Eaton 9701-4006-00P

Eaton DG1 Variable frequency drive, 230 V AC, 3-phase, 75 A, 22 kW, IP21/NEMA1, Brake chopper, DC link choke

PRODUCT NAME	Eaton DG1 variable frequency drive
CATALOG NUMBER	9701-4006-00P
PRODUCT LENGTH/DEPTH	294 mm
PRODUCT HEIGHT	630 mm
PRODUCT WIDTH	237.7 mm
PRODUCT WEIGHT	34.4 kg
CERTIFICATIONS	UL report applies to both US and Canada C-Tick IEC/EN61800-3 IEC/EN 61800-3 Safety requirements: IEC/EN 61800-5 UL Certified by UL for use in Canada UL Category Control No.: NMMS, NMMS7 CUL RoHS, ISO 9001 IEC/EN61800-5 UkrSEPRO CSA-C22.2 No. 274-13 EAC UL File No.: E134360 CE Specification for general requirements: IEC/EN 61800-2 UL508
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

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	available upon request.

PRODUCT CATEGORY	Variable frequency drives
FEATURES	Temperature-controlled fan Externally accessible 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-004.eps eaton-frequency-inverter-dg1-3d-drawing-004.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:	IGBT inverter Brake chopper Control unit PC connection Breaking resistance DC link choke Additional PCB protection Multi-line graphic display Radio interference suppression filter Internal DC link
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	Sensorless vector control

	(SLV) U/f control Speed control with slip compensation Torque regulation
FRAME SIZE	FS4
AIR VOLUME CAPACITY	260 m^3/h
ALTITUDE	Max. 1000 m Max. 3000 m Above 1000 m with 1 % derating per 100 m Max. 2000 m for Corner Grounded TN Systems
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 230 V	35.1 kVA
APPARENT POWER AT 240 V	36.6 kVA
ASSIGNED MOTOR CURRENT IM AT 220 - 240 V, 60 HZ, 150% OVERLOAD	68 A
ASSIGNED MOTOR CURRENT IM AT 230 V, 50 HZ, 110% OVERLOAD	71 A
ASSIGNED MOTOR	71 A

CURRENT IM AT 230 V, 50 HZ, 150% OVERLOAD	
ASSIGNED MOTOR CURRENT IM AT 230 V, 60 HZ, 110% OVERLOAD	80 A
MOUNTING POSITION	Vertical
RATED CONDITIONAL SHORT-CIRCUIT CURRENT (IQ)	100 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)
HEAT DISSIPATION DETAILS	Operation (with 150 % overload), allow for derating
RESOLUTION	0.01 Hz (Frequency resolution, setpoint value)
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	17.1 W
SWITCH-ON THRESHOLD FOR THE BRAKING TRANSISTOR	425 VDC
VOLTAGE RATING - MAX	240 VAC
OVERVOLTAGE CATEGORY	III
COMMUNICATION INTERFACE	BACnet MS/TP, built in Ethernet IP, built in CANopen®, optional DeviceNet, optional PROFIBUS, optional Modbus RTU, built in Modbus TCP, built in SmartWire-DT, optional
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP21 NEMA 1
PROTOCOL	DeviceNet BACnet CAN PROFIBUS TCP/IP

	Other bus systems PROFINET IO EtherNet/IP MODBUS
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	25 HP
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 230/240 V, 60 HZ, 3-PHASE, 110 % OVERLOAD	30 HP
BRAKING RESISTANCE	3.3 Ω
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	830 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
INPUT CURRENT ILN AT 110% OVERLOAD	78 A
INPUT CURRENT ILN AT 150% OVERLOAD	69.4 A
MAINS CURRENT DISTORTION	25.6 %
CURRENT LIMITATION	0.1 - 2 x IH (CT), motor, main circuit
NUMBER OF SLOTS	2 (expansion)
BRAKING TORQUE	Adjustable to 150 % (I/Ie), DC - Main circuit Max. 30 % MN, Standard - Main circuit Adjustable to 150 %, DC - Main circuit Max. 100 % of rated operational current Ie with external braking resistor - Main circuit
CABLE LENGTH	C3 ≤ 50 m, Radio interference level, maximum motor cable length 200 m, screened, maximum permissible, Motor feeder

	C2 ≤ 10 m, Radio interference level, maximum motor cable length
FUNCTIONS	4-quadrant operation possible
OUTPUT VOLTAGE (U2)	230 V AC, 3-phase 240 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. Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments 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
POWER CONSUMPTION	830 W
RATED CONTROL SUPPLY VOLTAGE	10 V DC (Us, max. 10 mA)
EFFICIENCY	97.4 % (η)
RATED CONTROL VOLTAGE (UC)	24 V DC (external, max. 250 mA options incl.)
SUPPLY FREQUENCY	50/60 Hz
LEAKAGE CURRENT AT	6.2 mA

GROUND IPE - MAX	
MAINS VOLTAGE - MAX	240 V
MAINS VOLTAGE - MIN	208 V
NOMINAL OUTPUT CURRENT I2N	75 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	18.5 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	22 kW
OUTPUT FREQUENCY - MAX	400 Hz
OUTPUT FREQUENCY - MIN	0 Hz
OUTPUT VOLTAGE - MAX	240 V
OVERLOAD CURRENT IL AT 110% OVERLOAD	96.8 A
OVERLOAD CURRENT IL AT 150% OVERLOAD	112.5 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	3.6 kHz, 1 - 10 kHz adjustable, fPWM, Power section, Main circuit
RATED OPERATIONAL VOLTAGE	240 V AC, 3-phase 230 V AC, 3-phase
SHORT-CIRCUIT PROTECTION RATING	110 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: 5 - 15.8 Hz, Amplitude 1 mm (peak) 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	88 A
RATED OPERATIONAL CURRENT (IE) AT 150% OVERLOAD	75 A
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	75 A
RATED OPERATIONAL POWER AT 220/230 V, 50 HZ, 1-PHASE	22 kW
RATED OPERATIONAL POWER AT 220/230 V, 50 HZ, 3-PHASE, 110% OVERLOAD	22 kW
SAFETY FUNCTION/LEVEL	STO (Safe Torque Off, SIL1, PLc Cat 1)
HEAT DISSIPATION AT CURRENT/SPEED	261 W at 25% current and 0% speed 295 W at 25% current and 50% speed 312 W at 100% current and 50% speed 401 W at 50% current and 50% speed 447 W at 50% current and 90% speed

	596 W at 100% current and 0% speed 716 W at 50% current and 0% speed 842 W at 100% current and 90% speed

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
:

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