

Explore a World of Continuous Efficiency



PowerXL variable frequency drives
The DC1 and DA1 series



Powering Business Worldwide

Eaton – your partner for drive technology.

Whether it's starting a simple machine motor or controlling the speed of complex applications – Eaton has the right drive technology for your needs. The PowerXL™ family offers you the benefit of an optimized device series and a comprehensive range of energy-efficient products for use in numerous applications.



DE1/11 variable speed starter

The DE1/11 frequency-controlled variable speed starter combines ease of use with maximum reliability for your machine. Thanks to the integrated DOL and reversing starter with variable motor speed, the DE1/11 closes the gap between conventional motor starters and variable frequency drives and brings together the advantages of both in a single device.



DC1 variable frequency drive

With its compact design and IP20 and IP66 degree of protection, the DC1 variable frequency drive is particularly suitable for simple pump, fan and material handling applications. It can be quickly and easily commissioned, producing measurable cost savings even with high-efficiency motors (IE3/IE4).



DM1 variable frequency drive

The DM1 variable frequency drive offers the same advantages as the DG1 in a more compact housing with reduced installation depth. As such, it can even be installed in 200 mm housings. The control functions of this IP20 device are primarily designed for use in fan, conveyor belt, pump or multi-pump applications. The DM1, which is also available with IP21 degree of protection, can be used with PM (IE3/IE4) as well as asynchronous motors.



DA1 variable frequency drive

The DA1 variable frequency drive excels in demanding applications due to its high starting torque, powerful vector mode and safe operating conditions with STO functionality. Thanks to the comprehensive on-board communication protocols and the function block editor for customized configurations, the DA1 offers machine builders a maximum level of flexibility.



DG1 variable frequency drive

The DG1 series of variable frequency drives embodies the next generation of the PowerXL family. Thanks to its patented energy-saving algorithm, high short-circuit rating and rugged design, the DG1 offers increased efficiency, safety and reliability. The control, communication and installation options are highly versatile, making the series particularly suitable for use in demanding applications.



9000X variable frequency drive

The 9000X variable frequency drive has been designed for all types of premium applications. Two series are available, the standard SVX drive for controlling simple and complex motors in industrial machine building, and the SPX drive for all premium and high-performance applications.

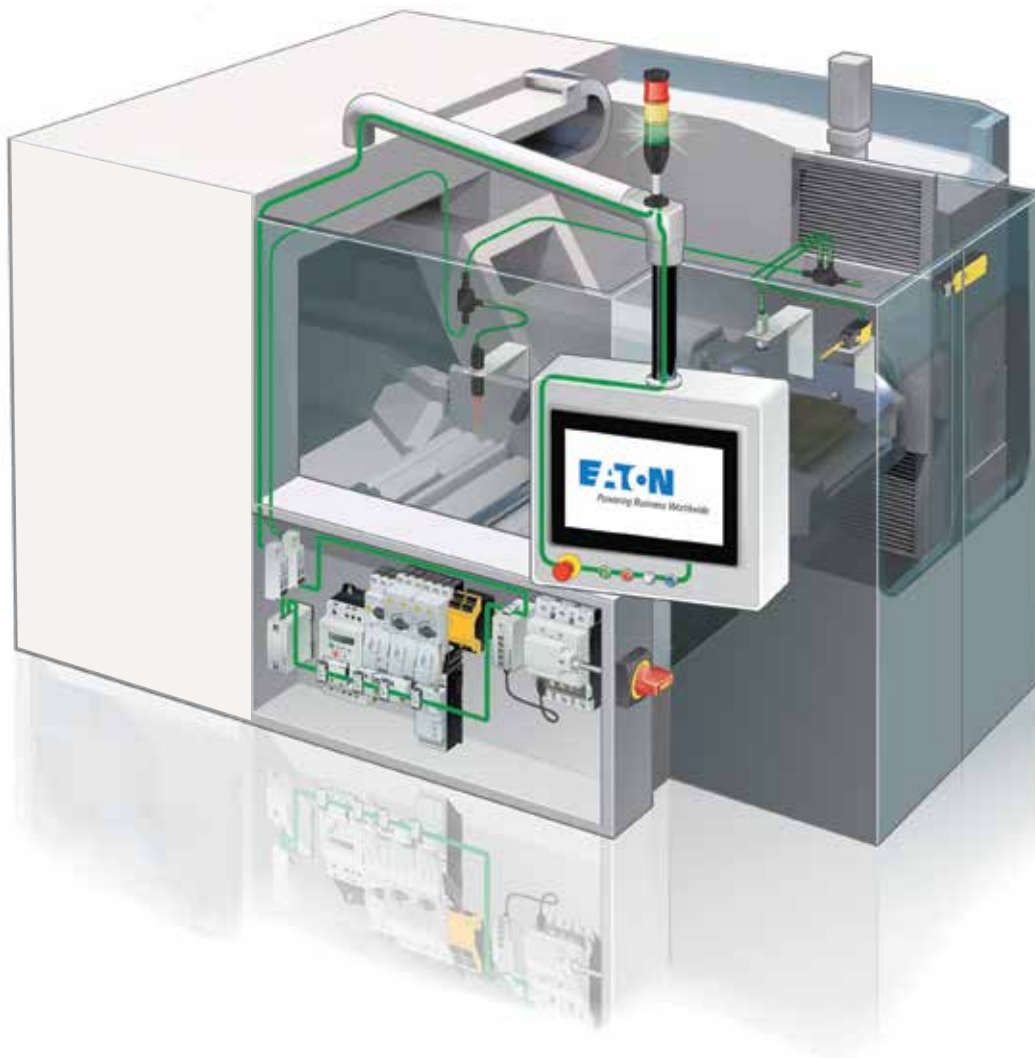
Application	PowerXL						9000X			
	DB1	DE1	DC1	DM1	DA1	DG1	SVX	SPX	LCX	SPI/SPA
Single-phase power supply	✓	✓	✓	✓	✓	✓	–	–	–	–
Single-phase AC motors	–	–	115/230 V		–	–	–	–	–	–
Performance range: 230 V [kW]	1.5	2.2	11	15	75	90	90	90	–	–
400 V [kW]	4	7.5	22	22	160	630	160	1,100	2,150	1,500
575 V [kW]	–	–	–	22	90	630	132	1,800	2,300	1,800
690 V [kW]	–	–	–	–	–	–	200	2,000	2,800	2,000
OEM drive systems	•	•	•	•	•	•				
Cold plate	•									
HVAC			•	•		•				
General purpose drive				•		•	•			
High-performance drive systems					•			•	•	•
Water cooling									•	
Regenerative										•

Energy efficiency in focus

With the adoption of ErP Directive 2009/125/EC, it has become more important than ever for companies to reduce their energy consumption even further – especially when it comes to electrical drive applications. This is where Eaton variable speed starters and variable frequency drives are useful. By using these devices for applications with variable speeds and loads subject to significant changes, you can increase the energy efficiency of your applications and achieve significant long-term savings.

SmartWire-DT for drives engineering

Our intelligent connection and communications technology SmartWire-DT is gaining popularity and is successfully establishing in all segments. SmartWire-DT helps to identify and optimize operating sequences in machinery and control panel construction. Our product portfolio – from motor starters through soft starters to variable frequency drives – has continued to expand to the present day.



Download White Paper:
www.eaton.com/erp



DX-NET-SWD3
Plug-in module for DE1 variable speed starters and DC1 variable frequency drives.



For CAD data for our products see on
www.eaton.eu/cad
For your local support: www.eaton.com



Download Drives Engineering catalog:
www.eaton.eu/catalog

PowerXL – rugged on the outside, efficient on the inside.

PowerXL DC1 and DA1 variable frequency drives make a compelling case with their heavy-duty, compact design. Moreover, an additional conformal coating provides for longer lifespans and enhanced protection from soiling and moisture. Standardized keypads, parameter structures, interfaces, and connection terminals all characterize the system-based approach behind these series.

Powerful **performance** for any application:
DC1, DA1: 150% torque during overload
DC1: 175 % Torque during start
DA1: 200% torque during start and at zero speed, with vector control

DC1 and DA1 come with CANopen and Modbus onboard as standard:

Concise overview of start parameters with the integrated **information card**

Easy commissioning with only 14 basic parameters

Simple mounting with DIN rail mounting

Savings in the control panel
 No derating even at 50 °C, allowing side-by-side mounting in compact control panels without fan

Clear navigation through self-explanatory menu structure

Series production made easy, thanks to parameter copy function through communication stick

Cohesiveness with connection to PROFINET, EtherNet/IP and SmartWire-DT

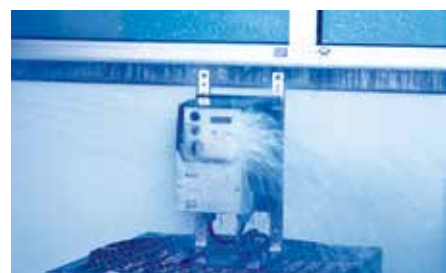
Fast installation through plug-in terminal strip

The right variable frequency drive for any requirement – DC1 and DA1 with unbeatable features

PowerXL variable frequency drives are fully short-circuit protected, and the conformal coating on their PCBs ensures that they are wellprotected when used in harsh environments. In fact, these are just two of the many reasons behind the devices' reputation as solidly heavyduty solutions.

Sensorless vector control makes it easier to operate the devices. In highly dynamic applications, this translates into large torques when starting and outstanding speed control characteristics. On top of this, both the DC1 and DA1 series are 'IE4-ready' and enable users to efficiently and reliably control all types of motors.

With a high IP66/NEMA 4x degree of protection, DC1 and DA1 variable frequency drives can be used in areas where they will be exposed to moisture and/or splash water. Moreover, they can be installed directly on machines.



Convincing technology

In machinery construction and in conveying and building services engineering motors often drive pumps, fans, conveyors, cranes, winding machines, compressors or elevators. This calls for simple, user-friendly and energy-efficient technology. The new PowerXL variable frequency drives DC1 and DA1 have been specially designed for this kind of application and excel with their rugged design, availability and universal functionality.

Rugged design

All devices unfold their full performance at an ambient temperature of up to 50 °C (IP20) and feature a short-circuit proof output. Fans with rolling bearings and an exceptionally long service life increase reliability. The rugged design is

also reflected in the devices' degree of protection: The DC1 series is available for ratings up to 22 kW with degree of protection IP66 resp. the American standard NEMA 4x.

Simplifying technology

With their self-explanatory keys to part numbers, auto-tune function, convenient parameterization (only 14 basic parameters) and fast engineering and commissioning these devices help minimize planning, installation and technical support costs.

The PowerXL variable frequency drives can be programmed with keypad and LED or OLED (multi-language display) and from a PC. With a Bluetooth PC stick parameter settings can be quickly transferred to other devices.

Protected against dust and splashing water

DC1 and DA1 variable frequency drives series are also available with an IP66/ NEMA 4x degree of protection and outdoor rating. The DC1 and DA1 are available up to motor ratings of 22 kW (400 V). This means that the drives can be used in areas with moisture, dust, or contaminants without hesitation.

The water-tight ABS housing and the corrosion-resistant heat sink make it possible to clean the units with pressure washers, making them ideal for use in landscaping and agricultural applications,

in the food industry, in concrete and cement equipment, and in drive-through and selfservice car washes.

Protected from adverse environmental conditions, DC1 and DA1 devices (IP66/ NEMA 4X) can be installed directly at the processing location. The outdoor rating of the DC1 also stands out. With an integrated setpoint potentiometer, selector switch, and main switch, these versions can be controlled directly at the point of use.



The information card in each device provides a quick overview of basic parameters and control terminals.



With the communication stick you can simply and quickly copy all parameters from one variable frequency drive to another.

Variable frequency drives for all motors up to IE4

IEC 60034-30: 2008 distinguishes between the following efficiency classes when it comes to low-voltage three-phase asynchronous motors:

- IE1 (standard efficiency)
- IE2 (high efficiency)
- IE3 (premium efficiency)
- IE4 (super premium efficiency)

Within this context, IE4 motors are energysaving motors and feature the

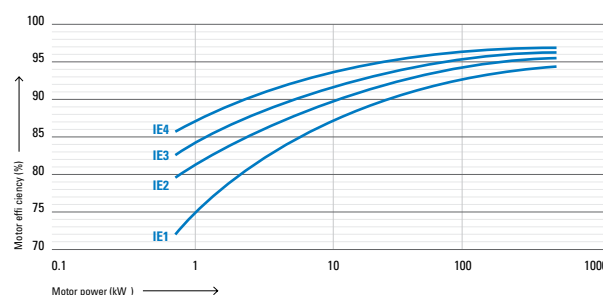
highest efficiency out of all four classes. Accordingly, Eaton has ensured that its PowerXL variable frequency drives are suitable for use with the corresponding motors:

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



The plug-in control signal terminals on DC1 and DA1 devices reduce installation costs and make maintenance and servicing much easier.

Fig. 1: Efficiency curves (IE code) for standard asynchronous motors, valid worldwide,
Source: IEC 60034-30



Up to 63 devices can be accessed through a keypad mounted in the control panel door.

DC1 – the ideal solution for conventional applications.

The DC1 is Eaton's compact variable frequency drives. Simple to mount and install, the DC1 is ideal for fans, pumps and conveyors. Additional parameters and functionalities can be enabled to master more demanding applications with highly efficient IE4-motors.



With local controls

Standard applications such as pumps, conveyor belts and fans can be implemented easily and quickly by simply configuring the basic parameters.



Perfect adaptability

DC1 devices can be used to drive IE2, IE3, and high-efficiency IE4 motors. Their sensorless vector control is suitable for all motor types (induction, permanent magnet, brushless DC; and synchronous reluctance motors). DC1 devices can also be used to drive single-phase motors (AC and shaded-pole motors) with ratings of up to 1.1 kW. A built-in PI controller can be used externally, allowing a control circuit to be set up, for example by connecting sensors for flow or pressure control to the device's 0-10 V analog input. The available 'firemode' is ideal for HVAC applications, making it possible to remove smoke from buildings in the event of a fire.

Flexible expansion capability

All models come with a 7-digit LED display assembly and a keypad are optionally available with a built-in EMC filter or braking transistor.

Control methods: Voltage/frequency (V/f) control and sensorless vector control (SLV)

part no.	Input voltage	Output voltage	Assigned motor rating	Degrees of protection	Note
DC1-12...	1~ 230 V	3~ 230 V	0.37 – 4 kW	IP20, IP66	Three-phase motors
DC1-32...	3~ 230 V	3~ 230 V	0.37 – 11 kW	IP20, IP66	Three-phase motors
DC1-34...	3~ 400 V	3~ 400 V	0.75 – 22 kW	IP20, IP66	Three-phase motors
DC1-1D...	1~ 115 V	3~ 230 V	0.37 – 1.1 kW	IP20, IP66	Three-phase motors, voltage doubler
DC1-S2...	1~ 230 V	1~ 230 V	0.37 – 1.1 kW	IP20, IP66	AC motors
DC1-S1...	1~ 115 V	1~ 115 V	0.37 – 0.55 kW	IP20, IP66	AC motors

Should the variable frequency drives basic equipment level not be sufficient, it can be easily extended with expansion modules, for example with additional relay outputs.

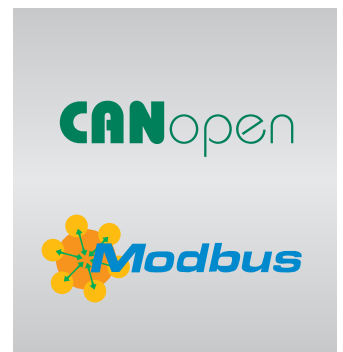
Universal application

In addition to the IP20 protection class, the devices are also available with a high degree of protection with outdoor rating (IP66) of up to 22 kW for decentralized applications. With mains voltages of 115 V, 230 V and 400 V and the required CE, UL, Ukr SEPRO, EAC and c-Tick approvals the DC1 is a true global market product.

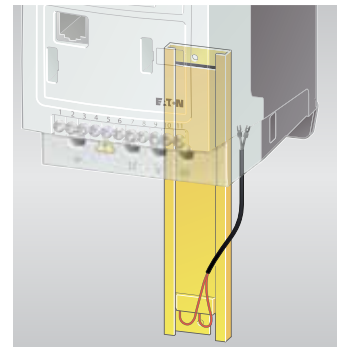
Variable frequency drives DC1 is also fully equipped for communications, featuring a CANopen and Modbus RTU interface as standard and – in conjunction with according modules – PROFINET, EtherNet/IP and SmartWire-DT capability.



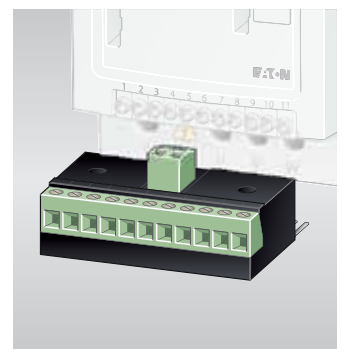
Communication module for PROFINET and Ethernet/IP.



The DC1 has CANopen and Modbus RTU onboard as standard



A braking resistor can be built into the enclosure.



Retrofit relay extensions optionally available

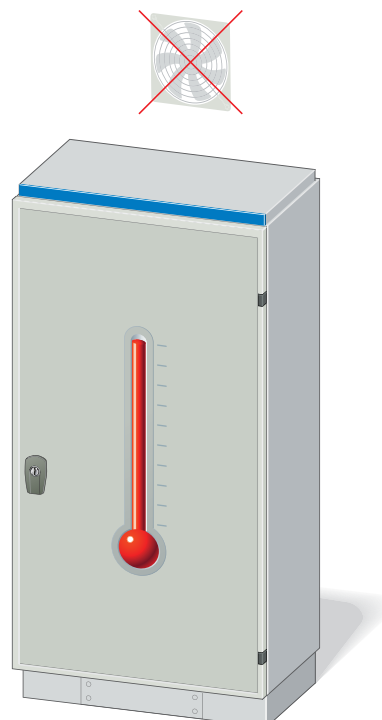
No problems at 50 °C

All IP20 devices of series DC1 and DA1 support an ambient temperature of 50 °C without needing derating, i.e. the variable frequency drives can be operated at the device's full rated current.

Advantages:

- Smaller control panel possible
- No added costs for additional ventilation

In addition side-by-side mounting of the devices allows an optimized space utilization in the control panel.



DA1 – The multi-talent for demanding drives.

DA1 variable frequency drives are the perfect solution for demanding, speed-dependent and torque-dependent applications. Their wide performance range of up to 250 kW, together with their compact dimensions and high level of functionality, are sure to leave a lasting impression.



With local controls



Plenty of performance even for demanding lifting applications.



With their DNV classification society approval, DA1 units are the perfect drive for equipment such as ship winches.



For Emergency Stop functionality the DA1 has the STO function built in.



Full range of features

The DA1 series is equipped for every application as standard, supports the Modbus RTU and CANopen protocols and features a built-in EMC filter, braking transistor and a performance range up to 250 kW.

In addition to sensorless vector control (SLV) the motor can be operated at 150% in rated operation and at 200% overload at startup.

Ingress-protected to IP66 the DA1 is ideally suited for remote applications outside the control panel.

Ready for all eventualities

With the PLC functionality of the drivesConnect parameterization software you can create your own logic links, for example with time

dependencies, to generate your own applications. A comprehensive range of expansions as well as additional inputs and outputs (analog and digital) can be added to the devices.

With the Safe Torque Off (STO) function the DA1 provides the most basic driveintegrated safety function, keeping the motor torque-free and preventing inadvertent starting.

The communications genius

A range of field bus modules for the DA1 provide connectivity using Ethernet-based protocols (PROFINET, Ethernet/IP, EtherCAT, Modbus TCP, BACnet IP) and widely-used PROFIBUS. With an SWD module, the variable frequency drives can be connected to SmartWire-DT.

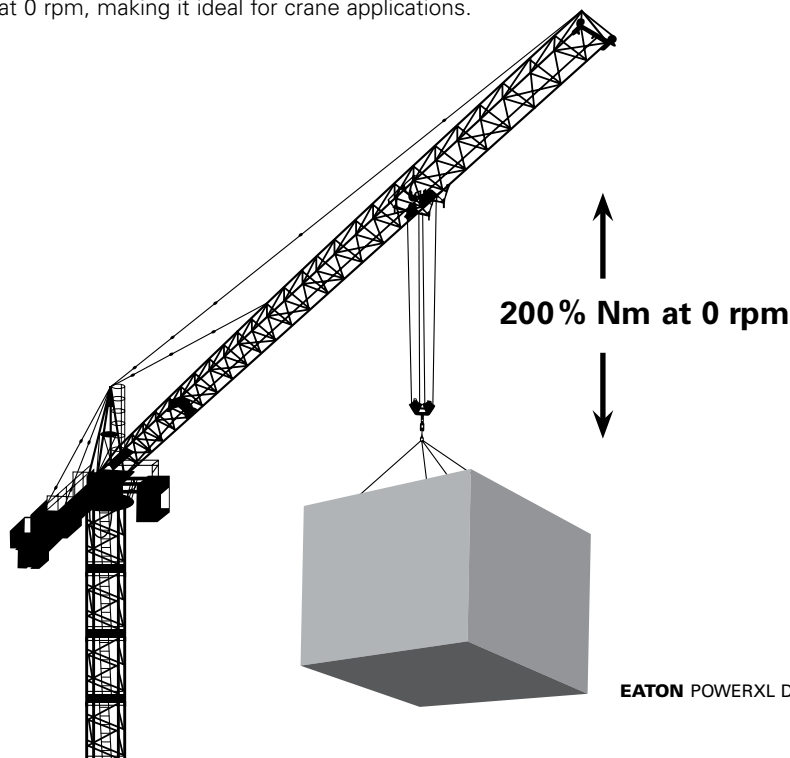
Control methods: Voltage/frequency (V/f) control as well as sensorless vector (SLV) and closed-loop vector (CLV) control

part no.	Input voltage	Output voltage	Assigned motor rating	Degrees of protection	Note
DA1-12...	1~ 230 V	3~ 230 V	0.75 – 2,2 kW	IP20, IP66	Three-phase motors
DA1-32...	3~ 230 V	3~ 230 V	0.75 – 75 kW	IP20, IP55, IP66*	Three-phase motors
DA1-34...	3~ 400 V	3~ 400 V	0.75 – 160 kW	IP20, IP40, IP55, IP66**	Three-phase motors
DA1-35...	3~ 575 V	3~ 575 V	0.75 – 110 kW	IP20, IP55, IP66**	Three-phase motors

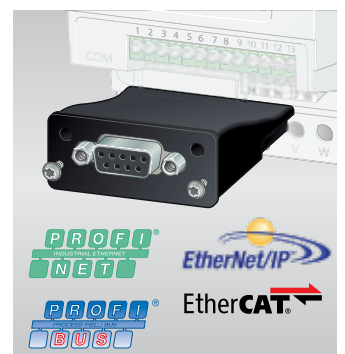
* up to 11 kW, ** up to 22 kW

Ideal for all heavyweights

The sensorless vector control (SLV) of variable frequency drives DA1 offers 200% torque at 0 rpm, making it ideal for crane applications.



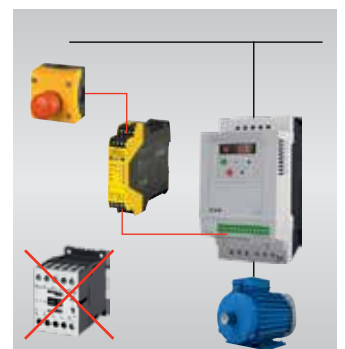
High-resolution OLED display with language selection available for all ratings



All common field bus types available as modules.



DA1 can be used to drive high-efficiency permanent-magnet motors.



The built-in STO (Safe Torque Off) safety function makes a mains contactor unnecessary.

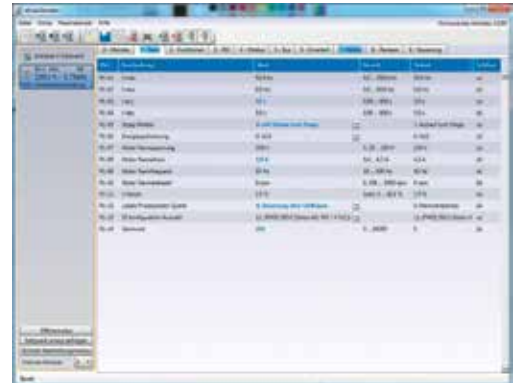
drivesConnect – the software for optimum implementation.

The drivesConnect software for PCs and the Smartphone App drivesConnect mobile are powerful commissioning tools for the PowerXL family. Beside parameterization and diagnosis user-defined internal logic links can be set up through the function block editor and transferred to the variable frequency drives.



Parameter editor

The parameterization function has an uncluttered, easy to understand user interface. With the editor variable frequency drives can be parameterized both online and offline. In online mode monitor values can be used for diagnostics.



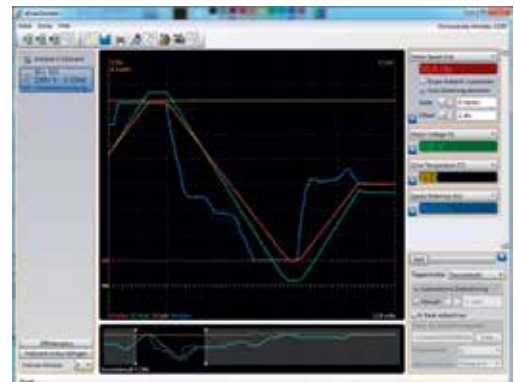
Parameter editor – start interface

Drive control/monitor

The drive control/monitor function makes it possible to easily run connected variable frequency drives with the use of software. This not only means that individual drive functions can be quickly accessed, but also that devices can be easily activated and deactivated.

Scope/data logger

The scope/data logger can be used to graphically show up to four selected variable frequency drive parameters as curves. This ensures that the behavior of display values such as motor voltage and motor current during ongoing operation can be tracked directly – and even recorded.

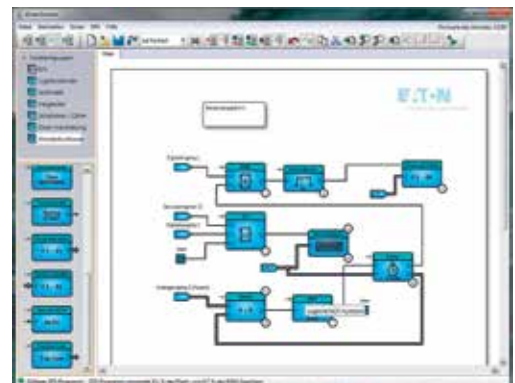


Display of recorded signals

Function block editor

Together with the DA1 variable frequency drive, the function block editor provides the option of using PLC programming to create separate logic operations – with time dependencies, for example – within the variable frequency drive. In fact, using the blocks from the 'Inputs/Outputs', 'Logic Functions', 'Arithmetic', 'Comparators', 'Timers', 'Counters', 'Data Handling', and 'Drive Functions' function groups makes it possible to generate your own applications within the editor.

By simulating the PLC program, invalid blocks can be identified as errors and corrected directly. This makes it possible to adapt the variable frequency drive to any application, cutting down on additional hardware costs in the process.



Interface example with different blocks

Download Software drivesConnect:

Eaton.com/DC1

Eaton.com/DA1

Installation online:

<http://www.drive-support-studio.com/OTS/Eaton/downloads/deploy/drivesConnect.htm>

Selection Aid

Efficient planning and engineering

An electronic selection aid provides simple planning, helping you quickly select the drive required for your application and the associated switchgear, protective elements chokes and filters complete with the corresponding article number.

Eaton.com/drives-configurator



Communications Stick

Easily transfer parameter configurations

The 'DX-COM-STICK3-KIT' it possible to quickly and easily transfer parameters from your laptop to PowerXL variable frequency drives using Bluetooth. In addition, the stick enables the connection to the smartphone app drivesConnect mobile. The convenience of this feature is only matched by the stick's copy function, which can be used to transfer parameter sets from one variable frequency drive to another. This makes the stick a perfect little helper – especially when it comes to mass production operations.



Energy Savings Estimator

A few steps are all it takes to determine your energy needs and save big

The 'Energy Savings Estimator' is a program that calculates the estimated energy needed for applications involving fans and/or pumps. After entering your project information, you will get an estimate of the energy savings and payback time that can be achieved when using variable frequency drives instead of conventional speed controllers.

Eaton.com/EnergySavingsEstimator



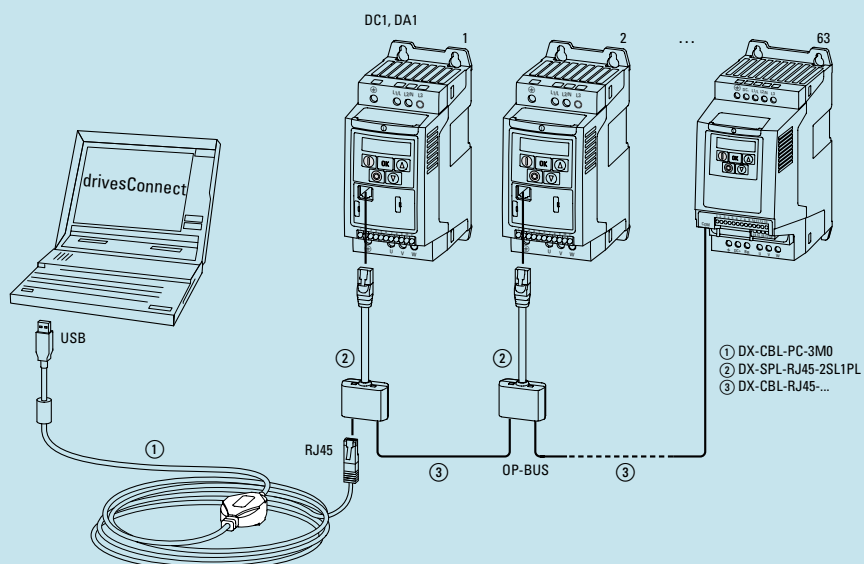
PC connection

Hardwired:

With a hardwired USB connection you can connect up to 63 variable frequency drives with the PC and conveniently parameterize them with the software and used with the PLC's functionality.

Wireless (Bluetooth):

The communications sticks can be used to establish a wireless Bluetooth connection to the variable frequency drives.



Data Overview

PowerXL variable frequency drives DC1

Input/output voltage [V]	Motor [kw]	Motor [HP]	Input phases	Output phases	Output current [A]	Frame size	Part no. Article no. IP20 / NEMA 0	Part no. Article no. IP66 / NEMA 4x	Part no. Article no. IP66 / NEMA 4x local control
115	0.37	0.5	1	1	7	1	DC1-S17D0NN-A20CE1 186073		
	0.37	0.5	1	3	2.3	1	DC1-1D2D3NN-A20CE1 185765	DC1-1D2D3NN-A66OE1 199393	DC1-1D2D3NN-A6SOE1 199394
	0.55	0.75	1	1	10.5	2	DC1-S1011NB-A20CE1 186076		
	0.75	1	1	3	4.3	1	DC1-1D4D3NN-A20CE1 185768	DC1-1D4D3NN-A66OE1 199395	DC1-1D4D3NN-A6SOE1 199396
	1.1	1.5	1	3	2.3	2	DC1-1D5D8NB-A20CE1 185771	DC1-1D5D8NB-A66OE1 199397	DC1-1D5D8NB-A6SOE1 199398
230	0.37	0.5	1	1	4.3	1	DC1-S24D3FN-A20CE1 186088	DC1-S24D3FN-A66OE1 199387	DC1-S24D3FN-A6SOE1 199388
	0.75	1	1	1	7	1	DC1-S27D0FN-A20CE1 186091	DC1-S27D0FN-A66OE1 199389	DC1-S27D0FN-A6SOE1 199390
	1.1	1.5	1	1	10.5	2	DC1-S2011FB-A20CE1 186094	DC1-S2011FB-A66OE1 199391	DC1-S2011FB-A6SOE1 199392
	0.37	0.5	1	3	2.3	1	DC1-122D3FN-A20CE1 185803	DC1-122D3FN-A66OE1 199399	DC1-122D3FN-A6SOE1 199400
	0.75	1	1	3	4.3	1	DC1-124D3FN-A20CE1 185806	DC1-124D3FN-A66OE1 199401	DC1-124D3FN-A6SOE1 199402
	1.5	2	1	3	7	2	DC1-127D0FN-A20CE1 185809	DC1-127D0FN-A66OE1 199403	DC1-127D0FN-A6SOE1 199404
	1.5	2	1	3	7	2	DC1-127D0FB-A20CE1 185812	DC1-127D0FB-A66OE1 199405	DC1-127D0FB-A6SOE1 199406
	2.2	3	1	3	10.5	2	DC1-12011FB-A20CE1 185815	DC1-12011FB-A66OE1 199407	DC1-12011FB-A6SOE1 199408
	4.0	2.3	1	3	2.3	3	DC1-12015NB-A20CE1 185800	DC1-12015FB-A66OE1 199409	DC1-12015FB-A6SOE1 199410
	0.37	2.3	3	3	2.3	1	DC1-322D3NN-A20CE1 185818	DC1-322D3FN-A66OE1 199411	DC1-322D3FN-A6SOE1 199412
	0.75	2.3	3	3	2.3	1	DC1-324D3NN-A20CE1 185821	DC1-324D3FN-A66OE1 199413	DC1-324D3FN-A6SOE1 199414
	1.5	2.3	3	3	2.3	1	DC1-327D0NN-A20CE1 185827	DC1-327D0FN-A66OE1 199415	DC1-327D0FN-A6SOE1 199416
	1.5	2.3	3	3	2.3	2	DC1-327D0FB-A20CE1 185836	DC1-327D0FB-A66OE1 199417	DC1-327D0FB-A6SOE1 199418
	2.2	2.3	3	3	2.3	2	DC1-32011FB-A20CE1 185839	DC1-32011FB-A66OE1 199419	DC1-32011FB-A6SOE1 199420
	4.0	2.3	3	3	2.3	3	DC1-32018FB-A20CE1 185842	DC1-32018FB-A66OE1 199421	DC1-32018FB-A6SOE1 199422
	5.5	2.3	3	3	2.3	3	DC1-32024FB-A20CE1 185774	DC1-32024FB-A66OE1 199423	DC1-32024FB-A6SOE1 199424
	7.5	2.3	3	3	2.3	4	DC1-32030FB-A20CE1 185775	DC1-32030FB-A66OE1 199425	DC1-32030FB-A6SOE1 199426
	11.0	2.3	3	3	2.3	4	DC1-32046FB-A20CE1 185776	DC1-32046FB-A66OE1 199427	DC1-32046FB-A6SOE1 199428
400	0.75	1	3	3	2.2	1	DC1-342D2FN-A20CE1 185743	DC1-342D2FN-A66OE1 199429	DC1-342D2FN-A6SOE1 199430
	1.5	2	3	3	4.1	1	DC1-344D1FN-A20CE1 185746	DC1-344D1FN-A66OE1 199431	DC1-344D1FN-A6SOE1 199432
	1.5	2	3	3	4.1	1	DC1-344D1FB-A20CE1 185749	DC1-344D1FB-A66OE1 199433	DC1-344D1FB-A6SOE1 199434
	2.2	3	3	3	5.8	2	DC1-345D8FB-A20CE1 185752	DC1-345D8FB-A66OE1 199435	DC1-345D8FB-A6SOE1 199436
	4	5	3	3	9.5	2	DC1-349D5FB-A20CE1 185755	DC1-349D5FB-A66OE1 199437	DC1-349D5FB-A6SOE1 199438
	5.5	7.5	3	3	14	3	DC1-34014FB-A20CE1 185758	DC1-34014FB-A66OE1 199439	DC1-34014FB-A6SOE1 199440
	7.5	10	3	3	18	3	DC1-34018FB-A20CE1 185761	DC1-34018FB-A66OE1 199441	DC1-34018FB-A6SOE1 199442t
	11	15	3	3	24	3	DC1-34024FB-A20CE1 185764	DC1-34024FB-A66OE1 199443	DC1-34024FB-A6SOE1 199444
	15	20	3	3	30	4	DC1-34030FB-A20CE1 185780	DC1-34030FB-A66OE1 199445	DC1-34030FB-A6SOE1 199446
	18.5	25	3	3	39	4	DC1-34039FB-A20CE1 185781	DC1-34039FB-A66OE1 199447	DC1-34039FB-A6SOE1 199448
	22	30	3	3	46	4	DC1-34046FB-A20CE1 185782	DC1-34046FB-A66OE1 199449	DC1-34046FB-A6SOE1 199450

Data Overview

PowerXL variable frequency drives DA1

Input/output voltage [V]	Motor [kw]	Motor [HP]	Input phases	Output phases	Output current [A]	Frame size	Part no. Article no. IP20 / NEMA 0	Part no. Article no. IP55 / NEMA 12	Part no. Article no. IP66 / NEMA 4x	Part no. Article no. IP66 / NEMA 4x local control
230	0.75	1	1	3	4.3	2	DA1-124D3FB-A20C 169078		DA1-124D3FB-B660 400015	DA1-124D3FB-B6SO 400016
	1.5	2	1	3	7	2	DA1-127D0FB-A20C 169081		DA1-127D0FB-B660 400017	DA1-127D0FB-B6SO 400018
	2.2	3	1	3	10.5	2	DA1-12011FB-A20C 169084		DA1-12011FB-B660 400019	DA1-12011FB-B6SO 400020
400	0.75	1	3	3	2.2	2	DA1-342D2FB-A20C 169117		DA1-342D2FB-B660 400035	DA1-342D2FB-B6SO 400036
	1.5	2	3	3	4.1	2	DA1-344D1FB-A20C 169120		DA1-344D1FB-B660 400037	DA1-344D1FB-B6SO 400038
	2.2	3	3	3	5.8	2	DA1-345D8FB-A20C 169051		DA1-345D8FB-B660 400039	DA1-345D8FB-B6SO 400040
	4	5	3	3	9.5	2	DA1-349D5FB-A20C 169054		DA1-349D5FB-B660 400041	DA1-349D5FB-B6SO 400042
	5.5	7.5	3	3	14	3	DA1-34014FB-A20C 169057		DA1-34014FB-B660 400043	DA1-34014FB-B6SO 400044
	7.5	10	3	3	18	3	DA1-34018FB-A20C 169060		DA1-34018FB-B660 400045	DA1-34018FB-B6SO 400046
	11	15	3	3	24	3	DA1-34024FB-A20C 169063		DA1-34024FB-B660 400047	DA1-34024FB-B6SO 400048
	11	15	3	3	24	4		DA1-34024FB-B55C 169390		
	15	20	3	3	30	4	DA1-34030FB-B20C 197493	DA1-34030FB-B55C 169391	DA1-34030FB-B660 400049	DA1-34030FB-B6SO 400050
	18.5	25	3	3	39	4	DA1-34039FB-B20C 197494	DA1-34039FB-B55C 169392	DA1-34039FB-B660 400051	DA1-34039FB-B6SO 400052
	22	30	3	3	46	4	DA1-34046FB-B20C 197495	DA1-34046FB-B55C 169393	DA1-34046FB-B660 400053	DA1-34046FB-B6SO 400054
	30	40	3	3	61	5	DA1-34061FB-B20C 197496	DA1-34061FB-B55C 169394		
	37	50	3	3	72	5	DA1-34072FB-B20C 197497	DA1-34072FB-B55C 169395		
	45	60	3	3	90	6		DA1-34090FB-B55C 169397		
	55	75	3	3	110	6		DA1-34110FB-B55C 169399		
	75	125	3	3	150	6		DA1-34150FB-B55C 169401		
	90	150	3	3	180	6		DA1-34180FB-B55C 169403		
	110	200	3	3	202	7		DA1-34202FB-B55C 169405		
	132	200	3	3	240	7		DA1-34240FB-B55C 169407		
	160	250	3	3	302	7		DA1-34302FB-B55C 169217		

Accessories

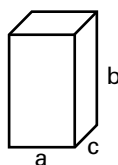
	Article no.	Part no.	for use with
Keypad	186946	DX-KEY-LED2	DE1, DE11, DB1, DC1, DA1, RapidLink 5
	169133	DX-KEY-OLED	DC1, DA1, RapidLink 5
	169129	DX-NET-SWD1	DA1
	169131	DX-NET-SWD3	DE1, DE11, DC1
	184969	DX-NET-ETHERNET2-2	DE1, DE11, DC1
Communication modules	169122	DX-NET-ETHERNET-2	DA1
	184947	DX-NET-PROFINET2-2	DE1, DE11, DC1
	169125	DX-NET-PROFINET-2	DA1
	169124	DX-NET-PROFIBUS	DA1
	169127	DX-NET-ETHERCAT-2	DA1
	169126	DX-NET-MODBUSTCP-2	DA1
	169128	DX-NET-BACNETIP-2	DA1
PC communication	197586	DX-COM-STICK3-KIT	DE1, DE11, DB1, DC1, DA1, RapidLink 5
	744A3036-00P	DX-CBL-PC-3M0	DE1, DE11, DB1, DC1, DA1, RapidLink 5
Connection cable	169137	DX-CBL-RJ45-0M5	DE1, DE11, DB1, DC1, DA1
	169138	DX-CBL-RJ45-1M0	DE1, DE11, DB1, DC1, DA1
	169139	DX-CBL-RJ45-3M0	DE1, DE11, DB1, DC1, DA1
Bus termination resistor	256281	EASY-NT-R	DX-SPL-RJ45-2SL1PL
Splitter	169141	DX-SPL-RJ45-3SL	DX-CBL-RJ45...
	169142	DX-SPL-RJ45-2SL1PL	DE1, DE11, DB1, DC1, DA1
Mounting accessories	172925	DX-EMC-MNT-1N	DC1*
	179927	DX-EMC-MNT-2N	DC1*, DA1*
	172929	DX-EMC-MNT-3N	DC1*, DA1*
	172926	DX-EMC-MNT-1M	DC1**
	172928	DX-EMC-MNT-2M	DC1**, DA1**
	172930	DX-EMC-MNT-3M	DC1**, DA1**

* For installing the connection cables on the mains side
 ** For installing the connection cables on the motor side

Dimensions and weights

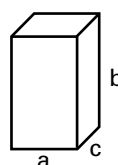
PowerXL DC1 variable frequency drives

Frame size	Protection class	Weight	Dimensions (a x b x c)		
		[kg]	a	b	c
1	IP20 / NEMA 0	1.1	81	184	124
2	IP20 / NEMA 0	2.6	107	231	152
3	IP20 / NEMA 0	4	131	273	175
4	IP20 / NEMA 0	8.4	173	418.5	211
1	IP66 / NEMA 4x	2.5	161	232	162
2	IP66 / NEMA 4x	3.5	188	257	186
3	IP66 / NEMA 4x	7	211	310	235
4	IP66 / NEMA 4x	9.5	240	360	271



PowerXL DA1 variable frequency drives

Frame size	Protection class	Weight	Dimensions (a x b x c)		
		[kg]	a	b	c
2	IP20 / NEMA 0	1.8	107	231	186
3	IP20 / NEMA 0	3.5	131	273	204
4	IP20 / NEMA 0	9.2	173	419	241
5	IP20 / NEMA 0	18.2	234	485	261
4	IP55 / NEMA 12	11.5	173	450	240
5	IP55 / NEMA 12	22.5	235	540	270
6	IP55 / NEMA 12	50	330	865	322
7	IP55 / NEMA 12	80	330	1,280	348
2	IP66 / NEMA 4x	3.5	188	257	186
3	IP66 / NEMA 4x	6.6	211	310	235
4	IP66 / NEMA 4x	9.5	240	360	271



For complete assortment
 see online catalog
<https://ecat.eaton.com>

Eaton Online Catalog - find product details quickly and efficiently!

You can find comprehensive up-to-date product information at <https://ecat.eaton.com>

Lookup

You can search by keywords, product names, article numbers, technical data: The search understands everything and takes you straight to the product you're looking for.

Graphical navigation

Graphical representation of the fields of application and product groups.

Selection aids

Tailored to the typical expert's approach, this search aid helps you to quickly find the product you need.

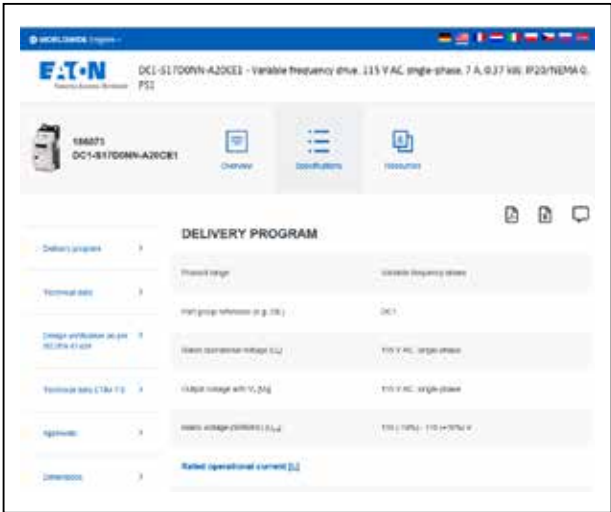
Data sheets

For every article the catalog can generate a technical data sheet, which you can convert to a PDF file for printing or saving with a single click.

Parts lists

From your search results you can create a parts list that you can send to your Eaton sales partner as a query.

Comprehensive up-to-date information about Eaton's drives products are available in the Eaton online catalog.



HTML data sheet can be saved as a PDF file



Parts list, e.g. for queries to Eaton sales



Eaton is an intelligent power management company dedicated to improving the quality of life and protecting the environment for people everywhere. 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 accelerating the planet's transition to renewable energy, helping to solve the world's most urgent power management challenges, and doing what's best for our stakeholders and all of society.

Founded in 1911, Eaton is marking its 100th anniversary of being listed on the New York Stock Exchange. We reported revenues of \$20.8 billion in 2022 and serve customers in more than 170 countries.

For more information, visit www.eaton.com.
Follow us on **Twitter** and **LinkedIn**.

Changes to the products, to the information contained in this document, and to prices are reserved; so are errors and omissions. Only order confirmations and technical documentation by Eaton is binding. Photos and pictures also do not warrant a specific layout or functionality. Their use in whatever form is subject to prior approval by Eaton. The same applies to Trademarks (especially Eaton, Moeller, and Cutler-Hammer). The Terms and Conditions of Eaton apply, as referenced on Eaton internet pages and Eaton order confirmations.

Eaton Industries GmbH
Hein-Moeller-Str. 7-11
D-53115 Bonn/Germany

© 2018 by Eaton Corporation
All rights reserved
Publication No.: BR040001EN
March 2023