ALARKO

Circulation Pump
Optima BMS

ECO DESIGN
The First&Only According to Directives

AT THE HEART OF THE SYSTEM

MADE IN TÜRKİYE MADE IN

HIGHER EFFICIENCY DESIGN WITH ECM (ELECTRO-COMMUTATED MOTOR) TECHNOLOGY!

ECM technology
Beyond of Frequency Inverter
optima
LOW ENERGY CONSUMPTION
SAVE the NATURE

With more than 60 years of Alarko Circulation Pump experience...

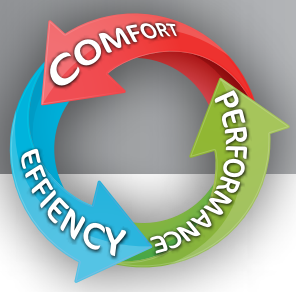
ALARKO OPTIMA BMS

Protect the nature...

Alarko aims to significantly improve the quality of life by adding innovative products that respect the environment and provide significant energy savings, as well as better performance, to its product range. The process of compliance with the European Union ECO Design regulations resulted in a real turning point for the Alarko circulation pumps that is Alarko Optima BMS.

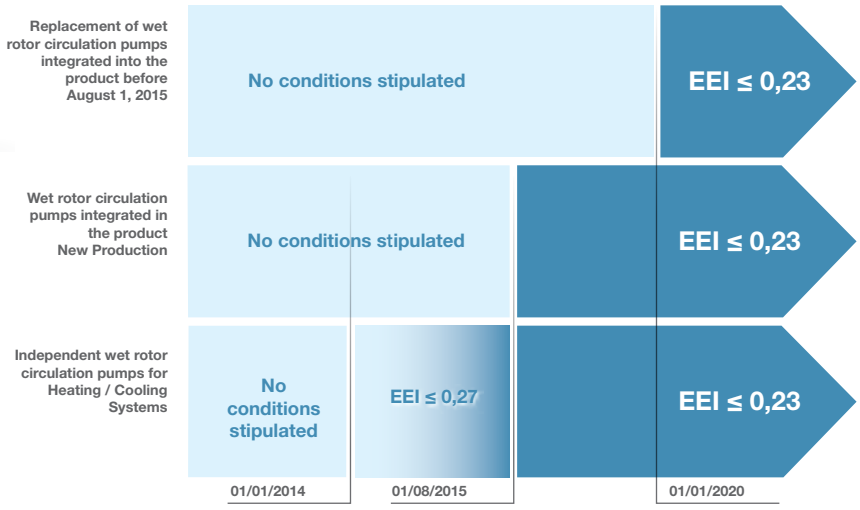
Alarko Optima BMS's
Key Benefits

1. Optional digital and analog communication modules compatible with building automation systems
2. Class A High Energy Saving
3. Ideal Performance
4. Reliability
5. Ease of Installation and Commissioning
6. Ease of after-sales service and spare parts supply
7. Electronically controlled
8. In accordance with Turkish SGM-2011/15 and EU EC 641/2009



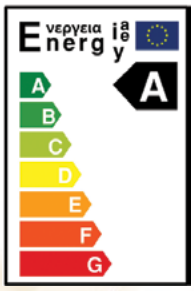
EEI≤0,23

Eco Design Requirements for European Commission Circulation Pumps



IDEAL PERFORMANCE

Alarko Optima BMS serves in three different operating modes with continuous ideal operating point unlike conventional single and three-speed pumps. In this way, high energy saving is possible.



ADVANCED FEATURES

Alarko Optima BMS provides integrated operation and high energy savings with its digital and analog communication modules and building automation systems.

ECM technology

Higher efficiency design and key benefits with ECM (Electro-Commutated Motor) Technology:

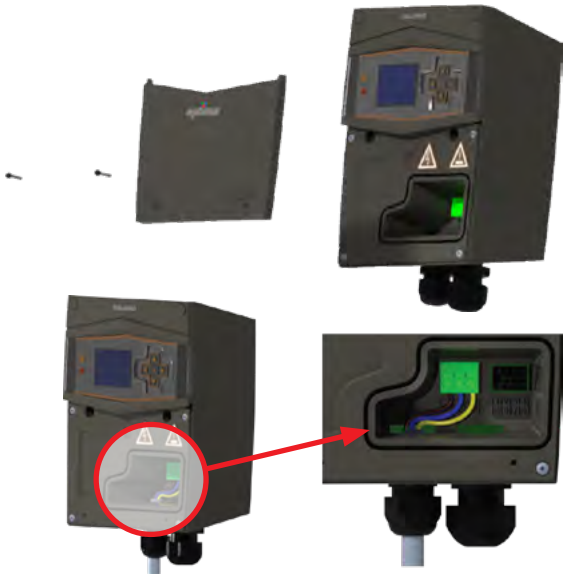
- No external sensors or controllers required.
- Motor life is prolonged with low engine temperature.
- Motor life is prolonged due to lower stress on the engine bearings.
- Vibration and noise levels are lower.

SAFETY

- Alarko Optima circulation pumps are documented by the tests carried out in accordance with all the following standards and regulations.
- Machinery Directive 2006/42/ EC
- Low Voltage Directive 2014/35/ EC
- EMC Directive 2004/108/EC
- Ecodesign Directive 2009/125/ EC
- TS EN 60335-1-51:2003 + A2:2012
- TS EN 16297-1:2012
- TS EN 16297-2:2012
- TS EN 60335-1:2012

EASE OF INSTALLATION AND COMMISSIONING

Alarko Optima circulation pumps have junction boxes and connection sockets that help them to be commissioned very quickly and easily. These specially designed connection sockets on the control box allow the pump to be connected safely and as soon as possible without contact with mains voltage and electronic systems.



Multi Pump operation characteristics

Multi Pump mode operation is managed by the CCM module (software).

Multi Pump mode supports 1 to 8 pumps in a single network.

In a valid Multi Pump configuration, only 1 pump in a network must be defined as a **Master Pump**.

Each pump in the network must be manually assigned a unique ID by the user.

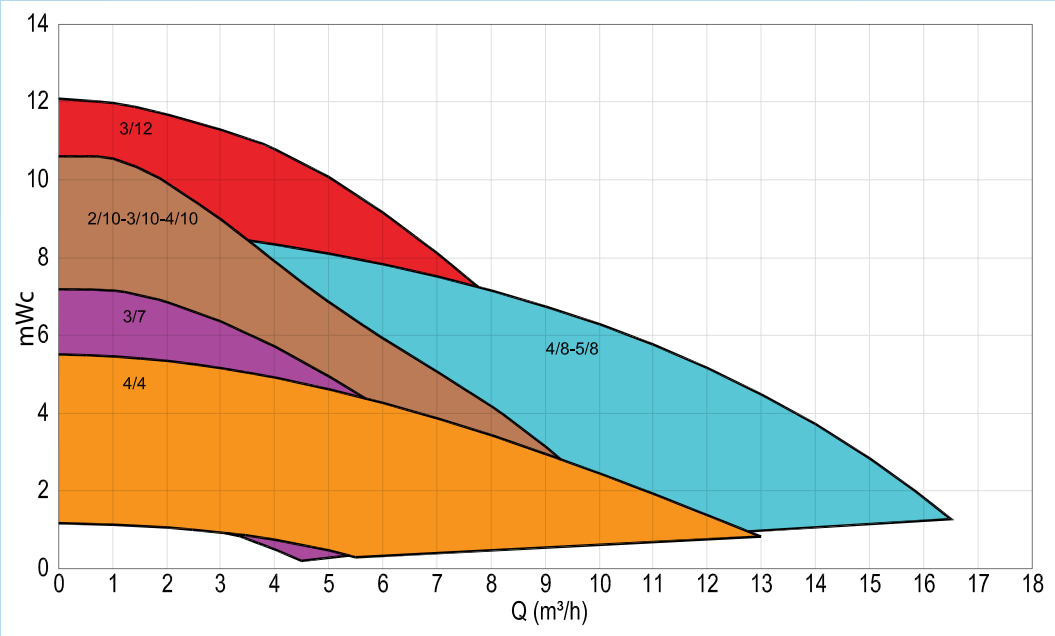
The ID of the master pump must be set to 0, and the ID of the other slave pumps must be set to 1, 2, 3.

Multi Pump mode has 3 different scenarios: **Master/Slave, Main/Standby, Pump Cycling**. (Details are given in the user manual.)

All slave pumps in the Multi Pump network will automatically have the main pump's operating mode, set point, and multi pump mode without the need for additional setting.

Alarko Optima BMS, provides high energy savings while improving the quality of life...

General Selection Chart



ALARKO
3.5
OK
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User Friendly **GRAPHIC DISPLAY**

Digital Display

No Display Option

All controls and settings can be made with the help of 5 keys.

- Graphic Display, Digital Display and No Display options.
- User-friendly control and control system with Turkish software.
- English language support available as standard in the menu.
- “service info” feature showing the code and content of the last 5 errors occurred to the user.

Al **at your service**

3 different card options
designed to meet all needs

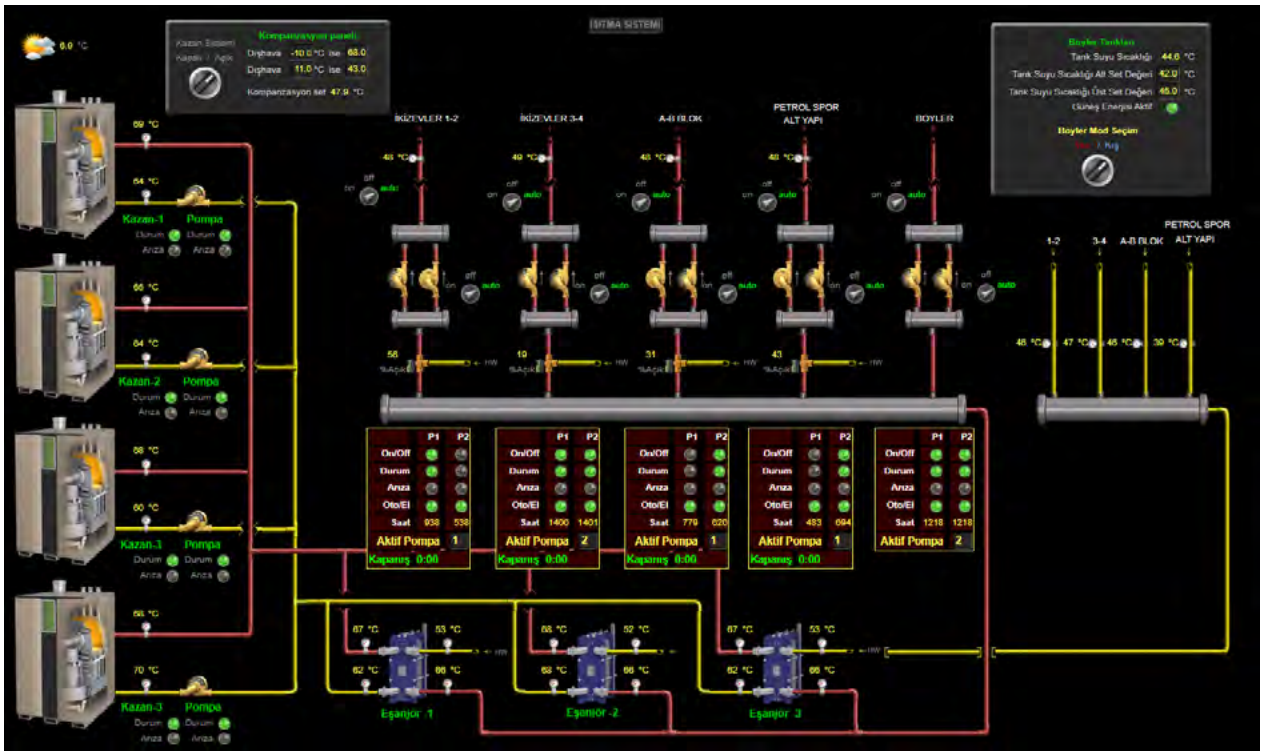
1) Communication Control Module (Modbus RTU / BACnet MS-TP/ Multi-Pump)

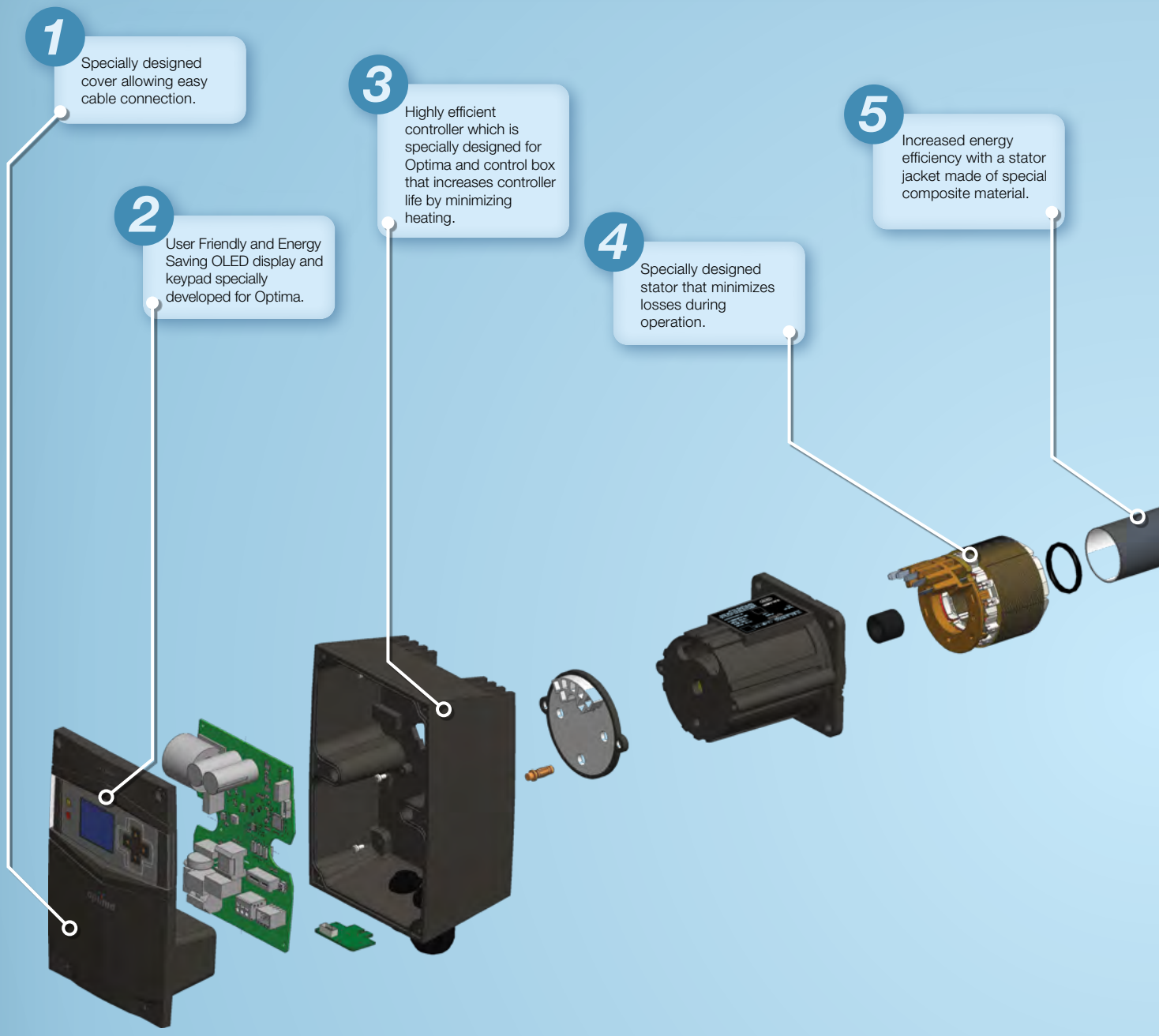
2) Analog Control Module (with Relay)

3) Analog Control Module (without Relay)

ASHRAE BACnet™

Modbus





the perfect design is hidden in the details...

Optima circulation pumps, which are produced with the latest technological facilities and designed with care in every part, have passed all tests successfully.

6 High-efficiency rotor with permanent magnet that maximizes motor efficiency.

7 Maintenance-free long-lasting carbon bearings and special stainless material dirt trap that prevents contaminants in the fluid from entering the motor.

8 Specially designed PPO fans with high hydraulic efficiency.

9 Specially designed pump casing for high hydraulic efficiency and silent operation.

10 Polypropylene insulation jacket that provides thermal insulation of the pump body.

Supplied as standard with the pump.

OPTIMA BMS
2/10-180
3/10-180
4/10

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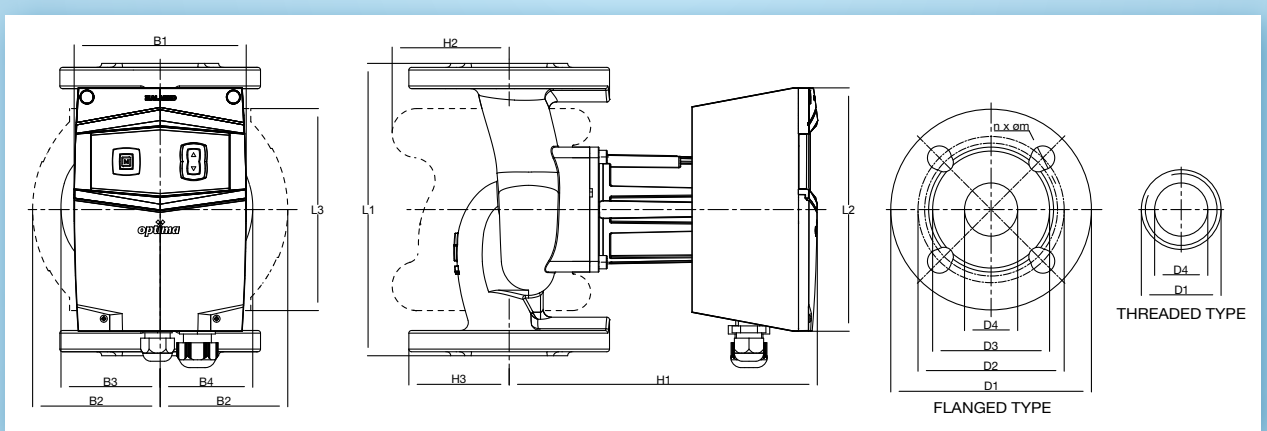
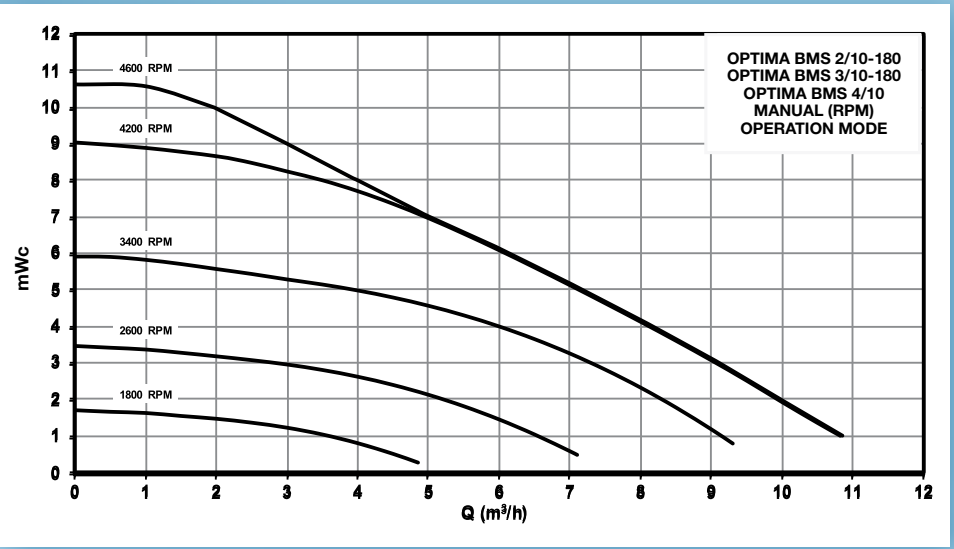
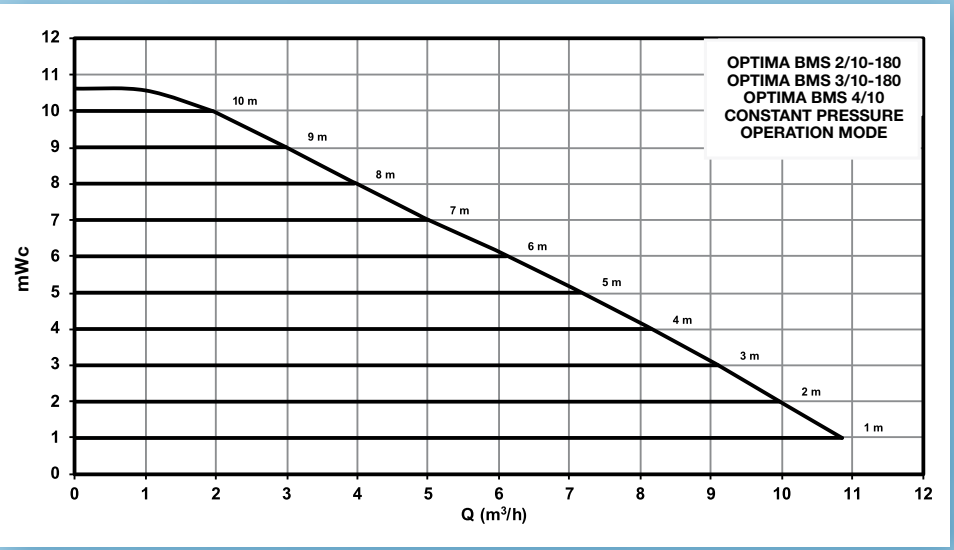
Maximum Pump Head [m]	According to pump type	
Maximum Flow Rate [m³/h]	According to pump type	
Motor Speed [rpm]	1.800 – 4.600	
Input Voltage and Frequency	1~ 230 V AC ± %10, 50 Hz, PE	
Nominal Current [A]	1,4	
Power drawn [W]	12 – 190	
Energy Efficiency Index (EEI)	< 0.23	
Insulation Class	F	
Protection Class	IP X4D	
Temperature Class	TF 110	
Maximum System Pressure	2/10-180 - 3/10-180 PN10	4/10 PN 6/10 [1]
Sound Pressure	< 56 dB	
Relative Humidity	< %90	

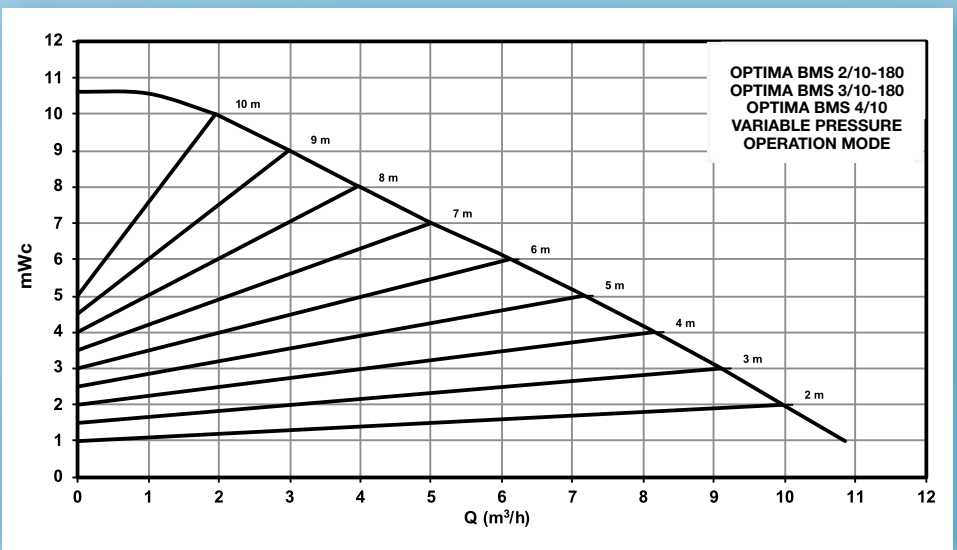
[1] The pump is suitable for use at both pressure values.



	DIMENSIONS																	
	D1 (mm)	D2 (mm) PN6	D2 (mm) PN10	D3 (mm)	D4 (mm)	n x Øm (mm) PN6	n x Øm (mm) PN10	B1 (mm)	B2 (mm)	B3 (mm)	B4 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	H1 (mm)	H2 (mm)	H3 (mm)	Weight (kg)
Optima BMS 2/10-180	G1 1/2"	-	-	-	25.0	-	-	129.5	82.5	65.3	55.7	180.0	183.0	152.0	232.6	77.5	23.9	6.2
OPTIMA 3/10-180	G2"	-	-	-	30.0	-	-	129.5	82.5	65.3	55.7	180.0	183.0	152.0	232.6	77.5	29.8	6.2
OPTIMA 4/10	151.0	100.0	110.0	88.0	40.0	4x14	4x18	129.5	81.0	65.3	55.7	220.0	183.0	152.0	232.6	77.9	75.5	10.5


OPTIMA BMS 2/10-180
OPTIMA BMS 3/10-180
OPTIMA BMS 4/10
MANUAL (RPM)
OPERATION MODE
4600 RPM
4200 RPM
3400 RPM
2600 RPM
1800 RPM
mWc
Q (m³/h)


OPTIMA BMS 2/10-180
OPTIMA BMS 3/10-180
OPTIMA BMS 4/10
CONSTANT PRESSURE
OPERATION MODE
10 m
9 m
8 m
7 m
6 m
5 m
4 m
3 m
2 m
1 m
mWc
Q (m³/h)


OPTIMA BMS 2/10-180
OPTIMA BMS 3/10-180
OPTIMA BMS 4/10
VARIABLE PRESSURE
OPERATION MODE
10 m
9 m
8 m
7 m
6 m
5 m
4 m
3 m
2 m
mWc
Q (m³/h)

OPTIMA BMS
3/7-180

Maximum Pump Head [m]	According to pump type
Maximum Flow Rate [m³/h]	According to pump type
Motor Speed [rpm]	1.600 – 3.800
Input Voltage and Frequency	1~ 230 V AC ± %10, 50 Hz, PE
Nominal Current [A]	1
Power drawn [W]	12 – 125
Energy Efficiency Index (EEI)	< 0.23
Insulation Class	F
Protection Class	IP X4D
Temperature Class	TF 110
Maximum System Pressure	PN10
Sound Pressure	< 56 dB
Relative Humidity	< %90

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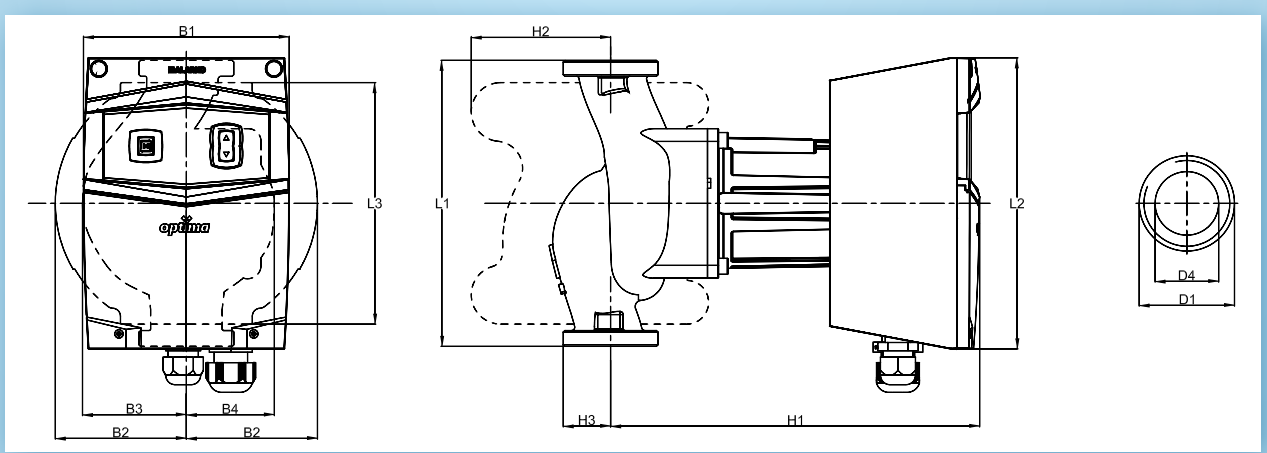
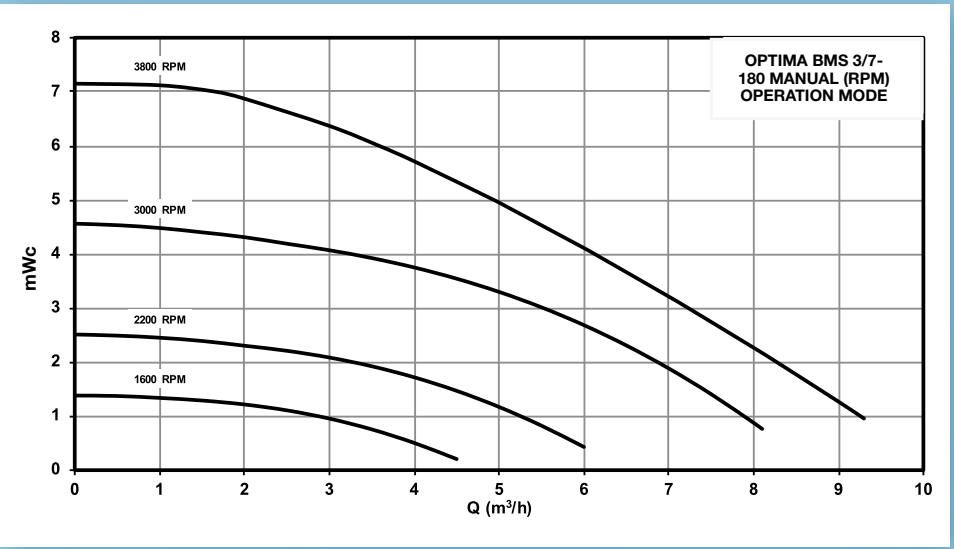
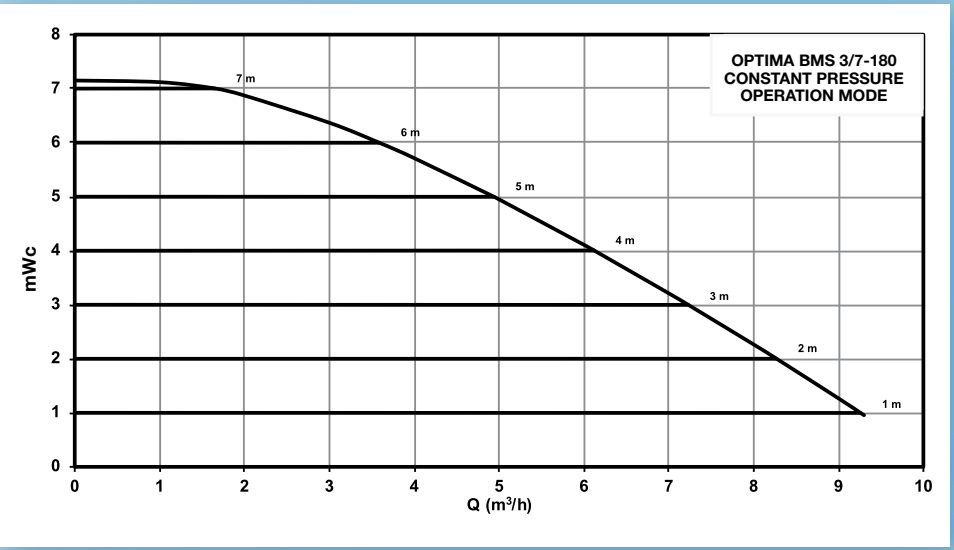
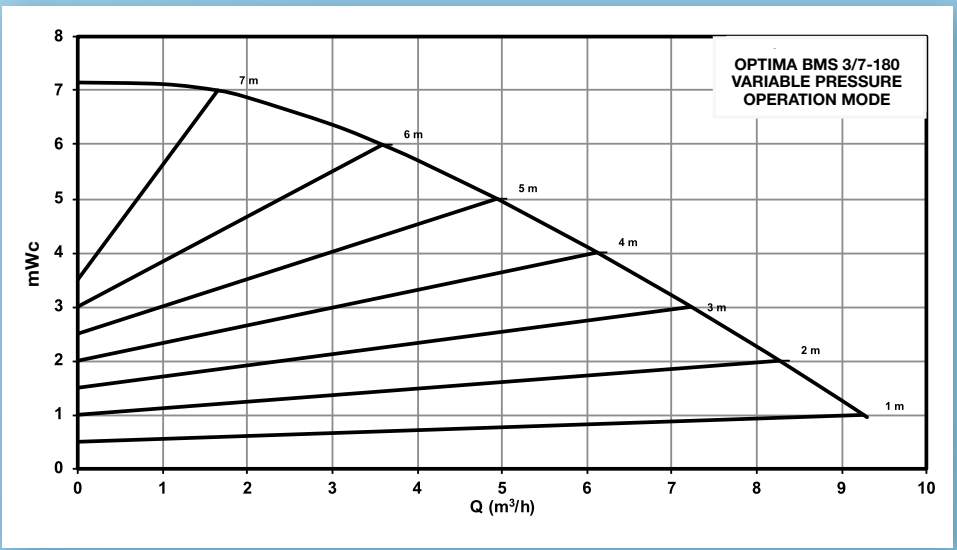


	DIMENSIONS																	
	D1 (mm)	D2 (mm) PN6	D2 (mm) PN10	D3 (mm)	D4 (mm)	n x Øm (mm) PN6	n x Øm (mm) PN10	B1 (mm)	B2 (mm)	B3 (mm)	B4 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	H1 (mm)	H2 (mm)	H3 (mm)	Weight (kg)
Optima BMS 3/7-180	G2"	-	-	-	30.0	-	-	129.5	82.5	65.3	55.7	180.0	183.0	152.0	232.6	77.5	29.8	6.2


OPTIMA BMS 3/7-180 MANUAL (RPM) OPERATION MODE
3800 RPM
3000 RPM
2200 RPM
1600 RPM
mWc
Q (m³/h)


OPTIMA BMS 3/7-180 CONSTANT PRESSURE OPERATION MODE
7 m
6 m
5 m
4 m
3 m
2 m
1 m
mWc
Q (m³/h)


OPTIMA BMS 3/7-180 VARIABLE PRESSURE OPERATION MODE
7 m
6 m
5 m
4 m
3 m
2 m
1 m
mWc
Q (m³/h)

OPTIMA BMS
3/12-180

Maximum Pump Head [m]	According to pump type
Maximum Flow Rate [m³/h]	According to pump type
Motor Speed [rpm]	1.800 – 4.900
Input Voltage and Frequency	1~ 230 V AC ± %10, 50 Hz, PE
Nominal Current [A]	1,34
Power drawn [W]	16 – 300
Energy Efficiency Index (EEI)	< 0.23
Insulation Class	F
Protection Class	IP X4D
Temperature Class	TF 110
Maximum System Pressure	PN10
Sound Pressure	< 56 dB
Relative Humidity	< %90

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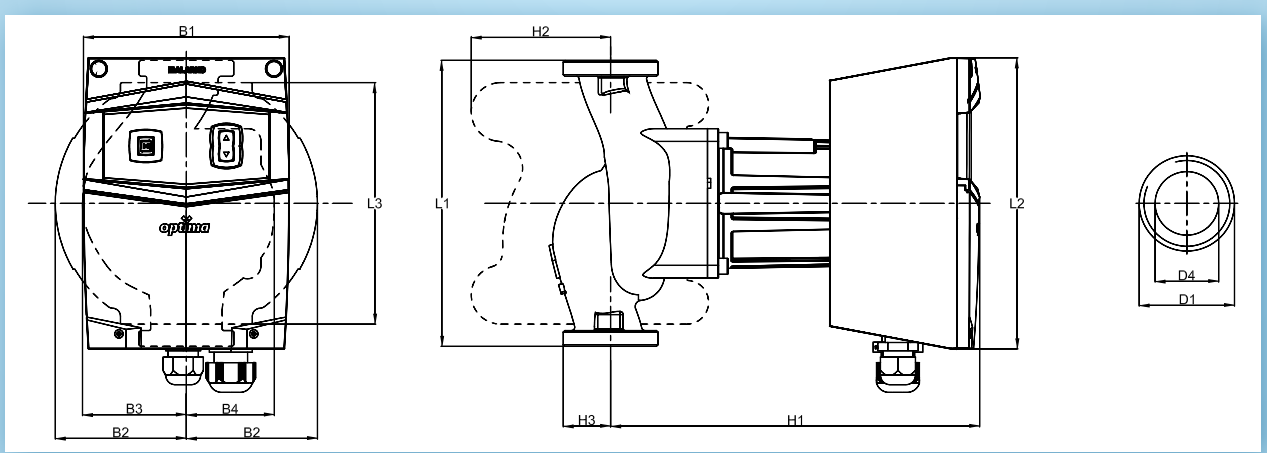
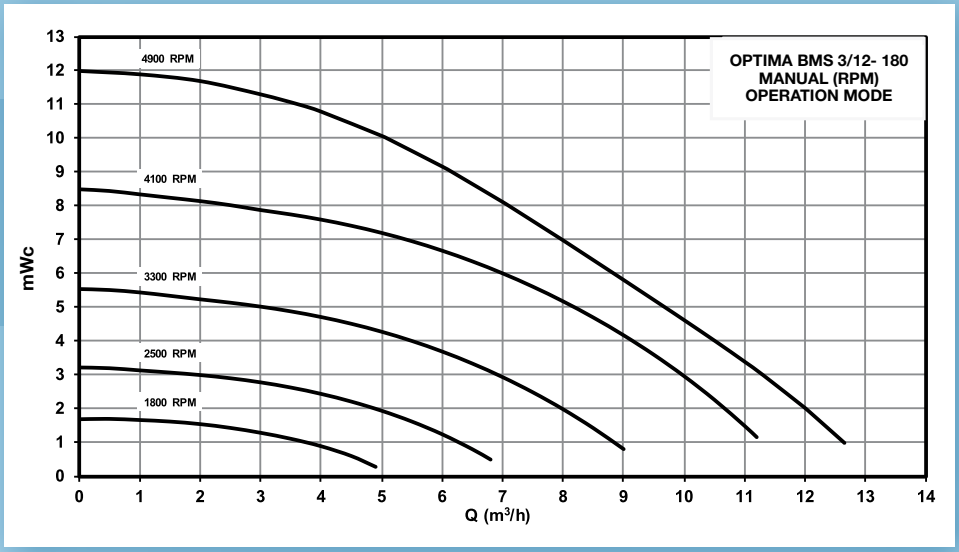
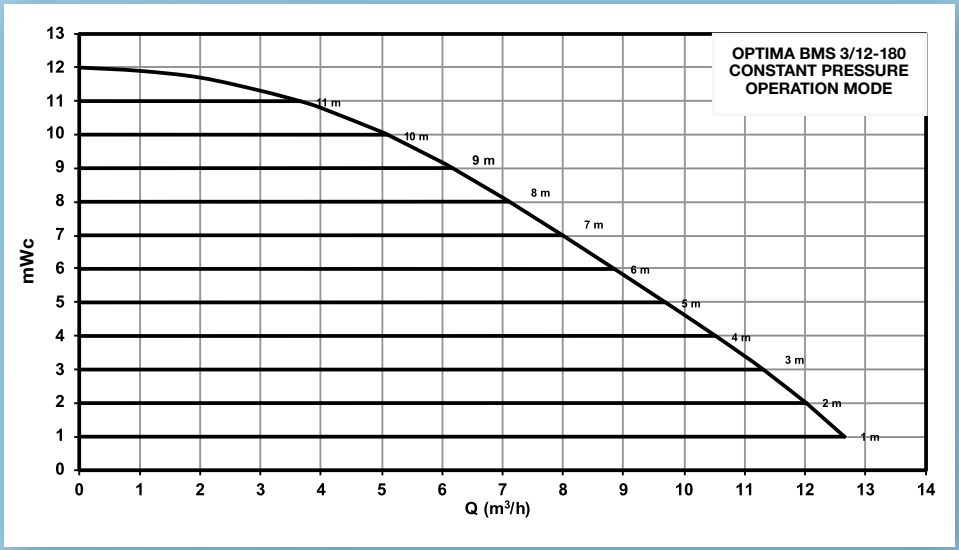
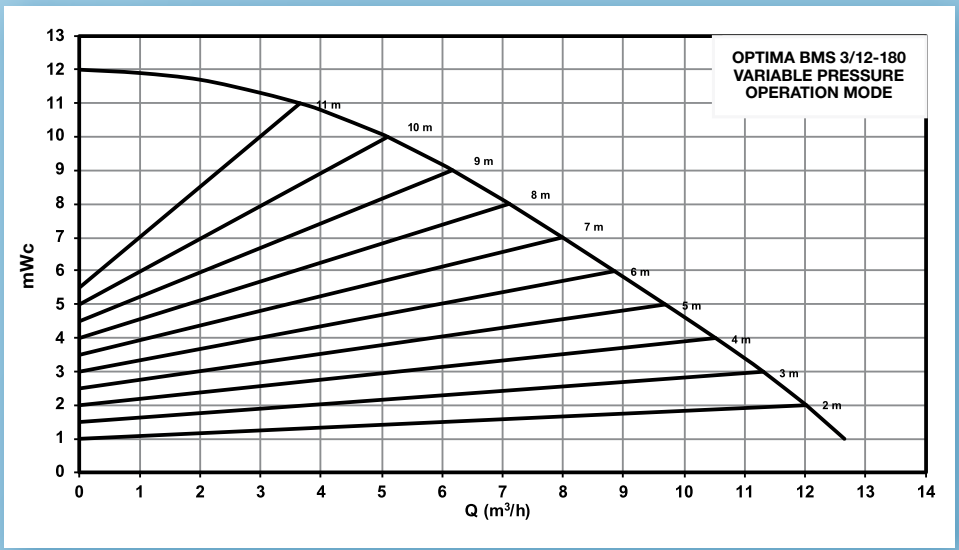


	DIMENSIONS																	
	D1 (mm)	D2 (mm) PN6	D2 (mm) PN10	D3 (mm)	D4 (mm)	n x Øm (mm) PN6	n x Øm (mm) PN10	B1 (mm)	B2 (mm)	B3 (mm)	B4 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	H1 (mm)	H2 (mm)	H3 (mm)	Weight (kg)
Optima BMS 3/12-180	G2"	-	-	-	30.0	-	-	129.5	82.5	65.3	55.7	180.0	183.0	152.0	233.0	77.5	29.8	6.5


OPTIMA BMS 3/12- 180
MANUAL (RPM)
OPERATION MODE
4900 RPM
4100 RPM
3300 RPM
2500 RPM
1800 RPM
mWc
Q (m³/h)


OPTIMA BMS 3/12-180
CONSTANT PRESSURE
OPERATION MODE
11 m
10 m
9 m
8 m
7 m
6 m
5 m
4 m
3 m
2 m
1 m
mWc
Q (m³/h)


OPTIMA BMS 3/12-180
VARIABLE PRESSURE
OPERATION MODE
11 m
10 m
9 m
8 m
7 m
6 m
5 m
4 m
3 m
2 m
mWc
Q (m³/h)

OPTIMA BMS 4/4

Maximum Pump Head [m]	According to pump type
Maximum Flow Rate [m³/h]	According to pump type
Motor Speed [rpm]	1.600 – 3.600
Input Voltage and Frequency	1~ 230 V AC ± %10, 50 Hz, PE
Nominal Current [A]	1
Power drawn [W]	12 – 125
Energy Efficiency Index (EEI)	< 0.23
Insulation Class	F
Protection Class	IP X4D
Temperature Class	TF 110
Maximum System Pressure	PN 6/10[1]
Sound Pressure	< 56 dB
Relative Humidity	< %90

[1] The pump is suitable for use at both pressure values.

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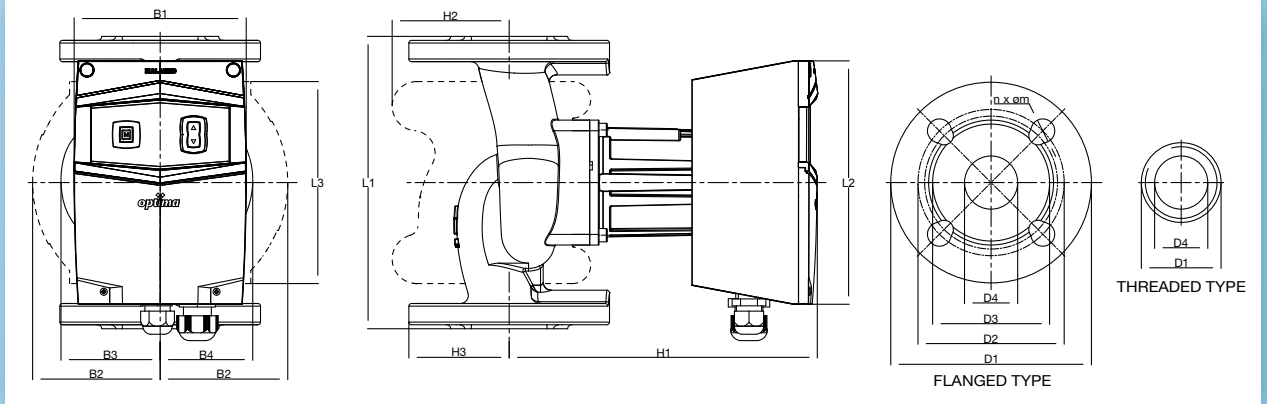
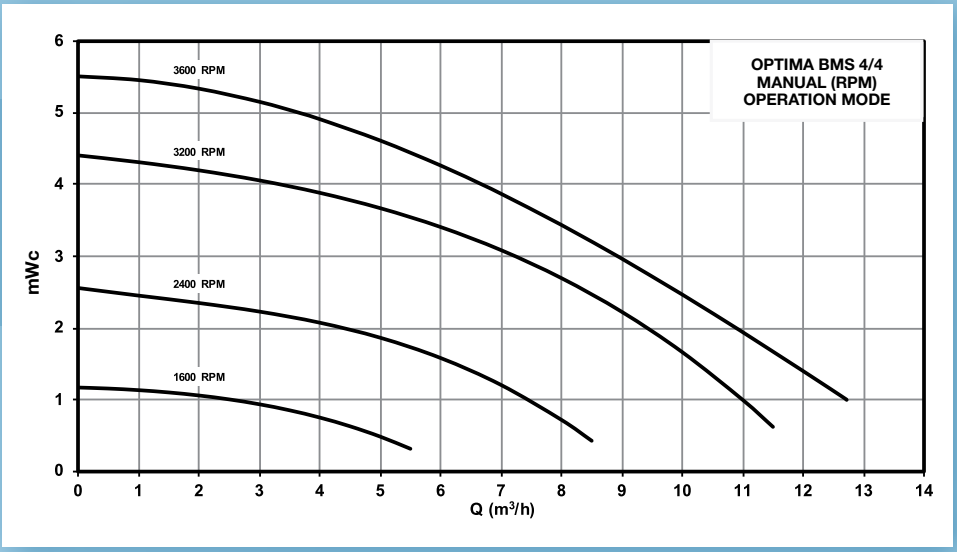
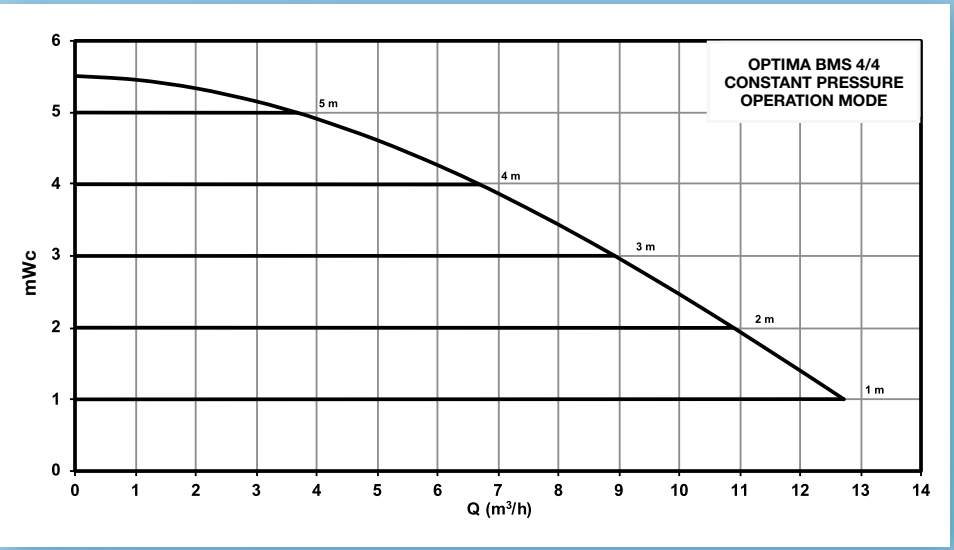
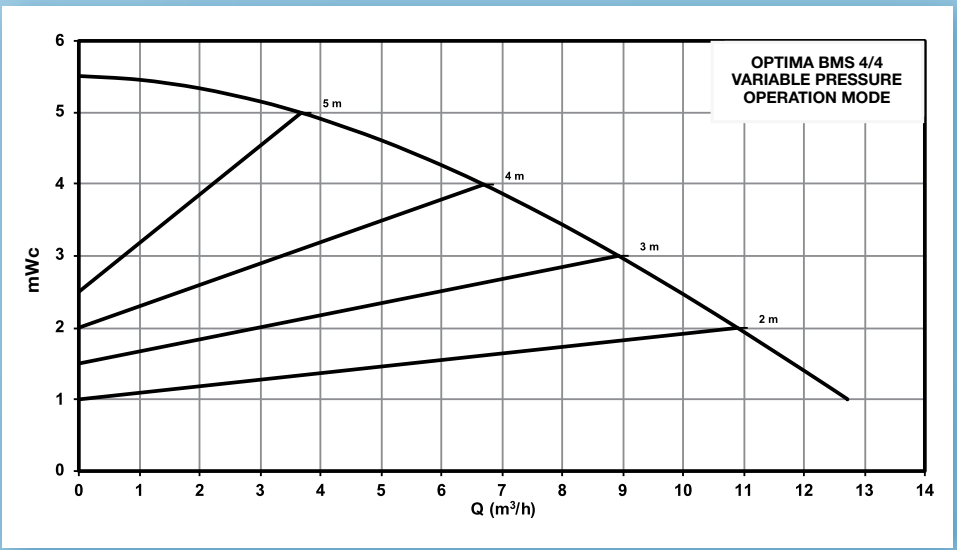


	DIMENSIONS																	
	D1 (mm)	D2 (mm) PN6	D2 (mm) PN10	D3 (mm)	D4 (mm)	n x Øm (mm) PN6	n x Øm (mm) PN10	B1 (mm)	B2 (mm)	B3 (mm)	B4 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	H1 (mm)	H2 (mm)	H3 (mm)	Weight (kg)
Optima BMS 4/4	151.0	100.0	110.0	88.0	40.0	4x14	4x18	129.5	96.0	69.7	57.5	220.0	183.0	152.0	232.3	88.0	75.5	12


OPTIMA BMS 4/4
MANUAL (RPM)
OPERATION MODE
3600 RPM
3200 RPM
2400 RPM
1600 RPM
mWc
Q (m³/h)


OPTIMA BMS 4/4
CONSTANT PRESSURE
OPERATION MODE
5 m
4 m
3 m
2 m
1 m
mWc
Q (m³/h)


OPTIMA BMS 4/4
VARIABLE PRESSURE
OPERATION MODE
5 m
4 m
3 m
2 m
mWc
Q (m³/h)

OPTIMA BMS 4/8 5/8

Maximum Pump Head [m]	According to pump type
Maximum Flow Rate [m³/h]	According to pump type
Motor Speed [rpm]	1.800 – 4.600
Input Voltage and Frequency	1~ 230 V AC ± %10, 50 Hz, PE
Nominal Current [A]	1,35
Power drawn [W]	15 – 300
Energy Efficiency Index (EEI)	< 0.23
Insulation Class	F
Protection Class	IP X4D
Temperature Class	TF 110
Maximum System Pressure	PN 6/10[1]
Sound Pressure	< 56 dB
Relative Humidity	< %90

[1] The pump is suitable for use at both pressure values.

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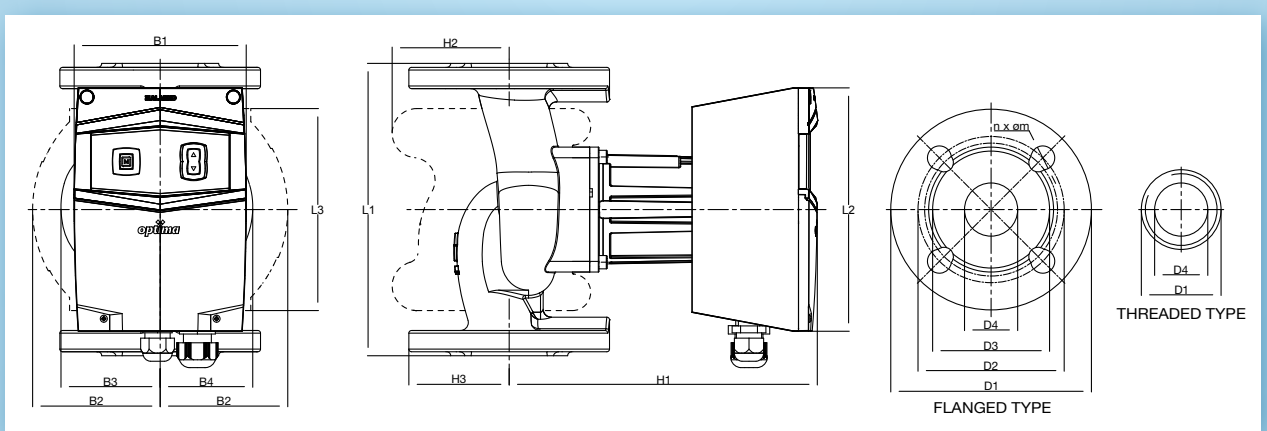
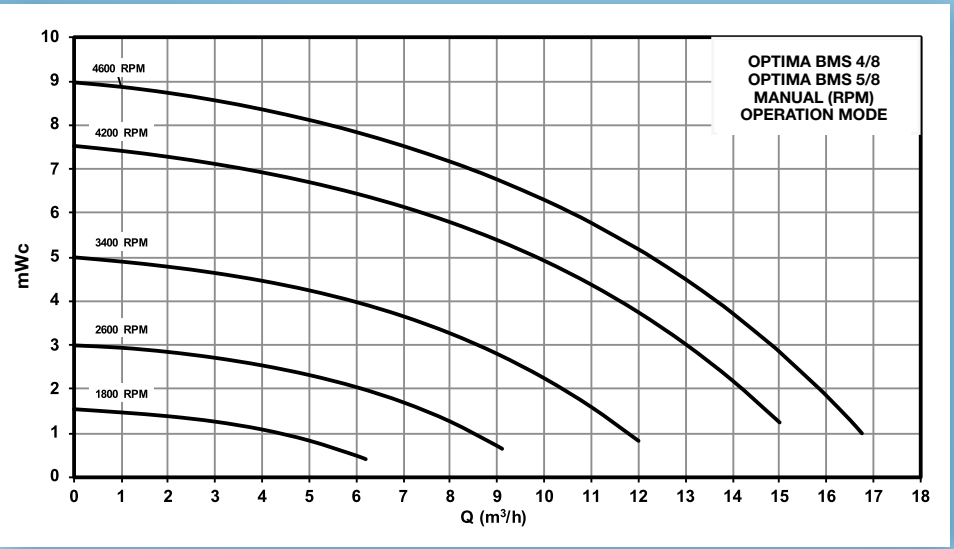
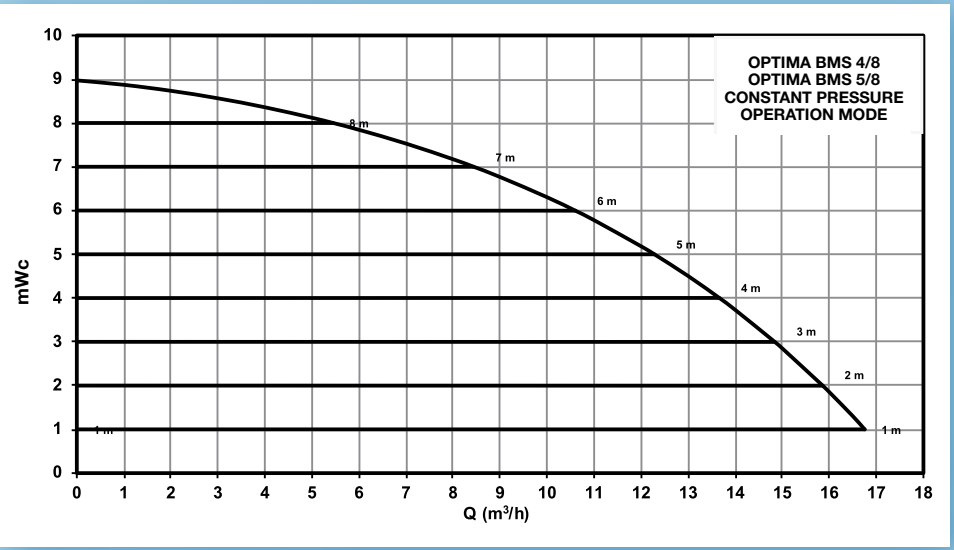
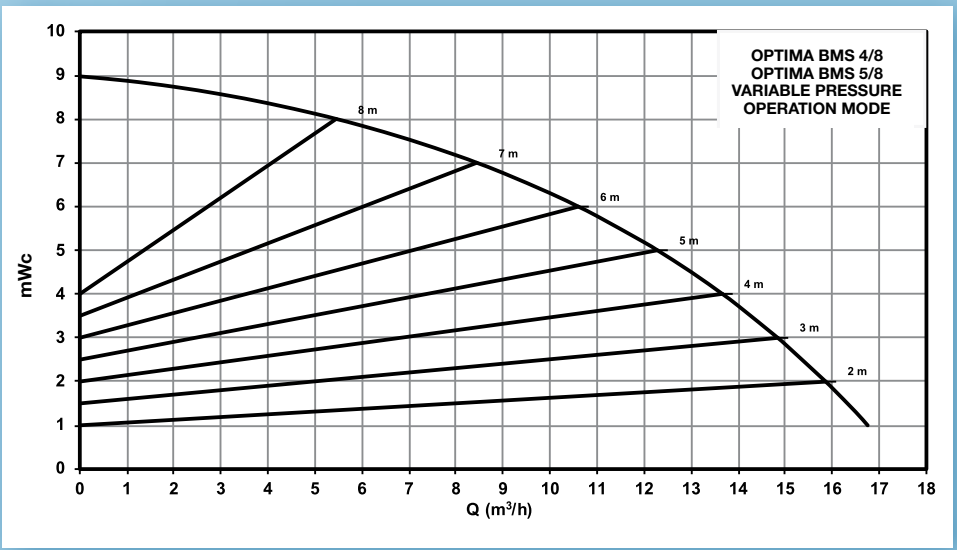


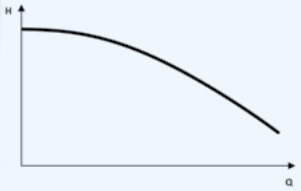
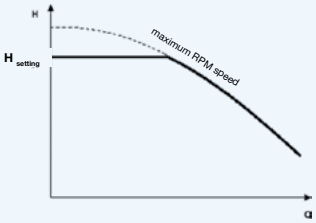
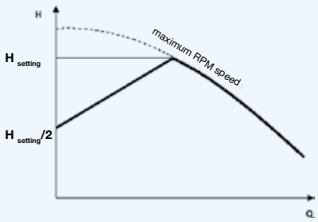
	DIMENSIONS																	
	D1 (mm)	D2 (mm) PN6	D2 (mm) PN10	D3 (mm)	D4 (mm)	n x Øm (mm) PN6	n x Øm (mm) PN10	B1 (mm)	B2 (mm)	B3 (mm)	B4 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	H1 (mm)	H2 (mm)	H3 (mm)	Weight (kg)
Optima BMS 4/8	151.0	100.0	110.0	88.0	40.0	4x14	4x18	129.5	96.0	69.7	57.5	220.0	183.0	152.0	232.0	88.0	75.5	12
Optima BMS 5/8	166.0	110.0	125.0	102.0	50.0	4x14	4x18	129.5	96.0	69.7	57.5	240.0	183.0	152.0	232.0	88.0	83.0	12


OPTIMA BMS 4/8
OPTIMA BMS 5/8
MANUAL (RPM)
OPERATION MODE
4600 RPM
4200 RPM
3400 RPM
2600 RPM
1800 RPM
mWc
Q (m³/h)


OPTIMA BMS 4/8
OPTIMA BMS 5/8
CONSTANT PRESSURE
OPERATION MODE
8 m
7 m
6 m
5 m
4 m
3 m
2 m
1 m
mWc
Q (m³/h)


OPTIMA BMS 4/8
OPTIMA BMS 5/8
VARIABLE PRESSURE
OPERATION MODE
8 m
7 m
6 m
5 m
4 m
3 m
2 m
mWc
Q (m³/h)

MODE SELECTION TABLE

	Manual Pressure	Constant Pressure	Variable Pressure
			
Heating Systems with Two Pipes and Thermostatic Valves		• Total friction loss > 4mSS • Too long circulation line • High friction losses • Usage of pressure compensating valve • Branch valves with extremely low flow	• Total friction loss < 2mSS • Short or large diameter circulation lines • Low friction losses
Single Pipe Heating Systems	• Systems that do not use flow changer circuit elements (thermostatic radiator valve, two-way cut-off valve, etc.)		• Systems using thermostatic valves • Systems using thermostatic valve and pressure compensation valve
Floor Heating Systems	• Systems that do not use flow changer circuit elements (thermostatic radiator valve, two-way cut-off valve, etc.)	• High friction losses • Usage of pressure compensating valve	• Systems using thermostatic valves
Heating Systems Using Condensing Boiler		• Secondary circulation circuits • High friction losses • Usage of pressure compensating valve	• Primary circulation circuits • Low pressure loss • Natural circulation
Flow rate and Systems with Unchanged Internal System Resistance	• DWH (Boiler) applications • Plate exchanger storage tank applications • In recirculation applications where pressure loss and flow rate changes are very low	• Primary circulation circuits • Low pressure loss • Natural circulation	• High friction losses • Usage of pressure compensating valve

CABLE and FUSE TABLE

	5/8	4/10	4/8	4/4	3/12-180	3/10-180	3/7-180	2/10-180
Cable	3 x 1.5 mm²							
Insurance	2A							

2 YEAR WARANTY

The right to amend specifications under technologic developments is reserved

ALARKO
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