

Eaton 185744

Eaton DC1 Variable frequency drive, 400 V AC, 3-phase, 2.2 A, 0.75 kW, IP66/NEMA 4X, Radio interference suppression filter, FS1 DC1-342D2FN-A66CE1

PRODUCT NAME	Eaton DC1 Variable frequency drive
CATALOG NUMBER	185744
PRODUCT LENGTH/DEPTH	184 mm
PRODUCT HEIGHT	232 mm
PRODUCT WIDTH	161 mm
PRODUCT WEIGHT	2.8 kg
CERTIFICATIONS	IEC/EN61800-3 Certified by UL for use in Canada CSA-C22.2 No. 14 Safety requirements: IEC/EN 61800-5-1 Specification for general requirements: IEC/EN 61800-2 UkrSEPRO IEC/EN 61800-3 RCM UL 508C UL File No.: E172143 CE CUL EAC UL report applies to both US and Canada IEC/EN61800-5 UL Category Control No.: NMMS, NMMS7 RoHS, ISO 9001 UL
CATALOG NOTES	Environmental class: 3C3, 3S3

FEATURES	Parameterization: drivesConnect Parameterization: drivesConnect mobile (App) Parameterization: Fieldbus
	Parameterization: Keypad
	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.10 TEMPERATURE RISE	
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

DECLARATIONS OF CONFORMITY	eaton-variable-frequency-drive-declaration-of-conformity-uk251078en.pdf
INSTALLATION VIDEOS	Video PowerXL DA1
	IL04020013Z
	eaton-powerxl-variable-frequency-drives-dc1-da1-brochure-br040001en-en-us.pdf
	eaton-frequency-inverter-dimensions-018.eps
	eaton-frequency-inverter-3d-drawing-004.eps
	The OP System Bus - Parameterizing - Control
	How does the internal motor protection work?
	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:	7-digital display assembly Control unit IGBT inverter Internal DC link Radio interference suppression filter PC connection Additional PCB protection
CLIMATIC PROOFING	< 95 average relative humidity (RH), no condensation, no corrosion
CONNECTION TO SMARTWIRE-DT	No
OPERATING MODE	U/f control Speed control with slip compensation Sensorless vector control (SLV) BLDC motors PM motors Synchronous reluctance motors

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	40 °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	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	1.52 kVA
APPARENT POWER AT 480 V	1.83 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
VOLTAGE RATING - MAX	480 V
MOUNTING POSITION	Vertical
COMMUNICATION INTERFACE	Modbus RTU, built in OP-Bus (RS485), built in CANopen®, built in SmartWire-DT, optional
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP66 NEMA 4X
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	1 HP
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	63.75 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
INPUT CURRENT ILN AT 150% OVERLOAD	3.5 A
PROTOCOL	MODBUS EtherNet/IP CAN Other bus systems
OVERLOAD CURRENT IL AT 150% OVERLOAD	3.3 A
RATED FREQUENCY - MAX	62 Hz
RATED FREQUENCY - MIN	48 Hz
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	2.2 A
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 3-PHASE	0.75 kW
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 150% OVERLOAD	1.9 A
ASSIGNED MOTOR CURRENT IM AT 440 - 480 V, 60 HZ, 150% OVERLOAD	2.1 A
SYSTEM	AC supply systems with

CONFIGURATION TYPE	earthed center point
ELECTROMAGNETIC COMPATIBILITY	1st and 2nd environments (according to EN 61800-3)
BRAKING TORQUE	Max. 30 % MN, Standard - Main circuit Max. 100 % of rated operational current I_e , variable, DC - Main circuit
CABLE LENGTH	75 m, unscreened, maximum permissible, Motor feeder 100 m, screened, with motor choke, maximum permissible, Motor feeder $C2 \leq 5$ m, Radio interference level, maximum motor cable length 50 m, screened, maximum permissible, Motor feeder $C3 \leq 25$ m, Radio interference level, maximum motor cable length 150 m, unscreened, with motor choke, maximum permissible, Motor feeder
OUTPUT VOLTAGE (U2)	400 V AC, 3-phase 480 V AC, 3-phase
NUMBER OF INPUTS (ANALOG)	2 (parameterizable, 0 - 10 V DC, 0/4 - 20 mA) 2
NUMBER OF INPUTS (DIGITAL)	4 (parameterizable, max. 30 V DC) 4
RADIO INTERFERENCE CLASS	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 (parameterizable, 24 V DC) 1
STARTING CURRENT -	175 %, I_H , max. starting

MAX	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
RATED CONTROL SUPPLY VOLTAGE	10 V DC (Us, max. 10 mA)
EFFICIENCY	91.5 % (η)
SUPPLY FREQUENCY	50/60 Hz, fLN, Main circuit 50/60 Hz
LEAKAGE CURRENT AT GROUND IPE - MAX	13 mA
MAINS VOLTAGE - MIN	380 V
NOMINAL OUTPUT CURRENT I2N	2.2 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 -	60 Hz

MAX	
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)	2.2 A at 150% overload At a switching frequency of 16 kHz and an ambient air temperature of +40 °C
RATED OPERATIONAL VOLTAGE	400 V AC, 3-phase 480 V AC, 3-phase
SHORT-CIRCUIT PROTECTION RATING	6 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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