

Specifications

Eaton DC1-12015FB-A6SOE1

Eaton DC1 Variable frequency - drive, 230 V AC, 1-phase, 15.3 A, 5 HP, IP66/NEMA 4X, Radio interference suppression filter, Brake chopper, 7-digital display assembly, Local controls, Additional PCB protection, UV resistant, FS3

General specifications

PRODUCT NAME	Eaton DC1 Variable frequency drive
CATALOG NUMBER	DC1-12015FB-A6SOE1
UPC	786689592257
PRODUCT LENGTH/DEPTH	238 mm
PRODUCT HEIGHT	310 mm
PRODUCT WIDTH	210.5 mm
PRODUCT WEIGHT	7 kg
CERTIFICATIONS	CE UL 508C CUL IEC/EN61800-5 UL File No.: E172143 UL Category Control No.: NMMS, NMMS7 UL CE marking RCM UL report applies to both US and Canada RoHS, ISO 9001 IEC/EN 61800-2 Certified by UL for use in Canada CSA-C22.2 No. 14 IEC/EN 61800-3 UL Listed UkrSEPRO IEC/EN 61800-5-1 EAC



Powering Business Worldwide

CATALOG NOTES

- Assigned motor rating: Overload cycle for 60 s every 600 s
- For normal internally and externally ventilated four-pole three-phase asynchronous motors with 1500 rpm at 50 Hz and 1800 rpm at 60 Hz
- operation (with 150 % overload)
- 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.

Product specifications

FEATURES	Parameterization: Fieldbus
	Parameterization: Keypad
	Parameterization: drivesConnect Parameterization: drivesConnect mobile (App)
FITTED WITH:	Additional PCB protection PC connection UV resistance Control unit 7-digital display assembly Brake chopper Internal DC link Radio interference suppression filter IGBT inverter Local controls Breaking resistance
CLIMATIC PROOFING	< 95 average relative humidity (RH), no condensation, no corrosion
CONNECTION TO SMARTWIRE-DT	No
OPERATING MODE	Sensorless vector control (SLV) PM motors Synchronous reluctance motors U/f control Speed control with slip compensation BLDC motors
FRAME SIZE	FS3
ALTITUDE	Above 1000 m with 1 % derating per 100 m Max. 2000 m Max. 4000 m
APPLICATION IN DOMESTIC AND COMMERCIAL AREA PERMITTED	Yes
MAINS SWITCH-ON FREQUENCY	Maximum of one time every 30 seconds
AMBIENT OPERATING TEMPERATURE - MAX	40 °C
AMBIENT OPERATING TEMPERATURE - MIN	-20 °C

Resources

APPLICATION NOTES	How does the internal motor protection work?
	Electromagnetic compatibility (EMC)
	The OP System Bus - Parameterizing - Control
BROCHURES	DX-COM-STICK3 Connection
	eaton-powerxl-variable-frequency-drives-dc1-da1-brochure-br040001en-en-us.pdf
	Drives - Product range catalog
CATALOGS	Product Range Catalog Drives Engineering
INSTALLATION VIDEOS	PowerXL Variable Frequency Drives DC1 and DA1 - EN
	Video PowerXL DA1
MULTIMEDIA	Looking for variable frequency drives DC1 and DA1 which can be used in harsh environments?
SPECIFICATIONS AND DATASHEETS	Eaton Specification Sheet - DC1-12015FB-A6SOE1

MAINS VOLTAGE - MAX	240 V
OUTPUT VOLTAGE - MAX	250 V
RELATIVE SYMMETRIC NET FREQUENCY TOLERANCE	10 %
RELATIVE SYMMETRIC NET VOLTAGE TOLERANCE	10 %
AMBIENT STORAGE TEMPERATURE - MAX	60 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
APPARENT POWER AT 230 V	5.98 kVA
APPARENT POWER AT 240 V	6.24 kVA
APPLICATION IN INDUSTRIAL AREA PERMITTED	Yes
PRODUCT CATEGORY	Variable frequency drives
PROTECTION	Finger and back-of-hand proof, Protection against direct contact (BGV A3, VBG4)
RESOLUTION	0.1 Hz (Frequency resolution, setpoint value)
SWITCH-ON THRESHOLD FOR THE BRAKING TRANSISTOR	390 VDC
VOLTAGE RATING - MAX	240 V
MOUNTING POSITION	Vertical
COMMUNICATION INTERFACE	OP-Bus (RS485), built in SmartWire-DT, optional CANopen®, built in Modbus RTU, built in
CONVERTER TYPE	U converter
DEGREE OF PROTECTION	IP66 NEMA 4X
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	5 HP
BRAKING RESISTANCE	25 Ω
INPUT CURRENT ILN AT 150% OVERLOAD	29.2 A
ASSIGNED MOTOR CURRENT IM AT 220 - 240 V, 60 HZ, 150% OVERLOAD	15.2 A

ASSIGNED MOTOR CURRENT IM AT 230 V, 50 HZ, 150% OVERLOAD	14.8 A
PROTOCOL	CAN MODBUS Other bus systems EtherNet/IP
OVERLOAD CURRENT IL AT 150% OVERLOAD	22.9 A
RATED FREQUENCY - MAX	62 Hz
RATED FREQUENCY - MIN	48 Hz
RATED OPERATIONAL POWER AT 220/230 V, 50 HZ, 1-PHASE	4 kW
SYSTEM CONFIGURATION TYPE	AC supply systems with earthed center point
ELECTROMAGNETIC COMPATIBILITY	1st and 2nd environments (according to EN 61800-3)
BRAKING TORQUE	Max. 100 % of rated operational current I _e , variable, DC - Main circuit Max. 100 % of rated operational current I _e with external braking resistor - Main circuit Max. 30 % MN, Standard - Main circuit
CABLE LENGTH	300 m, unscreened, with motor choke, maximum permissible, Motor feeder 100 m, screened, maximum permissible cable length 150 m, unscreened, maximum permissible cable length 200 m, screened, with motor choke, maximum permissible cable length
OUTPUT VOLTAGE (U2)	230 V AC, 3-phase 240 V AC, 3-phase
NUMBER OF INPUTS (ANALOG)	2 2 (parameterizable, 0 - 10 V DC, 0/4 - 20 mA)
NUMBER OF INPUTS (DIGITAL)	4 4 (parameterizable, max. 30 V DC)
RADIO INTERFERENCE CLASS	C2, C3: depending on the motor cable length, the connected load, and

	ambient conditions. External radio interference suppression filters (optional) may be necessary. C1: for conducted emissions only Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments
NUMBER OF OUTPUTS (DIGITAL)	1 1 (parameterizable, 24 V DC)
STARTING CURRENT - MAX	175 % I _H
NUMBER OF PHASES (INPUT)	1
NUMBER OF RELAY OUTPUTS	1 (parameterizable, N/O, 6 A (250 V, AC-1) / 5 A (30 V, DC-1))
NUMBER OF PHASES (OUTPUT)	3
RATED CONTROL SUPPLY VOLTAGE	10 V DC (U _s , max. 10 mA)
EFFICIENCY	97 % (η)
SUPPLY FREQUENCY	50/60 Hz, f _{LN} , Main circuit 50/60 Hz
LEAKAGE CURRENT AT GROUND I_{PE} - MAX	4.7 mA
MAINS VOLTAGE - MIN	200 V
NOMINAL OUTPUT CURRENT I_{2N}	11 A
NUMBER OF HW-INTERFACES (INDUSTRIAL ETHERNET)	0
NUMBER OF HW-INTERFACES (OTHER)	0
NUMBER OF HW-INTERFACES (PARALLEL)	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-	0

INTERFACES (SERIAL TTY)	
NUMBER OF HW-INTERFACES (USB)	0
NUMBER OF INTERFACES (PROFINET)	0
NUMBER OF OUTPUTS (ANALOG)	1
OUTPUT AT LINEAR LOAD AT RATED OUTPUT VOLTAGE - MAX	2.2 kW
OUTPUT AT QUADRATIC LOAD AT RATED OUTPUT VOLTAGE - MAX	2.2 kW
OUTPUT FREQUENCY - MAX	60 Hz
OUTPUT FREQUENCY - MIN	0 Hz
SUITABLE FOR	Branch circuits, (UL/CSA)
SWITCHING FREQUENCY	8 kHz, 4 - 24 kHz adjustable (audible), fPWM, Power section, Main circuit
RATED OPERATIONAL CURRENT (IE)	15.3 A at 150% overload (at an operating frequency of 6 kHz and an ambient air temperature of +40 °C)
RATED OPERATIONAL VOLTAGE	230 V AC, 1-phase 240 V AC, 1-phase
SHORT-CIRCUIT PROTECTION RATING	50 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



Eaton Corporation plc
Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

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