

Specifikace



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Eaton 199444

Eaton DC1 Variable frequency drive, 400 V AC, 3-phase, 24 A, 11 kW, IP66/NEMA 4X, Radio interference suppression filter, Brake chopper, 7-digital display assembly, Local controls, Additional PCB protection, UV resistant, FS3

Obečné specifikace

PRODUCT NAME	Eaton DC1 Variable frequency drive
CATALOG NUMBER	199444
EAN	4015081978335
PRODUCT LENGTH/DEPTH	238 mm
PRODUCT HEIGHT	310 mm
PRODUCT WIDTH	210.5 mm
PRODUCT WEIGHT	7 kg
CERTIFICATIONS	UL Category Control No.: NMMS, NMMS7 UL File No.: E172143 RCM CE marking UL report applies to both US and Canada CUL EAC CSA-C22.2 No. 14 IEC/EN 61800-2 IEC/EN 61800-5-1 RoHS, ISO 9001 Certified by UL for use in Canada IEC/EN 61800-3 UL UL 508C UL Listed CE IEC/EN61800-5 UkrSEPRO

CATALOG NOTES

- Environmental class: 3C3, 3S3
- Overload cycle for 60 s every 600 s



Powering Business Worldwide

- For normal internally and externally ventilated four-pole three-phase asynchronous motors with 1500 rpm at 50 Hz and 1800 rpm at 60 Hz

Zdánlivý výkon

APPARENT POWER AT 400 V 16.63 kVA

APPARENT POWER AT 480 V 19.95 kVA

Klimatické podmínky a podmínky prostředí

ALTITUDE Max. 4000 m
Above 1000 m with 1 % derating per 100 m

AMBIENT OPERATING TEMPERATURE - MAX 40 °C

AMBIENT STORAGE TEMPERATURE - MAX 60 °C

AMBIENT OPERATING TEMPERATURE - MIN -20 °C

AMBIENT STORAGE TEMPERATURE - MIN -40 °C

CLIMATIC PROOFING < 95 average relative humidity (RH), no condensation, no corrosion

MODEL CODE

DC1-34024FB-A6SOE1

Funkce brzdění

BRAKING RESISTANCE 50 Ω

BRAKING TORQUE

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
Max. 30 % MN, Standard - Main circuit

SWITCH-ON THRESHOLD FOR THE BRAKING TRANSISTOR

780 VDC

Řídicí obvod

NUMBER OF INPUTS (ANALOG) 2 (parameterizable, 0 - 10 V DC, 0/4 - 20 mA)

NUMBER OF INPUTS (DIGITAL) 4 (parameterizable, 10 - 30 V DC)

NUMBER OF OUTPUTS (ANALOG) 1

NUMBER OF OUTPUTS (DIGITAL) 1

NUMBER OF RELAY OUTPUTS 1 (parameterizable, N/O, 6 A (250 V, AC-1) / 5 A (30 V, DC-1))

Ověření návrhu

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.
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	Does not apply, since the

Features & functions

FEATURES	Parameterization: Fieldbus Parameterization: Keypad Parameterization: drivesConnect Parameterization: drivesConnect mobile (App)
FITTED WITH:	Control unit Local controls Internal DC link Brake chopper Breaking resistance Additional PCB protection IGBT inverter 7-digital display assembly UV resistance Radio interference suppression filter PC connection
FUNCTIONS	4-quadrant operation possible

AGAINST ELECTRIC SHOCK	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.
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W

Obečné informace

CABLE LENGTH	C3 ≤ 25 m, maximum motor cable length
	100 m, screened, maximum permissible cable length
	200 m, screened, with motor choke, maximum permissible cable length
	150 m, unscreened, maximum permissible cable length
	300 m, unscreened, with motor choke, maximum permissible, Motor feeder
	C2 ≤ 5 m, maximum motor cable length
COMMUNICATION INTERFACE	Modbus RTU, built in OP-Bus (RS485), built in SmartWire-DT, optional CANopen®, built in
CONNECTION TO SMARTWIRE-DT	No
DEGREE OF PROTECTION	IP66 NEMA 4X
ELECTROMAGNETIC COMPATIBILITY	1st and 2nd environments (according to EN 61800-3)
FRAME SIZE	FS3
MOUNTING POSITION	Vertical
PRODUCT CATEGORY	Variable frequency drives
PROTECTION	Finger and back-of-hand proof, Protection against direct contact (BGV A3, VBG4)
PROTOCOL	CAN MODBUS EtherNet/IP Other bus systems
RADIO INTERFERENCE CLASS	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. External radio interference suppression filters (optional) may be necessary.
SUITABLE FOR	Branch circuits, (UL/CSA)

Hlavní obvod

EFFICIENCY	97 % (η)
HEAT DISSIPATION AT CURRENT/SPEED	102.2 W at 25% current and 50% speed 131.6 W at 50% current and 0% speed 144.3 W at 50% current and 50% speed 160.8 W at 50% current and 90% speed 238.7 W at 100% current and 0% speed 278 W at 100% current and 50% speed 314.4 W at 100% current and 90% speed 98.8 W at 25% current and 0% speed
INPUT CURRENT ILN AT 150% OVERLOAD	27.5 A
LEAKAGE CURRENT AT GROUND IPE - MAX	12.7 mA
MAINS SWITCH-ON FREQUENCY	Maximum of one time every 30 seconds
MAINS VOLTAGE - MAX	480 V
MAINS VOLTAGE - MIN	380 V
OPERATING MODE	U/f control Sensorless vector control (SLV) BLDC motors PM motors Speed control with slip compensation Synchronous reluctance motors
OUTPUT FREQUENCY - MAX	500 Hz
OUTPUT FREQUENCY - MIN	0 Hz
OUTPUT VOLTAGE (U2)	400 V AC, 3-phase 480 V AC, 3-phase
OVERLOAD CURRENT IL AT 150% OVERLOAD	36 A
RATED CONTROL SUPPLY VOLTAGE	10 V DC (Us, max. 10 mA)
RATED FREQUENCY - MAX	62 Hz
RATED FREQUENCY - MIN	48 Hz
RATED OPERATIONAL CURRENT (IE)	24 A at 150% overload (at an operating frequency of 6 kHz and an ambient air temperature of +40 °C)

RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 3-PHASE	11 kW
RATED OPERATIONAL VOLTAGE	400 V AC, 3-phase 480 V AC, 3-phase
RESOLUTION	0.1 Hz (Frequency resolution, setpoint value)
SHORT-CIRCUIT PROTECTION RATING	35 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring
STARTING CURRENT - MAX	175 % IH
SUPPLY FREQUENCY	50/60 Hz
SWITCHING FREQUENCY	8 kHz, 4 - 24 kHz adjustable (audible), fPWM, Power section, Main circuit
SYSTEM CONFIGURATION TYPE	AC supply systems with earthed center point
VOLTAGE RATING - MAX	240 V

Jmenovité charakteristiky motoru

ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 150% OVERLOAD 3.2 A

ASSIGNED MOTOR CURRENT IM AT 440 - 480 V, 60 HZ, 150% OVERLOAD 4.2 A

ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE 15 HP

Zdroje

	DX-COM-STICK3_Connection
APLIKAČNÍ POZNÁMKY	How does the internal motor protection work? The OP System Bus - Parameterizing - Control
DECLARATIONS OF CONFORMITY	eaton-variable-frequency-drive-declaration-of-conformity-uk251078en.pdf eaton-variable-frequency-drive-declaration-of-conformity-eu250595en.pdf
INSTALAČNÍ NÁVODY	eaton-powerxl-dc1-ip66-instruction-leaflet-il040059zu.pdf
INSTALAČNÍ VIDEO	Video PowerXL DA1
MCAD MODEL	e3_s3_ip66_mit_bedienelementen.stp eaton-micro-compact-drives-mcad-drawings-e3-s3-ip66-mit.dwg
VÝKRESY	eaton-frequency-inverter-dc1-dimensions-005.eps

NÁZEV PROJEKTU:

ČÍSLO PROJEKTU:

PŘIPRAVIL:

DATUM:



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