

Frequency controls with minimal space requirements

40%
less space
required



**Eaton's smallest class of
frequency drives**



Powering Business Worldwide

Frequency control even in tight spaces

The PowerXL™ DB1 brings together all the functions of the established DC1 series while conforming to the smallest IEC-compatible size. Thanks to the cold plate technology, this powerful device is the ideal solution for customers who want to integrate frequency drives into existing systems that lack the space for heat sinks or proper ventilation.

Download
drivesConnect
mobile app



CANopen and Modbus RTU
communication on board

Communication
interface



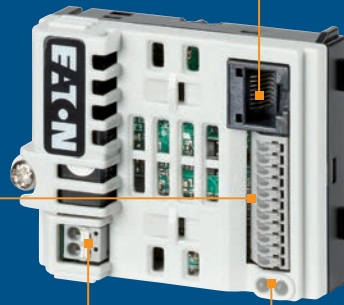
Communication stick for easy transmission
via Bluetooth and configuration using the
drivesConnect via PC and smartphone app

Detachable
control module



Control signal terminals with push-in
technology for quick and easy wiring

Relay output



Status-LEDs
indicate the device status

Advantages at a glance

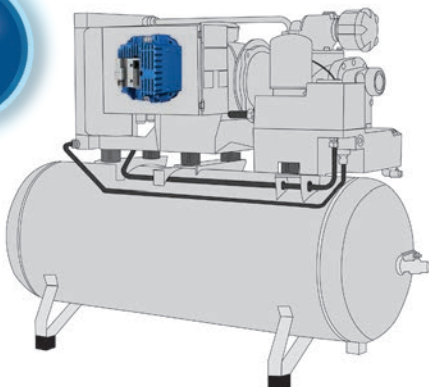
Compact frequency controls

At a height of merely 74 mm, the DB1 in frame size 1 is a frequency drive in the smallest IEC-compatible class. This compact size is the result of eliminating the need for any display, keypad or heat sink. As such, the DB1 takes up **40 %** less space than a comparable frequency drive with active cooling mechanism.

Wide range of applications

The cold plate unit consists of a power module and a detachable control module. The control module contains several I/O interfaces, as well as ports for CANopen and Modbus-RTU communication. In addition to the COM interface (RJ45), the Modbus protocol is also served by data cables that are routed via two control signal terminals. Thanks to Eaton's push-in technology the wiring of the terminals is carried out in an easy way. In addition, this technology saves time for users during installation.

40%
less space
required



Compact installation of the DB1 in motors,
pumps and compressors.

CANopen Modbus



As the DB1 is fully compatible with Eaton's external keypads,
no integrated display or keypad are required.

Cold plate technology

What's it all about?

The DB1 is a cold plate frequency drive that functions without a heat sink. But how does the technology work? It's simple. The cooling of the electronics is handled by the materials in the enclosure itself. This passive cooling effect is achieved for example, by the cold plate being attached to the installation via the panel mounting plate, cast parts or the housing directly. Hence, a system-specific and therefore flexible integration based on customer needs is enabled.

What are your benefits out of this technology?

By eliminating the heat sink, the devices can be installed even in confined spaces that lack sufficient ventilation. Cabinets or enclosures can be sealed off without any problems, as the materials they contain will themselves conduct the heat away from the device. This makes the devices suitable for use in harsh and demanding environments, including high temperatures or humidity.



**Tension clamp connection
reduces the commissioning time**



Performance range of the DB1

- Up to 0.75 kW at system voltages of 115 V
- Up to 1.5 kW at system voltages of 230 V
- Up to 4 kW at system voltages of 400 V

Future-proof – DB1 for all motors

The PowerXL DB1 frequency drive can be used to control motors up to the highest efficiency class. It therefore covers the following motors:

- standard induction motors
- three-phase asynchronous motors
- permanent magnet motors (PMM)
- brushless DC motors (BLDC)
- synchronous reluctance motors (SyncRM)



DB1 - a frequency drive for nearly every electric motor

DB1 PFC – low harmonics made easy

Thanks to power factor compensation (PFC), the DB1 achieves superior harmonic correction. This means that additional accessories for the compensation of harmonics are no longer required, saving both space and installation time. With the PFC devices, the requirements of the DIN EN 61000-3-2 standard for household applications can be easily met. The DB1 with PFC is available with a single-phase 230 V voltage input that covers the power range from 0.75 kW to 1.5 kW.

The DB1 for motors with an output of 0.75 kW also features a multi-voltage input. In addition to single-phase 230 V power supply, input voltages from 115 V to 230 V are also possible, which helps you to reduce the number of versions of your applications intended for global markets.



The DB1 units with PFC are available with a single-phase 115/230 V voltage input in the power ratings 0.75 kW and 1.5 kW.

Data overview

PowerXL DB1 Variable Frequency Drives

Input/output voltage [V]	Motor [kw]	Motor [HP]	Input phases	Output phases	Output current [A]	Brake chopper	Frame size	Part no. Article no.
115 / 230	0.55	1	1	3	3.2	—	1	DB1-1D3D2FN-N2CC 199347
115 - 230/230	0.75	1	1	3	4.3	—	1	DB1-1M4D3FN-N2CC-PFC 199738
230	1.5	2	1	3	7	—	1	DB1-1273D0FN-N2CC-PFC 199739
	0.37	0.5	1	3	2.3	—	1	DB1-122D3FN-N2CC 197193
	0.75	1	1	3	4.3	—	1	DB1-124D3FN-N2CC 197194
	0.37	0.5	3	3	2.3	—	1	DB1-322D3FN-N2CC 199735
	0.75	1	3	3	4.3	—	1	DB1-324D3FN-N2CC 199736
	1.5	2	3	3	7	—	1	DB1-327D3FN-N2CC 199737
	0.75	1	3	3	2.2	—	1	DB1-342D2FN-N2CC 197196
400	1.5	2	3	3	4.1	—	1	DB1-344D1FN-N2CC 197197
	2.2	3	3	3	5.8	✓	2	DB1-345D8FB-N2CC 197565
	4	5	3	3	9.5	✓	2	DB1-349D5FB-N2CC 197566

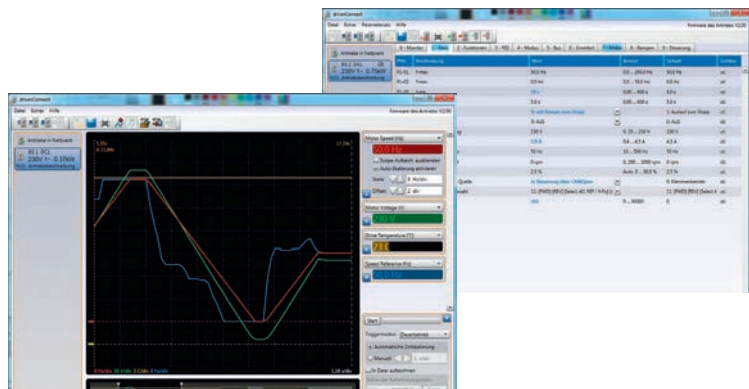
Accessories

Product image	Description	Part no. Article no.
	Paramater storage and Bluetooth communication stick for parameter transfer to a PC for DB1, DA1, DC1 variable frequency drives, DE1 variable speed starter, RAM05 and RASP5 devices	DX-COM-STICK 197585
	Keypad with LED display for DB1, DC1, DA1 variable frequency drives and DE1, DE11 variable speed starter	DX-KEY-LED2 186946
	OLED keypad for DB1, DA1 and DC1 variable frequency drives DE1 variable speed starter, RAM05 and RASP5 devices	DX-KEY-OLED 169133
	Interface converter USB/RS485 for PC connection of DB, DA1, DC1 variable frequency drives DE1 variable speed starter, RAM05 and RASP5 devices	DX-CBL-PC-3M0 744-A3036-00P

Software Download

drivesConnect

The drivesConnect software is a powerful desktop commissioning tool – for the DB1 as well as for the entire PowerXL family. In addition to parameter setting, the software can also be used to run additional diagnostics via the scope/ data logger function. With this function, values such as motor voltage and motor current can be monitored and recorded during operation.



Data overview

PowerXL DB1 Variable Frequency Drives

Technical data

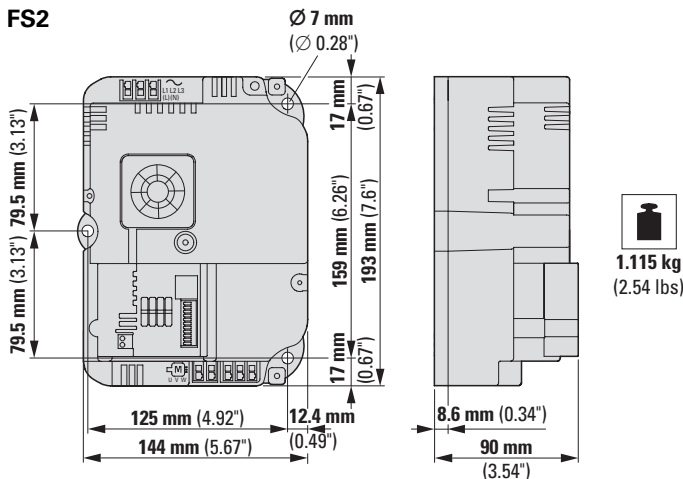
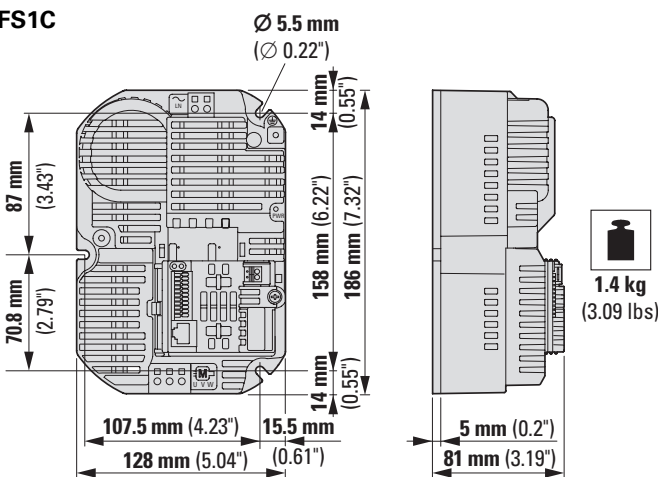
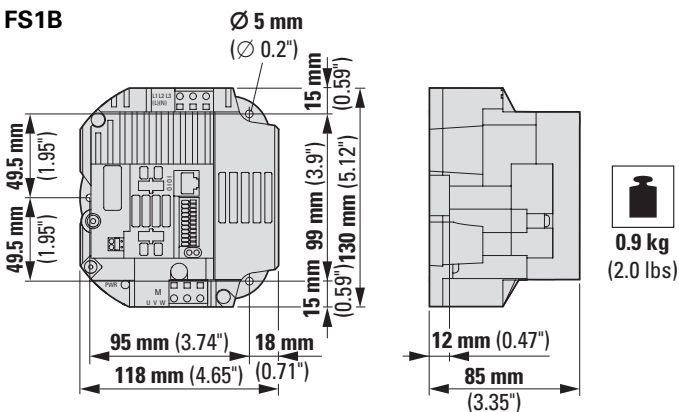
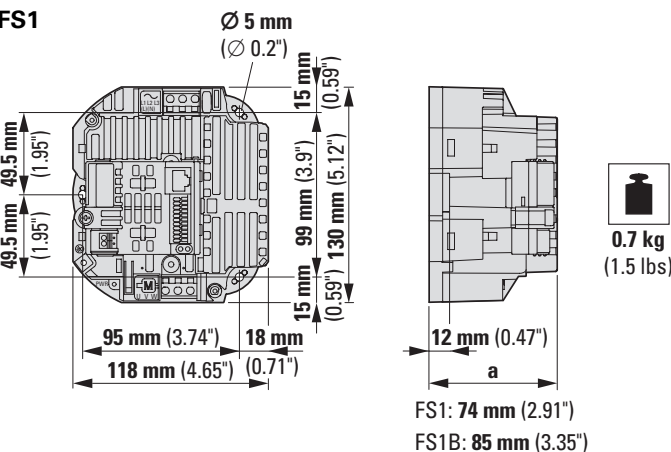
Category		
Supply voltage (+/- 10%)	1~ 200 - 240 V	3 ~ 380 - 480 V
Motor performance	0.37 - 1.5 kW (FS1)	0.75 - 1.5 kW (FS1) 2.2 - 4 kW (FS2)
EMV filter	EN61800-3 (C1/C2/C3 category)	
Brake chopper	FS1: -	FS2: available
Communication (integrated)	CANopen, Modbus RTU	
Protection class	IP20	
Cold Plate	Yes	
Ambient temperature	-10 to +60 °C (without derating)	
Display/keypad	Remote keypad (optional)	

Category	
Approvals	CE, UL, IEC, EAC



The DB1 variable frequency drive with its approvals is suitable for worldwide use.

Dimensions



Eaton is an intelligent power management company dedicated to protecting the environment and improving the quality of life for people everywhere. We make products for the data center, utility, industrial, commercial and institutional, machine building, residential, aerospace and mobility markets. We are guided by our commitment to do business right, to operate sustainably and to help our customers manage power - today and well into the future. By capitalizing on the global growth trends of electrification and digitalization, we're helping to solve the world's most urgent power management challenges and building a more sustainable society for people today and generations to come.

Founded in 1911, Eaton has continuously evolved to meet the changing and expanding needs of our stakeholders. With revenues of \$27.4 billion in 2025, the company serves customers in 180 countries.

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