



**CONTROL
TECHNIQUES**

www.controltechniques.com

Commander SX

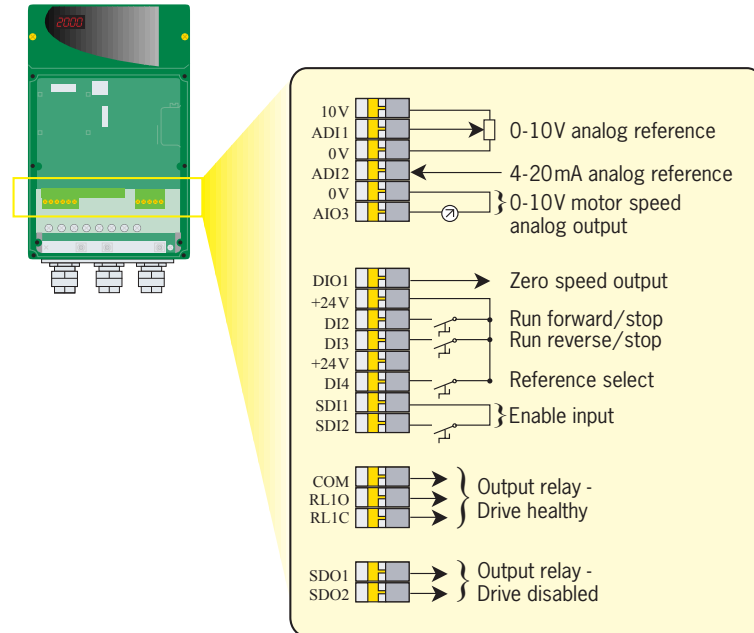
IP66, Nema 4X

AC drive 0.75 to 7.5 kW

1 HP to 10 HP



Commander SX - for tough environments



From 0.75 to 7.5 kW the Commander SX has been designed as a robust, IP66 wall mounting AC drive for applications in food, drink, paper, textile and packaging machines where dirt, dust and other pollutants need to be regularly washed away.

Why Commander SX?

- IP66 Nema 4x enclosed drive - no need for separate enclosure.
- Designed for 'direct to wall' or 'next-to-motor' mounting - avoiding cabling, cabinet and installation costs.
- Easy setup and commissioning - the first 10 parameters cover 80% of applications.
- 8 preset drive configurations.
- Surface and corners designed to maximise washdown effectiveness.
- Internally fitted EMC filter (to generic and drive standard) for units up to 4 kW - IP65 EMC filters 4 kW, from 5.5 kW as option.
- Robust industrial housing with simple speed control interface - no drive installation specialists required.

IP66 Nema 4X

- For tough environments.
- Designed for factory washdown with pressure hose.
- Wall mounting - no extra cubicles required.

Integrated braking IGBT and resistor

- Heavy duty optional IP66 resistors also available.

Automatic autotune

- For fast reliable set up.

Encoder option

- Internally fitted encoder option for incremental encoders up to 32,000 lines per revolution.

Commander SX design features

Keyhole mounting slots

- For easy wall fixing.

LCD text keypad

- For parameter set up and commissioning.
- Bright backlit for clarity.
- Online help functions.
- Dual language



Optional Brake module

- For motor mechanical brake release - internally fitted.

General Characteristics

Advanced set up and commissioning with CTSOft

- Windows™ based commissioning software for both control and display of all parameters
- Special drive set up wizard for first time users
- Storage of parameter settings
- Access to advanced parameters



World class fieldbus flexibility

Modbus RTU
(as standard)



DeviceNet



Onboard EMC filter

- For units up to 4 kW.
- Meets both generic and drive EMC standards.

Optional EMC filter

- From 5.5 kW rated to IP65.
- For long motor cable lengths.



Removable gland plate

- For rapid commissioning and easy maintenance.

Environment

- IP66 Nema 4X rating.
- Ambient temperature 40 °C without derating. Up to 50 °C operation with a maximum derating of only one motor size.
- Removable gland plate for easy termination and removal of control and motor cables.
- EMC cable glands for shielded cable management.
- Electromagnetic Immunity complies with EN61800-3 (Drive standard) and EN50082-2.
- Electromagnetic Emissions complies with EN61800-3 (Drive standard - first and second environment) with EMC filter. Complies with EN50081-1 and EN50081-2 (Generic standard) with EMC filter.
- Complies with EN50081-2 with integrated EMC filter.
- Earth leakage current less than 3 mA with integral EMC filter in circuit.
- Ergonomically designed surfaces to aid dirt removal during wash down -
 - Slopes greater than 3° from horizontal
 - Radii above 6 mm.

Control

- Open loop vector control.
- V/F control.
- Closed loop vector (option).
- Speed reference input 0-10 V, 0-20 mA, 4-20 mA.
- 5 digital input. Enable, Run forward, Run reverse, Jog, local / remote select.
- Switching frequency 3-11 kHz with 4 kHz as default.
- Acceleration and Deceleration ramps (linear and S-type).
- Serial communication as standard
 - Modbus RTU RS485 via RJ45 connector.
- DC injection braking as standard.
- Integral dynamic braking transistor and resistor.
- PID Controller.

Protection

- Undervoltage, Supply and DC Link overvoltage, Phase loss, Drive overload, Instantaneous overcurrent, Over temp, Short circuit, Ground fault, Over heat, Motor thermal, Watchdog.

technical data...

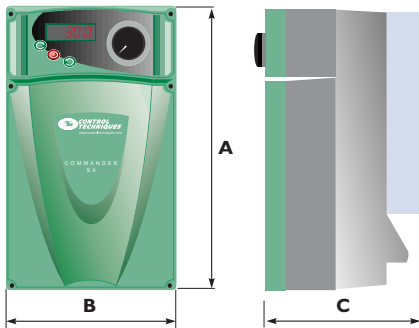
Commander SX rating and EMC filter selection

Commander SX								EMC Filter						
Model order code	Supply volts $\pm 10\%$	No. of input phases	Frame size	kW rating	HP rating	100% Output current	150% Overload current for 60s	Mounting style	Motor Cable Industrial (m)	CT order code	D (mm)	H (mm)	W (mm)	
SX13400075	380-480	3	1	0.75	1	2.1	3.2	Integral EMC filter as standard						
SX13400110	380-480	3	1	1.1	1.5	3	4.5							
SX13400150	380-480	3	1	1.5	2	4.2	6.3							
SX23400220	380-480	3	2	2.2	3	5.8	8.7							
SX23400300	380-480	3	2	3	4	7.6	11.4							
SX23400400	380-480	3	2	4	5	9.5	14.3							
SX33400550	380-480	3	3	5.5	7.5	13	19.5	IP65	20	TBA	130	175	40	
SX33400750	380-480	3	3	7.5	10	16.5	24.8	Bookcase						

* Rated current at 4kHz (default) switching frequency. Higher switching frequencies are available with some derating.

Commander SX 2 3 4 00075

- 00075: kW rating
- 000: Voltage (400V)
- 00: 3 phase input
- 4: frame size
- 3: family name



Dimensions

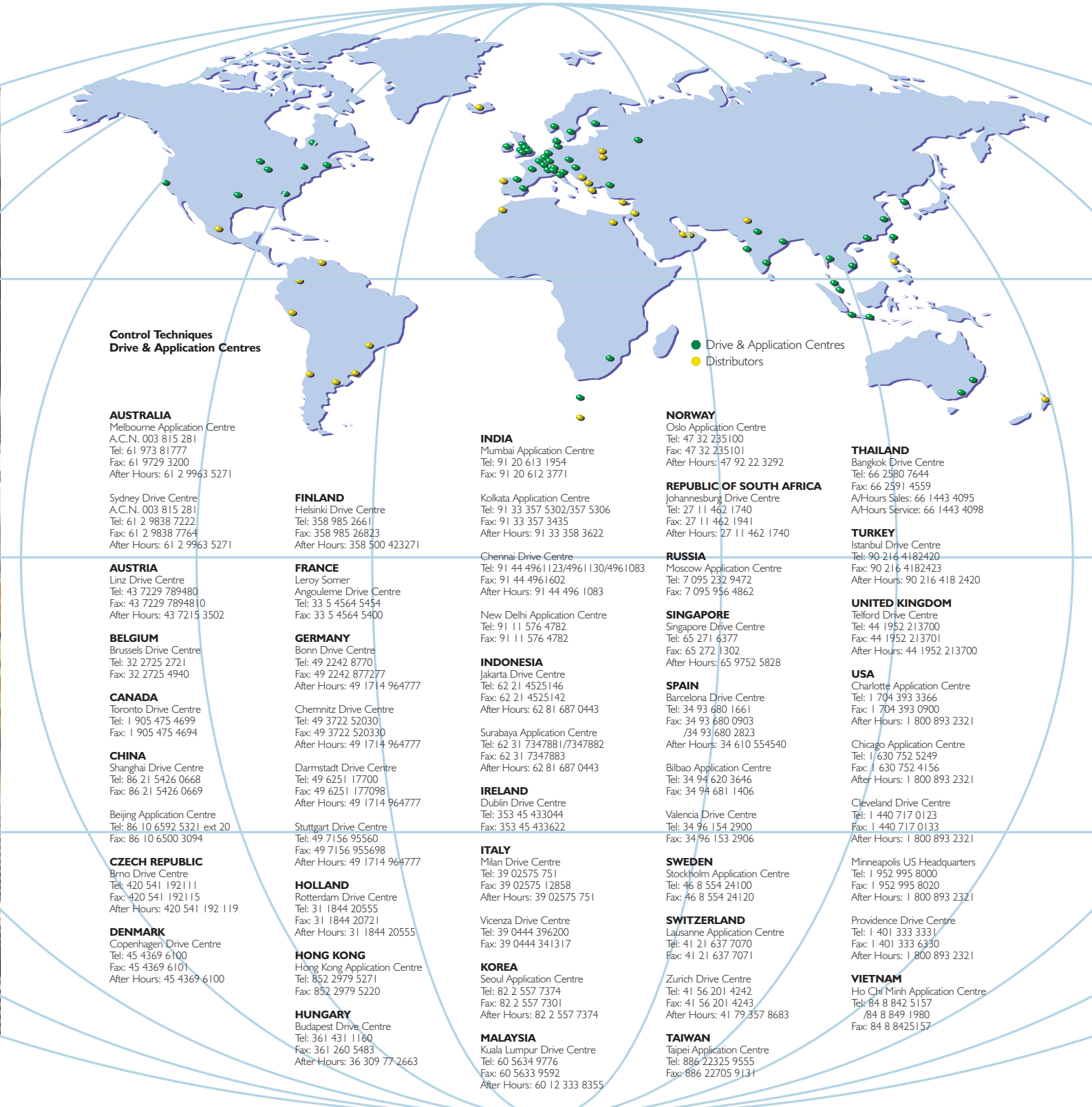
Frame Size	A		B		C	
	mm	in	mm	in	mm	in
1	330	12.99	175	6.89	170	6.69
2	330	12.99	175	6.89	200	7.87
3	330	12.99	250	9.84	210	8.27

Options

Part No.	Description
SX-Keypad Plus	LCD text keypad
CT Soft	PC Windows™ based setup software
CT Comms Cable	For CTSoft between PC and Drive
SM-PROFIBUS-DP	Profibus DP-12MB
SM-DeviceNet	DeviceNet fieldbus interface
SM-INTERBUS	Interbus fieldbus interface
SM-CANopen	CANOpen fieldbus interface
SM-CAN	CANbus fieldbus interface
SX-Encoder	Incremental encoder feedback module
SX-Brake	Motor mechanical brake controller
Resistors	Braking resistor available to match duty



driving the world...



**Control Techniques
Drive & Application Centres**

● Drive & Application Centres
● Distributors

AUSTRALIA
Melbourne Application Centre
A.C.N. 003 815 281
Tel: 61 973 81777
Fax: 61 9729 3200
After Hours: 61 2 9963 5271

Sydney Drive Centre
A.C.N. 003 815 281
Tel: 61 2 9838 7222
Fax: 61 2 9838 7764
After Hours: 61 2 9963 5271

AUSTRIA
Linz Drive Centre
Tel: 43 7229 789480
Fax: 43 7229 7894810
After Hours: 43 7215 3502

BELGIUM
Brussels Drive Centre
Tel: 32 2725 2721
Fax: 32 2725 4940

CANADA
Toronto Drive Centre
Tel: 1 905 475 4699
Fax: 1 905 475 4694

CHINA
Shanghai Drive Centre
Tel: 86 21 5426 0668
Fax: 86 21 5426 0669

Beijing Application Centre
Tel: 86 10 6592 5321 ext 20
Fax: 86 10 6500 3094

CZECH REPUBLIC
Brno Drive Centre
Tel: 420 541 192111
Fax: 420 541 192115
After Hours: 420 541 192 119

DENMARK
Copenhagen Drive Centre
Tel: 45 4369 6100
Fax: 45 4369 6101
After Hours: 45 4369 6100

FINLAND
Helsinki Drive Centre
Tel: 358 985 2661
Fax: 358 985 26823
After Hours: 358 500 423271

FRANCE
Leroy Somer
Angouleme Drive Centre
Tel: 33 5 4564 5454
Fax: 33 5 4564 5400

GERMANY
Bonn Drive Centre
Tel: 49 2242 8770
Fax: 49 2242 877277
After Hours: 49 1714 964777

Chemnitz Drive Centre
Tel: 49 3722 52030
Fax: 49 3722 520330
After Hours: 49 1714 964777

Darmstadt Drive Centre
Tel: 49 6251 17700
Fax: 49 6251 177098
After Hours: 49 1714 964777

Stuttgart Drive Centre
Tel: 49 7156 95560
Fax: 49 7156 955698
After Hours: 49 1714 964777

HOLLAND
Rotterdam Drive Centre
Tel: 31 1844 20555
Fax: 31 1844 20721
After Hours: 31 1844 20555

HONG KONG
Hong Kong Application Centre
Tel: 852 2979 5271
Fax: 852 2979 5220

HUNGARY
Budapest Drive Centre
Tel: 361 431 1160
Fax: 361 260 5483
After Hours: 36 309 77 2663

INDIA
Mumbai Application Centre
Tel: 91 20 613 1954
Fax: 91 20 612 3771

Kolkata Application Centre
Tel: 91 33 357 5302/357 5306
Fax: 91 33 357 3435
After Hours: 91 33 358 3622

Chennai Drive Centre
Tel: 91 44 4961123/4961130/4961083
Fax: 91 44 4961602
After Hours: 91 44 496 1083

New Delhi Application Centre
Tel: 91 11 576 4782
Fax: 91 11 576 4782

INDONESIA
Jakarta Drive Centre
Tel: 62 21 4525146
Fax: 62 21 4525142
After Hours: 62 21 687 0443

Surabaya Application Centre
Tel: 62 31 7347881/7347882
Fax: 62 31 7347883
After Hours: 62 81 687 0443

IRELAND
Dublin Drive Centre
Tel: 353 45 433044
Fax: 353 45 433622

ITALY
Milan Drive Centre
Tel: 39 02575 751
Fax: 39 02575 12858
After Hours: 39 02575 751

Vicenza Drive Centre
Tel: 39 0444 396200
Fax: 39 0444 341317

KOREA
Seoul Application Centre
Tel: 82 2 557 7374
Fax: 82 2 557 7301
After Hours: 82 2 557 7374

MALAYSIA
Kuala Lumpur Drive Centre
Tel: 60 5634 9776
Fax: 60 5633 9592
After Hours: 60 12 333 8355

NORWAY
Oslo Application Centre
Tel: 47 32 235100
Fax: 47 32 235101
After Hours: 47 92 22 3292

REPUBLIC OF SOUTH AFRICA
Johannesburg Drive Centre
Tel: 27 11 462 1740
Fax: 27 11 462 1941
After Hours: 27 11 462 1740

RUSSIA
Moscow Application Centre
Tel: 7 095 232 9472
Fax: 7 095 956 4862

SINGAPORE
Singapore Drive Centre
Tel: 65 271 6377
Fax: 65 272 1302
After Hours: 65 9752 5828

SPAIN
Barcelona Drive Centre
Tel: 34 93 680 1661
Fax: 34 93 680 0903
/34 93 680 2823
After Hours: 34 610 554540

Bilbao Application Centre
Tel: 34 94 620 3646
Fax: 34 94 681 1406

Valencia Drive Centre
Tel: 34 96 154 2900
Fax: 34 96 153 2906

SWEDEN
Stockholm Application Centre
Tel: 46 8 554 24100
Fax: 46 8 554 24120

SWITZERLAND
Lausanne Application Centre
Tel: 41 21 637 7070
Fax: 41 21 637 7071

Zurich Drive Centre
Tel: 41 56 201 4242
Fax: 41 56 201 4243
After Hours: 41 79 357 8683

TAIWAN
Taipei Application Centre
Tel: 886 22325 9555
Fax: 886 22705 9131

THAILAND
Bangkok Drive Centre
Tel: 66 2580 7644
Fax: 66 2591 4559
A/Hours Sales: 66 1443 4095
A/Hours Service: 66 1443 4098

TURKEY
Istanbul Drive Centre
Tel: 90 216 4182420
Fax: 90 216 4182423
After Hours: 90 216 418 2420

UNITED KINGDOM
Telford Drive Centre
Tel: 44 1952 213700
Fax: 44 1952 213701
After Hours: 44 1952 213700

USA
Charlotte Application Centre
Tel: 1 704 393 3366
Fax: 1 704 393 0900
After Hours: 1 800 893 2321

Chicago Application Centre
Tel: 1 630 752 5249
Fax: 1 630 752 4156
After Hours: 1 800 893 2321

Cleveland Drive Centre
Tel: 1 440 717 0123
Fax: 1 440 717 0133
After Hours: 1 800 893 2321

Minneapolis US Headquarters
Tel: 1 952 995 8000
Fax: 1 952 995 8020
After Hours: 1 800 893 2321

Providence Drive Centre
Tel: 1 401 333 3331
Fax: 1 401 333 6330
After Hours: 1 800 893 2321

VIETNAM
Ho Chi Minh Application Centre
Tel: 84 8 842 5157
/84 8 849 1980
Fax: 84 8 8425157