UNSER ANTRIEB: IHRE LÖSUNG

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BLEMO® frequency converter ER41K / ER41G

More control, less energy consumption – ER41 for pumps and fans!

The ER41 product range is a frequency converter for speed adjustment of DS asynchronous motors, synchronous reluctance motors and synchronous motors with permanent magnets.

0.75 kW to 2600 kW from 380V – 690V three-phase protection class IP21 to IP55.

Version K
in protection class IP21

Version G-V2 in protection
class IP55 with load disconnector

MORE THAN JUST A DRIVE

ER41 – Intelligent efficiency for pumps & fans.

The ER41 frequency converter from BLEMO® was specially developed for pump and fan applications and offers an optimal balance of energy savings, intelligent control and reliability.

With its integrated functions for speed control, dry-run protection and pressure maintenance, it reduces energy consumption and extends the service life of the systems. With the intelligent control, the ER41 automatically adapts to the requirements of the system - whether in water supply, HVAC or industrial processes. Thanks to Modbus, Ethernet and smart communication, it can be seamlessly integrated into existing systems and ensures efficient monitoring and remote maintenance.

Device versions:

The ER41 is available in two versions ER41-... K, protection class IP21/23 and ER41-... G, protection class IP54/55 with (-V2) and without (-V1) load-break switch. The devices are delivered from the factory with painted circuit boards. Devices from 90 kW are also equipped with tinned copper bars (optional for lower outputs) for aggressive air.

Version 1: Basic device without built-in load switch IP55
Version 2: Basic device with built-in load switch IP54
Version K: For the control cabinet IP21

YOUR BENEFITS AT A GLANCE

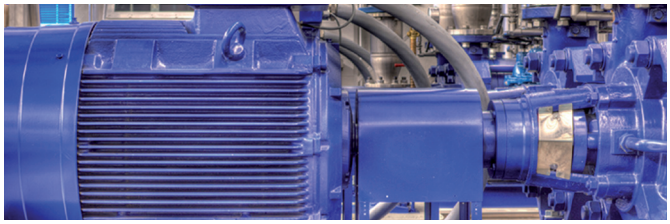
- Protection functions for pumps (e.g. dry running, blockage detection)
- Remote monitoring & smart connection for more control
- Sustainable cost savings thanks to predictable maintenance based on the condition
- Pump characteristic curve for the optimal operating range
- Operation at optimum saves energy and increases the service life
- Reduction in downtime without additional investment
- Optimal process monitoring and control
- Simple parameterization

Standard features:

- Multilingual operator terminal with real-time clock and USB connection
- Built-in PID controller
- Integration of the real pump curve
- Integrated Modbus/TCP, serial Modbus interface, Ethernet
- Integrated EMC filter, mains choke
- Output filter up to 300m motor cable length, shielded
- PTC thermistor input PTC, PT100, PT1000, KTY84
- Integrated STO function, SIL3/Ple, two-channel
- RoHs, WEEE compliant (recycling rate 88%)
- Options: Ethernet IP, Modbus TCP, CANopen (RJ45 daisy chain, Sub-D, screw terminals), PROFINET, Profibus DP V1, EtherCAT, DeviceNet, PowerLink, BACnet MS/TP

APPLICATION EXAMPLES:

Water and wastewater applications Centrifugal and volumetric pumps, Building applications, Food and beverage applications, Compressors, Fans, Energy efficiency



DEVICE OVERVIEW ER41

blemo® ANTRIEBSTECHNIK

mains voltage (2)3~380 to 415/440/480 V 50/60 Hz	version	Engine power HD/ND recommended (kW)	Rated current In(1) HD (A)	Rated current In(1) ND (A)	series ER41-...K protection class IP21/IP23(3) dimension (HxBxT) (mm)	Weight (kg)	series ER41-...G protection class IP54/IP55(3) dimension (HxBxT) (mm)	Weight (kg)
	ER41-0.75/4	0,55/0,75	1,5	2,2	350 x 144 x 203	4,5	678 x 264 x 272	10,5
	ER41-1.5/4	1,1/1,5	2,2	4,0	350 x 144 x 203	4,5	678 x 264 x 272	10,5
	ER41-2.2/4	1,5/2,2	4,0	5,6	350 x 144 x 203	4,5	678 x 264 x 272	10,5
	ER41-3.0/4	2,2/3,0	5,6	7,2	350 x 144 x 203	4,6	678 x 264 x 272	10,6
	ER41-4.0/4	3,0/4,0	7,2	9,3	350 x 144 x 203	4,6	678 x 264 x 272	10,6
	ER41-5.5/4	4,0/5,5	9,3	12,7	350 x 144 x 203	4,7	678 x 264 x 272	10,7
	ER41-7.5/4	5,5/7,5	12,7	16,5	409 x 171 x 233	7,7	678 x 264 x 299	13,7
	ER41-11.0/4	7,5/11,0	16,5	23,5	409 x 171 x 233	7,7	678 x 264 x 299	13,7
	ER41-15.0/4	11,0/15,0	23,5	31,7	546 x 211 x 233	13,6	678 x 264 x 299	19,6
	ER41-18.5/4	15,0/18,5	31,7	39,2	546 x 211 x 233	14,2	678 x 264 x 299	20,6
	ER41-22.0/4	18,5/22,0	39,2	46,3	546 x 211 x 233	14,3	678 x 264 x 299	20,6
	ER41-30.0/4	22,0/30,0	46,3	61,5	673 x 226 x 271	28,0	910 x 290 x 340	50,0
	ER41-37.0/4	30,0/37,0	61,5	74,5	673 x 226 x 271	28,2	910 x 290 x 340	50,0
	ER41-45.0/4	37,0/45,0	74,5	88,0	673 x 226 x 271	28,7	910 x 290 x 340	50,0
	ER41-55.0/4	45,0/55,0	88,0	106,0	922 x 290 x 323	56,5	1250 x 345 x 375	87,0
	ER41-75.0/4	55,0/75,0	106,0	145,0	922 x 290 x 323	58,0	1250 x 345 x 375	87,0
	ER41-90.0/4	75,0/90,0	145,0	173,0	922 x 290 x 323	58,5	1250 x 345 x 375	87,0
	ER41-110/4	90,0/110,0	173,0	211,0	1160 x 320 x 390	85,0	2350 x 400 x 664	310,0
	ER41-132/4	110,0/132,0	211,0	250,0	1160 x 320 x 390	85,0	2350 x 400 x 664	310,0
	ER41-160/4	132,0/160,0	250,0	302,0	1160 x 320 x 390	85,0	2350 x 400 x 664	310,0
	ER41-200/4	160,0/200,0	302,0	370,0	1190 x 440 x 377	140,0	2350 x 600 x 664	420,0
	ER41-250/4	200,0/250,0	370,0	477,0	1190 x 595 x 377	170,0	2350 x 600 x 664	420,0
	ER41-315/4	250,0/315,0	477,0	590,0	1190 x 595 x 377	215,0	2350 x 600 x 664	420,0
	ER41-355/4	280,0/355,0	520,0	660,0	2150 x 800 x 664	650,0	2350 x 800 x 664	682,0
	ER41-400/4	315,0/400,0	590,0	730,0	2150 x 800 x 664	650,0	2350 x 800 x 664	682,0
	ER41-450/4	355,0/450,0	660,0	830,0	2150 x 800 x 664	650,0	2350 x 800 x 664	682,0
	ER41-500/4	400,0/500,0	730,0	900,0	2150 x 800 x 664	650,0	2350 x 800 x 664	682,0
	ER41-560/4	450,0/560,0	830,0	1020,0	2150 x 1200 x 664	850,0	2350 x 1200 x 664	904,0
	ER41-630/4	500,0/630,0	900,0	1140,0	2150 x 1200 x 664	850,0	2350 x 1200 x 664	904,0
	ER41-710/4	560,0/710,0	1020,0	1260,0	2150 x 1200 x 664	1100,0	2350 x 1400 x 664	1159,0
	ER41-800/4	630,0/800,0	1140,0	1420,0	2150 x 1200 x 664	1100,0	2350 x 1400 x 664	1159,0

Higher power on request / Low Harmonics on request / 690V on request

(1) See next page: Overload capacity, (2) See next page: Voltage and power range, (3) See next page: Protection classes

TECHNICAL SPECIFICATIONS

Power connection

(2) Voltage and power range:

- 3~380 bs 480 V, +10/-15%, ER41-...K: 0,75 – 160 kW
- 3~380 bs 480 V, +10/-15%, ER41-...G: 0,75 – 90 kW
- 3~380 bs 440 V, +10/-15%, ER41-...G: 110 – 315 kW
- 3~380 bs 415 V, +10/-15%, ER41-...K/G: 355 – 800 kW
- frequency: 50/60 Hz +/-5%

Motor connection

- Voltage: 3-phase, from 0 to U_{Net}
- frequency: 0,0018 to 500 Hz

(1) Overload capacity

- ND: In = Continuous output current with 1.1x overload for 60 sec.
- HD: In = Continuous output current with 1.5x overload for 60 sec

Switching frequency

- Adjustable: 0,75 – 45 kW 1...16 kHz
  55 – 800 kW 1...8 kHz

Ramp time

- 0,01 to 6000 sec.

Limits for environmental conditions

Ambient temperature:

- IP21:
  - -15 to 50°C, without power reduction, without ice formation
  - 50 to 60°C, f_{schalt} max. 4 kHz, with power reduction
- IP23/54/55:
  - -15 to 40°C, without power reduction, without ice formation
  - 40 to 50°C, f_{schalt} max. 4 kHz, with power reduction

Installation height:

- 1000 m above NN without power reduction
- Reduction of 1%/100 m over 1000 to 4800 m

Relative humidity:

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

(3) Protection classes

- IP21: ER41-...K: 0,75 – 315 kW
- IP23: ER41-...K: 355 – 800 kW
- IP55: ER41-...G: 0,75 – 90 kW
- IP54: ER41-...G: 110 – 800 kW

Resistance to harsh environmental conditions:

- Chemical class 3C3, Mechanical class 3S3, according to IEC/EN 69721

Certificates:

- CE, UL, CSA, DNV, C-Tick, NOM117, EAC and ATEX

Do you have any questions about the ER41?

Contact us! We'll be happy to help you!
The operating instructions and further information about the ER41 K/G and all BLEMO® products can be found at

www.blemo.com

Programmable inputs and outputs:

Three configurable analog inputs:

- AI1, AI2, AI3: 0...10 VDC, 0(4)...20 mA, 12 Bit
  Sampling time 5ms +/- 1ms, accuracy +/-0,6%, linearity +/- 0,15%
  AI1, AI2, AI3 configurable fo: PT100, PT1000, KTY84, PTC, water level sensor

Two analog outputs:

- AQ1, AQ2: 0(4) to 20 mA or 0 to 10 VDC

Six digital inputs:

- DI1...DI6: 5 programmable logic inputs
  Input impedance 3,5 kΩ, sampling time 2ms - 0,5ms

Security entrance:

- STOA, STOB: safely switched off torque; SIL3/PIe

Three relay outputs:

- R1A, R1B, R1C: potential-free relay output, 1Ö/1S
- R2A, R2B: potential-free relay output, 1S
- R3: potential-free relay output, 1S

Ohmic load 3A at 250 VAC/30VDC, ind. load 2A at 250 VWS/30VDC, max. response time 7ms +/-0,5 ms

Additional inputs and outputs:

- 24V: supply voltage +24 VDC, 200 mA
- 10V: supply voltage +10 VDC, 10 mA
- P24: external power supply input 24 VDC, max. 800 mA
- COM: 0 V, mass

Communication protocols:

- RJ45 serial Modbus and Ethernet-Modbus-TCP

Product conformity:

- CE marking: Low Voltage Directive 73/23/CEE with amendments, Machinery Directive 98/37/EC, EMV-Directive 89/336/CEE with amendments

Standards and approvals:

- EMC Directive 2014/30/EU: IEC/EN 61800-3: 2004 + A1:2011
- LV Directive 2014/35/EU: IEC/EN 61800-5-1: 2007

Optional modules:

- Ethernet IP
- Modbus TCP
- CANopen (RJ45 Daisy Chain, Sub-D, screw terminals)
- PROFINET
- PROFIBUS DP-V1
- EtherCAT
- DeviceNet
- PowerLink
- BACnet MS/TP
- Extended E/A-Modul, digital 6E/2A, analog 2E
- Extended relay module, 3 relays