

## SIMPLE TO USE...

Commander SK is an easy drive – easy to connect, easy to configure and easy to install.

**Easy to install** - Flexibility allows you to install the drive in the best way for your application.

- All drive sizes can be mounted on a flat surface
- DIN rail fixing integrated on small sizes
- Provision for “through hole mounting” is standard from Size 2 upwards. This allows the heat from the drive to be dissipated externally meaning the size of the cubicle can be greatly reduced

**Easy to connect** - All connectors are generously sized and clearly labelled.

**Easy to configure** - The configuration settings you need for most applications are detailed on the front facia of the drive.

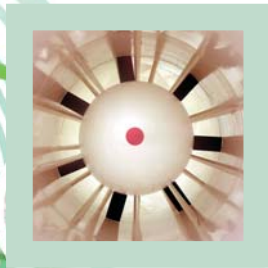


## COMPACT TO FIT...

Commander SK is a compact drive - A compact footprint with space saving features.

Commander SK gives you back valuable space with its compact footprint and extra features that can eliminate the requirement for additional components such as EMC filters.

In simple applications the onboard PLC feature saves you money by removing the need for an external PLC and power supplies. Integrated fieldbus options minimise the need for external I/O to interface with the drive.



## POWER TO PERFORM...

Commander SK – Reliable and productive with exceptional motor performance as you would expect from a Control Techniques drive.

Control Techniques have a fine heritage in manufacturing high performance drives; Commander SK is designed with the same principles to give you an easy to apply performance drive for your standard AC motors. Technology is used to achieve this, on power-up the drive automatically measures the motor characteristics to ensure you get the best motor performance straight out of the box, every time - how could we make it easier?







**EMERSON**<sup>™</sup>  
Industrial Automation

## Commander SK

AC Drives – Simple to Use,  
Compact to Fit, Power to Perform

0.25 to 132 kW (0.33 to 200 HP)  
100V / 200V / 400V / 575V / 690V



**CONTROL  
TECHNIQUES**

[www.controltechniques.com](http://www.controltechniques.com)

## COMMANDER SK – SIMPLE & COMPACT YET POWERFUL

- Easy installation – choose between simple panel mounting and DIN-rail mounting (up to 1.5 kW/ 2HP)
- Simple connections – easy access terminals with clear marking
- Easy to set up – all the parameters you need for typical applications are shown on the front facia – it could not be easier
- Simple start up – simple push button set up – no need for complex programming
- Built in EMC filter
- Display Keypad included as standard
- Software and Documentation CD included as standard
- Communications Port RS485 – Modbus RTU as standard
- Available up to 132 kW / 200HP
- Unbeatable Performance – Try it! Compare it!
- **NEW** Ultra-compact frame size D  
400V - 5.5kW and 7.5kW (7.5HP and 10HP)  
200V - 3kW (1 phase & 3 phase) and 4kW (3HP and 5HP)
- **NEW** 100/120VAC frame size A up to 0.37kW (0.5HP)



## COMMANDER SK ORDER CODES

| 100 / 120 VAC<br>+/- 10% 1 phase<br>(200 / 240 VAC<br>output) | Normal Duty                      |                           |                        | Heavy Duty                       |                           |                        |
|---|----------------------------------|---------------------------|------------------------|----------------------------------|---------------------------|------------------------|
|   | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) |
| <b>Order Code</b>   |                                  |                           |                        |                                  |                           |                        |
| <b>NEW</b> SKA1100025   |                                  |                           |                        | 1.7                              | 0.25                      | 0.33                   |
| <b>NEW</b> SKA1100037   |                                  |                           |                        | 2.2                              | 0.37                      | 0.5                    |
| SKB1100075  |                                  |                           |                        | 4                                | 0.75                      | 1                      |
| SKB1100110  |                                  |                           |                        | 5.2                              | 1.1                       | 1.5                    |

| 200 / 240 VAC<br>+/- 10% 1 phase | Normal Duty                      |                           |                        | Heavy Duty                       |                           |                        |
|----------------------------------|----------------------------------|---------------------------|------------------------|----------------------------------|---------------------------|------------------------|
|                                  | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) |
| <b>Order Code</b>                |                                  |                           |                        |                                  |                           |                        |
| SKA1200025                       |                                  |                           |                        | 1.7                              | 0.25                      | 0.33                   |
| SKA1200037                       |                                  |                           |                        | 2.2                              | 0.37                      | 0.5                    |
| SKA1200055                       |                                  |                           |                        | 3                                | 0.55                      | 0.75                   |
| SKA1200075                       |                                  |                           |                        | 4                                | 0.75                      | 1                      |
| SKBD200110                       |                                  |                           |                        | 5.2                              | 1.1                       | 1.5                    |
| SKBD200150                       |                                  |                           |                        | 7                                | 1.5                       | 2                      |
| SKCD200220                       |                                  |                           |                        | 9.6                              | 2.2                       | 3                      |
| <b>NEW</b> SKDD200300            |                                  |                           |                        | 12.6                             | 3                         | 3                      |

| 200 / 240 VAC<br>+/- 10% 3 phase | Normal Duty                      |                           |                        | Heavy Duty                       |                           |                        |
|----------------------------------|----------------------------------|---------------------------|------------------------|----------------------------------|---------------------------|------------------------|
|                                  | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) |
| <b>Order Code</b>                |                                  |                           |                        |                                  |                           |                        |
| SKBD200110                       |                                  |                           |                        | 5.2                              | 1.1                       | 1.5                    |
| SKBD200150                       |                                  |                           |                        | 7                                | 1.5                       | 2                      |
| SKCD200220                       |                                  |                           |                        | 9.6                              | 2.2                       | 3                      |
| <b>NEW</b> SKDD200300            |                                  |                           |                        | 12.6                             | 3                         | 3                      |
| <b>NEW</b> SKD3200400            |                                  |                           |                        | 17                               | 4                         | 5                      |
| SK2201                           | 15.5                             | 4                         | 5                      | 12.6                             | 3                         | 3                      |
| SK2202                           | 22                               | 5.5                       | 7.5                    | 17                               | 4                         | 5                      |
| SK2203                           | 28                               | 7.5                       | 10                     | 25                               | 5.5                       | 7.5                    |
| SK3201                           | 42                               | 11                        | 15                     | 31                               | 7.5                       | 10                     |
| SK3202                           | 54                               | 15                        | 20                     | 42                               | 11                        | 15                     |
| SK4201                           | 68                               | 18.5                      | 25                     | 56                               | 15                        | 20                     |
| SK4202                           | 80                               | 22                        | 30                     | 68                               | 18.5                      | 25                     |
| SK4203                           | 104                              | 30                        | 40                     | 80                               | 22                        | 30                     |

| 575 VAC<br>+/- 10% 3 phase | Normal Duty                      |                           |                        | Heavy Duty                       |                           |                        |
|----------------------------|----------------------------------|---------------------------|------------------------|----------------------------------|---------------------------|------------------------|
|                            | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) |
| <b>Order Code</b>          |                                  |                           |                        |                                  |                           |                        |
| SK3501                     | 5.4                              | 3                         | 3                      | 4.1                              | 2.2                       | 2                      |
| SK3502                     | 6.1                              | 4                         | 5                      | 5.4                              | 3                         | 3                      |
| SK3503                     | 8.4                              | 5.5                       | 7.5                    | 6.1                              | 4                         | 5                      |
| SK3504                     | 11                               | 7.5                       | 10                     | 9.5                              | 5.5                       | 7.5                    |
| SK3505                     | 16                               | 11                        | 15                     | 12                               | 7.5                       | 10                     |
| SK3506                     | 22                               | 15                        | 20                     | 18                               | 11                        | 15                     |
| SK3507                     | 27                               | 18.5                      | 25                     | 22                               | 15                        | 20                     |
| SK4603                     | 36                               | 22                        | 30                     | 27                               | 18.5                      | 25                     |
| SK4604                     | 43                               | 30                        | 40                     | 36                               | 22                        | 30                     |
| SK4605                     | 52                               | 37                        | 50                     | 43                               | 30                        | 40                     |
| SK4606                     | 62                               | 45                        | 60                     | 52                               | 37                        | 50                     |
| SK5601                     | 84                               | 55                        | 75                     | 63                               | 45                        | 60                     |
| SK5602                     | 99                               | 75                        | 100                    | 85                               | 55                        | 75                     |
| SK6601                     | 125                              | 90                        | 125                    | 100                              | 75                        | 100                    |
| SK6602                     | 144                              | 110                       | 150                    | 125                              | 90                        | 125                    |

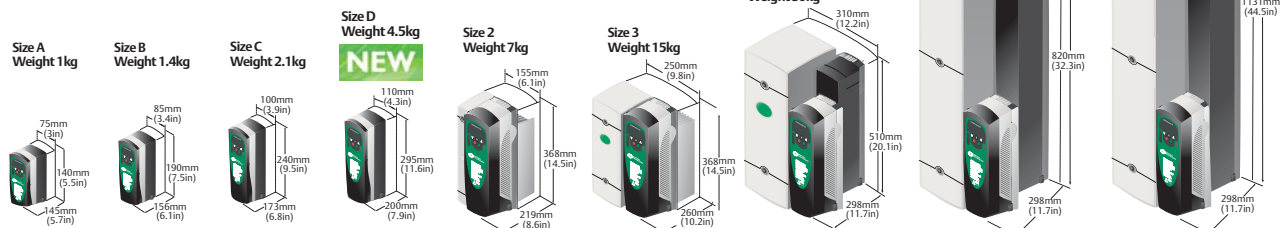
| 380 / 480 VAC<br>+/- 10% 3 phase | Normal Duty                      |                           |                        | Heavy Duty                       |                           |                        |
|----------------------------------|----------------------------------|---------------------------|------------------------|----------------------------------|---------------------------|------------------------|
|                                  | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) |
| <b>Order Code</b>                |                                  |                           |                        |                                  |                           |                        |
| SKB3400037                       |                                  |                           |                        | 1.3                              | 0.37                      | 0.5                    |
| SKB3400055                       |                                  |                           |                        | 1.7                              | 0.55                      | 0.75                   |
| SKB3400075                       |                                  |                           |                        | 2.1                              | 0.75                      | 1                      |
| SKB3400110                       |                                  |                           |                        | 2.8                              | 1.1                       | 1.5                    |
| SKB3400150                       |                                  |                           |                        | 3.8                              | 1.5                       | 2                      |
| SKC3400220                       |                                  |                           |                        | 5.1                              | 2.2                       | 3                      |
| SKC3400300                       |                                  |                           |                        | 7.2                              | 3                         | 3                      |
| SKC3400400                       |                                  |                           |                        | 9                                | 4                         | 5                      |
| <b>NEW</b> SKD3400550            |                                  |                           |                        | 13                               | 5.5                       | 7.5                    |
| <b>NEW</b> SKD3400750            |                                  |                           |                        | 16.5                             | 7.5                       | 10                     |
| SK2401                           | 15.3                             | 7.5                       | 10                     | 13                               | 5.5                       | 7.5                    |
| SK2402                           | 21                               | 11                        | 15                     | 16.5                             | 7.5                       | 10                     |
| SK2403                           | 29                               | 15                        | 20                     | 25                               | 11                        | 20                     |
| SK2404                           |                                  |                           |                        | 29                               | 15                        | 20                     |
| SK3401                           | 35                               | 18.5                      | 25                     | 32                               | 15                        | 25                     |
| SK3402                           | 43                               | 22                        | 30                     | 40                               | 18.5                      | 30                     |
| SK3403                           | 56                               | 30                        | 40                     | 46                               | 22                        | 30                     |
| SK4401                           | 68                               | 37                        | 50                     | 60                               | 30                        | 50                     |
| SK4402                           | 83                               | 45                        | 60                     | 74                               | 37                        | 60                     |
| SK4403                           | 104                              | 55                        | 75                     | 96                               | 45                        | 75                     |
| SK5401                           | 138                              | 75                        | 100                    | 124                              | 55                        | 100                    |
| SK5402                           | 168                              | 90                        | 125                    | 156                              | 75                        | 125                    |
| SK6401                           | 205                              | 110                       | 150                    | 180                              | 90                        | 150                    |
| SK6402                           | 236                              | 132                       | 200                    | 210                              | 110                       | 150                    |

| 690 VAC<br>+/- 10% 3 phase | Normal Duty                      |                           |                        | Heavy Duty                       |                           |                        |
|----------------------------|----------------------------------|---------------------------|------------------------|----------------------------------|---------------------------|------------------------|
|                            | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) | Max<br>Continuous<br>Current (A) | Typical<br>Output<br>(kW) | Motor<br>Power<br>(HP) |
| <b>Order Code</b>          |                                  |                           |                        |                                  |                           |                        |
| SK4601                     | 22                               | 18.5                      | 25                     | 19                               | 15                        | 20                     |
| SK4602                     | 27                               | 22                        | 30                     | 22                               | 18.5                      | 25                     |
| SK4603                     | 36                               | 30                        | 40                     | 27                               | 22                        | 30                     |
| SK4604                     | 43                               | 37                        | 50                     | 36                               | 30                        | 40                     |
| SK4605                     | 52                               | 45                        | 60                     | 43                               | 37                        | 50                     |
| SK4606                     | 62                               | 55                        | 75                     | 52                               | 45                        | 60                     |
| SK5601                     | 84                               | 75                        | 100                    | 63                               | 55                        | 75                     |
| SK5602                     | 99                               | 90                        | 125                    | 85                               | 75                        | 100                    |
| SK6601                     | 125                              | 110                       | 150                    | 100                              | 90                        | 125                    |
| SK6602                     | 144                              | 132                       | 175                    | 125                              | 110                       | 150                    |

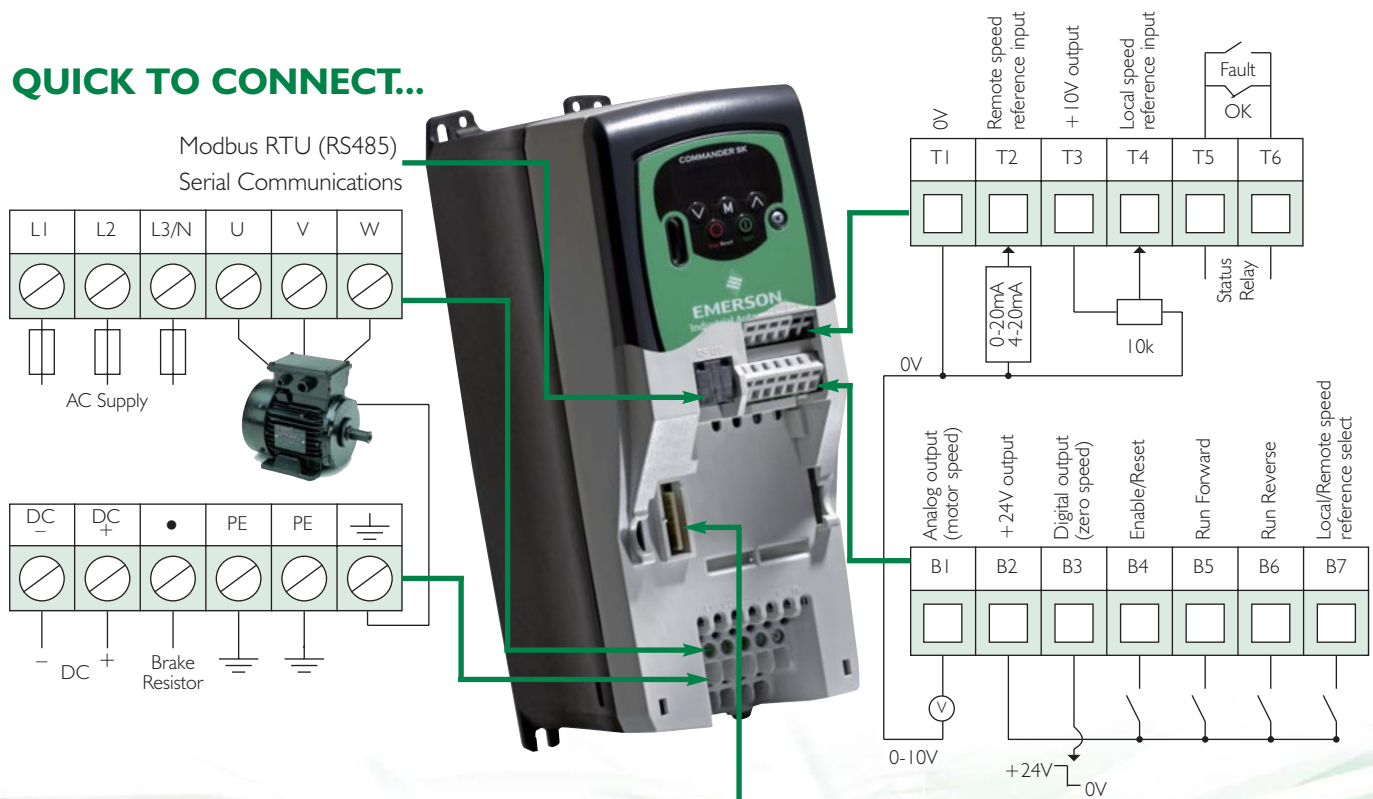
**Normal Duty** 110% overload current for 215 s. For applications which use self-ventilated induction motors and require a low overload capability (e.g. fans, pumps)

**Heavy Duty** 150% overload current for 60 s. For constant torque applications which require a high overload capability (e.g. cranes, hoists)

## COMMANDER SK DIMENSIONS



## QUICK TO CONNECT...



1 x Option Slot for Control Techniques click-in option modules (from Frame Size B upwards)

## SIMPLICITY OF SET UP TO DRIVE YOUR MACHINE AT OPTIMUM EFFICIENCY

- Automatic no-spin autotune for rapid performance optimisation
- 8 preset speeds available for greater application flexibility
- Keypad access to all parameters – basic and advanced menus
- Open loop vector control. Speed or Torque control
- Speed reference input: 0-10V, 0-20mA, 4-20mA (-10V to +10V SM-I/O Lite option)
- Switching frequency from 3kHz up to 18kHz – quiet motor operation
- Output frequency from 0 to 1500 Hz
- Linear and S type acceleration and deceleration ramps
- Modbus RTU RS485 via RJ45 connector as standard
- DC injection braking as standard
- Dynamic braking transistor as standard
- Energy savings with dynamic motor flux V/Hz
- Fan and pump energy optimisation with quadratic motor flux V/Hz

### Environment

- IP20
- UL Type I kit and cover kit options up to Size D
- Ambient temperature -10°C to 40°C
- Electromagnetic Immunity complies with EN61800-3, EN61000-6-1 and EN61000-6-2
- Humidity 95% maximum (non-condensing)
- Electromagnetic Emissions complies with EN61800-3 (second environment) as standard. Complies with EN61000-6-3 (residential) and EN61000-6-4 (industrial) generic standards with optional footprint EMC filter



Tab to easily connect/disconnect internal EMC filter

## COMMANDER SK CAN DO EVEN MORE...

Commander SK is delivered to you ready to run, however, a comprehensive range of accessories allow you to expand the features to achieve even more with your drive.



### 1 Operator Interface Options

Interface with your Commander SK with a comprehensive range of optional remote keypads and operator interfaces; these can be used to commission and control the drive.

- SK Keypad – A simple LED keypad with a high IP65 rating
- SM-Keypad Plus – A plain text, multi-language LCD keypad
- HMI Panels – A range of fully configurable LCD touch screen displays



### 2 Installation Options

Flexible installation accessories help you to optimise the drive for your application.

- An internal braking transistor is standard on Commander SK, by fitting an optional braking resistor you can decelerate even heavier loads more rapidly
- Additional EMC Filters supplement the drives internal filter to allow you to meet even more stringent standards
- The robust SK Cable Bracket makes it easier to support heavy cables and conduit glands to the drives
- UL Type I kit and cover kit options up to Size D



Control Techniques  
click-in option modules

### 3 Communication, Programming and Control Options

Add intelligence and connectivity to your drive with a range of integration accessories. As an example Ethernet and internet connectivity allows you to connect your PC to a drive located anywhere in the world, Commander SK is as simple or sophisticated as you need it to be.

- **Communications** – All major fieldbus communications are supported through Control Techniques click-in option modules
- **I/O Modules** – A range of Control Techniques click-in I/O options are available that allow you to further extend the functionality of the drive
- **SmartStick** – Inserting the SmartStick into the front fascia of the drive enables parameters to be copied from one drive to another. This is especially useful for replicating a configuration across multiple drives
- **LogicStick** – Inserting the LogicStick into the front fascia of the drive adds the required memory storage for the use of the onboard PLC features. This is an advantage in applications where traditionally a small external PLC would normally be used

- **Serial and USB cables** – These are safe isolated cables to link your PC with the drive
- **PC software tools** – Included with the drive, these provide the means to gain easy access to the advanced features

Note: Click in option modules may only be fitted on drives from Size B up wards.



## COMMANDER SK – THE MOST POWERFUL EASY AC DRIVE IN THE WORLD...

### Dynamic Performance that Exceeds Expectations

Though simple to operate, Commander SK has the performance characteristics to allow it to solve applications normally requiring more complex and expensive drives. Commander SK is robust and ideal for industrial applications demanding high cycle rates and tight speed control, such as indexers and fuel pumps. Its superior shaft performance makes it incredibly responsive to either demand or load changes. The ability to hold torque down to 1 Hz makes it ideal for material handling applications. Selectable switching frequencies allow for quiet motor operation.



### Replace PLCs

The Commander SK from Control Techniques establishes its dominant status in simple general purpose drives providing a level of performance and flexibility not found in any other low-cost, open loop AC drive. It is the first economical drive that a user can add PLC functionality into, to save both space and cost on systems. The LogicStick and the free of charge SyPTLite programming software can be used to replace a nano or micro PLC, or to replace relays and timers.

### Lower Cost Solution from Premium Technology

Commander SK includes premium functions as standard: logic functions, comparators, motorised potentiometer, PID regulator, dynamic braking transistor with optional external braking resistor and DC injection braking as standard. Optional functions include SM-I/O Lite that can control an external encoder and even allow real-time clock functions with SM-I/O Timer.

Dynamic performance, PLC on board, premium functions and plug-in options ensure that in more complex applications Commander SK can deliver more than the average general purpose drive – giving you lower cost solutions and better productivity in your motor control applications.

## COMMANDER SK – THE SIMPLE DRIVE WITH AWARD WINNING DESIGN

### The Design Business Association, Design Effectiveness Awards Industrial Product 2006

There is no better scheme to demonstrate and celebrate the impact that good design can have on business performance than the DBA Design Effectiveness Awards.

### Industrial Product Design of the Year, Plastics Industry Awards 2006

The Plastics Industry Awards is the industry's most prestigious awards initiative; a sign of excellence.



### Powerful and Reliable

Commander SK has been developed, tested and proven in the harshest operating conditions by Control Techniques dedicated electrical, mechanical and software engineering groups. The result: a strong drive that gets your machine running quickly and consistently with the highest productivity.

