

Eaton 3-4918-108A

Eaton DG1 Variable frequency drive, 400 V AC, 3-phase, 820 A, 450 kW, IP00, Brake chopper, DC link choke

PRODUCT NAME	Eaton DG1 variable frequency drive
CATALOG NUMBER	3-4918-108A
PRODUCT LENGTH/DEPTH	561 mm
PRODUCT HEIGHT	1538 mm
PRODUCT WIDTH	1037 mm
PRODUCT WEIGHT	820 kg
CERTIFICATIONS	EAC Specification for general requirements: IEC/EN 61800-2 CE UL Category Control No.: NMMS, NMMS7 RoHS, ISO 9001 UkrSEPRO CUL UL File No.: E134360 IEC/EN 61800-3 Safety requirements: IEC/EN 61800-5 UL C-Tick

FEATURES	Externally accessible fan Temperature-controlled fan
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.
10.5 PROTECTION AGAINST ELECTRIC SHOCK	Does not apply, since the entire switchgear needs to be evaluated.
10.9.3 IMPULSE WITHSTAND VOLTAGE	Is the panel builder's responsibility.
FITTED WITH:	DC link choke Brake chopper Internal DC link Multi-line graphic display IGBT inverter Radio interference suppression filter Additional PCB protection Breaking resistance Control unit PC connection

MCAD MODEL	dg1_18.dwg dg1_18.stp
	eaton-profinet-de1-dc1-da1-dg1-dm1-dx1-mn040062-en-en.pdf

POLLUTION DEGREE	2
CLIMATIC PROOFING	< 95 average relative humidity (RH), no condensation, no corrosion
CONNECTION TO SMARTWIRE-DT	In conjunction with DXG-NET-SWD SmartWire DT module Yes
OPERATING MODE	U/f control Speed control with slip compensation Torque regulation Sensorless vector control (SLV)
FRAME SIZE	FS8
AIR VOLUME CAPACITY	2800 m³/h
ALTITUDE	Max. 3000 m Max. 2000 m for Corner Grounded TN Systems Above 1000 m with 1 % derating per 100 m Max. 1000 m
ENVIRONMENTAL CLASS	3C2, 3S2 (Air quality)
APPLICATION IN DOMESTIC AND COMMERCIAL AREA PERMITTED	Yes
MAINS SWITCH-ON FREQUENCY	Maximum of one time every 60 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	40 °C
AMBIENT OPERATING TEMPERATURE AT 150% OVERLOAD - MIN	-10 °C
AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
APPARENT POWER AT 400 V	637.4 kVA

APPARENT POWER AT 480 V	796.7 kVA
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 110% OVERLOAD	900 A
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 150% OVERLOAD	769 A
MOUNTING POSITION	Vertical
RATED CONDITIONAL SHORT-CIRCUIT CURRENT (IQ)	65 kA
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	0.01 Hz (Frequency resolution, setpoint value)
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	215 W
SWITCH-ON THRESHOLD FOR THE BRAKING TRANSISTOR	850 VDC
VOLTAGE RATING - MAX	500 VAC
OVERVOLTAGE CATEGORY	III
COMMUNICATION INTERFACE	Modbus TCP, built in SmartWire-DT, optional Modbus RTU, built in DeviceNet, optional BACnet MS/TP, built in Ethernet IP, built in CANopen®, optional PROFIBUS, optional
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP00 NEMA Other
PROTOCOL	BACnet CAN DeviceNet EtherNet/IP MODBUS

	Other bus systems PROFIBUS PROFINET IO TCP/IP
ASSIGNED MOTOR CURRENT IM AT 440 - 480 V, 60 HZ, 150% OVERLOAD	775 A
ASSIGNED MOTOR CURRENT IM AT 440/480 V, 60 HZ, 110% OVERLOAD	775 A
ASSIGNED MOTOR CURRENT IM AT 500 V, 50 HZ, 110% OVERLOAD	855 A
ASSIGNED MOTOR CURRENT IM AT 500 V, 50 HZ, 150% OVERLOAD	770 A
SYSTEM CONFIGURATION TYPE	TN-S, TN-C, TN-C-S, TT, IT
ELECTROMAGNETIC COMPATIBILITY	1st and 2nd environments (according to EN 61800-3)
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ	700 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 110% OVERLOAD	800 HP
BRAKING RESISTANCE	1.4 Ω
EQUIPMENT HEAT DISSIPATION, CURRENT- DEPENDENT PVID	13190 W
INPUT CURRENT ILN AT 110% OVERLOAD	916 A
INPUT CURRENT ILN AT 150% OVERLOAD	815 A
MAINS CURRENT DISTORTION	28 %
CURRENT LIMITATION	0.1 - 2 x I _H (CT), motor, main circuit
NUMBER OF SLOTS	2 (expansion)
BRAKING TORQUE	Adjustable to 150 % (I/I _e), DC - Main circuit Adjustable to 150 %, DC - Main circuit Max. 30 % MN, Standard - Main circuit Max. 100 % of rated operational current I _e with external braking resistor -

	Main circuit
CABLE LENGTH	<p>C3 ≤ 50 m, Radio interference level, maximum motor cable length</p> <p>200 m, screened, maximum permissible, Motor feeder</p> <p>C2 ≤ 10 m, Radio interference level, maximum motor cable length</p>
FUNCTIONS	4-quadrant operation possible
OUTPUT VOLTAGE (U2)	<p>480 V AC, 3-phase</p> <p>400 V AC, 3-phase</p> <p>500 V AC, 3-phase</p>
NUMBER OF INPUTS (ANALOG)	2
NUMBER OF INPUTS (DIGITAL)	8
RADIO INTERFERENCE CLASS	<p>Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments</p> <p>C1: with external filter, for conducted emissions only</p> <p>C2, C3: depending on the motor cable length, the connected load, and ambient conditions.</p> <p>External radio interference suppression filters (optional) may be necessary.</p>
NUMBER OF OUTPUTS (DIGITAL)	1
STARTING CURRENT - MAX	<p>200 %, I_H, max. starting current (High Overload), For 2 seconds every 20 seconds, Power section</p>
NUMBER OF PHASES (INPUT)	3
NUMBER OF RELAY OUTPUTS	<p>3 (parameterizable, 2 changeover contacts and 1 N/O, 6 A (240 V AC) / 6 A (24 V DC))</p>
NUMBER OF PHASES (OUTPUT)	3
RATED CONTROL SUPPLY	10 V DC (U _s , max. 10 mA)

VOLTAGE	
EFFICIENCY	97.4 % (η)
RATED CONTROL VOLTAGE (UC)	24 V DC (external, max. 250 mA options incl.)
SUPPLY FREQUENCY	50/60 Hz
MAINS VOLTAGE - MAX	500 V
MAINS VOLTAGE - MIN	380 V
NOMINAL OUTPUT CURRENT I_{2N}	820 A
NUMBER OF HW-INTERFACES (INDUSTRIAL ETHERNET)	1
NUMBER OF HW-INTERFACES (OTHER)	1
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)	2
OUTPUT AT LINEAR LOAD AT RATED OUTPUT VOLTAGE - MAX	450 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	500 kW
OUTPUT FREQUENCY - MAX	400 Hz
OUTPUT FREQUENCY - MIN	0 Hz
OUTPUT VOLTAGE - MAX	500 V
OVERLOAD CURRENT I_L AT 110% OVERLOAD	1012 A
OVERLOAD CURRENT I_L AT 150% OVERLOAD	1230 A
SHOCK RESISTANCE	Mechanical, According to EN 61800-5-1, IEC/EN

	60068-2-27 UPS drop test (for weights inside the UPS frame) Storage and transportation: maximum 15 g, 11 ms (inside the packaging)
SUITABLE FOR	Branch circuits, (UL/CSA)
SWITCHING FREQUENCY	2 kHz, 1.5 - 6 kHz adjustable, fPWM, Power section, Main circuit
RATED OPERATIONAL VOLTAGE	400 V AC, 3-phase 500 V AC, 3-phase 480 V AC, 3-phase
SHORT-CIRCUIT PROTECTION RATING	2 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring
VIBRATION	Resistance: 15.8 – 150 Hz, 1 g, Maximum acceleration amplitude Resistance: 5 - 150 Hz, According to EN 61800-5-1, IEC/EN 60068-2-6 Resistance: 5 - 15.8 Hz, Amplitude 1 mm (peak)
RATED FREQUENCY - MAX	66 Hz
RATED FREQUENCY - MIN	45 Hz
RATED OPERATIONAL CURRENT (IE) AT 110% OVERLOAD	920 A
RATED OPERATIONAL CURRENT (IE) AT 150% OVERLOAD	820 A
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	820 A
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ	450 kW
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 110% OVERLOAD	500 kW
RATED OPERATIONAL POWER AT 500 V, 50 HZ	560 kW
RATED OPERATIONAL POWER AT 500 V, 50 HZ, 110% OVERLOAD	630 kW
SAFETY FUNCTION/LEVEL	STO (Safe Torque Off, SIL1, PLc Cat 1)

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
:



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