



Award-winning  
performance



# PowerXL DX1

Touch the power. Trust the safety.



*Powering Business Worldwide*

# PowerXL – robust on the outside, efficient on the inside

The DX1 expands the PowerXL family with a high-performance variable frequency drive that is robust and easy to use, fitting seamlessly into the existing portfolio. This means we can always offer you the right product, from simple to complex applications – including standardized production in machine and system building, and more.

With a focus on speed-controlled applications and general mechanical engineering, the DX1 is perfectly equipped.

**Standardized production**  
made easy:  
parameters can simply be copied with the keypad

**Savings in the control cabinet**  
No derating required even at 50°C. This means the devices can be installed side-by-side in compact control cabinets without the need for fans.

**Quick installation**  
with plug-in terminal blocks

**Flexible mounting**  
on the mounting plate or by means of push-through technology (the power section is located behind the mounting plate). All sizes are available with IP21 and IP54 degree of protection.

**The right level of performance for every application type:**  
DX1: 200% torque

**Easy menu navigation**  
through self-explanatory navigation with plain text

**Simple commissioning**  
with just 18 basic parameters

**Full-color touch display**  
simplifies operation through smartphone-like, intuitive user guidance. Detailed help texts replace the manual.

**Seamless integration:**  
Connection to Profibus and Profinet



# DX1 – the high performance variable frequency drive for demanding applications

The DX1 variable frequency drive is the perfect match for demanding variable-speed and torque-dependent applications. It impresses with its wide power range of up to 160 kW as well as its compactness and high functionality.

A dual rating is available for optimal application adaptation: 150% overload for machine applications and 110% for pumps and fans. When designed for 110% overload, the DX1 can operate the next larger motor size.



## Safe to use even in harsh environments

Thanks to the coated circuit boards it can even be used in dusty environments, for example as a drive for vibrating screens in cement machines.

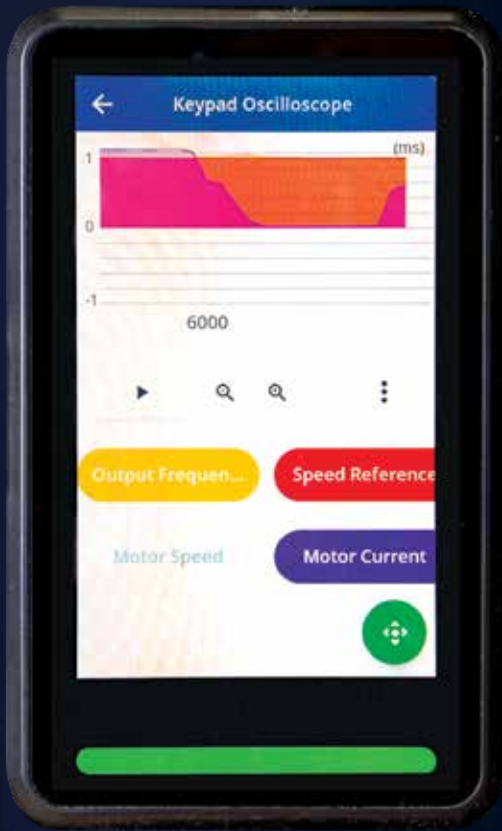
In cold environments, such as inside a stone crusher, the DX1 is also safe to use thanks to its cold weather function.

Robustness is essential underground – a matter of course for the DX1 frequency converter.



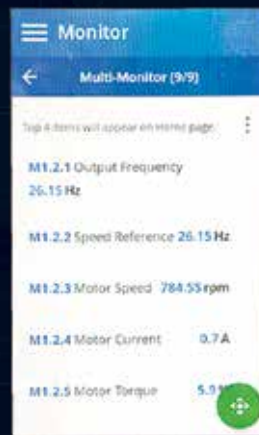
Innovative  
touchscreen offers  
**easy install  
and operation**





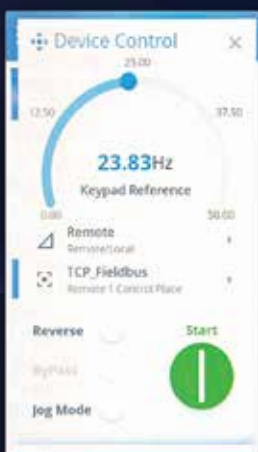
### Graphical trending capabilities

Quickly analyze live data



### Built-in metering

Safely assess drive without external equipment



### Contextual menus

Improved workflow compared to traditional keypads

**Note:** Membrane keypad option available.

# Security features



## STO according to SIL3, PLe, Cat.4

The exceptional safety level of the DX1 allows emergency stop buttons to be connected directly to the DX1, eliminating the need for an external safety relay. This makes the DX1 a true “buy and forget” solution: install, connect, done. Couldn't be simpler or safer!



## Certified cyber security

The DX1 is certified according to IEC/EN 62443-4-2 level 1, and is therefore optimally protected against cyber attacks. This ensures that modern protection mechanisms are in place – and attackers have no chance of getting malware into your company network via the DX1. Our high security standards are transparent, comparable, and verifiable. Certification according to IEC/EN 62443-4-2 is a key component in your security chain.



# Outstanding features

## Extensive on-board interfaces - wide range of protocols covered

On-board communication protocols:



## Flexibly expandable with standard fieldbus protocols

Optional communication protocols:



Focus on  
Industry 4.0



Master-follower  
function



Touchscreen  
Keypad



Predictive  
maintenance



Operation  
made easy



Reliable from  
50°C to -35°C



User Access  
Management

## Other features



Speed control



Tough in harsh  
environments



Power management



Internal  
web server

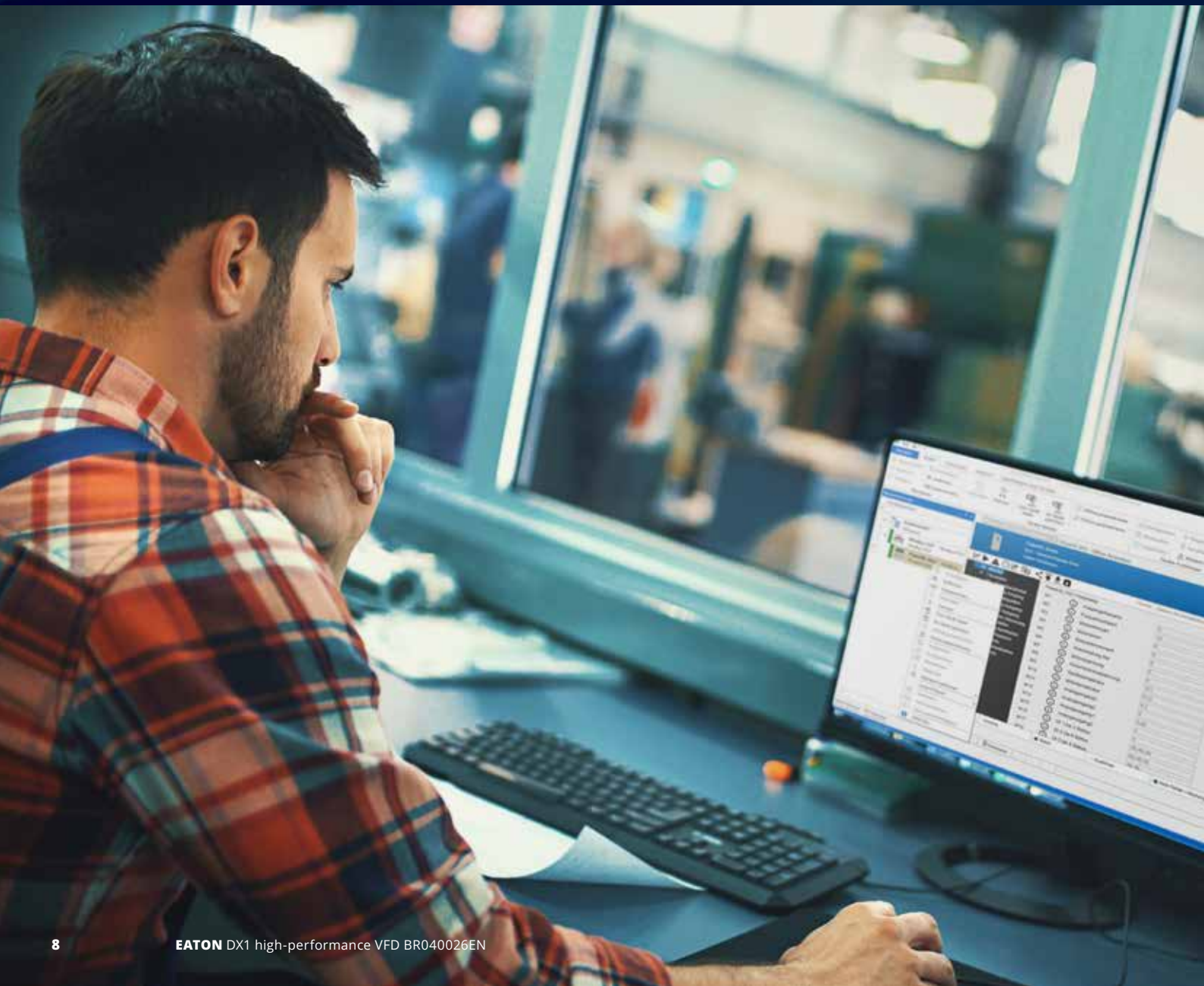
# Power Xpert inControl – the Eaton platform for easy configuration

The Power Xpert inControl software is a powerful commissioning tool for the PowerXL family. Besides configuration and diagnostics, the software can also be used to configure and read out the DX1's built-in oscilloscope. This allows recordings in 20 ms increments for 8 channels simultaneously.

Power Xpert inControl is an Eaton platform not only for DX1, but for all future communication enabled devices from Eaton.

## **Serial or Ethernet**

The connection to a PC can either be established via a serial RS485 port or via Ethernet. The DX1 comes with both types of hardware interfaces, for which Power Xpert inControl also provides the necessary drivers. This means you are free to choose which connection you want to use.



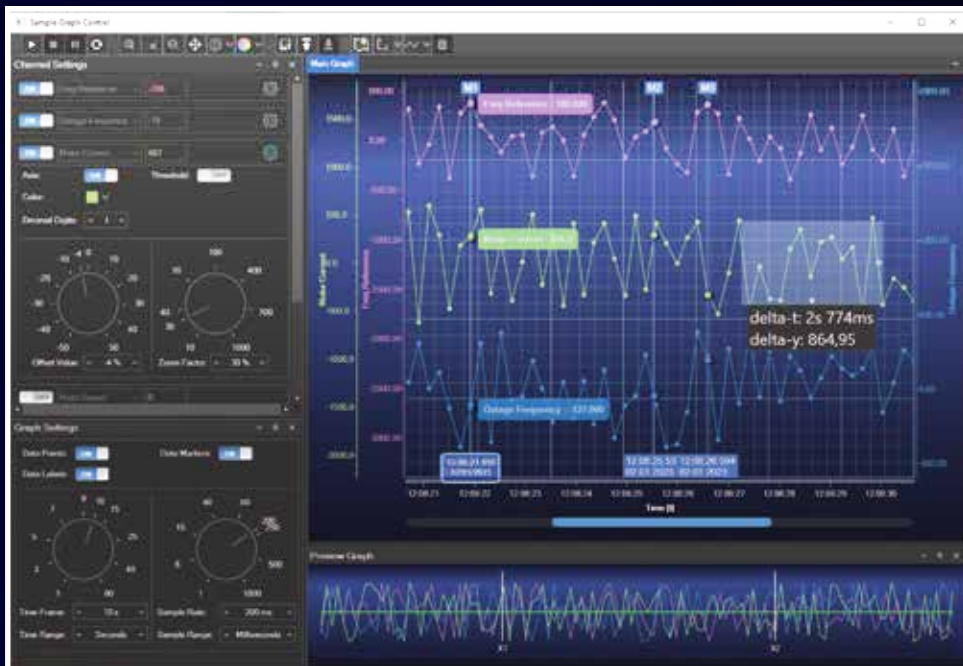
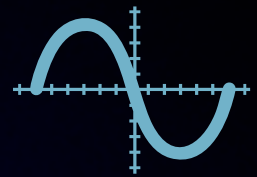
## Configuration

With the help of the editor function, users can configure the drives either online or offline, while the online mode gives the option to use monitoring data for diagnostics.



## Internal oscilloscope

Data can be retrieved over long periods of time via the serial connection to the PC. The DX1 and Power Xpert inControl can record up to 8 signals. The 8-channel oscilloscope integrated into the DX1, which records in 20 ms increments, can be used for fast processes.



## Comparing and documenting data sets

The large number of parameters in DX1 can be quickly compared against a second data set. Whether measured against another device in the system or a stored data record, the result can be easily inserted into a spreadsheet and filtered according to changed parameters.



## Exceptional memory

Did you accidentally make any changes? Or do you need to figure out why the drive suddenly stopped operating? DX1 stores the most recent 100 parameter changes including time stamps. Power Xpert inControl can read out and display these recordings. This makes it easy to undo any unwanted changes.



## PC connection

The DX1 stores the most recent 100 parameter changes with time stamps, Modbus RTU, Modbus TCP are available for PC connection. The electronic selection guide and the Energy Savings Estimator facilitate planning and energy savings.



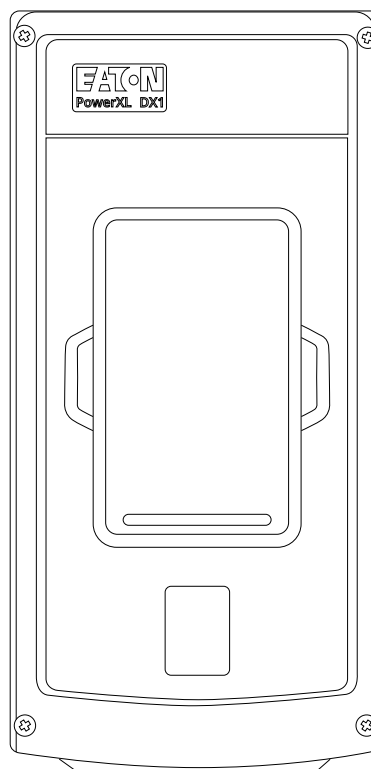
# Power spectrum

**Control modes:** voltage/frequency control (V/f control) and sensorless vector control (SLV)

150% OL			110% OL			Model				
P <sub>H</sub> [kW]	P <sub>H</sub> [HP]	I <sub>H</sub> [A]	P <sub>L</sub> [kW]	P <sub>L</sub> [HP]	I <sub>L</sub> [A]	Frame size	IP21 with BU	IP21 without BU	IP54 with BU	IP54 without BU
<b>208 - 240 V</b>										
0.75	0.75	3.7	1.1	1	4.8	1	DX1-323D7FB-T21CE		DX1-323D7FB-T54CE	
1.1	1	4.8	1.5	1.5	6.6	1	DX1-324D8FB-T21CE		DX1-324D8FB-T54CE	
1.5	1.5	6.6	1.5	2	7.8	1	DX1-326D6FB-T21CE		DX1-326D6FB-T54CE	
1.5	2	7.8	2.2	3	11	1	DX1-327D8FB-T21CE		DX1-327D8FB-T54CE	
2.2	3	11	3	3	12.5	1	DX1-32011FB-T21CE		DX1-32011FB-T54CE	
3	3	12.5	4	5	17.5	2	DX1-32012FB-T21CE		DX1-32012FB-T54CE	
4	5	17.5	5.5	7.5	25	2	DX1-32017FB-T21CE		DX1-32017FB-T54CE	
5.5	7.5	25	7.5	10	31	2	DX1-32025FB-T21CE		DX1-32025FB-T54CE	
7.5	10	31	11	15	48	3	DX1-32031FB-T21CE		DX1-32031FB-T54CE	
11	15	48	15	20	61	3	DX1-32048FB-T21CE		DX1-32048FB-T54CE	
15	20	61	22	25	75	4	DX1-32061FB-T21CE	DX1-32061FN-T21CE	DX1-32061FB-T54CE	DX1-32061FN-T54CE
22	25	75	22	30	88	4	DX1-32075FB-T21CE	DX1-32075FN-T21CE	DX1-32075FB-T54CE	DX1-32075FN-T54CE
22	30	88	30	40	114	4	DX1-32088FB-T21CE	DX1-32088FN-T21CE	DX1-32088FB-T54CE	DX1-32088FN-T54CE
30	40	114	45	50	143	5	DX1-32114FB-T21CE	DX1-32114FN-T21CE	DX1-32114FB-T54CE	DX1-32114FN-T54CE
45	50	143	45	60	170	5	DX1-32143FB-T21CE	DX1-32143FN-T21CE	DX1-32143FB-T54CE	DX1-32143FN-T54CE
45	60	170	55	75	211	5	DX1-32170FB-T21CE	DX1-32170FN-T21CE	DX1-32170FB-T54CE	DX1-32170FN-T54CE
55	75	211	75	100	261	6	DX1-32211FB-T21CE	DX1-32211FN-T21CE	DX1-32211FB-T54CE	DX1-32211FN-T54CE
75	75	248	90	100	312	6	DX1-32248FB-T21CE	DX1-32248FN-T21CE	DX1-32248FB-T54CE	DX1-32248FN-T54CE
<b>380 - 500 V</b>										
0.75	1	2.2	1.1	1.5	3.3	1	DX1-342D2FB-T21CE		DX1-342D2FB-T54CE	
1.1	1.5	3.3	1.5	2	4.3	1	DX1-343D3FB-T21CE		DX1-343D3FB-T54CE	
1.5	2	4.3	2.2	3	5.6	1	DX1-344D3FB-T21CE		DX1-344D3FB-T54CE	
2.2	3	5.6	3	3	7.6	1	DX1-345D6FB-T21CE		DX1-345D6FB-T54CE	
3	3	7.6	4	5	9	1	DX1-347D6FB-T21CE		DX1-347D6FB-T54CE	
4	5	9	5.5	7.5	12	1	DX1-349D0FB-T21CE		DX1-349D0FB-T54CE	
5.5	7.5	12	7.5	10	16	2	DX1-34012FB-T21CE		DX1-34012FB-T54CE	
7.5	10	16	11	15	23	2	DX1-34016FB-T21CE		DX1-34016FB-T54CE	
11	15	23	15	20	31	2	DX1-34023FB-T21CE		DX1-34023FB-T54CE	
15	20	31	18.5	25	38	3	DX1-34031FB-T21CE		DX1-34031FB-T54CE	
18.5	25	38	22	30	46	3	DX1-34038FB-T21CE		DX1-34038FB-T54CE	
22	30	46	30	40	61	3	DX1-34046FB-T21CE		DX1-34046FB-T54CE	
30	40	61	37	50	72	4	DX1-34061FB-T21CE	DX1-34061FN-T21CE	DX1-34061FB-T54CE	DX1-34061FN-T54CE
37	50	72	45	60	87	4	DX1-34072FB-T21CE	DX1-34072FN-T21CE	DX1-34072FB-T54CE	DX1-34072FN-T54CE
45	60	87	55	75	105	4	DX1-34087FB-T21CE	DX1-34087FN-T21CE	DX1-34087FB-T54CE	DX1-34087FN-T54CE
55	75	105	75	100	140	5	DX1-34105FB-T21CE	DX1-34105FN-T21CE	DX1-34105FB-T54CE	DX1-34105FN-T54CE
75	100	140	90	125	170	5	DX1-34140FB-T21CE	DX1-34140FN-T21CE	DX1-34140FB-T54CE	DX1-34140FN-T54CE
90	125	170	110	150	205	5	DX1-34170FB-T21CE	DX1-34170FN-T21CE	DX1-34170FB-T54CE	DX1-34170FN-T54CE
110	150	205	132	200	261	6	DX1-34205FB-T21CE	DX1-34205FN-T21CE	DX1-34205FB-T54CE	DX1-34205FN-T54CE
132	200	245	160	250	310	6	DX1-34245FB-T21CE	DX1-34245FN-T21CE	DX1-34245FB-T54CE	DX1-34245FN-T54CE

150% OL			110% OL			Model				
P <sub>H</sub> [kW]	P <sub>H</sub> [HP]	I <sub>H</sub> [A]	P <sub>L</sub> [kW]	P <sub>L</sub> [HP]	I <sub>L</sub> [A]	Frame size	IP21 with BU	IP21 without BU	IP54 with BU	IP54 without BU
<b>525 - 600 V</b>										
1.5	2	3.3	2.2	3	4.5	1	DX1-353D3FB-T21CE		DX1-353D3FB-T54CE	
2.2	3	4.5	4	5	7.5	1	DX1-354D5FB-T21CE		DX1-354D5FB-T54CE	
4	5	7.5	5.5	7.5	10	1	DX1-357D5FB-T21CE		DX1-357D5FB-T54CE	
5.5	7.5	10	7.5	10	13.5	2	DX1-35010FB-T21CE		DX1-35010FB-T54CE	
7.5	10	13.5	11	15	18	2	DX1-35013FB-T21CE		DX1-35013FB-T54CE	
11	15	18	11	15	22	2	DX1-35018FB-T21CE		DX1-35018FB-T54CE	
11	15	22	15	20	27	3	DX1-35022FB-T21CE		DX1-35022FB-T54CE	
15	20	27	22	30	34	3	DX1-35027FB-T21CE		DX1-35027FB-T54CE	
22	30	34	22	30	41	3	DX1-35034FB-T21CE		DX1-35034FB-T54CE	
22	30	41	30	40	52	4	DX1-35041FB-T21CE	DX1-35041FN-T21CE	DX1-35041FB-T54CE	DX1-35041FN-T54CE
30	40	52	37	50	62	4	DX1-35052FB-T21CE	DX1-35052FN-T21CE	DX1-35052FB-T54CE	DX1-35052FN-T54CE
37	50	62	55	75	80	4	DX1-35062FB-T21CE	DX1-35062FN-T21CE	DX1-35062FB-T54CE	DX1-35062FN-T54CE
55	75	80	55	100	100	5	DX1-35080FB-T21CE	DX1-35080FN-T21CE	DX1-35080FB-T54CE	DX1-35080FN-T54CE
55	100	100	75	100	125	5	DX1-35100FB-T21CE	DX1-35100FN-T21CE	DX1-35100FB-T54CE	DX1-35100FN-T54CE
75	100	125	90	125	144	5	DX1-35125FB-T21CE	DX1-35125FN-T21CE	DX1-35125FB-T54CE	DX1-35125FN-T54CE
90	125	144	132	200	208	6	DX1-35144FB-T21CE	DX1-35144FN-T21CE	DX1-35144FB-T54CE	DX1-35144FN-T54CE
132	200	208	160	250	250	6	DX1-35208FB-T21CE	DX1-35208FN-T21CE	DX1-35208FB-T54CE	DX1-35208FN-T54CE

Frame size	H x W x D [mm]	Weight [kg]
1	327 x 153 x 237.4	7
2	419 x 168 x 281.2	12
3	558 x 205 x 298	23
4	630 x 238 x 328.5	35
5	888.5 x 286 x 369.1	64
6	1035 x 486 x 399.5	113



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Eaton's mission is to improve the quality of life and the environment through the use of power management technologies and services. We provide sustainable solutions that help our customers effectively manage electrical, hydraulic and mechanical power – more safely, more efficiently and more reliably. Eaton's 2020 revenues were \$17.9 billion, and we sell products to customers in more than 175 countries.

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