

**Date:** 10/11/2020

Qty. | Description

1 SP 60-9



Note! Product picture may differ from actual product

Product No.: 14A01909

Submersible borehole pump, suitable for pumping clean water. Can be installed vertically or horizontally. All steel components are made in stainless steel, EN 1.4301 (AISI 304), that ensures high corrosive resistance. This pump carries drinking water approval.

The pump is fitted with a 18.5 kW MS6000 motor with sand shield, mechanical shaft seal, water-lubricated journal bearings and a volume compensating diaphragm. The motor is a canned type submersible motor offering good mechanical stability and high efficiency. Suitable for temperatures up to 40 °C.

The motor is fitted with the Grundfos Tempcon sensor that, by use of powerline communication together with a MP204 control panel, enables temperature monitoring.

The motor is for direct-on-line starting (DOL).

#### Further product details

The pump is suitable for applications similar to the following:

- raw-water supply
- irrigation
- groundwater lowering
- pressure boosting
- fountain applications.

The Grundfos SP pump is renowned for its high efficiency and already complies with the requirements of the Minimum Efficiency Index, and therefore Grundfos is amongst the best in class within submersible pumps.

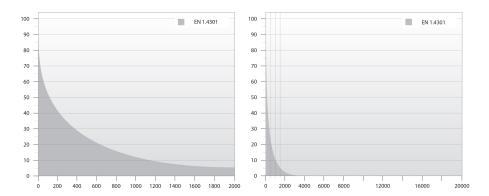


### **Pump**

All pump surfaces that are in contact with pumped liquids are made in stainless steel which makes them corrosionand wear-resistant. The corrosion diagram below shows the capabilities of the pump and motor in relation to the temperature in Celsius (y-axis) and the concentration of chloride in ppm (x-axis).



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The elastomer parts in the pump are made of NBR (Nitrile-Butadiene Rubber) which ensures good wear resistance and long service intervals.

In case the pump is used for pumping water with high content of hydrocarbons or solvents, Grundfos offers FKM rubber parts (Fluorocarbon) which are oil and temperature-resistant up to 90 °C.

The pump is built with octagonal bearings with sand flush channels that minimise wear. As wear of the pump is inevitable, the pump design allows for easy replacement of all internal wear parts (bearings, impeller, wear rings and seal rings) to maintain high performance and a long lifetime.

The suction interconnector is fitted with a strainer to prevent large particles from entering the pump. The suction interconnector is designed to comply with NEMA standards for motor mounting/dimensions.

#### Motor

The stator is hermetically encapsulated in stainless steel and the windings are embedded in polymer compound. This results in high mechanical stability, optimum cooling and reduces the risk of short circuits in the windings.

The shaft seal faces are ceramic/carbon. The material combination provides good dry-running resistance. Together with the shaft seal housing, the sand shield forms a labyrinth seal, which during normal operating conditions prevents penetration of sand particles into the shaft seal.

The motor is fitted with the Grundfos Tempcon temperature sensor device that includes a NTC-resistor which senses the temperature. The resistor is built-in close to the winding. The temperature is converted into a high-frequency signal which is sent via the submersible drop cable and which can be converted into a temperature reading by means of Grundfos MP204.

The MP204 is an electronic motor protection device that also monitors the supply network quality to protect the submersible motor against supply network disturbances.



Liquid:

Pumped liquid: Water

Maximum liquid temperature: 40 °C

Max liquid t at 0.15 m/sec: 40 °C

Selected liquid temperature: 20 °C

Density: 998.2 kg/m³

Technical:

Pump speed on which pump data are based: 2900 rpm

Rated flow:

60 m³/h

Rated head:

71 m

Shaft seal for motor: CER/CARNBR Approvals on nameplate: CE,GOST2



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Curve tolerance: ISO9906:2012 3B

Motor version: T40

Materials:

Pump: Stainless steel

EN 1.4301 AISI AISI 304

Impeller: Stainless steel

EN 1.4301

AISI AISI 304 Motor: Stainless steel

DIN W.-Nr. 1.4301

**AISI 304** 

Installation:

Pump outlet: RP4 Motor diameter: 6 inch

Electrical data:

Motor type: MS6000 Rated power - P2: 18.5 kW Power (P2) required by pump: 18.5 kW Mains frequency: 50 Hz

 Rated voltage:
 3 x 380-400-415 V

 Rated current:
 42.0-41.0-41.5 A

 Starting current:
 510-560-580 %

 Cos phi - power factor:
 0.85-0.82-0.79

 Rated speed:
 2860-2880-2890 rpm

Start. method: direct-on-line

Enclosure class (IEC 34-5): IP68
Insulation class (IEC 85): F
Built-in temp. transmitter: yes
Motor No: 78195517

Others:

Minimum efficiency index, MEI ≥: 0.40

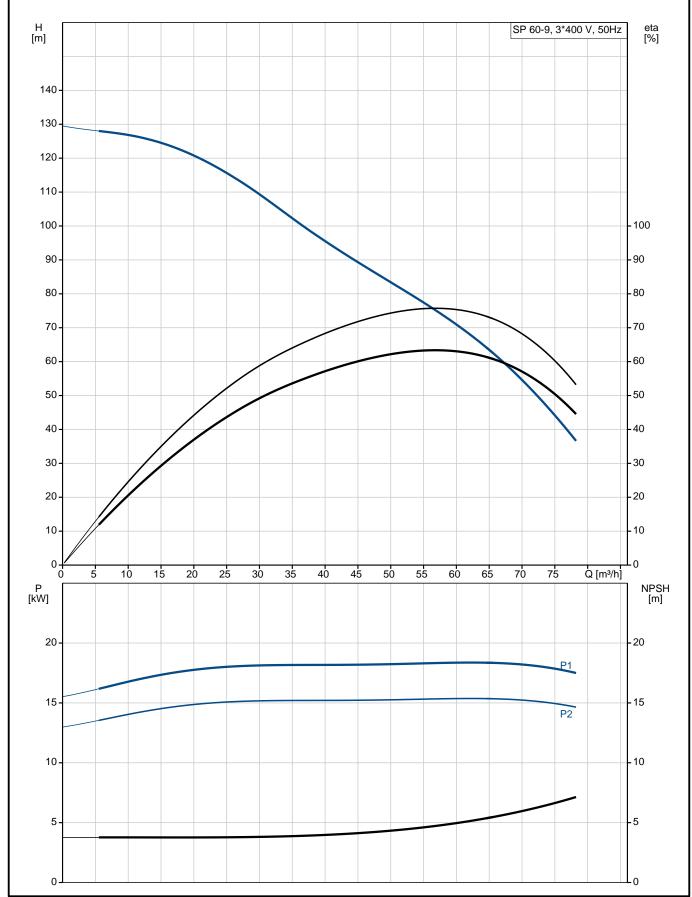
ErP status: EuP Standalone/Prod.

Net weight: 87.9 kg
Gross weight: 122 kg
Shipping volume: 0.264 m³
Danish VVS No.: 388343090
Finnish LVI No.: 4762759
Country of origin: GB
Custom tariff no.: 84137029



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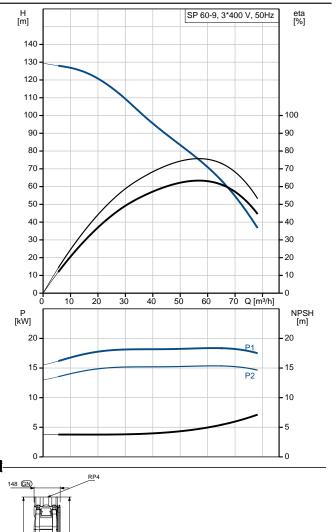
## 14A01909 SP 60-9 50 Hz

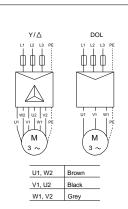




**Date:** 10/11/2020

Price: GBP 63  Technical:  Pump speed on which pump data are based:  Rated flow: 60 m³/h Rated head: 71 m  Stages: 9  Impeller reduc.: NONE Shaft seal for motor: CER/C/Approvals on nameplate: CE,GO	1060267 347 m
Product No: 14A019 EAN number: 570860 Price: GBP 63  Technical: Pump speed on which pump data are based: 80 m³/h Rated flow: 60 m³/h Rated head: 71 m Stages: 9 Impeller reduc.: NONE Shaft seal for motor: CER/C/Approvals on nameplate: CE,GO Curve tolerance: ISO990 Model: B Valve: YES Motor version: T40  Materials: Pump: Stainles Pump: Pump: AISI AISI Impeller: Stainles Impeller: EN 1.43	1060267 347 m ARNBR ST2
Product No:         14A018           EAN number:         570860           Price:         GBP 63           Technical:         2900 rp           Pump speed on which pump data are based:         2900 rp           Rated flow:         60 m³/h           Rated head:         71 m           Stages:         9           Impeller reduc.:         NONE           Shaft seal for motor:         CER/CA           Approvals on nameplate:         CE,GO           Curve tolerance:         ISO990           Model:         B           Valve:         YES           Motor version:         T40           Materials:         Pump:           Pump:         Stainles           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	1060267 347 m ARNBR ST2
EAN number: 570860 Price: GBP 63  Technical: Pump speed on which pump data are based: 2900 rp Rated flow: 60 m³/h Rated head: 71 m Stages: 9 Impeller reduc.: NONE Shaft seal for motor: CER/C/Approvals on nameplate: CE,GO Curve tolerance: ISO990 Model: B Valve: YES Motor version: T40  Materials: Pump: Stainles Pump: AISI AISI Impeller: Stainles Impeller: EN 1.43	1060267 847 m ARNBR ST2
Price:  Technical: Pump speed on which pump data are based: Rated flow: Rated head: Stages: Impeller reduc.: Shaft seal for motor: Approvals on nameplate: Curve tolerance: ISO990 Model: Walve: Yes Motor version: T40 Materials: Pump: Pump: Pump: Pump: AISI AISI Impeller: Stainles: Impeller: Stainles: Impeller: Stainles: Impeller: Stainles: Impeller: Stainles: Impeller: Stainles: Impeller: Impeller: EN 1.43	ARNBR ST2
Technical: Pump speed on which pump data are based: Rated flow: Rated head: Stages: Impeller reduc.: Shaft seal for motor: Approvals on nameplate: Curve tolerance: ISO990 Model: Walve: Yes Motor version: T40  Materials: Pump: Pump: Pump: Pump: AISI AISI Impeller: Impeller: Stainles Impeller: Impeller: Impeller: Iso990 Stainles Impeller: Impeller: Impeller: Impeller: Insolve in the pump data are 2900 rp AO rp AO rp AO material are ANONE CER/CA APPROVA INONE ISO990 AD rp ANONE ISO900 FOR THE PORT ANONE IN 1.43 ANONE Insolve in the pump data are 2900 rp AISI AISI AISI AISI AISI AISI AISI AISI	m ARNBR ST2
Pump speed on which pump data are based:  Rated flow: Rated head: Stages: 9 Impeller reduc.: NONE Shaft seal for motor: Approvals on nameplate: Curve tolerance: ISO990 Model: Valve: YES Motor version: T40  Materials: Pump: Pump: Pump: Pump: AISI AISI Impeller: Stainles: Impeller: Stainles: Impeller: Stainles: Impeller: Stainles: Impeller: EN 1.43	ARNBR ST2
based:       2900 rp         Rated flow:       60 m³/h         Rated head:       71 m         Stages:       9         Impeller reduc.:       NONE         Shaft seal for motor:       CER/C/I         Approvals on nameplate:       CE,GO         Curve tolerance:       ISO990         Model:       B         Valve:       YES         Motor version:       T40         Materials:       Pump:         Pump:       Stainles         Pump:       AISI AIS         Impeller:       Stainles         Impeller:       EN 1.43	ARNBR ST2
Rated flow:       60 m³/h         Rated head:       71 m         Stages:       9         Impeller reduc.:       NONE         Shaft seal for motor:       CER/CA         Approvals on nameplate:       CE,GO         Curve tolerance:       ISO990         Model:       B         Valve:       YES         Motor version:       T40         Materials:         Pump:       Stainles         Pump:       AISI AIS         Impeller:       Stainles         Impeller:       EN 1.43	ARNBR ST2
Rated head:         71 m           Stages:         9           Impeller reduc.:         NONE           Shaft seal for motor:         CER/CA           Approvals on nameplate:         CE,GO           Curve tolerance:         ISO990           Model:         B           Valve:         YES           Motor version:         T40           Materials:         Pump:           Pump:         Stainles           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	ARNBR ST2
Stages:         9           Impeller reduc.:         NONE           Shaft seal for motor:         CER/C/I           Approvals on nameplate:         CE,GO           Curve tolerance:         ISO990           Model:         B           Valve:         YES           Motor version:         T40           Materials:         Pump:           Pump:         EN 1.43           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	ST2
Impeller reduc.:         NONE           Shaft seal for motor:         CER/C/A           Approvals on nameplate:         CE,GO           Curve tolerance:         ISO990           Model:         B           Valve:         YES           Motor version:         T40           Materials:         Pump:           Pump:         Stainles           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	ST2
Shaft seal for motor:         CER/C/I           Approvals on nameplate:         CE,GO           Curve tolerance:         ISO990           Model:         B           Valve:         YES           Motor version:         T40           Materials:         Pump:           Pump:         Stainles           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	ST2
Approvals on nameplate:         CE,GO           Curve tolerance:         ISO990           Model:         B           Valve:         YES           Motor version:         T40           Materials:           Pump:         Stainles           Pump:         EN 1.43           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	ST2
Curve tolerance:         ISO990           Model:         B           Valve:         YES           Motor version:         T40           Materials:         Pump:           Pump:         Stainles           Pump:         EN 1.43           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	
Model:         B           Valve:         YES           Motor version:         T40           Materials:         Stainles           Pump:         Stainles           Pump:         EN 1.43           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	6:2012 3B
Valve:         YES           Motor version:         T40           Materials:         Stainles           Pump:         EN 1.43           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	
Motor version:         T40           Materials:         Stainles           Pump:         Stainles           Pump:         EN 1.43           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	
Materials:           Pump:         Stainles           Pump:         EN 1.43           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	
Pump:         Stainles           Pump:         EN 1.43           Pump:         AISI AIS           Impeller:         Stainles           Impeller:         EN 1.43	
Pump: EN 1.43 Pump: AISI AIS Impeller: Stainles Impeller: EN 1.43	
Pump: AISI AISI Impeller: Stainles Impeller: EN 1.43	ss steel
Impeller: Stainles Impeller: EN 1.43	301
Impeller: EN 1.43	SI 304
	ss steel
Impeller: AISI AIS	301
	SI 304
Motor: Stainles	ss steel
Motor: DIN W.	-Nr. 1.4301
Motor: AISI 30	4
Installation:	
Pump outlet: RP4	
Motor diameter: 6 inch	
Liquid:	
Pumped liquid: Water	
Maximum liquid temperature: 40 °C	
	g/m³
Electrical data:	
Motor type: MS6000	0
Applic. motor: GRUNE	DFOS
	<b>V</b>
Rated power - P2: 18.5 kV	V
Power (P2) required by pump: 18.5 kV	
Power (P2) required by pump: 18.5 kV Mains frequency: 50 Hz	-400-415 V
Power (P2) required by pump: 18.5 kV Mains frequency: 50 Hz Rated voltage: 3 x 380	-400-415 V .0-41.5 A
Power (P2) required by pump: 18.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380 Rated current: 42.0-41	.0-41.5 A
Power (P2) required by pump: 18.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380 Rated current: 42.0-41 Starting current: 510-560	.0-41.5 A 0-580 %
Power (P2) required by pump: 18.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380 Rated current: 42.0-41 Starting current: 510-560 Cos phi - power factor: 0.85-0.8	.0-41.5 A 0-580 % 32-0.79
Power (P2) required by pump:       18.5 kW         Mains frequency:       50 Hz         Rated voltage:       3 x 380         Rated current:       42.0-41         Starting current:       510-560         Cos phi - power factor:       0.85-0.8         Rated speed:       2860-28	.0-41.5 A 0-580 % 32-0.79 380-2890 rpm
Power (P2) required by pump:       18.5 kW         Mains frequency:       50 Hz         Rated voltage:       3 x 380         Rated current:       42.0-41         Starting current:       510-560         Cos phi - power factor:       0.85-0.8         Rated speed:       2860-20         Start. method:       direct-o	.0-41.5 A 0-580 % 32-0.79 380-2890 rpm
Power (P2) required by pump:  Mains frequency:  Rated voltage:  Rated current:  Starting current:  Cos phi - power factor:  Rated speed:  Start. method:  Enclosure class (IEC 34-5):  I 18.5 kW  18.5 kW  18.5 kW  18.5 kW  18.5 kW  18.5 kW  18.6 kW  18.6 kW  18.7 kW  18.8 kW	.0-41.5 A 0-580 % 32-0.79 380-2890 rpm
Power (P2) required by pump:       18.5 kW         Mains frequency:       50 Hz         Rated voltage:       3 x 380         Rated current:       42.0-41         Starting current:       510-560         Cos phi - power factor:       0.85-0.8         Rated speed:       2860-28         Start. method:       direct-o         Enclosure class (IEC 34-5):       IP68         Insulation class (IEC 85):       F	.0-41.5 A 0-580 % 32-0.79 380-2890 rpm
Power (P2) required by pump:         18.5 kW           Mains frequency:         50 Hz           Rated voltage:         3 x 380           Rated current:         42.0-41           Starting current:         510-560           Cos phi - power factor:         0.85-0.8           Rated speed:         2860-28           Start. method:         direct-o           Enclosure class (IEC 34-5):         IP68           Insulation class (IEC 85):         F           Motor protec:         NONE	.0-41.5 A 0-580 % 32-0.79 380-2890 rpm n-line
Power (P2) required by pump:         18.5 kW           Mains frequency:         50 Hz           Rated voltage:         3 x 380           Rated current:         42.0-41           Starting current:         510-560           Cos phi - power factor:         0.85-0.8           Rated speed:         2860-28           Start. method:         direct-o           Enclosure class (IEC 34-5):         IP68           Insulation class (IEC 85):         F           Motor protec:         NONE           Thermal protec:         external	.0-41.5 A 0-580 % 32-0.79 380-2890 rpm n-line
Power (P2) required by pump:         18.5 kW           Mains frequency:         50 Hz           Rated voltage:         3 x 380           Rated current:         42.0-41           Starting current:         510-560           Cos phi - power factor:         0.85-0.8           Rated speed:         2860-28           Start. method:         direct-o           Enclosure class (IEC 34-5):         IP68           Insulation class (IEC 85):         F           Motor protec:         NONE           Thermal protec:         external           Built-in temp. transmitter:         yes	.0-41.5 A 0-580 % 32-0.79 880-2890 rpm n-line
Power (P2) required by pump:         18.5 kW           Mains frequency:         50 Hz           Rated voltage:         3 x 380           Rated current:         42.0-41           Starting current:         510-560           Cos phi - power factor:         0.85-0.8           Rated speed:         2860-28           Start. method:         direct-o           Enclosure class (IEC 34-5):         IP68           Insulation class (IEC 85):         F           Motor protec:         NONE           Thermal protec:         externa           Built-in temp. transmitter:         yes           Motor No:         781955	.0-41.5 A 0-580 % 32-0.79 880-2890 rpm n-line
Power (P2) required by pump:         18.5 kW           Mains frequency:         50 Hz           Rated voltage:         3 x 380           Rated current:         42.0-41           Starting current:         510-560           Cos phi - power factor:         0.85-0.8           Rated speed:         2860-28           Start. method:         direct-o           Enclosure class (IEC 34-5):         IP68           Insulation class (IEC 85):         F           Motor protec:         NONE           Thermal protec:         external           Built-in temp. transmitter:         yes           Motor No:         781955           Others:	.0-41.5 A 0-580 % 32-0.79 880-2890 rpm n-line
Power (P2) required by pump:       18.5 kW         Mains frequency:       50 Hz         Rated voltage:       3 x 380         Rated current:       42.0-41         Starting current:       510-560         Cos phi - power factor:       0.85-0.8         Rated speed:       2860-28         Start. method:       direct-o         Enclosure class (IEC 34-5):       IP68         Insulation class (IEC 85):       F         Motor protec:       NONE         Thermal protec:       external         Built-in temp. transmitter:       yes         Motor No:       781955         Others:         Minimum efficiency index, MEI ≥:       0.40	.0-41.5 A 0-580 % 32-0.79 880-2890 rpm n-line
Max liquid t at 0.15 m/sec: 40 °C Selected liquid temperature: 20 °C Density: 998.2 k Electrical data: Motor type: MS6000	0





139.5



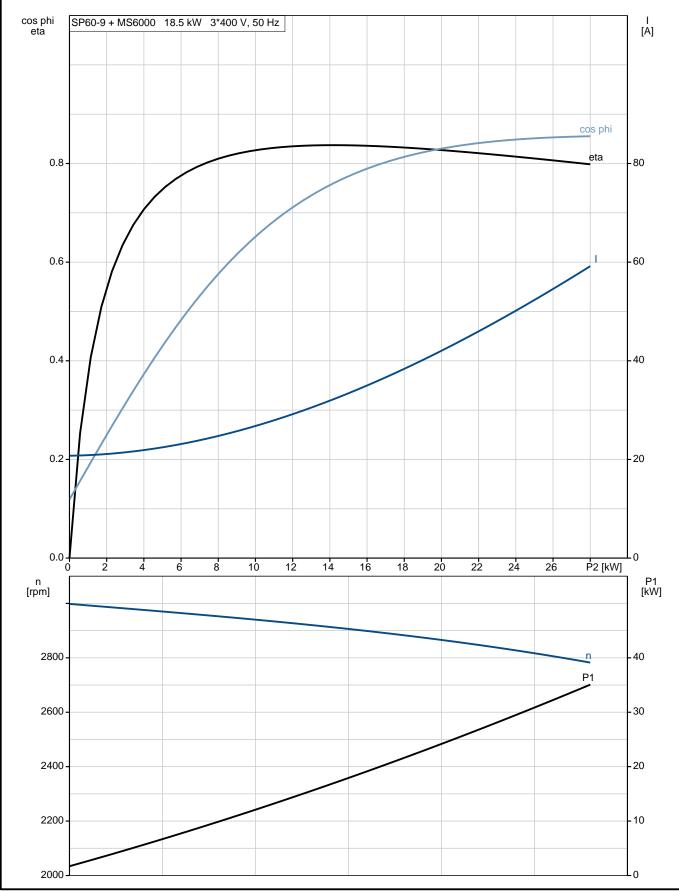
**Date:** 10/11/2020

Description	Value
Net weight:	87.9 kg
Gross weight:	122 kg
Shipping volume:	0.264 m <sup>3</sup>
Danish VVS No.:	388343090
Finnish LVI No.:	4762759
Country of origin:	GB
Custom tariff no.:	84137029



**Date:** 10/11/2020

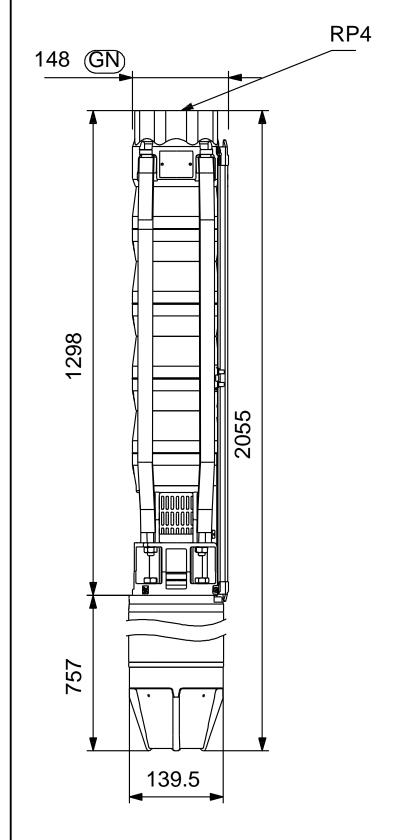
## 14A01909 SP 60-9 50 Hz





Date: 10/11/2020

# 14A01909 SP 60-9 50 Hz

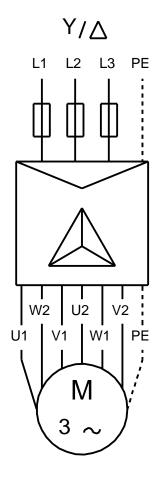


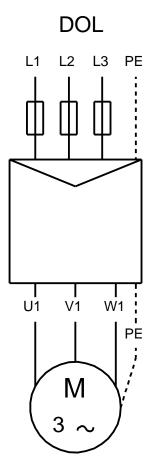
Note! All units are in [mm] unless others are stated. Disclaimer: This simplified dimensional drawing does not show all details.



**Date:** 10/11/2020

# 14A01909 SP 60-9 50 Hz





U1, W2	Brown
V1, U2	Black
W1, V2	Grey

Note! All units are in [mm] unless others are stated.