



# Unidrive M100

Value, quality and performance for open-loop applications

0.25 kW - 7.5 kW Heavy Duty (0.33 hp - 10 hp)  
100 V | 200 V | 400 V



**Control Techniques™**



**EMERSON™**  
Industrial Automation

# Unidrive M

## Optimized throughput, open automation systems, maximum ease of use

Led by the results of extensive customer-driven market research, we have tailored six Unidrive M feature-sets to specific application needs identified within Industrial Automation. The Unidrive M100 is a value drive that provides class leading quality and performance for open loop applications.

For more information on the full Unidrive M family, please download the Unidrive M Drives for Industry brochure or the 'Discover Unidrive M' App (available on the App Store, Android and online) via [www.UnidriveM.com](http://www.UnidriveM.com).



# Unidrive M100 features

M101 variant has additional speed reference potentiometer

Optional hot swappable AI-Back-up Adaptor allows the drive to use an SD card for parameter cloning and acts as an input for 24 V back-up. Can be used without line power. Optional AI-Smart Adaptor has built-in memory for parameter cloning and 24 V backup

LED keypad fitted as standard for quick commissioning and easy use

User-friendly control connections  
1 x Analog input  
4 x Digital I/O

Conventional surface and DIN rail mounting (DIN rail mounting available on size 1 and 2 only)\*

10 set-up parameters listed on front cover

Easy-to-remove terminal cover with tool-less close system (patent pending)

Easy-to-disconnect internal EMC filter

User-friendly power connections for open loop vector or V/Hz induction motor control

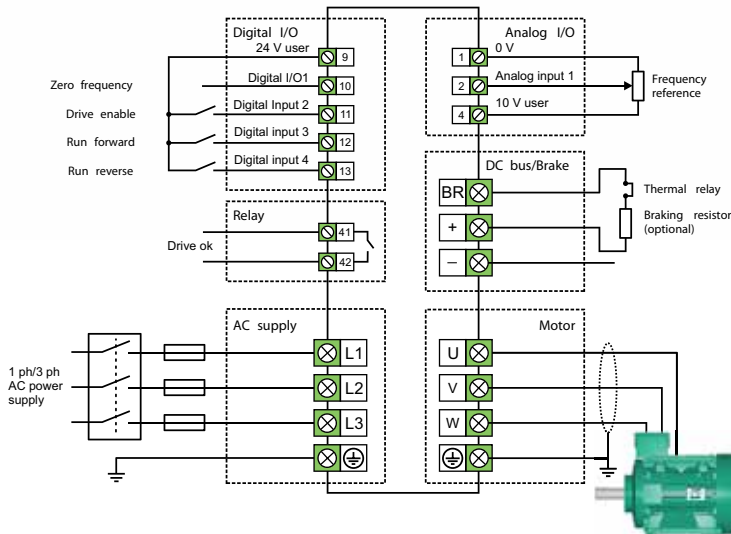
Robust cable management system providing grounding point for shielded control and power cables

Drive rated to IP21 / UL open class (NEMA 1) as standard

Conduit kits are available to meet UL Type 1 rating as standard

\* Additional fixings recommended where heavy vibration is expected

## Terminal layout



# Unidrive M100

## AC drive at a glance

### Value drive with quality and performance for open loop industrial automation applications

As part of the Unidrive M family, dedicated to Industrial Automation, M100 delivers an economical open loop drive for general applications, with Control Techniques' proven quality and class leading motor operation.

### Install and configure quickly and easily

Unidrive M100 has an easy-to-use fixed LED keypad as standard and a useful parameter guide on the front of the drive to aid understanding when setting up and interrogating. Parameter sets can be easily transferred between drives using an SD card with AI-Back-up or AI-Smart Adaptor. Fast install DIN rail mounting is supported up to 1.5 kW (2 hp)\*

### Transfer parameters without mains power

For fast, serial machine production, the AI-Back-up or AI-Smart Adaptor option can be powered by 24 V to transfer parameter sets to and from standard SD Cards.

### Minimize downtime with robust and reliable design

Unidrive M100 is extremely reliable due to a design based on over 40 years' of drive knowledge, expertise and development. Build quality is ensured using world leading manufacturing processes. M100 is packed with features to keep systems running in environments as described by IEC60721-3-3 3C3 and EN60068-2-60 Meth. 4.

- PCBs have conformal coating to further increase resilience to harsh environmental conditions
- A patented air flow system cools the drive more effectively and protects internal components
- Wide supply voltage tolerance keeps drive operation smooth in areas where supplies are variable
- Intelligent 3 speed user-replaceable cooling fan with patented fan-fail detection circuit\*\*

\* Additional fixings recommended where heavy vibration is expected

\*\* From 0.37 kW



- Trip avoidance features take intelligent action instead of tripping out critical processes. For example:
  - Load shedding reduces speed at current limits
  - Supply loss ride-through keeps running during brown outs
- Derating values are available so that M100 can be run in higher temperature environments
- High overload capability - 150 % for 60 s
- Ingress protection up to IP21 - UL open class (NEMA 1) compliance

## Reduce application size and cost

Unidrive M100's compact drive dimensions are among the smallest in class at every power rating.



*M101 - potentiometer version*

### Unidrive M101 variant

*Integrated speed reference potentiometer enhances choice and ease of use.*

# Unidrive M100 ratings and specifications

100/120 Vac ±10 %				
Order Code	Supply Phases	Heavy Duty		
		Max Continuous Current (A)	Motor Shaft Power (kW)	Motor Shaft Power (hp)
M10x-011 00017A	1	1.7	0.25	0.33
M10x-011 00024A	1	2.4	0.37	0.5
M10x-021 00042A	1	4.2	0.75	1
M10x-021 00056A	1	5.6	1.1	1.5

200/240 Vac ±10 %				
Order Code	Supply Phases	Heavy Duty		
		Max Continuous Current (A)	Motor Shaft Power (kW)	Motor Shaft Power (hp)
M10x-012 00017A	1	1.7	0.25	0.33
M10x-012 00024A	1	2.4	0.37	0.5
M10x-012 00033A	1	3.3	0.55	0.75
M10x-012 00042A	1	4.2	0.75	1
M10x-022 00024A	1/3	2.4	0.37	0.5
M10x-022 00033A	1/3	3.3	0.55	0.75
M10x-022 00042A	1/3	4.2	0.75	1
M10x-022 00056A	1/3	5.6	1.1	1.5
M10x-022 00075A	1/3	7.5	1.5	2
M10x-032 00100A	1/3	10	2.2	3
M10x-042 00133A	1/3	13.3	3	3
M10x-042 00176A	3	17.6	4	5

380/480 Vac ±10 %				
Order Code	Supply Phases	Heavy Duty		
		Max Continuous Current (A)	Motor Shaft Power (kW)	Motor Shaft Power (hp)
M10x-024 00013A	3	1.3	0.37	0.5
M10x-024 00018A	3	1.8	0.55	0.75
M10x-024 00023A	3	2.3	0.75	1
M10x-024 00032A	3	3.2	1.1	1.5
M10x-024 00041A	3	4.1	1.5	2
M10x-034 00056A	3	5.6	2.2	3
M10x-034 00073A	3	7.3	3	3
M10x-034 00094A	3	9.4	4	5
M10x-044 00135A	3	13.5	5.5	7.5
M10x-044 00170A	3	17	7.5	10

## Environmental safety and electrical conformance

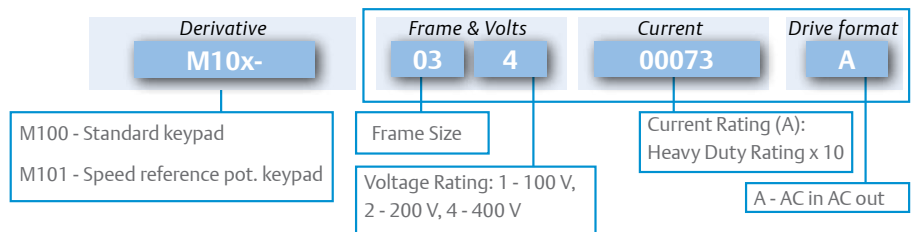
- IP21 / UL open class (NEMA 1).
- IP20 when the AI-Back-up Adaptor is fitted.
- UL TYPE 1 compliance requires the appropriate Conduit kit to be fitted.
- Ambient temperature -20 °C (-4 °F) to 40 °C (104 °F) as standard.
- Output current derating required at ambient temperatures >40 °C (104 °F).
- Storage temperature -40 °C to 60 °C (-40 °F to 140 °F).
- Humidity 95 % maximum (non-condensing) at 40 °C (104 °F) in accordance with EN/IEC 60068-2-78 and ANSI/EIA-364-31.
- EN/IEC 60068-2-60, Method 4 Corrosive gas.
- Altitude: 0 to 3000 m (0 to 9843 ft), derate 1 % per 100 m (328 ft) between 1000 m and 3000 m (3281 ft and 9843 ft).
- Random Vibration: Tested in accordance with EN/ IEC 60068-2-64.
- Mechanical Shock: Tested in accordance with EN/ IEC 60068-2-29.
- Electromagnetic Immunity complies with EN/IEC 61800-3 and EN/IEC 61000-6-2.
- With onboard EMC filter, complies with EN/IEC 61800-3 (2nd environment).
- EN/IEC 61000-6-3 and EN/IEC 61000-6-4 with optional footprint EMC filter.
- EN/IEC 61800-5-1 Electrical Safety.
- EN/IEC 61131-2 I/O.
- UL 508C Electrical Safety.

For Normal Duty applications, use Heavy Duty ratings.

## Heavy Duty

Suitable for demanding applications, current overload of 150 % (60 s) is available for dynamic loads.

### Key:



## Optional accessories

Description/Order code	Order code
AI-Back-up Adaptor	82500000000001
AI-Smart Adaptor	82500000018500

## Conduit kit

When the following kits are fitted to the drive, it meets UL Type 1.

Frame size	Order code
1	3470-0091
2	3470-0094
3	3470-0098
4	3470-0102

## Retrofit mounting brackets

These mounting brackets ensure the drive can be mounted on existing Commander SK installations.

Frame size	Order code
3	3470-0097
4	3470-0101

## Fan replacement kit

Frame size	Order code
1	3470-0092
2	3470-0095
3	3470-0099
4	3470-0103

## Dimensions and Weight



Frame Size		1	2	3	4
Dimensions (H x W x D)	mm	137 x 75 x 130	180 x 75 x 150	200 x 90 x 160	245 x 115 x 175
	in	5.4 x 3.0 x 5.1	7.1 x 3.0 x 5.9	7.9 x 3.5 x 6.3	9.7 x 4.5 x 6.9
Weight	kg	0.75	1.0	1.5	3.13
	(lb)	(1.65)	(2.2)	(3.3)	(6.9)

### Notes:

Height dimension (H) does not include mounting feet.

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

- AI-Back-up Adaptor: 15 mm (0.59 in)
- AI-Smart Adapter: 15 mm (0.59 in)

## Optional external EMC filters

Unidrive M built-in EMC filter complies with EN/IEC 61800-3 (2nd environment). External EMC filters are required for compliance with EN/IEC 61000-6-4 as per the table below.

Frame size	Voltage	Phases	Type	Order code
1	All	1	Standard	4200-1000
		1	Low leakage	4200-1001
2	100 V	1	Standard	4200-2000
		1	Low leakage	4200-2001
	200 V	1	Standard	4200-2002
		1	Low leakage	4200-2003
		3	Standard	4200-2004
		3	Low leakage	4200-2005
400 V	3	Standard	4200-2006	
	3	Low leakage	4200-2007	
3	200 V	1	Standard	4200-3000
		1	Low leakage	4200-3001
		3	Standard	4200-3004
		3	Low leakage	4200-3005
	400 V	3	Standard	4200-3008
		3	Low leakage	4200-3009
4	200 V	1	Standard	4200-4000
		1	Low leakage	4200-4001
		3	Standard	4200-4002
		3	Low leakage	4200-4003
	400 V	3	Standard	4200-4004
		3	Low leakage	4200-4005

For a full list of patents and patent applications, visit [www.controltechniques.com/patents](http://www.controltechniques.com/patents).

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