



□□□□□

Eaton EP-400039

Eaton DA1 Variable frequency drive, 400 V AC, 3-phase, 5.8 A, 2.2 kW, IP66/NEMA 4X, Radio interference suppression filter, OLED display, UV resistant

□□□□

PRODUCT NAME	Eaton DA1 Variable frequency drive
CATALOG NUMBER	EP-400039
PRODUCT LENGTH/DEPTH	171.5 mm
PRODUCT HEIGHT	257 mm
PRODUCT WIDTH	188 mm
PRODUCT WEIGHT	3.5 kg
CERTIFICATIONS	CE Certified by UL for use in Canada CSA-C22.2 No. 14 CUL EAC IEC/EN 61800-3 IEC/EN61800-3 IEC/EN61800-5 RCM RoHS, ISO 9001 Safety: EN 61800-5-1: 2003 Specification for general requirements: IEC/EN 61800-2 UkrSEPRO UL UL 508C UL Category Control No.: NMMS, NMMS7 UL File No.: E172143 UL report applies to both US and Canada
CATALOG NOTES	The brake resistors are assigned based on the maximum rated power of the variable frequency drive. Additional brake resistors and designs (e.g. different duty cycles) are available upon request.

PRODUCT CATEGORY	Variable frequency drives
FEATURES	Parameterization: drivesConnect Parameterization: drivesConnect mobile (App) Parameterization: Fieldbus Parameterization: Keypad
10.10 TEMPERATURE RISE	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 SHORT-CIRCUIT RATING	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 ELECTROMAGNETIC COMPATIBILITY	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 MECHANICAL FUNCTION	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.
10.2.2 CORROSION RESISTANCE	Meets the product standard's requirements.
10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES	Meets the product standard's requirements.
10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT	Meets the product standard's requirements.
10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS	Meets the product standard's requirements.
10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION	Meets the product standard's requirements.
10.2.5 LIFTING	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 MECHANICAL IMPACT	Does not apply, since the entire switchgear needs to be evaluated.

DECLARATIONS OF CONFORMITY	eaton-variable-frequency-drive-declaration-of-conformity-uk251134en.pdf
INSTALLATION VIDEOS	Video PowerXL DA1
□□□□	eaton-powerxl-variable-frequency-drives-dc1-da1-brochure-br040001en-en-us.pdf

10.2.7 INSCRIPTIONS	Meets the product standard's requirements.
10.3 DEGREE OF PROTECTION OF ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
10.4 CLEARANCES AND CREEPAGE DISTANCES	Meets the product standard's requirements.
10.5 PROTECTION AGAINST ELECTRIC SHOCK	Does not apply, since the entire switchgear needs to be evaluated.
10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS	Does not apply, since the entire switchgear needs to be evaluated.
10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS	Is the panel builder's responsibility.
10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS	Is the panel builder's responsibility.
10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH	Is the panel builder's responsibility.
10.9.3 IMPULSE WITHSTAND VOLTAGE	Is the panel builder's responsibility.
10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL	Is the panel builder's responsibility.
FITTED WITH:	PC connection Control unit Breaking resistance Additional PCB protection Brake chopper IGBT inverter Internal DC link OLED display Radio interference suppression filter
CLIMATIC PROOFING	< 95 average relative humidity (RH), no condensation, no corrosion
CONNECTION TO SMARTWIRE-DT	No
OPERATING MODE	Optional: Vector control with feedback (CLV) Sensorless vector control (SLV) Speed control with slip compensation U/f control
FRAME SIZE	FS2
ALTITUDE	Max. 1000 m Above 1000 m with 1 % derating per 100 m Max. 4000 m

ENVIRONMENTAL CLASS	3C2, 3S2 (Air quality)
APPLICATION IN DOMESTIC AND COMMERCIAL AREA PERMITTED	Yes
MAINS SWITCH-ON FREQUENCY	Maximum of one time every 30 seconds
APPLICATION IN INDUSTRIAL AREA PERMITTED	Yes
AMBIENT OPERATING TEMPERATURE - MAX	40 °C
AMBIENT OPERATING TEMPERATURE - MIN	-10 °C
AMBIENT OPERATING TEMPERATURE AT 150% OVERLOAD - MAX	40 °C
AMBIENT OPERATING TEMPERATURE AT 150% OVERLOAD - MIN	-10 °C
AMBIENT STORAGE TEMPERATURE - MAX	60 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
APPARENT POWER AT 400 V	4.02 kVA
APPARENT POWER AT 480 V	4.82 kVA
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 150% OVERLOAD	5 A
MOUNTING POSITION	Vertical
RELATIVE SYMMETRIC NET FREQUENCY TOLERANCE	10 %
RELATIVE SYMMETRIC NET VOLTAGE TOLERANCE	10 %
PROTECTION	Finger and back-of-hand proof, Protection against direct contact (BGV A3, VBG4)
RESOLUTION	0.1 Hz (Frequency resolution, setpoint value)
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0 W
SWITCH-ON THRESHOLD FOR THE BRAKING TRANSISTOR	780 VDC

VOLTAGE RATING - MAX	480 VAC
COMMUNICATION INTERFACE	CANopen®, built in EtherCAT, optional Ethernet IP, optional Modbus RTU, built in Modbus-TCP, optional OP-Bus (RS485), built in PROFIBUS, optional PROFINET, optional BACnet/IP, optional
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP66 NEMA 4X
PROTOCOL	CAN EtherNet/IP MODBUS Other bus systems PROFIBUS PROFINET IO TCP/IP BACnet/IP
ASSIGNED MOTOR CURRENT IM AT 440 - 480 V, 60 HZ, 150% OVERLOAD	4.8 A
SYSTEM CONFIGURATION TYPE	AC supply systems with earthed center point
ELECTROMAGNETIC COMPATIBILITY	1st and 2nd environments (according to EN 61800-3)
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	3 HP
BRAKING RESISTANCE	150 Ω
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	101.2 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
INPUT CURRENT ILN AT 150% OVERLOAD	7.5 A
BRAKING TORQUE	Max. 30 % MN, Standard - Main circuit Max. 100 % of rated operational current I _e , variable, DC - Main circuit Max. 100 % of rated operational current I _e with external braking resistor - Main circuit
CABLE LENGTH	100 m, screened, maximum permissible,

	<p>Motor feeder 150 m, unscreened, maximum permissible, Motor feeder 200 m, screened, with motor choke, maximum permissible, Motor feeder 300 m, unscreened, with motor choke, maximum permissible, Motor feeder C2 ≤ 5 m, Radio interference level, maximum motor cable length C3 ≤ 25 m, Radio interference level, maximum motor cable length</p>
FUNCTIONS	4-quadrant operation possible
OUTPUT VOLTAGE (U2)	480 V AC, 3-phase 400 V AC, 3-phase
NUMBER OF INPUTS (ANALOG)	2
NUMBER OF INPUTS (DIGITAL)	5
RADIO INTERFERENCE CLASS	<p>C1: for conducted emissions only Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments C2, C3: depending on the motor cable length, the connected load, and ambient conditions.</p>
NUMBER OF OUTPUTS (DIGITAL)	2
STARTING CURRENT - MAX	200 %, I _H , max. starting current (High Overload), for 4 seconds every 40 seconds, Power section
NUMBER OF PHASES (INPUT)	3
NUMBER OF RELAY OUTPUTS	2 (parameterizable, 1 N/O and 1 changeover contact, 6 A (250 V, AC-1) / 5 A (30 V, DC-1))
NUMBER OF PHASES (OUTPUT)	3
POWER CONSUMPTION	101.2 W
RATED CONTROL SUPPLY VOLTAGE	10 V DC (U _s , max. 10 mA)

EFFICIENCY	95.4 % (η)
RATED CONTROL VOLTAGE (UC)	24 V DC (external, max. 100 mA)
SUPPLY FREQUENCY	50/60 Hz
LEAKAGE CURRENT AT GROUND IPE - MAX	4.65 mA
MAINS VOLTAGE - MAX	528 V
MAINS VOLTAGE - MIN	342 V
NOMINAL OUTPUT CURRENT I2N	5.8 A
NUMBER OF HW-INTERFACES (INDUSTRIAL ETHERNET)	0
NUMBER OF HW-INTERFACES (OTHER)	0
NUMBER OF HW-INTERFACES (PARALLEL)	0
NUMBER OF HW-INTERFACES (RS-232)	0
NUMBER OF HW-INTERFACES (RS-422)	0
NUMBER OF HW-INTERFACES (RS-485)	2
NUMBER OF HW-INTERFACES (SERIAL TTY)	0
NUMBER OF HW-INTERFACES (USB)	0
NUMBER OF INTERFACES (PROFINET)	0
NUMBER OF OUTPUTS (ANALOG)	2
OUTPUT AT LINEAR LOAD AT RATED OUTPUT VOLTAGE - MAX	2.2 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	2.2 kW
OUTPUT FREQUENCY - MAX	500 Hz
OUTPUT FREQUENCY - MIN	0 Hz
OUTPUT VOLTAGE - MAX	500 V
OVERLOAD CURRENT IL AT 150% OVERLOAD	8.7 A
SUITABLE FOR	Branch circuits, (UL/CSA)
SWITCHING FREQUENCY	8 kHz, 4 - 32 kHz adjustable (audible), fPWM, Power section, Main circuit

RATED OPERATIONAL VOLTAGE	400 V AC, 3-phase 480 V AC, 3-phase
SHORT-CIRCUIT PROTECTION RATING	10 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring
RATED FREQUENCY - MAX	62 Hz
RATED FREQUENCY - MIN	48 Hz
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 3-PHASE	2.2 kW
SAFETY FUNCTION/LEVEL	STO (Safe Torque Off, SIL3, PLe Cat 3)
HEAT DISSIPATION AT CURRENT/SPEED	51 W at 100% current and 0% speed 66 W at 100% current and 50% speed 81 W at 100% current and 90% speed 43 W at 50% current and 0% speed 47 W at 50% current and 50% speed 57 W at 50% current and 90% speed 38 W at 25% current and 50% speed 35 W at 25% current and 0% speed

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:



0000
Eaton House
30 Pembroke Road
Dublin 4, 0000
Eaton.com

© 2025 00 00000000

Follow us on social media to get the latest product and support information.

