DATASHEET - DC1-344D1FB-A20CE1



Variable frequency drive, 400 V AC, 3-phase, 4.1 A, 1.5 kW, IP20/NEMA 0, Radio interference suppression filter, Brake chopper, FS2



Part no. EL Number (Norway) DC1-344D1FB-A20CE1 185749 4137030

General specifications

General specifications	
Product name	Eaton DC1 Variable frequency drive
Part no.	DC1-344D1FB-A20CE1
EAN	4015081812486
Product Length/Depth	152 millimetre
Product height	231 millimetre
Product width	107 millimetre
Product weight	1.2 kilogram
Certifications	UL Category Control No.: NMMS, NMMS7 IEC/EN61800-5 RoHS, ISO 9001 UkrSEPR0 IEC/EN 61800-3 Safety requirements: IEC/EN 61800-5-1 UL File No.: E172143 Specification for general requirements: IEC/EN 61800-2 CSA-C22.2 No. 14 UL 508C RCM IEC/EN61800-3 CUL UL report applies to both US and Canada CE Certified by UL for use in Canada EAC UL
Product Tradename	DC1
Product Type	Variable frequency drive
Product Sub Type	None
Catalog Notes	Environmental class: 3C2, 3S2 Overload cycle for 60 s every 600 s
Features & Functions	
Features	Parameterization: drivesConnect Parameterization: drivesConnect mobile (App) Parameterization: Fieldbus Parameterization: Keypad
Fitted with:	IGBT inverter Brake chopper Radio interference suppression filter PC connection 7-digital display assembly Control unit Internal DC link Breaking resistance Additional PCB protection
Functions	4-quadrant operation possible
General information	
Cable length	200 m, screened, with motor choke, maximum permissible, Motor feeder C3 ≤ 25 m, Radio interference level, maximum motor cable length C2 ≤ 5 m, Radio interference level, maximum motor cable length 100 m, screened, maximum permissible, Motor feeder 150 m, unscreened, maximum permissible, Motor feeder 300 m, unscreened, with motor choke, maximum permissible, Motor feeder
Communication interface	OP-Bus (RS485), built in Modbus RTU, built in CANopen®, built in SmartWire-DT, optional
Connection to SmartWire-DT	Yes In conjunction with DX-NET-SWD3 SmartWire DT module
Degree of protection	IP20 NEMA Other
Electromagnetic compatibility	1st and 2nd environments (according to EN 61800-3)
Frame size	FS2

Mounting position	Vertical
Product category	Variable frequency drives
Protection	Finger and back-of-hand proof, Protection against direct contact (BGV A3, VBG4)
Protocol	EtherNet/IP
Radio interference class	Other bus systems MODBUS CAN 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.
Suitable for	Branch circuits, (UL/CSA)
Climatic environmental conditions	
Altitude	Above 1000 m with 1 % derating per 100 m
	Max. 4000 m
Ambient operating temperature - min	-10 °C
Ambient operating temperature - max	50 °C
Ambient operating temperature at 150% overload - min	-10 °C
Ambient operating temperature at 150% overload - max	50 °C
Ambient storage temperature - min	-40 °C
Ambient storage temperature - max	60 °C
Climatic proofing	< 95 average relative humidity (RH), no condensation, no corrosion
Main circuit	
Efficiency	94.9 % (ŋ)
Heat dissipation at current/speed	31 W at 25% current and 0% speed35 W at 25% current and 50% speed39 W at 50% current and 0% speed45 W at 50% current and 50% speed52 W at 50% current and 90% speed56 W at 100% current and 0% speed61 W at 100% current and 50% speed73 W at 100% current and 90% speed
Input current ILN at 150% overload	5.6 A
Leakage current at ground IPE - max	12.6 mA
Mains switch-on frequency	Maximum of one time every 30 seconds
Mains voltage - min	380 V
Mains voltage - max	480 V
Operating mode	U/f control Speed control with slip compensation Sensorless vector control (SLV) BLDC motors PM motors Synchronous reluctance motors
Output frequency - min	0 Hz
Output frequency - max	500 Hz
Output voltage (U2)	400 V AC, 3-phase 480 V AC, 3-phase
Overload current IL at 150% overload	6.15 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)	4.1 A at 150% overload (at an operating frequency of 16 kHz and an ambient air temperature of +50 °C)
Rated operational power at 380/400 V, 50 Hz, 3-phase	1.5 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	6 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring
Starting current - max Supply frequency	175 %, IH, max. starting current (High Overload), For 2.5 seconds every 600 seconds, Power section 50/60 Hz
Switching frequency	8 kHz, 4 - 32 kHz adjustable (audible), fPWM, Power section, Main circuit
System configuration type	AC supply systems with earthed center point

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	10.11 Short-circuit rating	

10.13 Mechanical function

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

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)

Electric engineering, automation, process control engineering / Electrical drive / Static fi	requency converte	r / 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	4.1
Max. output at quadratic load at rated output voltage	kW	1.5
Max. output at linear load at rated output voltage	kW	1.5
Power consumption	W	76.5
Relative symmetric net frequency tolerance	%	10
Relative symmetric net voltage tolerance	%	10
Number of analogue outputs		1
Number of analogue inputs		2
Number of digital outputs		1
Number of digital inputs		4
With control element		Yes
Application in industrial area permitted		Yes
Application in domestic- and commercial area permitted		Yes
Supporting protocol for TCP/IP		No
Supporting protocol for PROFIBUS		No
Supporting protocol for CAN		Yes
Supporting protocol for INTERBUS		No
Supporting protocol for ASI		No
Supporting protocol for KNX		No
Supporting protocol for Modbus		Yes
Supporting protocol for Data-Highway		No
Supporting protocol for DeviceNet		No
Supporting protocol for SUCONET		No
Supporting protocol for LON		No
Supporting protocol for PROFINET IO		No
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		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 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	mn	nm 231
Width	mn	nm 107
Depth	mn	nm 152