ENGINEERING
TOMORROW

Fact Sheet

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

IP20

IP54

Efficient control of induction and permanent magnet motors in all HVAC applications

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 25% energy savings. Integrated DC coils reduce harmonics without the extra cost and space required for external devices.

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

Quiet
cooling fan operation over the entire power range

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
Alpha-numeric display/improved HMI	Display in multiple languages and metric/imperial units
Cooling fan operation adjusts precisely to load	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 protection class C1, C2 or C3
Integrated DC choke	Small power cables. Meets EN 61000-3-12

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Easy commissioning

- Configure with a start-up wizard
- Easy-to-program parameters
- Alphanumeric display
- Hand – Off – Auto keys
- Status LCDs
- Easy to install and wire up
- 7 languages and numeric programming

Your choice

- Enclosures: IP20/Chassis or IP21/Type 1 or IP54
- Optional harmonic filters for 5% or 10% THDi
- Minimum 25 m C3 as standard built-in
  Optional: C1/C2 filters

Specifications

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