Eaton 185736

Eaton DC1 Variable frequency drive, 400 V AC, 3-phase, 14 A, 5.5 kW, IP20/NEMA 0, Brake chopper, FS3 DC1-34014NB-A20CE1

PRODUCT NAME	Eaton DC1 Variable frequency drive
CATALOG NUMBER	185736
PRODUCT LENGTH/DEPTH	175 mm
PRODUCT HEIGHT	273 mm
PRODUCT WIDTH	129 mm
PRODUCT WEIGHT	6 kg
CERTIFICATIONS	IEC/EN61800-3 EAC CUL UL File No.: E172143 UL Category Control No.: NMMS, NMMS7 CE UL report applies to both US and Canada Certified by UL for use in Canada CSA-C22.2 No. 14 UL RCM Specification for general requirements: IEC/EN 61800-2 UL 508C IEC/EN61800-5 RoHS, ISO 9001 UkrSEPRO IEC/EN 61800-3 Safety requirements: IEC/EN 61800-5-1
CATALOG NOTES	• Environmental class: 3C2, 3S2 • Overload cycle for 60 s every 600 s

Powering Business Worldwide

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	Does not apply, since the

INSTALLATION VIDEOS	Video PowerXL DA1
	IL04020009Z
	eaton-powerxl-variable-frequency-drives-dc1-da1-brochure-br040001en-en-us.pdf
	eaton-frequency-inverter-dimensions-020.eps eaton-frequency-inverter-3d-drawing-009.eps
	How does the internal motor protection work? The OP System Bus - Parameterizing - Control DX-COM-STICK3_Connection

IMPACT	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 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:	IGBT inverter Brake chopper Control unit 7-digital display assembly Internal DC link PC connection Breaking resistance Additional PCB protection
CLIMATIC PROOFING	< 95 average relative humidity (RH), no condensation, no corrosion
CONNECTION TO SMARTWIRE-DT	In conjunction with DX-NET-SWD3 SmartWire DT module Yes
OPERATING MODE	U/f control Sensorless vector control (SLV) Speed control with slip compensation BLDC motors PM motors

	Synchronous reluctance motors
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	2000 V
FRAME SIZE	FS3
ALTITUDE	Above 1000 m with 1 % derating per 100 m Max. 4000 m
APPLICATION IN DOMESTIC AND COMMERCIAL AREA PERMITTED	Yes
MAINS SWITCH-ON FREQUENCY	Maximum of one time every 30 seconds
AMBIENT OPERATING TEMPERATURE - MAX	50 °C
AMBIENT OPERATING TEMPERATURE - MIN	-10 °C
MAINS VOLTAGE - MAX	480 V
OUTPUT VOLTAGE - MAX	500 V
RELATIVE SYMMETRIC NET FREQUENCY TOLERANCE	10 %
RELATIVE SYMMETRIC NET VOLTAGE TOLERANCE	10 %
AMBIENT OPERATING TEMPERATURE AT 150% OVERLOAD - MAX	50 °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	9.67 kVA
APPARENT POWER AT 480 V	11.64 kVA
APPLICATION IN INDUSTRIAL AREA PERMITTED	Yes
HEAT DISSIPATION DETAILS	Operation (with 150 % overload)
PRODUCT CATEGORY	Variable frequency drives
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 V
MOUNTING POSITION	Vertical
OVERVOLTAGE CATEGORY	III
COMMUNICATION INTERFACE	Modbus RTU, built in SmartWire-DT, optional OP-Bus (RS485), built in CANopen®, built in
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP20 NEMA Other
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	10 HP
BRAKING RESISTANCE	100 Ω
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	209 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
INPUT CURRENT ILN AT 150% OVERLOAD	17.2 A
MAINS CURRENT DISTORTION	120 %
PROTOCOL	EtherNet/IP CAN MODBUS Other bus systems
OVERLOAD CURRENT IL AT 150% OVERLOAD	21 A
RATED FREQUENCY - MAX	62 Hz
RATED FREQUENCY - MIN	48 Hz

RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	14 A
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 3-PHASE	5.5 kW
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 150% OVERLOAD	11.3 A
ASSIGNED MOTOR CURRENT IM AT 440 - 480 V, 60 HZ, 150% OVERLOAD	14 A
SYSTEM CONFIGURATION TYPE	AC supply systems with earthed center point
BRAKING CURRENT	≤ 0.6 A (max. 6 A for 120 ms), Actuator for external motor brake
BRAKING TORQUE	Max. 100 % of rated operational current Ie with external braking resistor - Main circuit Max. 30 % MN, Standard - Main circuit Max. 100 % of rated operational current Ie, variable, DC - Main circuit
CABLE LENGTH	150 m, unscreened, maximum permissible, Motor feeder 300 m, unscreened, with motor choke, maximum permissible, Motor feeder 200 m, screened, with motor choke, maximum permissible, Motor feeder 100 m, screened, maximum permissible, Motor feeder
FUNCTIONS	4-quadrant operation possible
OUTPUT VOLTAGE (U2)	400 V AC, 3-phase 480 V AC, 3-phase
DELAY TIME	< 10 ms, On-delay < 10 ms, Off-delay
NUMBER OF INPUTS (ANALOG)	2 (parameterizable, 0 - 10 V DC, 0/4 - 20 mA)
NUMBER OF INPUTS (DIGITAL)	4 (parameterizable, 10 - 30 V DC)
RADIO INTERFERENCE CLASS	Optional external radio interference suppression

	filter for longer motor cable lengths and for use in different EMC environments
NUMBER OF OUTPUTS (DIGITAL)	1
STARTING CURRENT - MAX	175 %, IH, max. starting current (High Overload), For 2.5 seconds every 600 seconds, Power section
NUMBER OF PHASES (INPUT)	3
NUMBER OF RELAY OUTPUTS	1 (parameterizable, N/O, 6 A (250 V, AC-1) / 5 A (30 V, DC-1))
NUMBER OF PHASES (OUTPUT)	3
POWER CONSUMPTION	209 W
RATED CONTROL SUPPLY VOLTAGE	10 V DC (Us, max. 10 mA)
EFFICIENCY	96.2 % (η)
SUPPLY FREQUENCY	50/60 Hz
LEAKAGE CURRENT AT GROUND IPE - MAX	12.7 mA
MAINS VOLTAGE - MIN	380 V
NOMINAL OUTPUT CURRENT I2N	14 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)	1
NUMBER OF HW-INTERFACES (SERIAL TTY)	0
NUMBER OF HW-INTERFACES (USB)	0
NUMBER OF INTERFACES (PROFINET)	0
NUMBER OF OUTPUTS (ANALOG)	1

OUTPUT AT LINEAR LOAD AT RATED OUTPUT VOLTAGE - MAX	5.5 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	5.5 kW
OUTPUT FREQUENCY - MAX	500 Hz
OUTPUT FREQUENCY - MIN	0 Hz
SHORT-CIRCUIT PROTECTION (EXTERNAL OUTPUT CIRCUITS)	Type 1 coordination via the power bus' feeder unit, Main circuit
SUITABLE FOR	Branch circuits, (UL/CSA)
SWITCHING FREQUENCY	8 kHz, 4 - 24 kHz adjustable (audible), fPWM, Power section, Main circuit
RATED OPERATIONAL CURRENT (IE)	14 A at 150% overload (at an operating frequency of 16 kHz and an ambient air temperature of +50 °C)
RATED OPERATIONAL VOLTAGE	480 V AC, 3-phase 400 V AC, 3-phase
SHORT-CIRCUIT PROTECTION RATING	20 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring
HEAT DISSIPATION AT CURRENT/SPEED	132 W at 100% current and 0% speed 146 W at 100% current and 50% speed 164 W at 100% current and 90% speed 55 W at 25% current and 0% speed 64 W at 25% current and 50% speed 75 W at 50% current and 0% speed 84 W at 50% current and 50% speed 86 W at 50% current and 90% speed

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
:	

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