

Fact Sheet

# VLT® AutomationDrive EZ FC 321 Designed for easy distribution



Designed for variable speed control of all asynchronous and permanent magnet motors, on any industrial machine or production line, the VLT® AutomationDrive EZ FC 321 helps you save energy, improve flexibility, and optimize processes.

### Flexible and expandable

With a flexible modular design, the AutomationDrive EZ FC 321 is packed with standard features which can be expanded with plug-and-play options with additional features and fieldbuses. Safe Torque-Off is a standard safety feature that can be applied through hardwired safety.

### Printed circuit board protection

The AutomationDrive EZ FC 321 conforms to class 3C2 (IEC 60721-3-3) as standard. If used in particularly harsh conditions, it is possible to order a special coating that complies with class 3C3. Drives above 100 HP come standard with 3C3.

### Robust and reliable

VLT® AutomationDrive EZ FC 321 is a proven performer in all industrial environments and grid voltages, including 690V. Enclosures are available up to NEMA 4X (depending on model), and integrated DC chokes and RFI filters in all models protect installations by minimizing harmonic distortion and electromagnetic interferences. All drives are tested at full-load before leaving the factory.

### Power range:

- 3 x 200 – 240 V.....0.33 HP – 100 HP
- 3 x 380 – 480/500 V.....0.5 HP – 200 HP
- 3 x 525 – 600 V.....1 HP – 100 HP
- 3 x 525 – 690 V.....125 HP – 200 HP

### Easy set up and commissioning

The VLT® AutomationDrive EZ FC 321 is easy to set up and operate via the user-friendly graphical control panel, requires minimal maintenance, and delivers a market leading control solution which provides a fast return on investment with a highly competitive cost of ownership.

Smart Start provides wizard groups for several of the most common applications, including conveyors, pumps and fans, and setup with mechanical brake. With the settings to run these applications already in place, you can get your machine up and running faster, increasing your productivity.

Features	Benefits
<b>Reliable</b>	
Ambient temperature 122° F without derating for most frames	Less need for cooling or oversizing
Available in Chassis, NEMA 1, NEMA 12 NEMA 4X enclosures	Enclosures for all environments
Resistant to wear and tear	Low lifetime cost
Maintenance assistant	Maintenance plans for the FC and the application can be stored in the AC Drive
<b>User-friendly</b>	
On/Off cooling fan	Prolong lifetime of internal cooling fan
Plug-and-Play technology	Easy upgrade and changeover
Help button and associated screens	Readout of help texts in the drive suggests a problem solving text which help end-users
Intuitive award winning VLT® control panel	User friendly and saves time
Spring load and screw type connections with pluggable terminal blocks	Fast, Easy, Secure connections
Multiple languages	User-friendly
PLC function blocks	Reduce engineering time to develop custom functions
Modular design	Helps reduce spare parts inventory and provides a faster way to install and configure drives
Programming and Commissioning	Simplified configuration and programming using standard USB cables and powerful free software tools
<b>Intelligent</b>	
Intelligent warning systems	Warning before controlled stop
Smart Logic Control	Reduces need for PLC capacity. Total number of sequences = 4 parallel. Number of blocks per sequence 20
Safe stop / Safe Torque Off	Built-in safety can help lower your total system costs, boost machine availability and reduce downtime.
STO: Safe Torque Off (IEC 61800-5-2)	PL d , category 3 (ISO 13849-1), Stop cat. 0 (EN 60204-1), SIL 2 acc. IEC 61508
Intelligent heat management	Removes excessive heat, promotes longer life
AMA (Automatic Motor Adaption)	Motor identification and optimization without decoupling your load
4 x Menu sets	Set parameter individually in each of the 4 set-ups, that means 1 single parameter can have 4 different data values.
Smart Start Wizards	Designed for machine applications – such as pumps, fans, and in-feed and out-feed conveyors – that need speed control for all motors



**Fieldbus options**

- VLT® PROFIBUS DP MCA 101
- VLT® DeviceNet MCA 104
- VLT® PROFINET MCA 120
- VLT® Ethernet/IP MCA 121
- VLT® Modbus TCP MCA 122
- Modbus RTU is included as standard

**I/O option**

- VLT® 24 V External Supply MCB 107

**Power options**

- VLT® Brake resistors MCE 101
- VLT® Sine-Wave Filters MCC 101
- VLT® dV/dt Filters MCC 102
- VLT® All-mode sine wave filter MCC 201
- VLT® Common Mode Filter MCC 105
- VLT® Advanced Harmonic Filters AHF 005/010

**Other accessories**

- NEMA 1/IP 21 Kit (convert chassis to NEMA 1)
- Decoupling plate for fieldbus cables
- USB connection cable to PC
- LCP panel mounting kit
- Mains disconnect and fuse option (NEMA 12/4X)
- USB Extension

**Brake chopper (IGBT) option**

Dissipates extra energy to a Brake Resistor from Regenerating motor loads.



**Specifications**

Mains supply (L1, L2, L3)	
Supply voltage	200 – 240 V ±10%, 380 – 500 V ±10%, 525 – 600 V ±10%, 525 – 690 V ±10%
Supply frequency	50/60 Hz
True Power Factor (λ)	0.92 nominal at rated load
Displacement Power Factor (cos φ) near unity	(> 0.98)
Switching on input supply L1, L2, L3	Maximum 2 times/min.
Output data (U, V, W)	
Output voltage	0–100% of supply voltage
Output frequency	0 – 590 Hz (1/3 – 200 HP) 0 – 300 Hz (Flux mode)
Switching on/off output	Unlimited
Ramp times	1–3600 sec.
<i>Note: 160% current can be provided for 1 minute.</i>	
Digital inputs	
Programmable digital inputs	4 (6)
Logic	PNP or NPN
Voltage level	0–24 VDC
<i>Note: Two digital inputs can be programmed as digital output</i>	
Analog input	
Analog inputs	2
Modes	Voltage or current
Voltage level	-10 to +10 V (scaleable)
Current level	0/4 to 20 mA (scaleable)
Pulse/encoder inputs	
Programmable pulse/encoder inputs	2
Voltage level	0 – 24 V DC (PNP positive/NPN negative logic)
Digital output	
Programmable digital/pulse outputs	2
Voltage level at digital/frequency output	0 – 24 V
Analog output	
Programmable analog outputs	1
Current range	0/4–20 mA
Relay outputs	
Programmable relay outputs	2 Form C 240VAC 2A
Cable lengths	
Max. motor cable lengths	500 ft (screened/armoured) 1000 ft (unscreened/unarmoured)
Environmental	
Ambient temperature without derating: 13°F to 122°F Operating ambient temperature when derating: -31°F to 140°F. -31°F only possible with NEMA 4X enclosures	

**Typecode**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
F	C	-	3	2	1	P	K	7	5	T	2	E	2	0	H	2	B	G	C	X	X	X	S	X	X	X	X	A	N	B	X	C	X	X	X	X	D	0

<b>Power size: char 7-10</b> PK25:0.25kW/0.33HP --- N132:132 kW/200HP	<b>Voltage: char 11-12</b> T2:3x200-240VAC T5:3x380-500VAC T6:3x525-600VAC T7:3x525-690VAC *	<b>Enclosure: char 13-15</b> E20:IP20 / Chassis E54:IP54 / Type 12 * E66:IP66 / Type 4X	<b>RFI: char 16-17</b> H2:RFI Cl. A2 (C3) HX:No RFI filter	<b>Brake: char 18</b> X:No brake chopper B:Brake chopper
--	--	--	--	--

\* D-Frame only

<b>Display: char 19</b> X:No Display G:G-LCP	<b>Coated: char 20</b> X:Not coated C: Coated	<b>Mains opt: char 21</b> X:No mains option 3:Mains Disconnect + Fuse	<b>Fieldbus: char 29-30</b> AX:No option AN:EtherNet/IP	<b>24V Back: char 38-39</b> DX: No option D0:24V DC backup
--	---	---	---	--