DATASHEET - DA1-34024FB-A20C



Variable frequency drive, 400 V AC, 3-phase, 24 A, 11 kW, IP20/NEMA 0, Radio interference suppression filter, 7-digital display assembly

DA1-34024FB-A20C

Powering Business Worldwide*

6

Part no. DA1-34024FB-A20C Catalog No. 169063

Alternate Catalog No.

EL-Nummer 4137167

(Norway)

Delivery program

Delivery program			
Product range			Variable frequency drives
Part group reference (e.g. DIL)			DA1
Rated operational voltage	U _e		400 V AC, 3-phase 480 V AC, 3-phase
Output voltage with V _e	U 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	Α	24
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 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	P	kW	11
150 % Overload	I _M	Α	21.7
Note			at 440 - 480 V, 60 Hz
150 % Overload	P	HP	15
150 % Overload	I _M	Α	21
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 7-digital display assembly
Parameterization			Keypad Fieldbus drivesConnect drivesConnect mobile (App)
Frame size			FS3
Connection to SmartWire-DT			yes in conjunction with DX-NET-SWD1 SmartWire DT module

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
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	θ	°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	27.5
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	36
max. starting current (High Overload)	I _H	%	200
Note about max. starting current			for 4 seconds every 40 seconds
Output voltage with $V_{\rm e}$	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 - 16 (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) Rated operational current	Δf	Hz	0.1
At 150% overload	l _e	A	24
Note	U		Rated operational current at a switching frequency of 8 kHz and an ambient air
Power loss			temperature of +50 °C
Heat dissipation at rated operational current $I_{\rm e}$ =150 %	P_V	W	297
· · · · · ·		%	97.3
Efficiency Maximum leakage current to ground (PE) without motor	η I _{PE}	mA	1.55
Fitted with	iPE	IIIA	Radio interference suppression filter Brake chopper Additional PCB protection 7-digital display assembly
Safety function			STO (Safe Torque Off, SIL2, PLd Cat 3)
Frame size			FS3
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
			· · · · · · · · · · · · · · · · · · ·

150 % Overload	Note			at 400 V, 50 Hz
Note 1915 No Net feet		р	kW	
15 % Overload		•	KVV	
Interference of Control Secretary (Control Control Con		р	НР	
Appearent power of stated speration 600 V		ı		screened: 100 screened, with motor choke: 200 unscreened: 150
Apparent power at mand operation 400 V Apparent power at make operation 400 V P Apparent P	Apparent power			
Braiting function Standard braiting torque De Crating torque Braiting torque with external braiting resistance Mans. 100% of rated operational current I, with external braiting resistance Mans. 100% of rated operational current I, with external braiting resistance Solitic—an threshold for the harbing transistance Solitic—an threshold for the harbing transistance Us V 788 V 10 C (max. 100 mA) Febermal cordo voltage Us V 10 V 10 C (max. 100 mA) Febermal cordo voltage Us V 10 V 10 C (max. 100 mA) Febermal cordo voltage Us V 10 V 10 C (max. 100 mA) Analog imputs Analog imputs Analog imputs Digital inquise Us V 10 V 10 C (max. 100 mA) Febermal cordo voltage Us V 10 V 10 C (max. 100 mA) Analog imputs Digital inquise Us V 10 V 10 C (max. 100 mA) Febermal cordo voltage Us V 10 V 10 C (max. 100 mA) Analog imputs Digital inquise Us V 10 V 10 C (max. 100 mA) Analog imputs Digital inquise Us V 10 V 10 C (max. 100 mA) Analog imputs Digital inquise Us V 10 V 10 C (max. 100 mA) External cordo voltage Digital inquise Us V 10 V 10 C (max. 100 mA) External cordo voltage Digital inquise Us V 10 V 10 C (max. 100 mA) External cordo voltage Digital inquise Us V 10 V 10 C (max. 100 mA) External cordo voltage Digital inquise Us V 10 V 10 C (max. 100 mA) External cordo voltage Digital inquise Us V 10 V 10 C (max. 100 mA) External cordo voltage Digital inquise Digital inquise Us V 10 V 10 V 10 C (max. 100 mA) External cordo voltage Digital inquise Us V 10 V 1		S	kVA	16.63
Sandard braking torque De traking torque Braking torque with external braking resistance minimum external braking resistance minimum external braking resistance Max 100% of rated operational current I _s with external braking resistance Max 100% of rated operational current I _s with external braking resistance Max 100% of rated operational current I _s with external braking resistance Braking control seatchin External control voltage Bufference voltage Multipate Inputs Annole groups Bufference voltage Multipate Us V 24 V DC (max 100 mA) 2 parameterizable, 0 - 10 V DC, 04 - 20 mA Annole groups Bufference voltage Digital loques Digital loques Digital loques Digital loques Digital loques Bufference voltage Multipate Bufference voltage Multipate Bufference voltage Multipate Bufference voltage Bufference voltage Multipate Bufference voltage B	Apparent power at rated operation 480 V	S	kVA	19.95
DC braking torque with external braking resistance Maini mum external braking resistance Maini DS of rated operational current II, with external braking resistance Manual DSS of rated operational current II, with external braking resistance We Ward DSS of rated operational current II, with external braking resistance We Way DC (Marx. 100 MA) Reference valuage Us V 24 DC (Marx. 100 MA) Reference culture Reference culture Reference culture Manual goutputs Quartic V 24 DC (Marx. 100 MA) Reference culture September (Saturd) Reference culture Annulog outputs Quartic V 24 DC (Marx. 100 MA) Reference culture Annulog outputs Quartic V 24 DC (Marx. 100 MA) Reference culture Annulog outputs Quartic V 24 DC (Marx. 100 MA) Reference culture Annulog outputs Quartic V 24 DC (Marx. 100 MA) Reference culture Annulog outputs Quartic V 24 DC (Marx. 100 MA) Reference culture Quartic V 24 DC (Marx. 100 MA) Reference culture Quartic V 24 DC (Marx. 100 MA) Reference culture Quartic V 24 DC (Marx. 100 MA) Quartic V 24 DC (Mar	Braking function			
Braking torque with external braking resistance minimum external braking resistance Main 0 4 Soutch-on threshold for the braking transistor Control section External control voltage Ue V 24 V D Climac. 189 mA) Reference voltage Reference voltag	Standard braking torque			max. 30 % M _N
Braking torque with external braking resistance minimum external braking resistance Main 0 4 Soutch-on threshold for the braking transistor Control section External control voltage Ue V 24 V D Climac. 189 mA) Reference voltage Reference voltag	DC braking torque			max. 100% of rated operational current I _a variable
minimum external braking resistance				7
Switch-on fivrahold for the braking transistor Up		R:	0	· · · · · · · · · · · · · · · · · · ·
Central section External control voltage U _c V V 10 C (max. 10 mA) Analog inputs Analog inputs Analog outputs 2 parameterizable, 0 - 10 V DC, 04 - 20 mA 2 parameterizable, 0 - 10 V DC, 04 - 20 mA 2 parameterizable, 0 - 10 V DC, 04 - 20 mA 3 parameterizable, 0 - 10 V DC, 04 - 20 mA 3 parameterizable, 0 - 10 V DC, 04 - 20 mA 3 parameterizable, 0 - 10 V DC, 04 - 20 mA 3 parameterizable, 0 - 10 V DC, 04 - 20 mA 3 parameterizable, 0 - 10 V DC, 04 - 20 mA 4 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 5 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 - 20 mA 6 parameterizable, 0 - 10 V DC, 04 -	-			
Retirence voltage	-	ODC	V	700 V DC
Note Parameterizable Par		Uc	٧	24 V DC (max. 100 mA)
Analog inputs Digital inputs Digital inputs Analog inputs				
Analog outputs Digital joutputs Digital		-5		
Digital injutts Digital injutts Digital outputs Relay outputs Relay outputs Relay outputs Relay outputs Digital injutts Digital controls Relay outputs Relay outputs Digital injutts Digital controls Relay outputs Digital injutts Digital controls Relay outputs Digital controls Di				
Digital outputs Relay outputs 2 parameterizable, 24 V DC 2 parameterizable, 1 N/O and 1 changeover contact, 6 A (250 V, AC-1) / 5 A (30 V, OC-1) OC-1 OC-1 OC-1 OC-1 OC-1 OC-1 OC-1 OC-1 OC-1				
Relay outputs 2, parameterizable, 1 N/O and 1 changeover contact, 6 A (250 V. AC-11/5 A (30 V. OC-1) OC-1) OC-1 OC-1 OC-1 OC-1 OC-1 OC-1 OC-1 OC-1				
DC-11 OP-Bus (RS485)/Modbus RTU, CANopen® OP-Bus (RS485)/Modbus				
Assigned switching and protective elements Power Wrinig Safety device (fuse or miniature circuit-breaker) EC (Type B, g6), 150 % UL (Class CC or J) Mains contactor 150 % overload (CT/l ₁ , at 50 °C) Radio interference suppression filter (external, 150 %) Note regarding radio interference suppression filter, low leakage currents (external, 150 %) Note regarding radio interference suppression filter Braking resistance 10 % duty factor (DF) 40 % duty factor (DF) 40 % duty factor (DF) Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/l ₁ , at 50 °C) Note vegating resistances: DX-BR040-3K1 DX-BR040-3K1 DX-BR040-9K1 DX	iou, cupuc			
Power Wiring Safety device (fuse or miniature circuit-breaker) IEC (Type B, gG), 150 % UL (Class CC or J) A Mains control 150 % overload (CT/I _H , at 50 °C) Main choke 150 % overload (CT/I _H , at 50 °C) Radio interference suppression filter (external, 150 %) Note regarding radio interference suppression filter (ow leakage currents (external, 150 %) Note regarding radio interference suppression filter 10 % duty factor (DF) 40 % duty factor (DF) 40 % duty factor (DF) Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/I _H , at 50 °C) Motor seeder motor choke 150 % overload (CT/I _H , at 50 °C) DX-BN3-025	Interface/field bus (built-in)			OP-Bus (RS485)/Modbus RTU, CANopen®
IEC (Type B, g6), 150 % UL (Class CC or J) A 4 40 Mains contactor 150 % overload (CT/H _H , at 50 °C) Main choke 150 % overload (CT/H _H , at 50 °C) Radio interference suppression filter (external, 150 %) Note regarding radio interference suppression filter Note regarding radio interference suppression filter 10 % duty factor (DF) 20 % duty factor (DF) 40 % duty factor (DF) Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/H _H , at 50 °C) Motor feeder motor choke 150 % overload (CT/H _H , at 50 °C) Sine filter 150 % overload (CT/H _H , at 50 °C) A 40 A 40 DX-LN3-025 DX-EMC34-030 DX-EMC34-030-1 Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments DX-EMC34-030-1 DX-EMC34-03	Assigned switching and protective elements Power Wiring			
UL (Class CC or J) Mains contactor 150 % overload (CT/l _H , at 50 °C) Main choke 150 % overload (CT/l _H , at 50 °C) Radio interference suppression filter (external, 150 %) Radio interference suppression filter (external, 150 %) Note regarding radio interference suppression filter DC link connection Braking resistance 10 % duty factor (DF) 40 % duty factor (DF) Notes concerning braking resistances: motor choke 150 % overload (CT/l _H , at 50 °C) Motor feeder motor choke 150 % overload (CT/l _H , at 50 °C) Ali-pole sine filter DX-LN3-025 DX-EMC34-030 DX-EMC34-030-L Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments DX-BR040-3K1 DX-BR040-3K1 DX-BR040-5K1 DX-BR040-5K1 DX-BR040-9K2 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/l _H , at 50 °C) Sine filter 150 % overload (CT/l _H , at 50 °C) Ali-pole sine filter	Safety device (fuse or miniature circuit-breaker)			
Mains contactor 150 % overload (CT/I _H , at 50 °C) Main choke 150 % overload (CT/I _H , at 50 °C) Radio interference suppression filter (external, 150 %) Radio interference suppression filter, low leakage currents (external, 150 %) Note regarding radio interference suppression filter DC link connection Braking resistance 10 % dury factor (DF) 20 % dury factor (DF) Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/I _H , at 50 °C) Sine filter 150 % overload (CT/I _H , at 50 °C) All-pole sine filter	IEC (Type B, gG), 150 %			FAZ-B40/3
DILM17 Main choke T50 % overload (CT/I _H , at 50 °C) DX-LM3-025 DX-LM3-025 DX-EMC34-030 DX-EMC34-	UL (Class CC or J)		Α	40
Main choke 150 % overload (CT/l _H , at 50 °C) Radio interference suppression filter (external, 150 %) Radio interference suppression filter, low leakage currents (external, 150 %) Note regarding radio interference suppression filter Note regarding radio interference suppression filter DC link connection Braking resistance 10 % duty factor (DF) 20 % duty factor (DF) 40 % duty factor (DF) Notes concerning braking resistances: Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/l _H , at 50 °C) Sine filter 150 % overload (CT/l _H , at 50 °C) All-pole sine filter	Mains contactor			
DX-LN3-025 DX-LN3-025 DX-EMC34-030 DX-EMC34-030 DX-EMC34-030-L	150 % overload (CT/I _H , at 50 °C)			DILM17
Radio interference suppression filter (external, 150 %) Radio interference suppression filter, low leakage currents (external, 150 %) Note regarding radio interference suppression filter DC link connection Braking resistance 10 % duty factor (DF) 20 % duty factor (DF) Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/l _H , at 50 °C) Sine filter All-pole sine filter	Main choke			
Radio interference suppression filter, low leakage currents (external, 150 %) Note regarding radio interference suppression filter DC link connection Braking resistance 10 % duty factor (DF) 20 % duty factor (DF) A0 % duty factor (DF) Notes concerning braking resistances: Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/l _H , at 50 °C) Sine filter All-pole sine filter	150 % overload (CT/I _H , at 50 °C)			DX-LN3-025
Note regarding radio interference suppression filter DC link connection Braking resistance 10 % duty factor (DF) 20 % duty factor (DF) 40 % duty factor (DF) Notes concerning braking resistances: Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/I _H , at 50 °C) All-pole sine filter Dytional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments DX-BR04-3K1 DX-BR040-3K1 DX-BR040-5K1 DX-BR047-9K2 The 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. DX-BR047-9K2 The 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. DX-LM3-035 DX-LM3-035 DX-SIN3-023	Radio interference suppression filter (external, 150 %)			DX-EMC34-030
Ingiths and for use in different EMC environments DC link connection	Radio interference suppression filter, low leakage currents (external, 150 %)			DX-EMC34-030-L
Braking resistance 10 % duty factor (DF) 20 % duty factor (DF) 40 % duty factor (DF) Notes concerning braking resistances: Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/I _H , at 50 °C) Sine filter 150 % overload (CT/I _H , at 50 °C) All-pole sine filter DX-BR040-3K1 DX-BR040-5K1 DX-BR047-9K2 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. DX-LM3-035 DX-SIN3-023 DX-SIN3-023				
10 % duty factor (DF) 20 % duty factor (DF) 40 % duty factor (DF) Notes concerning braking resistances: Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/I _H , at 50 °C) Sine filter 150 % overload (CT/I _H , at 50 °C) All-pole sine filter DX-BR040-5K1 DX-BR047-9K2 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. DX-LM3-035 DX-LM3-035 DX-SIN3-023				
20 % duty factor (DF) 40 % duty factor (DF) Notes concerning braking resistances: Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/I _H , at 50 °C) Sine filter 150 % overload (CT/I _H , at 50 °C) All-pole sine filter				
A0 % duty factor (DF) Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/I _H , at 50 °C) All-pole sine filter DX-BR047-9K2 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. DX-LM3-035 DX-LM3-035 DX-SIN3-023 DX-SIN3-023				
Notes concerning braking resistances: Motor feeder motor choke 150 % overload (CT/l _H , at 50 °C) Sine filter 150 % overload (CT/l _H , at 50 °C) All-pole sine filter Dividence in 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. DX-LM3-035 DX-LM3-035 DX-SIN3-023				
Motor feeder Component of the filter motor choke DX-LM3-035 Sine filter DX-SIN3-023 All-pole sine filter DX-SIN3-023				
motor choke 150 % overload (CT/I _H , at 50 °C) Sine filter 150 % overload (CT/I _H , at 50 °C) DX-LM3-035 DX-LM3-035 DX-SIN3-023 All-pole sine filter	Notes concerning braking resistances:			variable frequency drive. Additional brake resistors and designs (e.g. different duty
150 % overload (CT/I _H , at 50 °C) Sine filter 150 % overload (CT/I _H , at 50 °C) All-pole sine filter DX-LM3-035 DX-SIN3-023	Motor feeder			
Sine filter 150 % overload (CT/I _H , at 50 °C) All-pole sine filter DX-SIN3-023	motor choke			
150 % overload (CT/I _H , at 50 °C) DX-SIN3-023 All-pole sine filter	150 % overload (CT/I _H , at 50 °C)			DX-LM3-035
All-pole sine filter	Sine filter			
	150 % overload (CT/I _H , at 50 °C)			DX-SIN3-023
150 % overload (CT/I _H , at 50 °C) DX-SIN3-024-A	All-pole sine filter			
	150 % overload (CT/I _H , at 50 °C)			DX-SIN3-024-A

Design verification as per IEC/EN 61439

200:9:: 10::::0ation: 40 po: 120, 2:: 0: 100			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	24
Heat dissipation per pole, current-dependent	P _{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	297
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	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 switch gear must be observed. $\label{eq:specification}$
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switch gear must be observed. $\label{eq:constraint}$
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed. $\label{eq:continuous}$

Technical data ETIM 7.0

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

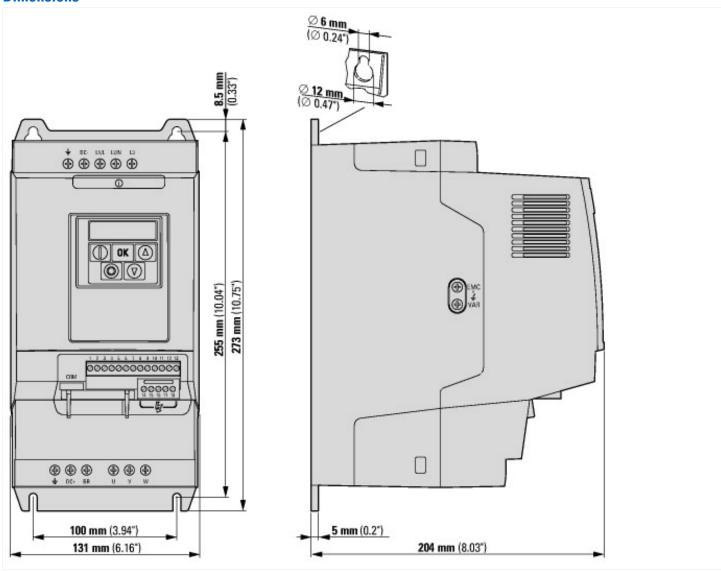
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Mains voltage	V	342 - 528
Mains frequency		50/60 Hz
Number of phases input		3
Number of phases output		3
Max. output frequency	Hz	500
Max. output voltage	V	500
Nominal output current I2N	А	24
Max. output at quadratic load at rated output voltage	kW	11
Max. output at linear load at rated output voltage	kW	11
Relative symmetric net frequency tolerance	%	10
Relative symmetric net voltage tolerance	%	10
Number of analogue outputs		2
Number of analogue inputs		2
Number of digital outputs		2
Number of digital inputs		5

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 No
Supporting protocol for INTERBUS		
Supporting protocol for ASI		No No
Supporting protocol for KNX		
Supporting protocol for MODBUS		Yes
Supporting protocol for Data-Highway		No V-
Supporting protocol for DeviceNet		Yes
Supporting protocol for SUCONET		No
Supporting protocol for LON		No V-
Supporting protocol for PROFINET CDA		Yes
Supporting protocol for PROFINET CBA		No
Supporting protocol for SERCOS		No
Supporting protocol for Foundation Fieldbus		No
Supporting protocol for EtherNet/IP		Yes
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 BACnet		Yes
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 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)		IP20
Degree of protection (NEMA)		Other
Height	mm	273
Width	mm	131
Depth	mm	204

Approvals

Approvato	
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~ 480 V AC IEC: TN-S UL/CSA: "Y" (Solidly Grounded Wey)

Dimensions



Additional product information (links)

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IL04020010Z DA1 variable frequency drives (FS2 - FS3, IP20)					
IL04020010Z DA1 variable frequency drives (FS2 https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL04020010Z2018_04.pdf - FS3, IP20)					
MN04020005Z DA1 variable frequency drives, I	nstallation 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/D0CUMENTATION/AWB_MANUALS/MN04020005Z_EN.pdf				
MN04020005Z Convertitore di frequenza DA1, manuale Installazione - italiano	https://es-assets.eaton.com/D0CUMENTATION/AWB_MANUALS/MN04020005Z_IT.pdf				
MN04020006Z DA1 variable frequency drives, F	MN04020006Z DA1 variable frequency drives, Parameters manual				
MN04020006Z Frequenzumrichter DA1, Parameterhandbuch - Deutsch	https://es-assets.eaton.com/D0CUMENTATION/AWB_MANUALS/MN04020006Z_DE.pdf				
MN04020006Z DA1 variable frequency drives, Parameters manual - English	https://es-assets.eaton.com/D0CUMENTATION/AWB_MANUALS/MN04020006Z_EN.pdf				
MN04020006Z Convertitore di frequenza DA1, manuale Parametri - italiano	https://es-assets.eaton.com/D0CUMENTATION/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				