Eaton 9702-4004-00P

Eaton DG1 Variable frequency drive, 400 V AC, 3-phase, 61 A, 30 kW, IP21/NEMA1, DC link choke

PRODUCT NAME	Eaton DG1 variable frequency drive
CATALOG NUMBER	9702-4004-00P
PRODUCT LENGTH/DEPTH	294 mm
PRODUCT HEIGHT	630 mm
PRODUCT WIDTH	237.7 mm
PRODUCT WEIGHT	35.2 kg
CERTIFICATIONS	C-Tick IEC/EN 61800-3 UL Category Control No.: NMMS, NMMS7 UL File No.: E134360 CSA-C22.2 No. 274-13 UL report applies to both US and Canada Certified by UL for use in Canada IEC/EN61800-3 IEC/EN61800-5 RoHS, ISO 9001 EAC Specification for general requirements: IEC/EN 61800-2 CUL CE Safety requirements: IEC/EN 61800-5 UL508 UkrSEPRO UL

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PRODUCT CATEGORY	Variable frequency drives
FEATURES	Externally accessible 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-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:	Radio interference suppression filter IGBT inverter Additional PCB protection PC connection Control unit Internal DC link DC link choke Multi-line graphic display
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) Speed control with slip

	compensation Torque regulation U/f control
FRAME SIZE	FS4
AIR VOLUME CAPACITY	260 m^3/h
ALTITUDE	Above 1000 m with 1 % derating per 100 m Max. 1000 m Max. 2000 m for Corner Grounded TN Systems 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	49.9 kVA
APPARENT POWER AT 480 V	62.4 kVA
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 110% OVERLOAD	68 A
ASSIGNED MOTOR CURRENT IM AT 400 V, 50 HZ, 150% OVERLOAD	55.2 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
RATED OPERATIONAL POWER AT 500 V, 50 HZ, 3-PHASE, 110% OVERLOAD	45 kW
RESOLUTION	0.01 Hz (Frequency resolution, setpoint value)
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	24.42 W
SWITCH-ON THRESHOLD FOR THE BRAKING TRANSISTOR	850 VDC
VOLTAGE RATING - MAX	500 VAC
OVERVOLTAGE CATEGORY	III
COMMUNICATION INTERFACE	SmartWire-DT, optional DeviceNet, optional Modbus TCP, built in Ethernet IP, built in PROFIBUS, optional CANopen®, optional BACnet MS/TP, built in Modbus RTU, built in
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP21 NEMA 1
PROTOCOL	BACnet Other bus systems CAN TCP/IP PROFINET IO MODBUS PROFIBUS DeviceNet EtherNet/IP
ASSIGNED MOTOR CURRENT IM AT 440 - 480	52 A

V, 60 HZ, 150% OVERLOAD	
ASSIGNED MOTOR CURRENT IM AT 440/480 V, 60 HZ, 110% OVERLOAD	65 A
ASSIGNED MOTOR CURRENT IM AT 500 V, 50 HZ, 110% OVERLOAD	65 A
ASSIGNED MOTOR CURRENT IM AT 500 V, 50 HZ, 150% OVERLOAD	54 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	40 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE, 110 % OVERLOAD	50 HP
BRAKING RESISTANCE	6.5 Ω
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	758 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
INPUT CURRENT ILN AT 110% OVERLOAD	65.7 A
INPUT CURRENT ILN AT 150% OVERLOAD	55.7 A
MAINS CURRENT DISTORTION	31.5 %
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. 100 % of rated operational current Ie with external braking resistor - Main circuit Max. 30 % MN, Standard - Main circuit Adjustable to 150 %, DC -

	Main circuit
CABLE LENGTH	200 m, screened, maximum permissible, Motor feeder C2 ≤ 10 m, Radio interference level, maximum motor cable length C3 ≤ 50 m, Radio interference level, maximum motor cable length
OUTPUT VOLTAGE (U2)	480 V AC, 3-phase 400 V AC, 3-phase 500 V AC, 3-phase
NUMBER OF INPUTS (ANALOG)	2
NUMBER OF INPUTS (DIGITAL)	8
RADIO INTERFERENCE CLASS	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 C2, C3: depending on the motor cable length, the connected load, and ambient conditions. External radio interference suppression filters (optional) may be necessary.
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	758 W
RATED CONTROL SUPPLY VOLTAGE	10 V DC (Us, max. 10 mA)

EFFICIENCY	98.3 % (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	8.5 mA
MAINS VOLTAGE - MAX	500 V
MAINS VOLTAGE - MIN	380 V
NOMINAL OUTPUT CURRENT I2N	61 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	30 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	37 kW
OUTPUT FREQUENCY - MAX	400 Hz
OUTPUT FREQUENCY - MIN	0 Hz
OUTPUT VOLTAGE - MAX	500 V
OVERLOAD CURRENT IL AT 110% OVERLOAD	79.2 A
OVERLOAD CURRENT IL AT 150% OVERLOAD	91.5 A
SHOCK RESISTANCE	Mechanical, According to

	EN 61800-5-1, IEC/EN 60068-2-27 UPS drop test (for weights inside the UPS frame) Storage and transportation: maximum 15 g, 11 ms (inside the packaging)
SUITABLE FOR	Branch circuits, (UL/CSA)
SWITCHING FREQUENCY	3.6 kHz, 1 - 10 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	100 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	72 A
RATED OPERATIONAL CURRENT (IE) AT 150% OVERLOAD	61 A
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	61 A
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 3-PHASE	30 kW
RATED OPERATIONAL POWER AT 380/400 V, 50 HZ, 3-PHASE, 110% OVERLOAD	37 kW
RATED OPERATIONAL POWER AT 500 V, 50 HZ, 3-PHASE	37 kW
SAFETY FUNCTION/LEVEL	STO (Safe Torque Off, SIL1, PLc Cat 1)

HEAT DISSIPATION AT CURRENT/SPEED	169 W at 25% current and 0% speed 280 W at 100% current and 50% speed 314 W at 25% current and 50% speed 414 W at 50% current and 50% speed 445 W at 50% current and 90% speed 479 W at 100% current and 0% speed 711 W at 50% current and 0% speed 777 W at 100% current and 90% speed

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
:	

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