

# CONTROL TECHNIQUES



# COMMANDER

GENERAL PURPOSE, LOW VOLTAGE AC DRIVES

# C200

## DRIVE OBSESSED

# COMMANDER C200

# SIMPLE RELIABLE

# MOTOR CONTROL

Control Techniques has set the standards in motor control since 1973.

The Commander C200 delivers benchmark functionality at no added cost to the base drive itself. Plug-in options, dynamic performance, PLC functionality and other advanced features such as fieldbus, Ethernet, and Modbus RTU communications ensure that in more complex applications Commander C200 can deliver more than the average general purpose drive - giving you lower cost solutions and better productivity in your motor control applications.

## Other Commander C200 benefits include:

### Enhance up-time and system flexibility

- Flexible system integration and remote diagnostics through optional industrial Ethernet and fieldbus communication
- Flexible I/O expandable with SI-I/O option module
- Enhanced functionality and onboard PLC programming provide a low-cost system solution, minimizing the need for additional equipment such as PLCs

### Maximum machine productivity with exceptional open-loop motor control

- RFC-A (Rotor Flux Control) algorithm for high performance induction motor control of demanding applications
- Closed loop current control without a position feedback device
- Speed control for conveyors, fans, pumps, and mixers, where their function is controlled remotely with fieldbus or Ethernet communications



## Diagnostic Software

Our **Drive Diagnostics APP** allows users to quickly diagnose faults. In the unlikely event that you get a drive error, download our complimentary Diagnostic Tool APP and input the error code from your drive and you'll be given a solution.

Download our APP at: [www.ctdrives.com/diagnostics](http://www.ctdrives.com/diagnostics)



\*Warranty terms and conditions apply.

[WWW.CONTROLTECHNIQUES.COM](http://WWW.CONTROLTECHNIQUES.COM)



# COMMANDER C200

# ORDERING INFORMATION

## 115 VAC, Single Phase 50/60 Hz Input, 230 VAC 3-Phase Output

Commander C200 Order Code*	Input Phase	Normal Duty		Heavy Duty	
		HP	Amps	HP	Amps
C200-01100017A	1	0.33	1.7	0.33	1.7
C200-01100024A	1	0.5	2.4	0.5	2.4
C200-02100042A	1	1	4.2	1	4.2
C200-02100056A	1	1.5	5.6	1.5	5.6

## 230 VAC, Single & 3-Phase Input, 3-Phase Output, 50/60 Hz Input

C200-01200017A	1	0.33	1.7	0.33	1.7
C200-01200024A	1	0.5	2.4	0.5	2.4
C200-01200033A	1	0.75	3.3	0.75	3.3
C200-01200042A	1	1	4.2	1	4.2
C200-02200024A	1,3	0.5	2.4	0.5	2.4
C200-02200033A	1,3	0.75	3.3	0.75	3.3
C200-02200042A	1,3	1	4.2	1	4.2
C200-02200056A	1,3	1.5	5.6	1.5	5.6
C200-02200075A	1,3	2	7.5	2	7.5
C200-03200100A	1,3	3	10	3	10
C200-04200133A	1,3	3	13.3	3	13.3
C200-04200176A	3	5	17.6	5	17.6
C200-05200250A	3	10	30	7.5	25
C200-06200330A	3	15	50	10	33
C200-06200440A	3	20	58	15	44
C200-07200610A	3	25	75	20	61
C200-07200750A	3	30	94	25	75
C200-07200830A	3	40	117	30	83
C200-08201160A	3	50	149	40	116
C200-08201320A	3	60	180	50	132
C200-09201760x**	3	75	216	60	176
C200-09202190x**	3	100	266	75	219

## 460 VAC, Three Phase Input, 3-Phase Output, 50/60 Hz Input

C200-02400013A	3	0.5	1.3	0.5	1.3
C200-02400018A	3	0.75	1.8	0.75	1.8
C200-02400023A	3	1	2.3	1	2.3
C200-02400032A	3	1.5	3.2	1.5	3.2
C200-02400041A	3	2	4.1	2	4.1
C200-03400056A	3	3	5.6	3	5.6
C200-03400073A	3	3	7.3	3	7.3
C200-03400094A	3	5	9.4	5	9.4
C200-04400135A	3	7.5	13.5	7.5	13.5
C200-04400170A	3	10	17	10	17
C200-05400270A	3	20	30	20	27
C200-05400300A	3	20	30	20	30
C200-06400350A	3	25	38	25	35
C200-06400420A	3	30	48	30	42
C200-06400470A	3	50	63	30	47
C200-07400660A	3	60	79	50	66
C200-07400770A	3	75	94	60	77
C200-07401000A	3	75	112	75	100
C200-08401340A	3	125	155	100	134
C200-08401570A	3	150	184	125	157
C200-09402000x**	3	150	221	150	180
C200-09402240x**	3	200	255	150	211

\*Add 10101AB100 to the base order code when ordering standard US (60Hz) default products

\*\*x= A or E (9E frame requires an external AC Line Reactor)

Note: Ratings shown for 3 kHz switching frequency.

## 575 VAC, 3-Phase Input & Output, 50/60 Hz Input

Unidrive C200 Order Code*	Input Phase	Normal Duty		Heavy Duty	
		HP	Amps	HP	Amps
C200-05500030A	3	3	3.9	2	3
C200-05500040A	3	5	6.1	3	4
C200-05500069A	3	7.5	10	5	6.9
C200-06500100A	3	10	12	7.5	10
C200-06500150A	3	15	17	10	15
C200-06500190A	3	20	22	15	19
C200-06500230A	3	25	27	20	23
C200-06500290A	3	30	34	25	29
C200-06500350A	3	40	43	30	34
C200-07500440A	3	50	53	40	44
C200-07500550A	3	60	73	50	55
C200-08500630A	3	75	86	60	63
C200-08500860A	3	100	108	75	86
C200-09501040x**	3	125	125	100	104
C200-09501310x**	3	150	150	125	131

Order String - Frame Size Key
Example: C200-XX_ _ _ _ _
XX = Frame Size (01-09 above)

690 V products are also available, for details visit: [www.controltechniques.us](http://www.controltechniques.us)

## OPTIONS AT-A-GLANCE

Option	Description	Order Code	
Drive Configuration & Programming	Configuration software	CONNECT	
	Drive to PC USB cable (requires a 485 adaptor)	CT-USB-CABLE	
	Parameter cloning 4 GB (includes 4 GB SD card)	AI-SMART-ADAPTOR	
	Parameter cloning (requires an SD card)	AI-BACKUP-ADAPTOR	
Operator Interfaces	8 GB SD card	CT5D8GB	
	Remote LCD display	REMOTE-KEYPAD	
	Remote LCD display with real-time clock	REMOTE-KEYPAD-RTC	
	Remote display cable	UM-LCD-485-XXX****	
Input / Output***	Extended I/O	SI-I/O	
	Modbus RTU	AI-485-ADAPTOR	
Communications***	Modbus RTU with 24 V	AI-485-24V-ADAPTOR	
	PROFIBUS DP	SI-PROFIBUS	
	DeviceNet	SI-DEVICENET	
	CANopen	SI-CANOPEN	
	PROFINET RT	SI-PROFINET-V2	
	EtherCAT	SI-ETHERCAT	
	EtherNet/IP, Modbus TCP	SI-ETHERNET	
	Powerlink	SI-POWERLINK	
	Interbus	SI-INTERBUS-500K, SI-INTERBUS-2M	
	Application Programming Software & Diagnostics	PLC programming	MACHINE-CONTROL-STUDIO
		Digital oscilloscope	CTSCOPE
Power Accessories	External EMC filter	Consult factory	
	Line & load reactors		
	Dynamic braking resistors		
	UL Type 1 conduit kits		
Environmental Protection & Cable Management	Retrofit for Commander SK	Consult factory	
	Fan replacement kits		

\*\*\*frame sizes 2 and up accept 15I option

\*\*\*\*Shielded RS485 patch cable, CAT5e, conductive metal RJ45 connectors, XXX=cable length in 5 foot increments (max 330 ft), standard lengths are (005, 010, 015, 025 and 050)

# COMMANDER C200

# RATINGS & DIMENSIONS

## Ratings

Voltage ratings	
100 V - 120 V ± 10%	✓
200 V - 240 V ± 10%	✓
380 V - 480 V ± 10%	✓
500 V - 575 V ± 10%	✓
500 V - 690 V ± 10%	✓
Control mode	
Open loop vector or V/Hz control for induction motor control	✓
Open loop Rotor Flux Control for induction motor control (RFC-A)	✓
Active Front End (AFE) power quality converter	✓

Heavy Duty Ratings:	0.33 HP to 150 HP (0.25 kW to 110 kW)
Normal Duty Ratings:	0.33 HP to 200 HP (0.25 kW to 132 kW)
Supply phases:	Frame size 1 and 2: 115 V drives 1Ø, 230 V drives 1Ø or 3Ø; Frame size 7 and larger 3Ø; 460, 575 and 690 V drives 3Ø
Control connections:	2x Analog inputs, 4x Digital inputs, 1x Analog output, 1x Digital I/O, 1x Relay
Drive rating:	IP21 / UL open class as standard
Keypad:	Fixed LED
Option slots:	1 (frame size 2 and above)
Parameter cloning via:	PC tools, SD card

Visit [www.Drive-Setup.com](http://www.Drive-Setup.com) for step-by-step guides, videos, software & product support documentation.

## Dimensions & Weights

Frame Size	Dimensions H x W x D (in)	Weight (lbs)
01	6.3 x 3.0 x 5.1	1.7
02	8.1 x 3.1 x 5.9	2.2
03	8.9 x 3.5 x 6.3	3.3
04	10.9 x 4.5 x 6.9	6.9
05	15.4 x 5.6 x 7.9	16.3
06	15.4 x 8.3 x 9.0	30.9
07	21.9 x 10.6 x 11.0	61.7
08	31.7 x 12.2 x 11.4	114.6
09E	39.8 x 12.2 x 11.4	101.4
09A	43.6 x 12.2 x 11.4	146.6

Additional distance should be added to the height dimension (H) when the AI options are fitted.



## How to select a drive

(Consult online catalog for complete drive information)

### 1. Electrical Considerations

- What is the supply voltage?
- Single or 3Ø input power?
- What is the motor rating?
  - Continuous current – FLA (Full Load Amps)
  - Select the drive based on motor Amps rather than horsepower

### 2. Load Type (choose one)

- Normal Duty: Peak current is 110% of drive rating (fans, pumps, etc.)
- Heavy Duty: Peak current is 180% (mixers, conveyors, etc.)

### 3. Drive Mechanical Mounting

- Panel mounting – as standard
- Wall mounting – UL conduit kits are available
- Through panel mounting – frames 5 and up

**Nidec**

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