

FREQUENCY DRIVE

For tight-space applications

With the PowerXL DB1 frequency drive, Eaton has launched its smallest frequency inverter. It features CANopen connectivity and complies with the CiA 402 profiles.

Despite its small size, the DB1 comes with all the functionalities of the established DC1 Enhanced series. The reduced size has been achieved by removing the display, keypad and heat sink. The DB1 was developed as a cold plate unit and relies on the metal enclosure of the surrounding machine for heat removal. After heat-conducting paste has been applied, the frequency drive is screwed directly onto the metallic partition, using the thermal conductivity of the latter for heat removal.

Since the DB1 is compatible with Eaton's external keypads, no integrated display or keypad is required. "This reduction of components epitomizes the efficiency of the DB1. Via speed control, machines with existing enclosures can reduce the energy required in the process", explained Andreas Miessen from Eaton. "As a result, the DB1 will be particularly attractive for OEMs looking for a versatile frequency drive that can be integrated seamlessly into existing pumps, compressors, or other systems where space is tight." The DB1 is compatible with the Drives-Connect parameter configuration software, as well as with the Drives-Connect.



The frequency inverter can be linked to an external display (Photo: Eaton)

The smallest frame size has been designed for motor outputs of up to 1,5 kW at either 230 V or 400 V. Eaton is also launching a larger size for up to 4 kW at 400 V, which will cover the majority of motors available on the market.

The DB1 consists of a power section and a detachable control section. The control section contains several I/O interfaces as well as a port for CANopen. In addition, the control section of the DB1 also features safe cage-clamp connectors. "If required, and provided that the order volume is sufficiently large, the control section can also be adapted to customer needs", said Miessen, who also offers customers an application-specific consultation service. "Customers who are unsure about the heat removal via the cold plate unit can come to us for advice." Such a consultation would also include a discussion on the precise thermal conductivity of the alloy used in the enclosure in question. However, Miessen excludes the possibility of the device being damaged through overheating: "All PowerXL devices have a self-protection mechanism that prevents damage even in the improbable event of a fault."

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