

Eaton 9702-1002-00P

Eaton DG1 Variable frequency drive, 400 V AC, 3-phase, 2.2 A, 0.75 kW, IP21/NEMA1, Brake chopper, DC link choke

PRODUCT NAME	Eaton DG1 variable frequency drive
CATALOG NUMBER	9702-1002-00P
PRODUCT LENGTH/DEPTH	200.9 mm
PRODUCT HEIGHT	327 mm
PRODUCT WIDTH	153 mm
PRODUCT WEIGHT	6.7 kg
CERTIFICATIONS	CE Certified by UL for use in Canada IEC/EN61800-3 EAC UL File No.: E134360 IEC/EN 61800-3 UL508 IEC/EN61800-5 CSA-C22.2 No. 274-13 UkrSEPRO UL report applies to both US and Canada RoHS, ISO 9001 C-Tick UL Category Control No.: NMMS, NMMS7 Safety requirements: IEC/EN 61800-5 Specification for general requirements: IEC/EN 61800-2 CUL UL
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

PRODUCT CATEGORY	Variable frequency drives
FEATURES	Tool-less swapping of fan Temperature-controlled fan Parameterization: Fieldbus Parameterization: Keypad Parameterization: Power Xpert inControl
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.

eaton-profinet-de1-dc1-da1-dg1-dm1-dx1-mn040062-en-en.pdf
eaton-frequency-inverter-dg1-dimensions.eps
eaton-frequency-inverter-dg1-3d-drawing.eps

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:	Additional PCB protection Internal DC link IGBT inverter PC connection Breaking resistance Multi-line graphic display Control unit Radio interference suppression filter Brake chopper DC link choke
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	Sensorless vector control

	(SLV) U/f control Speed control with slip compensation Torque regulation
FRAME SIZE	FS1
AIR VOLUME CAPACITY	24 m ³ /h
ALTITUDE	Max. 1000 m Max. 2000 m for Corner Grounded TN Systems Above 1000 m with 1 % derating per 100 m Max. 3000 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	50 °C
AMBIENT OPERATING TEMPERATURE AT 150% OVERLOAD - MIN	-30 °C
AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
APPARENT POWER AT 400 V	2.3 kVA
APPARENT POWER AT 480 V	2.9 kVA
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 110% OVERLOAD	2.6 A
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 150% OVERLOAD	1.9 A
MOUNTING POSITION	Vertical
RATED CONDITIONAL	100 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)
HEAT DISSIPATION DETAILS	Operation (with 150 % overload), allow for derating
RATED OPERATIONAL POWER AT 500 V, 50 HZ, 3-PHASE, 110% OVERLOAD	1.5 kW
RESOLUTION	0.01 Hz (Frequency resolution, setpoint value)
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	15.1 W
SWITCH-ON THRESHOLD FOR THE BRAKING TRANSISTOR	850 VDC
VOLTAGE RATING - MAX	500 VAC
OVERVOLTAGE CATEGORY	III
COMMUNICATION INTERFACE	BACnet MS/TP, built in Ethernet IP, built in Modbus TCP, built in CANopen®, optional Modbus RTU, built in PROFIBUS, optional DeviceNet, optional SmartWire-DT, optional
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP21 NEMA 1
PROTOCOL	CAN BACnet MODBUS PROFINET IO Other bus systems TCP/IP DeviceNet PROFIBUS EtherNet/IP

ASSIGNED MOTOR CURRENT IM AT 440 - 480 V, 60 HZ, 150% OVERLOAD	2.1 A
ASSIGNED MOTOR CURRENT IM AT 440/480 V, 60 HZ, 110% OVERLOAD	3 A
ASSIGNED MOTOR CURRENT IM AT 500 V, 50 HZ, 110% OVERLOAD	2.9 A
ASSIGNED MOTOR CURRENT IM AT 500 V, 50 HZ, 150% OVERLOAD	2.1 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, 3-PHASE	1 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE, 110 % OVERLOAD	1.5 HP
BRAKING RESISTANCE	63 Ω
EQUIPMENT HEAT DISSIPATION, CURRENT- DEPENDENT PVID	59 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT- DEPENDENT PVID	0 W
INPUT CURRENT ILN AT 110% OVERLOAD	3.1 A
INPUT CURRENT ILN AT 150% OVERLOAD	2 A
MAINS CURRENT DISTORTION	35.3 %
CURRENT LIMITATION	0.1 - 2 x IH (CT), motor, main circuit
NUMBER OF SLOTS	2 (expansion)
BRAKING TORQUE	Max. 30 % MN, Standard - Main circuit Adjustable to 150 % (I/Ie), DC - Main circuit Adjustable to 150 %, DC - Main circuit Max. 100 % of rated

	operational current I_e with external braking resistor - Main circuit
CABLE LENGTH	100 m, screened, maximum permissible, Motor feeder C2 $\leq$ 10 m, Radio interference level, maximum motor cable length C3 $\leq$ 50 m, Radio interference level, maximum motor cable length
FUNCTIONS	4-quadrant operation possible
OUTPUT VOLTAGE (U2)	400 V AC, 3-phase 500 V AC, 3-phase 480 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 %, I_H , 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	3

(OUTPUT)	
POWER CONSUMPTION	59 W
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
LEAKAGE CURRENT AT GROUND IPE - MAX	2.9 mA
MAINS VOLTAGE - MAX	500 V
MAINS VOLTAGE - MIN	380 V
NOMINAL OUTPUT CURRENT I2N	2.2 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	0.75 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	1.1 kW
OUTPUT FREQUENCY - MAX	400 Hz
OUTPUT FREQUENCY - MIN	0 Hz
OUTPUT VOLTAGE - MAX	500 V

OVERLOAD CURRENT IL AT 110% OVERLOAD	3.63 A
OVERLOAD CURRENT IL AT 150% OVERLOAD	3.3 A
SHOCK RESISTANCE	Storage and transportation: maximum 15 g, 11 ms (inside the packaging) Mechanical, According to EN 61800-5-1, IEC/EN 60068-2-27 UPS drop test (for weights inside the UPS frame)
SUITABLE FOR	Branch circuits, (UL/CSA)
SWITCHING FREQUENCY	4 kHz, 1 - 12 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	10 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	3.3 A
RATED OPERATIONAL CURRENT (IE) AT 150% OVERLOAD	2.2 A
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	2.2 A
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 3-PHASE	0.75 kW
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 3-PHASE, 110% OVERLOAD	1.1 kW

RATED OPERATIONAL POWER AT 500 V, 50 HZ, 3-PHASE	1.1 kW
SAFETY FUNCTION/LEVEL	STO (Safe Torque Off, SIL1, PLc Cat 1)
HEAT DISSIPATION AT CURRENT/SPEED	26 W at 25% current and 0% speed 28 W at 100% current and 50% speed 33 W at 100% current and 0% speed 35 W at 25% current and 50% speed 38 W at 50% current and 50% speed 42 W at 50% current and 90% speed 47 W at 50% current and 0% speed 51 W at 100% current and 90% speed

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
:



Eaton House
30 Pembroke Road
Dublin 4,
Eaton.com

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