

CONTROL TECHNIQUES



UNIDRIVE M400

Quick setup and diagnostics with real text display,
onboard PLC and safety inputs

DRIVE OBSESSED

UNIDRIVE M400

GENERAL-PURPOSE

AC DRIVES

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

Unidrive M400 minimizes downtime with an intuitive backlit LCD keypad offering a real-text, multi-language display for rapid setup and clear diagnostic help. The integrated PLC can execute a substantial range of sequencing and logic programs. The Unidrive M400's impressive I/O count complete with two STO inputs, an optional SI interface for industry standard fieldbuses, Ethernet and Modbus RTU communications. Additionally, the intuitive display makes it an ideal solution for stand-alone machine control.

Other Unidrive M400 benefits include:

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 provides exceptional induction motor control and high stability for demanding applications
- S-ramp accel / decel profiling provides smooth speed transitions to minimize "jerk"
- Speed control for conveyors, fans, pumps, mixers, extruders, and material payoffs where fast setup and diagnostics are required

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.ctdrives.com/diagnostics



WWW.CONTROLTECHNIQUES.COM

UNIDRIVE M400

ORDERING INFORMATION

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

Unidrive M400 Order Code*	Input Phase	Normal Duty		Heavy Duty	
		HP	Amps	HP	Amps
M400-01100017A	1	0.33	1.7	0.33	1.7
M400-01100024A	1	0.5	2.4	0.5	2.4
M400-02100042A	1	1	4.2	1	4.2
M400-02100056A	1	1.5	5.6	1.5	5.6

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

Unidrive M400 Order Code*	Input Phase	Normal Duty		Heavy Duty	
		HP	Amps	HP	Amps
M400-01200017A	1	0.33	1.7	0.33	1.7
M400-01200024A	1	0.5	2.4	0.5	2.4
M400-01200033A	1	0.75	3.3	0.75	3.3
M400-01200042A	1	1	4.2	1	4.2
M400-02200024A	1,3	0.5	2.4	0.5	2.4
M400-02200033A	1,3	0.75	3.3	0.75	3.3
M400-02200042A	1,3	1	4.2	1	4.2
M400-02200056A	1,3	1.5	5.6	1.5	5.6
M400-02200075A	1,3	2	7.5	2	7.5
M400-03200100A	1,3	3	10	3	10
M400-04200133A	1,3	3	13.3	3	13.3
M400-04200176A	3	5	17.6	5	17.6
M400-05200250A	3	10	30	7.5	25
M400-06200330A	3	15	50	10	33
M400-06200440A	3	20	58	15	44
M400-07200610A	3	25	75	20	61
M400-07200750A	3	30	94	25	75
M400-07200830A	3	40	117	30	83
M400-08201160A	3	50	149	40	116
M400-08201320A	3	60	180	50	132
M400-09201760x**	3	75	216	60	176
M400-09202190x**	3	100	266	75	219

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

Unidrive M400 Order Code*	Input Phase	Normal Duty		Heavy Duty	
		HP	Amps	HP	Amps
M400-02400013A	3	0.5	1.3	0.5	1.3
M400-02400018A	3	0.75	1.8	0.75	1.8
M400-02400023A	3	1	2.3	1	2.3
M400-02400032A	3	1.5	3.2	1.5	3.2
M400-02400041A	3	2	4.1	2	4.1
M400-03400056A	3	3	5.6	3	5.6
M400-03400073A	3	3	7.3	3	7.3
M400-03400094A	3	5	9.4	5	9.4
M400-04400135A	3	7.5	13.5	7.5	13.5
M400-04400170A	3	10	17	10	17
M400-05400270A	3	20	30	20	27
M400-05400300A	3	20	30	20	30
M400-06400350A	3	25	38	25	35
M400-06400420A	3	30	48	30	42
M400-06400470A	3	50	63	30	47
M400-07400660A	3	60	79	50	66
M400-07400770A	3	75	94	60	77
M400-07401000A	3	75	112	75	100
M400-08401340A	3	125	155	100	134
M400-08401570A	3	150	184	125	157
M400-09402000x**	3	150	221	150	180
M400-09402240x**	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)

Ratings are shown for 3 kHz switching frequency.

Order String - Frame Size Key
Example: M400-XX
XX = Frame Size (01-09 above)

690 V products are also available, for details visit: www.controltechniques.us

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

Unidrive M400 Order Code*	Input Phase	Normal Duty		Heavy Duty	
		HP	Amps	HP	Amps
M400-05500030A	3	3	3.9	2	3
M400-05500040A	3	5	6.1	3	4
M400-05500069A	3	7.5	10	5	6.9
M400-06500100A	3	10	12	7.5	10
M400-06500150A	3	15	17	10	15
M400-06500190A	3	20	22	15	19
M400-06500230A	3	25	27	20	23
M400-06500290A	3	30	34	25	29
M400-06500350A	3	40	43	30	34
M400-07500440A	3	50	53	40	44
M400-07500550A	3	60	73	50	55
M400-08500630A	3	75	86	60	63
M400-08500860A	3	100	108	75	86
M400-09501040x**	3	125	125	100	104
M400-09501310x**	3	150	150	125	131

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	CTSD8GB
	Drive Keypad	CI-KEYPAD-LCD
	Remote LCD display	REMOTE-KEYPAD
	Remote LCD display with real-time clock	REMOTE-KEYPAD-RTC
Input / Output***	Remote display cable	UM-LCD-485-XXX****
	Extended I/O	SI-I/O
Communications***	Modbus RTU	CI-485-ADAPTOR
	Modbus RTU	AI-485-ADAPTOR
	Modbus RTU with 24 V PROFIBUS DP	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
Application Programming Software & Diagnostics	Interbus	SI-INTERBUS-500K, SI-INTERBUS-2M
	PLC programming	MACHINE-CONTROL-STUDIO
Power Accessories	Digital oscilloscope	CTSCOPE
	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 1 S1 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)

UNIDRIVE M400

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)	✓

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:	4x Analog I/O, 7x Digital I/O, 2x STO, 1x Relay
Drive rating:	IP21 / UL open class as standard
Keypad:	No keypad as standard
Option slots:	1 (frame size 2 and above)
Parameter cloning via:	PC tools, SD card

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
09A	43.6 x 12.2 x 11.4	146.6
09E	39.8 x 12.2 x 11.4	101.4

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

© 2022 Control Techniques a Nidec Motor Corporation business. The information contained in this brochure is for guidance only and does not form part of any contract. The accuracy cannot be guaranteed as Control Techniques has an ongoing process of development and reserves the right to change the specifications of its products without notice.

Control Techniques Americas. Registered Office: 12095 NW 39th Street, Coral Springs, FL 33065 USA

+1 800 893-2321

Part No. FLI-M400 9/22