

Eaton 185788

Eaton DC1 Variable frequency drive, 230 V AC, 1-phase, 4.3 A, 0.75 kW, IP20/NEMA 0, FS1 DC1-124D3NN-A20CE1

PRODUCT NAME	Eaton DC1 Variable frequency drive
CATALOG NUMBER	185788
PRODUCT LENGTH/DEPTH	124 mm
PRODUCT HEIGHT	184 mm
PRODUCT WIDTH	81 mm
PRODUCT WEIGHT	1.2 kg
CERTIFICATIONS	IEC/EN61800-5 CE UL RoHS, ISO 9001 Specification for general requirements: IEC/EN 61800-2 EAC UL report applies to both US and Canada UL 508C IEC/EN 61800-3 UL File No.: E172143 Certified by UL for use in Canada IEC/EN61800-3 CSA-C22.2 No. 14 Safety requirements: IEC/EN 61800-5-1 UkrSEPRO RCM CUL UL Category Control No.: NMMS, NMMS7
CATALOG NOTES	<ul style="list-style-type: none">• Environmental class: 3C2, 3S2• Overload cycle for 60 s every 600 s

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-016.eps
	eaton-frequency-inverter-dimensions-017.eps
	eaton-frequency-inverter-3d-drawing-003.eps
	DX-COM-STICK3_Connection
	How does the internal motor protection work?
	The OP System Bus - Parameterizing - Control

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:	PC connection Internal DC link IGBT inverter 7-digital display assembly Control unit 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	FS1
ALTITUDE	Max. 4000 m Above 1000 m with 1 % derating per 100 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
RATED OPERATIONAL POWER AT 220/230 V, 50 HZ, 3-PHASE	0.75 kW
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	1.71 kVA
APPARENT POWER AT 240 V	1.79 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
VOLTAGE RATING - MAX	240 V
MOUNTING POSITION	Vertical
OVERVOLTAGE CATEGORY	III
COMMUNICATION INTERFACE	OP-Bus (RS485), built in Modbus RTU, built in CANopen®, built in SmartWire-DT, optional
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP20 NEMA Other
ASSIGNED MOTOR POWER AT 220/230 V, 60 HZ, 3-PHASE	1 HP
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	45.75 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
MAINS CURRENT DISTORTION	120 %
ASSIGNED MOTOR CURRENT IM AT 220 - 240 V, 60 HZ, 150% OVERLOAD	4.2 A
ASSIGNED MOTOR CURRENT IM AT 230 V, 50 HZ, 150% OVERLOAD	3.2 A
PROTOCOL	EtherNet/IP Other bus systems MODBUS CAN
OVERLOAD CURRENT IL AT 150% OVERLOAD	6.45 A
RATED FREQUENCY - MAX	62 Hz

RATED FREQUENCY - MIN	48 Hz
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	4.3 A
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 3-PHASE	15 kW
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. 30 % MN, Standard - Main circuit Max. 100 % of rated operational current I _e , variable, DC - Main circuit
CABLE LENGTH	100 m, screened, with motor choke, maximum permissible, Motor feeder 75 m, unscreened, maximum permissible, Motor feeder 50 m, screened, maximum permissible, Motor feeder 150 m, unscreened, with motor choke, maximum permissible, Motor feeder
OUTPUT VOLTAGE (U2)	230 V AC, 3-phase 240 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 %, I _H , 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)	3
POWER CONSUMPTION	45.75 W
RATED CONTROL SUPPLY VOLTAGE	10 V DC (Us, max. 10 mA)
EFFICIENCY	93.9 % (η)
SUPPLY FREQUENCY	50/60 Hz
LEAKAGE CURRENT AT GROUND IPE - MAX	4.8 mA
MAINS VOLTAGE - MIN	200 V
NOMINAL OUTPUT CURRENT I2N	4.3 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	0.75 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	0.75 kW
OUTPUT FREQUENCY - MAX	500 Hz
OUTPUT FREQUENCY - MIN	0 Hz
SHORT-CIRCUIT	Type 1 coordination via

PROTECTION (EXTERNAL OUTPUT CIRCUITS)	the power bus' feeder unit, Main circuit
SUITABLE FOR	Branch circuits, (UL/CSA)
SWITCHING FREQUENCY	8 kHz, 4 - 32 kHz adjustable (audible), fPWM, Power section, Main circuit
RATED OPERATIONAL CURRENT (IE)	4.3 A at 150% overload (at an operating frequency of 16 kHz and an ambient air temperature of +50 °C)
RATED OPERATIONAL VOLTAGE	230 V AC, 1-phase 240 V AC, 1-phase
SHORT-CIRCUIT PROTECTION RATING	10 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring
HEAT DISSIPATION AT CURRENT/SPEED	25 W at 25% current and 0% speed 26 W at 25% current and 50% speed 26 W at 50% current and 0% speed 29 W at 50% current and 50% speed 32 W at 50% current and 90% speed 33 W at 100% current and 0% speed 38 W at 100% current and 50% speed 43 W at 100% current and 90% speed

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

:



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