Eaton 197566

Eaton DB1 Variable frequency drive, 400 V AC, 3-phase, 9.5 A, 4 kW, IP20/NEMA 0, Radio interference suppression filter, FS2

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PRODUCT NAME	Eaton DB1 Variable frequency drive
CATALOG NUMBER	197566
PRODUCT LENGTH/DEPTH	89 mm
PRODUCT HEIGHT	193 mm
PRODUCT WIDTH	140 mm
PRODUCT WEIGHT	1.15 kg
CERTIFICATIONS	UL File No.: E172143 IEC/EN 61800-2 IEC/EN61800-5 Safety: EN 61800-5-1: 2003 CSA-C22.2 No. 14 CUL UL 508C UL report applies to both US and Canada RCM IEC/EN61800-3 UL Category Control No.: NMMS, NMMS7 Certified by UL for use in Canada IEC/EN 61800-3 RoHS, ISO 9001 CE UL CSA-C22.2 No. 274 IEC/EN 61800-5-1 CE marking
CATALOG NOTES	The brake resistors are assigned based on the maximum rated power of the variable frequency drive. Additional brake resistors and designs (e.g. different duty cycles) are available upon request.

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PRODUCT CATEGORY	Variable frequency drives
FEATURES	Tool-less swapping of fan Temperature-controlled fan Parameterization: Fieldbus Parameterization: Keypad Parameterization: drivesConnect Parameterization: drivesConnect mobile (App)
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.

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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

10.2.6 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.
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 Radio interference suppression filter IGBT inverter Breaking resistance 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 BLDC motors PM motors Sensorless vector control (SLV) Synchronous reluctance motors
FRAME SIZE	FS2
ALTITUDE	Max. 2000 m

	Max. 1000 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
APPLICATION IN INDUSTRIAL AREA PERMITTED	Yes
AMBIENT OPERATING TEMPERATURE - MAX	50 °C
AMBIENT OPERATING TEMPERATURE - MIN	-10 °C
AMBIENT OPERATING TEMPERATURE AT 150% OVERLOAD - MAX	60 °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	3.8 kVA
APPARENT POWER AT 480 V	4.56 kVA
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 150% OVERLOAD	9.5 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)
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0 W
SWITCH-ON THRESHOLD	780 VDC

FOR THE BRAKING TRANSISTOR	
VOLTAGE RATING - MAX	480 VAC
COMMUNICATION INTERFACE	OP-Bus (RS485) Modbus RTU CANopen®
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP20 NEMA Other
PROTOCOL	CAN MODBUS Other bus systems
ASSIGNED MOTOR CURRENT IM AT 440 - 480 V, 60 HZ, 150% OVERLOAD	9.5 A
SYSTEM CONFIGURATION TYPE	AC supply systems with earthed center point
ELECTROMAGNETIC COMPATIBILITY	1st and 2nd environments (according to EN 61800-3)
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ	5 HP
BRAKING RESISTANCE	100 Ω
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
INPUT CURRENT ILN AT 150% OVERLOAD	10.7 A
NUMBER OF SLOTS	1 (expansion)
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	C1 ≤ 1 m, maximum motor cable length C2 ≤ 3 m, maximum motor cable length C3 ≤ 10 m, maximum motor cable length 10 m, screened, maximum permissible cable length
OUTPUT VOLTAGE (U2)	400 V AC, 3-phase 480 V AC, 3-phase
NUMBER OF INPUTS	2

(ANALOG)	
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.
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)	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	244 W
RATED CONTROL SUPPLY VOLTAGE	10 V DC (Us, max. 10 mA)
EFFICIENCY	97 % (η)
RATED CONTROL VOLTAGE (UC)	24 V DC (external, max. 100 mA)
SUPPLY FREQUENCY	50/60 Hz
LEAKAGE CURRENT AT GROUND IPE - MAX	3.5 mA (at 3 x 400 V)
MAINS VOLTAGE - MAX	480 V
MAINS VOLTAGE - MIN	380 V
NOMINAL OUTPUT CURRENT I2N	9.5 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	4 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	4 kW
OUTPUT FREQUENCY - MAX	500 Hz
OUTPUT FREQUENCY - MIN	0 Hz
OUTPUT VOLTAGE - MAX	500 V
OVERLOAD CURRENT IL AT 150% OVERLOAD	14.25 A
SHOCK RESISTANCE	15 g, Mechanical, According to IEC/EN 60068-2-27, 11 ms
SUITABLE FOR	Branch circuits, (UL/CSA)
SWITCHING FREQUENCY	8 kHz, 4 - 32 kHz adjustable (audible), fPWM, Power section, Main circuit
RATED OPERATIONAL VOLTAGE	400 V AC, 3-phase 480 V AC, 3-phase
SHORT-CIRCUIT PROTECTION RATING	15 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring
VIBRATION	Resistance: According to EN 61800-5-1
RATED FREQUENCY - MAX	62 Hz
RATED FREQUENCY - MIN	48 Hz
RATED OPERATIONAL CURRENT (IE) AT 150% OVERLOAD	9.5 A
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	9.5 A
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ	4 kW

HEAT DISSIPATION AT CURRENT/SPEED	105 W at 50% current and 50% speed 116 W at 50% current and 90% speed 128 W at 100% current and 0% speed 149 W at 100% current and 50% speed 178 W at 100% current and 90% speed 82 W at 25% current and 0% speed 91 W at 25% current and 50% speed 93 W at 50% current and 0% speed

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
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