



# Danfoss Packaged Drive Solutions

## Electro-Mechanical and Electronically Controlled Bypass

Flexibility is the key to Danfoss packaged drive solutions. Through our unique feature-rich standard packages, Danfoss supplies the product to meet the application. Our packaged solutions are all manufactured in our own UL-certified facilities—without outsourcing—and supported by the same stringent manufacturing standards and warranties as VLT Series drive products. Being your single source supplier of both VFDs and packaged solutions is just one more way that Danfoss reduces your total cost of ownership.

### Performance ranges

208 V: ½ to 60 HP

460 V or 600 V: ½ to 350 HP

### Enclosures

NEMA/UL Type 1 and 12

### Typical Package Options

- Two-contactor bypass
- Three-contactor bypass
- Contactor motor selection
- Dual motor operation
- Main input disconnect
- Main input fusing
- Main input circuit breaker
- Drive only input fusing
- Input AC line reactors
- Output dV/dt filters
- 100,000 amp short circuit current rated packages

### Enhanced performance and protection

#### Class 20 overload standard

- Phase loss / imbalance protection
- Motor protection in bypass
- Wide range of trip settings
- Overload reset over BAS or from drive keypad or digital input (ECB only)

#### 24 VDC switch mode power supply

- Maintains contactor operation in low voltage or phase loss condition, allowing continued operation despite loss of any single input phase
- Eliminates contactor dropout on voltage conditions as low as 70% of nominal voltage
- Provides a separate power source for drive logic (ECB only)

**Drive input fuses supplied with every panel**





## Electro-Mechanical Bypass (EMB2)

EMB2 is a traditional Electro-Mechanical Bypass packed with performance and features:

- **Automatic bypass** operation selectable and programmable, including adjustable time delay
- **Common start/stop** selectable operation in drive and bypass mode, regardless of the command source
- **Coordinated Run Permissive** in both drive and bypass. A command to start the motor (regardless of operating mode) does not start the motor, but instead activates a relay used to actuate another device. Confirmation from this device then starts the motor.
- **Firefighter's Override Mode** runs the motor in bypass, ignoring stop commands

### Door-mounted operators

- Drive-Off-Bypass selector
- Bypass pilot light indication
- Test selection added with three-contactor bypass units



## Electronically Controlled Bypass (ECB)

Danfoss ECB is Electronically Controlled Bypass done right. With the highest level of performance and protection, and the easiest operator interface on the market, our ECB offers the best solution for even the most critical of applications. In addition to the features available with EMB2,



Danfoss ECB offers even greater control and flexibility for the lowest overall cost of ownership:

- **Serial and BAS control of drive and bypass operation** provides complete oversight of the package's operation, with no loss of command or communication even in bypass mode.
- **Advanced Firefighter's Override**, coordinated with the VLT HVAC Drive's Firefighter's Override mode. The user determines whether the system follows the drive's Firefighter's Override, goes to Bypass Firefighter's Override, or goes to Bypass only if the VLT HVAC Drive fails during override mode. Not only does this feature enhance performance, but it also has the potential to protect lives.
- Bypass run-time hour meter
- Password protection prevents unauthorized bypass operation
- Manual bypass initiation override ensures operation
- Bypass control through the drive Smart Logic Controller and Real-Time clock
- Bypass fault logging and time stamping
- Bypass-specific keypad provides one-touch access to bypass operation

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