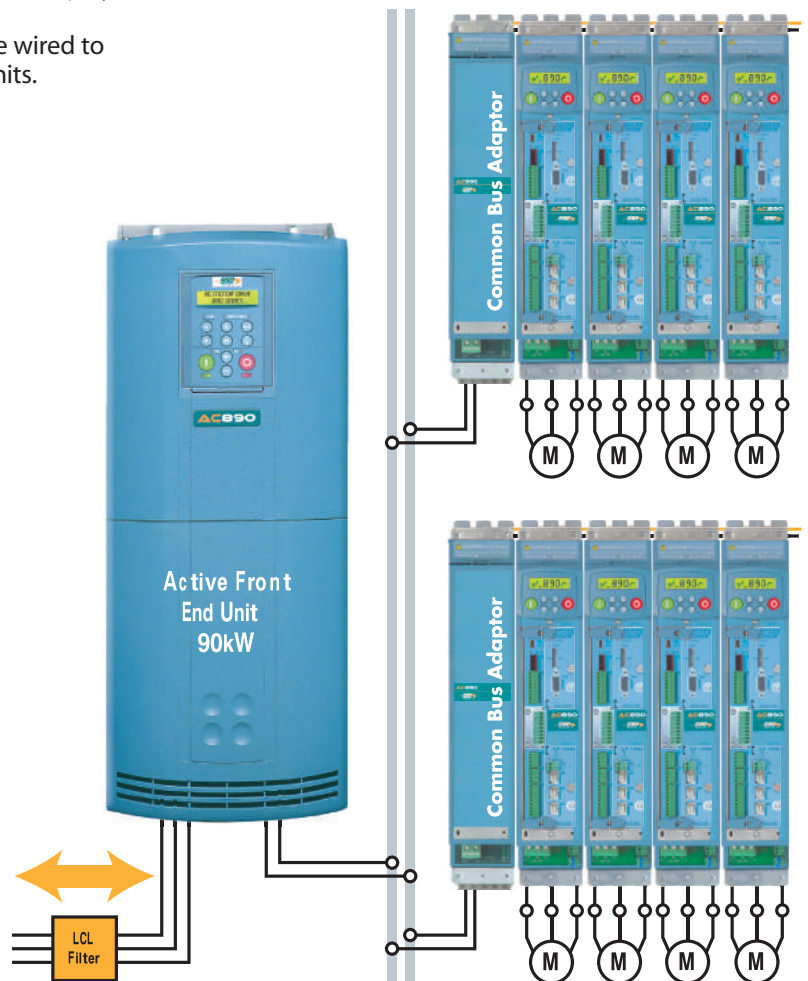
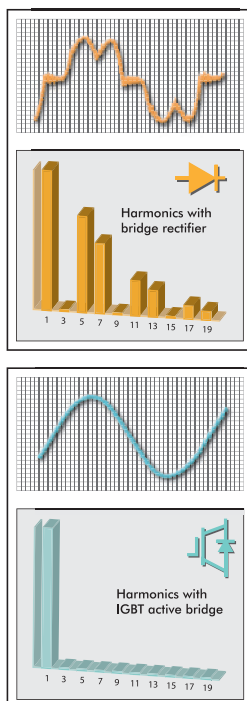
- :: Pre-load Circuit
- :: LCL Filter

PERFORMANCE

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



Higher rate Active Front End units can be employed for higher power systems. Rows of 890DC Common Bus drives are wired to high-current bars by 890AC adapter units.



AC890

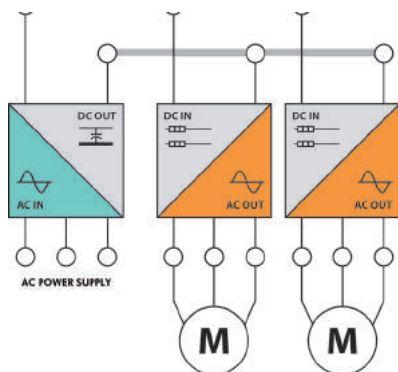
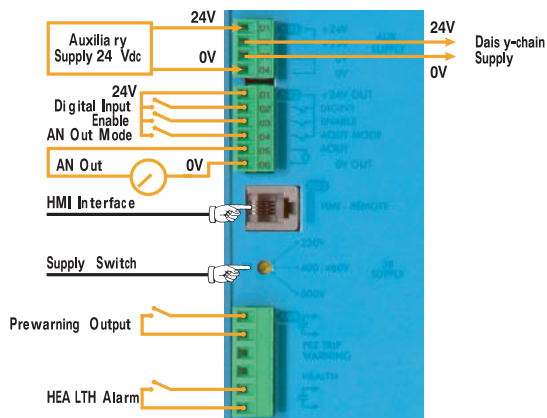
890CS/CD SERIES



DESCRIPTION

The AC890 is modular enough to match exactly your needs. It features the following variations :

- 890CD inverter units DC powered and each one driving a motor
- 890CS common supply units which come with a double DC bus output connected either to inverter units (890CD) or stand-alone drives (890SD) for currents up to 1,681 Amperes.

890CS POWER SUPPLY UNIT
from 40 to 200A

**208-500VAC POWER SUPPLY
BUILT-IN DYNAMIC BRAKING UNIT
DOUBLE DC BUS SUPPLY OUTPUT
DIAGNOSTIC OPERATOR PANEL**

890CS POWER SUPPLY UNIT

KEY POINTS

- :: Clean Health Contact
- :: 24VDC supply control
- :: HMI Interface connection
- :: Three-phase supply selector
- :: Configurable analog output
- :: Prewarning Output

Characteristics

Type	Size	Input Voltage (Vac)	Power (kW)	AC Input Current (A)	DC Output Current (A)
890CS5-0032B-B	Frame B	230	7.5	32	40
		400 / 460	15		
		500	18		
890CS5-0054B-B	Frame B	230	15	54	65
		400 / 460	30		
		500	37		
890CS5-0108D-B	Frame D	230	30	108	135
		400 / 460	60		
		500	75		
890CS5-0162D-B	Frame D	230	45	162	200
		400 / 460	90		
		500	110		

Note: To increase power connect more parallel supply units. Please contact our Technical Dept.

890CD INVERTERS

from 1.5 to 180A

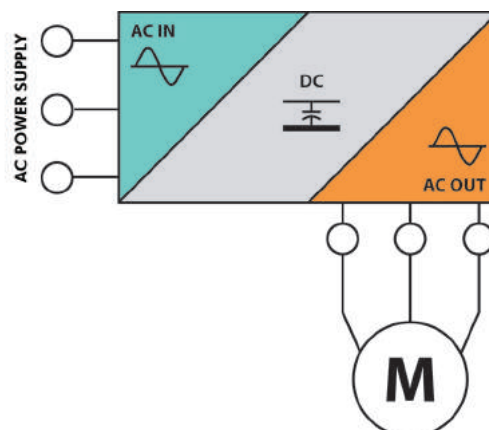
320, 650, 705VDC POWER SUPPLY
STANDARD EQUIPPED OPERATOR PANEL
COMMON OPTIONS WITH 890SD
6 FIELDBUS AVAILABLE

Characteristics								
Type	Size	Input Voltage (Vac)	Power (kW)	DC Input Current (A)	Output Current (A)			
					Vector Mode	Servo Mode		
890CD/2/0003B	1.5	320	0.55	4.2	3	2.2		
890CD/2/0005B			1.1	7.6	5.5	4		
890CD/2/0007B				9.3	7	6		
890CD/2/0011B			2.2	14.9	11	8		
890CD/2/0016B			4	22.2	16.5	12		
890CD/5/0002B	1.1 Frame B	560 705	0.55	2.9	2	1.5		
890CD/5/0003B				5	3.5	2.5		
890CD/5/0004B			1.5	6.6	4.5	3.5		
890CD/5/0006B			2.2	8.6	6	4		
890CD/5/0010B			4	14.1	10	6		
890CD/5/0012B			5.5	16.8	12	9		
890CD/5/0016B			7.5	22.2	16	12		
890CD/5/5016B			7.5	22.2	16	16		
890CD/2/0024C			7.5	320	5.5	31	24	24
890CD/2/0030C		39			30	30		
890CD/5/0024C	560 705	11		33	24	20		
890CD/5/0030C		15		43	30	25		
890CD/5/5030C		15		43	30	30		
890CD/5/0039D				18.5	37	39	35	
890CD/5/0045D		22		43	45	38		
890CD/5/0059D		30	59	59	50			
890CD/4/0073E	45	560 650	37	Data not available at the time of printing*	73	Data not available at the time of printing		
890CD/4/0087E					87			
890CD/4/0105F	75		55		105			
890CD/4/0145F					145			
890CD/4/0180F	90				180			

* For updates please contact our Sales Dept. or visit www.SSDdrives.com

Note: For higher powers refer to 890SD Series DC Bus supplied via DC bus

Note: Nominal Powers refer to 320 and 560Vdc

AC890**890 SD Series****from 1.5 to 1681A****DESCRIPTION**

890SD Series (Stand Alone) frequency converters are independent units that can be powered either with mains three phase voltage or via bus in DC. 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 EQUIPPED OPERATOR PANEL
COMMON OPTIONS WITH 890CD
6 FIELD BUS AVAILABLE

890SD Series - 220 ÷ 240V AC

Type	Size	Input Voltage (Vac)	Power (kW)	Input Current (A)		Output Current (A)	
				Vector Mode	Servo Mode	Vector Mode	Servo Mode
890SD2-0003B	Frame B	230	0.55	4.2	4.2	3	2.2
890SD2-0005B			1.1	7.7	7.3	5.5	4
890SD2-0007B			1.5	9.3	9.9	7	6
890SD2-0011B			2.2	15.2	12.9	11	8
890SD2-0016B			4	21.8	18.2	16.5	12
890SD2-0024C	Frame C	230	5.5	31	31	24	24
890SD2-0030C			7.5	40	40	30	30

Note: Nominal Powers refer to 230Vac

Overload allowed: 150% for 60secs in vector mode - 200% for 4secs in servo mode.

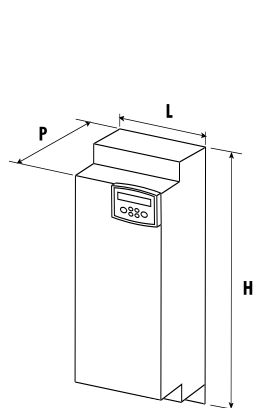
890SD Series - 400 500 VAC

Type	Size	Input Voltage (Vac)	Power (kW)	Input Current (A)		Output Current (A)		
				Vector Mode	Servo Mode	Vector Mode	Servo Mode	
890SD/5/0002B	1.1 1.5 2.2Frame B 4 5.5 7.5 7.5	400 500	0.55	2.9	2.9	2	1.5	
890SD/5/0003B				5	4.7	3.5	2.5	
890SD/5/0004B				6.8	6.4	4.5	3.5	
890SD/5/0006B				9	7.2	6	4	
890SD/5/0010B				14	14	10	6	
890SD/5/0012B				16.5	13.8	12	9	
890SD/5/0016B				21.7	17.9	16	12	
890SD/5/S016B				21.7	23.4	16	16	
890SD/5/0024C	15 Frame C 15		11	32	32	24	20	
890SD/5/0030C				40	40	30	25	
890SD/5/S030C				40	40	30	30	
890SD/5/0039D	22 Frame D 30		18.5	42	38	39	35	
890SD/5/0045D				50	45	45	38	
890SD/5/0059D				62	54	59	50	
890SD/4/0073E	37 Frame E 45			81	Data not available at the time of printing*	73	Data not available at the time of printing*	
890SD/4/0087E				95		87		
890SD/4/0105F	75 Frame F 90	55	114	105				
890SD/4/0145F			143	145				
890SD/4/0180F			164	180				
890SD/4/0216G	132 Frame G 160 180	110	Data not available at the time of printing*	216		Data not available at the time of printing*		
890SD/4/0250G				250				
890SD/4/0316G				316				
890SD/4/0361G				361				
890SD/4/0420H	250Frame H 280	220		420				Data not available at the time of printing*
890SD/4/0480H						480		
890SD/4/0520H						520		
890SD/4/0590J	315Frame J					590		
890SD/4/0685K	2 x Frame G	355				685		
890SD/4/0798K	2 x Frame H 500	400	798					
890SD/4/0988K				988				
890SD/4/1120K	2 x Frame J	600		1.12				
890SD/4/1028K	3 x Frame G	550		1.028				
890SD/4/1197K	3 x Frame H 800	630	1.197					
890SD/4/1482K				1.482				
890SD/4/1681K	3 x Frame J	900		1.681				

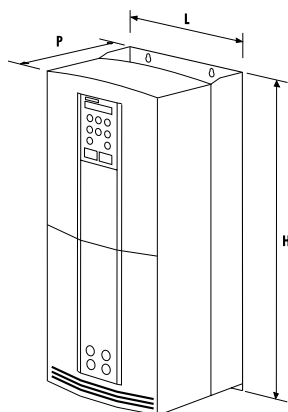
* For updates please contact our Sales Dept. or visit www.ssddrives.com

Note: Nominal Powers refer to 400Vac

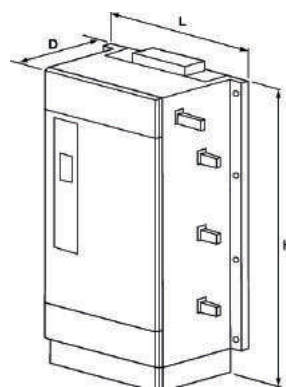
Overload allowed: 150% for 60secs in vector mode - 200% for 4secs in servo mode.



Frame Sizes B/C/D



Frame Sizes E/F



Frame Sizes G/H/J

Dimensions and Weights

Type		W (mm)	H (mm)	D (mm)	Weight (kg)		
					890CS	890CD	890SD
890 F	rame B	72.4	433	258	3.5	5	6
890 F	rame C	116			n.a.	6.6	7.6
890 F	rame D	160			8.7	12.1	13.1
890 F	rame E	257	668	312	n.a.	32.5	33.5
890 F	rame F		720	355		41	42
890 F	rame G	456	1.042	465		n.a.	108
890 F	rame H	572	1.177				138
890 F	rame J	675	1.288				176

CABLES AND CONNECTORS

Cables

Type	Description
8905/USBC11/00	890 USB Programming Cable
8905/FWCBL200/00	200 mm FireWire Cable
8905/FWCBL280/00	280 mm FireWire Cable
8905/FWCBL1000/00	1m FireWire Cable
8905/FWCBL4500/00	4.5m FireWire Cable

Bus Bar System

Type	Description
BH465850	1m DC Bus Bar
BC465938U200	200 mm Insulator for DC Bus Bars

Assembly Kit

Type	Description
LA468430U003	Assembly kit for 890CS/CA
LA468430U103	Assembly kit for 890CD, B to D
LA468430U203	Assembly kit for 890S D, B to D
8905/DUCTKIT/00	Ventilating Duct Kit
8905/DUCTFAN/00	Exhaust Fan

Feedback

Type	Description	Slot
8902/E1/00/FF	EnDat 2.1 Encoder (SinCos, Heidenhain)	C
8902/EQ/00/FF	Quadrature Encoder	C
8902/RE/00/FF	Resolver	C
8902/RR/00/FF	Resolver + Encoder emulation output	C
8903/ER/00/FF	Master incremental encoder	A

FieldBus

Type	Description	Slot
8903/FA/00/FF	FireWire 1394a Communication Module	B
8903/DN/00/FF	DeviceNet FieldBus Communication Module	A
8903/PB/00/FF	ProfiBus FieldBus Communication Module	A
8903/CN/00/FF	ControlNet FieldBus Communication Module	A
8903/CB/00/FF	CanOpen FieldBus Communication Module	A
8903/EN/00/FF	Ethernet* FieldBus Communication Module	A

* Available soon

Operator Panel

Type	Description
6511/TTL/00	4-digit LCD Operator Panel*
6901/00	Alphanumeric Multilingual Keypad
6052/00	Remote Mounting Kit for 6901 Keypad including 3m cable

* Standard Equipment for sizes B/C/D

* *Standard Equipment for sizes E/F/G/H/J/K

CA Modules

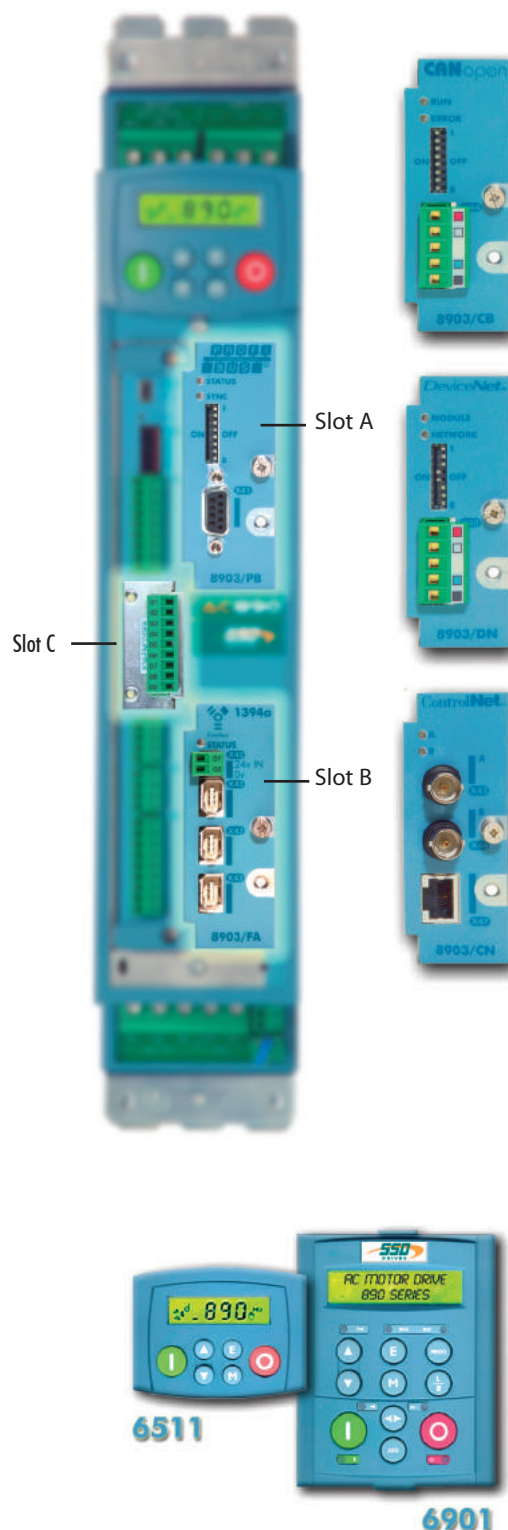
Type	Description
890A5/0050B/NRN	CC Bus Module repeater with capa., 50Adc, 500Vac
890A5/0080B/NON	CC Bus Module repeater without capa., 80Adc, 500Vac

DSE 890 Programming Software

Type	Description
8906/DSELITE/00	DSE Lite Software (single axis) + USB cable
8906/DSEDEV/00	DSE Development Software + USB cable
8906/DSERUN/00	DSE Runtime/Maintenance Software+ USB cable
8906/DSEDEVUPG/00	Upgrade DSD Development to DSE + USB cable
8906/DSERUNUPG/00	Upgrade DSD Runtime to DSE + USB cable

Screened motor cables with connectors

Type	Description
CD1UA1F9R00xx	Power cable with motor connector for NX and $I_o \leq 14$ Arms
CD1UP2F1R00xx	Power cable with motor connector for NX and $I_o \leq 22$ Arms
CS4UA1F1R00xx	Resolver cable with motor connector and Sub-D for NX



INTERNATIONAL STANDARDS

Conforms to:

- Directive 89/336/EEC in compliance with EN61800-3 (Environment 2)
- Directive 73/23/EEC in compliance with EN50178 (Low Voltage)
- Complies with UL508C safety standard

CE and Marked

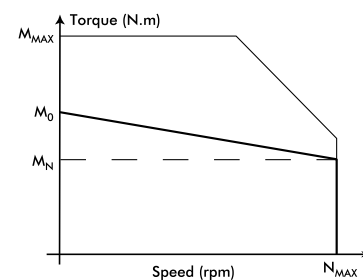
890 - NX / EX ASSOCIATIONS



NX and EX - 890 Associations / 230V

Motor	M ₀ (N.m)	I ₀ (Arms)	M _n (N.m)	I _n (Arms)	N _{MAX} (rpm)	M _{MAX} (N.m)	I _{MAX} (Arms)	890 Rating
NX SERVOMOTORS								
NX110EAP	0.45	1.0	0.33	0.7	6000	1.2	2.5	2.2/4.4
NX205EAV	0.45	1.0	0.37	0.8	5000	1.2	2.7	2.2/4.4
NX205EAS	0.45	1.3	0.29	0.9	7500	1.2	3.7	2.2/4.4
NX210EAT	1	1.3	0.8	1.1	4000	2.8	4.4	2.2/4.4
NX210EAP	1	2.0	0.61	1.3	6000	2.2	4.4	2.2/4.4
NX310EAP	2	1.4	1.9	1.3	2300	5.5	4.4	2.2/4.4
NX310EAK	2	2.5	1.7	2.1	4000	5.8	8	4/8
NX420EAP	4	2.8	3.8	2.7	2300	10.7	8	4/8
NX420EAJ	4	4.9	3.4	4.1	4000	9.3	12	6/12
NX430EAJ	5.5	5.2	4.7	4.5	3200	12.1	12	6/12
NX430EAF	5.5	6.6	4.3	5.2	4000	12.6	16	8/16
NX620EAR	8	5.3	7.4	4.9	2200	17.8	12	6/12
NX620EAJ	8	9.8	6.1	7.6	4000	18.9	24	12/24
NX630EAR	12	5.7	11.5	5.5	1450	27.0	12	6/12
NX630EAK	12	10.6	10.2	9.1	2800	28.4	24	12/24
NX630EAG	12	14.9	8.3	10.7	4000	36.4	48	24/48
NX820EAL	16	17.5	13.2	14.8	3600	39.0	48	24/48
NX840EAJ	28	18.9	22.9	15.7	2200	67.0	48	24/48
NX860EAF	41	27	32.8	22.0	1900	87.3	60	30/60
NX860VAJ	64	29.3	57.5	26.4	1450	117.9	60	30/60
EX SERVOMOTORS FOR EXPLOSIVE ATMOSPHERE								
EX310EAP	1.75	1.2	1.7	1.2	2300	5.5	4.4	2.2/4.4
EX310EAK	1.75	2.2	1.6	2.0	4000	3.5	4.4	2.2/4.4
EX420EAP	3.5	2.5	3.2	2.3	2300	10.4	8	4/8
EX420EAJ	3.5	4.2	2.7	3.3	4000	9.2	12	6/12
EX430EAJ	4.8	4.6	3.7	3.6	3200	12.1	12	6/12
EX430EAF	4.8	5.8	3.3	4.0	4000	9.8	12	6/12
EX620EAO	7	5.5	5.5	4.5	2500	15.5	12	6/12
EX630EAI	10.4	10.0	7.2	7.3	3000	25	24	12/24
EX820EAR	14	9.3	11.1	7.5	2200	32.7	24	12/24
EX820EAL	14	14.9	7.5	8.3	3600	39.0	48	24/48
EX840EAJ	24.5	16.0	14.2	9.5	2200	67.0	48	24/48
EX860EAD	35	27.3	8.5	7.3	2500	75.0	60	30/60

890 - NX / EX ASSOCIATIONS



NX and EX - 890 Associations / 400V

Motor	M ₀ (N.m)	I ₀ (Arms)	M _n (N.m)	I _n (Arms)	N _{MAX} (rpm)	M _{MAX} (N.m)	I _{MAX} (Arms)	890 Rating
NX SERVOMOTORS								
NX205EAV	0.45	1.0	0.29	0.7	7500	1.2	2.8	1.5/3
NX210EAT	1	1.3	0.61	0.8	6000	2.2	3	1.5/3
NX310EAP	2	1.4	1.7	1.2	4000	4.1	3	1.5/3
NX420EAV	4	1.4	3.8	1.3	2000	8.4	3	1.5/3
NX420EAP	4	2.8	3.4	2.4	4000	9.6	7	3.5/7
NX430EAV	5.5	1.4	5.4	1.4	1000	11.3	3	1.5/3
NX430EAP	5.5	2.8	4.8	2.5	3000	12.9	7	3.5/7
NX430EAL	5.5	3.8	4.3	3.0	4000	11.2	8	4/8
NX620EAV	8	2.8	7.5	2.7	2000	16.9	6	3.5/7
NX620EAR	8	5.3	6.2	4.2	3900	17.8	12	6/12
NX620EAJ	8	9.8	5.6	5.1	4500	18.8	24	12/24
NX630EAV	12	2.8	11.6	1.9	1350	27.0	6	3.5/7
NX630EAR	12	5.7	10.3	4.9	2700	27.0	12	6/12
NX630EAN	12	8.5	8.3	6.1	4000	26.8	18	9/18
NX820EAX	16	5.2	14.7	4.8	1900	34.2	12	6/12
NX820EAR	16	11.0	12.9	9.1	3900	32.6	24	12/24
NX840EAQ	28	10.1	23.2	8.5	2100	62.0	24	12/24
NX840EAK	28	16.8	18.5	11.5	3500	62.0	40	20/40
NX860EAJ	41	18.6	27.4	12.8	2600	85.1	40	20/40
NX860VAJ	64	29.3	50.5	23.2	2600	117.9	60	30/60
EX SERVOMOTORS FOR EXPLOSIVE ATMOSPHERE								
EX310EAP	1.75	1.2	1.5	1.1	4000	4.1	3	1.5/3
EX420EAV	3.5	1.2	3.2	1.1	2000	8.1	3	1.5/3
EX420EAP	3.5	2.5	2.7	1.9	4000	6.9	5	2.5/5
EX430EAP	4.8	2.5	3.9	2.0	3000	9.6	5	2.5/5
EX430EAL	4.8	3.3	3.3	2.3	4000	10.0	7	3.5/7
EX620EAO	7	5.5	3.1	2.8	4300	15.5	12	6/12
EX630EAY	10.4	5.5	7.4	4.1	2900	23.0	12	6/12
EX630EAN	10.4	7.5	5.2	4.1	4000	25.2	18	9/18
EX820EAW	14	5.4	11.1	4.4	2200	29.0	12	6/12
EX820EAR	14	9.3	7.5	5.2	3600	32.6	24	12/24
EX840EAQ	24.5	8.6	15	5.1	2100	50.5	18	9/18
EX840EAM	24.5	11.2	11.5	5.5	2500	51.4	24	12/24
EX840EAK	24.5	14.3	2.85	2.1	3300	53.4	32	16/32
EX860EAJ	35	15.4	8.5	4.1	2500	71.7	32	16/32