



**Variable frequency drive, 3-phase 230 V, 75A, EMC filter, degree of protection IP21**

**Part no. DG1-32075FN-C21C**  
**Article no. 9701-4008-00P**  
**Catalog No. DG1-32075FN-C21C**

## Delivery program

Product range			Variable frequency drives
Part group reference (e.g. DIL)			DG1
Rated operational voltage	$U_e$		230 V AC, 3-phase 240 V AC, 3-phase
Output voltage with $V_e$	$U_2$		230 V AC, 3-phase 240 V AC, 3-phase
Mains voltage (50/60Hz)	$U_{LN}$	V	208 (-15%) - 240 (+10%)
<b>Rated operational current</b>			
At 150% overload	$I_e$	A	75
Note			Rated operational current for a switching frequency of 1 - 10 kHz and an ambient temperature of +50 °C for a 150% overload and +40 °C for a 110% overload
At 110% overload	$I_e$	A	88
Note			Overload cycle for 60 s every 600 s
<b>Assigned motor rating</b>			
Note			for normal internally and externally ventilated 4 pole, three-phase asynchronous motors with $1500 \text{ rpm}^{-1}$ at 50 Hz or $1800 \text{ min}^{-1}$ at 60 Hz
Note			Overload cycle for 60 s every 600 s
Note			at 230 V, 50 Hz
150 % Overload	P	kW	22
110 % Overload	P	kW	22
150 % Overload	$I_M$	A	71
110 % Overload	$I_M$	A	71
Note			at 230 V, 60 Hz
150 % Overload	P	HP	25
110 % Overload	P	HP	30
150 % Overload	$I_M$	A	68
110 % Overload	$I_M$	A	80
Degree of Protection			IP21/NEMA1
Interface/field bus (built-in)			Modbus RTU, Modbus TCP, BACnet MS/TP, Ethernet IP
Fieldbus connection (optional)			PROFIBUS, i.V.: ProfiNet, CAN, SmartWire-DT, DeviceNet
Fitted with			Radio interference suppression filter Additional PCB protection Multi-line graphic display DC link choke
Frame size			FS4
Connection to SmartWire-DT			with SmartWire-DT module DXG-NET-SWD


## Technical data

<b>General</b>			
Standards			Specification for general requirements: IEC/EN 61800-2 EMC requirements: IEC/EN 61800-3 Safety requirements: IEC/EN 61800-5
Certifications			CE, UL, cUL, c-Tick, UkrSepro, EAC
Production quality			RoHS, ISO 9001
Climatic proofing	$\rho_w$	%	< 95%, average relative humidity (RH), non-condensing, non-corrosive
Air quality			3C2, 3S2

Ambient temperature			
operation (150 % overload)	θ	°C	-30 - +50 (max. +60 with 1 % derating per Kelvin temperature rise)
operation (110 % overload)	θ	°C	-30 - +40 (max. +55 mit 1 % Derating pro Kelvin Temperaturerhöhung)
Storage	θ	°C	-40 - +70
Overvoltage category			
III			
Pollution degree			
2			
Radio interference level			
Radio interference class (EMC)	C1, C2, C3, depending on the motor cable length, the connected load, and ambient conditions. External radio interference suppression filters (optional) may be necessary.		
Environment (EMC)	1st and 2nd environments		
maximum motor cable length	I	m	C2 ≤ 10 m C3 ≤ 50 m
Mechanical shock resistance			
EN 61800-5-1, EN 60068-2-27 UPS drop test (for weights inside the UPS frame) Storage and transportation: maximum 15 g, 11 ms (inside the packaging)			
Vibration			
EN 61800-5-1, EN 60068-2-6: 5 - 150 Hz Amplitude: 1 mm (peak) at 5 - 15.8 Hz Maximum acceleration amplitude: 1 g at 15.8 – 150 Hz			
Mounting position			
Vertical			
Altitude			
0 - 1000 m above sea level Above 1000 m: 1% derating for every 100 m max. 3000 m (2000 m for Corner Grounded TN Systems)			
Degree of Protection			
IP21/NEMA1			
Protection against direct contact			
BGV A3 (VBG4, finger- and back-of-hand proof)			

## Main circuit

Supply			
Rated operational voltage	$U_e$		230 V AC, 3-phase 240 V AC, 3-phase
Mains voltage (50/60Hz)	$U_{LN}$	V	208 (-15%) - 240 (+10%)
Input current (150% overload)	$I_{LN}$	A	69.4
Input current (110% overload)	$I_{LN}$	T	78
System configuration			
TN-S, TN-C, TN-C-S, TT, IT			
Supply frequency	$f_{LN}$	Hz	50/60
Frequency range	$f_{LN}$	Hz	45 - 66
Mains switch-on frequency			
Maximum of one time every 60 seconds			
Mains current distortion	THD	%	25.6
Rated conditional short-circuit current	$I_q$	kA	< 100
Power section			
Function			
Variable frequency drive with internal DC link, DC link choke and IGBT inverter			
Overload current (150% overload)	$I_L$	A	112.5
Overload current (110% overload)	$I_L$	A	96.8
max. starting current (High Overload)	$I_H$	%	200
Note about max. starting current			
for 2 seconds every 20 seconds			
Output voltage with $V_e$	$U_2$		230 V AC, 3-phase 240 V AC, 3-phase
Output Frequency	$f_2$	Hz	0 - 50/60 (max. 400)
Switching frequency	$f_{PWM}$	kHz	3.6 adjustable 1 - 10
Operation Mode			
U/f control Speed control with slip compensation sensorless vector control (SLV) Torque regulation			
Frequency resolution (setpoint value)	$\Delta f$	Hz	0.01
Rated operational current			
At 150% overload	$I_e$	A	75
At 110% overload	$I_e$	A	88
Note			
Rated operational current for a switching frequency of 1 - 10 kHz and an ambient temperature of +50 °C for a 150% overload and +40 °C for a 110% overload			
Motor current limit	I	A	0.1 - 2 x $I_H$ (CT)
Power loss			

Heat dissipation at rated operational current $I_e = 150\%$	$P_V$	W	689
Efficiency	$\eta$	%	97.4
Maximum leakage current to ground (PE) without motor	$I_{PE}$	mA	0
Fitted with			Radio interference suppression filter Additional PCB protection Multi-line graphic display DC link choke
Safety function			STO (Safe Torque Off, SIL1, PLc Cat 1)
Frame size			FS4
Motor feeder			
Note			for normal internally and externally ventilated 4 pole, three-phase asynchronous motors with $1500 \text{ rpm}^{-1}$ at 50 Hz or $1800 \text{ min}^{-1}$ at 60 Hz
Note			Overload cycle for 60 s every 600 s
Note			at 230 V, 50 Hz
150 % Overload	P	kW	22
110 % Overload	P	kW	22
Note			at 230 V, 60 Hz
150 % Overload	P	HP	25
110 % Overload	P	HP	30
maximum permissible cable length	l	m	screened: 200
Braking function			
Standard braking torque			max. 30 % $M_N$
DC braking torque			adjustable to 150 %
Braking torque with external braking resistance			Max. 100% of rated operational current $I_e$ with external braking resistor
minimum external braking resistance	$R_{min}$	$\Omega$	3.3
Switch-on threshold for the braking transistor	$U_{DC}$	V	425 V DC
DC braking	%	$I/I_e$	 150, adjustable

### Control section

External control voltage	$U_c$	V	24 V DC (max. 250 mA options incl.)
Reference voltage	$U_s$	V	10 V DC (max. 10 mA)
Analog inputs			2, parameterizable, 0 - 10 V DC, 2 - 10 V DC, -10 - +10 V DC, 0/4 - 20 mA
Analog outputs			2, parameterizable, 0 - 10 V, 0/4 - 20 mA
Digital inputs			8, parameterizable, max. 30 V DC
Digital outputs			1, parameterizable, 24 V DC
Relay outputs			3, parameterizable, 2 changeover contacts and 1 N/O, 6 A (240 VAC) / 6 A (24 VDC)
Interface/field bus (built-in)			Modbus RTU, Modbus TCP, BACnet MS/TP, Ethernet IP
Expansion slots			2

### Assigned switching and protective elements

Power Wiring			
IEC (Type B, gG), 150 %			NZMC1-A80
Safety device (110% overload)			NZMN1-S100
UL (Class CC or J)		A	110
150 % overload (CT/ $I_H$ , at 50 °C)			Integrated DC link choke, uk = 5%
110 % overload (VT/ $I_L$ , at 40 °C)			Integrated DC link choke, uk = 5%
Motor feeder			
150 % overload (CT/ $I_H$ , at 50 °C)			DX-LM3-080
110 % overload (VT/ $I_L$ , at 40 °C)			DX-LM3-100
150 % overload (CT/ $I_H$ , at 50 °C)			DX-SIN3-090
110 % overload (VT/ $I_L$ , at 40 °C)			DX-SIN3-090

### Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	75
Equipment heat dissipation, current-dependent	$P_{vid}$	W	689
Operating ambient temperature min.		°C	-30

Operating ambient temperature max.	°C	60
IEC/EN 61439 design verification		
10.2 Strength of materials and parts		
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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.
10.6 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 Insulation properties		
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.
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.

## Technical data ETIM 6.0

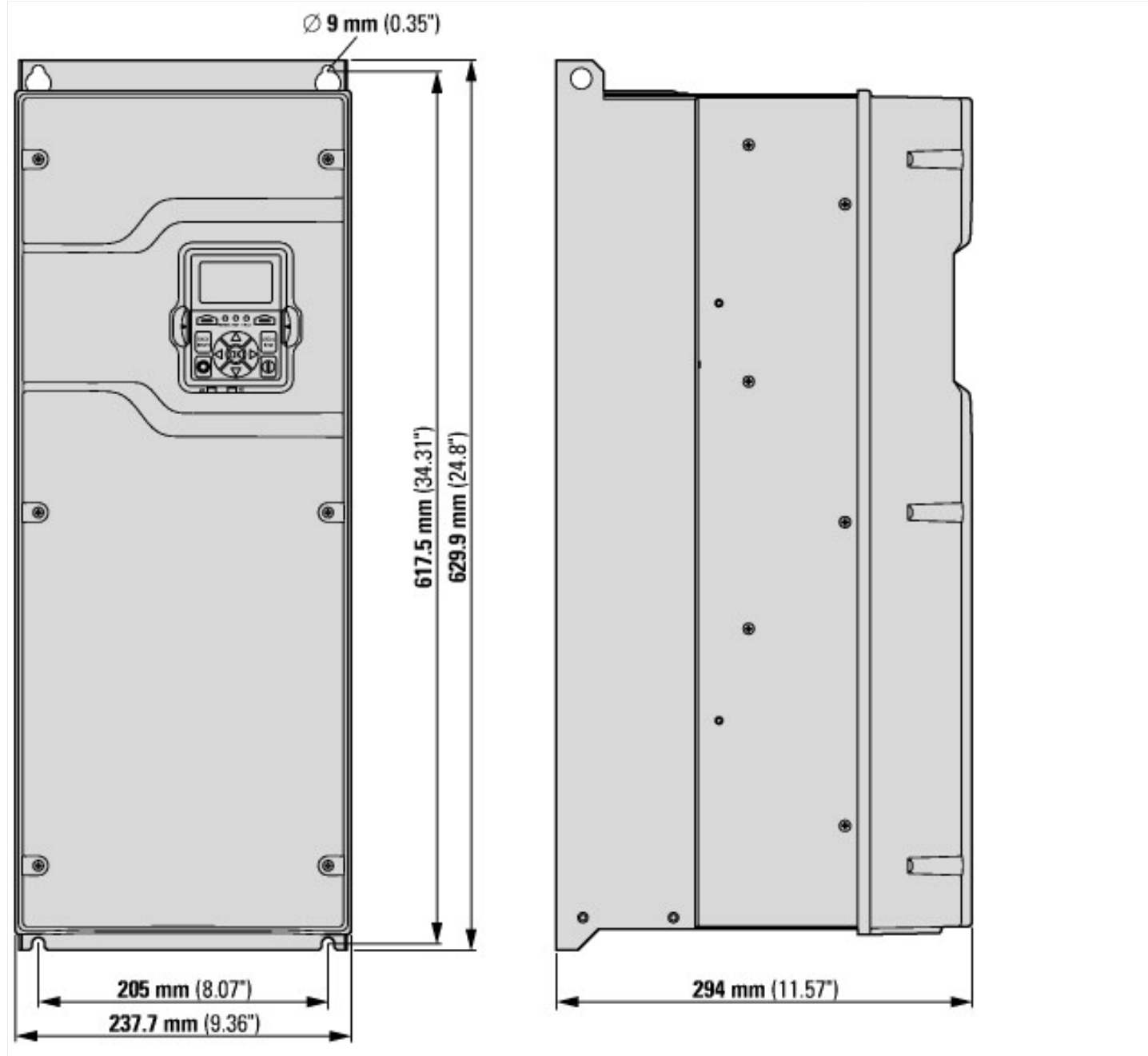
Low-voltage industrial components (EG000017) / Frequency converter =< 1 kV (EC001857)		
Electric engineering, automation, process control engineering / Electrical drive / Static frequency converter / Static frequency converter = < 1 kv (ecl@ss8.1-27-02-31-01 [AKE177011])		
Mains voltage	V	208 - 240
Mains frequency		50/60 Hz
Number of phases input		3
Number of phases output		3
Max. output frequency	Hz	400
Max. output voltage	V	240
Rated output current I <sub>2N</sub>	A	88
Max. output at quadratic load at rated output voltage	kW	22
Max. output at linear load at rated output voltage	kW	44
With control unit		Yes
Application in industrial area permitted		Yes
Application in domestic- and commercial area permitted		Yes
Supporting protocol for TCP/IP		Yes
Supporting protocol for PROFIBUS		Yes
Supporting protocol for CAN		Yes
Supporting protocol for INTERBUS		No
Supporting protocol for ASI		No
Supporting protocol for KNX		No
Supporting protocol for MODBUS		No
Supporting protocol for Data-Highway		No
Supporting protocol for DeviceNet		Yes
Supporting protocol for SUCONET		No
Supporting protocol for LON		No

Supporting protocol for PROFINET IO			Yes
Supporting protocol for PROFINET CBA			No
Supporting protocol for SERCOS			No
Supporting protocol for Foundation Fieldbus			No
Supporting protocol for EtherNet/IP			No
Supporting protocol for AS-Interface Safety at Work			No
Supporting protocol for DeviceNet Safety			No
Supporting protocol for INTERBUS-Safety			No
Supporting protocol for PROFIsafe			No
Supporting protocol for SafetyBUS p			No
Supporting protocol for other bus systems			Yes
Number of HW-interfaces industrial Ethernet			1
Number of HW-interfaces PROFINET			1
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 HW-interfaces parallel			0
Number of HW-interfaces other			1
With optical interface			No
With PC connection			Yes
Integrated breaking resistance			No
4-quadrant operation possible			Yes
Type of converter			U converter
Degree of protection (IP)			IP21
Height		mm	630
Width		mm	243
Depth		mm	290
Relative symmetric net frequency tolerance		%	10
Relative symmetric net current tolerance		%	10

## Approvals

Product Standards			UL508C, CSA-C22.2 No. 274-13; IEC/EN61800-3; IEC/EN61800-5; CE marking
UL File No.			E134360
UL Category Control No.			NMMS, NMMS7
CSA File No.			UL report applies to both US and Canada
North America Certification			UL listed, certified by UL for use in Canada
Suitable for			Branch circuits
Max. Voltage Rating			3~ 240 V AC IEC: TN-S UL/CSA: 'Y' (Solidly Grounded Wey)
Degree of Protection			IP21/NEMA1

## Dimensions



## Additional product information (links)

### MN040002 PowerXL DG1 Series VFD, Installation Manual

MN040002 PowerXL DG1 Serie VFD, Handbuch Installation - Deutsch	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040002_DE.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040002_DE.pdf</a>
MN040002 PowerXL DG1 Series VFD, Installation Manual - English	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040002_EN.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040002_EN.pdf</a>
MN040002 EFV PowerXL série DG1, Manuel d'installation - français	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040002_FR.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040002_FR.pdf</a>
MN040002 Serie VFD PowerXL DG1, Manuale di installazione - italiano	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040002_IT.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040002_IT.pdf</a>
MN040002 Napęd VFD PowerXL serii DG1, Podręcznik instalacji - polski	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040002_PL.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040002_PL.pdf</a>

### MN040004 PowerXL DG1 Series VFD, Application Manual

MN040004 PowerXL DG1 Serie VFD, Handbuch Applikation - Deutsch	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040004_DE.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040004_DE.pdf</a>
MN040004 EFV PowerXL série DG1, Manuel d'application - français	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040004_FR.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040004_FR.pdf</a>
MN040004 Serie VFD PowerXL DG1, Manuale applicativo - italiano	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040004_IT.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040004_IT.pdf</a>
MN040004 Napęd VFD PowerXL serii DG1, Podręcznik aplikacji - polski	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040004_PL.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040004_PL.pdf</a>
Documentation	<a href="http://www.eaton.eu/Europe/Electrical/ProductsServices/AutomationControl/SwitchingProtectingDrivingMotors/PowerXLfrequencydrives/DG1GeneralPurposeDrives/index.htm?wtredirect=www.eaton.eu/dg1#tabs-7">http://www.eaton.eu/Europe/Electrical/ProductsServices/AutomationControl/SwitchingProtectingDrivingMotors/PowerXLfrequencydrives/DG1GeneralPurposeDrives/index.htm?wtredirect=www.eaton.eu/dg1#tabs-7</a>

