ENGINEERING TOMORROW

Fact Sheet

# VLT® HVAC Basic Drive FC 101
# **Convenient** and **compact** control


*IP20*

*IP54*

## Efficient control of induction and permanent magnet motors

Optimized for basic operation of fans, pumps and compressors, the VLT® HVAC Basic Drive has built-in functions that reduce initial costs and increase productivity.

This drive is the most compact unit in its class, and can deliver up to 50% energy savings. Integrated DC coils reduce harmonics without the extra cost and space required for external devices.

With power loss ride-through and Semi F47 certification, the drive performs reliably, even when power quality is poor.

## Product range

3 x 200-240 V.....0.25-45 kW
3 x 380-480 V.....0.37-90 kW
3 x 525-600 V..... 2.2-90 kW

## Available enclosure ratings

IP20
IP21/UL Type 1 (separate option kit)
IP54

**50%**

**energy cost saving is typical for 20% reduction in speed in VT applications such as fans and pumps**

| Feature | Benefit |
|---|---|
| **All built-in – low investment** | |
| Most common HVAC protocols for BMS controller connectivity are embedded | Fewer extra gateway solutions needed |
| Smart Logic Controller | Often makes PLC unnecessary |
| Sensorless pump control | No need for external pressure transmitter |
| Compressor torque | Fits your compressor application |
| **Save energy – less operation cost** | |
| Flow compensation function | Saves energy |
| Automatic Energy Optimizer function | Saves 3-5% on operating costs on average |
| PM motor control in open loop | Increased efficiency especially at part load |
| Sleep mode | Saves energy and extends lifetime |
| **Unequalled robustness – maximum uptime** | |
| Robust single enclosure | Maintenance-free |
| Unique variable-speed cooling concept with no forced air flow over electronics | Problem-free operation in harsh environments |
| Max ambient temp. up to 122° F | No external cooling |
| Flying Start | Reduced mechanical wear on equipment |
| Fire override mode | Enhanced safety |
| Thermistor input | Prevents motor overheating |
| **User friendly – save commissioning and operating cost** | |
| UL LZGH2 certified in accordance with UL60335-2-40, UL60335-2-89 | A2L Refrigerants in HVAC/R system |
| Operate both PM and induction motors | Versatile, only one drive type required |
| Easy connectability and start-up wizard | Effective commissioning and operation |
| VLT® Mains-Free Interface option | Set drive parameters with no mains power |
| Alpha-numeric display/improved HMI | Fast commissioning, easy to use |
| Cooling fan operation adjusts precisely to load | Optimum efficiency and energy savings<br>Silent or low noise level only |
| Auto restart | Saves time and money |
| Global HVAC support organization | Local service – globally |
| **Built-in DC coils and EMC filters – no harmonic concerns** | |
| Built-in EMC filter | Meets compatibility class C1, C2 or C3 |
| Integrated DC chokes reduce THDi to less than 48%, in accordance with EN 61000-3-12 | Lower harmonic distortion, no need to buy external DC choke, saves panel space and mounting cost.<br>Smaller power cables. |

ENGINEERING
**TOMORROW**

## Easy commissioning

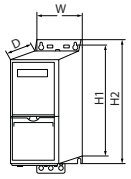
- Configure with set-up wizards
- Easy-to-program parameters
- Hand – Off – Auto keys
- Status LCDs, alarms & warnings
- Easy to install and wire up
- LCP copy function
- LCP 32 supports 8 languages
- LCP 31 supports 7 languages


## Your choice

- Optional VLT® Control Panel LCP 31 or LCP 32
- VLT® Mains-free Interface
- Enclosures: IP20/Chassis or IP21/Type 1 or IP54
- Optional harmonic filters for 10% THDi
- Minimum 25 m C3 as standard built-in Optional: C1/C2 filters

## Technical data

| | |
|---|---|
| **Mains supply (L1, L2, L3)** | |
| Supply voltage | 200–240 V ±10%<br>380–480 V ±10%<br>525–600 V ±10% |
| Supply frequency | 50/60 Hz |
| Displacement power factor (cos φ) | Near unity (> 0.98) |
| Switching frequency on input supply L1, L2, L3 | 1 time/minute max. |
| **Output data (U, V, W)** | |
| Output voltage | 0-100% of supply voltage |
| Switching on output | Unlimited |
| Ramp times | 1-3600 sec. |
| Open/closed loop | 0-400 Hz |
| **Digital inputs** | |
| Programmable digital inputs | 4 |
| Logic | PNP or NPN |
| Voltage level | 0-24 V DC |
| **Analog inputs** | |
| Analog inputs | 2 |
| Modes | 1 voltage or current |
| Voltage level | 0 V to +10 V (scaleable) |
| Current level | 0/4 to 20 mA (scaleable) |
| **Analog output (can be used as digital output)** | |
| Programmable analog outputs | 2 |
| Current range at analog output | 0/4 to 20 mA |
| **Relay outputs** | |
| Programmable relay outputs | 2 (240 VAC, 2 A and 400 VAC, 2 A) |
| **Fieldbus communication** | |
| Standard built-in:<br>BACnet mstp<br>FC Protocol | N2 Metasys<br>FLN Apogee<br>Modbus RTU |




## Dimensions

| Power [kW/HP] | | | | | Height [mm/inch] | | Width (W) [mm/inch] | Depth (D) [mm/inch] |
|---|---|---|---|---|---|---|---|---|
| Frame | IP Class | 3 x 200-240 V | 3 x 380-480 V | 3 x 525-600 V | H1 | H2 with decoupling plate | | |
| H1 | IP20 | 0.25-1.5 kW/0.3-2 HP | 0.37-1.5 kW/0.5-2 HP | - | 195/7.7 | 273/10.7 | 75/2.9 | 168/6.6 |
| H2 | IP20 | 2.2 kW/3 HP | 2.2-4 kW/3-5.4 HP | - | 227/8.9 | 303/11.9 | 90/3.5 | 190/7.5 |
| H3 | IP20 | 3.7 kW/5 HP | 5.5-7.5 kW/7.5-10 HP | - | 255/10.0 | 329/13.0 | 100/3.9 | 206/8.1 |
| H4 | IP20 | 5.5-7.5 kW/7.5-10 HP | 11-15 kW/15-20 HP | - | 296/11.7 | 359/14.1 | 135/5.3 | 241/9.5 |
| H5 | IP20 | 11 kW/15 HP | 18.5-22 kW/25-30 HP | - | 334/13.1 | 402/15.8 | 150/5.9 | 255/10.0 |
| H6 | IP20 | 15-18.5 kW/20-25 HP | 30-45 kW/40-60 HP | 18.5-30 kW/25-40 HP | 518/20.4 | 595/23.4-635/25.0 | 239/9.4 | 242/9.5 |
| H7 | IP20 | 22-30 kW/30-40 HP | 55-75 kW/75-100 HP | 37-55 kW/50-75 HP | 550/21.7 | 630/24.8-690/27.2 | 313/12.3 | 335/13.2 |
| H8 | IP20 | 37-45 kW/50-60 HP | 90 kW/125 HP | 75-90 kW/100-125 HP | 660/26.0 | 800/31.5 | 375/14.8 | 335/13.2 |
| H9 | IP20 | – | – | 2.2-7.5 kW/3-10 HP | 372/14.6 | 374/14.7 | 130/5.1 | 205/8.0 |
| H10 | IP20 | – | – | 11-15 kW/15-20 HP | 475/18.7 | 419/16.5 | 165/6.5 | 249/9.8 |
| I2 | IP54 | – | 0.75-4 kW/1-5.4 HP | – | 332/13.1 | – | 115/4.5 | 225/8.8 |
| I3 | IP54 | – | 5.5-7.5 kW/7.5-10 HP | – | 368/14.5 | – | 135/5.3 | 237/9.3 |
| I4 | IP54 | – | 11-18.5 kW/15-25 HP | – | 476/18.7 | – | 180/7.1 | 290/11.4 |
| I6 | IP54 | – | 22-37 kW/30-50 HP | – | 650/25.6 | – | 242/9.5 | 260/10.2 |
| I7 | IP54 | – | 45-55 kW/60-75 HP | – | 680/26.8 | – | 308/12.1 | 310/12.2 |
| I8 | IP54 | – | 75-90 kW/100-125 HP | – | 770/30.3 | – | 370/14.6 | 335/13.2 |

**AM453866899065en-US0201** | © Copyright Danfoss Drives | 2025.02