

Order number	Description	Part number
<b>BFI-E3 Input 1-phase 200-240 VAC, Output 3-phase, IP20, EMC-filter</b>		
BFI-E3-12-0023-1F12	0,37kW, 2,3A, Size 1, No Braketransistor	61500
BFI-E3-12-0043-1F12	0,75kW, 4,3A, Size 1, No Braketransistor	61501
BFI-E3-12-0070-1F12	1,5kW, 7A, Size 1, No Braketransistor	61502
BFI-E3-22-0070-1F42	1,5kW, 7A, Size 2, Braketransistor	61503
BFI-E3-22-0105-1F42	2,2kW, 10,5A, Size 2, Braketransistor	61504
BFI-E3-32-0153-1042	4,0kW, 15,3A, Size 3, Braketransistor, No EMC-filter	61505
<b>BFI-E3 Input 1-phase 200-240 VAC, Output 3-phase, IP66, EMC-filter</b>		
BFI-E3-12-0023-1F1A	0,37kW, 2,3A, Size 1, No Braketransistor	63510
BFI-E3-12-0043-1F1A	0,75kW, 4,3A, Size 1, No Braketransistor	63511
BFI-E3-12-0070-1F1A	1,5kW, 7A, Size 1, No Braketransistor	63512
BFI-E3-22-0070-1F4A	1,5kW, 7A, Size 2, Braketransistor	63513
BFI-E3-22-0105-1F4A	2,2kW, 10,5A, Size 2, Braketransistor	63514
BFI-E3-32-0153-1F4A	4,0kW, 15,3A, Size 3, Braketransistor	63515
<b>BFI-E3 Input 1-phase 200-240 VAC, Output 3-phase, IP66, EMC-filter, Mainswitch, Handcontrol</b>		
BFI-E3-12-0023-1F1B	0,37kW, 2,3A, Size 1, No Braketransistor	63520
BFI-E3-12-0043-1F1B	0,75kW, 4,3A, Size 1, No Braketransistor	63521
BFI-E3-12-0070-1F1B	1,5kW, 7A, Size 1, No Braketransistor	63522
BFI-E3-22-0070-1F4B	1,5kW, 7A, Size 2, Braketransistor	63523
BFI-E3-22-0105-1F4B	2,2kW, 10,5A, Size 2, Braketransistor	63524
BFI-E3-32-0153-1F4B	4,0kW, 15,3A, Size 3, Braketransistor	63525
<b>BFI-E3 Input/Output 3-phase 200-240 VAC, IP20, EMC-filter, Braketransistor</b>		
1,5 to 11 kW, Contact Beijer Electronics for more information.		
<b>BFI-E3 Input/Output 3-phase 200-240 VAC, IP66, EMC-filter, Braketransistor</b>		
1,5 to 11 kW, Contact Beijer Electronics for more information.		
<b>BFI-E3 Input/Output 3-phase 200-240 VAC, IP66, EMC-filter, Mainswitch, Handcontrol</b>		
1,5 to 11 kW, Contact Beijer Electronics for more information.		
<b>BFI-E3, Input/Output 3-phase 380-480 VAC, IP20, EMC-filter</b>		
BFI-E3-14-0022-3F12	0,75kW, 2,2A, Size 1, No Braketransistor	61560
BFI-E3-14-0041-3F12	1,5kW, 4,1A, Size 1, No Braketransistor	61561
BFI-E3-24-0041-3F42	1,5kW, 4,1A, Size 2, Braketransistor	61562
BFI-E3-24-0058-3F42	2,2kW, 5,8A, Size 2, Braketransistor	61563
BFI-E3-24-0095-3F42	4kW, 9,5A, Size 2, Braketransistor	61564
BFI-E3-34-0140-3F42	5,5kW, 14A, Size 3, Braketransistor	61565
BFI-E3-34-0180-3F42	7,5kW, 18A, Size 3, Braketransistor	61566
BFI-E3-34-0240-3F42	11kW, 24A, Size 3, Braketransistor	61567
BFI-E3-44-0300-3F42	15kW, 30A, Size 4, Braketransistor	61568
BFI-E3-44-0390-3F42	18kW, 39A, Size 4, Braketransistor	61569
BFI-E3-44-0460-3F42	22kW, 46A, Size 4, Braketransistor	61570
<b>BFI-E3, Input/Output 3-phase 380-480 VAC, Output 3-phase, IP66, EMC-filter</b>		
BFI-E3-14-0022-3F1A	0,75kW, 2,2A, Size 1, No Braketransistor	63580
BFI-E3-14-0041-3F1A	1,5kW, 4,1A, Size 1, No Braketransistor	63581
BFI-E3-24-0041-3F4A	1,5kW, 4,1A, Size 2, Braketransistor	63582
BFI-E3-24-0058-3F4A	2,2kW, 5,8A, Size 2, Braketransistor	63583
BFI-E3-24-0095-3F4A	4kW, 9,5A, Size 2, Braketransistor	63584
BFI-E3-34-0140-3F4A	5,5kW, 14A, Size 3, Braketransistor	63585
BFI-E3-34-0180-3F4A	7,5kW, 18A, Size 3, Braketransistor	63586
BFI-E3-34-0240-3F4A	11kW, 24A, Size 3, Braketransistor	63587
BFI-E3-44-0300-3F4A	15kW, 30A, Size 4, Braketransistor	63588
BFI-E3-44-0390-3F4A	18kW, 39A, Size 4, Braketransistor	63589
BFI-E3-44-0460-3F4A	22kW, 46A, Size 4, Braketransistor	63579
<b>BFI-E3, Input/Output 3-phase 380-480 VAC, IP66, EMC-filter, Mainswitch, Handcontrol</b>		
BFI-E3-14-0022-3F1B	0,75kW, 2,2A, Size 1, No Braketransistor	63590
BFI-E3-14-0041-3F1B	1,5kW, 4,1A, Size 1, No Braketransistor	63591
BFI-E3-24-0041-3F4B	1,5kW, 4,1A, Size 2, Braketransistor	63592
BFI-E3-24-0058-3F4B	2,2kW, 5,8A, Size 2, Braketransistor	63593
BFI-E3-24-0095-3F4B	4kW, 9,5A, Size 2, Braketransistor	63594
BFI-E3-34-0140-3F4B	5,5kW, 14A, Size 3, Braketransistor	63595
BFI-E3-34-0180-3F4B	7,5kW, 18A, Size 3, Braketransistor	63596
BFI-E3-34-0240-3F4B	11kW, 24A, Size 3, Braketransistor	63597
BFI-E3-44-0300-3F4B	15kW, 30A, Size 4, Braketransistor	63598
BFI-E3-44-0390-3F4B	18kW, 39A, Size 4, Braketransistor	63599
BFI-E3-44-0460-3F4B	22kW, 46A, Size 4, Braketransistor	63600
<b>BFI-E3 Input 1-phase 110 VAC, Output 3-phase 200-240 VAC, IP20</b>		
0,37 to 1,1 kW, Contact Beijer Electronics for more information.		
<b>BFI-E3 Input 1-phase 110 VAC, Output 3-phase 200-240 VAC, IP66</b>		
0,37 to 1,1 kW, Contact Beijer Electronics for more information.		
<b>BFI-E3 Input 1-phase 110 VAC, Output 3-phase 200-240 VAC, IP66, Mainswitch, Handcontrol</b>		
0,37 to 1,1 kW, Contact Beijer Electronics for more information.		
<b>BFI-E3 Input/Output 1-phase 200-240 VAC, EMC-filter, IP20</b>		
0,37 to 1,1 kW, Contact Beijer Electronics for more information.		
<b>BFI-E3 Input/Output 1-phase 200-240 VAC, EMC-filter, IP66</b>		
0,37 to 1,1 kW, Contact Beijer Electronics for more information.		
<b>BFI-E3 Input/Output 1-phase 200-240 VAC, EMC-filter, IP66, Mainswitch, Handcontrol</b>		
0,37 to 1,1 kW, Contact Beijer Electronics for more information.		
<b>Internal Options</b>		
ODP-2ROUT-BFI	Second relay output card	63112
OD-BR100-BFI	Internal brakesistor for IP20, 100ohm, 200W	63101
<b>External Options</b>		
OPT-2-OPPAD-BFI	OLED Remote External Keypad	63201
OPT-3-STICK-BFI	BFI SmartStick Bluetooth, Copy/Paste Parameters, Load PLC-program, Smartphone app	63489
OPT-3-WLKIT-BFI	BFI SmartStick Bluetooth, Copy/Paste Parameters, Load PLC-program, Smartphone app, Dongle for BFI-Tools on PC	63490
OPT-3-PCKIT-BFI	BFI SmartStick Bluetooth, Copy/Paste Parameters, Load PLC-program, Smartphone app, Dongle for BFI-Tools on PC, NFC	63491
OPT-J4505-BFI	RS-485 Data Cable 0,5m	63144
OPT-J4510-BFI	RS-485 Data Cable 1,0m	63145
OPT-J4530-BFI	RS-485 Data Cable 3,0m	63146
OPT-2-J455P	RS-485 2-port Data Cable Splitter	63148
OPT-2-RJTRM-BFI	RJ-45 Termination Plug	63202
CAB113	3m cable with 9-pole D-sub and RJ-45 between X2-series and BFI-H3/P2/E3 for Modbus RTU	660000290
CAB114	3m cable for screwterminals and RJ-45 between PLC and BFI-H3/P2/E3	660000291
CAB115	3m cable with USB and RJ45 (RS485) between PC and BFI-H3/P2/E3	660000292

## Drive specifications

Feature	Technical data
<b>Input ratings</b>	Supply voltage 110-115V ± 10% 200-240V ± 10% 380-480V ± 10% Supply frequency 48-62Hz Displacement power factor > 0,98 Phase imbalance 3% maximum allowed Inrush current < rated current Power cycles 120 per hour maximum, evenly spaced
<b>Output ratings</b>	Output power 110V 1-ph inp: 0.37-1.1kW (230V 3-ph out) 230V 1-ph inp: 0.37-4.0kW (0.5HP) 230V 3-ph inp: 0.75-11kW (0.5-15HP) 400V 3-ph inp: 0.75-22kW Overload capacity 150% for 60 seconds, 175% for 2.5 seconds Output frequency 0-500Hz, 0.1Hz resolution Typical efficiency > 98%
<b>Ambient conditions</b>	Temperature Storage: -40 to 60°C Operating: -10 to 50°C (IP20) Altitude Up to 1000m ASL without/ Up to 2000m maximum UL approved derating/Up to 4000m maximum (non UL) Humidity 95% max, non condensing Vibration Conforms to IEC 61800-5-1
<b>Enclosure</b>	Ingress protection IP20, IP66
<b>Programming</b>	Keypad Built-in keypad as standard Optional remote mountable keypad Display 7 segment LED PC-software BFI Tools App for Android and IOS BFI-Tools Mobile
<b>Control specification</b>	Control method V/F voltage vector / Energy optimized V/F Sensorless vector speed control/ PM vector control/ BLDC control/ Synchronous reluctance PWM frequency 4-32kHz effective Stopping mode Ramp to stop: User adjustable 0.1-600 seconds Coast to stop Braking Motor flux braking, built in brake transistor (not frame size 1) Skip frequency Single point, user adjustable Setpoint control 0 to 10 V, 10-0 0 to 20mA, 20 to 0mA, 4 to 20mA, 20 to 4 mA Motorised potentiometer (keypad) Modbus RTU, CANopen
<b>Fieldbus</b>	Built-in CANopen: 125-1000 kbps Modbus RTU: 9.6-115.2 kbps selectable
<b>I/O specification</b>	Power supply 24 V DC, 100mA, short circuit protected 10 V DC, 5mA for potentiometer Programmable inputs 2 digital 2 analog/digital selectable Digital inputs 8-30 V DC, internal or external supply Response time < 4ms Analog inputs Resolution: 12 bits Response time: < 4ms Accuracy: < 2% full scale Parameter adjustable scaling and offset Programmable outputs 1 analog/digital, 1 relay Relay outputs Maximum voltage: 250 V AC, 30 VDC Switching current capacity: 6A AC, 5A DC Analog outputs 0 to 10 V
<b>Control features</b>	PI control Internal PI controller Standby/sleep function Fire mode Bidirectional Selectable speed setpoint (fixed, PI, analog, fieldbus)
<b>Maintenance &amp; diagnostics</b>	Fault memory Last 4 trips stored with time stamp Data logging Logging of data prior to trip for diagnostic purposes: Output current, drive temperature, DC bus voltage Monitoring Hours run meter
<b>Standards compliance</b>	Low voltage directive Adjustable speed electrical power drive systems, EMC requirements EMC directive 2014/30/EC Cat C1 according to EN61800-3:2004 Machinery directive 2006/42/EC Conformance CE, UL, RCM Environmental class 3C3/3S3 conformal coated boards

E3 IP66	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Fixings
Size 1	232	161	162	2.5	4 × M4
Size 2	257	188	182	3.5	4 × M4
Size 3	310	210.5	238	7	4 × M4
Size 4	360	240	275	9.5	4 × M4

  

E3 IP20	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Fixings
Size 1	173	83	123	1.0	4 × M5
Size 2	221	110	150	1.7	4 × M5
Size 3	261	131	175	3.2	4 × M5
Size 4	420	171	212	9,1	4 × M8

## General Purpose Inverter

# General Purpose Inverter E3

Cost-effective, user-friendly industrial inverters for rugged, reliable control



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**Beijer**  
ELECTRONICS

# General Purpose Inverter E3

The E3 range is available with IP20 and IP66 enclosures to suit customer needs. Dust-tight and ready for washdown, the IP66-rated general purpose inverters can be mounted directly on your processing equipment. The IP20-rated inverters can be mounted in control cabinets or in machine parts providing the required protection. The E3 range also features the world's first fully digital drive for low power single phase motors. Designed for use with permanent split capacitor (PSC) or shaded pole, single phase induction motors.



## The easy-to-use, cost competitive solution to motor control

The Beijer Electronics General Purpose Inverter E3 range is dedicated to low power applications, combining innovative technology, reliability, robustness and ease-of-use.

### Intuitive keypad control

Precise digital control at the touch of a button.

### Simple commissioning

14 parameter basic setup. Default settings suitable for most applications. Contactor style connection for simple wiring.

### Integral RFI filter

- Built-in filter for full EMC compliance removable by a screw
- Vector control
- For applications requiring high starting torque and constant speed

### Modbus RTU and CANopen

Easy integration with your control and monitoring systems.

### Brake chopper (sizes 2, 3 and 4)

Dynamic and compact options with heatsink mounted resistor.

### High overload capability

- 150% overload for 60 sec
- 175% overload for 2 sec

### Industrial ambient ratings

- IP20 enclosure: 50°C
- IP66 enclosure: 50°C for outdoor mounting

### OEM

Smartstick with RJ-45 connection to inverter for easy parameter up or download. The Smartstick can also communicate with the PC software tool BFI Tools or a smartphone with the BFI Mobile app installed.

### Fire mode

For building automation safety systems.




**IP20**

- IP20**  
The IP20-rated inverters can be mounted in control cabinets or in machine parts providing the required protection.
- IP20 explained:**  
Protection against fingers or other object not greater than 80 mm in length and 12 mm in diameter. No moisture protection.



**IP66**

- Dust-tight design**  
Install in-situ and be sure of protection from dust and contaminants.
- Ready for washdown**  
With a sealed ABS enclosure and corrosion resistant heatsink, the General Purpose Inverter E3 is ideal for high pressure washdown applications.
- On-drive control**  
Switched IP66 models feature convenient controls for speed control, REV/OFF/FWD and Power ON/OFF, complete with safety lock.
- Indoor or outdoor mounting**  
*Non-switched IP66 models available.*



### Ideal for:

- Bottling
- Pumping
- Waste water
- HVAC
- Conveyor
- Baggage handling
- Exercise
- Packaging
- Woodworking
- Ceramics
- Building automation

### Recommended for:

- Paper
- Petroleum
- Food processing
- Aggregate/cement
- Mining
- Textile
- Horticultural
- Chemical
- Agricultural

**Options**

- Dynamic braking resistor
- Mains supply input chokes
- Motor output filter, recommended for long cable runs
- 2 Relay output option
- Remote mounting keypad
- RJ-45 cables and splitters
- Isolated RS485 USB adaptor
- Commissioning and storage software for PC
- PC-program for settings
- Parameter Optistick with RJ-45 connection and Bluetooth communication