

## Commander SE - Setting the standards.



From 0.25 to 37 kW, in a robust, no-nonsense AC drive that saves you money...

- 0.25 to 2.2 kW, single phase, 200 to 240 V
- 0.75 to 7.5 kW, three phase, 200 to 240 V
- 0.75 to 37 kW, three phase, 380 to 480 V

**R**educing complexity and cost is what Control Techniques' Commander SE is all about. SE stands for Simple and Easy... And it is: **SIMPLE** to understand and **EASY** to install and operate.

With the Commander SE users need never fight with technology. The drive's first 10 parameters cover most applications quickly, easily and cost effectively.

*Just take these simple steps to savings...  
it really is ...Simple & Easy...*

## Simple steps to success...



### ▶ Practical installation and connection

- Plenty of space to wire - no fiddling about
- Easy access ensures good terminations - no loose connections
- Sensible sized terminals - no screw thread breakages
- Removable terminal blocks - fast changeover, easy wiring
- No searching for manuals - wiring diagram in cover
- No optional keypad needed - able to programme straight from the box



### ▶ Commissioning made easy

**80%** of Applications can be done with **only 10** parameters

- You don't need to be a drives engineer to operate Commander SE
- Who else puts all the parameters you need on the front of the drive?
- Simple parameter access, easy learning with 'getting started card'



### ▶ Built to save expense

- Robust, industrial housing - for greater dependability
- Cooler running components from spacious design - increased reliability
- Internally fitted options - save cubicle space
- Fits in 200 mm standard enclosure - to 18.5 kW
- Modbus RTU RS485 as standard
- Designed to mount on footprint EMC filter - to 18.5 kW



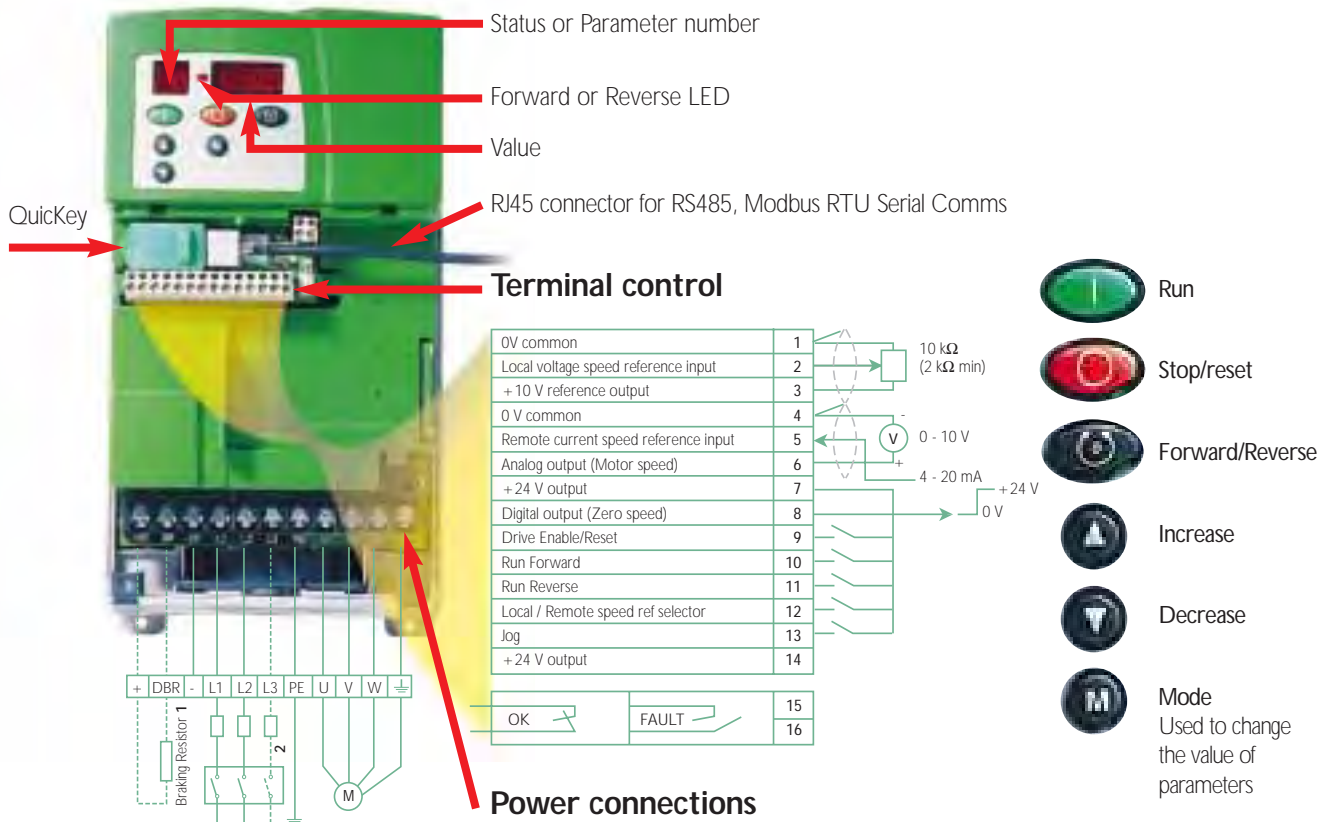
### ▶ *What happens when you need more from your Variable Speed Drive System?*

Use serial communications to access the integrated advanced functions:-

- PID control for pressure, flow or temperature control
- Brake control
- Dual motor control
- Torque control
- Threshold comparator

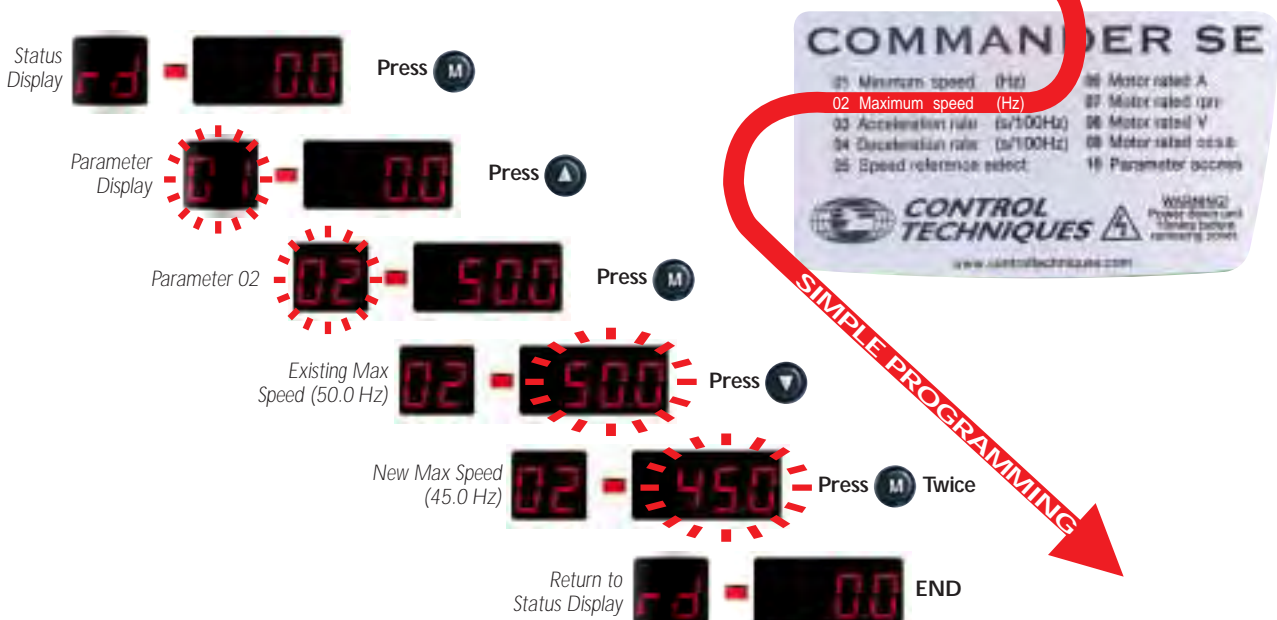


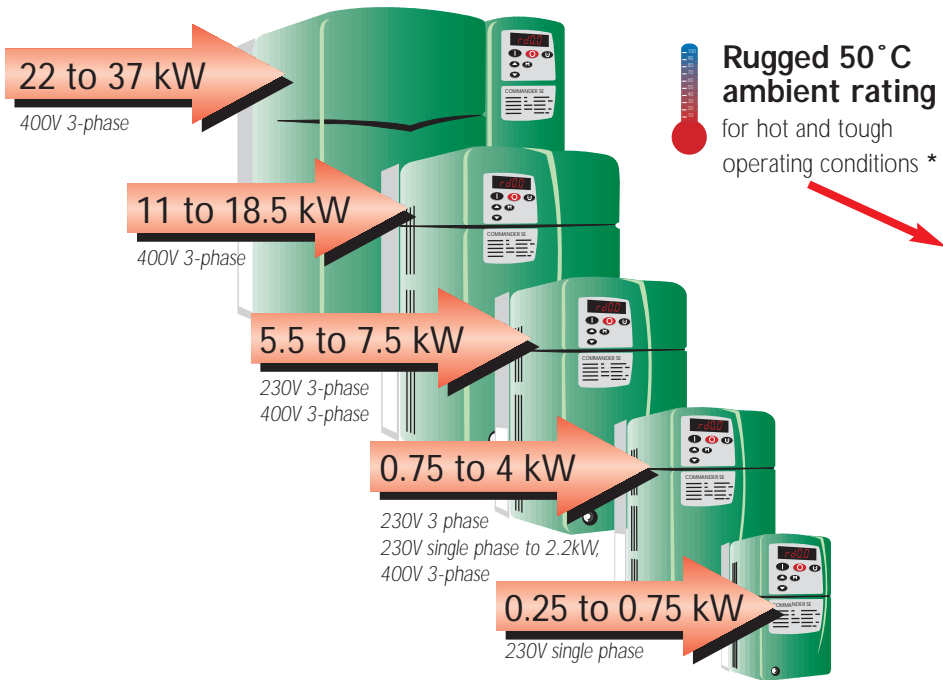
# It really is this easy to set up



Notes 1 Braking Resistor and DC Bus connections are not available on size 1  
2 Not used for single phase

## To change the maximum speed - simply use the front cover





**Rugged 50° C ambient rating**  
for hot and tough operating conditions \*



**Intelligent Thermal Management**

Commander SE's Intelligent Thermal Management technology reduces nuisance tripping and ensures minimum motor noise - while fully protecting the drive

**Clear visibility of key parameters to help commissioning**

**SE text keypad**

- Alpha numeric 32 character display
- Access to all parameters
- Panel mount or hand held

**QuickKey**

- Copy the parameter settings quickly and reliably
- Cloning and parameter storage

**Sensible cable management**

Space to terminate cables

**Fieldbus**

Modbus RTU as standard. Modbus RTU  
Other communication made simple with the widest possible range of fieldbus options to include **DeviceNet**, **Profibus**, **CANopen**



**Fits into an industry standard 200mm deep cubicle up to 18.5kW**

\* 40° C ambient (18.5 to 37 kW)



### Advanced set up and commissioning with SE Soft

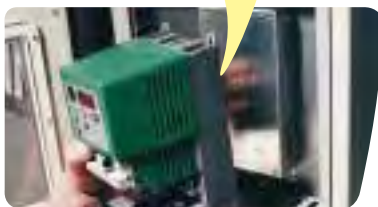
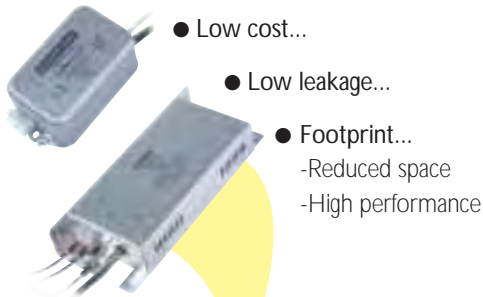
- Windows™ based commissioning software for both control and display of all parameters
- Special drive set up wizard for first time users
- Storage of parameter settings
- Access to advanced parameters



### Ultimate control

When you need ultimate control, Commander SE's advanced parameters give the user, via serial communications, access to advanced features such as: PID Controller, kW hour meter, 8 preset speeds, motorised potentiometer, second motor map, logic functions, and lots more.....

### EMC Filter choices



**Bi-directional  
±10V input  
reference option.**

### General Characteristics

- Maximum overload 150% of rated current for 60s
- Intelligent Thermal Management (ITM)
- 8 preset speeds
- Flying start
- Mains dip ride through
- No spin autotune for fast performance optimisation

### Control

- Open loop vector control
- Speed or torque control
- Speed reference input: 0-10 V, 0-20 mA, 4-20 mA, (-10 to +10 V option)
- 5 digital inputs: enable, run forward, run reverse, local/remote, jog
- Switching frequency 3 – 6 ( default ) – 12 kHz
- Output frequency 0 to 1000 Hz
- Accel and Decel ramps ( linear and S type)
- Positive or negative logic control
- Serial communication
  - Modbus RTU RS485 via RJ45 connector
  - Baud rate 4800,9600, or 19200 Å
- DC injection braking as standard
- Dynamic braking transistor as standard (from 0.75 kW)

### Environment

- IP20 Nema 1 rating
- Ambient temperature -10 to +50°C @ 3 kHz switching (40°C from 18.5kW)
- Humidity 95% maximum (non-condensing)
- Electromagnetic Immunity complies with EN61800-3 and EN50082-2
- Electromagnetic Emissions complies with EN61800-3 (first and second environment) with EMC filter. Complies with EN50081-1 (size 1) and EN50081-2 with EMC filter

### Protection

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

### Advanced functions

- "AND", "OR" functions (with time delay)
- Motorised potentiometer functions
- User definable alarm: adjustable threshold (current, speed, power etc) reached indication
- Timer and energy meter
- Second motor map
- PID controller

## Commander SE rating and EMC filter selection

Commander SE								EMC Filter									
Model order code	Supply volts ±10%	Number of input phases	Frame size	kW rating	HP rating	100% Output current	150% Output current	Filter current rating (A)	Mounting style	Motor Cable Industrial (m)	Schaffner order code	CT order code	L (mm)	H (mm)	W (mm)	Weight (kg)	
SE11200025	200-240	1	1	0.25	0.33	1.5	2.3	<b>12</b>	Low Cost	20	FS5594-12-07	4200-6101	114	46	58	0.49	
SE11200037	200-240	1	1	0.37	0.5	2.3	3.5		Footprint	75	FS5581-12-07	4200-6102	242	40	100	0.60	
SE11200055	200-240	1	1	0.55	0.75	3.1	4.7		Low Leakage	15	FS5581-12-07-LL	4200-6103	242	40	100	0.60	
SE11200075	200-240	1	1	0.75	1	4.3	6.5										
SE2D200075	200-240	1 or 3*	2	0.75	1	4.3	6.5	<b>26/16</b>	Low Cost	50	FS5594-26-07	4200-6204	119	57	86	0.70	
									Footprint	15	FS5901-17-07	4200-6304				0.60	
SE2D200110	200-240	1 or 3*	2	1.1	1.5	5.8	8.7	<b>26/16</b>	Footprint	100	FS5581-26-07	4200-6201	330	45	148	1.20	
										100	FS5569-16-07	4200-6202				1.10	
SE2D200150	200-240	1 or 3*	2	1.5	2	7.5	11.3	<b>26/16</b>	Low Leakage	15	FS5581-26-07-LL	4200-6205	330	45	148	1.20	
SE2D200220	200-240	1 or 3*	2	2.2	3	10	15.0			45	FS5569-16-07-LL	4200-6207				1.10	
SE23200400	200-240	3	2	4	5	17	25.5	<b>26</b>	Low Cost	15	FS5901-30-07	4200-6303	132	69	117	0.80	
									Footprint	100	FS5569-26-07	4200-6203	330	45	148	1.30	
									Low Leakage	45	FS5569-26-07-LL	4200-6209	330	45	148	1.30	
SE23400075	380-480	3	2	0.75	1	2.1	3.2	<b>16</b>	Low Cost	15	FS5901-17-07	4200-6304	119	57	86	0.60	
SE23400110	380-480	3	2	1.1	1.5	3	4.5		Footprint	100	FS5569-16-07	4200-6202	330	45	148	1.10	
SE23400150	380-480	3	2	1.5	2	4.2	6.3		Low Leakage	20	FS5569-16-07-LL	4200-6207	330	45	148	1.10	
SE23400220	380-480	3	2	2.2	3	5.8	8.7										
SE23400300	380-480	3	2	3	4	7.6	11.4										
SE23400400	380-480	3	2	4	5	9.5	14.3										
SE33200550	200-240	3	3	5.5	7.5	25	37.5	<b>30.5</b>	Book End	15	FS5901-30-07	4200-6303	133	70	118	0.80	
SE33200750	200-240	3	3	7.5	10	28.5	42.8		Footprint	100	FS5569-30-07	4200-6302	385	50	190	1.70	
SE33400550	380-480	3	3	5.5	7.5	13	19.5	<b>17.1</b>	Low Cost	15	FS5901-17-07	4200-6304	119	58	86	0.60	
SE33400750	380-480	3	3	7.5	10	16.5	24.8		Footprint	100	FS5569-17-07	4200-6301	385	50	190	1.60	
SE43401100	380-480	3	4	11	15	24.5	36.8	<b>33</b>	Low Cost	15	FS5901-33-07	4200-6402	143	80	128	1.09	
SE43401500	380-480	3	4	15	20	30.5	45.8		Footprint	100	FS5569-33-07	4200-6401	467	55	246	3.10	
SE43401850	380-480	3	4	18.5	25	37	55.5	<b>37</b>	Low Cost	20	FS5901-37-07	4200-6404	143	80	128	1.2	
									Footprint	100	FS5569-37-07	4200-6403	467	60	246	3.1	
SE53402200	380-480	3	5	22	30	46	69	<b>50</b>	Book End	100	FS5113-50-53	4200-6116	337	100	90	3.8	
SE53403000	380-480	3	5	30	40	60	90	<b>63</b>	Book End	100	FS5113-63-34	4200-6117	377	103	150	3.8	
SE53403700	380-480	3	5	37	50	70	105	<b>100</b>	Book End	100	FS5113-100-35	4200-6106	380	107	150	7.8	

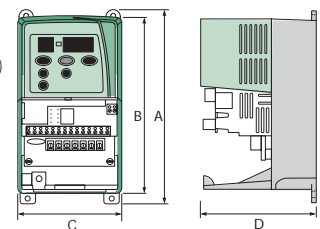
\*The details in italic relate to 3 input phases where applicable

Commander SE 2 3 4 00075

## Options

Model	Description
SE Soft	Universal Keypad - hand held or door mounted, plain text display PC Windows™ based setup software for advanced programming
	Cable screening clamps SE11: size 1, SE12: size 2, SE13: size 3, SE14: size 4, SE15: size 5
SE51	+10 to -10 V analogue input card for bi-directional speed ref.
SE55	QuickKey™ cloning module for rapid, accurate parameter transfer
SE71	RS232 to RS485 (2 wire) converter for connecting between the drive and PC when using SE Soft
SE73	Profibus DP - 12 MB
SE74	Interbus
SE77	CAN Open
SE77	DeviceNet

kW rating  
 voltage (200V or 400V)  
 no. of input phases  
 (D= single or 3 phase)  
 frame size  
 family name



## Dimensions

Frame Size	A		B		C		D	
	mm	in	mm	in	mm	in	mm	in
1	191	7.52	176	6.86	102	4	130	5.12
2	280	11.02	260	10.1	147	5.79	130	5.12
3	336	13.23	315	12.4	190	7.48	155	6.1
4	412	6.22	390	15.21	250	9.84	185	7.28
5	368	14.48	335	13.18	375	14.76	260	10.23

