



Eaton 199738

Eaton DB1 Variable frequency drive, 240 V AC, 1-phase, 10.9 A, IP20, NEMA Other, FS1, Radio interference

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PRODUCT NAME	Eaton DB1 Variable frequency drive
CATALOG NUMBER	199738
PRODUCT LENGTH/DEPTH	90 mm
PRODUCT HEIGHT	185.98 mm
PRODUCT WIDTH	127.98 mm
PRODUCT WEIGHT	0.7 kg
CERTIFICATIONS	IEC/EN 61800-2 IEC/EN 61800-3 RoHS, ISO 9001 IEC/EN 61800-5-1 UL Category Control No.: NMMS, NMMS7 Certified by UL for use in Canada UL Listed UL File No.: E172143 UL report applies to both US and Canada UL 508C CSA-C22.2 No. 274 IEC 61000-3-2 CE marking



Powering Business Worldwide

PRODUCT CATEGORY	Variable frequency drives
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.

DECLARATIONS OF CONFORMITY	eaton-variable-frequency-drive-declaration-of-conformity-uk251064en.pdf
□□□□□	eaton-variable-frequency-drive-db1-instruction-leaflet-il040044zu.pdf
□□□□	eaton-powerxl-variable-frequency-drives-db1-cold-plate-brochure-br040011en-en-us.pdf
	eaton-powerxl-variable-frequency-drives-hvac-brochure-br040012en-en-us.pdf

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:	Internal DC link IGBT inverter PC connection Additional PCB protection PFC (Power Factor Compensation) Radio interference suppression filter
CLIMATIC PROOFING	< 95 average relative humidity (RH), no condensation, no corrosion
CONNECTION TO SMARTWIRE-DT	No
OPERATING MODE	PM motors Synchronous reluctance motors U/f control Sensorless vector control (SLV) Speed control with slip compensation BLDC motors
FRAME SIZE	FS1
ALTITUDE	Above 1000 m with 1 % derating per 100 m Max. 2000 m Max. 1000 m
APPLICATION IN DOMESTIC AND COMMERCIAL AREA PERMITTED	Yes
MAINS SWITCH-ON FREQUENCY	Maximum of one time every 30 seconds
APPLICATION IN	Yes

INDUSTRIAL AREA PERMITTED	
AMBIENT OPERATING TEMPERATURE - MAX	50 °C
AMBIENT OPERATING TEMPERATURE - MIN	-10 °C
AMBIENT STORAGE TEMPERATURE - MAX	60 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
APPARENT POWER AT 230 V	0.99 kVA
APPARENT POWER AT 240 V	1.03 kVA
ASSIGNED MOTOR CURRENT IM AT 220 - 240 V, 60 HZ, 150% OVERLOAD	4.3 A
ASSIGNED MOTOR CURRENT IM AT 230 V, 50 HZ, 150% OVERLOAD	4.3 A
MOUNTING POSITION	As required Depending on the cooling
RELATIVE SYMMETRIC NET FREQUENCY TOLERANCE	10 %
RELATIVE SYMMETRIC NET VOLTAGE TOLERANCE	10 %
PROTECTION	Finger and back-of-hand proof, Protection against direct contact (BGV A3, VBG4)
RESOLUTION	0.1 Hz (Frequency resolution, setpoint value)
VOLTAGE RATING - MAX	240 V
COMMUNICATION INTERFACE	OP-Bus (RS485), built in Modbus RTU, built in CANopen®, built in
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP20 NEMA Other
PROTOCOL	CAN MODBUS Other bus systems
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	1 HP
SYSTEM CONFIGURATION TYPE	AC supply systems with earthed center point
INPUT CURRENT ILN AT	10.9 A

150% OVERLOAD	
NUMBER OF SLOTS	1 (expansion)
BRAKING TORQUE	Max. 30 % MN, Standard - Main circuit Max. 100 % of rated operational current I_e , variable, DC - Main circuit
CABLE LENGTH	C1 \leq 1 m, maximum motor cable length C3 \leq 10 m, maximum motor cable length C2 \leq 3 m, maximum motor cable length 10 m, screened, maximum permissible cable length
OUTPUT VOLTAGE (U2)	230 V AC, 3-phase
NUMBER OF INPUTS (ANALOG)	2
NUMBER OF INPUTS (DIGITAL)	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. C1: for conducted emissions only
NUMBER OF OUTPUTS (DIGITAL)	1
STARTING CURRENT - MAX	175 %, IH, max. starting current (High Overload), For 3.75 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	60W
SUPPLY FREQUENCY	50/60 Hz
LEAKAGE CURRENT AT GROUND IPE - MAX	3.5 mA (at 110 V)
MAINS VOLTAGE - MAX	230 V
MAINS VOLTAGE - MIN	110 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	1.5 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	1.5 kW
OUTPUT FREQUENCY - MAX	500 Hz
OUTPUT FREQUENCY - MIN	0 Hz
OUTPUT VOLTAGE - MAX	250 V
SHOCK RESISTANCE	15 g, Mechanical, According to IEC/EN 60068-2-27, 11 ms
SUITABLE FOR	Branch circuits, (UL/CSA)
RATED OPERATIONAL VOLTAGE	115 V AC, 1-phase 230 V AC, 1-phase
SHORT-CIRCUIT PROTECTION RATING	110 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring
RATED FREQUENCY - MAX	62 Hz
RATED FREQUENCY - MIN	48 Hz
RATED OPERATIONAL CURRENT (IE) AT 150% OVERLOAD	4.3 A
RATED OPERATIONAL POWER AT 220/230 V, 50 HZ, 1-PHASE	0.75 kW

