## DATASHEET - DA1-34024FB-B55C

Variable frequency drive, 400 V AC, 3-phase, 24 A, 11 kW, IP55/NEMA 12, Radio interference suppression filter, OLED display



Part no.	DA1-34024FB-B55C
	169390
EL Number	4137312
(Norway)	

## **General specifications**

General information   200 m, screened, with motor choke, maximum permissible, Motor feeder     Cable length   200 m, screened, with motor choke, maximum permissible, Motor feeder     200 m, unscreened, with motor choke, maximum permissible, Motor feeder   200 m, unscreened, with motor choke, maximum permissible, Motor feeder     Communication interface   2 S m, Radio interfacence level, maximum motor cable length     Communication interface   EtherCAT, optional     Communication interface   EtherCAT, optional     Communication interface   PPS (POFINE)     Connection to SmartWire-DT   PBE     Degree of protection   PPS5     Petter of protection   PPS5     Fitted with:   Victor Bit and 2nd environments (according to EN 6180-3)     Fitted with:   Control unit harmal DC link	General specifications	
EAN 91500165838   Product length/Biph 20 millinerer   Product length/Biph 13 millinerer   Product length/Biph 13 millinerer   Product valight 13 millinerer   Product valight 13 kingum   Certifications 13 kingum   Certifications 14 kingum   Product valight 13 kingum   Certifications 14 kingum   Product Todemanne 14	Product name	Eaton DA1 Variable frequency drive
Product largh/Qaph   240 millinere     Product wolk   450 millinere     Product wolk   115 kingsom     Cartifications   115 kingsom     Cartification for quarker lequinments: IECEN 01800 2:   115 kingsom     Unit Provide: Tradesame   0   0     Product Indename   0   0     Product Indename   0   0     Product Indename   0   0     Product Sub Type   Name   0     Catalog Nates   0   0     Catalog Nates   0   0   0     Catalog Nates   0   0   0   0     Catalog Nates   0   0   0   0   0     Catalog Nates   0   <	Part no.	DA1-34024FB-B55C
Product high   450 millinetre     Product weight   13 millinetre     Product weight   13 millinetre     Decifications   640	EAN	4015081658336
Product weightInstalling and installing a	Product Length/Depth	240 millimetre
Product weight   I1.5 kilogram     Certifications   RCM     Lerifications   RCM     Lerifications   RCM     Lerifications   RCM     Lerifications   RCM     Lerifications   RCM     Line trapper optical Point (Income in Canada UL Interfierd by UL or use in Canada Interfier	Product height	450 millimetre
Certifications   ROM   ROM     Certifications   ROM   Report splits to bab US and Canada     Cit Longsopy Cutter IV Law MMAS, MMMS7   Cutter FVD   Report splits to bab US and Canada     Cit Longsopy Cutter IV Law MMAS, MMMS7   Cutter FVD   Report splits to bab US and Canada     Product Tradename   Poduct Tradename   Poduct Tradename     Product Tradename   Poduct Tradename   None     Catalog Notes   None   None     Catalog Notes   None   None     Catalog Notes   Statum JP: None-N: 2000   Report Splits to and Tradename memory of via     Product Tradename   Poduct Tradename   None     Catalog Notes   None   None   Report Splits to and Splits to And Splits the Splits to And Splits to And Splits the Splits to And Splits to And Splits to And Splits the Splits to And Spli	Product width	173 millimetre
UUU	Product weight	11.5 kilogram
Product TypeVariable frequency driveProduct TypeNoneCatalog NotesNoneCatalog NotesThe brake resistors are assigned based on the maximum rated power of the variable frequency drive.General informationThe brake resistors are assigned based on the maximum rated power of the variable frequency drive.Cable length200 m, screened, with motor choke, maximum permissible, Motor feederCommunication interface200 m, screened, with motor choke, maximum pormissible, Motor feederCommunication interface200 m, screened, with motor choke, maximum pormissible, Motor feederCommunication interfaceEtherCAT, optionalConnection to SmartWire-DTEtherCAT, optionalDegree of protection1955Fitted with:1956Fitted with:Control unitFitted with:Control unitFitted with:Control unitFitted with:ProtectionFitted with:Protection	Certifications	UL report applies to both US and Canada CE UL Category Control No.: NMMS, NMMS7 CUL UkrSEPR0 Certified by UL for use in Canada UL File No.: E172143 Specification for general requirements: IEC/EN 61800-2 EAC CSA-C22.2 No. 14 Safety: EN 61800-5-1: 2003 UL 508C IEC/EN 61800-3 RoHS, ISO 9001 IEC/EN 61800-3 IEC/EN 61800-5 DNV
Product Sub Type   None     Catalog Notes   The brake resistors are assigned based on the maximum rated power of the variable frequency drive. Additional brake resistors and designs (e.g. different dut cycles) are available upon request.     General information   200 m, screened, with motor choke, maximum permissible. Motor feeder 300 m, unscreened, with motor choke, maximum motor cable length     Cable length   200 m, screened, with motor choke, maximum permissible. Motor feeder 22 s m, Bado interference level, maximum motor cable length     Communication interface   EtherCAT optional CAT optional POBIBUS, built in Modus-TCP optional CAT optional POBIBUS,	Product Tradename	DA1
Catalog Notes   The brake resistors are assigned based on the maximum rated power of the variable frequency drive. Additional brake resistors and designs (e.g. different dut cycles) are available upon request.     Cable length   200 m, screened, with motor choke, maximum permissible, Motor feeder 300 m, unscreened, with motor choke, maximum permissible, Motor feeder 22 5 m, Radio interference level, maximum motor cable length C3 25 m, Radio interference level, maximum motor cable length     Communication interface   Feed C4 and C4	Product Type	Variable frequency drive
General information   For available upon request.     General information   200 m, screened, with motor choke, maximum permissible, Motor feeder     Cable length   200 m, screened, with motor choke, maximum permissible, Motor feeder     Communication interface   200 m, screened, with motor choke, maximum permissible, Motor feeder     Communication interface   200 m, screened, with motor choke, maximum permissible, Motor feeder     Communication interface   200 m, screened, with motor choke, maximum permissible, Motor feeder     Communication interface   Ether CAT, optional     Ether CAT, optional   Ether CAT, optional     Connection to SmartWire-DT   OP-Bus (SR489), built in Modus-STC, optional     Degree of protection   In conjunction with DX-NET-SWD1 SmartWire DT module     Fitted with:   Vers     Fitted with:   Ether CAT optional     Fitted with:   Control on attribution	Product Sub Type	None
Cable length200 m, screened, with motor choke, maximum permissible, Motor feeder 20 cm, unscreened, with motor choke, maximum permissible, Motor feeder 22 s m, Radio interference level, maximum permissible, Motor feeder 10 m, unscreened, maximum permissible, Motor feederCommunication interfaceEtherCAT, optional Ethernel IP, optional CANopende, built in Modus STU, built in Modus STU, built in POP-Bus (RS488), built in Modus STU, built in POP-Bus (RS488), built in <td>Catalog Notes</td> <td>variable frequency drive. Additional brake resistors and designs (e.g. different duty</td>	Catalog Notes	variable frequency drive. Additional brake resistors and designs (e.g. different duty
Solo m, unscreened, with motor choke, maximum permissible, Motor feederC S S S m, Radio interference level, maximum motor cable length C3 S S m, Radio interference level, maximum motor cable length C3 S S m, Radio interference level, maximum permissible, Motor feederCommunication interfaceEtherCAT, optional Ethernet IP, optional SmartWire-DTConnection to SmartWire-DTIm conjunction with DX-NET-SWD1 SmartWire DT module YesDegree of protectionIm conjunction with DX-NET-SWD1 SmartWire DT module YesElectromagnetic compatibilityIm conjunction with DX-NET-SWD1 SmartWire DT module 	General information	
Image: state in the state in	Cable length	300 m, unscreened, with motor choke, maximum permissible, Motor feeder C2 ≤ 5 m, Radio interference level, maximum motor cable length C3 ≤ 25 m, Radio interference level, maximum motor cable length 150 m, unscreened, maximum permissible, Motor feeder
Degree of protectionYesElectromagnetic compatibilityIst and 2nd environments (according to EN 61800-3)Fitted with:OLED display Control unit Internal DC link Additional PCB protection Breaking resistance IGBT inverter Brake chopper Brake chopper Brake chopper Brake chopper 	Communication interface	Ethernet IP, optional CANopen®, built in OP-Bus (RS485), built in Modbus-TCP, optional SmartWire-DT, optional PROFIBUS, optional DeviceNet, optional Modbus RTU, built in
NEMA 12   Electromagnetic compatibility 1st and 2nd environments (according to EN 61800-3)   Fitted with: OLED display Control unit Internal DC link Additional PCB protection Breaking resistance IGBT inverter Brake chopper Radio interference suppression filter PC connection	Connection to SmartWire-DT	
Fitted with: DLED display Control unit Internal DC link Additional PCB protection Breaking resistance IGBT inverter Brake chopper Radio interference suppression filter PC connection	Degree of protection	
Control unit Internal DC link Additional PCB protection Breaking resistance IGBT inverter Brake chopper Radio interference suppression filter PC connection	Electromagnetic compatibility	1st and 2nd environments (according to EN 61800-3)
Frame size	Fitted with:	Control unit Internal DC link Additional PCB protection Breaking resistance IGBT inverter Brake chopper Radio interference suppression filter
ridille size r54	Frame size	FS4

Functions	4-quadrant operation possible
Mounting position	Vertical
Product Category	Variable frequency drives
Protection	Finger and back-of-hand proof, Protection against direct contact (BGV A3, VBG
Protocol	PROFIBUS Other bus systems EtherNet/IP DeviceNet CAN MODBUS PROFINET IO TCP/IP
Safety function/level	STO (Safe Torque Off, SIL2, PLc Cat 2)
Suitable for	Branch circuits, (UL/CSA)
Radio interference class	Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments C2, C3: depending on the motor cable length, the connected load, and ambient conditions. External radio interference suppression filters (optional) may be necessary.
Climatic environmental conditions	
Ambient operating temperature - min	-10 °C
Altitude	Above 1000 m with 1 % derating per 100 m Max. 1000 m Max. 4000 m
Ambient operating temperature - max	40 °C
Ambient operating temperature at 150% overload - min	-10 °C
Ambient operating temperature at 150% overload - max	40 °C
Ambient storage temperature - min	-40 °C
Ambient storage temperature - max	60 °C
Climatic proofing	< 95 average relative humidity (RH), no condensation, no corrosion
fain circuit	
Efficiency	97.3 % (ŋ)
Heat dissipation at current/speed	126 W at 25% current and 0% speed     139 W at 25% current and 50% speed     156 W at 50% current and 0% speed     162 W at 50% current and 90% speed     178 W at 50% current and 90% speed     234 W at 100% current and 0% speed     258 W at 100% current and 90% speed     284 W at 100% current and 90% speed     284 M
Leakage current at ground IPE - max	2.47 mA
Mains switch-on frequency	Maximum of one time every 30 seconds
Mains voltage - min	380 V
Mains voltage - max Operating mode	480 V Sensorless vector control (SLV) Speed control with slip compensation Optional: Vector control with feedback (CLV) U/f control
Output frequency - min	0 Hz
Output frequency - max	500 Hz
Output voltage (U2)	480 V AC, 3-phase 400 V AC, 3-phase
Overload current IL at 150% overload	36 A
Rated control supply voltage	10 V DC (Us, max. 10 mA)
Rated frequency - min	48 Hz
Rated frequency - max	62 Hz
Rated operational current (Ie) at 150% overload	24 A
Rated operational power at 380/400 V, 50 Hz, 3-phase	11 kW
Rated operational voltage	400 V AC, 3-phase 480 V AC, 3-phase
Resolution	0.1 Hz (Frequency resolution, setpoint value)
Short-circuit protection rating	40 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Powe Wiring

Supply frequency	50/60 Hz
Switching frequency	8 kHz, 4 - 24 kHz adjustable (audible), fPWM, Power section, Main circuit
System configuration type	AC supply systems with earthed center point
Voltage rating - max	480 V AC
Motor rating	
Assigned motor current IM at 400 V, 50 Hz, 150% overload	21.7 A
Assigned motor current IM at 440 - 480 V, 60 Hz, 150% overload	21 A
Assigned motor current in at 440 460 V, 60 Hz, 3-phase	15 HP
Apparent power	
Apparent power at 400 V	16.63 kV-A
Apparent power at 480 V	19.95 kV·A
Braking function	
Braking resistance	40 0
Braking torque	Max. 100 % of rated operational current le with external braking resistor - Ma circuit Max. 100 % of rated operational current le, variable, DC - Main circuit Max. 30 % MN, Standard - Main circuit
Switch-on threshold for the braking transistor	780 V DC
Control circuit	
Number of inputs (analog)	2
Number of inputs (digital)	5
Number of outputs (analog)	2
Number of outputs (digital)	2
Number of relay outputs	2 (parameterizable, 1 N/O and 1 changeover contact, 6 A (250 V, AC-1) / 5 A (30 DC-1))
Rated control voltage (Uc)	24 V DC (external, max. 100 mA)
Design verification	
Equipment heat dissipation, current-dependent Pvid	297 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	0 W
Rated operational current for specified heat dissipation (In)	24 A
Static heat dissipation, non-current-dependent Pvs	0 W
10.2.2 Corrosion resistance	Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures	Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat	Meets the product standard's requirements.
10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects	Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation	Meets the product standard's requirements.
10.2.5 Lifting	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions	Meets the product standard's requirements.
10.3 Degree of protection of assemblies	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.8 Connections for external conductors	Is the panel builder's responsibility.
10.9.2 Power-frequency electric strength	Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material	Is the panel builder's responsibility.
10.10 Temperature rise	The panel builder is responsible for the temperature rise calculation. Eaton w provide heat dissipation data for the devices.
10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## **Technical data ETIM 9.0**

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

Low-voltage industrial components (EG000017) / Frequency converter =< 1 kV (EC0018	357)	
Electric engineering, automation, process control engineering / Electrical drive / Stat	ic frequency converte	er / Static frequency / Servo converter = < 1 kV (ecl@ss13-27-02-31-01 [AKE177019])
Mains voltage	V	380 - 480
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	A	24
Nax. output at quadratic load at rated output voltage	kW	11
Nax. output at linear load at rated output voltage	kW	11
Power consumption	w	297
Relative symmetric net frequency tolerance	%	10
Relative symmetric net voltage tolerance	%	10
lumber of analogue outputs		2
lumber of analogue inputs		2
Number of digital outputs		2
Number of digital inputs		5
Vith control element		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
upporting protocol for CAN		Yes
upporting protocol for INTERBUS		No
upporting protocol for ASI		No
upporting protocol for KNX		No
Supporting protocol for Modbus		Yes
Supporting protocol for Data-Highway		No
Supporting protocol for DeviceNet		Yes
Supporting protocol for SUCONET		No
Supporting protocol for LON		No
Supporting protocol for PROFINET IO		Yes
Supporting protocol for PROFINET CBA		No
Supporting protocol for SERCOS		No
Supporting protocol for Foundation Fieldbus		No
Supporting protocol for EtherNet/IP		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
upporting protocol for BACnet		No
Supporting protocol for other bus systems		Yes
lumber of HW-interfaces industrial Ethernet		0
lumber of interfaces PROFINET		0
lumber of HW-interfaces RS-232		0
lumber of HW-interfaces RS-422		0
Jumber of HW-interfaces RS-485		1
lumber of HW-interfaces serial TTY		0
lumber of HW-interfaces USB		0
lumber of HW-interfaces parallel		0
Number of HW-interfaces other		0
Nith 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)		IP55
Degree of protection (NEMA)		12
Height	mm	450
Width	mm	173
Depth	mm	240