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 47 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
Built-in PI controller	No external PI controller required
Smart Logic Controller	Often makes PLC unnecessary
Sensorless pump control	No need for external pressure transmitter
Save energy – less operation cost	
Flow compensation function	Saves energy
Automatic Energy Optimizer function	Saves additional 5-15% energy
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 50° C	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	
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	Display in multiple languages and metric/imperial units
Cooling fan operation adjusts precisely to load	Optimum efficiency and energy savings Silent or low noise level only
Auto restart	Saves time and money
Bypass frequencies	Less noise and vibrations/resonances
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 choke	Small power cables. Meets EN 61000-3-12

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
- 7 languages and numeric programming

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% 380–480 V ±10% 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: BACnet mstp FC Protocol	N2 Metasys FLN Apogee Modbus RTU

Dimensions

Power (kW/HP)					Height (mm/inch)		Width (mm/inch)	Depth (mm/inch)
Frame	IP Class	3 x 200-240 V	3 x 380-480 V	3 x 525-600 V		Incl. 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-US0101 | © Copyright Danfoss Drives | 2023.07