Eaton 3-4918-301A

Eaton DG1 Variable frequency drive, 600 V AC, 3-phase, 416 A, 250 kW, IP00, DC link choke

PRODUCT NAME	Eaton DG1 variable frequency drive
CATALOG NUMBER	3-4918-301A
PRODUCT LENGTH/DEPTH	561 mm
PRODUCT HEIGHT	980 mm
PRODUCT WIDTH	1037 mm
PRODUCT WEIGHT	410 kg
CERTIFICATIONS	UL Safety requirements: IEC/EN 61800-5 CUL IEC/EN 61800-3 C-Tick UL Category Control No.: NMMS, NMMS7 EAC RoHS, ISO 9001 CE Specification for general requirements: IEC/EN 61800-2 UkrSEPRO UL File No.: E134360

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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:	Radio interference suppression filter Multi-line graphic display IGBT inverter DC link choke Additional PCB protection Internal DC link Control unit PC connection
POLLUTION DEGREE	2
CLIMATIC PROOFING	< 95 average relative

MCAD MODEL	dg1_18_2.dwg dg1_18_2.stp
	eaton-profinet-de1-dc1-da1-dg1-dm1-dx1-mn040062-en-en.pdf

	humidity (RH), no condensation, no corrosion
CONNECTION TO SMARTWIRE-DT	Yes In conjunction with DXG-NET-SWD SmartWire DT module
OPERATING MODE	U/f control Torque regulation Sensorless vector control (SLV) Speed control with slip compensation
FRAME SIZE	FS8
AIR VOLUME CAPACITY	2800 m^3/h
ALTITUDE	Above 1000 m with 1 % derating per 100 m Max. 1000 m Max. 2000 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 600 V	478 kVA
APPARENT POWER AT 690 V	549.8 kVA
MOUNTING POSITION	Vertical
RATED CONDITIONAL	65 kA

SHORT-CIRCUIT CURRENT (IQ)	
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)
RATED OPERATIONAL POWER AT 525 V, 50 HZ	250 kW
RATED OPERATIONAL POWER AT 525 V, 50 HZ, 110% OVERLOAD	315 kW
RATED OPERATIONAL POWER AT 600 V, 50 HZ	315 kW
RATED OPERATIONAL POWER AT 600 V, 50 HZ, 110% OVERLOAD	355 kW
RESOLUTION	0.01 Hz (Frequency resolution, setpoint value)
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	291 W
SWITCH-ON THRESHOLD FOR THE BRAKING TRANSISTOR	1050 VDC
VOLTAGE RATING - MAX	690 VAC
OVERVOLTAGE CATEGORY	III
COMMUNICATION INTERFACE	PROFIBUS, optional SmartWire-DT, optional Modbus TCP, built in DeviceNet, optional BACnet MS/TP, built in Ethernet IP, built in CANopen®, optional Modbus RTU, 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 525 V, 50 HZ, 110% OVERLOAD	436 A
ASSIGNED MOTOR CURRENT IM AT 525 V, 50 HZ, 150% OVERLOAD	349 A
ASSIGNED MOTOR CURRENT IM AT 600 V, 50 HZ, 110% OVERLOAD	431 A
ASSIGNED MOTOR CURRENT IM AT 600 V, 50 HZ, 150% OVERLOAD	383 A
ASSIGNED MOTOR CURRENT IM AT 690 V, 60 HZ, 110% OVERLOAD	411 A
ASSIGNED MOTOR CURRENT IM AT 690 V, 60 HZ, 150% OVERLOAD	411 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 690 V, 60 HZ	500 HP
ASSIGNED MOTOR POWER AT 690 V, 60 HZ, 110% OVERLOAD	500 HP
BRAKING RESISTANCE	2.5 Ω
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	7703 W
INPUT CURRENT ILN AT 110% OVERLOAD	477 A
INPUT CURRENT ILN AT 150% OVERLOAD	433 A
MAINS CURRENT DISTORTION	28 %
CURRENT LIMITATION	0.1 - 2 x IH (CT), motor, main circuit
NUMBER OF SLOTS	2 (expansion)
BRAKING TORQUE	Adjustable to 150 %, DC - Main circuit Max. 100 % of rated operational current Ie with external braking resistor -

	Main circuit Max. 30 % MN, Standard - Main circuit Adjustable to 150 % (I/Ie), DC - Main circuit
CABLE LENGTH	200 m, screened, maximum permissible, Motor feeder C3 ≤ 10 m, Radio interference level, maximum motor cable length
OUTPUT VOLTAGE (U2)	600 V AC, 3-phase 690 V AC, 3-phase
NUMBER OF INPUTS (ANALOG)	2
NUMBER OF INPUTS (DIGITAL)	8
RADIO INTERFERENCE CLASS	Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments 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
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 VOLTAGE	10 V DC (Us, max. 10 mA)
EFFICIENCY	98.1 % (η)

RATED CONTROL VOLTAGE (UC)	24 V DC (external, max. 250 mA options incl.)
SUPPLY FREQUENCY	50/60 Hz
MAINS VOLTAGE - MAX	600 V
MAINS VOLTAGE - MIN	525 V
NOMINAL OUTPUT CURRENT I2N	416 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	298 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	336 kW
OUTPUT FREQUENCY - MAX	400 Hz
OUTPUT FREQUENCY - MIN	0 Hz
OUTPUT VOLTAGE - MAX	600 V
OVERLOAD CURRENT IL AT 110% OVERLOAD	506 A
OVERLOAD CURRENT IL AT 150% OVERLOAD	624 A
SHOCK RESISTANCE	UPS drop test (for weights inside the UPS frame) Storage and transportation: maximum 15 g, 11 ms (inside the

	packaging) Mechanical, According to EN 61800-5-1, IEC/EN 60068-2-27
SUITABLE FOR	Branch circuits, (UL/CSA)
SWITCHING FREQUENCY	2 kHz, 1.5 - 6 kHz adjustable, fPWM, Power section, Main circuit
RATED OPERATIONAL VOLTAGE	600 V AC, 3-phase 690 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 - 15.8 Hz, Amplitude 1 mm (peak) 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
RATED FREQUENCY - MAX	66 Hz
RATED FREQUENCY - MIN	45 Hz
RATED OPERATIONAL CURRENT (IE) AT 110% OVERLOAD	460 A
RATED OPERATIONAL CURRENT (IE) AT 150% OVERLOAD	416 A
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	416 A
SAFETY FUNCTION/LEVEL	STO (Safe Torque Off, SIL1, PLc Cat 1)

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
:	

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