EMERSON
Industrial Automation

Commander SK

General purpose AC drive for machinery automation

0.25kW - 132kW (0.33hp - 200hp)
100V / 200V / 400V / 575V / 690V

CONTROL TECHNIQUES
www.controltechniques.com

Commander SK, the ultimate general purpose AC drive

Commander SK allows OEMs to add value to their machines whilst also minimising the installed cost. This is achieved through a simple to install, easy to use, yet high performance drive design with integrated features that allow advanced functions to be performed. Commander SK is robust and ideal for industrial automation systems.

E171230

N1652

Meeting the drive needs of machinery manufacturers

Commander SK is easy and quick to procure, fit and commission, whether installing 1 or 1000 drives.

Fast and easy **procurement**

- Control Techniques offer a single source for motors, soft starters, AC and DC drives and servos
- For high volume customers Control Techniques can integrate into your supply chain using lean distribution methods to minimise stock holding and maximise availability

Fast and easy **installation**

- All drives can be mounted on a flat surface, plus
  - Low power Commander SK drives can click onto standard DIN Rail
  - Commander SK sizes 2 and above can be through panel mounted to allow heat to be dissipated externally. This mounting method allows smaller cabinet dimensions and reduces the need for ventilation
- Integrated features such as EMC filter, PID controller, kW hour meter, integrated brake chopper and onboard PLC option remove the need for many external components

Fast and easy **connection**

- All connectors are generously sized and clearly labelled
- Control connections use screwless push connectors to reduce time required for wiring and increase reliability

Fast and easy drive **set-up**

- Simple keypad and display included as standard
- Sufficient set-up information is detailed on the front fascia of the drive for the majority of applications
- For standardised/high volume manufacture, the SmartStick can be used to transfer drive settings to multiple drives
- For more complex applications, a CD containing detailed documentation and free software tools is included to assist with configuration and monitoring

Fast and easy **support**

- Commander SK is supported through a global engineering network of 53 Control Techniques Drive Centres in 31 countries, plus authorised resellers located within 36 additional countries
- Commander SK is reliable and requires no scheduled servicing
- 2+ year warranty is honoured worldwide no matter where your drive is installed

Commander SK range
0.25kW to 132kW with SK-Keypad Remote

Commander SK - Fast and easy integration flexibility

Control mode

Open loop vector control

V/Hz control

Single motor

Multi motor

Drive programming and operator interface options

Operator Interface

CT comms cable/ CT USB comms cable

SM-Keypad Plus

Remote panel mounting LCD multilingual text keypad display to IP54 (NEMA 12)

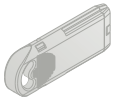
SK-Keypad Remote*

Remote panel mounting LED display to IP65 (NEMA 12)

SmartStick

Upload drive parameters to the SmartStick for storage or for easy set-up of identical drives

LogicStick



The LogicStick enables the user to program PLC functions within the drive. It can also be used as a SmartStick

Input/Output

Standard

4 Digital inputs
1 Digital input/output
1 Relay output
2 Analog inputs
1 Analog output

Options

SM-I/O 32

SM-I/O 24V Protected

SM-I/O Lite

SM-I/O Timer

SM-I/O 120V

SM-PELV

Typical applications

Communications

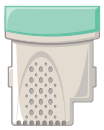
Standard

Options

Modbus RTU

SM-EtherCAT

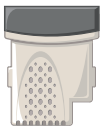
SM-LON



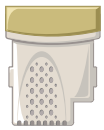
SM-Profibus DP

SM-Interbus

SM-DeviceNet

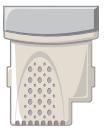


SM-Ethernet



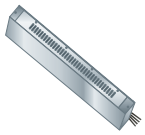
Ethernet/IP, Modbus TCP/IP, Email, Web server, Simple Network Time Protocol

SM-CANopen



Installation accessories

EMC filters



These additional filters are designed to operate together with the drive's own integral EMC filter in areas of sensitive equipment

SK Bracket**

Cable management brackets

Cover kit*

The additional top cover kit will increase the environmental protection of the top face to IP4X in vertical direction.

UL type 1 kit*

Bottom metal gland plate, top cover and side covers to allow the drive to comply with the requirements of UL type 1

* Applicable on sizes A to D only. ** Applicable on sizes A to C only. Sizes 2 to 6 have cable management accessories included as standard.

FREE Software

CTSoft
Software which allows the user to monitor, commission and store parameter settings

CTScope
Full featured software oscilloscope for viewing and analysing changing values within drive

SyPTLite
Software used to program PLC functions using the optional LogicStick

CT Energy Savings Estimator
Energy optimising software helps you to calculate pay-back periods and carbon dioxide savings

CT Harmonics Calculator
Supply harmonics calculator will help you to economically meet the required standards for your installation

Plastics

Material handling

Textiles

Commander SK specifications and dimensions

Specifications

- 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
- Advanced standard software features, such as timers, thresholds, maths blocks, logic operators, PID controller and kW/h meter

Environmental safety and electrical conformance

- IP20
- UL Type 1 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

Dimensions

Size A (≤0.75kW)
Weight 1kg

Size B (≤1.5kW)
Weight 1.4kg

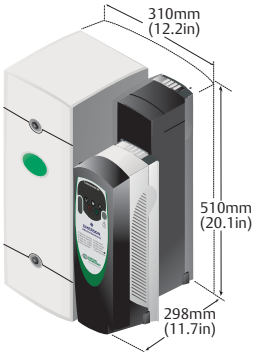
Size C (≤2.2kW)
Weight 2.1kg

Size D (≤7.5kW)
Weight 4.5kg

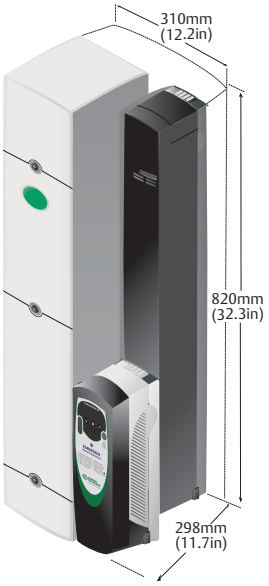
Size 2 (≤15kW)
Weight 7kg

Size 3 (≤30kW)
Weight 15kg

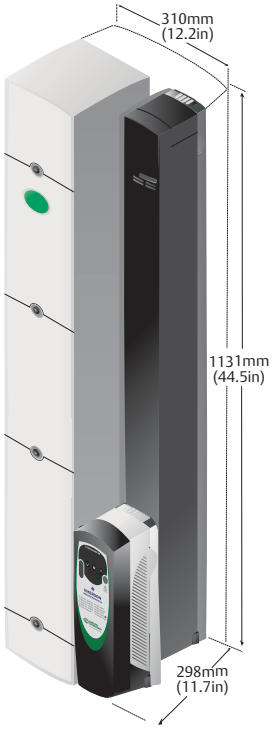
Size 4 (≤55kW)
Weight 30kg



Size 5 (≤125kW)
Weight 55kg



Size 6 (≤132kW)
Weight 75kg



Note: Height does not include mounting feet.

Ratings

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

Frame Size	200 / 240 VAC +/- 10% 1 phase Order Code	Normal Duty Max Continuous Current (A)	Normal Duty Typical Output (kW)	Normal Duty Motor Power (HP)	Heavy Duty Max Continuous Current (A)	Heavy Duty Typical Output (kW)	Heavy Duty Motor Power (HP)
A	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
B	SKBD200110				5.2	1.1	1.5
	SKBD200150				7	1.5	2
C	SKCD200220				9.6	2.2	3
D	SKDD200300				12.6	3	3

Frame Size	200 / 240 VAC +/- 10% 3 phase Order Code	Normal Duty Max Continuous Current (A)	Normal Duty Typical Output (kW)	Normal Duty Motor Power (HP)	Heavy Duty Max Continuous Current (A)	Heavy Duty Typical Output (kW)	Heavy Duty Motor Power (HP)
B	SKBD200110				5.2	1.1	1.5
	SKBD200150				7	1.5	2
C	SKCD200220				9.6	2.2	3
D	SKDD200300				12.6	3	3
	SKD3200400				17	4	5
2	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
3	SK3201	42	11	15	31	7.5	10
	SK3202	54	15	20	42	11	15
4	SK4201	68	18.5	25	56	15	20
	SK4202	80	22	30	68	18.5	25
	SK4203	104	30	40	80	22	30

Frame Size	380 / 480 VAC +/- 10% 3 phase Order Code	Normal Duty Max Continuous Current (A)	Normal Duty Typical Output (kW)	Normal Duty Motor Power (HP)	Heavy Duty Max Continuous Current (A)	Heavy Duty Typical Output (kW)	Heavy Duty Motor Power (HP)
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
C	SKC3400220				5.1	2.2	3
	SKC3400300				7.2	3	3
	SKC3400400				9	4	5
D	SKD3400550				13	5.5	7.5
	SKD3400750				16.5	7.5	10

Frame Size	380 / 480 VAC +/- 10% 3 phase Order Code	Normal Duty Max Continuous Current (A)	Normal Duty Typical Output (kW)	Normal Duty Motor Power (HP)	Heavy Duty Max Continuous Current (A)	Heavy Duty Typical Output (kW)	Heavy Duty Motor Power (HP)
2	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
3	SK3401	35	18.5	25	32	15	25
	SK3402	43	22	30	40	18.5	30
	SK3403	56	30	40	46	22	30
4	SK4401	68	37	50	60	30	50
	SK4402	83	45	60	74	37	60
	SK4403	104	55	75	96	45	75
5	SK5401	138	75	100	124	55	100
	SK5402	168	90	125	156	75	125
6	SK6401	205	110	150	180	90	150
	SK6402	236	132	200	210	110	150

Frame Size	575 VAC +/- 10% 3 phase Order Code	Normal Duty Max Continuous Current (A)	Normal Duty Typical Output (kW)	Normal Duty Motor Power (HP)	Heavy Duty Max Continuous Current (A)	Heavy Duty Typical Output (kW)	Heavy Duty Motor Power (HP)
3	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
4	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
5	SK5601	84	55	75	63	45	60
	SK5602	99	75	100	85	55	75
6	SK6601	125	90	125	100	75	100
	SK6602	144	110	150	125	90	125

Frame Size	690 VAC +/- 10% 3 phase Order Code	Normal Duty Max Continuous Current (A)	Normal Duty Typical Output (kW)	Normal Duty Motor Power (HP)	Heavy Duty Max Continuous Current (A)	Heavy Duty Typical Output (kW)	Heavy Duty Motor Power (HP)
4	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
5	SK5601	84	75	100	63	55	75
	SK5602	99	90	125	85	75	100
6	SK6601	125	110	150	100	90	125
	SK6602	144	132	175	125	110	150

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

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