DATASHEET - DA1-32180FB-B55C



Variable frequency drive, 230 V AC, 3-phase, 180 A, 55 kW, IP55/NEMA 12, Radio interference suppression filter, OLED display, DC link choke

Powering Business Worldwide

6

DA1-32180FB-B55C Part no. 169373 Catalog No.

Alternate Catalog

DA1-32180FB-B55C

No.

EL-Nummer 4137247

(Norway)

		Variable frequency drives
		DA1
U _e		230 V AC, 3-phase 240 V AC, 3-phase
U ₂		230 V AC, 3-phase 240 V AC, 3-phase
U_{LN}	V	200 (-10%) - 240 (+10%)
I _e	Α	180
		Rated operational current at an operating frequency of 4 kHz and an ambient air temperature of +40 $^{\circ}\text{C}$
		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
		Overload cycle for 60 s every 600 s
		at 230 V, 50 Hz
P	kW	55
I _M	Α	173
		at 220 - 240 V, 60 Hz
P	HP	60
		Alternatively: allocated motor output of 45 kW (230 V) with 141-A rated motor current
I _M	Α	154
		IP55/NEMA 12
		OP-Bus (RS485)/Modbus RTU, CANopen [®]
		Ethernet IP DeviceNet PROFIBUS PROFINET Modbus-TCP EtherCAT SmartWire-DT
		Radio interference suppression filter Brake chopper Additional PCB protection OLED display DC link choke
		Keypad Fieldbus drivesConnect drivesConnect mobile (App)
		FS6
		yes in conjunction with DX-NET-SWD1 SmartWire DT module
	U ₂ U _{LN} I _e P I _M	U2 ULN V Ie A P kW IM A P HP

Technical data General

Standards	Specification for general requirements: IEC/EN 61800-2
	EMC requirements: IEC/EN 61800-3
	Safety requirements: IEC/EN 61800-5-1

Certifications			CE, UL, cUL, RCM, UkrSEPRO, EAC
Approvals			DNV
Production quality			RoHS, ISO 9001
Climatic proofing	ρ_{W}	%	< 95%, average relative humidity (RH), non-condensing, non-corrosive
Air quality			3C3, 3S3
Ambient temperature			
Operating ambient temperature min.		°C	-10
Operating ambient temperature max.		°C	+ 40
			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			IP55/NEMA 12
Protection against direct contact			BGV A3 (VBG4, finger- and back-of-hand proof)
Main circuit Supply			
Rated operational voltage	Ue		230 V AC, 3-phase 240 V AC, 3-phase
Mains voltage (50/60Hz)	U_LN	V	200 (-10%) - 240 (+10%)
Input current (150% overload)	I _{LN}	Α	187.5
System configuration	LIN	^	AC supply systems with earthed center point
Supply frequency	f _{LN}	Hz	50/60
Frequency range		Hz	48 - 62
Mains switch-on frequency	f _{LN}	112	Maximum of one time every 30 seconds
Power section			Maximum of one time every 30 Seconds
Function			Variable frequency drive with internal DC link, DC link choke and IGBT inverter
Overload current (150% overload)	IL	Α	270
max. starting current (High Overload)	I _H	%	200
Note about max. starting current	•п	70	for 4 seconds every 40 seconds
Output voltage with V _e	U_2		230 V AC, 3-phase
Output voitage with ve	02		240 V AC, 3-phase
Output Frequency	f ₂	Hz	0 - 50/60 (max. 250)
Switching frequency	f _{PWM}	kHz	4 adjustable 4 - 8 (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 Note	I _e	А	180 Rated operational current at an operating frequency of 4 kHz and an ambient air
			temperature of +40 °C
Power loss			
Heat dissipation at rated operational current I_{e} =150 $\%$	P_V	W	945
Efficiency	η	%	97.9
Maximum leakage current to ground (PE) without motor	I _{PE}	mA	1.54
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			FS6
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 230 V, 50 Hz
150 % Overload	P	kW	55
Note			at 220 - 240 V, 60 Hz
150 % Overload	P	HP	60
Note			Alternatively: allocated motor output of 45 kW (230 V) with 141-A rated motor current
maximum permissible cable length	1	m	screened: 100 screened, with motor choke: 200 unscreened: 150 unscreened, with motor choke: 300
Apparent power			
Apparent power at rated operation 230 V	S	kVA	71.71
Apparent power at rated operation 240 V	S	kVA	74.82
Braking function			
Standard braking torque			max. 30 % M _N
DC braking torque			max. 100% of rated operational current l _e , variable
Braking torque with external braking resistance			Max. 100% of rated operational current I _e with external braking resistor
minimum external braking resistance	R _{min}	Ω	6
Switch-on threshold for the braking transistor	U _{DC}	V	390 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 %			NZMC3-S250
UL (Class CC or J)		Α	250
Mains contactor			
150 % overload (CT/I _H , at 50 °C)			DILM170
Main choke			
150 % overload (CT/I _H , at 50 °C)			DX-LN3-200
Note regarding mains choke			Mains choke recommended only if the power quality is poor. Current harmonics (THD) are attenuated by internal DC link chokes.
Radio interference suppression filter (external, 150 %)			DX-EMC34-250
Radio interference suppression filter, low leakage currents (external, 150 %)			DX-EMC34-250-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			
10 % duty factor (DF)			DX-BR006-9K2
20 % duty factor (DF)			DX-BR006-18K1
40 % duty factor (DF)			DX-BR006-33K3
Notes concerning braking resistances:			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 choke	
150 % overload (CT/I _H , at 50 °C)	DX-LM3-220
Sine filter	
150 % overload (CT/I _H , at 50 °C)	DX-SIN3-180
All-pole sine filter	
150 % overload (CT/I _H , at 50 °C)	P:2 x DX-SIN3-110-A

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	180
Heat dissipation per pole, current-dependent	P_{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	945
Static heat dissipation, non-current-dependent	P _{vs}	W	0
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-10
Operating ambient temperature max.		°C	40
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 b 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

Max. output at quadratic load at rated output voltage

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@ss10.0.1-27-02-31-01 [AKE177014])					
Mains voltage V 180 - 264					
Mains frequency		50/60 Hz			

Walls requertey		30/00 112
Number of phases input		3
Number of phases output		3
Max. output frequency	Hz	500
Max. output voltage	V	250
Nominal output current I2N	А	180

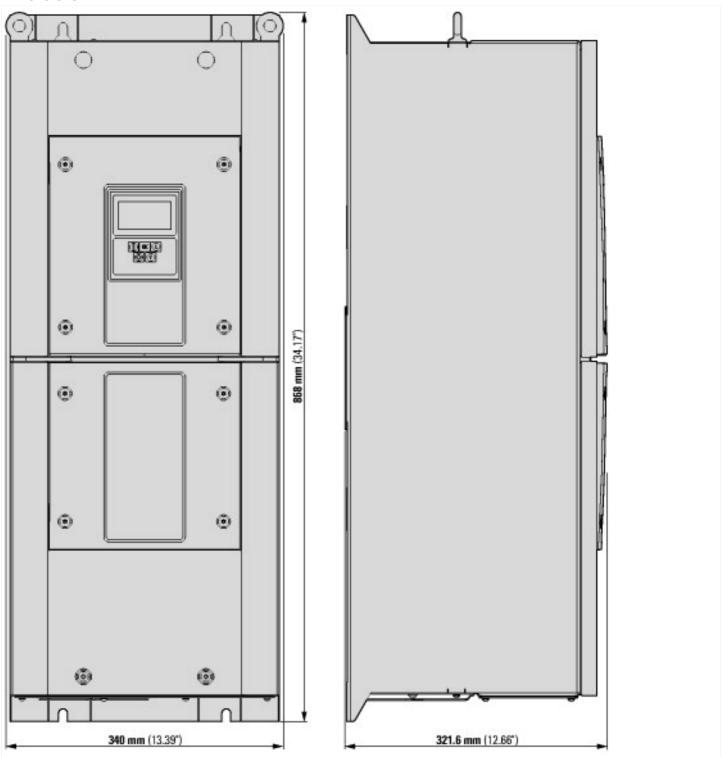
Selentie symmetrie net brougsey telename Selentie symmetrie net voltages elaterane Selentie symmetrie ne	Max. output at linear load at rated output voltage	kW	45
Relative symmetric net voltage laterance N C 2 Number of analogue copius 2 2 Number of displace (puiss) 2 2 Number of displace (puiss) 2 2 Number of displace (puiss) 4 2 With central unit 4 1 Application in industrial area permitted 5 2 Application in industrial area permitted 6 3 Application in industrial area permitted 6 3 Supporting protector for TOPA 6 3 Supporting protector for TOPA 7 4 Supporting protector for INTERBUS 6 3 Supporting protector for INTERBUS 7 4 Supporting protector for INTERBUS 7 4 Supporting protector for Devicebe 7 4 <td></td> <td></td> <td></td>			
Number of analogo imptot 2 Number of analogo imptot 2 Number of alpha liquits 2 Application in diordical era permitted 2 Application in diordical era permitted 2 Supporting protocol for CIVPIP 2 Supporting protocol for CIVPIP 2 Supporting protocol for CIVRIP 2 Supporting protocol for CIAN 3 Supporting protocol for MINERUS 3 Supporting protocol for MINERUS 4 Supporting protocol for Supporting protocol for MINERUS 4 Supporting protocol for MINERUS			
Number of ignation upons 2 Number of ignation utous 2 With control unit 5 Application in induction are permitted 6 Application in induction are permitted 9 Application in promote for TCDPP 9 Supporting promote for EAR 9 Supporting promote for In INTERIORS 9 Supporting promote for MOBINS 9 Supporting promote for MOBINS 9 Supporting promote for In MOBINS 9 <			
Number of digital roduptis 2 Number of digital roduptis 5 Number of digital roduptis 4 Application in diceases are permitted 4 Application in diceases are permitted 7 Supporting protect of TCPSPP 7 Supporting protect for TCPSPP 7 Supporting protect for TCPSPP 8 Supporting protect for MTERBUS 8 Supporting protect for MEDIUS 8			
Number of digital injunct 5 Vilta construit vera Application in indemetic and cammercial area permitted vera Supporting praces for TLPUP vera Supporting praces for PRDRIBUS vera Supporting praces for CAIN vera Supporting praces for KAIN vera Supporting praces for CRUSH vera Supporting praces for CRUSH Supporting praces			
Vict cannal unit Yea Application in induction and external dea permitted Yea Application in induction ale apermitted Yea Supporting protect for TCPIP Yea Supporting protect for TCPIP Yea Supporting protect for CNA Yea Supporting protect for KAS No Supporting protect for KAS Yea Supporting protect for Data Highway Yea Supporting protect for PROFINET ICR Yea Supporting protect for LON Yea Supporting protect for ProfInitial Field Yea Yea Supporting protect for Enhanced Yea Supporting protect for Demicrable Safety Xea			
Application in industrial ranke permitted 'Ves Application in industrial ranke permitted 'Ves Application in industrial ranke permitted 'Ves Supporting protocol for CRDPP 'Ves Supporting protocol for CRDP 'Ves Supporting protocol for CRDR 'Ves Supporting protocol for KBERUS 'Ves Supporting protocol for KBIX 'Ves Supporting protocol for KBIX 'Ves Supporting protocol for Data Highway 'Ves Supporting protocol for Data Highway 'Ves Supporting protocol for SUDNET 'Ves Supporting protocol for SUDNET 'Ves Supporting protocol for PBOFNET DA 'Ves Supporting protocol for FORMER SUBSA 'Ves Supporting protocol for Formedation Fieldus 'Ves Supporting protocol for Formed			
Application in domestic and commercial and parmitted Mes Supporting protector for TOPIPIS 10 Yes Supporting protector for PROTRIBUS 10 Yes Supporting protector for MITTERIUS 10 No Supporting protector for MIXTERIUS 10 No Supporting protector for Deat-Highway 10 No Supporting protector for Deat-Highway 10 No Supporting protector for FROMET IO 10 No Supporting protector			
Supporting protocol for PROPRIES Yes Supporting protocol for PROPRIES Yes Supporting protocol for INTERBUS No Supporting protocol for INTERBUS No Supporting protocol for INTERBUS No Supporting protocol for INTA Yes Supporting protocol for INTA No Supporting protocol for INTERBUS Saledy No Supporting protocol for InterBushys Saledy <td></td> <td></td> <td></td>			
Supporting protocol for CAM Yes Supporting protocol for CAM No Supporting protocol for NTKERUS No Supporting protocol for NTKERUS No Supporting protocol for NTKERUS Yes Supporting protocol for MOBUS Yes Supporting protocol for OMDRUS No Supporting protocol for Data-Highway No Supporting protocol for DATA No Supporting protocol for PROFINET DA No Supporting protocol for PROFINET DA No Supporting protocol for SERGOS No Supporting protocol for FERGOS No Supporting prot			
Supporting protected for EANI SURPORTING protected for INTERBUS No Supporting protected for INTERBUS No Supporting protected for EANI SURPORTING protected for MAX Po Supporting protected for MAX SURPORTING protected for MOBBUS Po Supporting protected for DEBUSHymay Po Supporting protected for DEBUSHymay Po Supporting protected for DEBUSHY Po Supporting protected for PREPINET DGA Po Support			
Supporting protacol for INTERBUS Na Supporting protacol for ASIA Na Supporting protacol for KNDK Yos Supporting protacol for MDBUS Yos Supporting protacol for DeviceMed Na Supporting protacol for DeviceMed Yos Supporting protacol for SUCOMET Na Supporting protacol for SUCOMET Yos Supporting protacol for PROFINET (O Yos Supporting protacol for PROFINET (O Yos Supporting protacol for PROFINET (OA) Na Supporting protacol for Subseque (OA) Na Supp			
Supporting protocol for ANSI No Supporting protocol for KNOR No Supporting protocol for MOOBUS No Supporting protocol for Deba-Highway No Supporting protocol for PROFINET DBA No Supporting protocol for PROFINET DBA No Supporting protocol for ERCHAPE DBA No Supporting protocol for ERCHAPE DBA No Supporting protocol for Deba-Highway DBA No Supporting protocol for Deba-Highway DBA No Supporting protocol for PROFINETA No Supporting protocol for PROFINETA No Supporting protocol for Deba-Highway DBA No Supporting protocol for School No Supporting protocol for School No Support			
Supporting protocol for MODBUS 6 7 9 <th< td=""><td></td><td></td><td></td></th<>			
Supporting protect for Data-Highway 1 No Supporting protect for Data-Highway 1 No Supporting protect for Enta-Highway 1 No Supporting protect for Data-Highway 1 No Supporting protect for SUCONET No No Supporting protect for PROFINET (FB No No Supporting protect for PROFINET (BA No No Supporting protect for FROFINET (BA No No Supporting protect for DeviceNest Safety No No Supporting protect for DeviceNest Safety No No Supporting protect for PROFINET No No Supporting protect for			
Supporting protocol for Data-Highway No Supporting protocol for Data-Highway Yes Supporting protocol for Succonter No Supporting protocol for Succonter No Supporting protocol for PROFINETIO No No Supporting protocol for PROFINETIOR No No Supporting protocol for Enderos No No Supporting protocol for Enderos Safety at Wark No No Supporting protocol for Enderos Safety No No Supporting protocol for SafetyBuS No No Supporting protocol for SafetyBuS No No Supporting protocol for SafetyBuS No No			
Supporting protocol for SUDNET Mo Supporting protocol for SUDNET Mo Supporting protocol for SUDNET Mo Supporting protocol for FRORINET (IA) Mo Supporting protocol for PRORINET (BA) Mo Supporting protocol for SERGOS Mo Supporting protocol for Fundament (PHE) Mo Supporting protocol for EthenNet(PHE) Mo Supporting protocol for EthenNet(PHE) Mo Supporting protocol for SERGOS Mo Supporting protocol for EthenNet(PHE) Mo Supporting protocol for EthenNet(PHE) Mo Supporting protocol for SERGOS Mo Supporting protocol for INTERBUS-Safety Mo Supporting protocol for SERGOS Mo Supporting protocol for INTERBUS-Safety Mo Supporting protocol for StafeyBUS P Mo Supporting protocol for StafeyBUS P Mo Number of HW-interfaces industrial Ethernet Mo Number of HW-interfaces ROFLINET Mo Number of HW-interfaces ROFLINET Mo Number of HW-interfaces ROFLINET Mo Number of H			
Supporting protect for SUCONET No Supporting protect for PROFINET (IO Per Supporting protect for PROFINET (IO Per Supporting protect for PROFINET (IOA) Per Supporting protect for PROFINET (IOA) Per Supporting protect for FROFINET (IOA) Per Supporting protect for Froundation Fieldbus Per Supporting protect for Fundation Fieldbus Per Supporting protect for FA-Interface Safety at Work Per Supporting protect for FORINETSBUS Safety No Supporting protect for PROFINET Per Supporting protect for PROFINET Per Supporting protect for SafetyBUSP Per Supporting protect for FORINETSBUS Safety Per Supporting protect for FORINETSBUS Safety Per Supporting protect for FORIACHE Per			
Supporting protocol for PROFINET IO No Supporting protocol for PROFINET CBA No Supporting protocol for PROFINET CBA No Supporting protocol for PROFINET CBA No Supporting protocol for SERCOS No Supporting protocol for CBCRCOS No Supporting protocol for CBCRCOS No Supporting protocol for CBCRCOS No Supporting protocol for EtherNevIIP No Supporting protocol for AS-Interface Safety at Work No Supporting protocol for PROFIsed No Supporting protocol for PROFIsed No Supporting protocol for SERCHBUS Safety No			
Supporting protocol for PROFINET IO 9 10	11 21		No
Supporting protocol for PROFINET CBA No Supporting protocol for SERCOS No Supporting protocol for EtherNeVIP No Supporting protocol for DeviceNet Safety at Work 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 SafetyBUS p No Supporting protocol for Other bus systems No Supporting protocol for Other bus systems No Number of HW-interfaces PROFINET 0 Number of HW-interfaces PR-222 0 Number of HW-interfaces RS-223 0 Number of HW-interfaces RS-224 0 Number of HW-interfaces RS-228 0 Number of HW-interfaces RS-248 0 Number of HW-interfaces parallel 0 Number of HW-interfaces RS-248 0 Number of HW-interfaces RS-248			
Supporting protocol for SERCOS No Supporting protocol for Foundation Fieldbus No Supporting protocol for FacherKet/IP Yes Supporting protocol for DeviceNet Safety at Work No Supporting protocol for DeviceNet Safety at Work No Supporting protocol for INTERBUS-Safety No Supporting protocol for PROFIsafe No Supporting protocol for SafetyBUS p No Supporting protocol for SafetyBUS p No Supporting protocol for Bother busystems Yes Supporting protocol for Bother busystems Yes Number of HW-interfaces MINER O Number of HW-interfaces RS-222 O Number of HW-interfaces RS-422 O Number of HW-interfaces RS-425 O Number of HW-interfaces RS-426 O Number of HW-interfaces RS-427 O Number of HW-interfaces RS-428 O Number of HW-interfaces RS-429 O Number of HW-interfaces Stematic O Number of HW-interfaces parallel O Number of HW-interfaces parallel O Vinterface	11		
Supporting protocol for Foundation Fieldbus No Supporting protocol for EthenNet/IP Yes Supporting protocol for A5-Interface Safety at Work No Supporting protocol for DeviceNet 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 Yes Supporting protocol for Other bus systems Yes Supporting protocol for Other bus systems Yes Supporting protocol for other bus systems Yes Number of HW-interfaces industrial Ethernet Yes Number of HW-interfaces RS-322 Q Number of HW-interfaces RS-425 Yes Number of HW-interfaces RS-485 1 Number of HW-interfaces RS-485 Yes Number of HW-interfaces prallel Yes Number of HW-interfaces prallel Yes With optical interface Yes Vith optical interface Yes Vith optical interface Yes Floquadrant operation possible Yes			
Supporting protocol for EtherNet/IP Yes Supporting protocol for AS-Interface Safety at Work No Supporting protocol for DaviceNet Safety No Supporting protocol for DaviceNet Safety 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 RS-232 0 Number of HW-interfaces RS-232 0 Number of HW-interfaces RS-485 1 Number of HW-interfaces RS-485 0 Number of HW-interfaces St-485 0 Number of HW-interfaces St-485 0 Number of HW-interfaces steril TTY 0 Number of HW-interfaces steril TY 0 Number of HW-interfaces other 0 With potical interface No With ptical interface No With PC connection No Integrated breaking resistance Yes Aquadrant operation possible No </td <td></td> <td></td> <td>No</td>			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 BAChet Yes Supporting protocol for bus systems 0 Number of HW-interfaces industrial Ethernet 0 Number of HW-interfaces RS-322 0 Number of HW-interfaces RS-422 0 Number of HW-interfaces RS-428 0 Number of HW-interfaces RS-428 0 Number of HW-interfaces parallel 0 Number of HW-interfaces parallel 0 Number of HW-interfaces other 0 With optical interface 0 Number of HW-interfaces other 0 With optical interface Yes Number of HW-interfaces other No With optical interface Yes Number of HW-interfaces other Yes With Optical interface Yes Legrated breaking resistance Yes			No
Supporting protocol for DeviceNet Safety No Supporting protocol for PROFIsafe No Supporting protocol for SafetyBUS p No Supporting protocol for SafetyBUS p No Supporting protocol for BACnet Yes Supporting protocol for ther bus systems Yes Number of HW-interfaces PROFINET 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 serial TY 0 Number of HW-interfaces shere 0 With optical interface 0 Ve			Yes
Supporting protocol for PROFIsafe No Supporting protocol for SAfetyBUS p 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-425 0 Number of HW-interfaces RS-426 0 Number of HW-interfaces RS-427 0 Number of HW-interfaces RS-428 0 Number of HW-interfaces RS-429 0 Number of HW-interfaces serial TTY 0 Number of HW-interfaces usb 0 Number of HW-interfaces other 0 With optical Interface No With Optical Interface Yes Vith Optical Interface Yes Vith PC connection Yes Integrated breaking resistance Yes 4-quadrant operation possible No Type of converter U converter Degree of protection (IP)	Supporting protocol for AS-Interface Safety at Work		No
Supporting protocol for SAfetyBUS p No Supporting protocol for SACnet Yes 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-428 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 Number of HW-interfaces other 0 With optical interface 0 With optical interface No With Connection Yes Integrated breaking resistance Yes 4-quadrant operation possible No 4-quadrant operation possible No 5-yes of converter Personance 6-quadrant operation (IP) IP55 6-quadrant operation (NEMA) IP55 7-yes IP55 8-quadrant operation (NEMA) IP55 <td>Supporting protocol for DeviceNet Safety</td> <td></td> <td>No</td>	Supporting protocol for DeviceNet Safety		No
Supporting protocol for SafetyBUS p Supporting protocol for BACnet Supporting protocol for other bus systems Number of HW-interfaces industrial Ethernet Number of interfaces PROFINET Number of HW-interfaces RS-232 Number of HW-interfaces RS-232 Number of HW-interfaces RS-422 Number of HW-interfaces RS-428 Number of HW-interfaces RS-428 Number of HW-interfaces Serial TTY Number of HW-interfaces serial TTY Number of HW-interfaces serial TTY Number of HW-interfaces parallel Number of HW-interfaces parallel Number of HW-interfaces other Vith optical interface Vith optical			No
Supporting protocol for BACnet Supporting protocol for other bus systems Number of HW-interfaces industrial Ethernet Number of interfaces PROFINET Number of HW-interfaces RS-232 Number of HW-interfaces RS-232 Number of HW-interfaces RS-422 Number of HW-interfaces RS-425 Number of HW-interfaces RS-425 Number of HW-interfaces RS-485 Number of HW-interfaces serial TTY Number of HW-interfaces serial TTY Number of HW-interfaces serial TTY Number of HW-interfaces parallel Number of HW-interfaces other No No No No No No No Type of converter Degree of protection (IP) Degree of protection (NEMA) Height No mm 888			No
Supporting protocol for other bus systems Number of HW-interfaces industrial Ethernet Number of interfaces RPOFINET Number of HW-interfaces RS-232 Number of HW-interfaces RS-422 Number of HW-interfaces RS-485 Number of HW-interfaces serial TTY Number of HW-interfaces serial TTY Number of HW-interfaces uSB Number of HW-interfaces uSB Number of HW-interfaces uSB Number of HW-interfaces other Number of HW-interfaces other Number of HW-interfaces other No Vith pC connection Nith optical interface Vith PC connection Integrated breaking resistance 4-quadrant operation possible No Type of converter Degree of protection (IP) Degree of protection (NEMA) Height No mm Ness Ness No No No No No No No No No	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 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 No Type of converter U converter Degree of protection (IP) IP55 Degree of protection (NEMA) 12 Height mm 868	Supporting protocol for BACnet		Yes
Number of interfaces RS-232 Number of HW-interfaces RS-232 Number of HW-interfaces RS-422 Number of HW-interfaces RS-425 Number of HW-interfaces RS-485 Number of HW-interfaces RS-485 Number of HW-interfaces Serial TTY Number of HW-interfaces Serial TTY Number of HW-interfaces USB Number of HW-interfaces USB Number of HW-interfaces Other O Number of HW-interfaces other Virth optical interface Virth Optical inter	Supporting protocol for other bus systems		Yes
Number of HW-interfaces RS-232 Number of HW-interfaces RS-422 Number of HW-interfaces RS-485 Number of HW-interfaces SPS-485 Number of HW-interfaces SPS-485 Number of HW-interfaces USB Number of HW-interfaces USB Number of HW-interfaces USB Number of HW-interfaces other O Number of HW-interfaces other O Virth optical interface Virth Optical interface Virth PC connection Integrated breaking resistance 4-quadrant operation possible No Type of converter Degree of protection (IP) Degree of protection (NEMA) Height mm 888	Number of HW-interfaces industrial Ethernet		0
Number of HW-interfaces RS-422 Number of HW-interfaces RS-485 Number of HW-interfaces serial TTY Number of HW-interfaces serial TTY Number of HW-interfaces USB Number of HW-interfaces parallel Number of HW-interfaces other Number of HW-interfaces other No Number of HW-interfaces other No With optical interface With optical interface Yes Integrated breaking resistance 4-quadrant operation possible No Type of converter Degree of protection (IP) Degree of protection (NEMA) mm No No Mm No No 12 Height	Number of interfaces PROFINET		0
Number of HW-interfaces RS-485 Number of HW-interfaces serial TTY Number of HW-interfaces USB Number of HW-interfaces parallel Number of HW-interfaces other Number of HW-interfaces other Number of HW-interfaces other No Number of HW-interfaces other No With optical interface With PC connection Integrated breaking resistance 4-quadrant operation possible No Type of converter Degree of protection (IP) Degree of protection (NEMA) Height I 1 1 1 1 1 1 1 1 1 1 1 1 1 1	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 O With optical interface With optical interface With optical oreation With PC connection Integrated breaking resistance 4-quadrant operation possible Type of converter Degree of protection (IP) Degree of protection (NEMA) Height O O O No Vo Vo Vo Vo Vo Vo Vo Vo Vo	Number of HW-interfaces RS-422		0
Number of HW-interfaces USB Number of HW-interfaces parallel Number of HW-interfaces other 0 Number of HW-interfaces other 0 With optical interface With optical interface With PC connection Ves Integrated breaking resistance 4-quadrant operation possible Type of converter Degree of protection (IP) Degree of protection (NEMA) Height 0 0 0 0 Vo Vo Vo Vo Vo Ves No Ves No Ves No Ves No 1 L' L' L' L' L' L' L' L' L'	Number of HW-interfaces RS-485		1
Number of HW-interfaces parallel Number of HW-interfaces other 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 0 0 Vo Vo Vo Vo Ves Ves Ves Vo Vo Vo Vo Vo Vo Vo No 12 Height	Number of HW-interfaces serial TTY		0
Number of HW-interfaces other With optical interface With PC connection Untergrated breaking resistance Yes 4-quadrant operation possible No Type of converter Degree of protection (IP) Degree of protection (NEMA) Height Degree of many and man	Number of HW-interfaces USB		0
With optical interface No With PC connection Yes Integrated breaking resistance Yes 4-quadrant operation possible No Type of converter U converter Degree of protection (IP) IP55 Degree of protection (NEMA) mm 868	Number of HW-interfaces parallel		0
With PC connection Integrated breaking resistance 4-quadrant operation possible Type of converter Degree of protection (IP) Degree of protection (NEMA) Height Yes Yes No U converter U converter IP55 12 Height	Number of HW-interfaces other		0
Integrated breaking resistance 4-quadrant operation possible No Type of converter Degree of protection (IP) Degree of protection (NEMA) Height Pyes No U converter IP55 12	With optical interface		No
4-quadrant operation possible Type of converter Degree of protection (IP) Degree of protection (NEMA) Height No U converter IP55 12 Height	With PC connection		Yes
Type of converter Degree of protection (IP) Degree of protection (NEMA) Height U converter IP55 12 Height	Integrated breaking resistance		Yes
Degree of protection (IP) Degree of protection (NEMA) Height IP55 12 Height	4-quadrant operation possible		No
Degree of protection (NEMA) 12 Height mm 868	Type of converter		U converter
Height mm 868	Degree of protection (IP)		IP55
	Degree of protection (NEMA)		12
Width mm 340	Height	mm	868
	Width	mm	340
Depth mm 321.6	Depth	mm	321.6

Approvals

Product Standards	UL 508C; CSA-C22.2 No. 14; IEC/EN61800-3; IEC/EN61800-5; CE marking
-------------------	---

UL File No.	E172143
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
Specially designed for North America	No
Suitable for	Branch circuits
Max. Voltage Rating	3~ 240 V AC IEC: TN-S UL/CSA: "Y" (Solidly Grounded Wey)
Degree of Protection	IEC: IP55

Dimensions



Additional product information (links)

IL04020011Z DA1 variable frequency drives (FS4 - 7)

IL04020011Z DA1 variable frequency drives (FS4 https://es-assets.eaton.com/D0CUMENTATION/AWA_INSTRUCTIONS/IL04020011Z2018_04.pdf - 7)

MN04020005Z DA1 variable frequency drives, Installation manual

MN04020005Z Frequenzumrichter DA1, Installationshandbuch - Deutsch	https://es-assets.eaton.com/D0CUMENTATION/AWB_MANUALS/MN04020005Z_DE.pdf
MN04020005Z DA1 variable frequency drives, Installation manual - English	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN04020005Z_EN.pdf
MN04020005Z Convertitore di frequenza DA1, manuale Installazione - italiano	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN04020005Z_IT.pdf
MN04020006Z DA1 variable frequency drives,	Parameters manual
MN04020006Z Frequenzumrichter DA1, Parameterhandbuch - Deutsch	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN04020006Z_DE.pdf
MN04020006Z DA1 variable frequency drives, Parameters manual - English	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN04020006Z_EN.pdf
MN04020006Z Convertitore di frequenza DA1, manuale Parametri - italiano	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN04020006Z_IT.pdf
CA04020001Z-EN Product Range Catalog: Efficient Engineering for Starting and Controlling Motors	http://www.eaton.eu/DE/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_1095238.pdf