



UNIDRIVE M100

Manufacturing Automation drive
Value drive with quality and performance
for open loop applications



- III → Unidrive M100
- Unidrive M200
- Unidrive M300
- Unidrive M400
- Unidrive M600
- Unidrive M700
- Unidrive M800

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





The Unidrive M Manufacturing Automation drive family

Unidrive M – A Manufacturing Automation drive family tailored to customer needs

Led by the results of extensive customer-driven market research, we have tailored seven Unidrive M feature-sets to specific application needs identified within Manufacturing 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 Overview brochure or the 'Discover Unidrive M' App (available on the App Store, Android and online) via www.UnidriveM.com.



Unidrive M100 features

M101 variant has additional speed reference potentiometer

Optional 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

LED keypad fitted as standard for quick commissioning and easy use

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

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

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

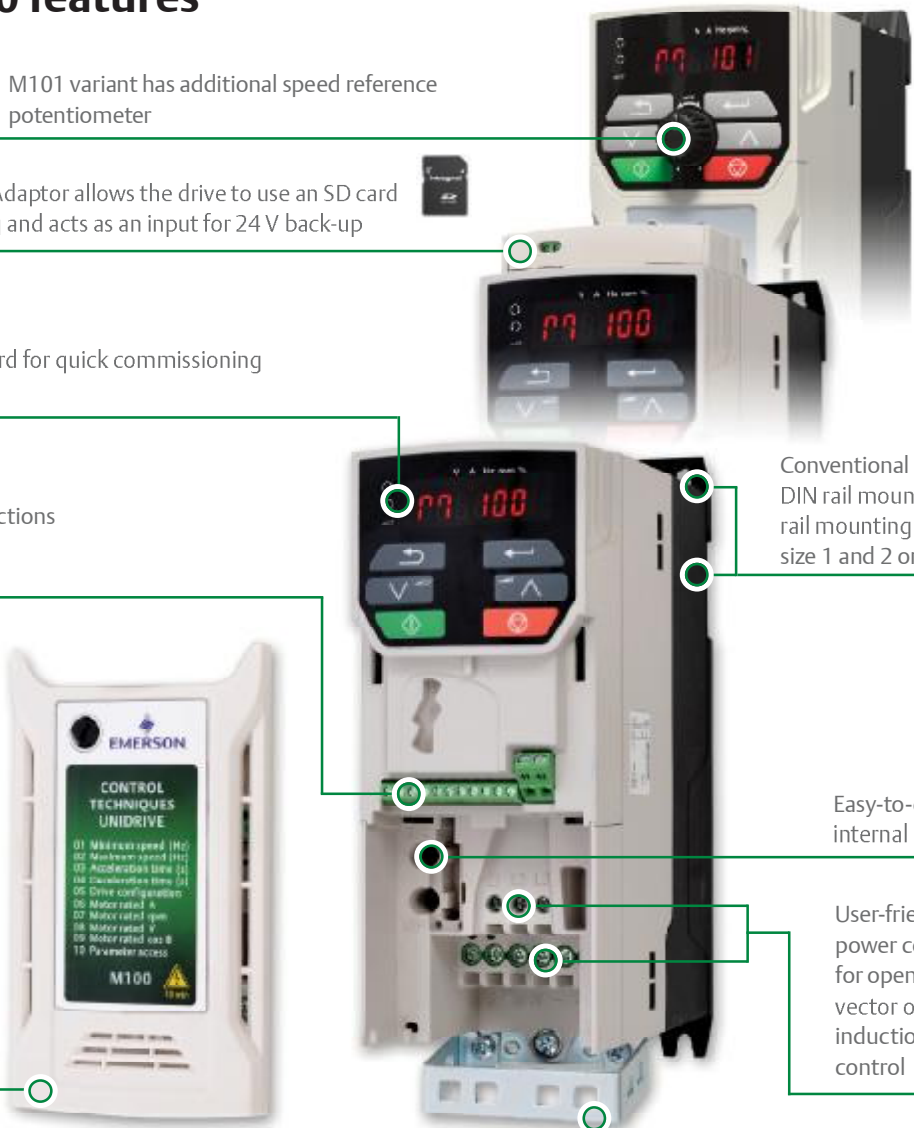
Easy-to-remove terminal cover with tool-less close system (patent pending)

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

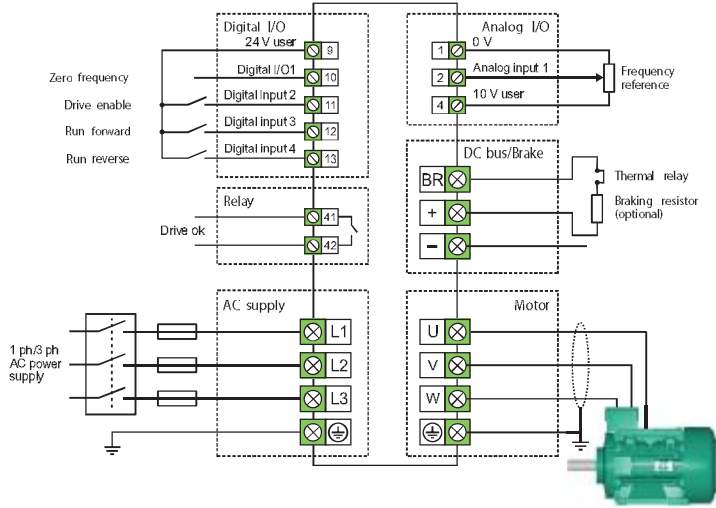
Easy-to-disconnect internal EMC filter

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



Terminal layout



Unidrive M100 AC drive at a glance

Value drive with quality and performance for open loop Manufacturing Automation applications

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



Quick and easy to install and configure

Unidrive M100 has a simple fixed LED keypad for easy configuration, monitoring and diagnostics, with the 10 most commonly used parameters listed on the front of the drive. The M101 provides an additional speed reference potentiometer, enhancing customer interface choice.

Robust design

After extensive customer research, Unidrive M100 has been designed and tested for leading reliability in manufacturing environments. It features:

- Unique advanced cooling design featuring a patented flow system that helps cool the drive more effectively while protecting internal components
- Conformally coated PCBs
- 150 % overload for 60 s
- Wide supply voltage tolerance
- Drive meets IP21 as standard
- Higher temperature operation with de-rating
- Intelligent 3 speed user-replaceable cooling fan with patented fan-fail detection circuit

Fast parameter transfer without mains power

For fast, serial machine production the AI-Back-up Adaptor option plugs into the top of the drive to allow configuration settings to be copied without the need to apply mains power. Files are stored on an SD memory card for easy handling and quick configuration.

Reduce machine size and cost

Unidrive M100's compact drive dimensions are among the smallest in class at every power rating. They provide a powerful and economical Manufacturing Automation solution.

Power system flexibility

Unidrive M's power stage enhances flexibility and energy efficiency:

- Low losses, up to 98 % efficient.
- Low power standby mode. In some applications, drives can sit idle for significant periods; M100's reduced standby power saves energy.
- Intelligently controlled 3-speed cooling fan adjusts to the motor load and environmental conditions. This results in power saving, extended fan life and reduced acoustic noise.
- Silent motor operation with high PWM switching frequencies up to 16 kHz.

Motor control mode

Unidrive M100 provides open loop vector or V/Hz induction motor control providing good performance and easy configuration. V/Hz can be used in multi-motor systems.

Typical applications:

Speed control for conveyors, fans, pumps and mixers.



Conveyor line application

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 00017	1	1.7	0.25	0.33
M10x-011 00024	1	2.4	0.37	0.5
M10x-021 00042	1	4.2	0.75	1
M10x-021 00056	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 00017	1	1.7	0.25	0.33
M10x-012 00024	1	2.4	0.37	0.5
M10x-012 00033	1	3.3	0.55	0.75
M10x-012 00042	1	4.2	0.75	1
M10x-022 00024	1/3	2.4	0.37	0.5
M10x-022 00033	1/3	3.3	0.55	0.75
M10x-022 00042	1/3	4.2	0.75	1
M10x-022 00056	1/3	5.6	1.1	1.5
M10x-022 00075	1/3	7.5	1.5	2
M10x-032 00100	1/3	10	2.2	3
M10x-042 00133	1/3	13.3	3	3
M10x-042 00176	3	17.6	4	5

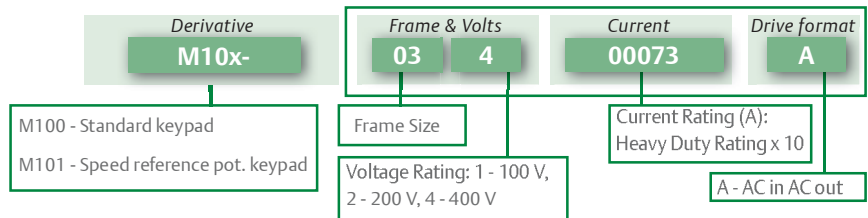
380/480 Vac ±10 %				
Order Code	Supply Phases	Heavy Duty		
		Max Continuous Current (A)	Motor Shaft Power (kW)	Motor Shaft Power (HP)
M10x-024 00013	3	1.3	0.37	0.5
M10x-024 00018	3	1.8	0.55	0.75
M10x-024 00023	3	2.3	0.75	1
M10x-024 00032	3	3.2	1.1	1.5
M10x-024 00041	3	4.1	1.5	2
M10x-034 00056	3	5.6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

For Normal Duty applications, use Heavy Duty ratings.

Key:

Heavy Duty

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



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.
Up to 60 °C (140 °F) with derating.
- 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 60146-1-1 Supply conditions.
- EN/IEC 61800-5-1 Electrical Safety.
- EN/IEC 61131-2 I/O.
- UL 508C Electrical Safety.

Optional accessories

Description	Order code
AI-Back-up Adaptor	82500000000004

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

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
	All	1	Low leakage	4200-1001
2	100 V	1	Standard	4200-2000
		1	Low leakage	4200-2001
	200 V	1	Low leakage	4200-2002
		3	Standard	4200-2003
		3	Low leakage	4200-2004
		3	Standard	4200-2005
400 V	3	Low leakage	4200-2006	
	3	Standard	4200-3000	
3	200 V	1	Low leakage	4200-3001
		3	Standard	4200-3004
		3	Low leakage	4200-3005
		3	Standard	4200-3008
	400 V	3	Low leakage	4200-3009
		3	Standard	4200-4000
4	200 V	1	Low leakage	4200-4001
		3	Standard	4200-4002
		3	Low leakage	4200-4003
		3	Standard	4200-4004
	400 V	3	Low leakage	4200-4005

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)

For a full list of patents and patent applications, visit www.controltechniques.com/patents.

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