Eaton 3-4918-102A

Eaton DG1 Variable frequency drive, 400 V AC, 3-phase, 590 A, 315 kW, IP00, Brake chopper, DC link choke

PRODUCT NAME	Eaton DG1 variable frequency drive
CATALOG NUMBER	3-4918-102A
PRODUCT LENGTH/DEPTH	561 mm
PRODUCT HEIGHT	1538 mm
PRODUCT WIDTH	1037 mm
PRODUCT WEIGHT	820 kg
CERTIFICATIONS	CE Safety requirements: IEC/EN 61800-5 CUL RoHS, ISO 9001 EAC Specification for general requirements: IEC/EN 61800-2 C-Tick UkrSEPRO UL IEC/EN 61800-3

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FEATURES	Temperature-controlled fan Externally accessible 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:	Brake chopper DC link choke Radio interference suppression filter IGBT inverter Multi-line graphic display Additional PCB protection Internal DC link Breaking resistance Control unit PC connection

MCAD MODEL	dg1_18.stp dg1_18.dwg
	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	Yes In conjunction with DXG-NET-SWD SmartWire DT module
OPERATING MODE	Torque regulation Sensorless vector control (SLV) U/f control Speed control with slip compensation
FRAME SIZE	FS8
AIR VOLUME CAPACITY	2800 m^3/h
ALTITUDE	Max. 3000 m Max. 1000 m Max. 2000 m for Corner Grounded TN Systems Above 1000 m with 1 % derating per 100 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	450.3 kVA

APPARENT POWER AT 480 V	562.9 kVA
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 110% OVERLOAD	619 A
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 150% OVERLOAD	550 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	SmartWire-DT, optional CANopen®, optional PROFIBUS, optional BACnet MS/TP, built in Modbus RTU, built in Ethernet IP, built in DeviceNet, optional Modbus TCP, built in
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	515 A
ASSIGNED MOTOR CURRENT IM AT 440/480 V, 60 HZ, 110% OVERLOAD	590 A
ASSIGNED MOTOR CURRENT IM AT 500 V, 50 HZ, 110% OVERLOAD	615 A
ASSIGNED MOTOR CURRENT IM AT 500 V, 50 HZ, 150% OVERLOAD	547 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	500 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 110% OVERLOAD	500 HP
BRAKING RESISTANCE	1.4 Ω
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	8076 W
INPUT CURRENT ILN AT 110% OVERLOAD	648 A
INPUT CURRENT ILN AT 150% OVERLOAD	587 A
MAINS CURRENT DISTORTION	28 %
CURRENT LIMITATION	0.1 - 2 x IH (CT), motor, main circuit
NUMBER OF SLOTS	2 (expansion)
BRAKING TORQUE	Max. 100 % of rated operational current Ie with external braking resistor - Main circuit Adjustable to 150 % (I/Ie), DC - Main circuit Adjustable to 150 %, DC - Main circuit Max. 30 % MN, Standard -

	Main circuit
CABLE LENGTH	C2 ≤ 10 m, Radio interference level, maximum motor cable length 200 m, screened, maximum permissible, Motor feeder C3 ≤ 50 m, Radio interference level, maximum motor cable length
FUNCTIONS	4-quadrant operation possible
OUTPUT VOLTAGE (U2)	400 V AC, 3-phase 480 V AC, 3-phase 500 V AC, 3-phase
NUMBER OF INPUTS (ANALOG)	2
NUMBER OF INPUTS (DIGITAL)	8
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: with external filter, for conducted emissions only 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	200 %, IH, max. starting current (High Overload), For 2 seconds every 20 seconds, Power section
NUMBER OF PHASES (INPUT)	3
NUMBER OF RELAY OUTPUTS	3 (parameterizable, 2 changeover contacts and 1 N/O, 6 A (240 V AC) / 6 A (24 V DC))
NUMBER OF PHASES (OUTPUT)	3
RATED CONTROL SUPPLY	10 V DC (Us, 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 I2N	590 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	315 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	355 kW
OUTPUT FREQUENCY - MAX	400 Hz
OUTPUT FREQUENCY - MIN	0 Hz
OUTPUT VOLTAGE - MAX	500 V
OVERLOAD CURRENT IL AT 110% OVERLOAD	715 A
OVERLOAD CURRENT IL AT 150% OVERLOAD	885 A
SHOCK RESISTANCE	UPS drop test (for weights inside the UPS frame)

	Mechanical, According to EN 61800-5-1, IEC/EN 60068-2-27 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: 5 - 150 Hz, According to EN 61800-5-1, IEC/EN 60068-2-6 Resistance: 15.8 – 150 Hz, 1 g, Maximum acceleration amplitude 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	650 A
RATED OPERATIONAL CURRENT (IE) AT 150% OVERLOAD	590 A
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	590 A
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ	315 kW
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 110% OVERLOAD	355 kW
RATED OPERATIONAL POWER AT 500 V, 50 HZ	400 kW
RATED OPERATIONAL POWER AT 500 V, 50 HZ, 110% OVERLOAD	450 kW
SAFETY FUNCTION/LEVEL	STO (Safe Torque Off, SIL1, PLc Cat 1)

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
:	

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