



**BFI-H3-22-0043-1F1A-MN**

Article number 62704

Output power 0.75 kW  
Output 3x230 VAC, 4.3 A  
Input voltage 1x200-240 VAC  
IP66

**Facts**

General description

|                |         |
|----------------|---------|
| Article number | 62704   |
| Warranty       | 3 years |

Mechanical

|                                                        |                             |
|--------------------------------------------------------|-----------------------------|
| IP class                                               | IP66                        |
| Physical size                                          | Size 2                      |
| Measurements (H x W x D)                               | 257 mm x 188 mm x 260 mm    |
| Weight                                                 | 4,2 kg                      |
| Typical power loss at rated power                      | 2 % of rated power          |
| Main switch                                            | No                          |
| Built in Main switch, control switch and potentiometer | No                          |
| Conformal coated PCBs                                  | Yes, IEC 60721-3-3, 3S3/3C3 |

## Output ratings

|                           |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| Output voltage            | 3 x 230 VAC                                                                                              |
| Rated motor current       | 4,3 A                                                                                                    |
| Overload capacity         | 110% for 60 seconds, 165% for 4 seconds                                                                  |
| Motor power               | 0.75 kW                                                                                                  |
| Output frequency          | 0 – 250Hz, 0.1Hz resolution                                                                              |
| Supported motor types     | 3 phase AC induction (IM), AC permanent magnet (PM), Brushless DC (BLDC), Synchronous reluctance (SynRM) |
| Built-in brake transistor | No                                                                                                       |
| Regenerative capacity     | No brake transistor                                                                                      |

## Input ratings

|                                   |                                     |
|-----------------------------------|-------------------------------------|
| Supply voltage                    | 200 – 240VAC ± 10%                  |
| Voltage fluctuations              | +/- 10%                             |
| Phase imbalance                   | 3% maximum allowed                  |
| Displacement factor               | > 0.98                              |
| Supply frequency                  | 48 – 62Hz                           |
| Power cycles                      | 120 per hour maximum, evenly spaced |
| Total harmonic current distortion | EN61000-3-12                        |

## Control specification

|                           |                                                                                                                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control modes             | Variable torque V/F, Variable torque energy optimised V/F, Constant torque U/F, Sensorless Vector Speed Control, Synchronous Reluctance Motor Control, Brushless DC Motor Control, Open Loop PM Vector Control |
| Current/torque limitation | Torque and current limitation                                                                                                                                                                                  |
| PWM frequency             | 4-32 kHz effective                                                                                                                                                                                             |
| Stopping mode             | Ramp to Stop: User Adjustable 0.1 – 6000 seconds. Fast stop. Coast to Stop                                                                                                                                     |
| Braking                   | Motor Flux Braking                                                                                                                                                                                             |
| Skip frequency            | Yes                                                                                                                                                                                                            |
| Analog setpoint control   | 0 to 10V, 10 to 0V, –10 to 10V, 0 to 20mA, 20 to 0mA, 4 to 20mA, 20 to 4mA                                                                                                                                     |
| Digital setpoint control  | 8 fixed speeds, Motorised Potentiometer, Internal PLC, Keypad, Modbus RTU, BacNet, Optional: PROFIBUS DP, DeviceNet, EtherNet/IP, EtherCat, PROFINET, Modbus TCP, CC-Link                                      |

## Communication

|                   |                                            |
|-------------------|--------------------------------------------|
| Modbus RTU        | Yes, 9.6 - 115.2 kbps (8N1, 8N2, 8E1, 8O1) |
| BACnet MS/TP      | Built-in                                   |
| Modbus TCP        | Yes, external option                       |
| Ethernet IP       | Yes, external option                       |
| EtherCat          | Yes, external option                       |
| Profinet IO       | Yes, external option                       |
| Profibus DP(DPV1) | Yes, external option                       |
| Device Net        | Yes, external option                       |
| CC-Link           | Yes, external option                       |
| CAN open          | No                                         |

## Display

|                             |                  |
|-----------------------------|------------------|
| Programmable display        | Yes              |
| Multi language OLED display | TFT Display      |
| External OLED display       | Yes, TFT Display |
| LED display                 | No               |

## HVAC

|                                           |                                      |
|-------------------------------------------|--------------------------------------|
| PID-control                               | Yes with sleep/wake up functionality |
| Spin start                                | Yes                                  |
| Pump dry protection                       | Yes                                  |
| Pump prime and burst protection           | Yes                                  |
| Stir function                             | Yes                                  |
| Motor pre-heat                            | Yes                                  |
| Broken impeller and broken belt detection | Yes                                  |
| Automatic cleaning for pumps              | Yes                                  |
| Bypass control                            | Yes                                  |
| Fire mode                                 | Yes                                  |

## Control terminals

|                            |                                                                                              |
|----------------------------|----------------------------------------------------------------------------------------------|
| Power supply               | 100 mA @ 24 VDC, 20 mA @ 10 VDC                                                              |
| Inputs                     | 5 in total, 3 Digital, 2 Analog or Digital, selectable                                       |
| Digital inputs             | 10-30 V DC, PNP, Response time: < 4 msec, Internal or external supply                        |
| Analog inputs              | Resolution:12 bit, Response time: <4 msec; Accuracy: <± 2% of full scale, Adjustable scaling |
| Outputs                    | 4 total, 2 relays, 2 analog or digital                                                       |
| Digital transistor outputs | 24VDC/20 mA, Internal supply                                                                 |
| Relay outputs              | Maximum Voltage: 250 VAC, 30 VDC Switching Current Capacity: 6A AC, 5A DC                    |
| Analog outputs             | 0 to 10 Volt, 0 to 20mA, 4 to 20mA                                                           |
| Safety inputs              | 2                                                                                            |
| Extra IOs                  | Yes, internal option                                                                         |

## Control features

|                             |                       |
|-----------------------------|-----------------------|
| Speed control Master/slave  | Yes, Master and slave |
| Modbus master functionality | Yes, Master and slave |
| Advanced hoist control      | No                    |
| Built-in PLC                | Yes                   |

## Standard compliances

|                                                        |                                                                                                     |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Low voltage directive                                  | 2014/35/EU                                                                                          |
| EMC directive                                          | 2014/30/EU                                                                                          |
| Conformance                                            | CE, UL, cUL                                                                                         |
| Machine directive                                      | 2006/42/EC                                                                                          |
| Marine approvals                                       | No                                                                                                  |
| Safe torque OFF                                        | Cat 3/PL"d" According to ISO 13849-1, SIL CL 2 According to EN61800-5-2 / EN62061 / IEC61508        |
| Restriction of hazardous substances                    | RoHS2                                                                                               |
| Registration evaluation and authorisation of chemicals | Reach                                                                                               |
| Harmonics                                              | EN 61000-3-12                                                                                       |
| Earth leakage current                                  | EN 61800-5-1: 2007. Test techniques EN 60990:2000. 1x230 VA < 2,5 mA, 3x400VAC < 4,65 during runing |
| DC Bus discharge time                                  | EN 61800-5-1:2007                                                                                   |
| Electrostatic discharge                                | EN 61800-3:2004+A1-2012. Test techniques EN 61000-4-2:2009.                                         |
| Dielectric strength                                    | 61800-5-1: 2007                                                                                     |
| Surge                                                  | EN 61800-3: 2004+A1-2012. Test techniques EN 61000-4-5:2006.                                        |
| Electrical fast transient burst                        | EN 61800-3: 2004+A1-2012. Test techniques EN 61000-4-4:2004.                                        |

## Ambient conditions

|                       |                         |
|-----------------------|-------------------------|
| Temperature operation | -10 to 40 °C            |
| Humidity              | 95% max, non-condensing |

## Maintenance

|                       |                                                                     |
|-----------------------|---------------------------------------------------------------------|
| Fault memory          | Last 4 Trips stored with time stamp                                 |
| Data logging          | Logging of data prior to trip, Current, Temperature, DC Bus Voltage |
| Maintenance indicator | Yes. Onboard service life monitoring                                |
| Monitoring            | Hours Run Meter, kWh/MWh meter                                      |

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