Eaton 186094

Eaton DC1 Variable frequency drive, 230 V AC, 1-phase, 10.5 A, 1.1 kW, IP20/NEMA 0, Radio interference suppression filter, Brake chopper, FS2 DC1-S2011FB-A20CE1

PRODUCT NAME	Eaton DC1 Variable frequency drive
CATALOG NUMBER	186094
PRODUCT LENGTH/DEPTH	152 mm
PRODUCT HEIGHT	231 mm
PRODUCT WIDTH	107 mm
PRODUCT WEIGHT	1.2 kg
CERTIFICATIONS	Certified by UL for use in Canada IEC/EN 61800-3 IEC/EN61800-5 Safety requirements: IEC/EN 61800-5-1 UL File No.: E172143 CE CUL IEC/EN61800-3 UL 508C UL Category Control No.: NMMS, NMMS7 UL report applies to both US and Canada CSA-C22.2 No. 14 EAC Specification for general requirements: IEC/EN 61800-2 RCM UL RoHS, ISO 9001 UkrSEPRO
CATALOG NOTES	Environmental class: 3C2, 3S2

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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
	IL04020014Z
	eaton-powerxl-variable-frequency-drives-dc1-da1-brochure-br040001en-en-us.pdf
	MN040028_EN.pdf
	eaton-frequency-inverter-dimensions-016.eps eaton-frequency-inverter-dimensions-026.eps eaton-frequency-inverter-3d-drawing-006.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:	Control unit Breaking resistance IGBT inverter Radio interference suppression filter PC connection Brake chopper 7-digital display assembly Internal DC link 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 Speed control with slip compensation BLDC motors PM motors

	Sensorless vector control (SLV) Synchronous reluctance motors
FRAME SIZE	FS2
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	240 V
OUTPUT VOLTAGE - MAX	250 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 230 V	2.42 kVA
APPARENT POWER AT 240 V	2.52 kVA
APPLICATION IN INDUSTRIAL AREA PERMITTED	Yes
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	390 VDC
VOLTAGE RATING - MAX	240 V
MOUNTING POSITION	Vertical
COMMUNICATION INTERFACE	OP-Bus (RS485), built in CANopen®, built in SmartWire-DT, optional Modbus RTU, built in
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP20 NEMA 0
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	1.5 HP
BRAKING RESISTANCE	100 Ω
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	44 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
INPUT CURRENT ILN AT 150% OVERLOAD	19.2 A
ASSIGNED MOTOR CURRENT IM AT 220 - 240 V, 60 HZ, 150% OVERLOAD	9.6 A
ASSIGNED MOTOR CURRENT IM AT 230 V, 50 HZ, 150% OVERLOAD	10.5 A
PROTOCOL	Other bus systems EtherNet/IP CAN MODBUS
OVERLOAD CURRENT IL AT 150% OVERLOAD	15.75 A
RATED FREQUENCY - MAX	62 Hz
RATED FREQUENCY - MIN	48 Hz

RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	10.5 A
RATED OPERATIONAL POWER AT 220/230 V, 50 HZ, 1-PHASE	1.1 kW
SYSTEM CONFIGURATION TYPE	AC supply systems with earthed center point
ELECTROMAGNETIC COMPATIBILITY	1st and 2nd environments (according to EN 61800-3)
BRAKING TORQUE	Max. 100 % of rated operational current Ie, variable, DC - Main circuit Max. 100 % of rated operational current Ie with external braking resistor - Main circuit
CABLE LENGTH	C1 ≤ 1 m, Radio interference level, maximum motor cable length C3 ≤ 25 m, Radio interference level, maximum motor cable length 150 m, unscreened, maximum permissible, Motor feeder 300 m, unscreened, with motor choke, maximum permissible, Motor feeder C2 ≤ 5 m, Radio interference level, maximum motor cable length 100 m, screened, maximum permissible, Motor feeder 200 m, screened, with motor choke, maximum permissible, Motor feeder
FUNCTIONS	4-quadrant operation possible
OUTPUT VOLTAGE (U2)	240 V AC, single-phase 230 V AC, single-phase
NUMBER OF INPUTS (ANALOG)	2
NUMBER OF INPUTS (DIGITAL)	4
RADIO INTERFERENCE CLASS	C1: for conducted emissions only C2, C3: depending on the motor cable length, the

	connected load, and ambient conditions. External radio interference suppression filters (optional) may be necessary. 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)	1
NUMBER OF RELAY OUTPUTS	1 (parameterizable, N/O, 6 A (250 V, AC-1) / 5 A (30 V, DC-1))
NUMBER OF PHASES (OUTPUT)	1
POWER CONSUMPTION	44 W
RATED CONTROL SUPPLY VOLTAGE	10 V DC (Us, max. 10 mA)
EFFICIENCY	96 % (η)
SUPPLY FREQUENCY	50/60 Hz
LEAKAGE CURRENT AT GROUND IPE - MAX	2.49 mA
MAINS VOLTAGE - MIN	200 V
NOMINAL OUTPUT CURRENT I2N	11 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-	0

INTERFACES (SERIAL TTY)	
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	1.1 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	1.1 kW
OUTPUT FREQUENCY - MAX	500 Hz
OUTPUT FREQUENCY - MIN	0 Hz
SUITABLE FOR	Branch circuits, (UL/CSA)
SWITCHING FREQUENCY	8 kHz, 4 - 32 kHz adjustable (audible), fPWM, Power section, Main circuit
RATED OPERATIONAL CURRENT (IE)	10.5 A at 150% overload (at an operating frequency of 16 kHz and an ambient air temperature of +50 °C)
RATED OPERATIONAL VOLTAGE	240 V AC, 1-phase 230 V AC, 1-phase
SHORT-CIRCUIT PROTECTION RATING	25 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
:	

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