

**Date:** 20/08/2019

Qty. Description

1 TPE 65-240/4 A-F-A-BQQE



Product No.: 99113696

Single-stage, close-coupled, volute pump with in-line suction and discharge ports of identical diameter. The pump is of the top-pull-out design, i.e. the power head (motor, pump head and impeller) can be removed for maintenance or service while the pump housing remains in the pipework.

TPE 65-240/4 A-F-A-BQQEThe pump is fitted with an unbalanced rubber bellows seal. TPE 65-240/4 A-F-A-BQQETPE 65-240/4 A-F-A-BQQETPE 65-240/4 A-F-A-BQQETPE 65-240/4 A-F-A-BQQEThe shaft seal is according to EN 12756. Pipework connection is via PN 16 DIN flanges (EN 1092-2 and ISO 7005-2).

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The pump is fitted with a fan-cooled, permanent-magnet synchronous motor. The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2.

The motor includes a frequency converter and PI controller in the motor terminal box. This enables continuously variable control of the motor speed, which again enables adaptation of the performance to a given requirement.

#### Further product details

A control panel enables setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop". The control panel has indicator lights for "Operation" and "Fault".

Communication with the pump is possible by means of the Grundfos GO Remote (accessory). The remote control enables further settings as well as reading out of a number of parameters such as "Actual value", "Speed", "Power input" and total "Power consumption".

An operating panel on the motor terminal box enables setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop". The Grundfos Eye indicator on the operating panel provides visual indication of pump status:

- "Power on": Motor is running (rotating green indicator lights) or not running (permanently green indicator lights)
- "Warning": Motor is still running (rotating yellow indicator lights) or has stopped (permanently yellow indicator lights)
- "Alarm": Motor has stopped (flashing red indicator lights).

Communication with the pump is possible by means of Grundfos GO Remote (accessory). The remote control enables further settings as well as reading out of a number of parameters such as "Actual value", "Speed", "Power input" and total "Power consumption".

The product's minimum efficiency index (MEI) is greater or equal to 0.70. This is by the Commission Regulation (EU) considered as an indicative benchmark for best-performing water pump available on the market as from 1 January 2013.

#### Pump

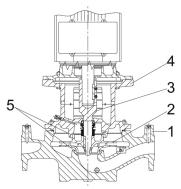
Pump housing and pump head are electrocoated to improve the corrosion resistance.

Electrocoating includes:

- 1) Alkaline-based cleaning.
- 2) Pretreatment with zinc phosphate coating.
- 3) Cathodic electrocoating (epoxy).
- 4) Curing of paint film at 200-250 °C.



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- 1: Pump housing
- 2: Impeller
- 3: Stub shaft
- 4: Pump head/motor stool
- 5: Wear rings

The pump housing is provided with a replaceable brass neck ring to reduce the amount of liquid running from the outlet side of the impeller to the inlet side. The impeller is secured to the shaft with a nut.

The pump is fitted with an unbalanced rubber bellows seal with torque transmission across the spring and around the bellows. Due to the bellows, the seal does not wear the shaft, and the axial movement is not prevented by deposits on the shaft.

#### Primary seal:

- Rotating seal ring material: silicon carbide (SiC)
- Stationary seat material: silicon carbide (SiC)

This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.

Secondary seal material: EPDM (ethylene-propylene rubber)

EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.

A circulation of liquid through the duct of the air vent screw ensures lubrication and cooling of the shaft seal. The flanges have tappings for mounting of pressure gauges.

The motor stool forms connection between the pump housing and the motor, and is equipped with a manual air vent screw for venting of the pump housing and the shaft seal chamber. The sealing between motor stool and pump housing is an O-ring.

The central part of the motor stool is provided with guards for protection against the shaft and coupling. The pump shaft is fastened directly on the motor shaft with key and set screws.

### Motor

The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. Electrical tolerances comply with IEC 60034.

The motor is flange-mounted with free-hole flange (FF).

Motor-mounting designation in accordance with IEC 60034-7: IM B 5, IM V 1 (Code I) / IM 3001, IM 3011 (Code II).

The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2.

The motor requires no external motor protection. The motor control unit incorporates protection against slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.

TPE 65-240/4 A-F-A-BQQEThe terminal box holds terminals for these connections:

- one dedicated digital input
- two analog inputs, 0(4)-20 mA, 0-5 V, 0-10 V, 0.5 3.5 V
- 5 V voltage supply to potentiometer and sensor
- · one configurable digital input or open-collector output
- · Grundfos Digital Sensor input and output



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### Qty. | Description

- 24 V voltage supply for sensors
- · two signal-relay outputs (potential-free contacts)
- · GENIbus connection
- · interface for Grundfos CIM fieldbus module.

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- 5 V voltage supply to potentiometer and sensor
- one configurable digital input or open-collector output
- Grundfos Digital Sensor input and output
- 24 V voltage supply for sensors
- two signal relay outputs (potential-free contacts)
- the two power heads communicate via wireless GENIair or wired GENI connection
- interface for Grundfos CIM fieldbus module.

#### **Technical data**

**Controls:** 

Frequency converter: Built-in

Liquid:

Pumped liquid: Water Liquid temperature range: -25 .. 120 °C

Selected liquid temperature: 20 °C

Density at selected liquid temperature: 998.2 kg/m³

Technical:

Pump speed on which pump data are based: 1455 rpm

Rated flow: 47.5 m³/h
Rated head: 19.8 m
Actual impeller diameter: 263 mm
Primary shaft seal: BQQE

Curve tolerance: ISO9906:2012 3B

Materials:

Pump housing: Cast iron

EN-JL1040 ASTM A48-40 B

Impeller: Cast iron

EN-JL1030 ASTM A48-30 B

Installation:

Range of ambient temperature: -20 .. 50 °C

Maximum operating pressure: 16 bar

Flange standard: DIN

Pipe connection: DN 65

Pressure rating: PN 16

Port-to-port length: 475 mm

Flange size for motor: FF215

Electrical data:

Motor type: 112ME
IE Efficiency class: IE5
Rated power - P2: 4 kW
Mains frequency: 50 Hz
Rated voltage: 3 x 380-500 V
Rated current: 7.70-6.00 A



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## Qty. | Description

Cos phi - power factor: 0.92-0.87 Rated speed: 180-2200 rpm

Efficiency: 90.3%

Motor efficiency at full load: 90.3 %

Enclosure class (IEC 34-5): IP55
Insulation class (IEC 85): F

Motor No: 98971183

#### Others:

Minimum efficiency index, MEI ≥: 0.70

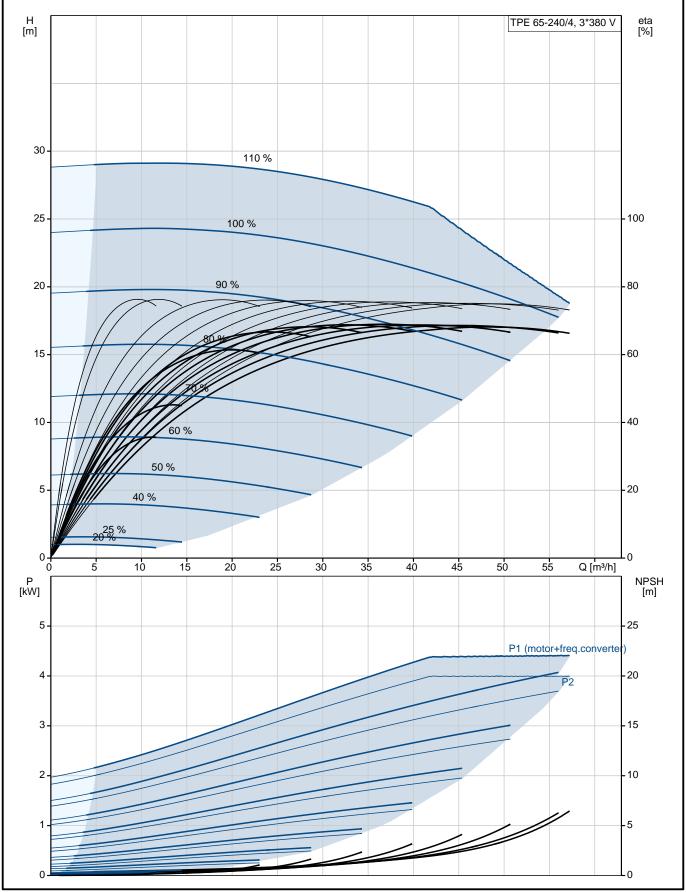
ErP status: EuP Standalone/Prod.

Net weight: 84 kg
Gross weight: 103 kg
Shipping volume: 0.383 m³
Danish VVS No.: 382054240



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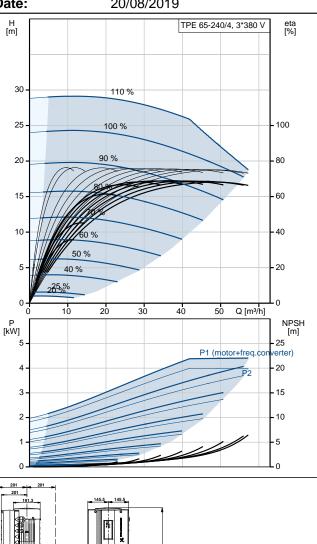
# 99113696 TPE 65-240/4 A-F-A-BQQE 50 Hz



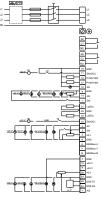


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Description         Value           General information:         TPE 65-240/4 A-F-A-BQQE           Product No:         99113696           EAN number:         5712607014414           5712607014414         5712607014414           Technical:         1455 rpm           Pump speed on which pump data are based:         19.8 m           Rated flow:         47.5 m³/h           Rated head:         19.8 m           Head max:         240 dm           Actual impeller diameter:         263 mm           Primary shaft seal:         BQQE           Curve tolerance:         ISO9906:2012 3B           Pump version:         A           Model:         A           Materials:         WID           Pump housing:         Cast iron           EN-JL1040         ASTM A48-40 B           Impeller:         Cast iron           EN-JL1030         ASTM A48-30 B           Material code:         Installation:           Range of ambient temperature:         -20 50 °C           Maximum operating pressure:         16 bar           Flange standard:         DIN           Pipe connection:         DN 65           Pressure rating:         PN 16      <		
Product name:		Value
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Technical:         1455 rpm           Pump speed on which pump data are based:         1455 rpm           Rated flow:         47.5 m³/h           Rated head:         19.8 m           Head max:         240 dm           Actual impeller diameter:         263 mm           Primary shaft seal:         BQQE           Curve tolerance:         ISO9906:2012 3B           Pump version:         A           Model:         A           Materials:         Pump housing:           Cast iron         EN-JL1040           ASTM A48-40 B         EN-JL1030           Impeller:         Cast iron           EN-JL1030         ASTM A48-30 B           Material code:         A           Installation:         Range of ambient temperature:           Range of ambient temperature:         -20 50 °C           Maximum operating pressure:         16 bar           Flange standard:         DIN           Pipe connection:         DN 65           Pressure rating:         PN 16           Port-to-port length:         475 mm           Flange size for motor:         FF215           Connect code:         F           Liquid:         Water	EAN number:	5712607014414
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EN-JL1040 ASTM A48-40 B Impeller: Cast iron EN-JL1030 ASTM A48-30 B  Material code: A  Installation: Range of ambient temperature: -20 50 °C  Maximum operating pressure: 16 bar Flange standard: DIN Pipe connection: DN 65 Pressure rating: PN 16 Port-to-port length: 475 mm Flange size for motor: FF215 Connect code: F  Liquid: Pumped liquid: Water Liquid temperature range: -25 120 °C Selected liquid temperature: 998.2 kg/m³  Electrical data: Motor type: 112ME IE Efficiency class: IE5 Rated power - P2: 4 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-500 V Rated current: 7.70-6.00 A Cos phi - power factor: 0.92-0.87 Rated speed: 180-2200 rpm Efficiency: 90.3% Motor efficiency at full load: 90.3 % Enclosure class (IEC 34-5): IP55 Insulation class (IEC 85): F Motor No: 98971183  Control panel: HMI200 - Standard Function Module: FM300 - Advanced Frequency converter: Built-in		
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Maximum operating pressure:  Flange standard:  DIN  Pipe connection:  Pressure rating:  Port-to-port length:  Fange size for motor:  Connect code:  Fuiquid:  Pumped liquid:  Liquid temperature range:  Selected liquid temperature:  Density at selected liquid temperature:  Biectrical data:  Motor type:  IE Efficiency class:  Rated power - P2:  A kW  Mains frequency:  Rated voltage:  Rated voltage:  Rated current:  Cos phi - power factor:  Rated speed:  Efficiency at full load:  Enclosure class (IEC 34-5):  Insulation class (IEC 85):  Motor No:  PN 16  DN 65  PN 16  Av75 mm  FF215  COC  PR215  COC  Selected liquid:  Water  Liquid:  Water  Liquid:  Pumped liquid:  Po °C  Selected liquid temperature:  998.2 kg/m³  Belectrical data:  Motor type:  112ME  IE5  Rated yowar - P2:  4 kW  Mains frequency:  50 Hz  Rated voltage:  3 x 380-500 V  Rated current:  7.70-6.00 A  Cos phi - power factor:  0.92-0.87  Rated speed:  180-2200 rpm  Efficiency:  90.3%  Motor efficiency at full load:  90.3 %  Enclosure class (IEC 34-5):  IP55  Insulation class (IEC 85):  F  Motor protec:  YES  Motor No:  98971183  Controls:  Controls:  Control panel:  HMI200 - Standard  Function Module:  FM300 - Advanced  Frequency converter:  Built-in		00 50 00
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Pressure rating: Port-to-port length: Flange size for motor: Connect code: F Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density at selected liquid temperature: Pumped liquid: Belectrical data: Motor type: Felectrical data: Felectrical data: Motor type: Felectrical data:		
Port-to-port length: 475 mm  Flange size for motor: FF215  Connect code: F  Liquid: Vater  Liquid temperature range: -25 120 °C  Selected liquid temperature: 998.2 kg/m³  Electrical data:  Motor type: 112ME  IE Efficiency class: IE5  Rated power - P2: 4 kW  Mains frequency: 50 Hz  Rated voltage: 3 x 380-500 V  Rated current: 7.70-6.00 A  Cos phi - power factor: 0.92-0.87  Rated speed: 180-2200 rpm  Efficiency: 90.3%  Motor efficiency at full load: 90.3 %  Enclosure class (IEC 34-5): IP55  Insulation class (IEC 34-5): F  Motor No: 98971183  Controls:  Control panel: HMI200 - Standard  Function Module: FM300 - Advanced  Frequency converter: Built-in	•	
Flange size for motor:  Connect code:  F  Liquid:  Pumped liquid:  Liquid temperature range:  Selected liquid temperature:  Density at selected liquid temperature:  Electrical data:  Motor type:  IE Efficiency class:  Rated power - P2:  A kW  Mains frequency:  Rated voltage:  Rated voltage:  Rated current:  Cos phi - power factor:  Efficiency:  Motor efficiency at full load:  Enclosure class (IEC 34-5):  Insulation class (IEC 85):  Motor No:  Controls:  Control panel:  Frequency converter:  Built-in		
Connect code:  Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density at selected liquid temperature: Pumped liquid temperature: Selectrical data: Motor type: Selected liquid temperature: Selectrical data: Motor type: Selectrical data: Selectrical dat	-	-
Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density at selected liquid temperature: 998.2 kg/m³  Electrical data: Motor type: IE Efficiency class: Rated power - P2: A kW Mains frequency: So Hz Rated voltage: 3 x 380-500 V Rated current: 7.70-6.00 A Cos phi - power factor: 0.92-0.87 Rated speed: 180-2200 rpm Efficiency: 90.3% Motor efficiency at full load: 90.3 % Enclosure class (IEC 34-5): Insulation class (IEC 85): Motor protec: Motor No: Selected liquid: Py88 Motor efficiency: Motor Potec: Motor No: Controls: Control panel: FM300 - Advanced Frequency converter: Built-in	<b>5</b>	= . •
Pumped liquid: Water Liquid temperature range: -25 120 °C Selected liquid temperature: 998.2 kg/m³  Electrical data:  Motor type: 112ME IE Efficiency class: IE5 Rated power - P2: 4 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-500 V Rated current: 7.70-6.00 A Cos phi - power factor: 0.92-0.87 Rated speed: 180-2200 rpm Efficiency: 90.3% Motor efficiency at full load: 90.3 % Enclosure class (IEC 34-5): IP55 Insulation class (IEC 85): F Motor protec: YES Motor No: 98971183  Controls: Control panel: HMI200 - Standard Frequency converter: Built-in		'
Liquid temperature range:  Selected liquid temperature:  Density at selected liquid temperature:  Pelectrical data:  Motor type:  IE Efficiency class:  Rated power - P2:  Mains frequency:  Rated voltage:  Rated current:  Cos phi - power factor:  Rated speed:  Efficiency at full load:  Enclosure class (IEC 34-5):  Insulation class (IEC 85):  Motor No:  Controls:  Control panel:  Frequency converter:  P98.2 kg/m³  20 °C  P98.2 kg/m³  E12  P98.2 kg/m³  P88.2	•	Water
Selected liquid temperature: 20 °C  Density at selected liquid temperature: 998.2 kg/m³  Electrical data:  Motor type: 112ME  IE Efficiency class: IE5  Rated power - P2: 4 kW  Mains frequency: 50 Hz  Rated voltage: 3 x 380-500 V  Rated current: 7.70-6.00 A  Cos phi - power factor: 0.92-0.87  Rated speed: 180-2200 rpm  Efficiency: 90.3%  Motor efficiency at full load: 90.3 %  Enclosure class (IEC 34-5): IP55  Insulation class (IEC 85): F  Motor protec: YES  Motor No: 98971183  Controls:  Control panel: HMI200 - Standard  Function Module: FM300 - Advanced  Frequency converter: Built-in		
Density at selected liquid temperature: 998.2 kg/m³  Electrical data:  Motor type: 112ME  IE Efficiency class: IE5  Rated power - P2: 4 kW  Mains frequency: 50 Hz  Rated voltage: 3 x 380-500 V  Rated current: 7.70-6.00 A  Cos phi - power factor: 0.92-0.87  Rated speed: 180-2200 rpm  Efficiency: 90.3%  Motor efficiency at full load: 90.3 %  Enclosure class (IEC 34-5): IP55  Insulation class (IEC 85): F  Motor protec: YES  Motor No: 98971183  Controls:  Control panel: HMI200 - Standard  Function Module: FM300 - Advanced  Frequency converter: Built-in		
Electrical data:         112ME           Motor type:         112ME           IE Efficiency class:         IE5           Rated power - P2:         4 kW           Mains frequency:         50 Hz           Rated voltage:         3 x 380-500 V           Rated current:         7.70-6.00 A           Cos phi - power factor:         0.92-0.87           Rated speed:         180-2200 rpm           Efficiency:         90.3%           Motor efficiency at full load:         90.3 %           Enclosure class (IEC 34-5):         IP55           Insulation class (IEC 85):         F           Motor protec:         YES           Motor No:         98971183           Controls:         HMI200 - Standard           Function Module:         FM300 - Advanced           Frequency converter:         Built-in		
Motor type:         112ME           IE Efficiency class:         IE5           Rated power - P2:         4 kW           Mains frequency:         50 Hz           Rated voltage:         3 x 380-500 V           Rated current:         7.70-6.00 A           Cos phi - power factor:         0.92-0.87           Rated speed:         180-2200 rpm           Efficiency:         90.3%           Motor efficiency at full load:         90.3 %           Enclosure class (IEC 34-5):         IP55           Insulation class (IEC 85):         F           Motor protec:         YES           Motor No:         98971183           Controls:         Control panel:           HMI200 - Standard           Function Module:         FM300 - Advanced           Frequency converter:         Built-in		ooo. <u>=</u> ng/
IE Efficiency class:		112ME
Rated power - P2:       4 kW         Mains frequency:       50 Hz         Rated voltage:       3 x 380-500 V         Rated current:       7.70-6.00 A         Cos phi - power factor:       0.92-0.87         Rated speed:       180-2200 rpm         Efficiency:       90.3%         Motor efficiency at full load:       90.3 %         Enclosure class (IEC 34-5):       IP55         Insulation class (IEC 85):       F         Motor protec:       YES         Motor No:       98971183         Controls:       Controls:         Control panel:       HMI200 - Standard         Function Module:       FM300 - Advanced         Frequency converter:       Built-in		IE5
Rated voltage:         3 x 380-500 V           Rated current:         7.70-6.00 A           Cos phi - power factor:         0.92-0.87           Rated speed:         180-2200 rpm           Efficiency:         90.3%           Motor efficiency at full load:         90.3 %           Enclosure class (IEC 34-5):         IP55           Insulation class (IEC 85):         F           Motor protec:         YES           Motor No:         98971183           Controls:         Control panel:           Function Module:         FM300 - Advanced           Frequency converter:         Built-in		4 kW
Rated current:         7.70-6.00 A           Cos phi - power factor:         0.92-0.87           Rated speed:         180-2200 rpm           Efficiency:         90.3%           Motor efficiency at full load:         90.3 %           Enclosure class (IEC 34-5):         IP55           Insulation class (IEC 85):         F           Motor protec:         YES           Motor No:         98971183           Controls:         Control panel:           Function Module:         FM300 - Advanced           Frequency converter:         Built-in	•	50 Hz
Cos phi - power factor:  Rated speed:  180-2200 rpm  Efficiency:  90.3%  Motor efficiency at full load:  90.3 %  Enclosure class (IEC 34-5):  Insulation class (IEC 85):  Motor protec:  YES  Motor No:  98971183  Controls:  Control panel:  HMI200 - Standard  Function Module:  Frequency converter:  Built-in	Rated voltage:	3 x 380-500 V
Rated speed: 180-2200 rpm  Efficiency: 90.3%  Motor efficiency at full load: 90.3 %  Enclosure class (IEC 34-5): IP55  Insulation class (IEC 85): F  Motor protec: YES  Motor No: 98971183  Controls:  Control panel: HMI200 - Standard  Function Module: FM300 - Advanced  Frequency converter: Built-in	Rated current:	7.70-6.00 A
Efficiency: 90.3%  Motor efficiency at full load: 90.3 %  Enclosure class (IEC 34-5): IP55  Insulation class (IEC 85): F  Motor protec: YES  Motor No: 98971183  Controls:  Control panel: HMI200 - Standard  Function Module: FM300 - Advanced  Frequency converter: Built-in	Cos phi - power factor:	0.92-0.87
Motor efficiency at full load: 90.3 %  Enclosure class (IEC 34-5): IP55  Insulation class (IEC 85): F  Motor protec: YES  Motor No: 98971183  Controls:  Control panel: HMI200 - Standard  Function Module: FM300 - Advanced  Frequency converter: Built-in	Rated speed:	180-2200 rpm
Enclosure class (IEC 34-5): IP55 Insulation class (IEC 85): F  Motor protec: YES  Motor No: 98971183  Controls:  Control panel: HMI200 - Standard  Function Module: FM300 - Advanced  Frequency converter: Built-in	Efficiency:	90.3%
Insulation class (IEC 85):  Motor protec: YES  Motor No: 98971183  Controls: Control panel: HMI200 - Standard Function Module: FM300 - Advanced Frequency converter: Built-in	Motor efficiency at full load:	90.3 %
Motor protec: YES  Motor No: 98971183  Controls:  Control panel: HMI200 - Standard  Function Module: FM300 - Advanced  Frequency converter: Built-in		IP55
Motor No: 98971183  Controls:  Control panel: HMI200 - Standard  Function Module: FM300 - Advanced  Frequency converter: Built-in	Insulation class (IEC 85):	F
Controls:  Control panel: HMI200 - Standard Function Module: FM300 - Advanced Frequency converter: Built-in	Motor protec:	YES
Control panel: HMI200 - Standard Function Module: FM300 - Advanced Frequency converter: Built-in	Motor No:	98971183
Function Module: FM300 - Advanced Frequency converter: Built-in	Controls:	
Frequency converter: Built-in	•	HMI200 - Standard
		FM300 - Advanced
Others:		Built-in
	Others:	









**Date:** 20/08/2019

Description	Value
Minimum efficiency index, MEI ≥:	0.70
ErP status:	EuP Standalone/Prod.
Net weight:	84 kg
Gross weight:	103 kg
Shipping volume:	0.383 m³
Config. file no:	99100731
Danish VVS No.:	382054240



**Date:** 20/08/2019

# 99113696 TPE 65-240/4 A-F-A-BQQE 50 Hz

