

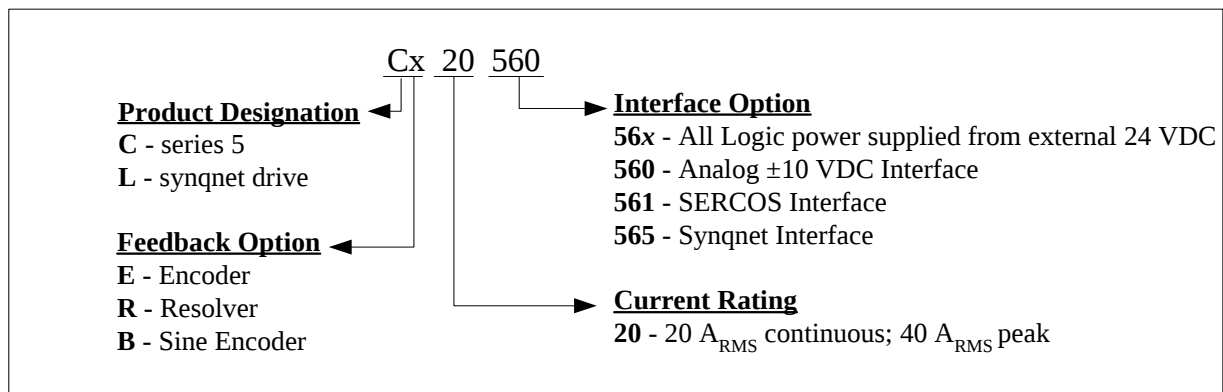
CD20 Technical Information

The CD20 is built from two electronic boards:

Digital board is either the digital board used in all CD series 5 drives or the digital board used in the synqnet drive. This document does not cover the digital board.

Power board is designed for 20 A_{RMS} and 40 A_{RMS} for two seconds. This document covers the technical information for the ordering part number and power board information.

Ordering Information



Possible part numbers are:

CE20561 – CD series 5, 20 A_{RMS} continuous, Incremental encoder feedback, SERCOS interface

CR20560 – CD series 5, 20 A_{RMS} continuous, Resolver feedback, Analog Interface

LB20565 – Synqnet Drive, 20 A_{RMS} continuous, sine encoder feedback, Synqnet Interface

Input Power Filtering

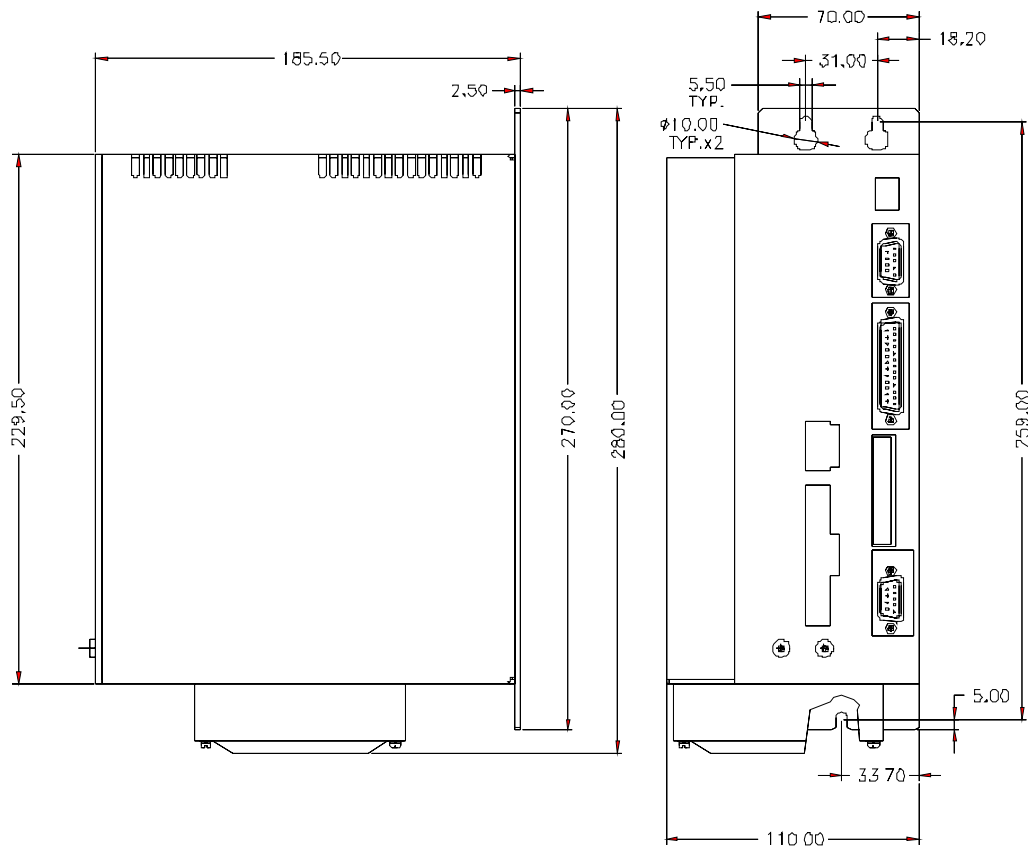
The SERVOSTAR CD electronic system components require EMI filtering in the input power leads to meet the conducted emission requirements for the industrial environment. This filtering blocks conducted-type emissions from exiting onto the power lines and provides a barrier for EMI on the power lines.

Be sure to adequately size the system. The type of filter is based on the voltage and current rating of the system the incoming line is three-phase. These filters are mounted as close to the incoming power as possible so noise is not capacitively coupled into other signal leads and cables. These lines may be noisy, so separate them from other sensitive cabling to avoid unwanted coupling of noise. Several manufacturers of these filters are listed below. They should be able to recommend the best filter design for most typical motor control applications. Danaher Motion also provides specific filter recommendations that adequately attenuate the conducted noise to levels well below the CE limits. Implement the EMI filter according to the following guidelines:

- Mount the filter on the same panel as the drive.
- Mount the filter as close as possible to the incoming cabinet power.
- When mounting the filter to the panel, remove any paint or material covering. Use an unpainted metallic back panel, if possible.
- Filters are provided with an earth connection. Tie all ground connections to ground.
- Filters can produce high leakage currents. Earth filters *before* connecting the supply!
- Do *NOT* touch filters for 10 seconds after removing the supply.

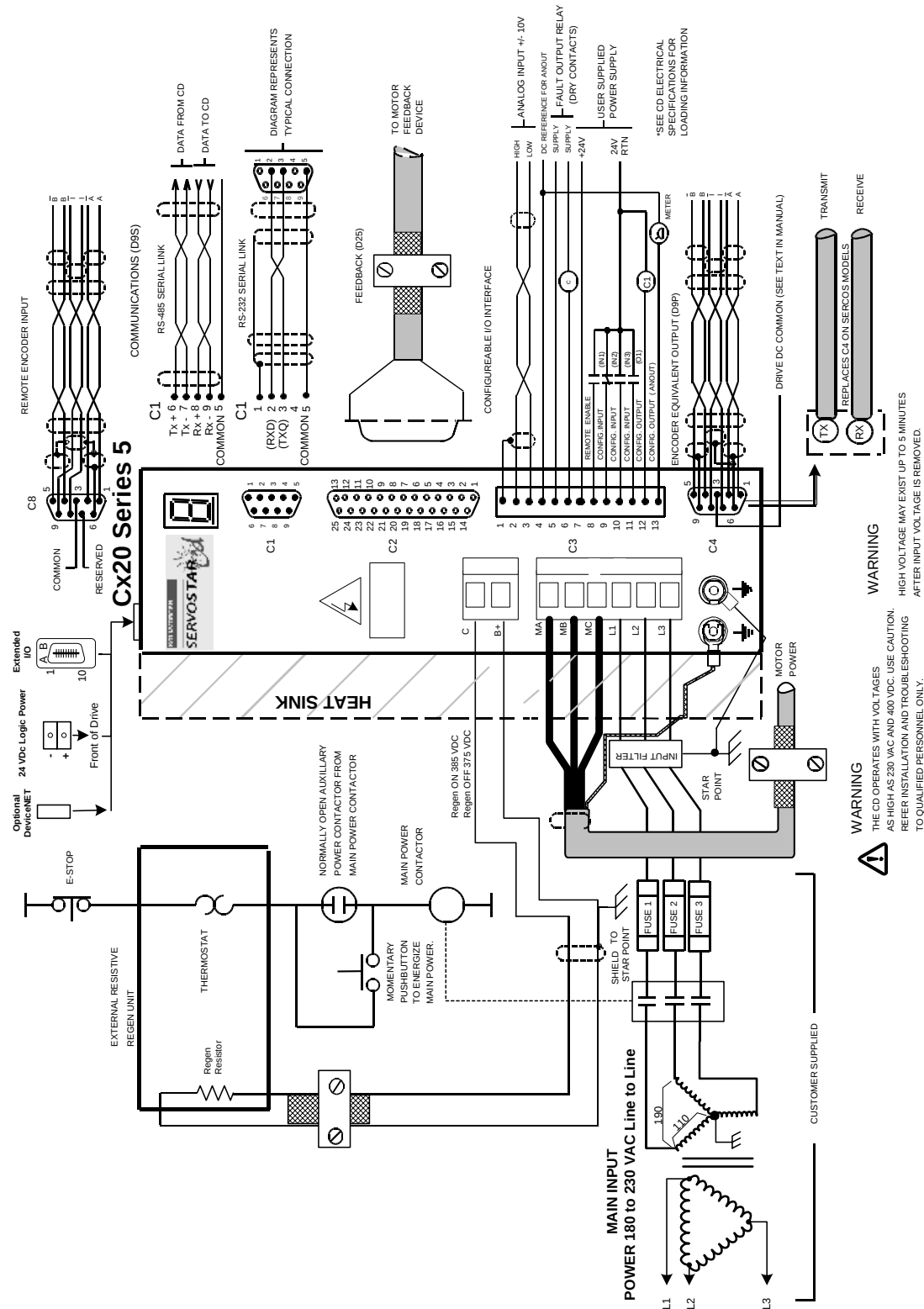
Recommended EMI Line Filter for CD20
Schaffner FN3258-30-47 http://www.schaffner.com Schaffner Holding AG Nordstrasse 11 CH-4542 Luterbach Switzerland T +41 32 6816 626 F +41 32 6816 641
CORCOM http://www.corcom.com Telephone 847-680-7400 For Customer Service please call 1-800-468-2023 FAX 847-680-8169 Postal address 844 E. Rockland Road Libertyville, Illinois 60048
Fair-Rite http://www.fair-rite.com Telephone (888) FAIRRITE (324-7748) or (845)895-2055 FAX (888) FERRITE (337-7483) or (845) 895-2629 Postal address PO Box J, 1 Commercial Row Walkill, NY 12589

Outline Dimensions



Cx20 System Wiring

(CD Series 5)



Cx20 (Cx2056y)

Model	Output Cont RMS/Phase	Output Peak RMS/Phase	Rated Output Cont. kW
Cx2056y	20	40(2 Sec)	4.5

AC Line input: 190-230 VAC 3P @ 8 kW, 50/60Hz

24 Logic 24 Vdc $\pm$ x @ 0.5 Amp

VBUS to Motor: SQR(T2)ix(AC Line Input), 270-325 VDC

OV Over voltage 400V

UV Under Voltage 100W

x - Feedback Options

E. E. Ender

19907113-2
B Boudier

PC-Receiver

B-Sine Encoder

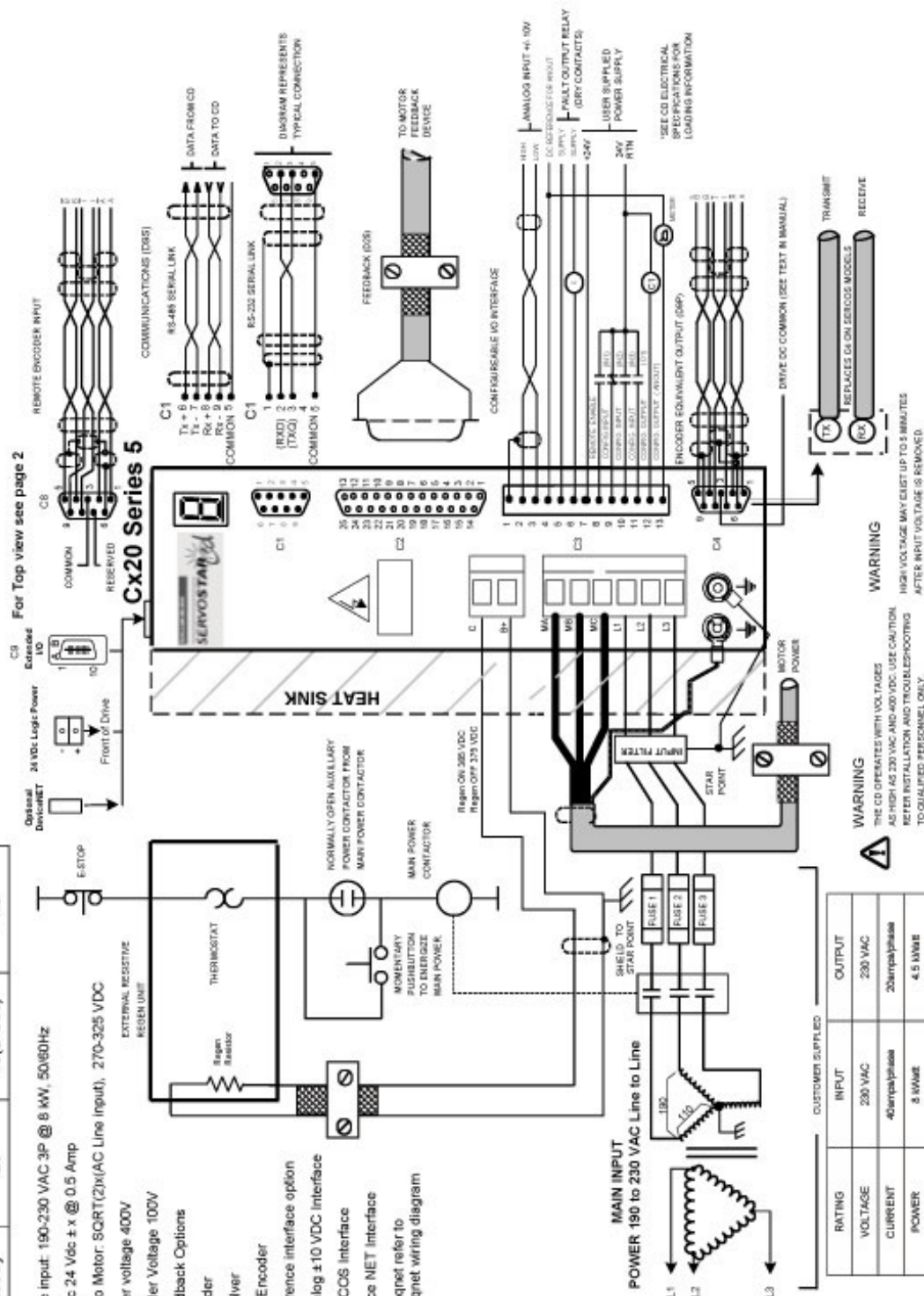
y. Reference interface option

0 - Analog ± 10 VDC Interface

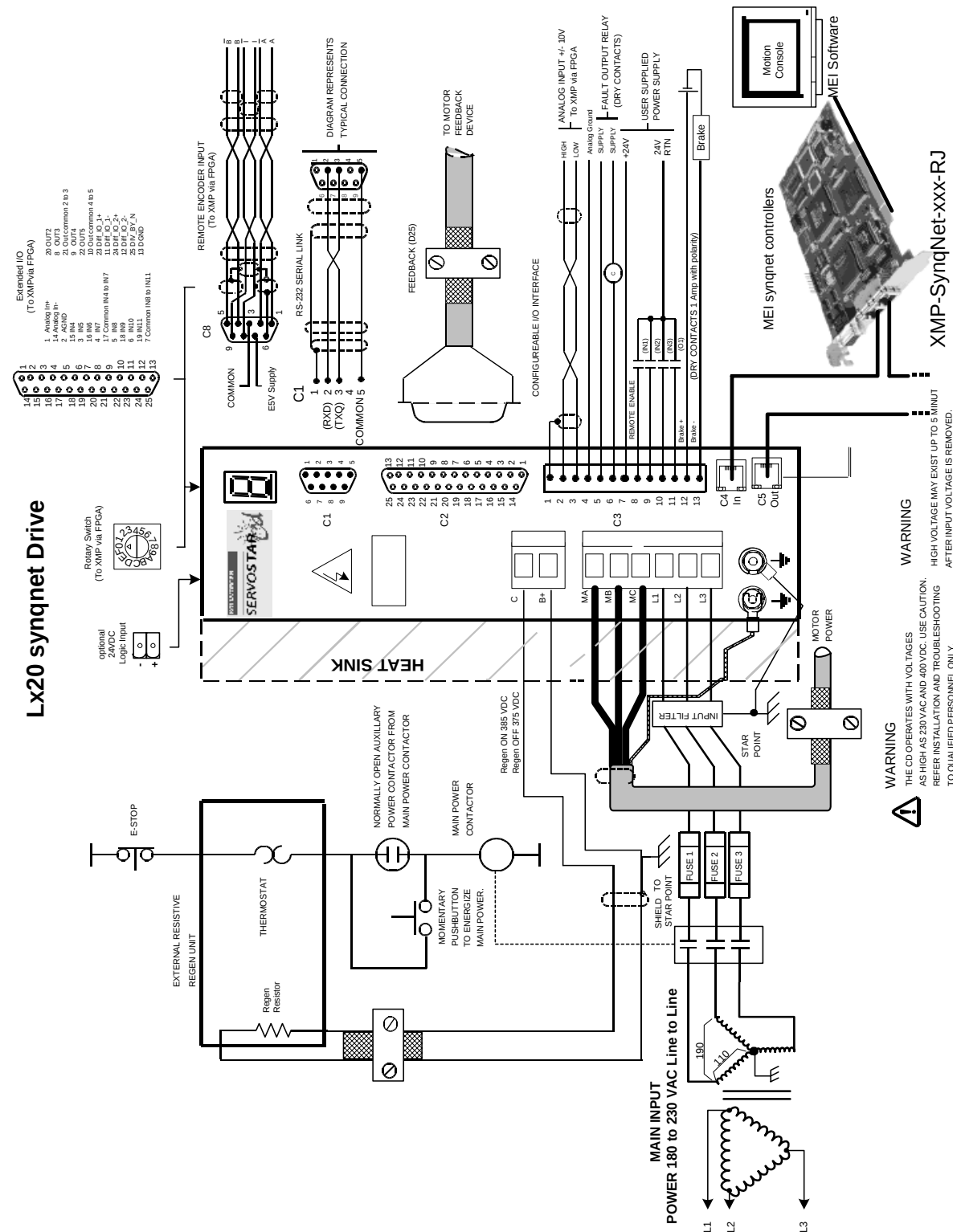
1- SERCOS Interface

4- Device NET Interface

5 – Synqnet refer to
current utility diagrams



Lx20 (Synqnet)



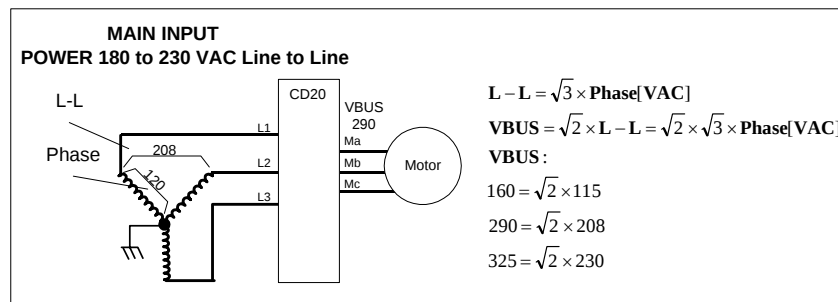
Hardware Specifications

Amplifier Model		Cx20
Unit Weight	Lbs./Kgs.	8.8 / 4
Mounting Hardware	English (Metric)	10-32 (M4)
	Applied Torque	20 lb-in. (2.26 N-m.)
Connection Hardware	Line Screw Size/Torque	M3.5/12 lb-in. (1.35 N-m)
	BUS Screw Size/Torque	
	Motor Screw Size/Torque	
	Ground Screw Size/Torque	
Wire Size (AWG#)	Control Logic (AWG/ mm ²)	16 / 1.31
	Configurable I/O wire gauge	22-18 AWG (0.3-0.75 mm ²) Ferrules recommended: 18 AWG Type H0 - 75/14 Weidmuller 4629.0 or equivalent 20 AWG Type H0 - 5/14 Weidmuller 6907.0 or equivalent 22 AWG Type H0 - 34/12 Weidmuller 90257.7 or equivalent
	Regen (AWG/ mm ²) C B+	10 / 5.26
	Motor Line (AWG/ mm ²) Main Input Ma Mb Mc L1 L2 L3	10 / 5.26
Clearance Distance	Side-to-Side	0.5 in (12.7 mm)
	Top/Bottom	2.5 in (63.5 mm)
Mating Connector Hardware	CK100 Kit	Includes: C1, C2, C4, C7 (plus 2 ft./0.69 m. of stranded bus ribbon), C8
	C1	D9 Female EDA 8S0009SS402S25 Connector 9 pins D type for Cable solder
	C2	D25 Male EDA 8S0025SS402525 Connector 25 pins D Type For Cable solder
	C3	Danaher Motion #: A-93899-013 Vendor Info: Weidmuller BL3.5/13 Cat.No. 161574
	Connector Screw Torque	2.25 lb-in. (0.25 N-m)
	C4	D9 male or Sercos or RJ45 for synqnet EDA 8S0009SS402S25 Connector 9 pins D type for Cable solder Sercos matting connector come w/ the sercos cable RJ45 shielded Ethernet cable
	C7	10 Pin (0.1"x0.1") Female ribbon
	C8	D9 male EDA 8S0009SS402S25 Connector 9 pins D type for Cable solder
	C9	20 PIN connector HIROSE FX2BA-20SA-1.27R
	Regen (AWG/ mm ²) C B+	Connector: 2 x PIN Molex MiniFit Molex P/N 42816-0212 *Terminal (Pins): Molex P/N 42815-0031
	Motor Line (AWG/ mm ²) Main Input Ma Mb Mc L1 L2 L3	Connector: 6 x PIN Molex MiniFit Molex P/N 42816-0612 *Terminal (Pins): Molex P/N 42815-0031
	24 V Logic (optional)	Danaher Motion #:A-81014-002 Vendor Info: PCD ELFP02210

* Molex Crimp tooling P/N 63811-1500 for terminal pins

Electrical Specifications

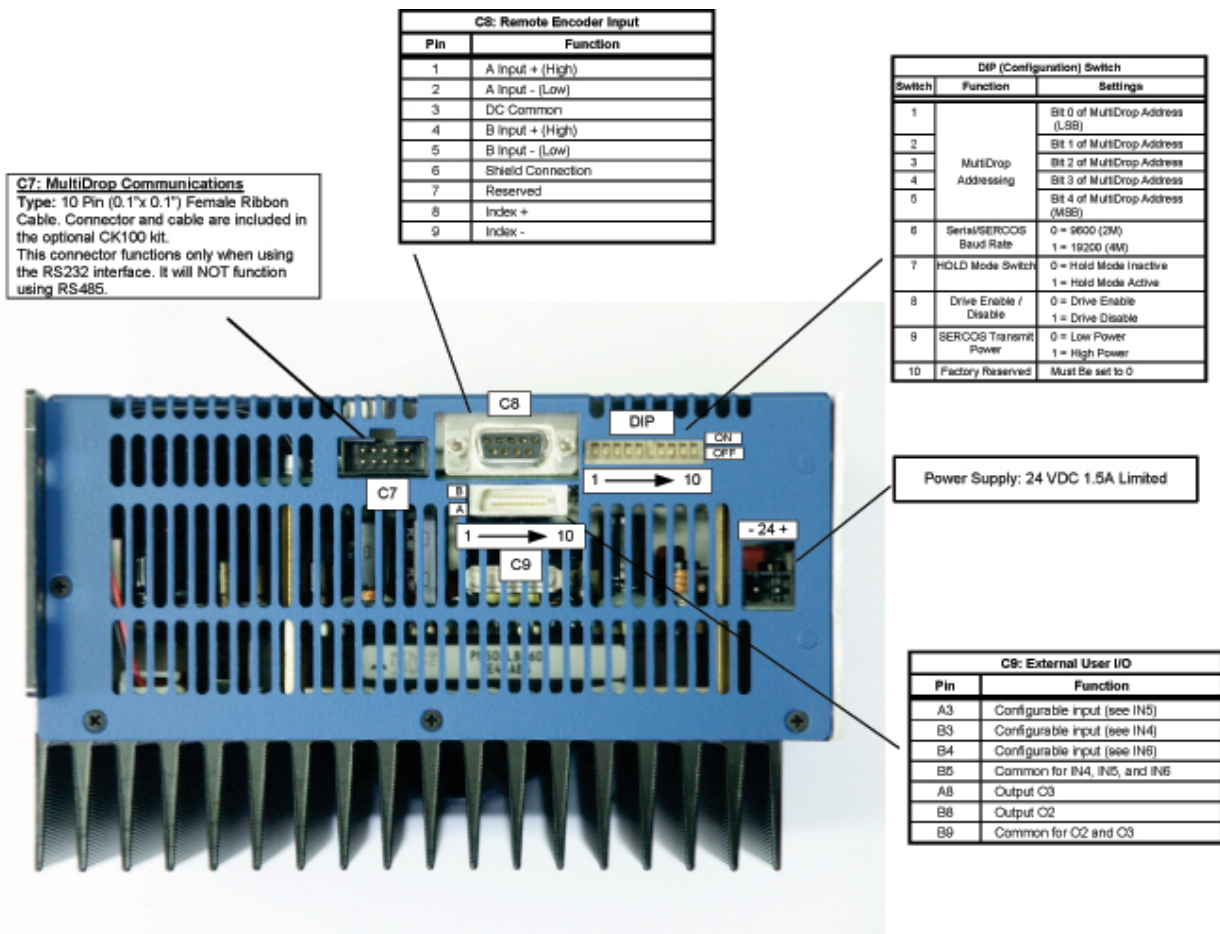
Product Model		Cx20
Main Input Power	Voltage (VAC _{L-L}) Nominal ±10%	180 to 230 3φ only
	Line Frequency Hz	47-63
	Input power at 180 VAC L-L	5.3 kW
	Input power at 208 VAC L-L	6.2 kW
	Input power at 230 VAC L-L	6.8 kW
	Continuous Current (A)	20 A/phase
	Peak Current (A) for 2s	40 A/phase
	Line Fuses (FRN-R, LPN, or equiv.)	25
Logic Input Power	+24 VDC Ext. Logic Voltage (V)	22 to 27
	+24 VDC Ext. Logic Current (amps sink)	1.5
	+24 VCD Ext. Logic Current (amps max surge)	2.6
SoftStart	Max. Surge Current (A)	200
	Max. Charge Time (msec)	50
Protection Functions	Fault Contact Rating (A)	1
	Fault Contact Closing Period (ms)	Close = 3 ms, Open = 2 ms
	Over-Temperature Trip (°C/°F)	80/176
Rated Main Output (Ma, Mb, Mc)	Continuous Power at 180 VAC L-L Line Input (45°C (113°F) Ambient)	4 kW
	Continuous Power at 230 VAC L-L Line Input (45°C (113°F) Ambient)	5.2 kW
	Continuous Current (A _{RMS})	20
	Peak Current (Arms) for 2 sec	40
	PWM Frequency (kHz)	8
	PWM Motor Current Ripple (kHz)	16
	Form Factor (rms/avg)	≤1.01
Protective Functions	Under-Voltage Trip (nominal) (VDC)	100
	Over-Voltage Trip (VDC)	400
	Over-Temperature Trip (°C/°F)	80/176
	Internal heat dissipation (watts)	330
Environment	Operation temperature (°C/°F)	5/41 to 45/113
	Storage temperature (°C/°F)	0/32 to 70/158
	Ambient humidity (%)	10 to 90
	Atmosphere	without corrosive gasses or dust
	Altitude	Derate 5% per 1000 ft.(300 m) above 3300 ft. (1000 m)
	Vibration (g)	0.5



Regen Information

Product Model		Cx20		
External Shunt Regulator	Peak current (amps)	45		
	Minimum resistance (ohms)	4 at 190VBUS / 8 at 320VBUS		
	watts	1 kW		
	BUS Voltage (nominal) (VDC)	325		
	V _{HYS} (Regen circuit turn-off) (VDC)	375		
	V _{MAX} (Regen circuit turn-on) (VDC)	385		
External Regen Kits		TBD	✓	✓

CD20 Series 5 TOP View



CD20 Series 5 Mating Connectors

	Description	Mating connector	P/N
C1	RS232	D9 Female	EDA 850009SS402525 Connector 9 pins D type for Cable solder
C2	Encoder Feedback	D25 Male	EDA 850025SS402525 Connector 25 pins D Type For Cable solder
*C3	User I/O	WEIDMULLER	STX P/N CON-00000013-01 WEIDMULLER 800161574
C4	Encoder Equivalent output or SERCOS	D9 male or Sercos	EDA 850009SS402525 Connector 9 pins D type for Cable solder
C7	Multidrop connector (Daisy chain)	10 Pin (0.1"x0.1") Female ribbon	
C8	Remote encoder input	D9 female	EDA 850009SS402525 Connector 9 pins D type for Cable solder
C9	Extended I/O	20 PIN CONNECTOR	STX P/N CON-00000020-15 for flat cable HIROSE FX2BA-20SA-1.27R
*Ma Mb Mc L1 L2 L3	To motor phases Power supply input	Connector: 6 x PIN Molex MiniFit Terminal: Molex Terminal (pins)	Connector: STX P/N CON-00000006-38 Molex P/N 42816-0612 Terminal (Pins): STX P/N PIN-00042815-00 Molex P/N 42815-0031
*B+ C	Regen	Connector: 2 x PIN Molex MiniFit Terminal: Molex Terminal (pins)	Connector: STX P/N CON-00000002-44 Molex P/N 42816-0212 Terminal (Pins): STX P/N CON-00000002-44 Molex P/N 42815-0031
GND	Two GND terminal	Ring Terminals	
*24VDC	Logic supply	PCD	STX P/N CON-00000002-05 PCD ELFP02210

*Supplied with the drive

Customer Support

Danaher Motion products are available world-wide through an extensive authorized distributor network. These distributors offer literature, technical assistance, and a wide range of models off the shelf for the fastest possible delivery.

Danaher Motion sales engineers are conveniently located to provide prompt attention to customer needs. Call the nearest office for ordering and application information and assistance or for the address of the closest authorized distributor. If you do not know who your sales representative is, contact us at:

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