DATASHEET - DA1-34072FB-B20C



Frequency inverter, 400 V AC, 3-phase, 72 A, 37 kW, IP20/NEMA 0, Radio interference suppression filter, Additional PCB protection, DC link choke, FS5 $\,$

Powering Business Worldwide*

6

Part no. DA1-34072FB-B20C Catalog No. 197497

Delivery program Product range Part group reference (e.g. DIL) Rated operational voltage Ue	Variable frequency drives DA1 400 V AC, 3-phase 480 V AC, 3-phase
Part group reference (e.g. DIL)	DA1 400 V AC, 3-phase 480 V AC, 3-phase
	400 V AC, 3-phase 480 V AC, 3-phase
Rated operational voltage	480 V AC, 3-phase
,	
Output voltage with $V_{\rm e}$ $U_{\rm 2}$	400 V AC, 3-phase 480 V AC, 3-phase
Mains voltage (50/60Hz) U _{LN} V	380 (-10%) - 480 (+10%)
Rated operational current	
At 150% overload I _e A	72
Note	Rated operational current at a switching frequency of 8 kHz and an ambient air temperature of +50 $^{\circ}\text{C}$
Assigned motor rating	
Note	for normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 $\rm rpm^{-1}$ at 50 Hz or 1800 $\rm min^{-1}$ at 60 Hz
Note	Overload cycle for 60 s every 600 s
Note	at 400 V, 50 Hz
150 % Overload P k	W 37
150 % Overload I _M A	72
Note	at 440 - 480 V, 60 Hz
150 % Overload P H	HP 50
150 % Overload I _M A	A 65
Degree of Protection	IP20/NEMA0
Interface/field bus (built-in)	OP-Bus (RS485)/Modbus RTU, CANopen®
Fieldbus connection (optional)	Ethernet IP DeviceNet PROFIBUS PROFINET Modbus-TCP EtherCAT SmartWire-DT
Fitted with	Radio interference suppression filter Brake chopper Additional PCB protection OLED display DC link choke
Parameterization	Keypad Fieldbus drivesConnect drivesConnect mobile (App)
Frame size	FS5
Connection to SmartWire-DT	yes in conjunction with DX-NET-SWD1 SmartWire DT module

Technical data

General			
Standards			General requirements: IEC/EN 61800-2 EMV requirements: IEC/EN 61800-3 Safety Requirements: IEC/EN 61800-5-1
Certifications			CE, UL, cUL, RCM, UkrSEPRO, EAC
Production quality			RoHS, ISO 9001
Climatic proofing	ρ_{W}	%	< 95%, average relative humidity (RH), non-condensing, non-corrosive
Air quality			3C2, 3S2

Ambient temperature			
Operating ambient temperature min.		°C	-10
Operating ambient temperature max.		°C	+ 50
			operation (with 150 % overload)
Storage	9	°C	-40 - +60
Radio interference level			
Radio interference class (EMC)			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 as per EN 61800-3
maximum motor cable length	I	m	C2 ≤ 5 m C3 ≤ 25 m
Mounting position			Vertical
Altitude		m	0 - 1000 m above sea level Above 1000 m: 1% derating for every 100 m max. 4000 m
Degree of Protection			IP20/NEMA0
Protection against direct contact			BGV A3 (VBG4, finger- and back-of-hand proof)
Main circuit			
Supply			
Rated operational voltage	U _e		400 V AC, 3-phase 480 V AC, 3-phase
Mains voltage (50/60Hz)	U_{LN}	V	380 (-10%) - 480 (+10%)
Input current (150% overload)	I _{LN}	Α	76.4
System configuration			AC supply systems with earthed center point
Supply frequency	f_{LN}	Hz	50/60
Frequency range	f_{LN}	Hz	48 - 62
Mains switch-on frequency			Maximum of one time every 30 seconds
Power section			
Function			Variable frequency drive with internal DC link and IGBT inverter
Overload current (150% overload)	IL	Α	105
max. starting current (High Overload)	I _H	%	200
Note about max. starting current			for 4 seconds every 40 seconds
Output voltage with V _e	U ₂		400 V AC, 3-phase 480 V AC, 3-phase
Output Frequency	f ₂	Hz	0 - 50/60 (max. 500)
Switching frequency	f _{PWM}	kHz	8 adjustable 4 - 24 (audible)
Operation Mode			U/f control Speed control with slip compensation sensorless vector control (SLV) optional: Vector control with feedback (CLV)
Frequency resolution (setpoint value)	Δf	Hz	0.1
Rated operational current			
At 150% overload	l _e	Α	72
Note			Rated operational current at a switching frequency of 8 kHz and an ambient air temperature of +50 $^{\circ}\text{C}$
Power loss			
Heat dissipation at rated operational current $\rm I_{\rm e}$ =150 $\%$	P_{V}	W	1050
Efficiency	η	%	97.2
Maximum leakage current to ground (PE) without motor	I _{PE}	mA	0.49
Fitted with			Radio interference suppression filter Brake chopper Additional PCB protection OLED display DC link choke
Safety function			STO (Safe Torque Off, SIL2, PLd Cat 3)
Frame size			FS5
Motor feeder			
Note			for normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 rpm ⁻¹ at 50 Hz or 1800 min ⁻¹ at 60 Hz
Note			Overload cycle for 60 s every 600 s

Note			at 400 V, 50 Hz
150 % Overload	Р	kW	37
Note	•	KVV	at 440 - 480 V, 60 Hz
150 % Overload	Р	НР	50
maximum permissible cable length		m	screened: 100
mammam permeasio casto tonga.	·		screened, with motor choke: 200 unscreened: 150
			unscreened, with motor choke: 300
Apparent power			
Apparent power at rated operation 400 V	S	kVA	49.88
Apparent power at rated operation 480 V	S	kVA	59.86
Braking function			
Standard braking torque			max. 30 % MN
DC braking torque			adjustable to 100 %
Braking torque with external braking resistance			Max. 100% of rated operational current $\rm I_{\rm e}$ with external braking resistor
minimum external braking resistance	R _{min}	Ω	12
Switch-on threshold for the braking transistor	U _{DC}	V	780 V DC
Control section			
External control voltage	U _c	V	24 V DC (max. 100 mA)
Reference voltage	U _s	V	10 V DC (max. 10 mA)
Analog inputs			2, parameterizable, 0 - 10 V DC, 0/4 - 20 mA
Analog outputs			2, parameterizable, 0 - 10 V, 0/4 - 20 mA
Digital inputs			3, parameterizable, max. 30 VDC, max. 5 for non-parameterized analog inputs
Digital outputs			2, parameterizable, 24 V DC
Relay outputs			2, parameterizable, 1 N/O and 1 changeover contact, 6 A (250 V, AC-1) / 5 A (30 V, DC-1)
Interface/field bus (built-in)			OP-Bus (RS485)/Modbus RTU, CANopen®
Assigned switching and protective elements			
Power Wiring			
Safety device (fuse or miniature circuit-breaker)			
IEC (Type B, gG), 150 %			NZMC1-S100
UL (Class CC or J)		A	100
Mains contactor			
150 % overload (CT/I _H , at 50 °C)			DILM65
Main choke			
150 % overload (CT/I _H , at 50 °C)			DX-LN3-080
Radio interference suppression filter (external, 150 %)			DX-EMC34-100
Radio interference suppression filter, low leakage currents (external, 150 %)			DX-EMC34-100-L
Note regarding radio interference suppression filter			Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments
DC link connection			
Braking resistance			DV PROGRAMA
10 % duty factor (DF)			DX-BR012-9K2
20 % duty factor (DF)			DX-BR012-18K1
40 % duty factor (DF)			R:2 x DX-BR006-33K3
Notes concerning braking resistances:			R:m = "m" resistors connected in series 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 available upon request.
Motor feeder			
motor choke			
150 % overload (CT/I _H , at 50 °C)			DX-LM3-080
Sine filter			
150 % overload (CT/I _H , at 50 °C)			DX-SIN3-072
All-pole sine filter			
150 % overload (CT/I _H , at 50 °C)			DX-SIN3-110-A

Design verification as per IEC/EN 61439

Design vermedition as per 120/214 01-103		
Technical data for design verification		
Operating ambient temperature min.	°C	-10
Operating ambient temperature max.	°C	50
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 7.0

Low-voltage industrial components (EG000017) / Frequency converter =< 1 kV (EC001857)

lectric engineering, automation, process control engineering / Electrical drive	/ Static frequency c	onvert	er / Static frequency converter = < 1 kV (ecl@ss10.0.1-27-02-31-01 [AKE177014])
Nains voltage	\	V	342 - 528
Nains frequency			50/60 Hz
lumber of phases input			3
lumber of phases output			3
Nax. output frequency	ŀ	Hz	500
Nax. output voltage	\	V	500
lominal output current I2N	A	Д	72
Nax. output at quadratic load at rated output voltage	k	κW	37
Nax. output at linear load at rated output voltage	k	κW	37
delative symmetric net frequency tolerance	Q	%	10
delative symmetric net voltage tolerance	Q	%	10
lumber of analogue outputs			2
lumber of analogue inputs			2
lumber of digital outputs			2
lumber of digital inputs			5
Vith control unit			Yes
pplication 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 NTERBUS No Supporting protocol for KNIX No Supporting protocol for KNIX Yes Supporting protocol for Chast-Highway No Supporting protocol for Data-Highway No Supporting protocol for Data-Highway No Supporting protocol for SUDNATT No Supporting protocol for UDN No Supporting protocol for FDROHNTI DB Yes Supporting protocol for FDROHNT DB No Supporting protocol for Foundation Fidebus No Supporting protocol for DeviceNet Safety No Supporting protocol for DeviceNet Safety No Supporting protocol for PROFIDES No			
Supporting protocol for KNX No Supporting protocol for KNX No Supporting protocol for MDGRUS Yes Supporting protocol for Devica Heighway No Supporting protocol for Devica Heighway No Supporting protocol for Devica Heighway No Supporting protocol for UDN No Supporting protocol for UDN No Supporting protocol for PROPENET DB No Supporting protocol for FBEROS No Supporting protocol for FBEROS No Supporting protocol for Family FEROS No Supporting protocol for PROPUSHESI No Number of HW-interfaces serial No Number of HW-interfaces serial	Supporting protocol for CAN		Yes
Supporting protocol for NAVDRUS Yes Supporting protocol for Deut-Highway Yes Supporting protocol for Deut-Highway Yes Supporting protocol for Deut-Chelet Yes Supporting protocol for EUNDRUS No Supporting protocol for EUNDRUS Yes Supporting protocol for PROFINET (0 Yes Supporting protocol for PROFINET (BA No Supporting protocol for Deut-Chelat Fidelbus No Supporting protocol for Foundation Fidelbus No Supporting protocol for Deut-Chelat Safety Yes Supporting protocol for Deut-Chelat Safety at Work No Supporting protocol for Deut-Chelat Safety at Work No Supporting protocol for PROFISsale No Supporting protocol for PROFISsale No Supporting protocol for Safety SUSP No Supporting protocol for Safety SUSP Yes Number of HW-interfaces St-322	Supporting protocol for INTERBUS		No
Supporting protocol for Data-Highway No Supporting protocol for Data-Highway Yes Supporting protocol for DeviceNet Yes Supporting protocol for EUCONET No Supporting protocol for FIGE FIGE IO No Supporting protocol for FIGE FIGE GA No	Supporting protocol for ASI		No
Supporting protocol for Date-Highway No Supporting protocol for DeviceNet Yes Supporting protocol for DeviceNet No Supporting protocol for DNA No Supporting protocol for ENDRIFET IO Yes Supporting protocol for PROFINET DBA No Supporting protocol for ENDRIFET DBA No Supporting protocol for FROFISes No Supporting protocol for ENDRIFET DBA Yes Supporting protocol for ENDRIFET DBA Yes Supporting protocol for SafetyBUS PBA No Supporting protocol for SafetyBUS PBA Yes Supporting protocol for SafetyBUS PBA Yes Supporting protocol for SafetyBUS PBA Yes Supporting protocol for SafetyBUS PBA Yes <	Supporting protocol for KNX		No
Supporting protocol for DeviceNet Yes Supporting protocol for SUCONET No Supporting protocol for PROFINET IO Yes Supporting protocol for PROFINET EBA No Supporting protocol for PROFINET EBA No Supporting protocol for EMDRINET EBA No Supporting protocol for Embratival Promotation Fieldbus No Supporting protocol for Embratival Promotation Fieldbus Yes Supporting protocol for Embratival Promotation Fieldbus No Supporting protocol for Embratival Promotation Fieldbus No Supporting protocol for PROFIsate No Supporting protocol for PROFIsate No Supporting protocol for PROFIsate Yes Supporting protocol for PROFIsate No Supporting protocol for PROFIsate Yes Number of HW-interfaces industrial Ethemet 0 Number of HW-interfaces SPOFINET 0 Number of HW-interfaces SPASE 1 Number of HW-interfaces SPASE <t< td=""><td>Supporting protocol for MODBUS</td><td></td><td>Yes</td></t<>	Supporting protocol for MODBUS		Yes
Supporting protocol for SUCDNET No Supporting protocol for PROFINET IO Yes Supporting protocol for PROFINET IO No Supporting protocol for PROFINET IOS No Supporting protocol for PROFINET IOS No Supporting protocol for ERROS No Supporting protocol for ERROS No Supporting protocol for EntherWeIP Yes Supporting protocol for Exheres Siety at Work No Supporting protocol for INTERBUS-Safoty No Supporting protocol for INTERBUS-Safoty No Supporting protocol for Safety BUS p No Supporting protocol for Safety BUS p No Supporting protocol for other bus systems Yes Number of HW-interfaces industrial Ethernet 0 Number of HW-interfaces RS-423 0 Number of HW-interfaces RS-425 0 Number of HW-interfaces RS-428 0 Number of HW-interfaces uses RS-428 0 Number of HW-interfaces she's -22 0 Number of HW-interfaces uses RS-428 0 Number of HW-interfaces uses RS-428 0 Nu	Supporting protocol for Data-Highway		No
Supporting protocol for PROFINET IO "es Supporting protocol for PROFINET CBA No Supporting protocol for PROFINET CBA No Supporting protocol for SERCOS No Supporting protocol for FED FACTOR No Supporting protocol for FED FACTOR No Supporting protocol for FED FACTOR No Supporting protocol for AS-Interface Sefety at Work No Supporting protocol for National Sefety No Supporting protocol for PROFIsafe No Supporting protocol for PROFIsafe No Supporting protocol for SafetyBUS p No Supporting protocol for SafetyBUS p No Number of HW-interfaces industrial Ethernet Ve Number of HW-interfaces industrial Ethernet Ve Number of HW-interfaces RS-232 0 Number of HW-interfaces RS-485 0 Number of HW-interfaces RS-485 0 Number of HW-interfaces serial ITY 0 Number of HW-interfaces serial ITY 0 Number of HW-interfaces parallel Ve Number of HW-interfaces serial ITY Ve <t< td=""><td>Supporting protocol for DeviceNet</td><td></td><td>Yes</td></t<>	Supporting protocol for DeviceNet		Yes
Supporting protect for PROFINET IO Yes Supporting protect for PROFINET CBA No Supporting protect for SERCOS No Supporting protect for Foundation Fieldbus Yes Supporting protect for FetherNet/P Yes Supporting protect for EtherNet/P No Supporting protect for Device-Net Safety No Supporting protect for Device-Net Safety No Supporting protect for INTERBUS-Safety No Supporting protect for Safety BUS Safety No Supporting Safety	Supporting protocol for SUCONET		No
Supporting protocol for PROFINET CBA No Supporting protocol for SERGOS No Supporting protocol for EtherNet/IP Yes Supporting protocol for EtherNet/IP No Supporting protocol for DeviceMet Safety at Work No Supporting protocol for DeviceMet Safety No Supporting protocol for INTERBUS-Safety No Supporting protocol for INTERBUS-Safety No Supporting protocol for SafetyBUS P No Supporting protocol for SafetyBUS P No Supporting protocol for derbus systems Yes Supporting protocol for SafetyBUS P No Number of HW-interfaces BCFURT 0 Number of HW-interfaces URF	Supporting protocol for LON		No
Supporting protocol for SERCOS Supporting protocol for Foundation Fieldbus Supporting protocol for Foundation Fieldbus Supporting protocol for AS-Interface Seftey at Work Supporting protocol for DeviceNet Seftey Supporting protocol for DeviceNet Seftey Supporting protocol for INTERBUS-Saftey Supporting protocol for INTERBUS-Saftey Supporting protocol for INTERBUS-Saftey Supporting protocol for PROFIsafe Supporting protocol for SefteyBUS p S	Supporting protocol for PROFINET IO		Yes
Supporting protocol for Foundation Fieldbus No Supporting protocol for EtherNet/IP Yes Supporting protocol for AS-Interface Safety at Work No Supporting protocol for INTERBUS-Safety No Supporting protocol for PROFIsafe No Supporting protocol for PROFIsafe No Supporting protocol for SafetyBUS p No Supporting protocol for SafetyBUS p No Supporting protocol for Other bus systems Yes Supporting protocol for Other bus systems 0 Number of HW-interfaces and Safety at Winterfaces and Safety 0 Number of HW-interfaces RS-422 0 Number of HW-interfaces RS-425 1 Number of HW-interfaces serial TTY 0 Number of HW-interfaces parallel 0 Number of HW-interfaces other 0 With pitcal interface No With pitcal interface No With pitcal interface Yes Upger of protoct	Supporting protocol for PROFINET CBA		No
Supporting protocol for EherNeVIP Yes Supporting protocol for AS-Interface Safety at Work No Supporting protocol for EherNeVIPS No Supporting protocol for INTERBUS-Safety No Supporting protocol for INTERBUS-Safety No Supporting protocol for SafetyBUS p No Supporting protocol for SafetyBUS p No Supporting protocol for other bus systems Yes Number of HW-interfaces industrial Ethernet 0 Number of HW-interfaces PROFINET 0 Number of HW-interfaces RS-422 0 Number of HW-interfaces RS-422 0 Number of HW-interfaces Safety Safety 1 Number of HW-interfaces serial TTY 0 Number of HW-interfaces serial TY 0 Number of HW-interfaces other 0 With potcal interface No With potcal interfaces active the safety state of the safety state of the safety state of the safety state of the safety sta	Supporting protocol for SERCOS		No
Supporting protocol for AS-Interface Safety at Work No Supporting protocol for DeviceNet Safety No Supporting protocol for PROFISATE No Supporting protocol for PROFISATE No Supporting protocol for SafetyBUS p No Supporting protocol for BACnet Yes Supporting protocol for Other bus systems Yes Number of HW-interfaces industrial Ethernet 0 Number of HW-interfaces RS-232 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 St-485 0 Number of HW-interfaces strail TTY 0 Number of HW-interfaces other 0 With optical interface No With optical interface No With optical interface diveaking resistance Yes 4-quadrant operation possible Yes Type of converter Uconverter Degree of protoction (IP) Uconverter Degree of protoction (NEMA) Interface Interface With the first of t	Supporting protocol for Foundation Fieldbus		No
Supporting protocol for DeviceNet Safety No Supporting protocol for INTERBUS-Safety No Supporting protocol for PROFIsafe No Supporting protocol for BACnet Yes Supporting protocol for backnet Yes Supporting protocol for other bus systems Yes Number of HW-interfaces industrial Ethernet 0 Number of HW-interfaces RS-232 0 Number of HW-interfaces RS-232 0 Number of HW-interfaces RS-425 0 Number of HW-interfaces RS-428 0 Number of HW-interfaces RS-485 0 Number of HW-interfaces RS-486 0 Number of HW-interfaces RS-487 0 Number of HW-interfaces RS-488 0 Number of HW-interfaces RS-489 0	Supporting protocol for EtherNet/IP		Yes
Supporting protocol for INTERBUS-Safety No Supporting protocol for PROFIsafe No Supporting protocol for SafetyBUS p No Supporting protocol for DRAChet Yes Supporting protocol for other bus systems Yes Number of HW-interfaces industrial Ethernet 0 Number of HW-interfaces PROFINET 0 Number of HW-interfaces RS-422 0 Number of HW-interfaces RS-425 0 Number of HW-interfaces RS-428 1 Number of HW-interfaces RS-428 0 Number of HW-interfaces RS-428 0 Number of HW-interfaces RS-428 0 Number of HW-interfaces Staff 0 Number of HW-interfaces Staff 0 Number of HW-interfaces perallel 0 Number of HW-interfaces other 9 With Optical interface Yes With Optical interface Yes With Optical interface Yes Vith Optical interface Yes Yes Yes Type of converter Yes Degree of protection (IP) Yes	Supporting protocol for AS-Interface Safety at Work		No
Supporting protocol for PROFIsafe No Supporting protocol for SafetyBUS p No Supporting protocol for BACnet Yes Supporting protocol for other bus systems Yes Number of HW-interfaces industrial Ethernet 0 Number of HW-interfaces PROFINET 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 RS-485 1 Number of HW-interfaces RS-485 0 Number of HW-interfaces RS-485 1 Number of HW-interfaces RS-485 1 Number of HW-interfaces Stematic 0 Number of HW-interfaces Stematic 1 Number of HW-interfaces Stematic 1 Number of HW-interfaces Stematic 1 With printerfaces Stematic 1 Number of HW-interfaces Stematic 1 With printerfaces Stematic 1 With printerfaces Stematic 1 With printerfaces Stematic 1 Vity PC connection 1 Type of converter	Supporting protocol for DeviceNet Safety		No
Supporting protocol for SafetyBUS p No Supporting protocol for BACnet Yes Supporting protocol for other bus systems Yes Number of HW-interfaces industrial Ethernet 0 Number of HW-interfaces RS-232 0 Number of HW-interfaces RS-422 0 Number of HW-interfaces RS-485 0 Number of HW-interfaces RS-486 0 Number of HW-interfaces serial TTY 0 Number of HW-interfaces serial TTY 0 Number of HW-interfaces other 0 Wumber of HW-interfaces serial TTY 0 Number of HW-interfaces Brallel 0 Number of HW-interfaces other 0 With optical interface Yes With optical interface Yes 4-quadrant operation possible Yes 4-quadrant operation possible Yes 1-yes of converter U converter Degree of protection (IP) Other Beight Mm 48 With Mm 48 Mumber of HW-interfaces other Other	Supporting protocol for INTERBUS-Safety		No
Supporting protocol for BACnet Yes Supporting protocol for other bus systems Yes Number of HW-interfaces industrial Ethernet 0 Number of HW-interfaces PROFINET 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 HW-interfaces other 0 With optical interfaces other 0 With optical interfaces other No With optical interface other Yes Integrated breaking resistance Yes 4-quadrant operation possible Yes Type of converter U converter Degree of protection (IP) P20 Degree of protection (NEMA) Other Height mm 418 Witth mm 438	Supporting protocol for PROFIsafe		No
Supporting protocol for other bus systems Yes Number of HW-interfaces industrial Ethernet 0 Number of interfaces PROFINET 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 HW-interfaces other 0 With optical interface 0 With optical interface other 0 With Optical interface Yes Integrated breaking resistance Yes 4-quadrant operation possible Yes Type of converter Uconverter Degree of protection (IP) IP20 Degree of protection (NEMA) Mm 48 Height mm 24 With Many 24	Supporting protocol for SafetyBUS p		No
Number of HW-interfaces industrial Ethernet 0 Number of interfaces PROFINET 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 userial TTY 0 Number of HW-interfaces parallel 0 Number of HW-interfaces other 0 With optical interface No With PC connection Yes Integrated breaking resistance Yes 4-quadrant operation possible Yes Type of converter U converter Degree of protection (IP) P20 Degree of protection (NEMA) Mm Height mm 418 With PC mm 418	Supporting protocol for BACnet		Yes
Number of interfaces RRF0FINET 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 HW-interfaces parallel 0 Number of HW-interfaces other 0 With optical interface No With PC connection Yes Integrated breaking resistance Yes 4-quadrant operation possible Yes Type of converter U converter Degree of protection (IP) IP20 Degree of protection (NEMA) Other Height mm 418 Witth Character mm 244	Supporting protocol for other bus systems		Yes
Number of HW-interfaces RS-232 0 Number of HW-interfaces RS-422 1 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 0 With optical interface No With PC connection Yes Integrated breaking resistance Yes 4-quadrant operation possible Yes Type of converter U converter Degree of protection (IP) IP20 Degree of protection (NEMA) Other Height mm 418 Width mm 234	Number of HW-interfaces industrial Ethernet		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 0 With optical interface No With PC connection Yes Integrated breaking resistance Yes 4-quadrant operation possible Yes Type of converter U converter Degree of protection (IP) IP20 Degree of protection (NEMA) Other Height mm 418 Witth mm 244	Number of interfaces PROFINET		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 0 With optical interface No With PC connection Yes Integrated breaking resistance Yes 4-quadrant operation possible Yes Type of converter U converter Degree of protection (IP) IP20 Degree of protection (NEMA) Mm 418 With MEM Mm 234	Number of HW-interfaces RS-232		0
Number of HW-interfaces Serial TTY Number of HW-interfaces USB Number of HW-interfaces parallel Number of HW-interfaces other No With Optical interface With PC connection With PC connection Integrated breaking resistance 4-quadrant operation possible Type of converter Degree of protection (IP) Degree of protection (NEMA) Height Mm M 418 With Main and Main	Number of HW-interfaces RS-422		0
Number of HW-interfaces USB Number of HW-interfaces parallel Number of HW-interfaces other With optical interface With PC connection Integrated breaking resistance Integrated breaking resistance Integrated breaking possible Type of converter Upgree of protection (IP) Degree of protection (NEMA) Height With HW-interfaces USB 0 0 Va Va Ves Ves Ves Uponverter Uponverter Uponverter Uponverter IP20 Other Height Mm 418 With HB 418	Number of HW-interfaces RS-485		1
Number of HW-interfaces parallel Number of HW-interfaces other O With optical interface With PC connection With PC connection Unumber of HW-interface With PC connection With PC connection With PC connection Unumber of HW-interface With PC connection With PC connection With PC connection With PC connection Unumber of HW-interfaces other Ves 4-quadrant operation possible Type of converter Unumber of HW-interfaces other Unumber of HW-interfaces Unumber of HW-	Number of HW-interfaces serial TTY		0
Number of HW-interfaces other With optical interface With PC connection With PC connecti	Number of HW-interfaces USB		0
With optical interface With PC connection With PC connection Integrated breaking resistance 4-quadrant operation possible Type of converter Degree of protection (IP) Degree of protection (NEMA) Height Width Width No Yes Yes Ves Ves U converter IP20 Other H8 H8 Width Mm Width 18 No No No Yes Yes Yes Yes Yes Wes Yes Wes Yes Wes Yes Wes Yes Wes Yes Wes W	Number of HW-interfaces parallel		0
With PC connection With PC connection Integrated breaking resistance 4-quadrant operation possible Type of converter Degree of protection (IP) Degree of protection (NEMA) Height Width Width Width With PC connection Yes Yes U converter U converter IP20 Other Has Has Width Mmm Width Width Wight Mmm Wight Wes Yes Yes Yes Yes Yes Yes Yes	Number of HW-interfaces other		0
Integrated breaking resistance 4-quadrant operation possible Type of converter Degree of protection (IP) Degree of protection (NEMA) Height Width Yes U converter U converter Other Has Has Width Yes U converter	With optical interface		No
4-quadrant operation possible Type of converter Degree of protection (IP) Degree of protection (NEMA) Height Width Yes U converter IP20 Other Has	With PC connection		Yes
Type of converter U converter Degree of protection (IP) IP20 Degree of protection (NEMA) Other Height mm 418 Width mm 234	Integrated breaking resistance		Yes
Degree of protection (IP) IP20 Degree of protection (NEMA) Other Height mm 418 Width mm 234	4-quadrant operation possible		Yes
Degree of protection (NEMA) Height Midth Other 234	Type of converter		U converter
Height mm 418 Width mm 234	Degree of protection (IP)		IP20
Width mm 234	Degree of protection (NEMA)		Other
	Height	mm	418
Depth mm 261	Width	mm	234
	Depth	mm	261

Approvals

UL 508C; IEC/EN61800-3; IEC/EN61800-5; CE marking
E172143
NMMS, NMMS7
UL report applies to both US and Canada
UL listed, certified by UL for use in Canada
No
Branch circuits
3~ 480 V AC IEC: TN-S UL/CSA: "Y" (Solidly Grounded Wey)
IEC: IP20

Additional product information (links)

IL040049ZU Frequency inverter DA1 (IP20) FS4, FS5

IL040049ZU Frequency inverter DA1 (IP20) FS4, https://es-assets.eaton.com/D0CUMENTATION/AWA_INSTRUCTIONS/IL040049ZU2018_04.pdf FS5