

# Eaton 3-4918-312A

Eaton DG1 Variable frequency drive, 600 V  
AC, 3-phase, 750 A, 500 kW, IP00, Brake  
chopper, DC link choke

<b>PRODUCT NAME</b>	Eaton DG1 variable frequency drive
<b>CATALOG NUMBER</b>	3-4918-312A
<b>PRODUCT LENGTH/DEPTH</b>	561 mm
<b>PRODUCT HEIGHT</b>	1538 mm
<b>PRODUCT WIDTH</b>	1037 mm
<b>PRODUCT WEIGHT</b>	820 kg
<b>CERTIFICATIONS</b>	CE UkrSEPRO Safety requirements: IEC/EN 61800-5 UL File No.: E134360 CUL EAC UL Category Control No.: NMMS, NMMS7 RoHS, ISO 9001 Specification for general requirements: IEC/EN 61800-2 IEC/EN 61800-3 C-Tick UL

<b>FEATURES</b>	Temperature-controlled fan Externally accessible fan
<b>10.2.2 CORROSION RESISTANCE</b>	Meets the product standard's requirements.
<b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>	Meets the product standard's requirements.
<b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>	Meets the product standard's requirements.
<b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b>	Meets the product standard's requirements.
<b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>	Meets the product standard's requirements.
<b>10.2.5 LIFTING</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.2.6 MECHANICAL IMPACT</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.2.7 INSCRIPTIONS</b>	Meets the product standard's requirements.
<b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>	Meets the product standard's requirements.
<b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>	Is the panel builder's responsibility.
<b>FITTED WITH:</b>	Brake chopper Internal DC link DC link choke Additional PCB protection IGBT inverter Radio interference suppression filter Multi-line graphic display Breaking resistance Control unit PC connection

<b>MCAD MODEL</b>	<a href="#">dg1_18.dwg</a> <a href="#">dg1_18.stp</a>
	<a href="#">eaton-profinet-de1-dc1-da1-dg1-dm1-dx1-mn040062-en-en.pdf</a>

<b>POLLUTION DEGREE</b>	2
<b>CLIMATIC PROOFING</b>	< 95 average relative humidity (RH), no condensation, no corrosion
<b>CONNECTION TO SMARTWIRE-DT</b>	In conjunction with DXG-NET-SWD SmartWire DT module Yes
<b>OPERATING MODE</b>	Torque regulation Sensorless vector control (SLV) U/f control Speed control with slip compensation
<b>FRAME SIZE</b>	FS8
<b>AIR VOLUME CAPACITY</b>	2800 m³/h
<b>ALTITUDE</b>	Max. 1000 m Above 1000 m with 1 % derating per 100 m Max. 2000 m
<b>ENVIRONMENTAL CLASS</b>	3C2, 3S2 (Air quality)
<b>APPLICATION IN DOMESTIC AND COMMERCIAL AREA PERMITTED</b>	Yes
<b>MAINS SWITCH-ON FREQUENCY</b>	Maximum of one time every 60 seconds
<b>APPLICATION IN INDUSTRIAL AREA PERMITTED</b>	Yes
<b>AMBIENT OPERATING TEMPERATURE - MAX</b>	50 °C
<b>AMBIENT OPERATING TEMPERATURE - MIN</b>	-10 °C
<b>AMBIENT OPERATING TEMPERATURE AT 150% OVERLOAD - MAX</b>	40 °C
<b>AMBIENT OPERATING TEMPERATURE AT 150% OVERLOAD - MIN</b>	-10 °C
<b>AMBIENT STORAGE TEMPERATURE - MAX</b>	70 °C
<b>AMBIENT STORAGE TEMPERATURE - MIN</b>	-40 °C
<b>APPARENT POWER AT 600 V</b>	852.2 kVA
<b>APPARENT POWER AT 690 V</b>	980 kVA

<b>MOUNTING POSITION</b>	Vertical
<b>RATED CONDITIONAL SHORT-CIRCUIT CURRENT (IQ)</b>	65 kA
<b>RELATIVE SYMMETRIC NET FREQUENCY TOLERANCE</b>	10 %
<b>RELATIVE SYMMETRIC NET VOLTAGE TOLERANCE</b>	10 %
<b>PROTECTION</b>	Finger and back-of-hand proof, Protection against direct contact (BGV A3, VBG4)
<b>RATED OPERATIONAL POWER AT 525 V, 50 HZ</b>	500 kW
<b>RATED OPERATIONAL POWER AT 525 V, 50 HZ, 110% OVERLOAD</b>	560 kW
<b>RATED OPERATIONAL POWER AT 600 V, 50 HZ</b>	560 kW
<b>RATED OPERATIONAL POWER AT 600 V, 50 HZ, 110% OVERLOAD</b>	630 kW
<b>RESOLUTION</b>	0.01 Hz (Frequency resolution, setpoint value)
<b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS</b>	291 W
<b>SWITCH-ON THRESHOLD FOR THE BRAKING TRANSISTOR</b>	1050 VDC
<b>VOLTAGE RATING - MAX</b>	690 VAC
<b>OVERVOLTAGE CATEGORY</b>	III
<b>COMMUNICATION INTERFACE</b>	SmartWire-DT, optional DeviceNet, optional Ethernet IP, built in Modbus RTU, built in Modbus TCP, built in BACnet MS/TP, built in CANopen®, optional PROFIBUS, optional
<b>CONVERTER TYPE</b>	U converter
<b>DEGREE OF PROTECTION</b>	IP00 NEMA Other
<b>PROTOCOL</b>	BACnet CAN DeviceNet

	EtherNet/IP MODBUS Other bus systems PROFIBUS PROFINET IO TCP/IP
<b>ASSIGNED MOTOR CURRENT IM AT 525 V, 50 HZ, 110% OVERLOAD</b>	770 A
<b>ASSIGNED MOTOR CURRENT IM AT 525 V, 50 HZ, 150% OVERLOAD</b>	720 A
<b>ASSIGNED MOTOR CURRENT IM AT 600 V, 50 HZ, 110% OVERLOAD</b>	765 A
<b>ASSIGNED MOTOR CURRENT IM AT 600 V, 50 HZ, 150% OVERLOAD</b>	680 A
<b>ASSIGNED MOTOR CURRENT IM AT 690 V, 60 HZ, 110% OVERLOAD</b>	810 A
<b>ASSIGNED MOTOR CURRENT IM AT 690 V, 60 HZ, 150% OVERLOAD</b>	729 A
<b>SYSTEM CONFIGURATION TYPE</b>	TN-S, TN-C, TN-C-S, TT, IT
<b>ELECTROMAGNETIC COMPATIBILITY</b>	1st and 2nd environments (according to EN 61800-3)
<b>ASSIGNED MOTOR POWER AT 690 V, 60 HZ</b>	900 HP
<b>ASSIGNED MOTOR POWER AT 690 V, 60 HZ, 110% OVERLOAD</b>	1000 HP
<b>BRAKING RESISTANCE</b>	2.5 $\Omega$
<b>EQUIPMENT HEAT DISSIPATION, CURRENT- DEPENDENT PVID</b>	16617 W
<b>INPUT CURRENT ILN AT 110% OVERLOAD</b>	813 A
<b>INPUT CURRENT ILN AT 150% OVERLOAD</b>	739 A
<b>MAINS CURRENT DISTORTION</b>	28 %
<b>CURRENT LIMITATION</b>	0.1 - 2 x IH (CT), motor, main circuit
<b>NUMBER OF SLOTS</b>	2 (expansion)
<b>BRAKING TORQUE</b>	Max. 30 % MN, Standard - Main circuit Adjustable to 150 %, DC -

	Main circuit Max. 100 % of rated operational current $I_e$ with external braking resistor - Main circuit Adjustable to 150 % ( $I/I_e$ ), DC - Main circuit
<b>CABLE LENGTH</b>	$C3 \leq 10$ m, Radio interference level, maximum motor cable length 200 m, screened, maximum permissible, Motor feeder
<b>FUNCTIONS</b>	4-quadrant operation possible
<b>OUTPUT VOLTAGE (U2)</b>	690 V AC, 3-phase 600 V AC, 3-phase
<b>NUMBER OF INPUTS (ANALOG)</b>	2
<b>NUMBER OF INPUTS (DIGITAL)</b>	8
<b>RADIO INTERFERENCE CLASS</b>	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
<b>NUMBER OF OUTPUTS (DIGITAL)</b>	1
<b>STARTING CURRENT - MAX</b>	200 %, $I_H$ , max. starting current (High Overload), For 2 seconds every 20 seconds, Power section
<b>NUMBER OF PHASES (INPUT)</b>	3
<b>NUMBER OF RELAY OUTPUTS</b>	3 (parameterizable, 2 changeover contacts and 1 N/O, 6 A (240 V AC) / 6 A (24 V DC))
<b>NUMBER OF PHASES (OUTPUT)</b>	3

<b>RATED CONTROL SUPPLY VOLTAGE</b>	10 V DC (Us, max. 10 mA)
<b>EFFICIENCY</b>	98.1 % ( $\eta$ )
<b>RATED CONTROL VOLTAGE (UC)</b>	24 V DC (external, max. 250 mA options incl.)
<b>SUPPLY FREQUENCY</b>	50/60 Hz
<b>MAINS VOLTAGE - MAX</b>	600 V
<b>MAINS VOLTAGE - MIN</b>	525 V
<b>NOMINAL OUTPUT CURRENT I2N</b>	820 A
<b>NUMBER OF HW-INTERFACES (INDUSTRIAL ETHERNET)</b>	1
<b>NUMBER OF HW-INTERFACES (OTHER)</b>	1
<b>NUMBER OF HW-INTERFACES (PARALLEL)</b>	0
<b>NUMBER OF HW-INTERFACES (RS-232)</b>	0
<b>NUMBER OF HW-INTERFACES (RS-422)</b>	0
<b>NUMBER OF HW-INTERFACES (RS-485)</b>	1
<b>NUMBER OF HW-INTERFACES (SERIAL TTY)</b>	0
<b>NUMBER OF HW-INTERFACES (USB)</b>	0
<b>NUMBER OF INTERFACES (PROFINET)</b>	0
<b>NUMBER OF OUTPUTS (ANALOG)</b>	2
<b>OUTPUT AT LINEAR LOAD AT RATED OUTPUT VOLTAGE - MAX</b>	485 kW
<b>OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX</b>	597 kW
<b>OUTPUT FREQUENCY - MAX</b>	400 Hz
<b>OUTPUT FREQUENCY - MIN</b>	0 Hz
<b>OUTPUT VOLTAGE - MAX</b>	600 V
<b>OVERLOAD CURRENT IL AT 110% OVERLOAD</b>	902 A
<b>OVERLOAD CURRENT IL AT 150% OVERLOAD</b>	1125 A
<b>SHOCK RESISTANCE</b>	Mechanical, According to

	EN 61800-5-1, IEC/EN 60068-2-27 Storage and transportation: maximum 15 g, 11 ms (inside the packaging) UPS drop test (for weights inside the UPS frame)
<b>SUITABLE FOR</b>	Branch circuits, (UL/CSA)
<b>SWITCHING FREQUENCY</b>	2 kHz, 1.5 - 6 kHz adjustable, fPWM, Power section, Main circuit
<b>RATED OPERATIONAL VOLTAGE</b>	600 V AC, 3-phase 690 V AC, 3-phase
<b>SHORT-CIRCUIT PROTECTION RATING</b>	2 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring
<b>VIBRATION</b>	Resistance: 5 - 15.8 Hz, Amplitude 1 mm (peak) 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
<b>RATED FREQUENCY - MAX</b>	66 Hz
<b>RATED FREQUENCY - MIN</b>	45 Hz
<b>RATED OPERATIONAL CURRENT (IE) AT 110% OVERLOAD</b>	820 A
<b>RATED OPERATIONAL CURRENT (IE) AT 150% OVERLOAD</b>	750 A
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	750 A
<b>SAFETY FUNCTION/LEVEL</b>	STO (Safe Torque Off, SIL1, PLc Cat 1)



PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
:



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