

Unidrive M300 AC Drives

Enhance throughput with machine safety, communications, and built-in PLC



Unidrive M300 Frame Size 1

Unidrive M300 provides flexible integration with safety and communications. Unidrive M300 is ideal for applications that require cost-effective integration into safety systems. With two Safe Torque Off (STO) inputs, onboard PLC and an SI interface for industry standard fieldbuses, Ethernet or extended I/O options, this feature set ensures Unidrive M300's flexible integration with any system.

Enhance up-time and system flexibility

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

High performance open loop motor control

- RFC-A (Rotor Flux Control) algorithm for exceptional 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 are controlled remotely with fieldbus or Ethernet communications

Key data

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: 110 V drives 1Ø, 230 V drives 1Ø or 3Ø; Frame size 7 and larger 3Ø; 460, 575 and 690 V drives 3Ø

Control connections: 3x Analog I/O, 5x Digital I/O, 2x STO, 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

Voltage ratings	
100 / 120 VAC ± 10%	✓
200 / 240 VAC ± 10%	✓
380 / 480 VAC ± 10%	✓
500 / 575 VAC ± 10%	✓
500 / 690 VAC ± 10%	✓
Control mode	
Open loop vector or V/Hz induction motor control	✓
Open loop Rotor Flux Control for induction motors (RFC-A)	✓

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

Order Information & Ratings

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

Unidrive M300 Order Code*	Normal Duty		Heavy Duty	
	hp	Amps	hp	Amps
M300-01100017A	0.33	1.7	0.33	1.7
M300-01100024A	0.5	2.4	0.5	2.4
M300-02100042A	1	4.2	1	4.2
M300-02100056A	1.5	5.6	1.5	5.6

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

Unidrive M300 Order Code*	Normal Duty		Heavy Duty	
	hp	Amps	hp	Amps
M300-01200017A	0.33	1.7	0.33	1.7
M300-01200024A	0.5	2.4	0.5	2.4
M300-01200033A	0.75	3.3	0.75	3.3
M300-01200042A	1	4.2	1	4.2
M300-02200024A	0.5	2.4	0.5	2.4
M300-02200033A	0.75	3.3	0.75	3.3
M300-02200042A	1	4.2	1	4.2
M300-02200056A	1.5	5.6	1.5	5.6
M300-02200075A	2	7.5	2	7.5
M300-03200100A	3	10	3	10
M300-04200133A	3	13.3	3	13.3

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

Unidrive M300 Order Code*	Normal Duty		Heavy Duty	
	hp	Amps	hp	Amps
M300-02200024A	0.5	2.4	0.5	2.4
M300-02200033A	0.75	3.3	0.75	3.3
M300-02200042A	1	4.2	1	4.2
M300-02200056A	1.5	5.6	1.5	5.6
M300-02200075A	2	7.5	2	7.5
M300-03200100A	3	10	3	10
M300-04200133A	3	13.3	3	13.3
M300-04200176A	5	17.6	5	17.6
M300-05200250A	10	30	7.5	25
M300-06200330A	15	50	10	33
M300-06200440A	20	58	15	44
M300-07200610A	25	75	20	61
M300-07200750A	30	94	25	75
M300-07200830A	40	117	30	83
M300-08201160A	50	149	40	116
M300-08201320A	60	180	50	132
M300-09201760x**	75	216	60	176
M300-09202190x**	100	266	75	219

*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)

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.

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 Diagnostics Tool app. Just input the error code on your device and you'll be given a solution.

Download our Diagnostics Tool App at:

www.controltechniques.com/mobile-applications



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

Unidrive M300 Order Code*	Normal Duty		Heavy Duty	
	hp	Amps	hp	Amps
M300-02400013A	0.5	1.3	0.5	1.3
M300-02400018A	0.75	1.8	0.75	1.8
M300-02400023A	1	2.3	1	2.3
M300-02400032A	1.5	3.2	1.5	3.2
M300-02400041A	2	4.1	2	4.1
M300-03400056A	3	5.6	3	5.6
M300-03400073A	3	7.3	3	7.3
M300-03400094A	5	9.4	5	9.4
M300-04400135A	7.5	13.5	7.5	13.5
M300-04400170A	10	17	10	17
M300-05400270A	20	30	20	27
M300-05400300A	20	30	20	30
M300-06400350A	25	38	25	35
M300-06400420A	30	48	30	42
M300-06400470A	50	63	30	47
M300-07400660A	60	79	50	66
M300-07400770A	75	94	60	77
M300-07401000A	75	112	75	100
M300-08401340A	125	155	100	134
M300-08401570A	150	184	125	157
M300-09402000x**	150	221	150	180
M300-09402240x**	200	255	150	211

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

Order String - Frame Size Key

Example: M300-XX_ _ _ _ _

XX = Frame Size (01-09 above)

OPTIONS AT-A-GLANCE

Option	Description	Order Code
Drive Configuration & Programming	Configuration software	UNIDRIVE-M-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
	8 GB SD card	CTSD8GB
Operator Interfaces	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
Communications***	Modbus RTU	AI-485-ADAPTOR
	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	
Application Programming Software & Diagnostics	PLC programming	MACHINE-CONTROL-STUDIO
	Digital oscilloscope	CTSCOPE
Power Accessories	External EMC filter	See the Unidrive M: General Purpose AC Drives brochure
	Line & load reactors	
	Dynamic braking resistors	
Environmental Protection & Cable Management	UL Type 1 conduit kits	See the Unidrive M: General Purpose AC Drives brochure
	Retrofit for Commander SK	
	Fan replacement kits	

***frame sizes 2 and up accept 1 SI 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)

See the Unidrive M: General Purpose AC Drives brochure for our full product offering including 575 V and 690 V solutions.



CONTROL TECHNIQUES™

Call us at: +1 800 893-2321