

Integrated field buses:
Modbus, METASYS N2, BACnet, APOGEE FLN P1

**BLEMO® compact HVAC drive -
for applications with variable
torque**

Type ER321K / ER321G

Frequency converter for
speed adjustment of
DS-asynchronous motors
0.75 to 75.0 kW
380 to 480 V, 3~
Protection class IP21 and IP54/55



Type G-V2

Type G-V1

Type K

Innovation

This new product line is a further development of the predecessor model ER32.

The series is intended for variable torque applications in building technology, sewage and waterworks, e.g. fans and pumps. It has been developed in accordance with the latest aspects of relevant standards and international regulations, including EMC, harmonics standard EN61000-3-12 and environmental compatibility, e.g. lead-free soldering and recyclability.

Standard features

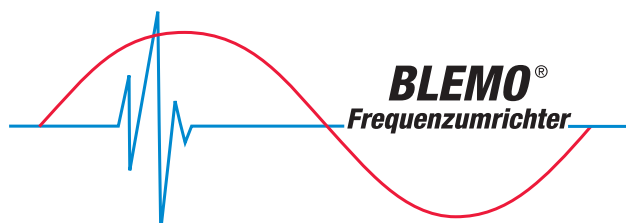
- 4-digit 7-segment display
- Optional: multilingual plain text display
- 4 preprogrammed application macros
- built-in PID controller
- Modbus, METASYS N2, BACnet, APOGEE FLN P1 via RJ 45, RS 485, optionally LonWorks
- Integrated EMC filter
- PTC thermistor input PTC
- Maximum THDI: 35%, EN61000-3-12
- RoHs compliant
- CE, UL, CSA, NOM 117, C-Tick

Standards

The ER321 series frequency converters have a mains filter integrated in the device, are CE marked in accordance with the EU Low Voltage Directive and EMC Directive and comply with the applicable standards for frequency converters EN 61800-3 and -5-1.

Device versions

The ER321 is available in two versions ER321-...K, protection class IP21 and ER321-...G, protection class IP54/55 with(-V2) and without(-V1) additional switches. The ER321 is designed with a 4-digit 7-segment display. 7 keys allow easy programming and control of the unit from the display. The Local/Remote button is used to switch between the display and the control terminal block. A multilingual plain text display is now available as an option.



Multilingual plain text display

Device Overview ER12-...K/B/KU/BU

Voltage	Type	Motor power recommended	Rated current	max. Overload current for 60 sec.	Series ER321-...K Protection class IP21		Series ER321-...G-V1 Protection class IP54/55(1)	
		kW	In		Size (HxWxD) mm	Mass kg	Size (HxWxD(2)) mm	Mass kg
3-380...480 V 50/60 Hz	ER321-0.75/4	0.75	2.2	2.4	143 x 107 x 150	2.00	297 x 215 x 192	7.0
	ER321-1.5/4	1.5	3.7	4.0	143 x 107 x 150	2.00	297 x 215 x 192	7.0
	ER321-2.2/4	2.2	5.1	5.6	143 x 105 x 150	2.00	340 x 230 x 208	7.0
	ER321-3.0/4	3.0	7.2	7.9	184 x 142 x 150	3.35	340 x 230 x 208	9.65
	ER321-4.0/4	4.0	7.1	10.0	184 x 142 x 150	3.35	340 x 230 x 208	9.65
	ER321-5.5/4	5.5	12.0	13.2	184 x 142 x 150	3.35	340 x 230 x 208	9.65
	ER321-7.5/4	7.5	16.0	17.6	232 x 180 x 170	6.45	340 x 230 x 208	10.95
	ER321-11.0/4	11.0	22.5	24.8	232 x 180 x 170	6.45	560 x 290 x 315	30.30
	ER321-15.0/4	15.0	30.5	33.6	330 x 245 x 190	11.65	560 x 290 x 315	30.30
	ER321-18.5/4	18.5	37.0	40.7	330 x 245 x 190	11.65	655 x 310 x 315	37.40
	ER321-22.0/4	22.0	43.5	47.9	420 x 240 x 214	26.40	720 x 284 x 315	49.50
	ER321-22.0/4S(3)	22.0	43.5	47.9	330 x 245 x 190	11.65		
	ER321-30.0/4	30.0	58.5	64.4	420 x 240 x 214	26.40	720 x 284 x 315	49.50
	ER321-37.0/4	37.0	79.0	86.9	550 x 240 x 244	36.90	880 x 284 x 343	57.40
	ER321-45.0/4	45.0	94.0	103.4	550 x 240 x 244	38.10	880 x 284 x 343	57.10
	ER321-55.0/4	55.0	116.0	127.6	630 x 320 x 290	54.90	1000 x 362 x 364	61.90
ER321-75.0/4	75.0	160.0	176.0	360 x 320 x 290	55.40	1000 x 362 x 364	61.90	

(1) Up to ER321-7.5/4G with IP55 protection, fro ER321-11.0/4G with IP54 protection

(2) For the ER321-.../4G-V2 versions, the following must be added to dimensions: D 53mm

(3) Note reduced key data

Technical specification

Network connection

Voltage and power range:

3-phase, 380 to 480 V, +10/-15%, 0.75-75.0 kW

Frequency: 50/60 Hz \pm 5%

Motor connection

Output voltage: 3-phase, from 0 to UN mains

Output frequency: 0.5 to 200 Hz

Overload current:

110% of In for 60 sec.

Overload torque:

120% of motor rated torque for 60 sec.

Switching frequency:

Adjustable 1...16 kHz

Ramp time:

0.01 to 3200 sec.

Limit values for ambient conditions

Ambient temperature:

-10 to 40°C without power reduction, no ice

Formation allowed

41 to 50°C with power reduction

Installation altitude:

1000m AMSL without power reduction

Reduction of 1%/100m

over 1000 to 3000m

Limited to 2000m for distribution

Relative air humidity:

5...95% (no condensation, no thawing, IEC 60068-2-3)

Protection class:

IP21 or IP54/55(1)

Approvals

CE, UL, CSA, C-Tick, NOM 117

Programmable inputs and outputs

Two analog inputs:

VIA 0 (4) to 20 mA or 0 to 10 VDC, 11 bit

This input can also be programmed as digital input

VIB 0 to 10 VDC, 11 bit

This input can also be programmed as input for PTC thermistor, max. 6 sensors in series up to 1.5 kOhm

Sampling time 2ms \pm 0.5ms, accuracy \pm 0.6%, linearity \pm 0.15%.

One analog output:

FM 0 (4) to 20 mA or 0 to 10 VDC, 10 bit

Sampling time 2ms \pm 0.5ms, accuracy \pm 1.0%, linearity \pm 0.2%.

Three logic inputs:

F, R, RES 3 programmable inputs

Input impedance 3.5 k Ω , sampling time 2m \pm 0.5ms

Two relay outputs:

FLA, FLB, FLC potential-free relay output, 1 \bar{O} ,1S

RY, RC potential-free relay output, 1S

Ohm, Load 5A at 250 VWS/30VDC, ind. Load 2A at 250 VWS/30VDC, Max response time 7ms \pm 0.5ms

Serial communication:

RS 485, RJ45 Modbus protocol

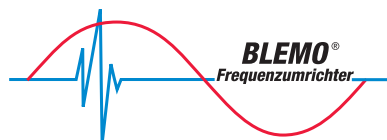
Product conformity

CE marking: Low Voltage Directive 73/23/EED and 93/68/EEC with endorsements, Machinery Directive 98/37/EC, EMC Directive 89/336/EED with endorsements

EMC

Radio interference immunity: IEC/EN 61800-3, 1st and 2nd environment

Interference emission: IEC/EN 61800-3, 1st and 2nd environment Category C1, C2



BLEMO®

Frequency converter

Siemensstraße

D-63110 Rodgau-Dudenhofen

Tel.: +49 61 06/82 95-0

Fax: +49 61 06/82 95-20

info@blemo.com

www.blemo.com