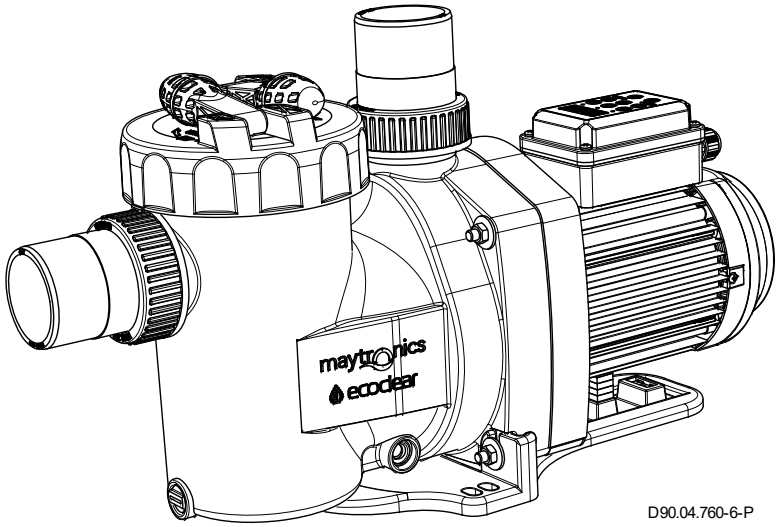
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EN Pump data sheet

ecoclear® 900-VS 1.25 hp



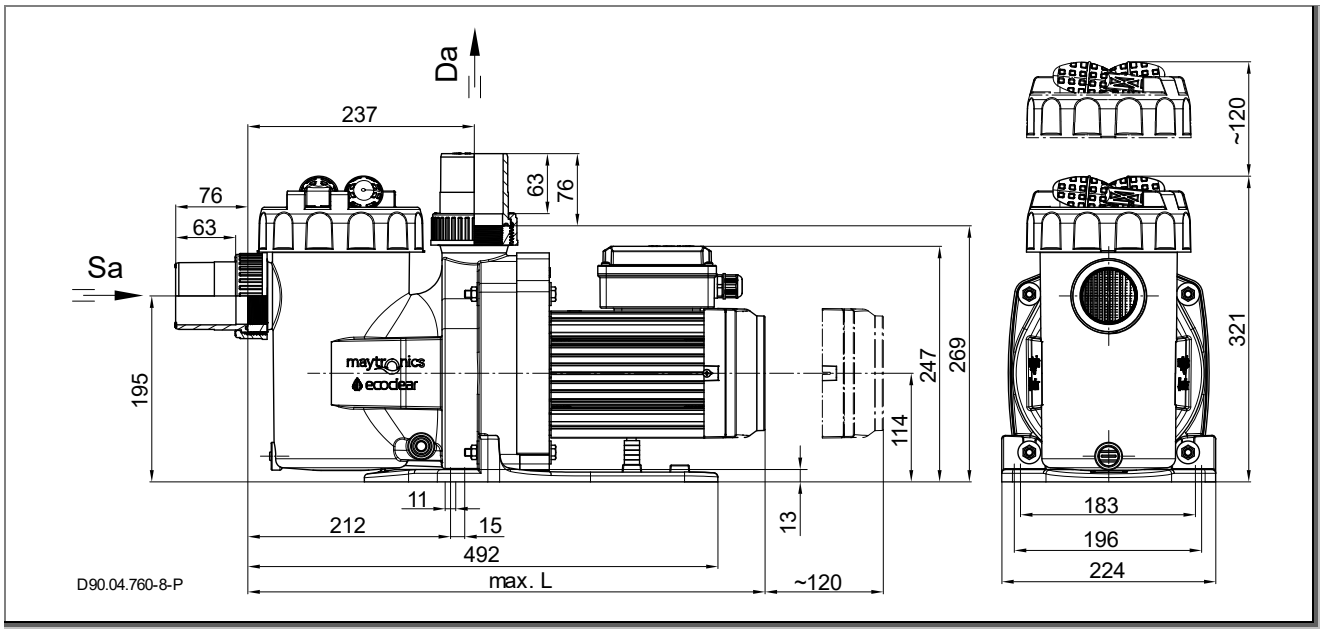
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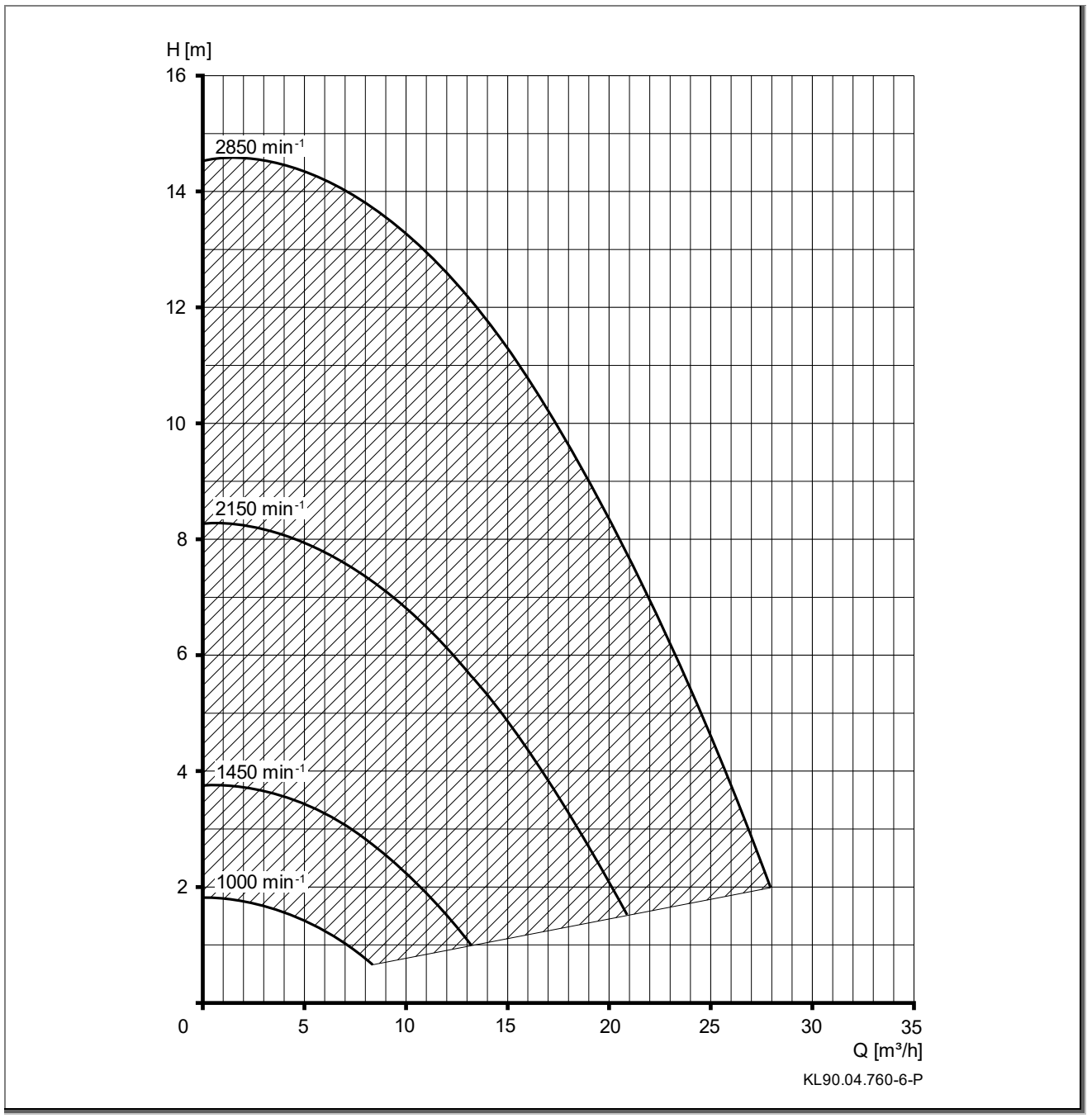
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Da
Sa
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114
13
11
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ecoclear
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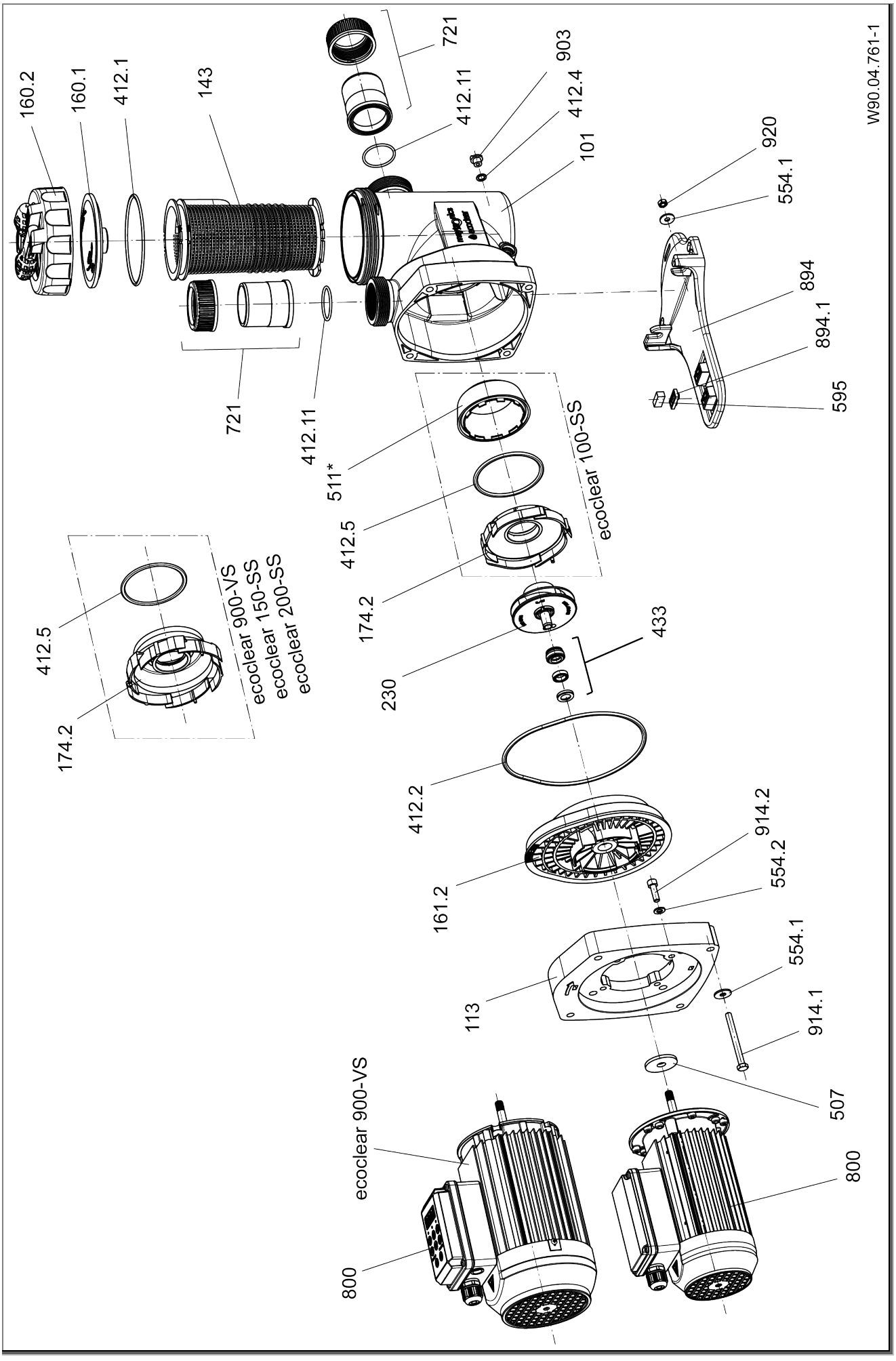

H [m]
16
14
12
10
8
6
4
2
0
2850 min-1
2150 min-1
1450 min-1
1000 min-1
5
10
15
20
25
30
35
Q [m³/h]
KL90.04.760-6-P

TD 50/60 Hz	Sa [mm]	Da [mm]	d-Saug [inch]	d-Druck [inch]	max. L [mm]
Ecoclear 900-VS	60,5	60,5	2	2	541

1~ 230-240 V

TD 50/60 Hz	n [min^{-1}]	P_1 [kW]	P_2 [kW]	I [A]	Lpa (1m) [dB(A)]	Lwa [dB(A)]	m [kg]	WSK/PTC
Ecoclear 900-VS	1000	0,06	0,04	0,30	38,6	47	10,4	●/○
Ecoclear 900-VS	2850	1,10	0,75	3,90	62,0	74	10,4	●/○

TD 50/60 Hz	n [min^{-1}]	$H_{max.}$ [m]	SP	Hs [m]	Hz [m]	IP	W-Kl	T [°C]	P-GHI [bar max.]
Ecoclear 900-VS	1000	1,80	○	1,5	3	55	F	40(60)	2,5
Ecoclear 900-VS	2850	14,6	●	1,5	3	55	F	40 (60)	2,5


W90.04.761-1
160.2
160.1
412.1
143
721
412.11
903
412.4
101
920
554.1
894
894.1
595
721
412.11
511*
412.5
174.2
ecoclear 100-SS
412.5
174.2
ecoclear 900-VS
ecoclear 150-SS
ecoclear 200-SS
230
433
412.2
161.2
914.2
554.2
113
554.1
914.1
507
ecoclear 900-VS
800
800

Teil Part	St Qty	Pumpe Pump	Benennung	Description	MTAU Code
101	1	all	Gehäuse, schwarz, Rp 2, ecoclear	Housing, black, Rp 2, ecoclear	20-400-0030
113	1	all	Zwischenflansch	Intermediate flange	20-400-0031
143	1	all	Saugsieb, PP, weiß	Strainer basket, PP, white	20-400-0032
160.1	1	all	Klarsichteinsatz, PC	Lid, PC	20-400-0033
160.2	1	all	Gewindering, m. Öffnungsgriff	Ring for lid, with lock for handle	20-400-0034
161.2	1	all	Dichtungsgehäuse, 39 mm	Gland housing 39 mm	20-400-0035
174.2	1	100-SS	Leitschaufeleinsatz	Diffuser	20-400-0036
	1	150-SS	Leitschaufeleinsatz, PA	Diffuser, PA	20-400-0037
	1	200-SS	Leitschaufeleinsatz, PA	Diffuser, PA	20-400-0037
	1	900-VA	Leitschaufeleinsatz, PA	Diffuser, PA	20-400-0037
230	1	100-SS	Laufrad, Ø = 112 mm, b = 6,5 mm	Impeller, d = 112 mm, b = 6.5 mm	20-400-0038
	1	150-SS	Laufrad, Ø = 112 mm, b = 9,5 mm	Impeller, d = 112 mm, b = 9.5 mm	20-400-0040
	1	200-SS	Laufrad, Ø = 110 mm, b = 13,5 mm	Impeller, d = 110 mm, b = 13.5 mm	20-400-0039
	1	900-VA	Laufrad, Ø = 112 mm, b = 9,5 mm	Impeller, d = 110 mm, b = 9.5 mm	20-400-0040
412.1	1	all	O-Ring, 137 x 5 mm, NBR	O-Ring, 137 x 5 mm, NBR	20-400-0011
412.2	1	all	O-Ring, 190 x 5 mm, NBR	O-Ring, 190 x 5 mm, NBR	20-400-0041
412.4	1	all	O-Ring 11 x 2,5 mm, NBR 70 für Verschlussschraube	O-Ring 11 x 2.5 mm, NBR 70 for drain plug	20-400-0013
412.5	1	100-SS	O-Ring, 97,8 x 5,33 mm, NBR	O-Ring, 97,8 x 5,33 mm, NBR	20-400-0042
	1	150-SS	O-Ring, 90 x 5mm, NBR	O-Ring, 90 x 5mm, NBR	20-400-0014
	1	200-SS	O-Ring, 90 x 5mm, NBR	O-Ring, 90 x 5mm, NBR	20-400-0014
	1	900-VA	O-Ring, 90 x 5mm, NBR	O-Ring, 90 x 5mm, NBR	20-400-0014
412.11	2	all	O-Ring, 63 x 3,5 mm, NBR	O-Ring, 63 x 3,5 mm, NBR	20-400-0043
433	1	all	Gleitringdichtung, 14mm	Mechanical seal, 14 mm	20-400-0044
507	1	all	Spritzring	Splesh ring	20-400-0045
511	1	100-SS	Zentrierring	Centring ring	20-400-0046
554.1	8	all	Unterlegscheibe, d = 8,4 x 24 mm, DIN 9021, A 2, SS304	Washer, d = 8,4 x 24 mm, DIN 9021, A 2, SS304	20-400-0047
554.2	4	all	Unterlegscheibe, d = 8,4 mm, DIN 125, A 2, SS304	Washer, d = 8,4 mm, DIN 125, A 2, SS304	20-400-0019
595	1	all	Gummipuffer, 10 x 12,5 x 27 mm, NBR	Rubber buffer, 10 x 12,5 x 27 mm, NBR	20-400-0020
721	2	all	Überwurfmutter, für Bundbuchse, 2 inch	Union nut for glue socket, 2 inch	20-400-0056
	2	all	Bundbuchse, 2 inch, PVC, grau	Glue socket, 2 inch, PVC, grey	20-400-0057
800	1	100-SS	We-Motor 0,45 kW, SS, 1.00 hp	1~ motor 0.45 kW, SS, 1.00 hp	20-400-0048
	1	150-SS	We-Motor 0,80 kW, SS, 1.50 hp	1~ motor 0.80 kW, SS, 1.50 hp	20-400-0049
	1	200-SS	We-Motor 1,10 kW, SS, 2.00 hp	1~ motor 1.10 kW, SS, 2.00 hp	20-400-0050
	1	900-VA	We-Motor 0,75 kW, VS, 1.25 hp	1~ motor 0.75 kW, VS,1.25 hp	20-400-0051
894	1	all	Bodenplatte	Base plate	20-400-0052
894.1	6	100-SS	Adapter für Motorfuß	Adapter for motor foot	20-400-0023
	4	150-SS	Adapter für Motorfuß	Adapter for motor foot	20-400-0023
	4	200-SS	Adapter für Motorfuß	Adapter for motor foot	20-400-0023
	4	900-VA	Adapter für Motorfuß	Adapter for motor foot	20-400-0023
903	1	all	Verschlussschraube, PP, schwarz	Plug, PP, black	20-400-0025
914.1	4	all	Sechskantschraube, M 8x90, DIN 931, A 4, SS316	Hexagon screw, M 8x90, DIN 931, A 4, SS316	20-400-0053
914.2	4	all	Innensechskantschraube, M8 x 25, DIN 912, A 2, SS 304	Hexagon socket screw, M8 x 25, DIN 912, A 2, SS304	20-400-0026
920	4	all	Mutter, M 8, DIN 934, Messing	Hexagon nut, M 8, DIN 934, brass	20-400-0054
	2	all	Öffnungsgriff, PP	Handle for rid ring lock, PP	20-400-0055

NOTICE

Related Documentation

The additional information compiled in this data sheet must be kept together with the original operation manual for "Non-self-priming and self-priming pumps with/without plastic lanterns" and must be accessible to the relevant personnel at all times.

Glossary	
TD	Technical data
Sa	Inlet connection
Da	Outlet connection
d-Saug	Recommended diameter of the suction line up to 5 m
d-Druck	Recommended diameter of the pressure line up to 5 m
max. L	Maximum length of the pump
D	Density
P_1	Power input
P_2	Power output
I	Rated current
Lpa (1 m)	Sound pressure level at 1 m measured in accordance with DIN 45635
Lwa	Acoustic capacity
m	Weight
WSK	Built-in or external overload switch
PTC	PTC resistor
$H_{max.}$	Total dynamic head
SP	Self-priming
Hs; Hz	Geodetic head between water level and pump
Hs	Total suction head
Hz	Total dynamic head with flooded suction
IP	Type of motor enclosure
W-Kl	Class of insulation
n	Motor speed
P-GHI	2.5 bar max. casing pressure/system pressure
T	Water temperature
●	Yes
○	No
T/°C	Clarification of the max. water temperature 40 °C: the max. water temperature allowed according to the GS approval.
1~/3~	Suitable for continuous operation at 1~ 220 - 240 V ± 5% 3~ Y/Δ 380 - 420 V/220 - 240 V ± 5% 3~ Y/Δ 660 - 725 V/380 - 420 V ± 5% For standard voltage in accordance with DIN IEC 60038; DIN EN 60034

The pump has a permanent magnetic motor and is electronically protected against overload.

Connecting external switch contacts

The pump has a 5-wire cable with open ends for external control.

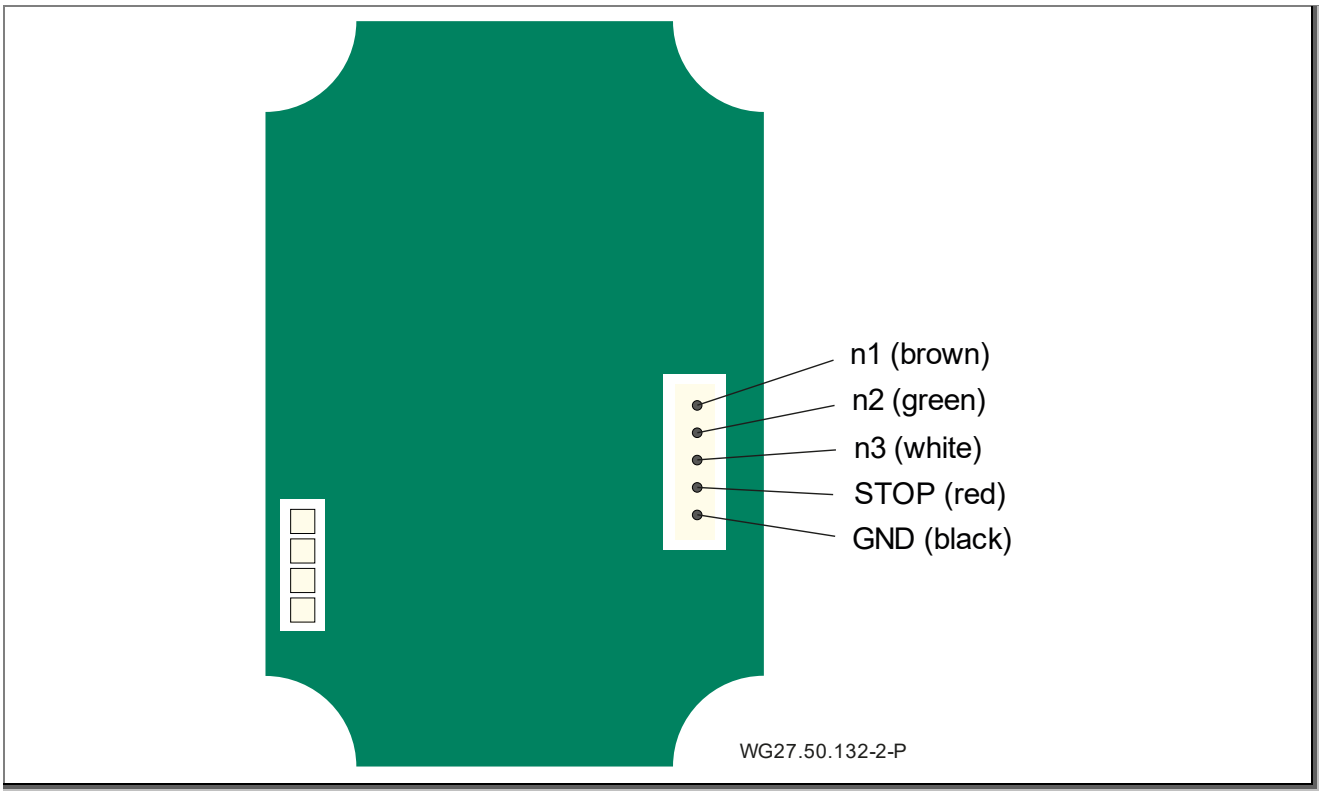
⚠ CAUTION

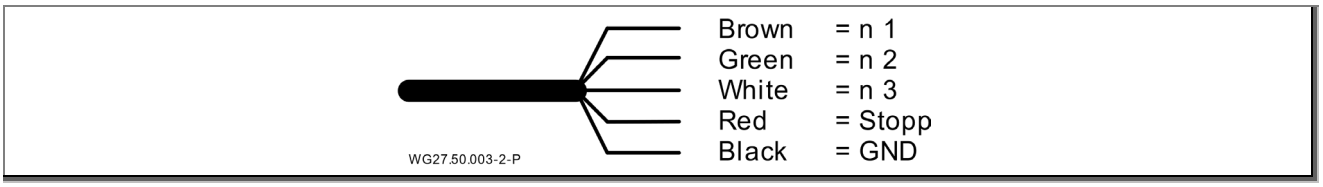
Intermediate circuit capacitors remain charged for a long time after switching off the main voltage.

➔ Observe the electrical safety regulations.

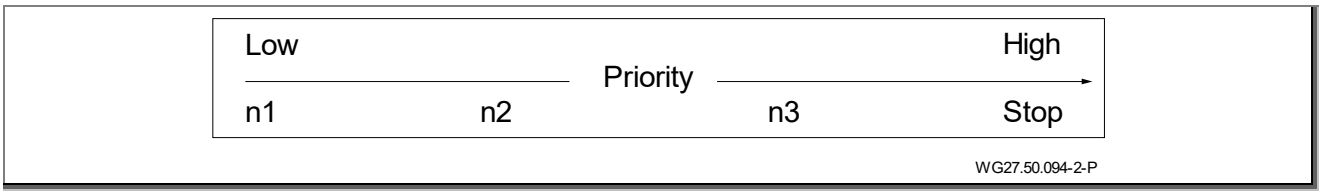
➔ Wait at least 5 minutes after disconnecting the voltage supply before opening the motor's terminal box.

The upper plug contact on the board is for control with a digital signal (potential-free).





The cables must be connected potential free. Only switch the contacts individually (observe priority of the contacts). Otherwise the desired speed is not activated. The digital inputs must be activated accordingly in the Setup menu for external activation.



NOTICE

It is possible to connect an external control cable. Open the four screws on the terminal box lid for this purpose and remove the lid carefully. Feed the grey control cable through the cable gland and attach the white plug in the lid to the upper socket with the "DIO" designation. Close the terminal box lid again and tighten the four screws firmly.

➔ The control cable can be ordered from the manufacturer.

NOTICE

The motor fixed speed is switched on using the manual button or external switch contacts. The switch contacts and the assigned speed are activated.

If the pump starts from a standstill, it starts up in priming mode and subsequently with the selected fixed speed.

During running operation the pump is started up directly at the fixed speed, without priming time.

If external control is not necessary, the cable ends need to be insulated.

NOTICE

For easy interaction with peripheral devices such as electric heat exchangers or dosing systems, installing a flow monitor with the appropriate evaluation unit is recommended. This can also output a fault message.

Function

Default settings: Speed:	 1 = 2000 min^{-1} 2 = 2400 min^{-1} 3 = 2850 min^{-1}
Priming speed:	= 2850 min^{-1}
Priming time:	= 5 minutes
Speed which can be set:	1000 - 2850 min^{-1} *(in 50 min^{-1} steps)*
Priming time which can be set:	0 - 10 minutes *(in 1 min steps)*

In the “constant speed” mode, the desired speed is set on the motor and this speed is kept constant over the characteristic.



User interface:

(1) LED display: displays the current motor speed

(2) (1) (2) (3) : used to select the speed

(3) (▼) (▲) : to change the speed; to change in the programming mode

(4) (OK) : to confirm the speed; to save in the programming mode

(5) (SET) : used to enter the programming mode or to reset the control.

(6) (0) : to stop the motor.



Setting control mode:

When switching on the power supply (insert the mains plug) and simultaneously pressing the (SET) button, the display shows two numbers “# #”. The number on the left stands for the control mode and the number on the right for the operating mode.

The control mode can be changed with the (▼) button and the operating mode with the (▲) button. Press (OK) to save.

Operating mode:

1: constant speed

Control mode:

0: Control with the buttons (▼) (▲)

1: Control with the buttons (▼) (▲) + external control by potential-free contacts n1, n2, n3, Stop, GND (factory setting)



Operation:

Press button (1), (2) or (3) to select the preset speed.

If the pump starts from a standstill, it starts up in priming mode and subsequently with the selected speed.

As long as the pump is in the priming phase, the LED of the selected speed range flashes.

During operation the pump is started up to the fixed speed directly, without priming time.

The motor is stopped by pressing the button (0). The "Power" LED flashes and the display shows "OFF".



Setting the speeds:
Press the button for the fixed speed that should be changed. The speed can now be changed with the ▼ ▲ button.

Notice: During the suction phase it is not possible to change the speed.



Setting the priming parameters:
The motor has to be stopped (0) to programme the priming time. Press the SET button for at least 3 seconds until the display begins to flash. Now the speed with which the motor is to start up during the priming time can be set. The speed can be changed with the buttons ▼ ▲ and saved with OK. The length of the suction time can be determined following adjustment of the suction speed. The priming time can be set between 0 (=Off) and 10 minutes.



Resetting:
The motor can be reset to the state of delivery by pressing the SET button for at least 15 seconds. The motor stops and the three LEDs of the speeds light up.



The display of the control unit switched off after 3 minutes without action, except if an external control unit for example emits a signal to the pump every minute.

After a voltage drop the pump automatically starts up again with the speed last set, or remains stopped if it had been stopped beforehand.

The pump can be turned on and off using the control cable (potential-free contact) intended for this purpose. This can be realised with a BADU Logic control, BADU OmniTronic, BADU Blue or using a small coupling relay. This puts less stress on the electronics.

Overview of possible operating and error messages

If a error occurs, the motor switches off permanently. Exception error: "Undervoltage". The motor automatically switches back on as soon as the voltage is over 209 V for at least 6 seconds.

If an defect occurs, the system must be disconnected from the power supply. See chapter 2.2 of the original operating manual "non self-priming and self-priming pumps with/without plastic lanterns (AK version)".

Error no.	Description
E-01	Overvoltage DC intermediate circuit
E-02	Overvoltage DC intermediate circuit (signal only, motor doesn’t stop)
E-03	Low DC intermediate circuit voltage (motor stops)
E-04	Power module overcurrent – software level
E-07	AC Voltage input is too high
E-08	AC Voltage input is too low
E-11	Motor speed protection
E-13	Power module overheating
E-16	Motor speed not synchronous to control
E-22	Output phase open circuit
E-51	Power module heat sensor error
E-60	Motor blocked
E-63	Digital process signal, error, programme not regulated
E-66	Communication error – terminal box