DATASHEET - DA1-34090FB-B55C

Variable frequency drive, 400 V AC, 3-phase, 90 A, 45 kW, IP55/NEMA 12, Radio interference suppression filter, OLED display, DC link choke



Part no.	DA1-34090FB-B55C
	169397
EL Number	4137319
(Norway)	

General specifications

General specifications	
Product name	Eaton DA1 Variable frequency drive
Part no.	DA1-34090FB-B55C
EAN	4015081658381
Product Length/Depth	313.5 millimetre
Product height	865 millimetre
Product width	330 millimetre
Product weight	50 kilogram
Certifications	Safety: EN 61800-5-1: 2003 UL 508C RCM UkrSEPRO RoHS, ISO 9001 CE Specification for general requirements: IEC/EN 61800-2 CSA-C22.2 No. 14 UL report applies to both US and Canada CUL UL EAC Certified by UL for use in Canada IEC/EN61800-3 DNV IEC/EN61800-5 UL Category Control No.: NMMS, NMMS7 IEC/EN 61800-3 UL File No.: E172143
Product Tradename	DA1
Product Type	Variable frequency drive
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	
Cable length	100 m, screened, maximum permissible, Motor feeder 150 m, unscreened, maximum permissible, Motor feeder 200 m, screened, with motor choke, maximum permissible, Motor feeder 300 m, unscreened, with motor choke, maximum permissible, Motor feeder C2 \leq 5 m, Radio interference level, maximum motor cable length C3 \leq 25 m, Radio interference level, maximum motor cable length
Communication interface	Ethernet IP, optional SmartWire-DT, optional OP-Bus (RS485), built in PROFIBUS, optional Modbus RTU, built in Modbus-TCP, optional PROFINET, optional EtherCAT, optional CANopen®, built in DeviceNet, optional
Connection to SmartWire-DT	In conjunction with DX-NET-SWD1 SmartWire DT module Yes
Degree of protection	IP55 NEMA 12
Electromagnetic compatibility	1st and 2nd environments (according to EN 61800-3)
Fitted with:	Radio interference suppression filter DC link choke Additional PCB protection IGBT inverter OLED display Internal DC link Breaking resistance Control unit PC connection Brake chopper

Parking: Available spacebild: Version Protocol design: Version Version Protocol design: Protocol design: Version Protocol design: Version Protocol design: Version Protocol design: Protocol design: Protocol design: Protocol design: Protocol design:<	Frame size	FS6
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Anbient operating temperature - min Image: Control of Control Control of Control	Radio interference class	conditions. External radio interference suppression filters (optional) may be necessary. Optional external radio interference suppression filter for longer motor cable
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Ambient storage temperature - min 40 °C Ambient storage temperature - max 60 °C Clinatic proding 60 °C Main circuit 50 °C Efficiency 97.6 % (n) Plant dissipation at current/speed 97.6 % (n) Input current ILN at 150% overload 97.6 % (n) Input current ILN at 150% overload 60 °C Mains voltage - min 98.6 % (n) Mains voltage - min 98.6 % (n) Mains voltage - min 98.0 % (n) %	Ambient operating temperature at 150% overload - min	-10 °C
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Cliniatic profing 45 average relative humidity (RH), no condensation, no corrosion Main circuit 97.6 % (n) Heat dissipation at current/speed 97.6 % (n) Book at current/speed 97.6 % (n) Book at current/speed 97.6 % (n) Book at current/speed 97.6 % (n) Input current (LN at 150% overload 90.0 at 25% current and 50% speed 800 wit 25% current and 50% speed 800 wit 100% current and 50% speed Input current (LN at 150% overload 90.0 at 25% current and 50% speed 800 wit 100% current 100% current and 50% speed 800 wit 100% current 100% current and 50% speed 800 wit 100% current 1	Ambient storage temperature - min	-40 °C
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Lakage current at ground IPE - max 268 mA Mains switch-on frequency Maximun of one time every 30 seconds Mains voltage - min 300 V Mains voltage - max 0ptional: Vector control with feedback (CLV) Uf control Sensorless vector control (SLV) Sensorless vector	Heat dissipation at current/speed	380 W at 25% current and 50% speed 460 W at 50% current and 0% speed 490 W at 50% current and 50% speed 560 W at 50% current and 90% speed 710 W at 100% current and 0% speed 870 W at 100% current and 50% speed
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Mains voltage - min 380 V Mains voltage - max 480 V Operating mode Optional: Vector control with feedback (CLV) Uf control Sensoriess vector control (SLV) Sensoriess vector control (SLV) Sensoriess vector control (SLV) Sensoriess vector control with silp compensation Output frequency - min Hz Output frequency - max 500 Hz Output oltage (U2) 500 Hz Overload current IL at 150% overload 104 VCL (Js, max. 10 mA) Rated control supply voltage 01 VDC (Us, max. 10 mA) Rated frequency - max 62 Hz Rated operational current (le) at 150% overload 62 Hz Rated operational power at 380/400 V, 50 Hz, 3- phase 90 A Rated operational power at 380/400 V, 50 Hz, 3- phase 90 A Rated operational power at 380/400 V, 50 Hz, 3- phase 90 A Rated operational voltage 01 Hz (Frequency resolution, setpoint value) Short-circuit protection rating 91 Hz (Frequency resolution, setpoint value)	Leakage current at ground IPE - max	2.68 mA
Mains voltage - max 480 V Operating mode Optional: Vector control with feedback (CLV) U/f control Sensoriess vector control (SLV) Sensoriess vector control (SLV) Sensoriess vector control (SLV) Output frequency - min 0 Hz Output frequency - max 500 Hz Output voltage (U2) 480 V AC, 3-phase 400 V AC, 3-phase 400 V AC, 3-phase Overload current IL at 150% overload 135 A Rated control supply voltage 10 V DC (Us, max. 10 mA) Rated frequency - min 64 Hz Rated operational current (le) at 150% overload 64 Hz Rated operational power at 380/400 V, 50 Hz, 3-phase 90 A Rated operational power at 380/400 V, 50 Hz, 3-phase 90 A Rated operational voltage 01 Hz (Frequency resolution, setpoint value) Short-circuit protection rating 0.1 Hz (Frequency resolution, setpoint value)	Mains switch-on frequency	Maximum of one time every 30 seconds
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Output frequency - max 500 Hz Output voltage (U2) 800 V AC, 3-phase Overload current IL at 150% overload 135 A Rated control supply voltage 10 V DC (Us, max. 10 mA) Rated frequency - min 84 Hz Rated frequency - max 62 Hz Rated operational current (le) at 150% overload 90 A Rated operational current (le) at 150% overload 64 MS Rated operational voltage 45 KW Rated operational voltage 45 KW Rated operational voltage 61 Hz (Frequency resolution, setpoint value) Short-circuit protection rating 11 Jz (Frequency resolution, setpoint value)	-	Optional: Vector control with feedback (CLV) U/f control Sensorless vector control (SLV)
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Overload current IL at 150% overload Image: Control supply voltage 135 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 90 A Rated operational power at 380/400 V, 50 Hz, 3-phase 54 KW Rated operational power at 380/400 V, 50 Hz, 3-phase 45 KW Rated operational voltage 61 Hz (Frequency resolution, setpoint value) Short-circuit protection rating 0.1 Hz (Frequency resolution, setpoint value)	Output frequency - max	500 Hz
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Rated frequency - max 62 Hz Rated operational current (le) at 150% overload 90 A Rated operational power at 380/400 V, 50 Hz, 3-phase 45 kW Rated operational voltage 480 V AC, 3-phase Resolution 0.1 Hz (Frequency resolution, setpoint value) Short-circuit protection rating 125 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power	Rated control supply voltage	10 V DC (Us, max. 10 mA)
Rated operational current (le) at 150% overload 90 A Rated operational power at 380/400 V, 50 Hz, 3-phase 90 A Rated operational voltage 45 kW Resolution 480 V AC, 3-phase Resolution 0.1 Hz (Frequency resolution, setpoint value) Short-circuit protection rating 125 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power	Rated frequency - min	48 Hz
Rated operational power at 380/400 V, 50 Hz, 3-phase 45 kW Rated operational voltage 480 V AC, 3-phase Resolution 480 V AC, 3-phase Resolution 0.1 Hz (Frequency resolution, setpoint value) Short-circuit protection rating 125 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power	Rated frequency - max	62 Hz
Rated operational voltage 480 V AC, 3-phase Resolution 0.1 Hz (Frequency resolution, setpoint value) Short-circuit protection rating 125 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power	Rated operational current (le) at 150% overload	90 A
Resolution 400 V AC, 3-phase Resolution 0.1 Hz (Frequency resolution, setpoint value) Short-circuit protection rating 125 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Powe	Rated operational power at 380/400 V, 50 Hz, 3-phase	45 kW
Short-circuit protection rating 125 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Powe	Rated operational voltage	
	Resolution	0.1 Hz (Frequency resolution, setpoint value)
	Short-circuit protection rating	125 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring

observed.	Starting current - max	200 %, IH, max. starting current (High Overload), for 4 seconds every 40 seconds, Power section
Subing regards Init of a like a like of a like of a like a like of a like of a like of	Supply frequency	50/60 Hz
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Assigned motor power at 404400 (40 Mz 3-phase 60 HP Appennet power at 400 V 235 V/A Appennet power at 400 V 432 V/A Appennet power at 400 V 432 V/A Briking function 60 Briking strates 60 Switch on threshold for the braking tanestar 60 Switch on threshold for the braking tanestar 70 V 0C Switch on threshold for the braking tanestar 70 V 0C Switch on threshold for the braking tanestar 70 V 0C Switch on threshold for the braking tanestar 70 V 0C Number of rings tranksg 70 V 0C Rinds condout starksge 70 V 0C Number of rings tranksge 70 V 0C Rinds condout starksge 70 V 0C Number of rings tranksge 70 V 0C Stark barden starksge 70 V 0C Stark barden starksge 70 V 0C Stark bard starksge 70 V 0C	Assigned motor current IM at 440 - 480 V, 60 Hz, 150% overload	77 A
Apparent power at 40 V Apparent power at 40 V Apparent power at 40 V D25 V/A Braking functions D25 V/A Braking transitions D0 Number of inpots transitions D0 Number of inpots transitions D0 Braking transing tr	Assigned motor power at 460/480 V, 60 Hz, 3-phase	60 HP
Aparent power at 460 V 2.35 W A Aparent power at 460 V 2.35 W A Braining instance 6.0 Number of inputs (digital) 2 Number of inputs (bigital) 2 Number of inputs (bigital) 2 Braining instance 2 Number of inputs (bigital) 2 Rand control veltage (big) 2 Braining instance 6.00 Braining insta		
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Braking resistance 60 Braking resistance 60 Braking resistance 60 Braking torque 60 Surdia-on inrusted for the braking transistor 60 Control circuit 70 Number of inputs land(g) 70 Rated cortical votage lu(k) 70		
Braking resistance 0 Braking resistance Max. 80 % MN, Standard - Main circuit Max. 80 % MN, Standard - With extense braking resistor - Main circuit Switch on threshold for the braking transitor 2 Number of spats (dpta) 2 Number of spats (dpta) 2 Number of rately circuits (dpta) 2 Number of rately circuits 2 Parameterization 2 Number of rately circuits 2 Parameterization, Toront-dependent Poid 2 Design verification 2 Parameterization, current-dependent Poid 108 W Heat dissipation, current-dependent Poid 0W Resid deparation of thermal stability of encloaures 0W 102.12 Verification of resizance of insubility materials to normal heat 0W 102.12 Verification of resizance of insubility materials to normal heat 0W 102.12 Verification of demain stability of encloaures 0W 102.12 Verification of resizance of insubility materials to normal heat 0W 102.12 Verification of demain stability of encloaures 0W 102.12 Verification of resizance of insubility materials to normal heat 0W 1		
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	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.

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 / Sta		
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	А	90
Max. output at quadratic load at rated output voltage	kW	45
Max. output at linear load at rated output voltage	kW	45
Power consumption	W	1080
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 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
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		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
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)		IP55
Degree of protection (NEMA)		12
Height	mm	865
Width	mm	330
Depth	mm	313.5