

RAKENTA LLP
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 Male', Maldives
 rakenta@gmail.com

PROJECT
 Design of Storm Water Management Facilities at
 Adh. Maamigili

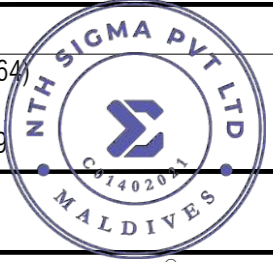
DRAWING NUMBER: D-E1-01-R4

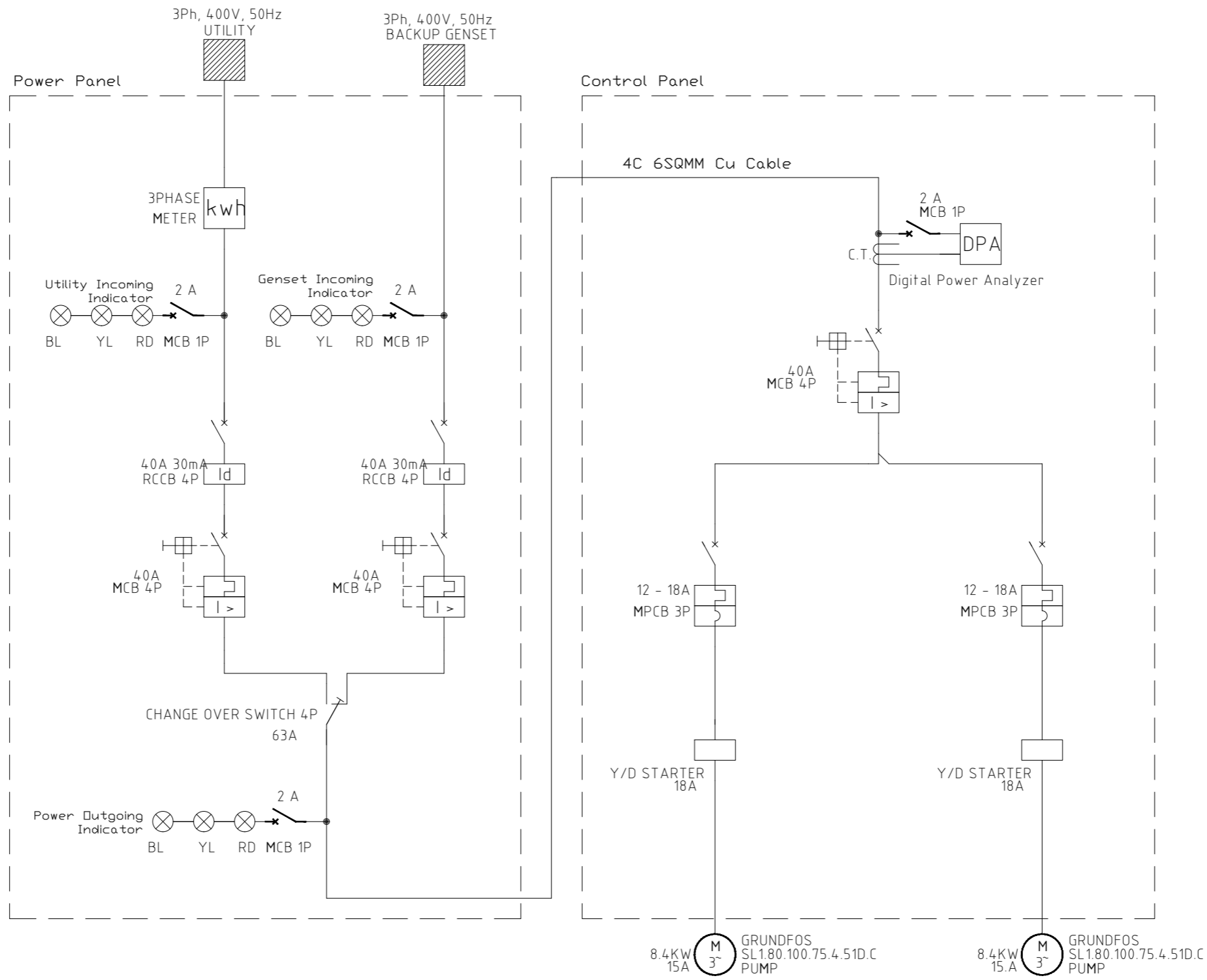
DRAWING CONTENTS
 Storm Water Pumpstation Single Line Diagram
 PS1


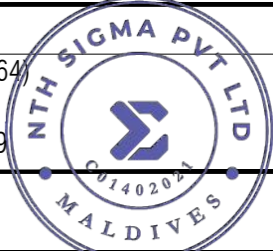
DATE: 24th June 2021

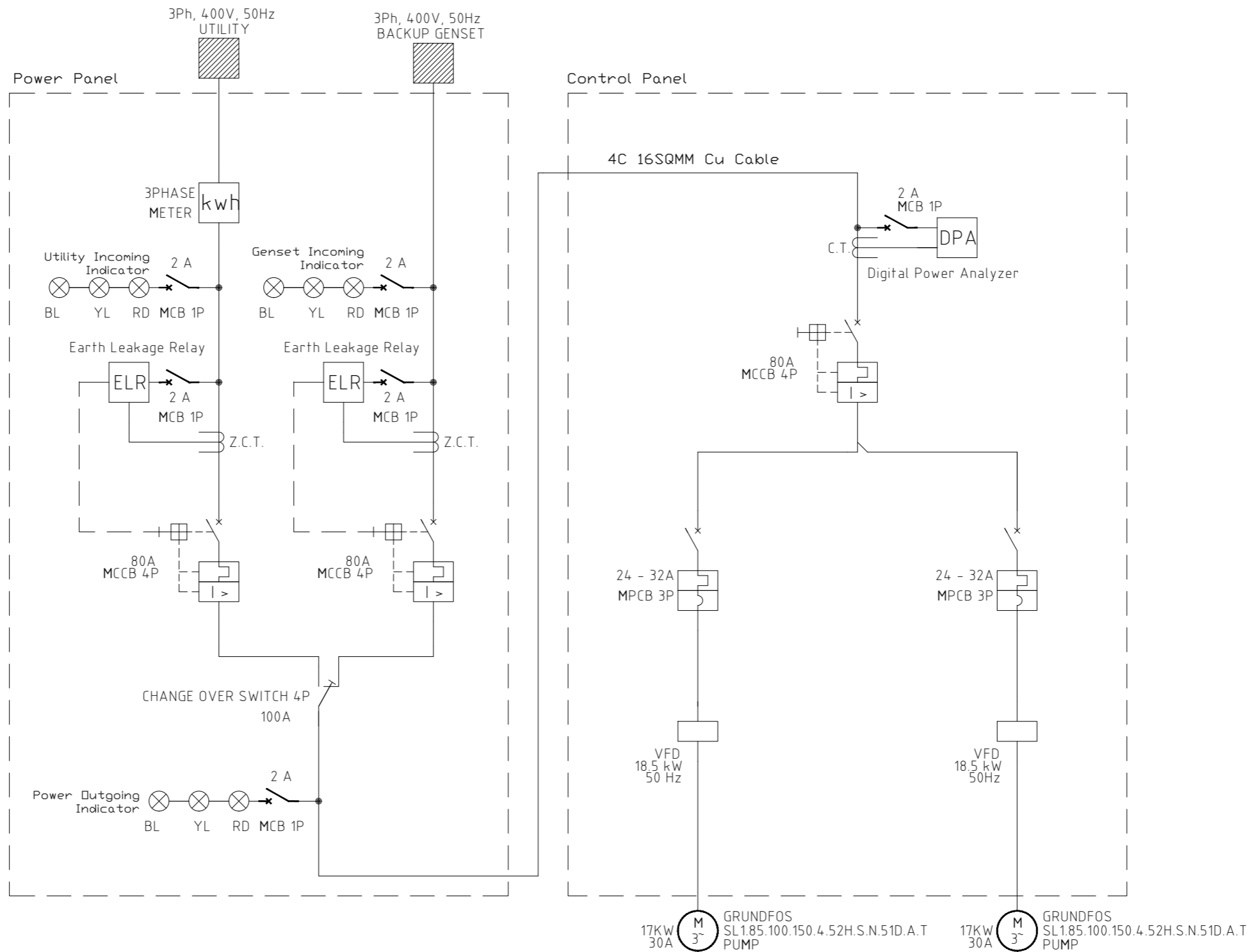
DRAWN BY
 YAAMEEN SHAMEEM (MEA/2020/1964)
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 info@nthsigma.com | +9607725919

SIGNATURE *Yaameen*





 <p>RAKENTA LLP Bodurasgefaanu Magu Male', Maldives rakenta@gmail.com</p>	<p>PROJECT Design of Storm Water Management Facilities at Adh. Maamigili</p>	<p>DRAWING CONTENTS Storm Water Pumpstation Single Line Diagram PS2</p>	<p>DRAWN BY YAAMEEN SHAMEEM (MEA/2020/1964) NTH SIGMA PVT LTD info@nthsigma.com +9607725919</p>
	<p>DRAWING NUMBER: D-E1-02-R4</p>	<p>DATE: 24th June 2021</p>	<p>SIGNATURE <i>Yaameen</i></p> 



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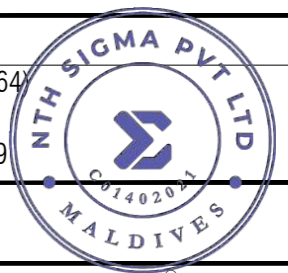
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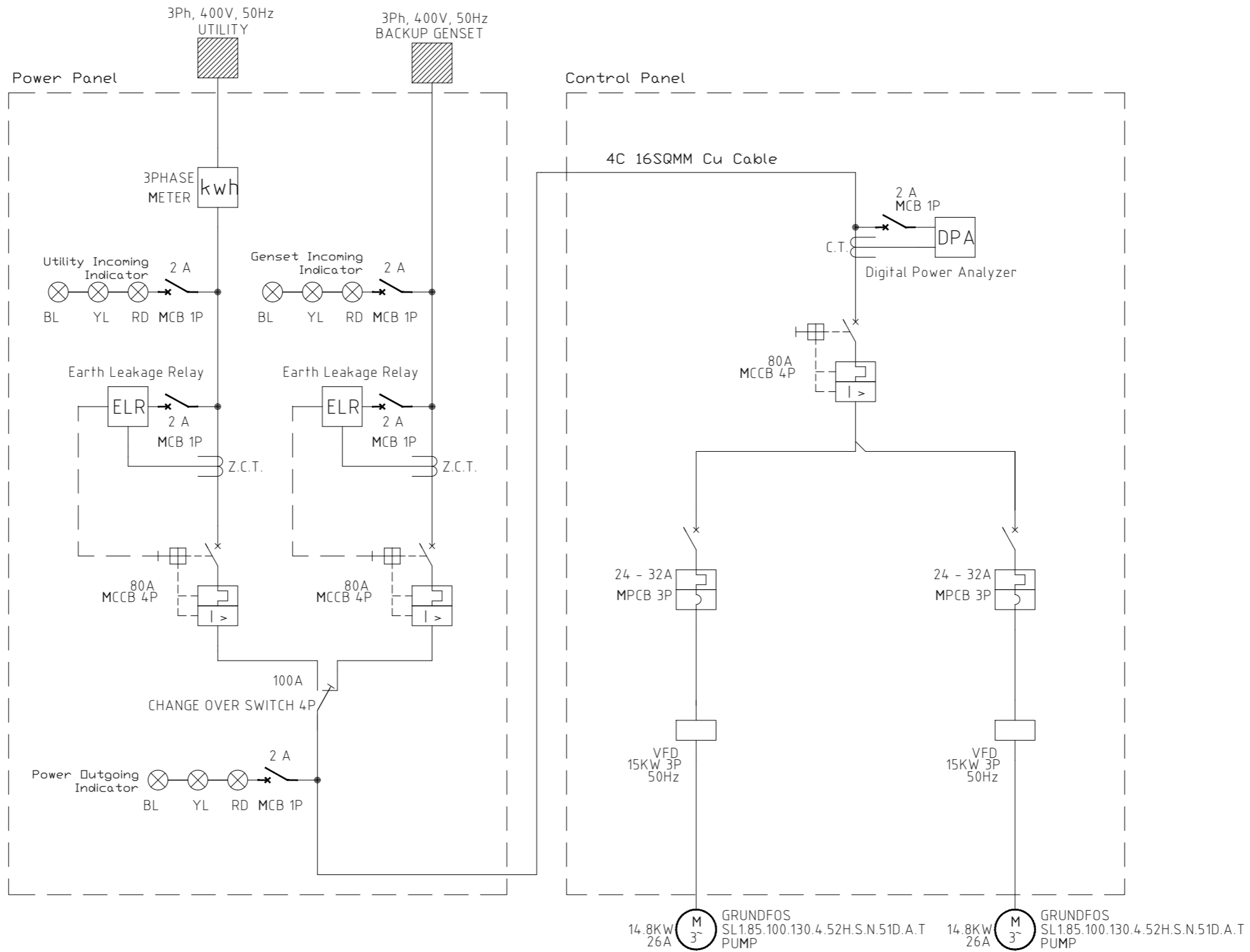
DRAWING CONTENTS
 Storm Water Pumpstation Single Line Diagram
 PS3

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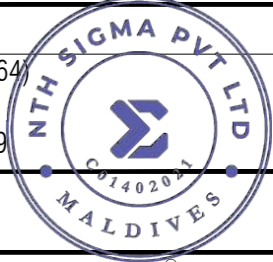
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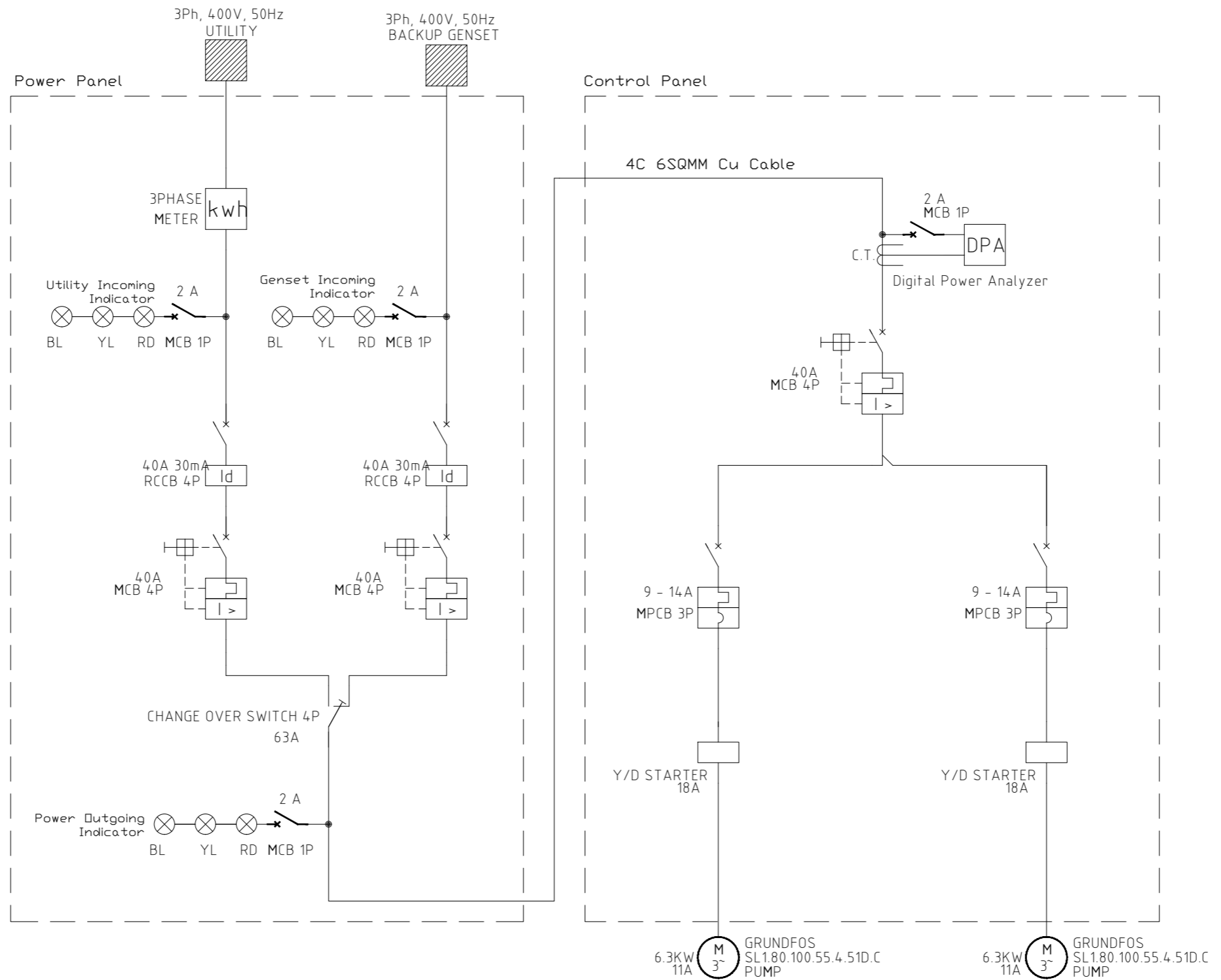
DRAWING CONTENTS
 Storm Water Pumpstation Single Line Diagram
 PS4

DATE: 24th June 2021

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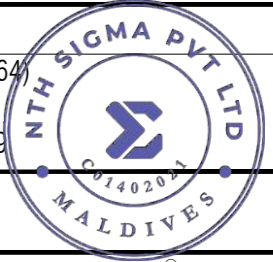
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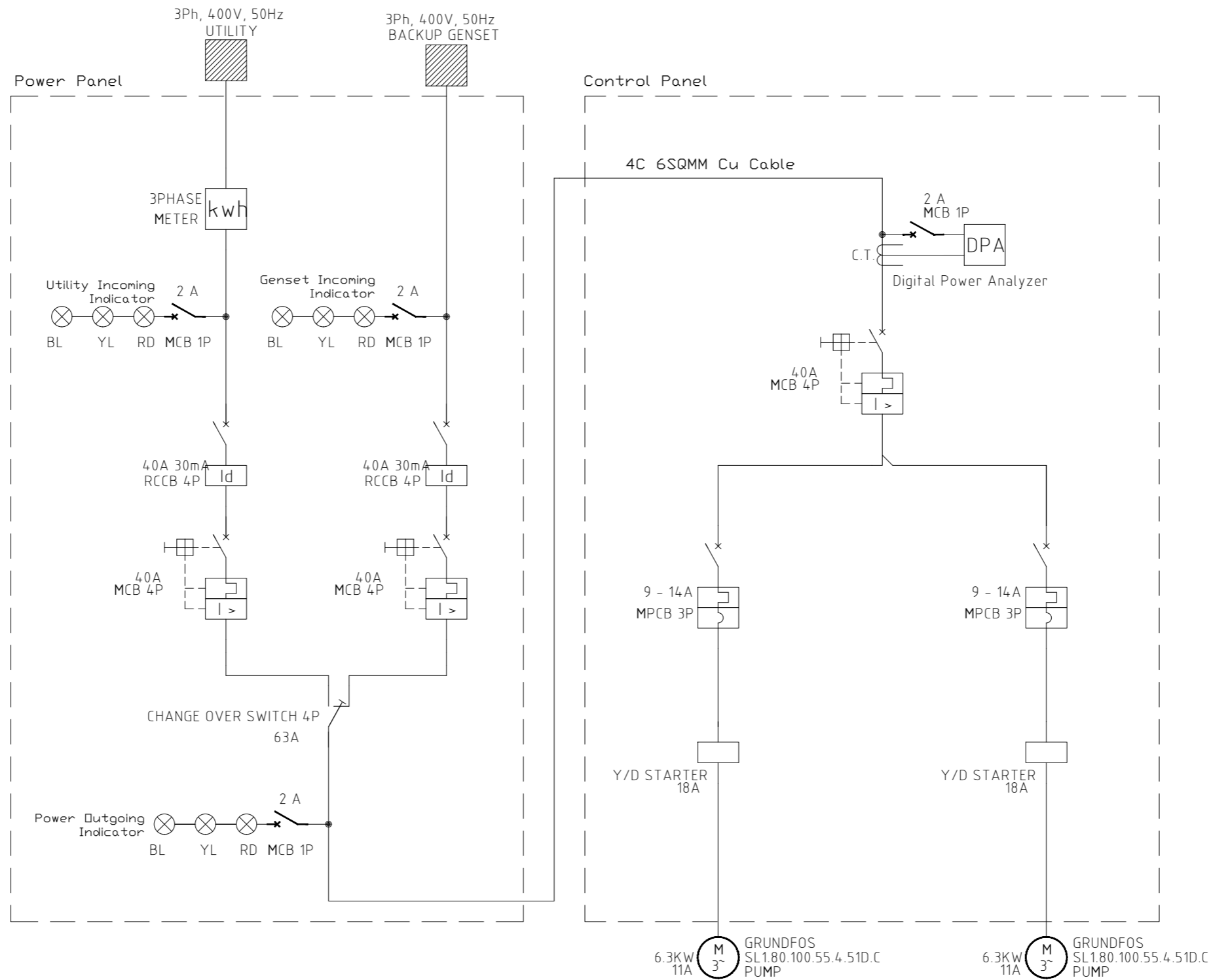
DRAWING CONTENTS
 Storm Water Pumpstation Single Line Diagram
 PS5

DATE: 24th June 2021

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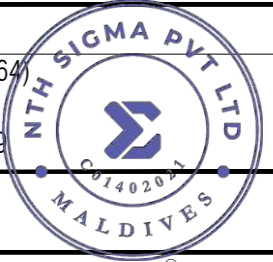
DRAWING NUMBER: D-E1-06-R4

DRAWING CONTENTS
 Storm Water Pumpstation Single Line Diagram
 PS6

DATE: 24th June 2021

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ADH. MAAMIGILI STORM WATER DESIGN

Storm Water Pump Station Load Calculation

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PUMP STATION 1 (DRAWING NUMBER: D-E1-01-R4)

Item Name	Rated Power (W)	Rated Power Factor	Rated Max Current (A)	Starting Current (A)	Starting Method	Load Factor	Load Current (A)	Actual Power (W)
PUMP 1	14800	0.83	26.0	-	VFD	1	26.0	14800
PUMP 2	14800	0.83	26.0	-	VFD	1	26.0	14800
TOTAL							52.0	29600

PUMP STATION 2 (DRAWING NUMBER: D-E1-02-R4)

Item Name	Rated Power (W)	Rated Power Factor	Rated Max Current (A)	Starting Current (A)	Starting Method	Load Factor	Load Current (A)	Actual Power (W)
PUMP 1	8400	0.83	15.0	111.0	Y/D	1	15.0	8400
PUMP 2	8400	0.83	15.0	111.0	Y/D	1	15.0	8400
TOTAL							30.0	16800

PUMP STATION 3 (DRAWING NUMBER: D-E1-03-R4)

Item Name	Rated Power (W)	Rated Power Factor	Rated Max Current (A)	Starting Current (A)	Starting Method	Load Factor	Load Current (A)	Actual Power (W)
PUMP 1	17000	0.84	30.0	-	VFD	1	30.0	17000
PUMP 2	17000	0.84	30.0	-	VFD	1	30.0	17000
TOTAL							60.0	34000

PUMP STATION 4 (DRAWING NUMBER: D-E1-04-R4)

Item Name	Rated Power (W)	Rated Power Factor	Rated Max Current (A)	Starting Current (A)	Starting Method	Load Factor	Load Current (A)	Actual Power (W)
PUMP 1	14800	0.83	26.0	-	VFD	1	26.0	14800
PUMP 2	14800	0.83	26.0	-	VFD	1	26.0	14800
TOTAL							52.0	29600

PUMP STATION 5 (DRAWING NUMBER: D-E1-05-R4)

Item Name	Rated Power (W)	Rated Power Factor	Rated Max Current (A)	Starting Current (A)	Starting Method	Load Factor	Load Current (A)	Actual Power (W)
PUMP 1	6300	0.85	11.0	81.0	Y/D	1	11.0	6300
PUMP 2	6300	0.85	11.0	81.0	Y/D	1	11.0	6300
TOTAL							22.0	12600

PUMP STATION 6 (DRAWING NUMBER: D-E1-06-R4)

Item Name	Rated Power (W)	Rated Power Factor	Rated Max Current (A)	Starting Current (A)	Starting Method	Load Factor	Load Current (A)	Actual Power (W)
PUMP 1	6300	0.85	11.0	81.0	Y/D	1	11.0	6300
PUMP 2	6300	0.85	11.0	81.0	Y/D	1	11.0	6300
TOTAL							22.0	12600

Note: The load calculations are for separate panels which control standalone pumpstations feeding a single pressure main.

STORM WATER SYSTEM LOAD

PUMP STATION	Power (kW)	Current (A)
PS1	29.6	52.0
PS2	16.8	30.0
PS3	34.0	60.0
PS4	29.6	52.0
PS5	12.6	22.0
PS6	12.6	22.0
TOTAL	135.2	238.0

CALCULATED BY: YAAMEEN SHAMEEM
MEA LICENSE NUMBER: MEA/2020/1964

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24th JUNE 2021





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Date: 22/06/2021

Project: Adh. Maamigili Storm Water Design
Reference Number: PS1

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

Qty. | Description

1 SL1.85.100.130.4.52H.S.N.51D.A.T



Note! Product picture may differ from actual product

Product No.: [99776095](#)

Non-self-priming, single-stage, centrifugal pump designed for handling wastewater, process water and unscreened raw sewage.

The pump is designed for intermittent and continuous operations in submerged installation. The revolutionary S-tube® impeller provides free spherical passage of solids up to 85 mm and suitable for wastewater with a dry matter content of up to 3 %.

A SmartTrim impeller clearance adjustment system makes it possible to maintain maximum performance. For installation on auto coupling, the Grundfos SmartSeal gasket system provides a leak-proof connection. The pump comes with a high efficient Grundfos motor built on IE3 motor components.

Controls:

Moisture sensor: with moisture sensors

Liquid:

Pumped liquid: Water
Liquid temperature range: 0 .. 40 °C
Selected liquid temperature: 20 °C
Density: 998.2 kg/m³

Technical:

Actual calculated flow: 51 l/s
Resulting head of the pump: 16.5 m
Type of impeller: S-TUBE
Maximum particle size: 85 mm
Primary shaft seal: SIC-SIC
Secondary shaft seal: SIC-CARBON
Curve tolerance: ISO9906:2012 3B

Materials:

Pump housing: Cast iron
EN 1561 EN-GJL-250
Impeller: Cast iron
EN 1561 EN-GJL-250



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Qty.	Description
------	-------------

	Motor: Cast iron EN 1561 EN-GJL-250
--	--

	Installation:
	Maximum ambient temperature: 40 °C
	Flange standard: DIN
	Pump inlet: DN 150
	Pump outlet: DN 100
	Pressure rating: PN 10
	Maximum installation depth: 20 m
	Auto-coupling: 96090994
	Base stand: 96102314
	Frame range: 52

	Electrical data:
	Power input - P1: 14.8 kW
	Rated power - P2: 13 kW
	Mains frequency: 50 Hz
	Rated voltage: 3 x 380-415/660-690 V
	Voltage tolerance: +10/-10 %
	Max starts per. hour: 20
	Rated current: 28-25/16-15 A
	Maximum current consumption: 26 A
	Starting current: 283/156 A
	Rated current at no load: 12.6 A
	Rated speed: 1483 rpm
	Motor efficiency at full load: 88 %
	Motor efficiency at 3/4 load: 88 %
	Motor efficiency at 1/2 load: 87 %
	Number of poles: 4
	Start. method: star/delta
	Enclosure class (IEC 34-5): IP68
	Insulation class (IEC 85): H
	Explosion proof: no
	Length of cable: 15 m
	Cable type: S1BN8-F
	Winding resistance: 0.499 Ohm
	Cos phi 1/1: 0.83
	Cos phi 1/2: 0.66
	Cos phi 3/4: 0.77

	Others:
	Net weight: 319 kg

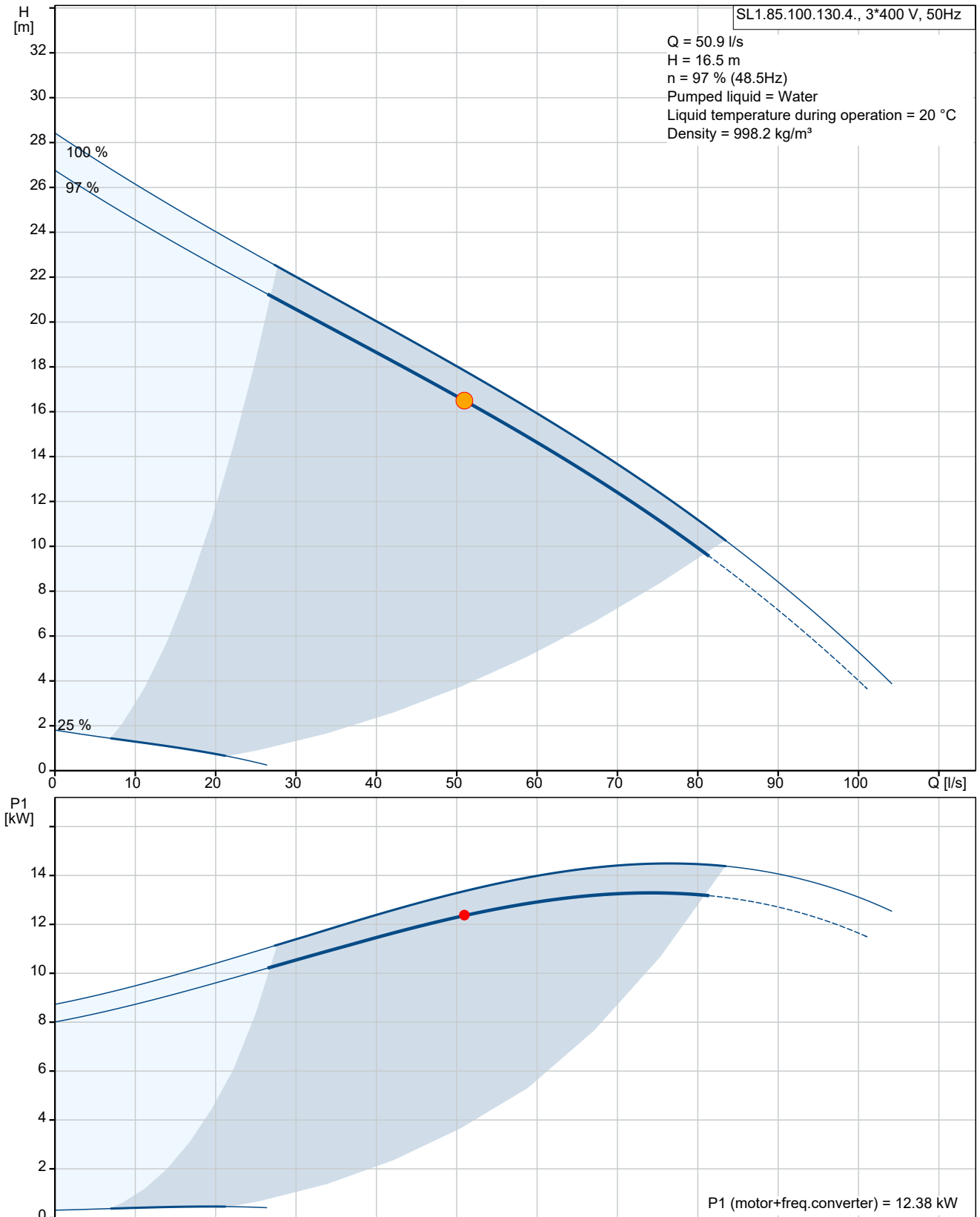


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Client Number: -
Contact: +9607763599

99776095 SL1.85.100.130.4.52H.S.N.51D.A.T 50 Hz



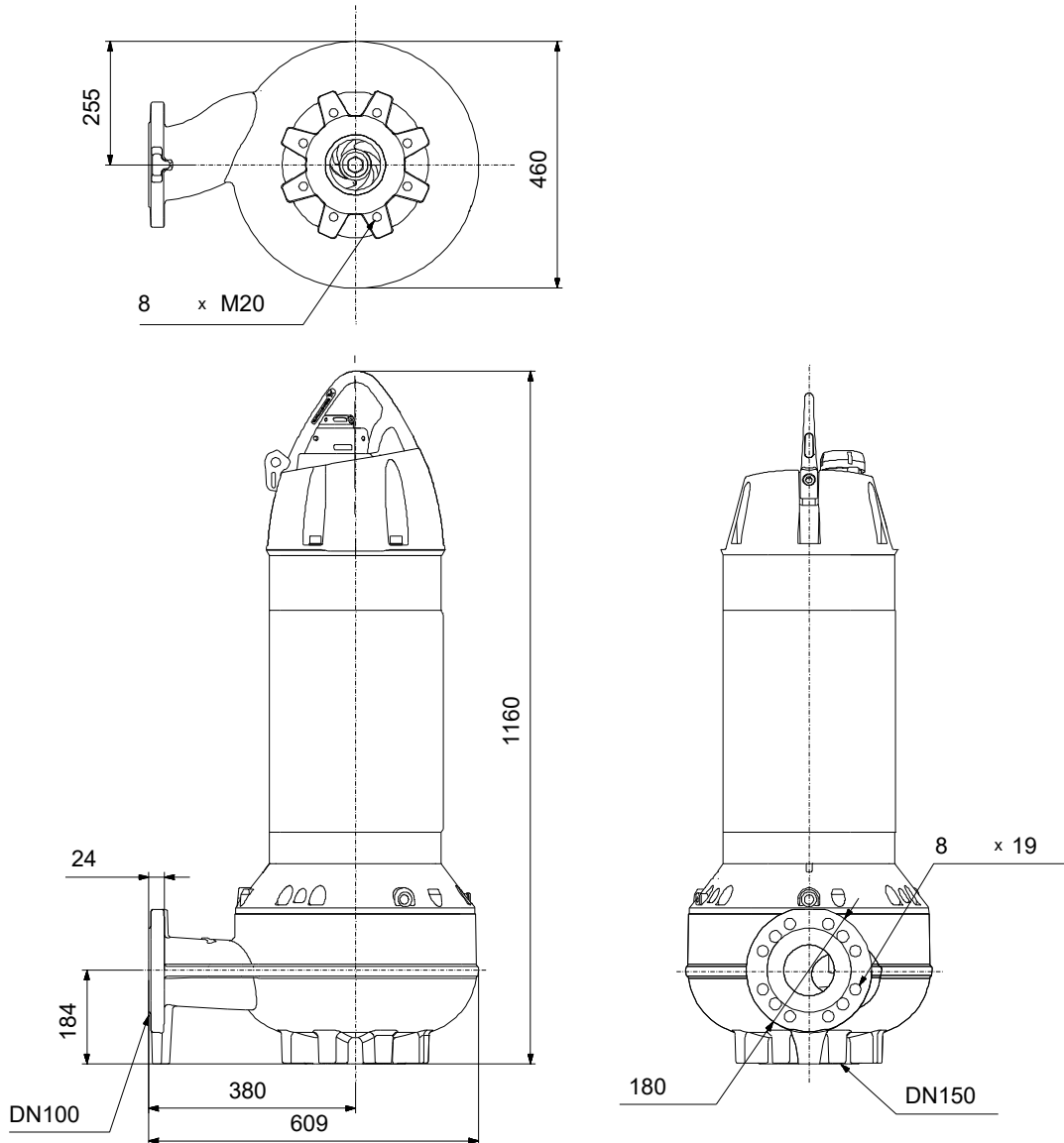


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99776095 SL1.85.100.130.4.52H.S.N.51D.A.T 50 Hz



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

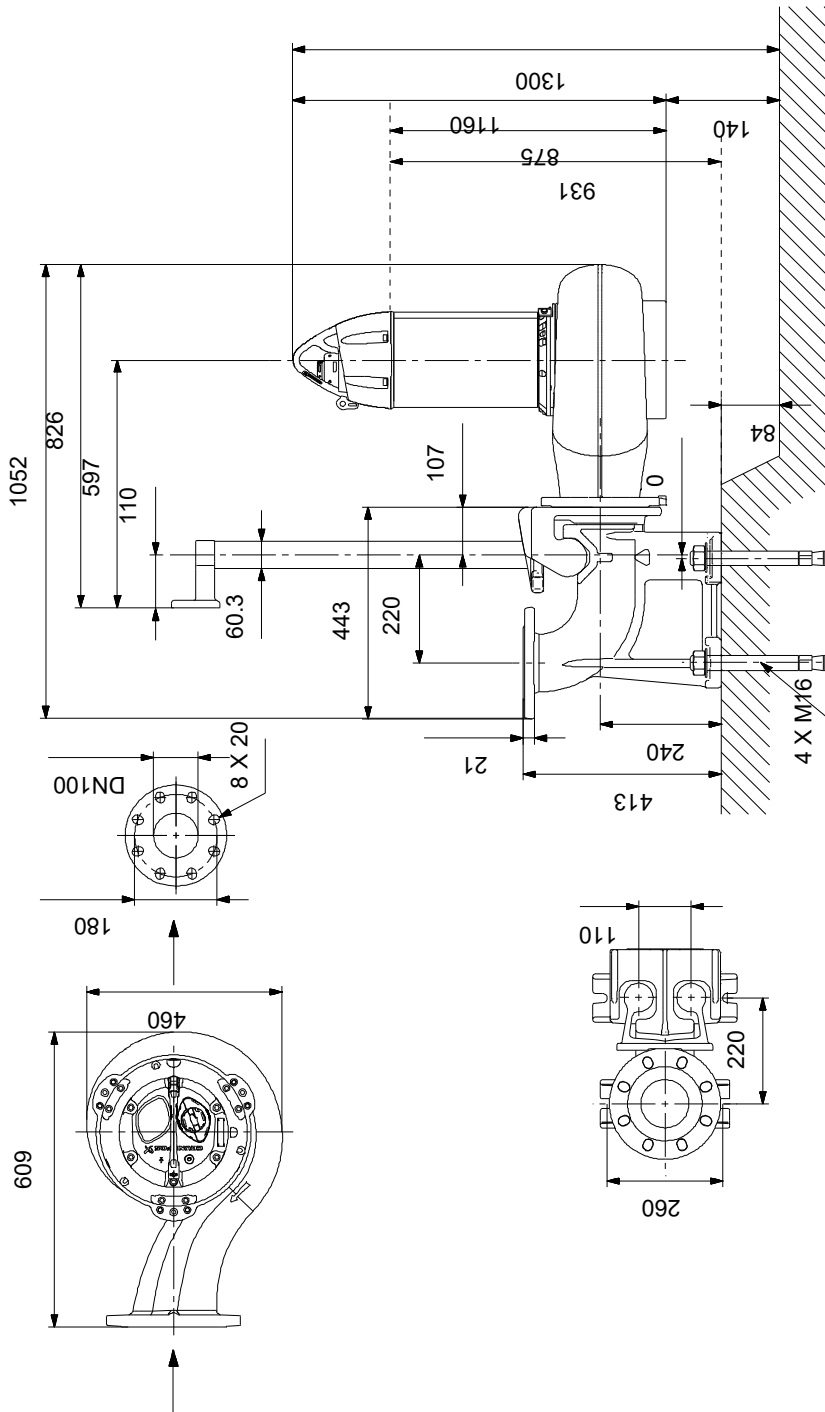


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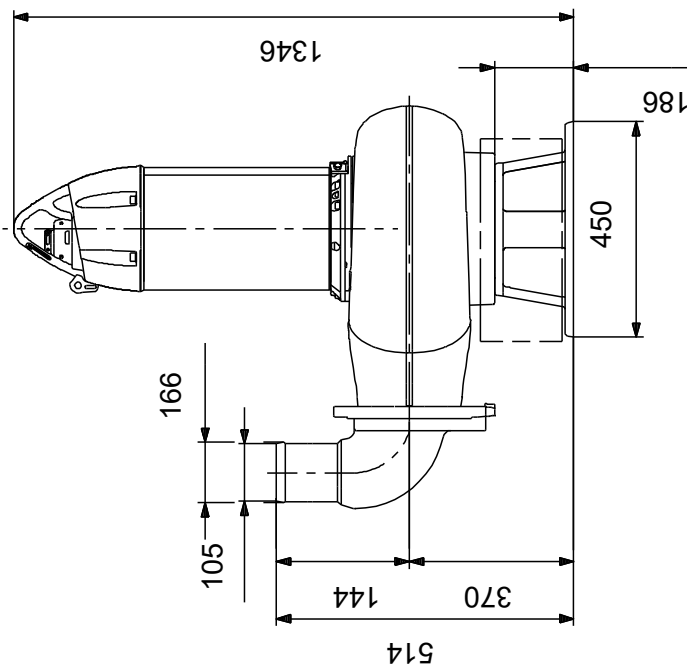
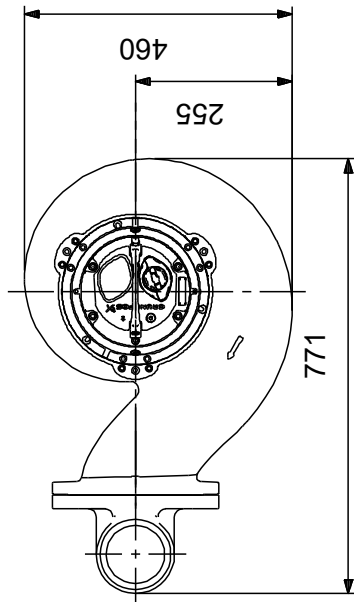


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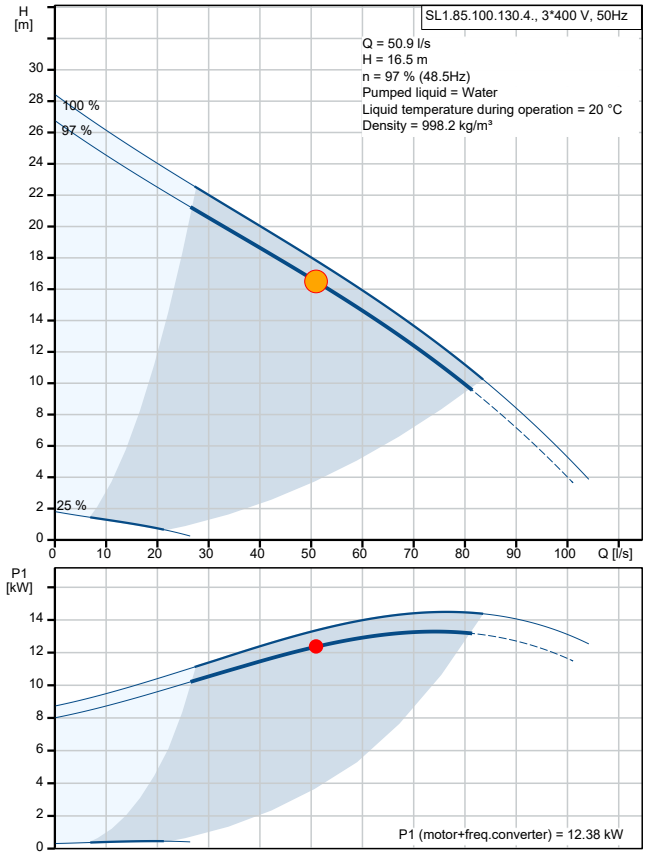
Input

Load Profile

	1	
Flow	100	%
Time	1000	h/a

Sizing result

Flow	51	l/s
Head	16.5	m
Power P1	12.38	kW
Power P2 required in the duty point	10.57	kW
Eta pump	78.0	%
Eta pump+motor	68.7	% =Eta pump * Eta motor
Energy consumption	12378	kWh/Year
Life cycle cost	45155	EUR /10Years





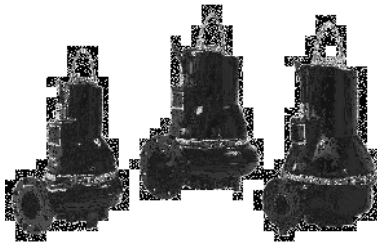
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Date: 22/06/2021

Project: Adh. Maamigili Storm Water Design
Reference Number: PS2

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

Qty. | Description

1 | **SL1.80.100.75.4.51D.C**



Note! Product picture may differ from actual product

Product No.: [98626066](#)

Non-self-priming, single-stage, centrifugal pump designed for handling wastewater, process water and unscreened raw sewage.

The pump is designed for intermittent and continuous operations in submerged installation. The revolutionary S-tube® impeller provides free spherical passage of solids up to 80 mm and is suitable for wastewater with a dry matter content of up to 3 %. A unique stainless-steel clamp assembling system enables quick and easy disassembly of the pump from the motor unit for service and inspection. No special tools are required. Pipework connection is via a DIN flange.

Controls:

Moisture sensor: with moisture sensors
Water-in-oil sensor: without water-in-oil sensor

Liquid:

Pumped liquid: Water
Maximum liquid temperature: 40 °C
Selected liquid temperature: 20 °C
Density: 998.2 kg/m³

Technical:

Actual calculated flow: 24 l/s
Resulting head of the pump: 18.08 m
Type of impeller: S-TUBE
Maximum particle size: 80 mm
Primary shaft seal: SIC/SIC
Secondary shaft seal: CARBON/CERAMICS
Approvals on nameplate: CE EN12050-1
Curve tolerance: ISO9906:2012 3B2

Materials:

Pump housing: Cast iron
EN 5.1301 EN-GJL-250
Impeller: Cast iron
EN 5.1301 EN-GJL-250
Motor: EN-GJL-250

Installation:

Maximum ambient temperature: 40 °C
Flange standard: DIN
Pump inlet: 100



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Reference Number: PS2

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

Qty.	Description
	Pump outlet: 100
	Pressure rating: PN 10
	Maximum installation depth: 20 m
	Auto-coupling: 96090994
	Frame range: D
	Electrical data:
	Power input - P1: 8.4 kW
	Rated power - P2: 7.5 kW
	Mains frequency: 50 Hz
	Rated voltage: 3 x 380-415 V
	Voltage tolerance: +10/-10 %
	Max starts per. hour: 20
	Rated current: 15.1-14.4 A
	Starting current: 111 A
	Cos phi - power factor: 0.83
	Cos phi - p.f. at 3/4 load: 0.78
	Cos phi - p.f. at 1/2 load: 0.68
	Rated speed: 1462 rpm
	Motor efficiency at full load: 90.5 %
	Motor efficiency at 3/4 load: 91.1 %
	Motor efficiency at 1/2 load: 90.7 %
	Number of poles: 4
	Start. method: star/delta
	Enclosure class (IEC 34-5): IP68
	Insulation class (IEC 85): H
	Explosion proof: no
	Length of cable: 10 m
	Cable type: LYNIFLEX
	Others:
	Net weight: 197 kg
	Finnish LVI No.: 4836123

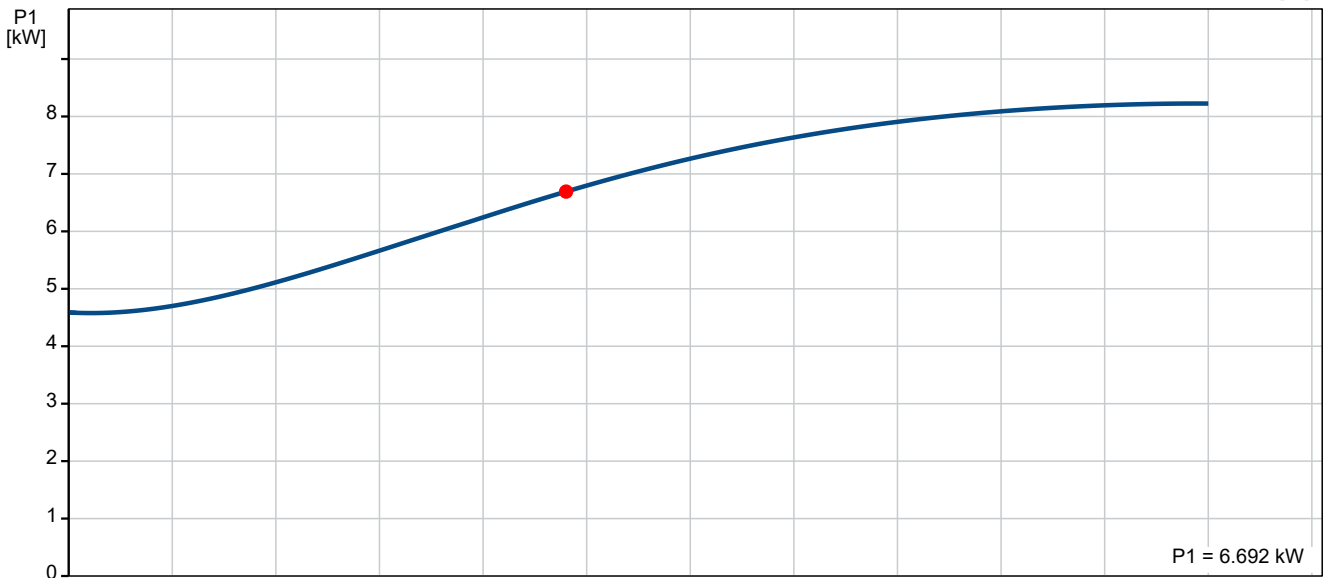
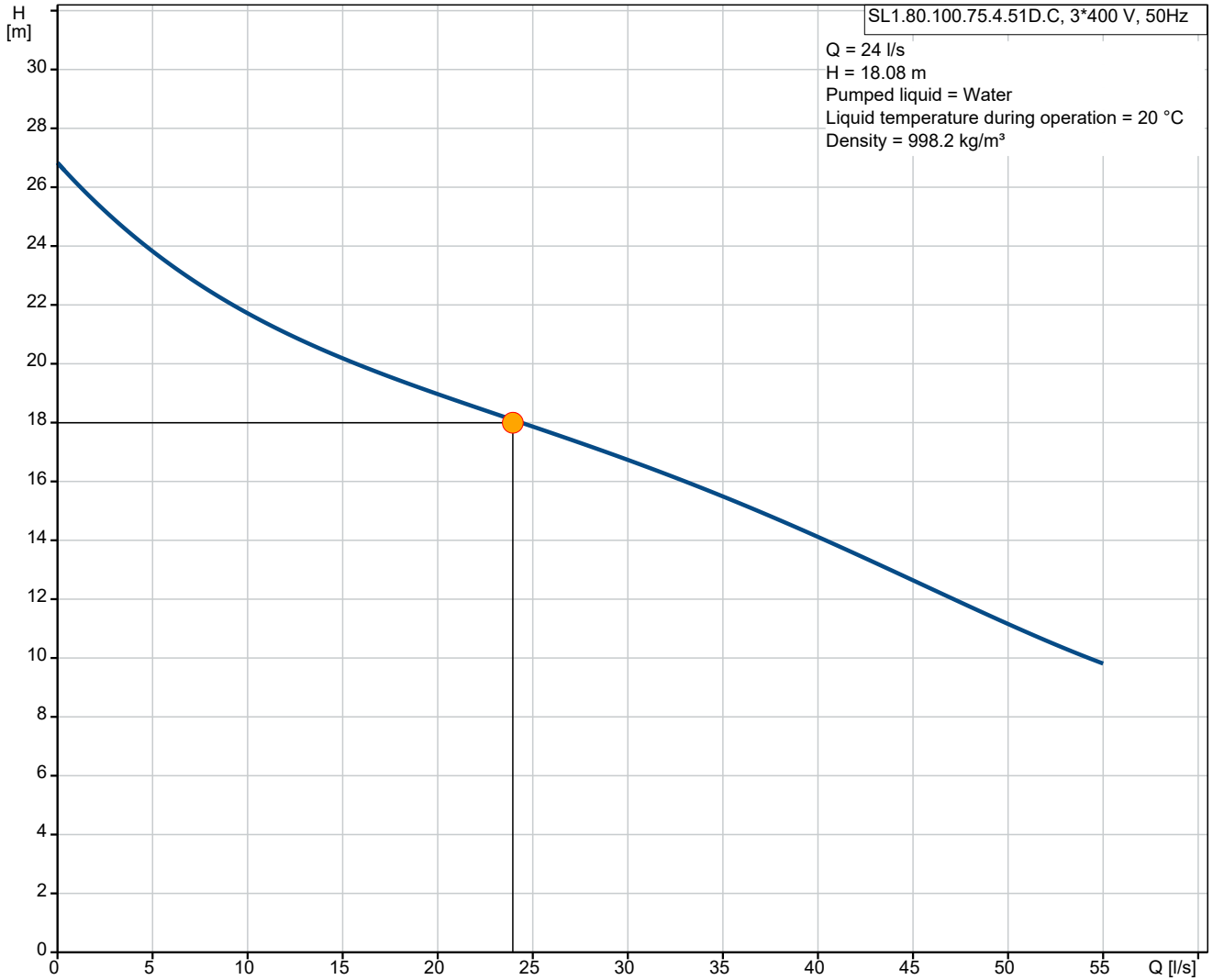


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98626066 SL1.80.100.75.4.51D.C 50 Hz



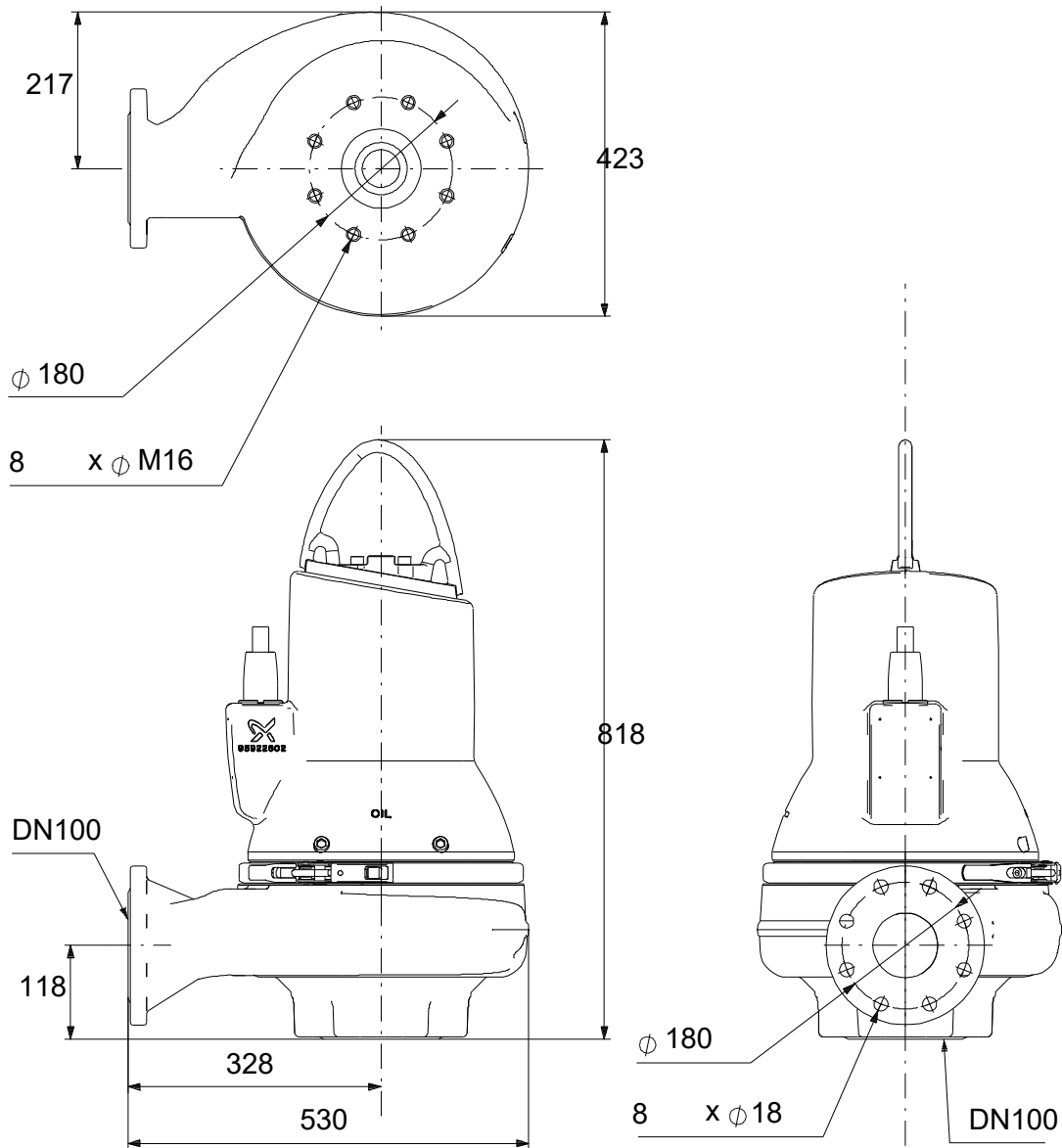


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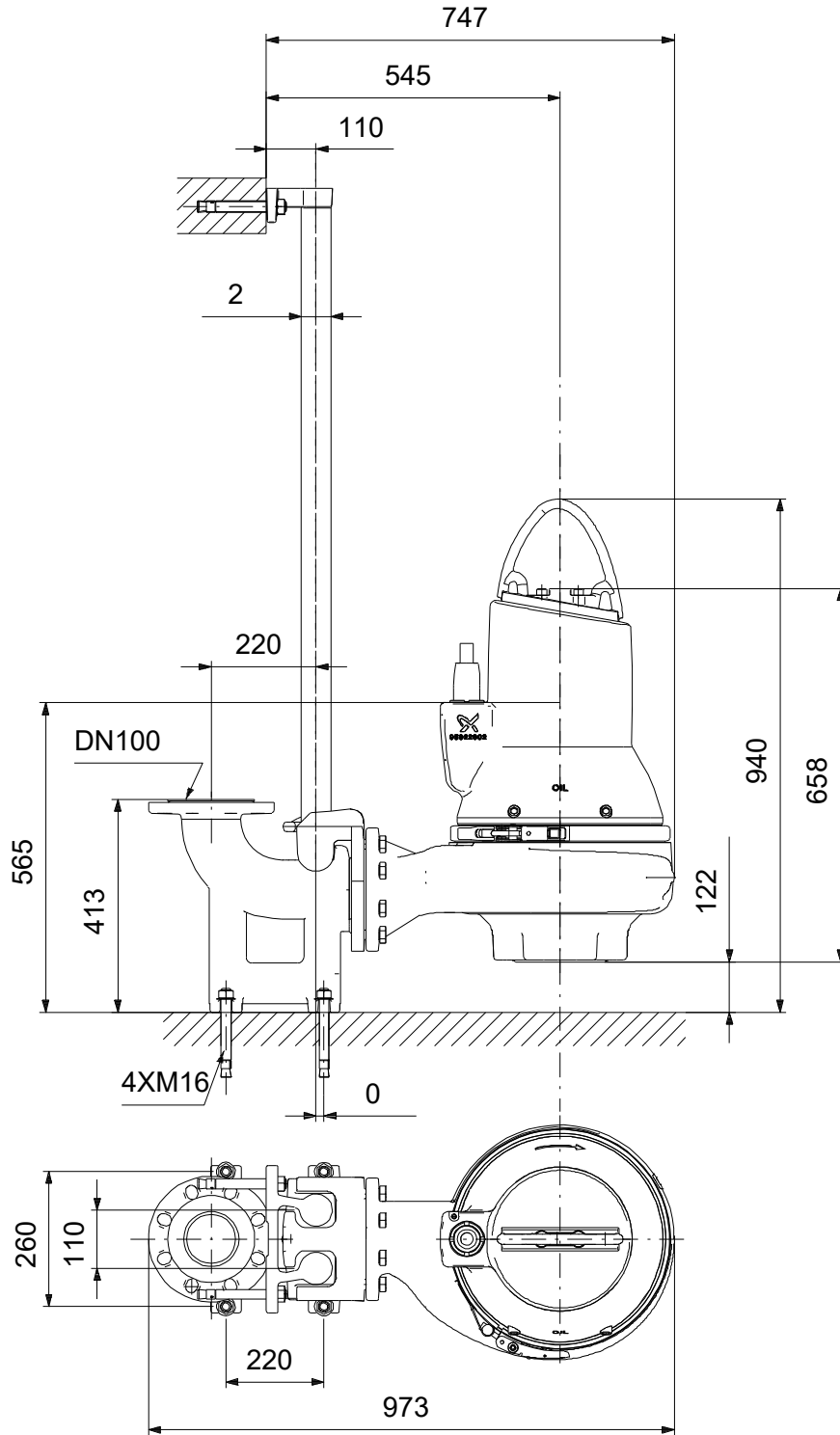


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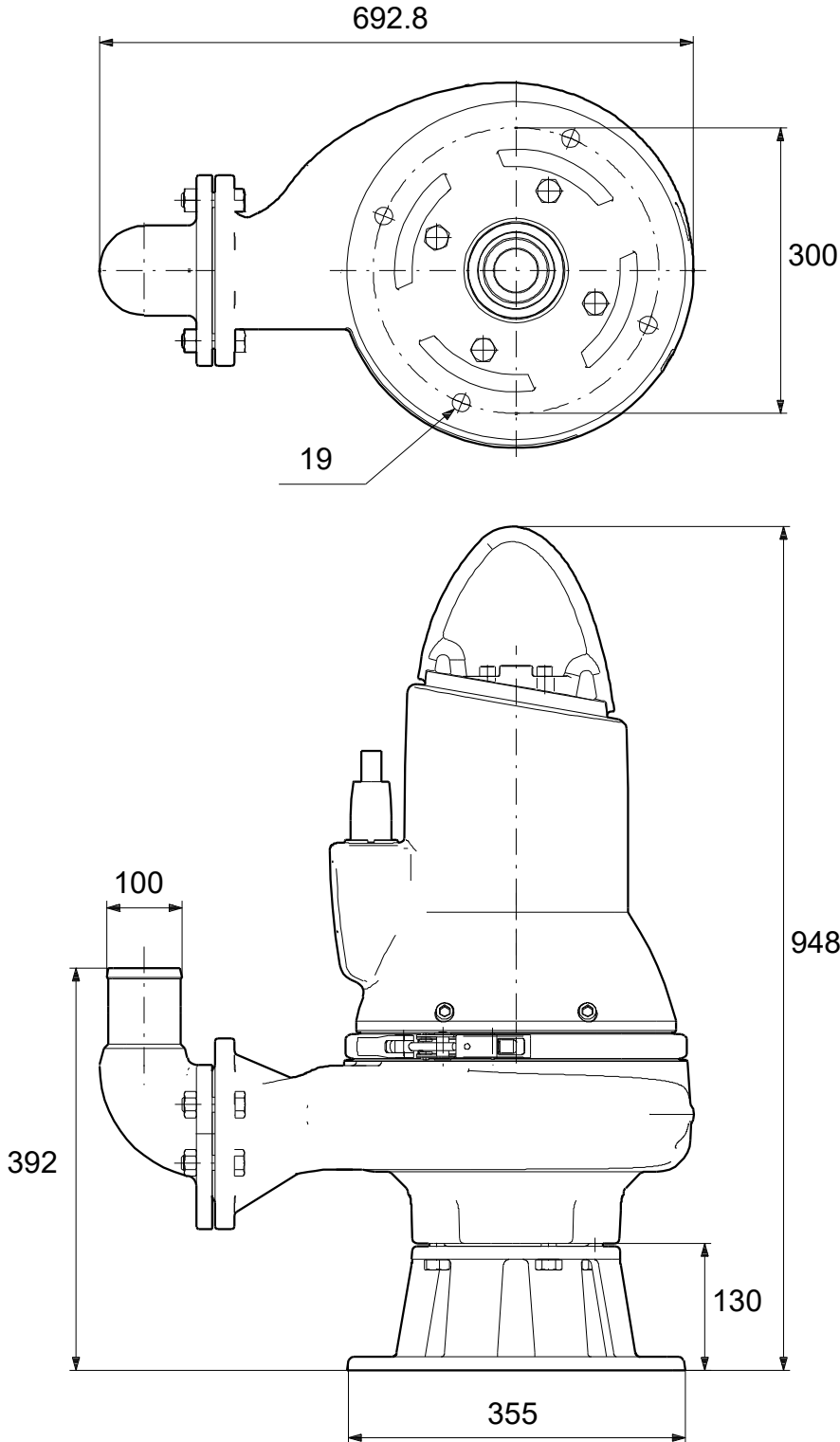


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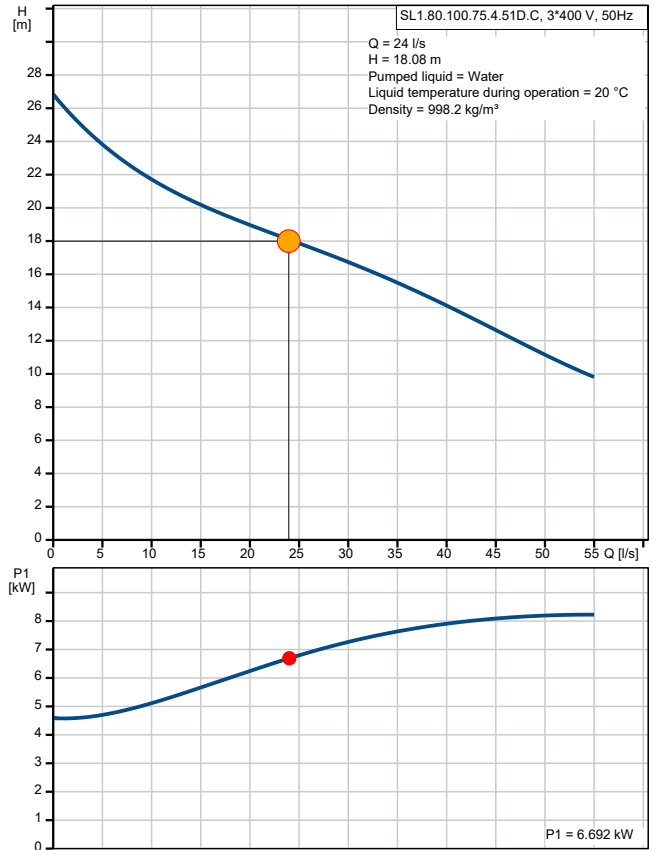
Input

Load Profile

	1	
Flow	100	%
Time	1000	h/a

Sizing result

Flow	24	l/s
Head	18.08	m
Power P1	6.692	kW
Power P2 required in the duty point	6.087	kW
Eta pump	69.9	%
Eta pump+motor	63.6	% =Eta pump * Eta motor
Energy consumption	6676	kWh/Year
Life cycle cost	22604	EUR /10Years





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Project: Adh. Maamigili Storm Water Design
Reference Number: PS3

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

Qty. Description

1 SL1.85.100.150.4.52H.S.N.51D.A.T



Note! Product picture may differ from actual product

Product No.: [99776132](#)

Non-self-priming, single-stage, centrifugal pump designed for handling wastewater, process water and unscreened raw sewage.

The pump is designed for intermittent and continuous operations in submerged installation. The revolutionary S-tube® impeller provides free spherical passage of solids up to 85 mm and suitable for wastewater with a dry matter content of up to 3 %.

A SmartTrim impeller clearance adjustment system makes it possible to maintain maximum performance. For installation on auto coupling, the Grundfos SmartSeal gasket system provides a leak-proof connection. The pump comes with a high efficient Grundfos motor built on IE3 motor components.

Controls:

Moisture sensor: with moisture sensors

Liquid:

Pumped liquid: Water
Liquid temperature range: 0 .. 40 °C
Selected liquid temperature: 20 °C
Density: 998.2 kg/m³

Technical:

Actual calculated flow: 51.5 l/s
Resulting head of the pump: 19.63 m
Type of impeller: S-TUBE
Maximum particle size: 85 mm
Primary shaft seal: SIC-SIC
Secondary shaft seal: SIC-CARBON
Curve tolerance: ISO9906:2012 3B

Materials:

Pump housing: Cast iron
EN 1561 EN-GJL-250
Impeller: Cast iron
EN 1561 EN-GJL-250



Company name: NTH SIGMA PVT LTD
Created by: Yaameen Shameem (MEA/2020/1964)
Phone: +9607725919
Email: info@nthsigma.com
Date: 22/06/2021

Project: Adh. Maamigili Storm Water Design
Reference Number: PS3

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

Qty.	Description
------	-------------

	Motor: Cast iron EN 1561 EN-GJL-250
--	--

	Installation:
	Maximum ambient temperature: 40 °C
	Flange standard: DIN
	Pump inlet: DN 150
	Pump outlet: DN 100
	Pressure rating: PN 10
	Maximum installation depth: 20 m
	Auto-coupling: 96090994
	Base stand: 96102314
	Frame range: 52

	Electrical data:
	Power input - P1: 17 kW
	Rated power - P2: 15 kW
	Mains frequency: 50 Hz
	Rated voltage: 3 x 380-415/660-690 V
	Voltage tolerance: +10/-10 %
	Max starts per. hour: 20
	Rated current: 31-29/18-17 A
	Maximum current consumption: 30 A
	Starting current: 283/156 A
	Rated current at no load: 12.6 A
	Rated speed: 1480 rpm
	Motor efficiency at full load: 88 %
	Motor efficiency at 3/4 load: 88 %
	Motor efficiency at 1/2 load: 87 %
	Number of poles: 4
	Start. method: star/delta
	Enclosure class (IEC 34-5): IP68
	Insulation class (IEC 85): H
	Explosion proof: no
	Length of cable: 15 m
	Cable type: S1BN8-F
	Winding resistance: 0.499 Ohm
	Cos phi 1/1: 0.84
	Cos phi 1/2: 0.70
	Cos phi 3/4: 0.80

	Others:
	Net weight: 320 kg

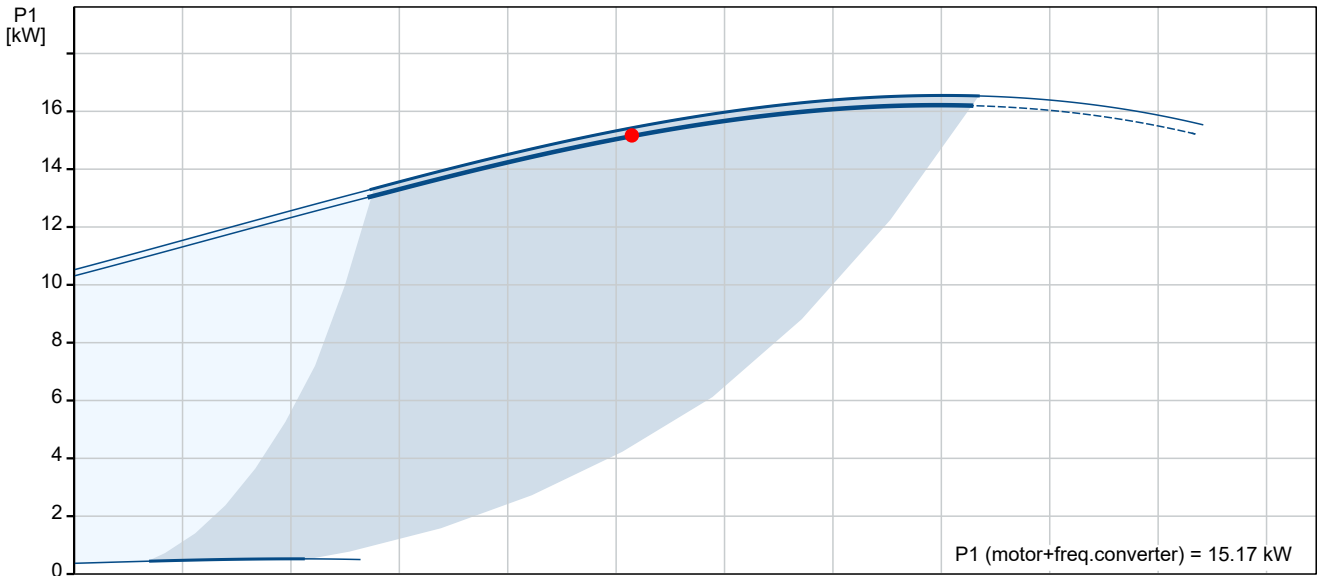
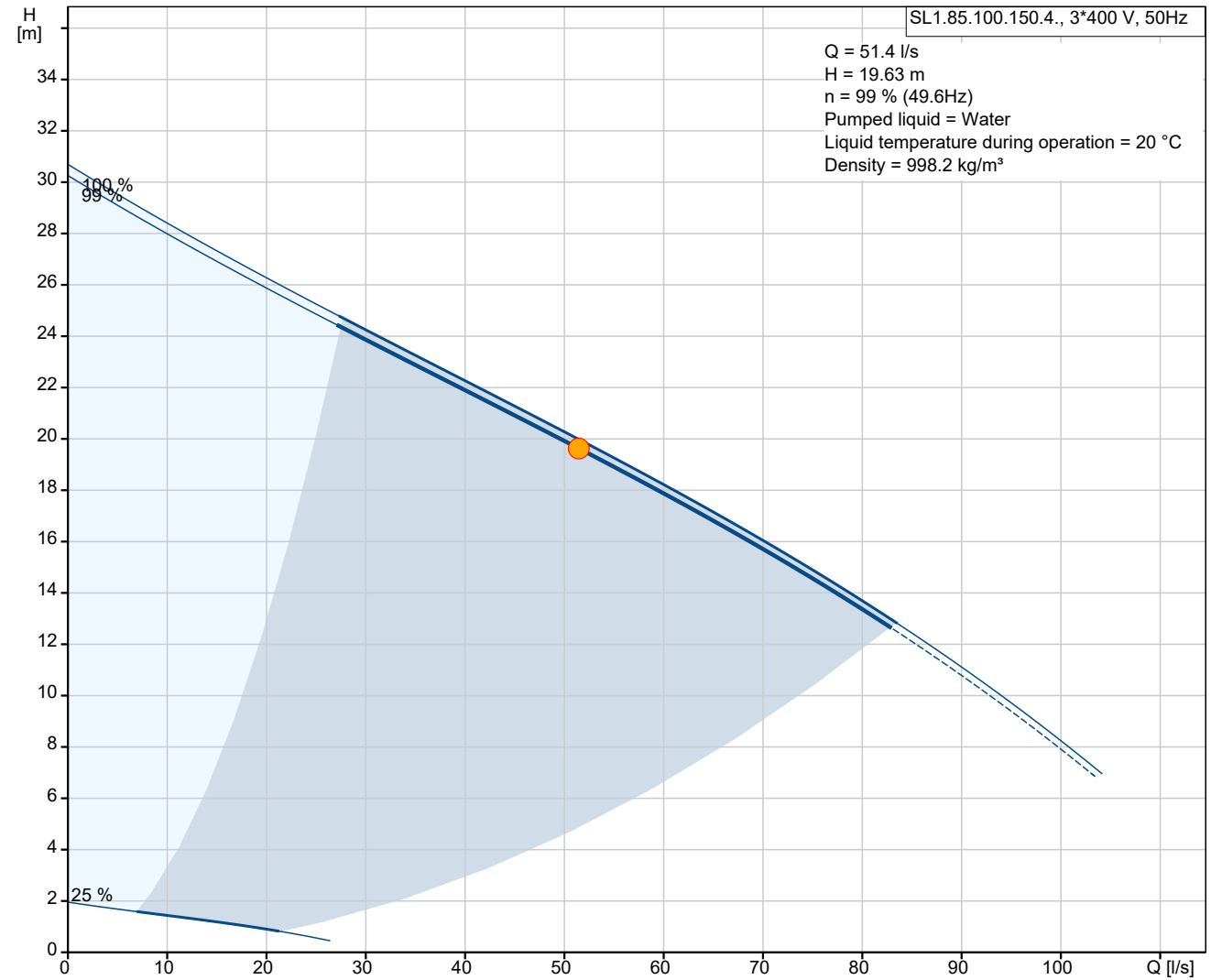


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Project: Adh. Maamigili Storm Water Design
Reference Number: PS3

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

99776132 SL1.85.100.150.4.52H.S.N.51D.A.T 50 Hz



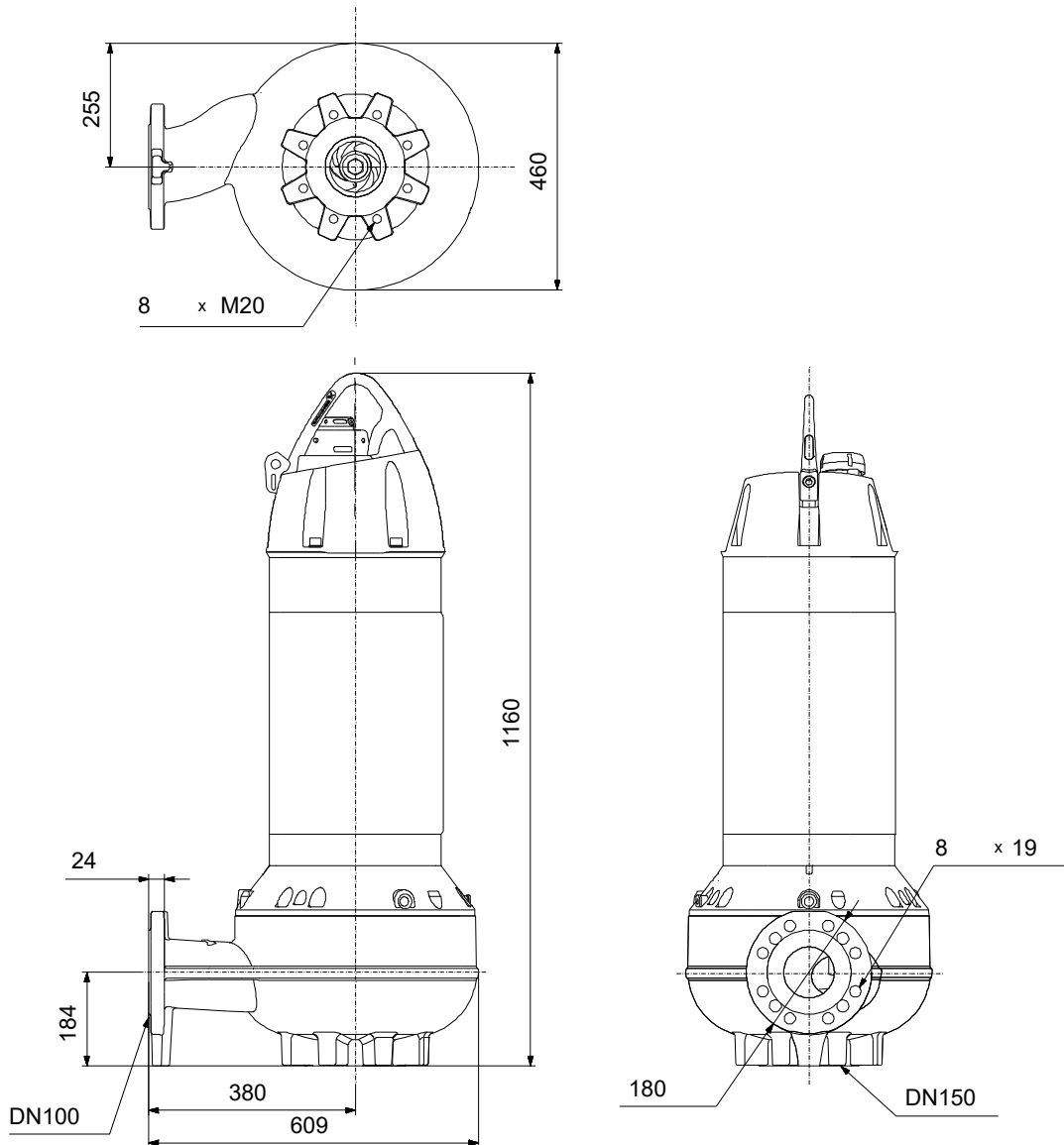


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Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

99776132 SL1.85.100.150.4.52H.S.N.51D.A.T 50 Hz



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

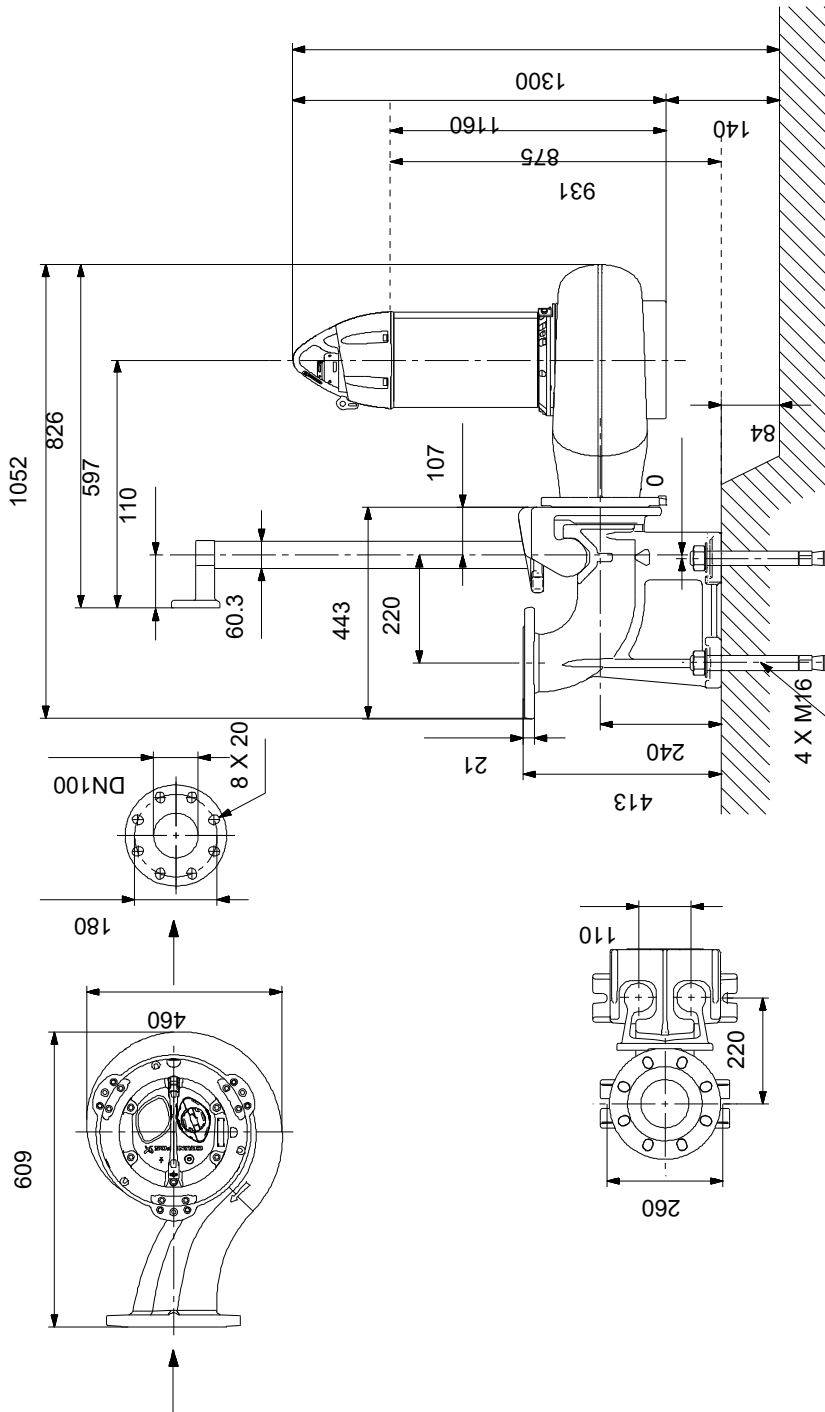


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Reference Number: PS3

Client: RAKENTA LLP
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99776132 SL1.85.100.150.4.52H.S.N.51D.A.T 50 Hz



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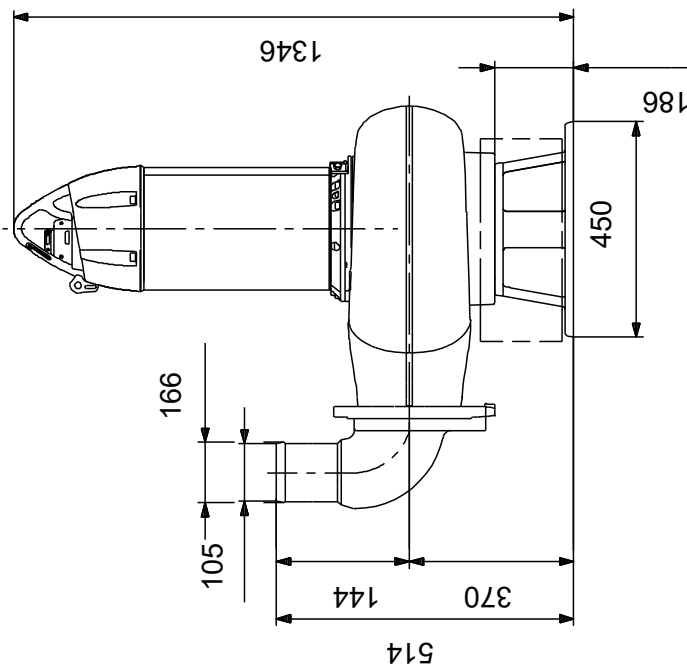
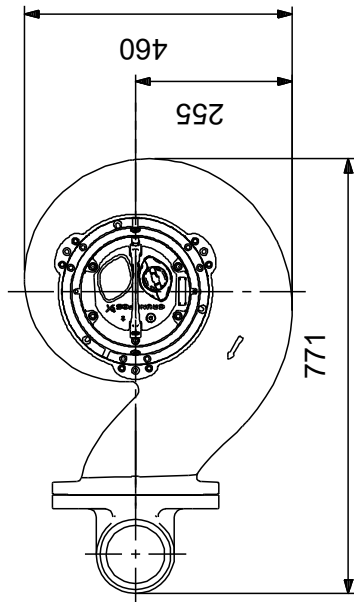


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99776132 SL1.85.100.150.4.52H.S.N.51D.A.T 50 Hz



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Client: RAKENTA LLP
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99776132 SL1.85.100.150.4.52H.S.N.51D.A.T 50 Hz

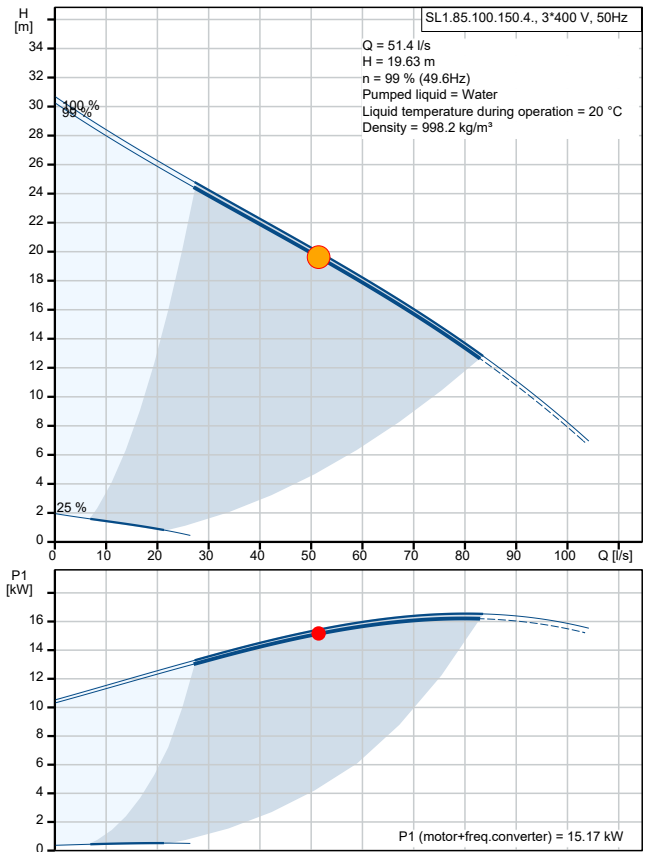
Input

Load Profile

	1	
Flow	100	%
Time	1000	h/a

Sizing result

Flow	51.5	l/s
Head	19.63	m
Power P1	15.17	kW
Power P2 required in the duty point	12.97	kW
Eta pump	76.4	%
Eta pump+motor	67.2	% =Eta pump * Eta motor
Energy consumption	15165	kWh/Year
Life cycle cost	51538	EUR /10Years





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Phone: +9607725919
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Date: 22/06/2021

Project: Adh. Maamigili Storm Water Design
Reference Number: PS4

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

Qty.	Description
------	-------------

1	SL1.85.100.130.4.52H.S.N.51D.A.T
---	----------------------------------



Note! Product picture may differ from actual product

Product No.: [99776095](#)

Non-self-priming, single-stage, centrifugal pump designed for handling wastewater, process water and unscreened raw sewage.

The pump is designed for intermittent and continuous operations in submerged installation. The revolutionary S-tube® impeller provides free spherical passage of solids up to 85 mm and suitable for wastewater with a dry matter content of up to 3 %.

A SmartTrim impeller clearance adjustment system makes it possible to maintain maximum performance. For installation on auto coupling, the Grundfos SmartSeal gasket system provides a leak-proof connection. The pump comes with a high efficient Grundfos motor built on IE3 motor components.

Controls:

Moisture sensor: with moisture sensors

Liquid:

Pumped liquid: Water
Liquid temperature range: 0 .. 40 °C
Selected liquid temperature: 20 °C
Density: 998.2 kg/m³

Technical:

Actual calculated flow: 45.1 l/s
Resulting head of the pump: 17.6 m
Type of impeller: S-TUBE
Maximum particle size: 85 mm
Primary shaft seal: SIC-SIC
Secondary shaft seal: SIC-CARBON
Curve tolerance: ISO9906:2012 3B

Materials:

Pump housing: Cast iron
EN 1561 EN-GJL-250
Impeller: Cast iron
EN 1561 EN-GJL-250



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Project: Adh. Maamigili Storm Water Design
Reference Number: PS4

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

Qty.	Description
------	-------------

	Motor: Cast iron EN 1561 EN-GJL-250
--	--

	Installation:
	Maximum ambient temperature: 40 °C
	Flange standard: DIN
	Pump inlet: DN 150
	Pump outlet: DN 100
	Pressure rating: PN 10
	Maximum installation depth: 20 m
	Auto-coupling: 96090994
	Base stand: 96102314
	Frame range: 52

	Electrical data:
	Power input - P1: 14.8 kW
	Rated power - P2: 13 kW
	Mains frequency: 50 Hz
	Rated voltage: 3 x 380-415/660-690 V
	Voltage tolerance: +10/-10 %
	Max starts per. hour: 20
	Rated current: 28-25/16-15 A
	Maximum current consumption: 26 A
	Starting current: 283/156 A
	Rated current at no load: 12.6 A
	Rated speed: 1483 rpm
	Motor efficiency at full load: 88 %
	Motor efficiency at 3/4 load: 88 %
	Motor efficiency at 1/2 load: 87 %
	Number of poles: 4
	Start. method: star/delta
	Enclosure class (IEC 34-5): IP68
	Insulation class (IEC 85): H
	Explosion proof: no
	Length of cable: 15 m
	Cable type: S1BN8-F
	Winding resistance: 0.499 Ohm
	Cos phi 1/1: 0.83
	Cos phi 1/2: 0.66
	Cos phi 3/4: 0.77

	Others:
	Net weight: 319 kg

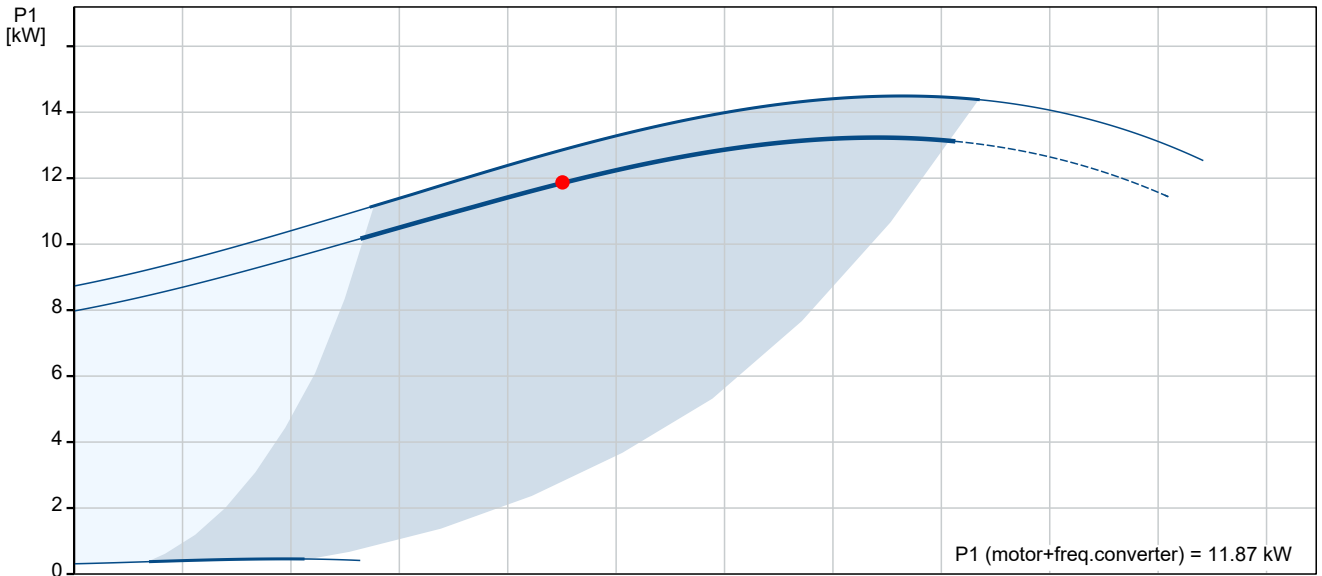
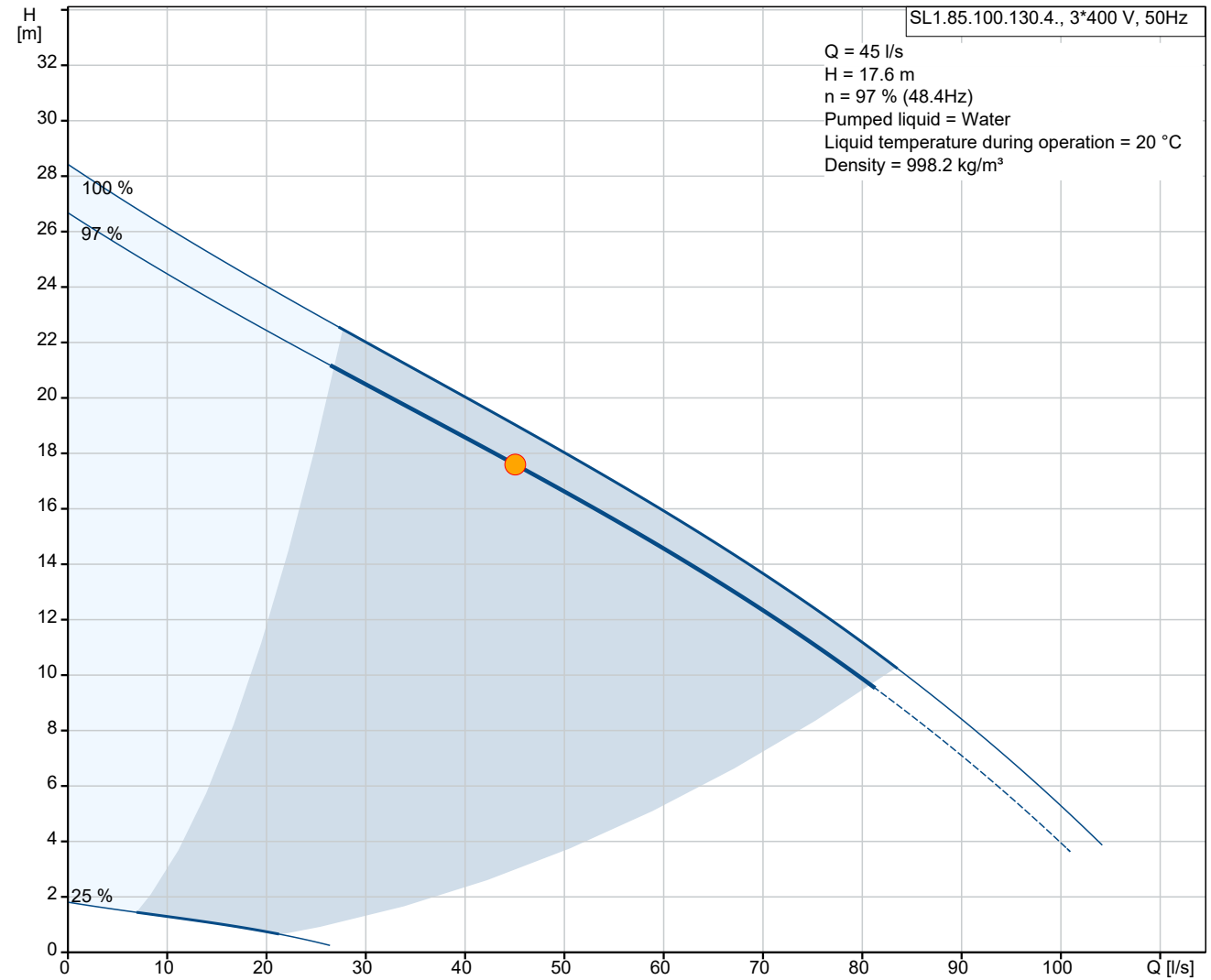


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Project: Adh. Maamigili Storm Water Design
Reference Number: PS4

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

99776095 SL1.85.100.130.4.52H.S.N.51D.A.T 50 Hz



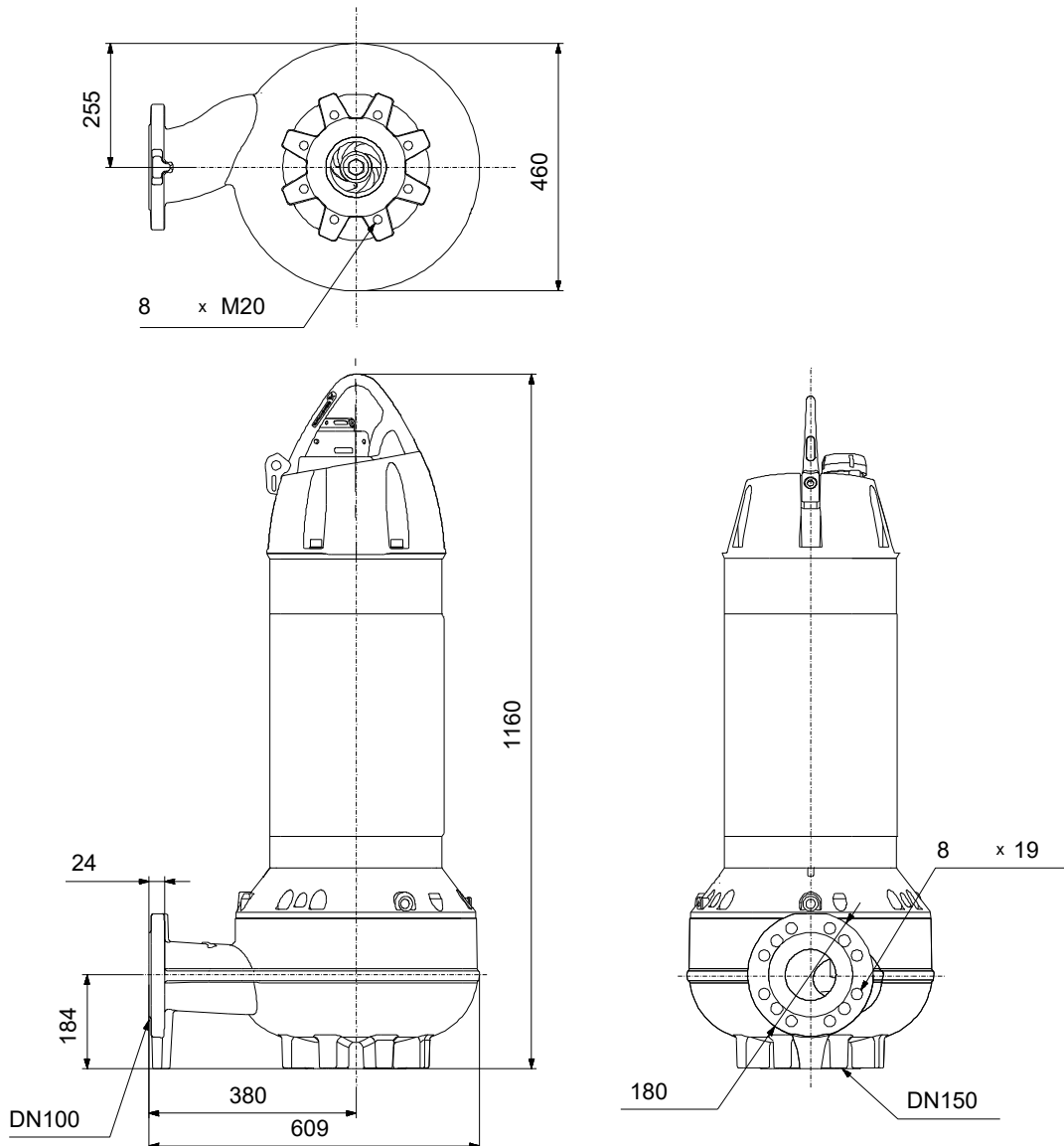


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99776095 SL1.85.100.130.4.52H.S.N.51D.A.T 50 Hz



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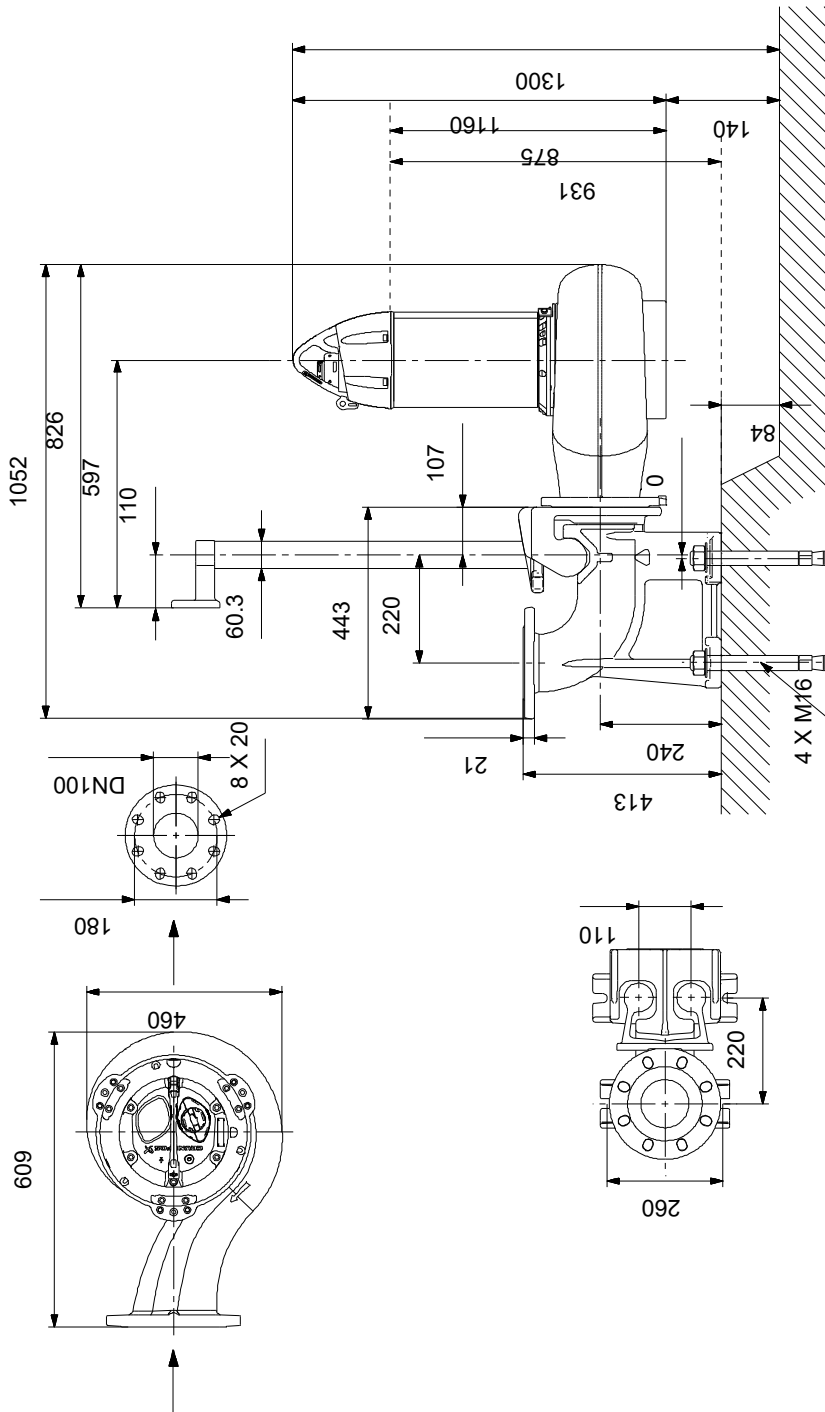


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99776095 SL1.85.100.130.4.52H.S.N.51D.A.T 50 Hz



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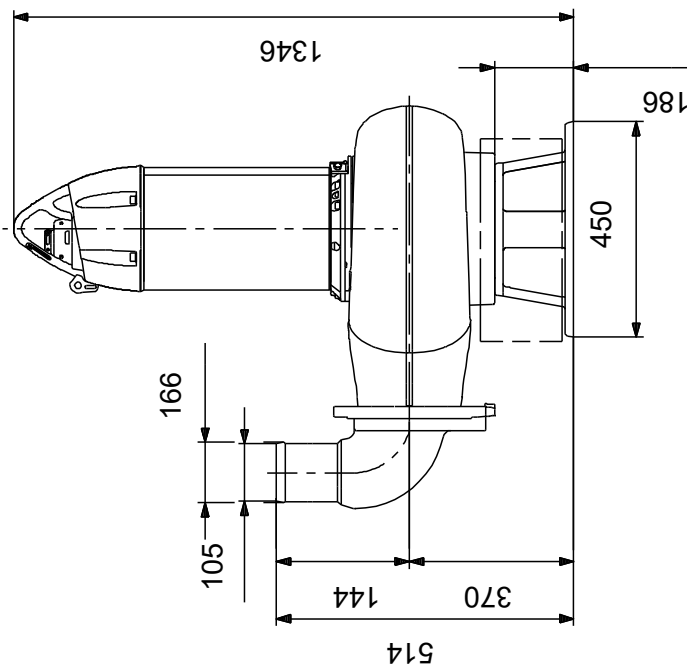
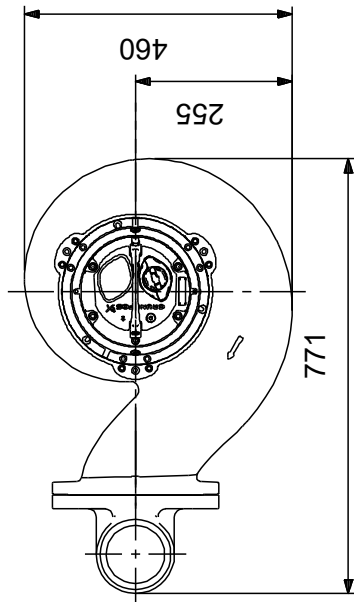


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99776095 SL1.85.100.130.4.52H.S.N.51D.A.T 50 Hz



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Project: Adh. Maamigili Storm Water Design
Reference Number: PS4

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

99776095 SL1.85.100.130.4.52H.S.N.51D.A.T 50 Hz

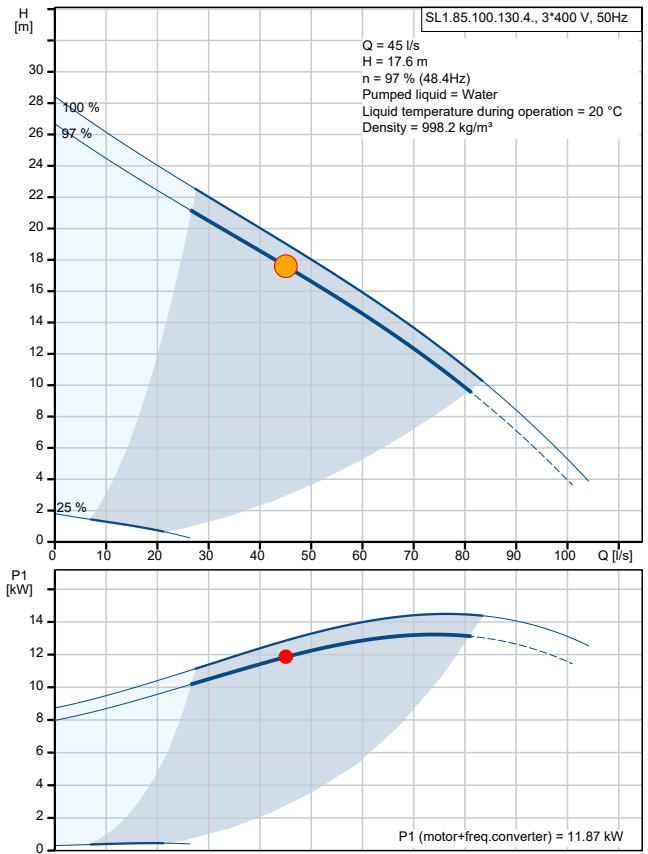
Input

Load Profile

	1	
Flow	100	%
Time	1000	h/a

Sizing result

Flow	45.1	l/s
Head	17.6	m
Power P1	11.87	kW
Power P2 required in the duty point	10.11	kW
Eta pump	76.9	%
Eta pump+motor	67.7	% =Eta pump * Eta motor
Energy consumption	11871	kWh/Year
Life cycle cost	49002	EUR /10Years





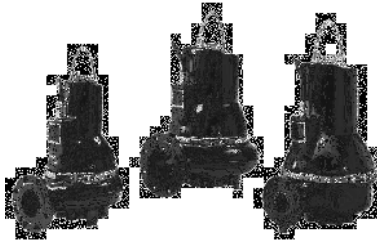
Company name: NTH SIGMA PVT LTD
Created by: Yaameen Shameem (MEA/2020/1964)
Phone: +9607725919
Email: info@nthsigma.com
Date: 22/06/2021

Project: Adh. Maamigili Storm Water Design
Reference Number: PS5

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

Qty.	Description
------	-------------

1	SL1.80.100.55.4.51D.C
---	-----------------------



Note! Product picture may differ from actual product

Product No.: [98626028](#)

Non-self-priming, single-stage, centrifugal pump designed for handling wastewater, process water and unscreened raw sewage.

The pump is designed for intermittent and continuous operations in submerged installation. The revolutionary S-tube® impeller provides free spherical passage of solids up to 80 mm and is suitable for wastewater with a dry matter content of up to 3 %. A unique stainless-steel clamp assembling system enables quick and easy disassembly of the pump from the motor unit for service and inspection. No special tools are required. Pipework connection is via a DIN flange.

Controls:

Moisture sensor: with moisture sensors
Water-in-oil sensor: without water-in-oil sensor

Liquid:

Pumped liquid: Water
Maximum liquid temperature: 40 °C
Selected liquid temperature: 20 °C
Density: 998.2 kg/m³

Technical:

Actual calculated flow: 25.5 l/s
Resulting head of the pump: 13.03 m
Type of impeller: S-TUBE
Maximum particle size: 80 mm
Primary shaft seal: SIC/SIC
Secondary shaft seal: CARBON/CERAMICS
Approvals on nameplate: CE EN12050-1
Curve tolerance: ISO9906:2012 3B2

Materials:

Pump housing: Cast iron
EN 5.1301 EN-GJL-250
Impeller: Cast iron
EN 5.1301 EN-GJL-250
Motor: EN-GJL-250

Installation:

Maximum ambient temperature: 40 °C
Flange standard: DIN
Pump inlet: 100



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Project: Adh. Maamigili Storm Water Design
Reference Number: PS5

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

Qty.	Description
	Pump outlet: 100
	Pressure rating: PN 10
	Maximum installation depth: 20 m
	Auto-coupling: 96090994
	Frame range: C
	Electrical data:
	Power input - P1: 6.3 kW
	Rated power - P2: 5.5 kW
	Mains frequency: 50 Hz
	Rated voltage: 3 x 380-415 V
	Voltage tolerance: +10/-10 %
	Max starts per. hour: 20
	Rated current: 11.2-10.6 A
	Starting current: 81 A
	Cos phi - power factor: 0.85
	Cos phi - p.f. at 3/4 load: 0.80
	Cos phi - p.f. at 1/2 load: 0.70
	Rated speed: 1463 rpm
	Motor efficiency at full load: 89.1 %
	Motor efficiency at 3/4 load: 89.6 %
	Motor efficiency at 1/2 load: 89.0 %
	Number of poles: 4
	Start. method: star/delta
	Enclosure class (IEC 34-5): IP68
	Insulation class (IEC 85): H
	Explosion proof: no
	Length of cable: 10 m
	Cable type: LYNIFLEX
	Others:
	Net weight: 160 kg
	Finnish LVI No.: 4836122

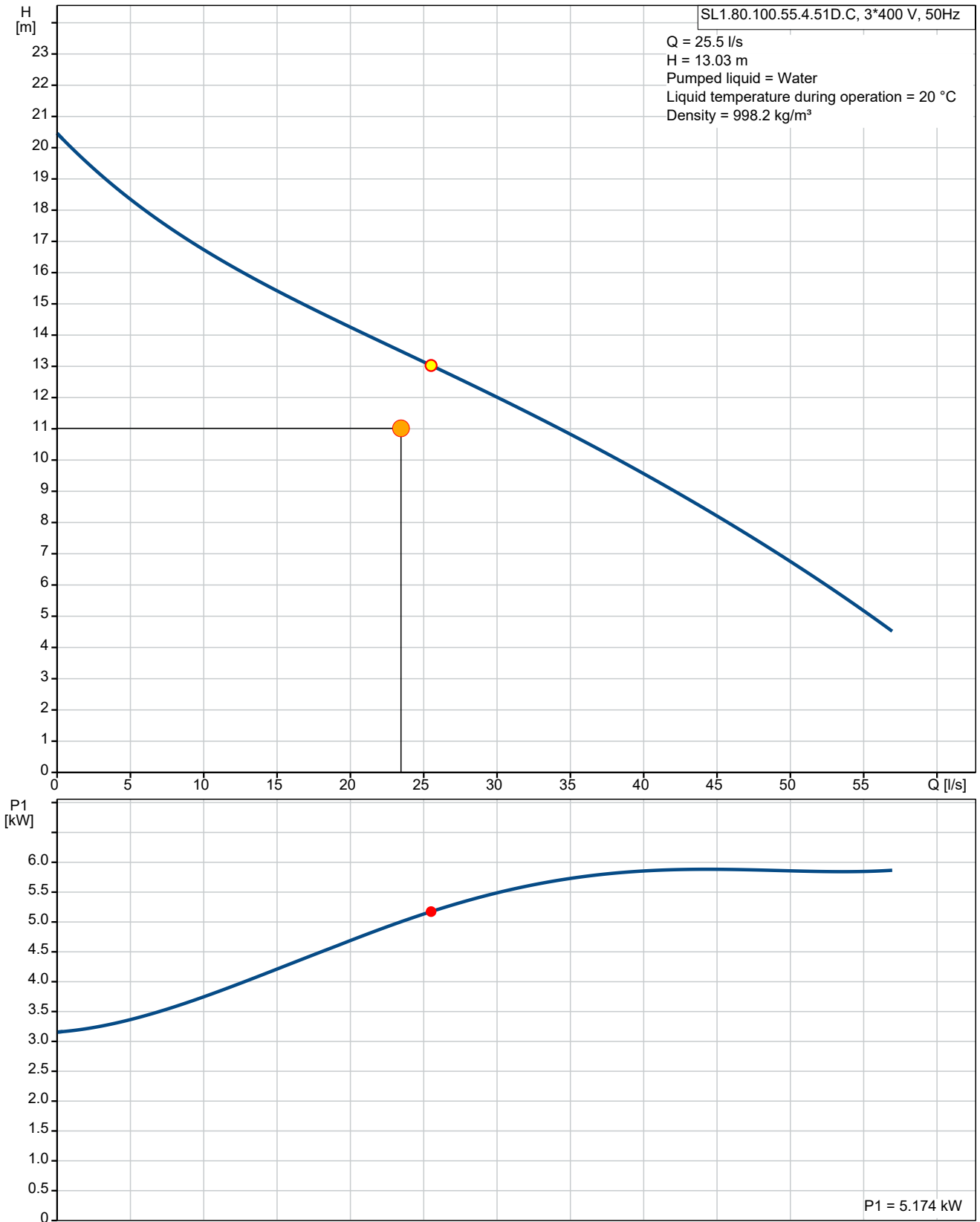


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Project: Adh. Maamigili Storm Water Design
Reference Number: PS5

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

98626028 SL1.80.100.55.4.51D.C 50 Hz



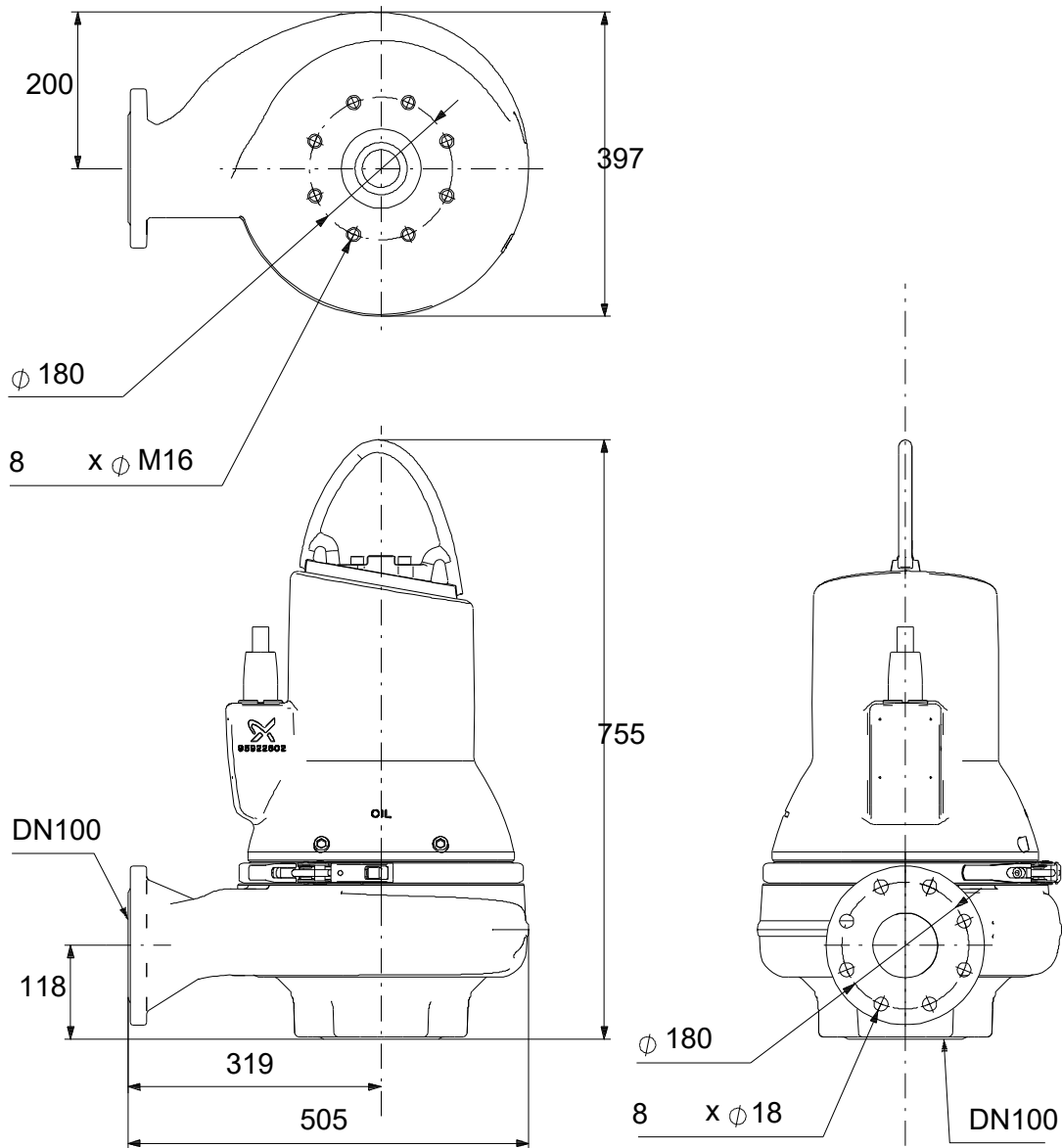


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98626028 SL1.80.100.55.4.51D.C 50 Hz



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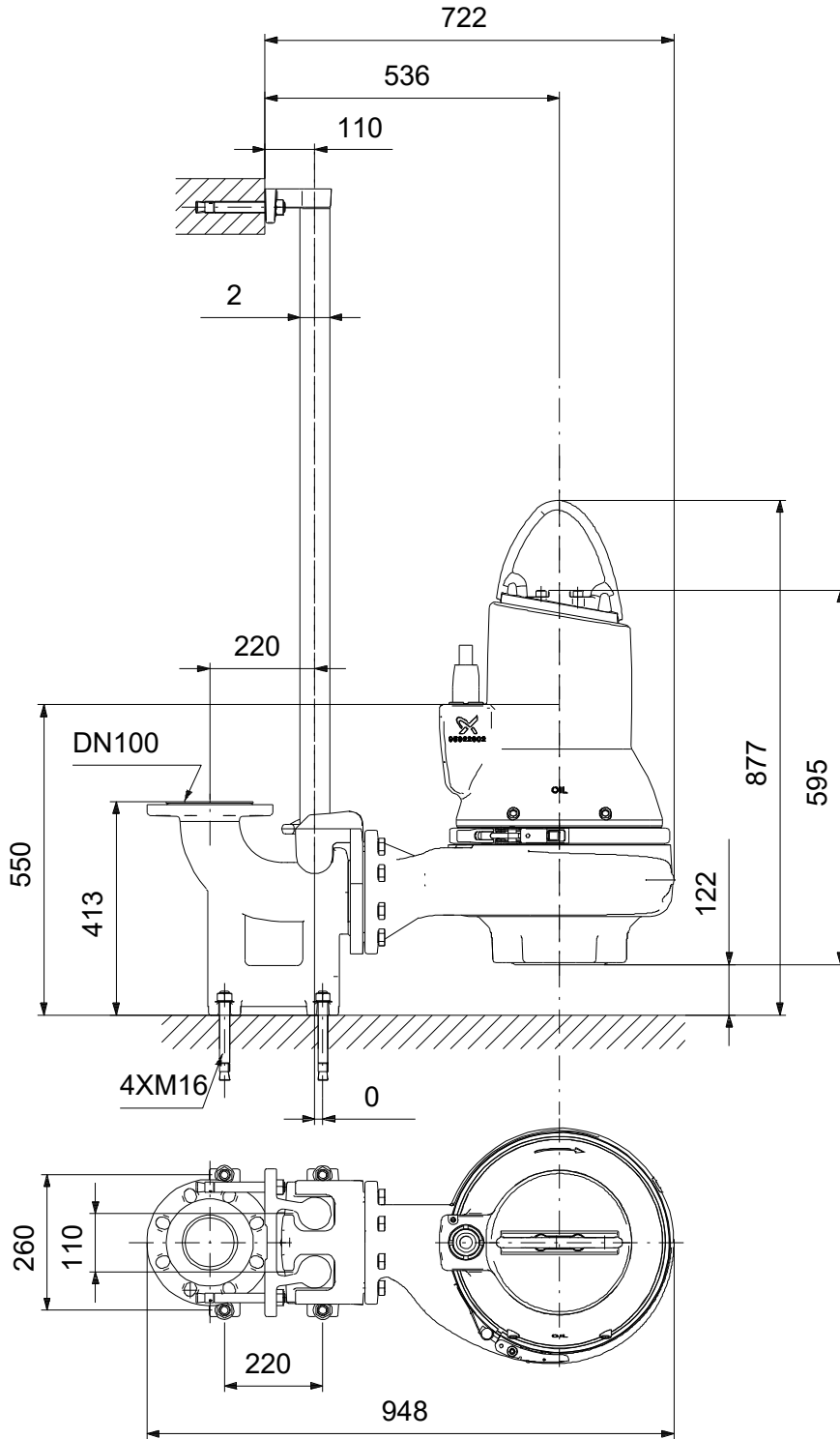


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98626028 SL1.80.100.55.4.51D.C 50 Hz



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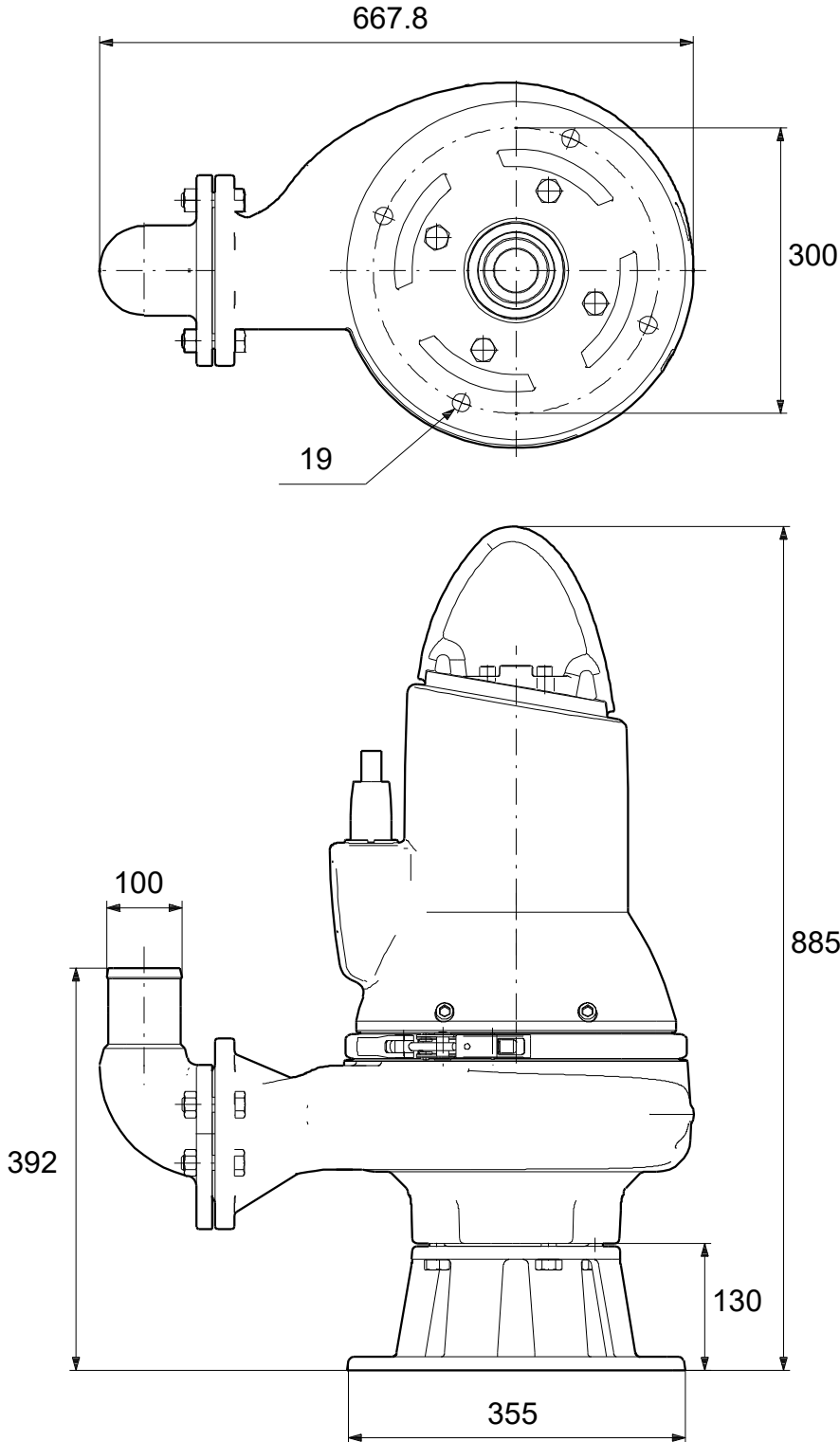


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Project: Adh. Maamigili Storm Water Design
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98626028 SL1.80.100.55.4.51D.C 50 Hz



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Reference Number: PS5

Client: RAKENTA LLP
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98626028 SL1.80.100.55.4.51D.C 50 Hz

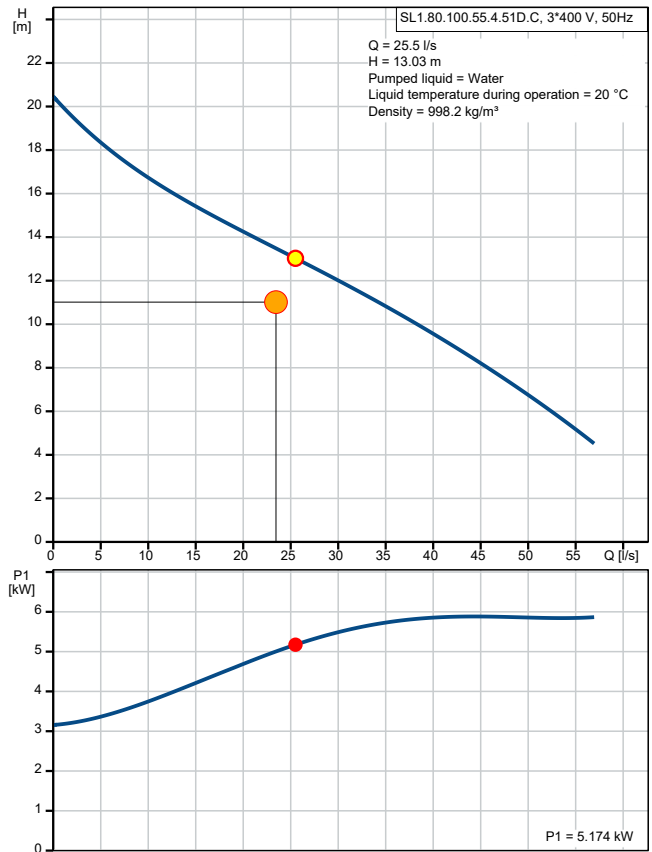
Input

Load Profile

	1	
Flow	100	%
Time	1000	h/a

Sizing result

Flow	25.5	l/s
Head	13.03	m
Power P1	5.174	kW
Power P2 required in the duty point	4.626	kW
Eta pump	70.4	%
Eta pump+motor	63.0	% =Eta pump * Eta motor
Energy consumption	4757	kWh/Year
Life cycle cost	17576	EUR /10Years





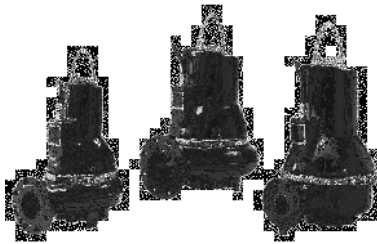
Company name: NTH SIGMA PVT LTD
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Phone: +9607725919
Email: info@nthsigma.com
Date: 22/06/2021

Project: Adh. Maamigili Storm Water Design
Reference Number: PS6

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

Qty.	Description
------	-------------

1	SL1.80.100.55.4.51D.C
---	-----------------------



Note! Product picture may differ from actual product

Product No.: [98626028](#)

Non-self-priming, single-stage, centrifugal pump designed for handling wastewater, process water and unscreened raw sewage.

The pump is designed for intermittent and continuous operations in submerged installation. The revolutionary S-tube® impeller provides free spherical passage of solids up to 80 mm and is suitable for wastewater with a dry matter content of up to 3 %. A unique stainless-steel clamp assembling system enables quick and easy disassembly of the pump from the motor unit for service and inspection. No special tools are required. Pipework connection is via a DIN flange.

Controls:

Moisture sensor: with moisture sensors
Water-in-oil sensor: without water-in-oil sensor

Liquid:

Pumped liquid: Water
Maximum liquid temperature: 40 °C
Selected liquid temperature: 20 °C
Density: 998.2 kg/m³

Technical:

Actual calculated flow: 45.6 l/s
Resulting head of the pump: 8.046 m
Type of impeller: S-TUBE
Maximum particle size: 80 mm
Primary shaft seal: SIC/SIC
Secondary shaft seal: CARBON/CERAMICS
Approvals on nameplate: CE EN12050-1
Curve tolerance: ISO9906:2012 3B2

Materials:

Pump housing: Cast iron
EN 5.1301 EN-GJL-250
Impeller: Cast iron
EN 5.1301 EN-GJL-250
Motor: EN-GJL-250

Installation:

Maximum ambient temperature: 40 °C
Flange standard: DIN
Pump inlet: 100



Company name: NTH SIGMA PVT LTD
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Date: 22/06/2021

Project: Adh. Maamigili Storm Water Design
Reference Number: PS6

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

Qty.	Description
	Pump outlet: 100
	Pressure rating: PN 10
	Maximum installation depth: 20 m
	Auto-coupling: 96090994
	Frame range: C
	Electrical data:
	Power input - P1: 6.3 kW
	Rated power - P2: 5.5 kW
	Mains frequency: 50 Hz
	Rated voltage: 3 x 380-415 V
	Voltage tolerance: +10/-10 %
	Max starts per. hour: 20
	Rated current: 11.2-10.6 A
	Starting current: 81 A
	Cos phi - power factor: 0.85
	Cos phi - p.f. at 3/4 load: 0.80
	Cos phi - p.f. at 1/2 load: 0.70
	Rated speed: 1463 rpm
	Motor efficiency at full load: 89.1 %
	Motor efficiency at 3/4 load: 89.6 %
	Motor efficiency at 1/2 load: 89.0 %
	Number of poles: 4
	Start. method: star/delta
	Enclosure class (IEC 34-5): IP68
	Insulation class (IEC 85): H
	Explosion proof: no
	Length of cable: 10 m
	Cable type: LYNIFLEX
	Others:
	Net weight: 160 kg
	Finnish LVI No.: 4836122

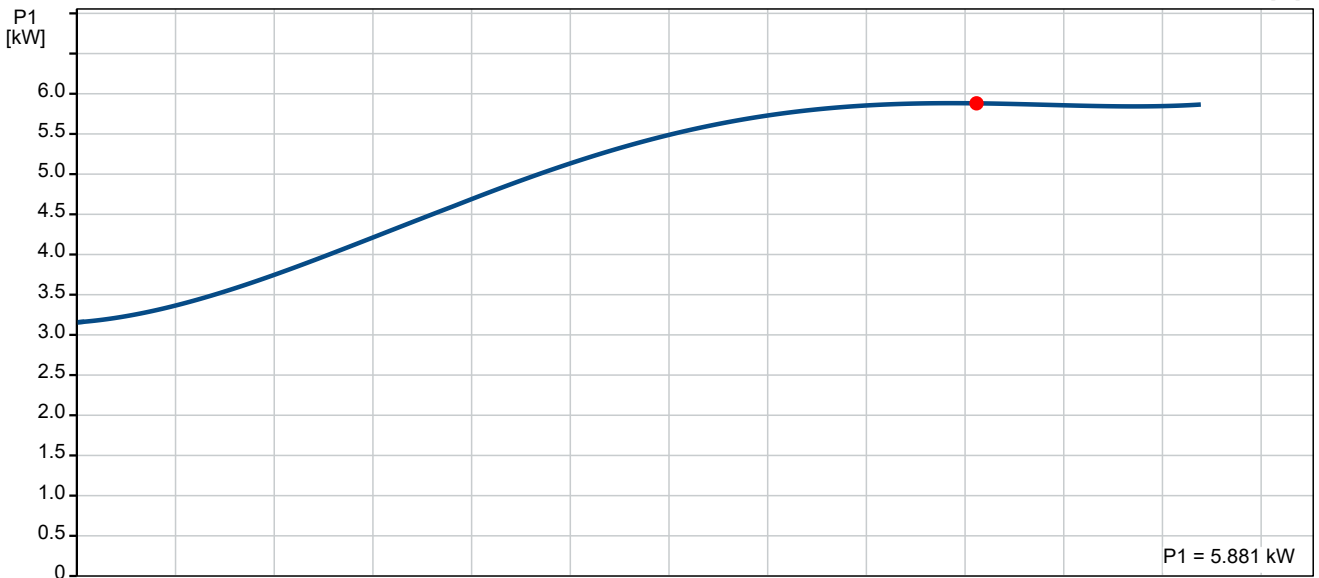
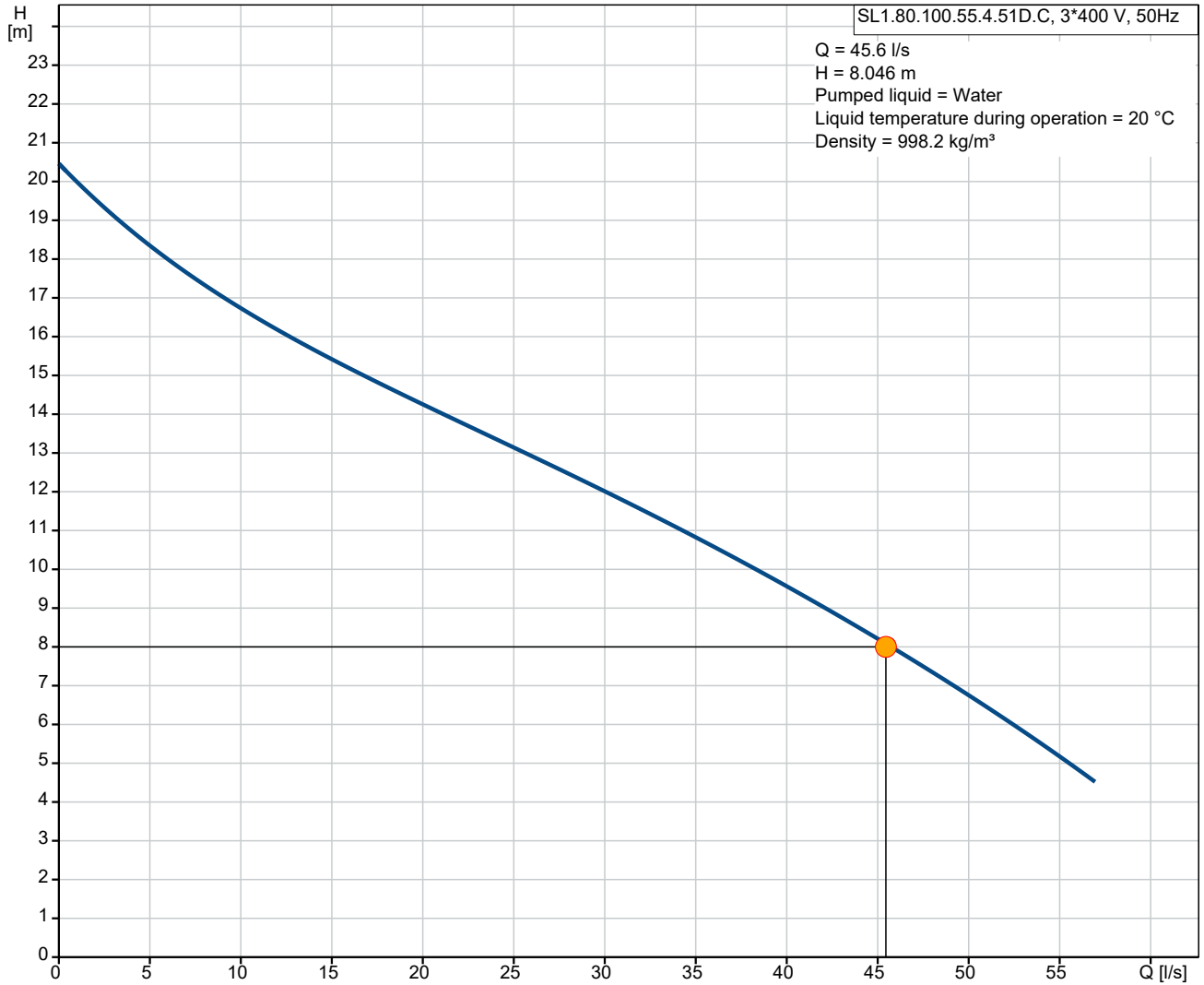


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Created by: Yaameen Shameem (MEA/2020/1964)
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Email: info@nthsigma.com
Date: 22/06/2021

Project: Adh. Maamigili Storm Water Design
Reference Number: PS6

Client: RAKENTA LLP
Client Number: -
Contact: +9607763599

98626028 SL1.80.100.55.4.51D.C 50 Hz



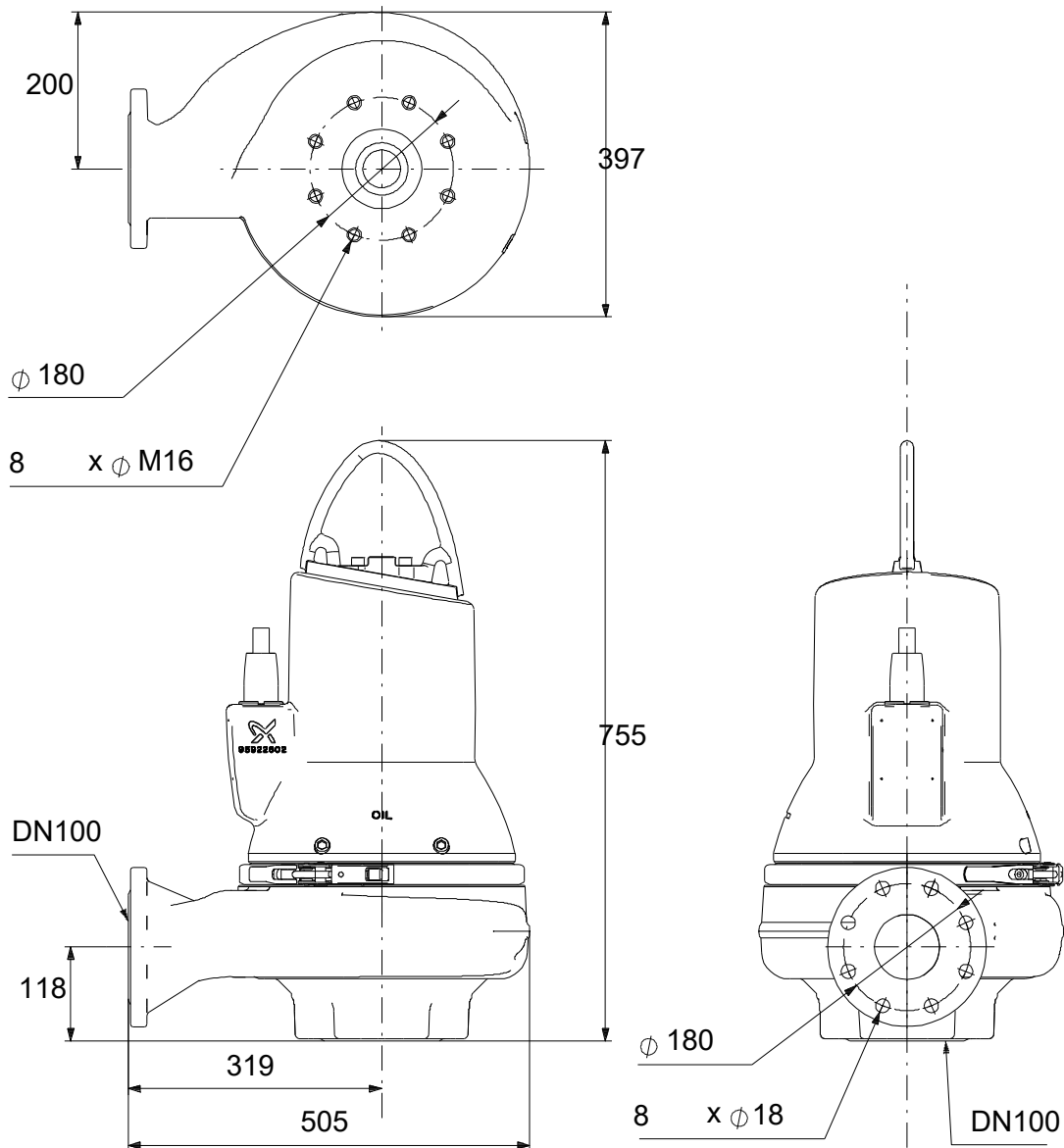


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Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

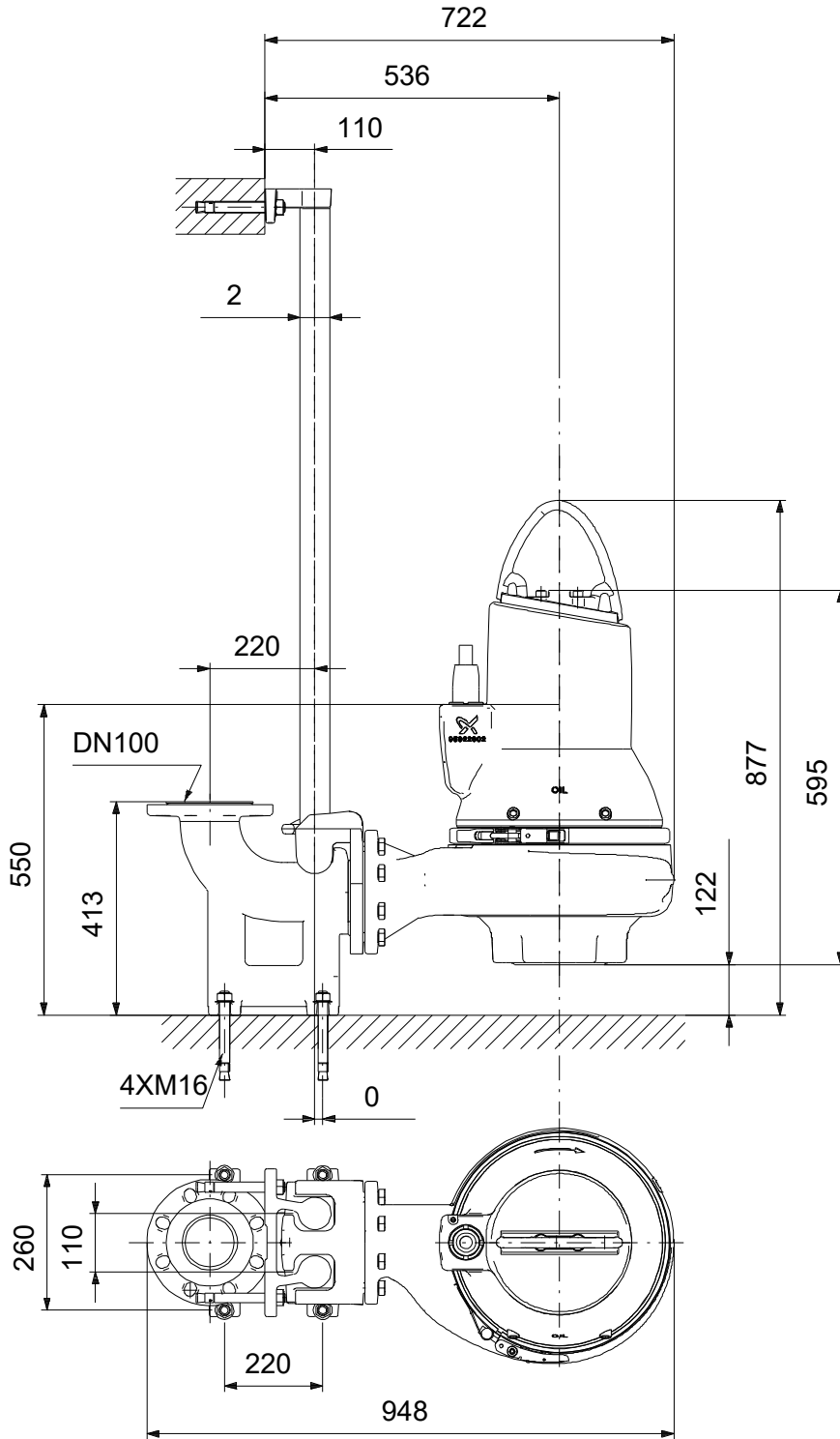


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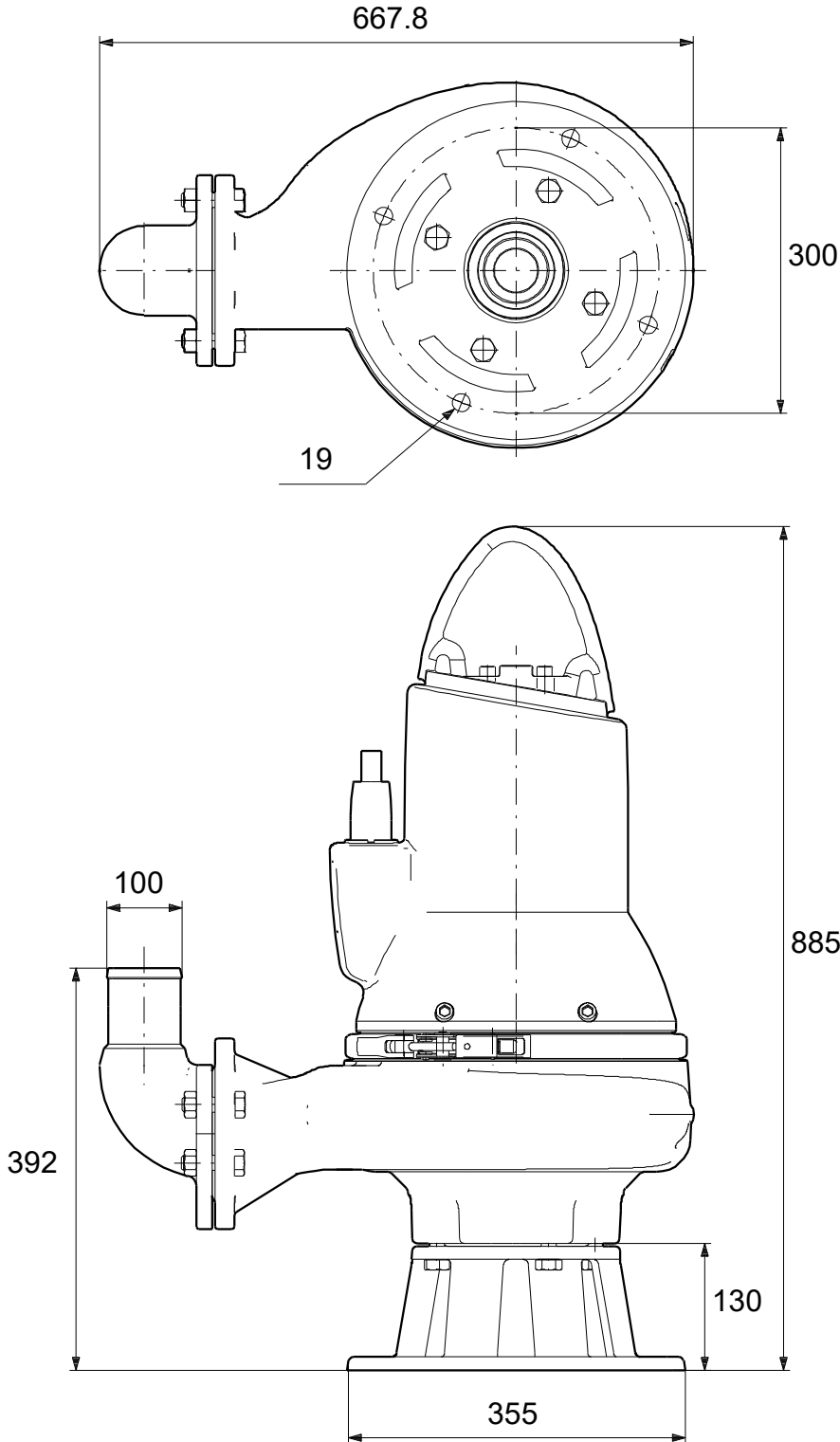


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Input

Load Profile

	1	
Flow	100	%
Time	1000	h/a

Sizing result

Flow	45.6	l/s
Head	8.046	m
Power P1	5.881	kW
Power P2 required in the duty point	5.245	kW
Eta pump	68.6	%
Eta pump+motor	61.1	% =Eta pump * Eta motor
Energy consumption	5864	kWh/Year
Life cycle cost	19778	EUR /10Years

