

Heating

Air-conditioning/Refrigeration

Service water

AX.. / A.. / ModulA..

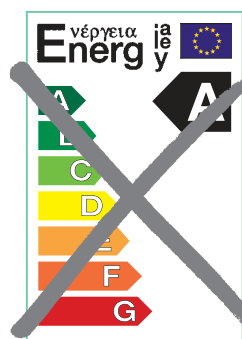
Highly efficient mini-energy pumps



More than pumps



**Biral ECO design
replaces energy label A**



Since 1 January 2013, the old energy label will be replaced with classifications «A» to «G» from the new energy efficiency index (EEI).

Highly-efficient mini-energy circulation pumps from Biral are exceptionally energy-efficient and meet the requirements of the eco-design guidelines (EO regulation no. 641/2009) that have been informed since 1 January 2013.

Reference value
for the most efficient circulation pumps:
 $EEI \leq 0.20$

Only the best of the circulation pumps currently classified under «A» will meet the new efficiency requirements.

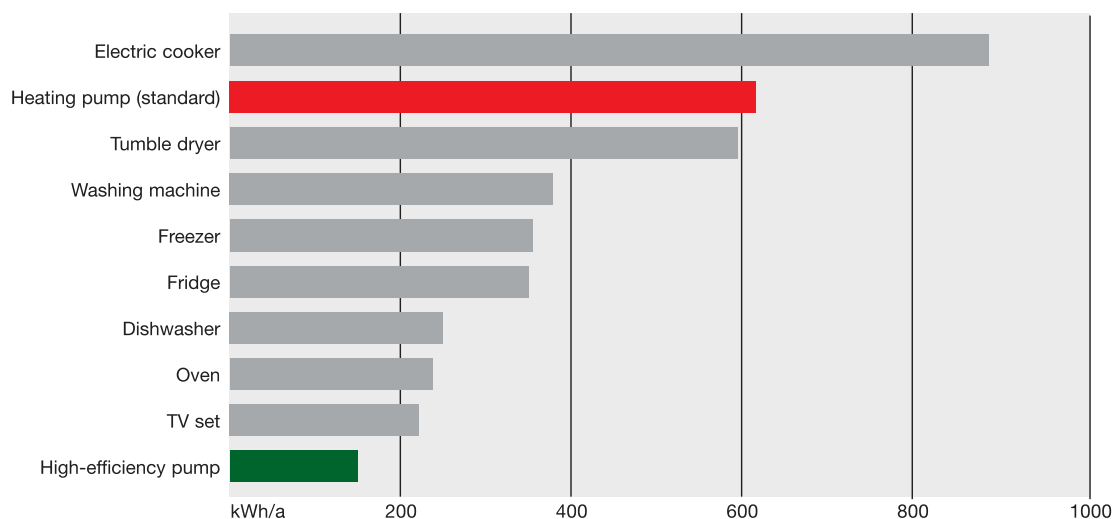
Drinking water circulation pumps do not come under the eco-design guidelines. Nevertheless, there are already highly-efficient, energy-saving pumps for this, which Biral is introducing into the range.

**Highly efficient
mini energy pumps
are economical:
Up to 80 per cent lower
electricity consumption**

New highly-efficient circulation pumps nowadays use up to 80 per cent less electricity than old inefficient models. As circulation pumps are in constant use, particularly during the cold

season, the purchase price of a highly-efficient circulation pump pays for itself after just a few years. With a lifespan of around 15 years, it pays to change.

Electricity use per year in a detached house



Introduction

Page	2	Biral – The innovator of highly-efficient permanent magnet technology
	3	Quality features of Biral heating circulating pumps
	4	The right pump at the right place

Heating circulation pumps



*«You enjoy your cosy warm home.
And the Mini-Energy pump from Biral allows the heating water to circulate. Silently and with maximum efficiency!»*

Page	11	Single pumps
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Heating

Cold water circulation pumps



«31 °C outside temperature. The air-conditioning in the office ensures a comfortable working atmosphere. And the Mini-Energy cold water pump from Biral plays its part. With maximum efficiency.»

Page	39	Single pumps
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Air-conditioning/
Refrigeration

Intelligent service water pumps



*«You turn on the shower as usual.
And the AXW-smart from Biral already knows.
Thanks to smart-technology!»*

Page	61	AXW smart
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Service water

Service water pumps



Seepark Hotel, Thoun.
*«The man in suite 57 turns on the shower.
And Biral AXW is on the spot – with maximum efficiency.»*

Page	65	AXW, AW, Modula BLUE
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Service water

Biral – The innovator of highly-efficient permanent magnet technology



promoted by the Wuppertal Institute for Climate, Environment, Energy Co.

Biral mini-energy pumps since 2000

As long ago as November 2000, Biral won the Wuppertal energy and environment prize, in addition to the Swiss Prix Eta Plus. This was achieved with the heating circulating pump MC 10, the efficiency of which exceeded all previous values.



Biral was already a leader at that time with regard to efficiency and has gradually enhanced its superiority. In the meantime of course heating systems of all sizes can be fitted with pumps bearing the A-label for maximum energy efficiency: for the sake of the environment and for greater operating reliability to save energy costs.



AXW smart – the intelligent Mini-Energy service water pump

The world innovation AXW smart was distinguished with the VSK award at the VSK trade-fair in Utrecht. The jury congratulated Biral on this new product. The self-taught pump ensures maximum comfort with massive energy savings. The smart technology learns your consumption habits and provides hot water at the right time.



Biral – Pioneers in power-saving heating circulation pumps

The Product Test foundation tested nine heating pumps. The test criteria were energy-efficiency, handling and suitable design for recycling. The Biral pump is highly economical and received the distinction «very good»!

Quality features of Biral heating circulating pumps

Three main demands are made of our circulating pump:

- **silent operation**
- **years of reliable use**
- **low energy consumption**

In order to satisfy these requirements in an increasingly better manner, Biral pumps have been continuously further developed for decades.

Manufacture takes place in a modern plant in Münsingen using the best and fully-proven materials.

All circulating pumps are based on fully-proven mechanical components optimised over many years:

- **The indestructible precision sliding bearings** ensure silent operation and largely determine the long service life of the pump.
- **The high temperature resistance** of the winding ensures a long service life. It permits use with high temperature media.
- **The ingenious water supply** to the rotor space ensures immediate lubrication of the bearings and even makes venting unnecessary when commissioning small pumps.

The new ECO-series provides significant energy savings. The new motor technology permits energy savings up to 80 percent!

- **Automatic pressure regulation** with variable rate of flow ensures a further saving
- **User-friendly operation** permits simple adjustment to the required operating conditions
- **The «watts indicator»** shows the end user the current power consumption directly on the pump
- **Various auxiliary modules** permit integration of the pump in domestic control systems



Biral®

**ECO
DESIGN**

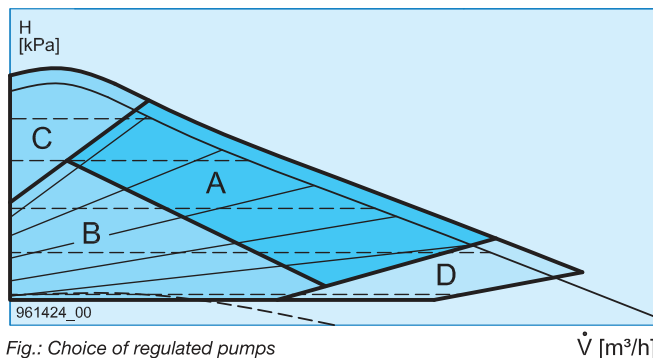
Notes for project planning and installation

1. Selection of circulating pump

Recommendation for regulated circulating pumps

Regulated circulating pumps continually adjust the flowrate along a pre-defined characteristic with changing pipe characteristics.

Nevertheless it is also worthwhile here to make a careful choice of the right pump size.



A = Optimum control range
– Range with the best degree of overall effectiveness

B = Limited control range
– If possible select a smaller pump

C = Limited control range
– The pump works but has limited control

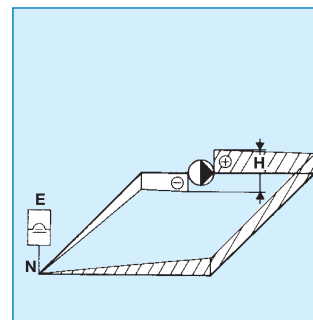
D = Outside the control range
– If possible avoid

2. Required operating pressure at circulating pump

If the operating pressure is too low, adequate lubrication of the pump sliding bearings (water lubrication) is not ensured and therefore their service life is reduced. The values specified should therefore be observed without fail.

The required operating pressure depends on the type of pump, the maximum temperature of the medium and the static pressure. If the position of the expansion vessel is not ideal, the operating pressure at the pump inlet when operating the pump can be reduced further (see fig. 2).

This can lead to penetration of air and inadequate bearing lubrication. In this case the static operating pressure must be raised accordingly.



⊕ = Overpressure range
⊖ = Underpressure range
E = Expansion vessel
N = Neutral point
H = Delivery head of pump

3. Requirements of medium

Water treatment

The guidelines of SWKI BT102-01 and VDI 2035 «Water treatment for heating, steam and air-conditioning systems» should be observed.

Overall hardness

7 to 14 °fH (4-8 °dH)

pH value

8.3 to 9.5 (8.3 to max. 9 for systems with aluminium or non-ferrous metal components)

Oxygen

<0,1 mg/dm³

The systems must be thoroughly flushed before filling.

Anti-frost mixture

Water/glycol mixture with up to 50% glycol is permitted. From 10% glycol proportion the delivery data of the pumps must be corrected according to fig. 3.

Example

$$H_{\text{mixture}} = 30 \text{ kPa}$$

$$Q_{\text{mixture}} = 7 \text{ m}^3/\text{h}$$

Medium:

50% glycol mixture at -10 °C operating temperature

Factors according to fig. 4:

$$F_h = 1,26$$

$$F_q = 1,57$$

Conversion of required pump operating point for water heat transfer

$$H_{\text{water}} = H_{\text{mixture}} \times F_h$$

$$= 30 \times 1,26 = 37,8 \text{ kPa}$$

$$Q_{\text{water}} = Q_{\text{mixture}} \times F_q$$

$$= 7 \times 1,57 = 11 \text{ m}^3/\text{h}$$

Circulating pump complying with operating point

$$Q_{\text{water}}/H_{\text{water}}:$$

ModuA 40-10 220 GREEN

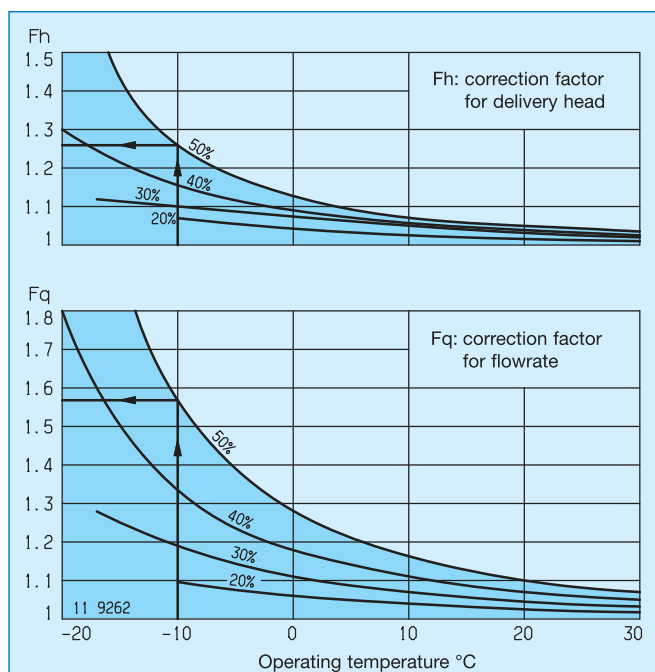


Fig. 3: Correction factors for pump characteristic compared with water delivery

4. Pipeline connection and pump installation

- Always fit pump between two shut-off devices
- Fit pump so that the motor shaft is horizontal, regardless of the position of the pump casing (fig. 4)
- The arrow on the pump casing shows the flow direction (fig. 5)
- Fit pump in pipeline free from stress
- When the pump is fitted do not work too closely with a welding flame
- The fitting of heating pumps on the inlet side reduces the danger of contamination. They should preferably be fitted on the return side if the temperature of the medium is very high.

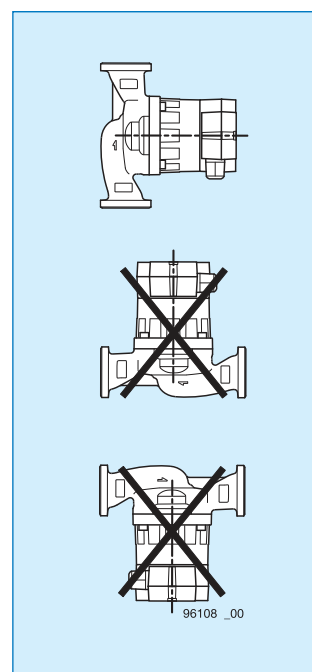


Fig. 4: Fitting pump

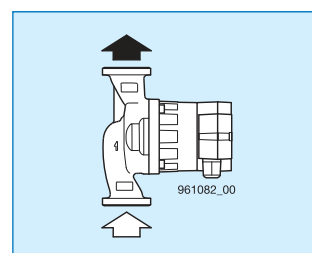


Fig. 5: Flow direction

5. Choice of control type

Regulated pumps can be operated in three different control types:



Regulation with proportional operating pressure (PP)

The internal regulation increases the differential pressure of the system with increasing flowrates. This desired regulation curve can be preset. This regulation is particularly suitable for the following systems:

- Two-pipe heating systems with thermostatic valves and
 - long pipe sections
 - valves with wide working range
 - high pressure losses
- Floor heating systems with thermostatic valves and high pressure losses
- Systems with primary circuit pumps with high pressure loss.



Regulation with constant operating pressure (CP)

The internal regulation keeps the differential pressure of the system constant if the flowrate changes. This pressure can be preset. This regulation is particularly suitable for the following systems:

- Two-pipe systems with thermostatic valves and
 - delivery head larger than 2 m
 - natural circulation (low pressure loss, large pipe dimensions)
- Floor heating systems with thermostatic valves
- Single-pipe heating systems with thermostatic valves and regulating valves
- Systems with primary circuit pumps with low pressure loss



Regulation with constant speed (CS)

With this form of regulation the internal pressure regulation is switched off.

The speed of the pump can be adjusted to a constant value manually or by an external signal (auxiliary module 0–10 V).

This form of regulation is particularly suitable for systems with constant pressure conditions (heat exchangers, boiler feed pumps, etc.) or for external system regulation.

6. Choice of regulation characteristic

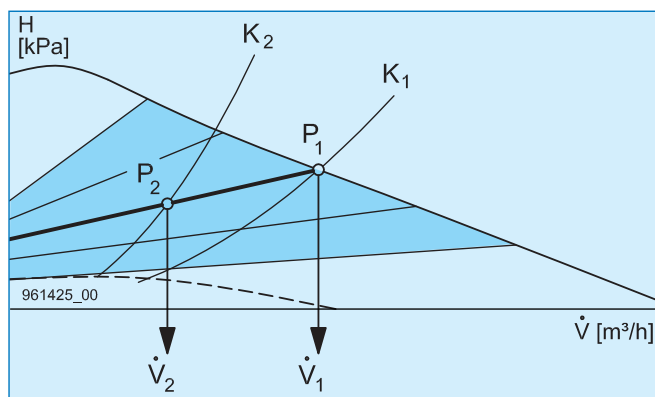


Fig. 6: Continuous variation of pump speed in regulated pumps

With changing pipeline resistance ($K_1 \rightarrow K_2$) regulated circulating pumps continuously adjust the flowrate along a pre-defined characteristic curve (fig. 6).

The required regulation characteristic can be set by means of the rotary switch or key A2 (fig. 7).

7. Operation of A pumps

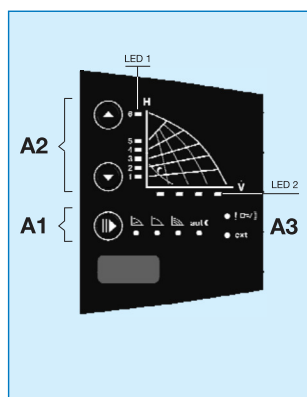


Fig. 7: Setting regulation characteristic curves

Operation

Regulated circulating pumps can be operated in three different regulation modes and in part have a so-called automatic minimum speed.

- A1** Form of regulation
- A2** Regulation characteristics 1...5
6 max. pump characteristic
- A3** Illuminated symbol for fault, ext. operation

-  Proportional pressure
-  Constant pressure
-  Constant speed

Aut.  with and without automatic minimum speed

LED 1: Indication of regulation characteristic set

LED 2: Indication of current rate of flow $\dot{V}$ (25 ... 100%)

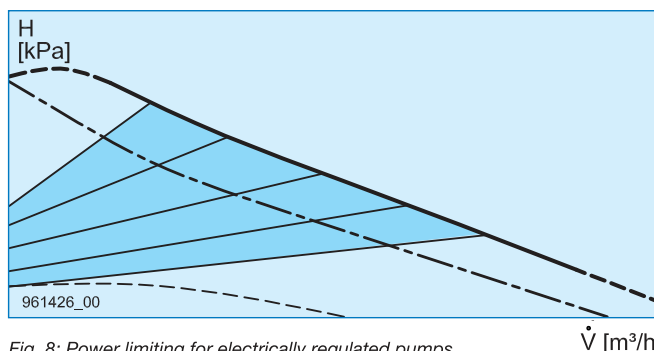


Fig. 8: Power limiting for electrically regulated pumps
----- Power limiting

Service limit for A pumps

All regulated circulating pumps are supplied with preset power limiting. This characteristic curve is sufficient owing to the power reserve in the design.

The limiting also saves energy and flow noise is reduced owing to over-dimensioned pumps. If full power is required, the pump can be changed over in the terminal box (see operating instructions).

8. Operation of Modula

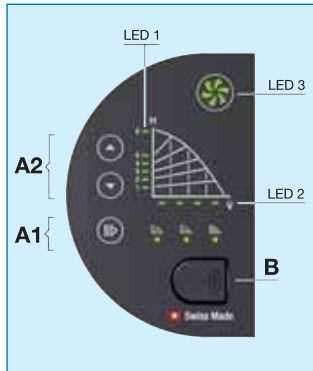


Fig. 9

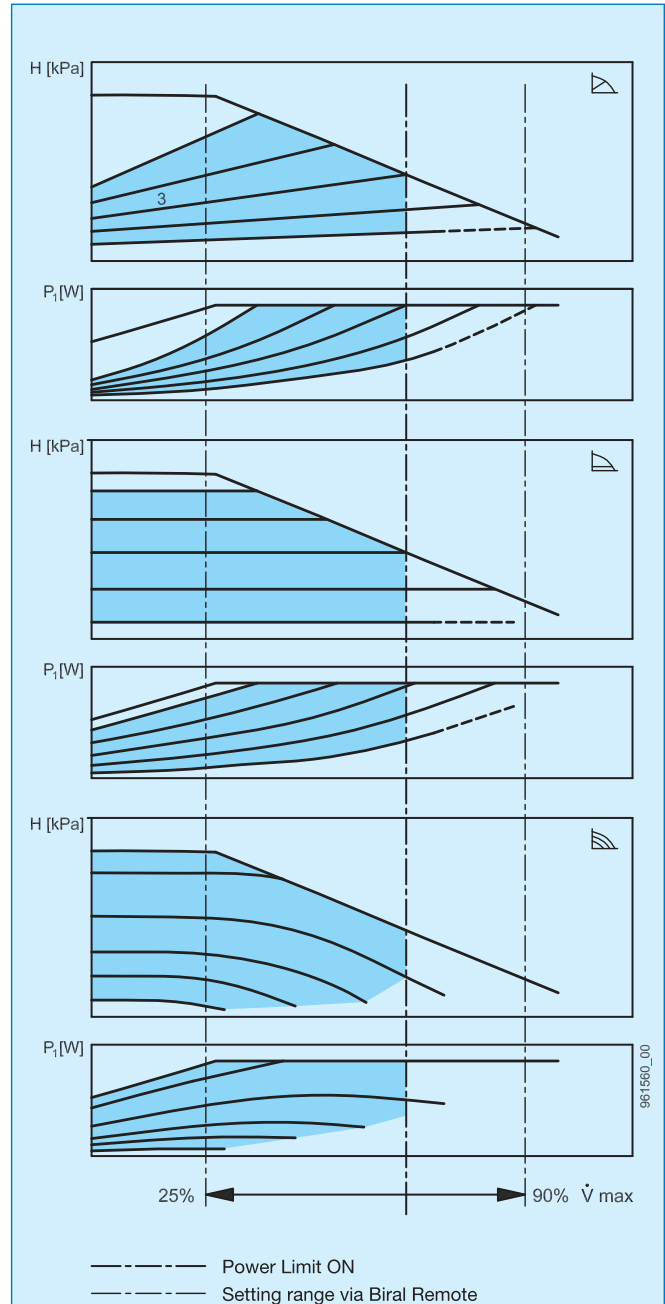
- A1** Setting the control type
- Proportional pressure
 - Constant pressure
 - Constant speed
- A2** Setting of the control characteristics
10 control characteristics (stage) can be set
- LED 1:** Display of control characteristics set (stage)
- LED 2:** Display of current $\dot{V}$ delivery amounts (25 ... 100%)
- LED 3:** Biral Impeller displays the status of the pump
- B** Slot for remote adapter

9. Power limit for Modula

The power limit (volume flow limit $\dot{V}$) can be activated in the pump.

The pre-set maximum volume flow $\dot{V}$ is at the end of control characteristic 3 (proportional pressure).

The volume flow limit $\dot{V}$ can be set from 25...90% via Biral Remote.





«I want maximum performance
for minimal energy consumption.»



«I want simple operation
and durable quality.»



«I want all extras
and technical features
that are available».

ModulA – the latest generation of top-class pumps, which can do exactly what you want – nothing more, nothing less.

Heating circulation pumps

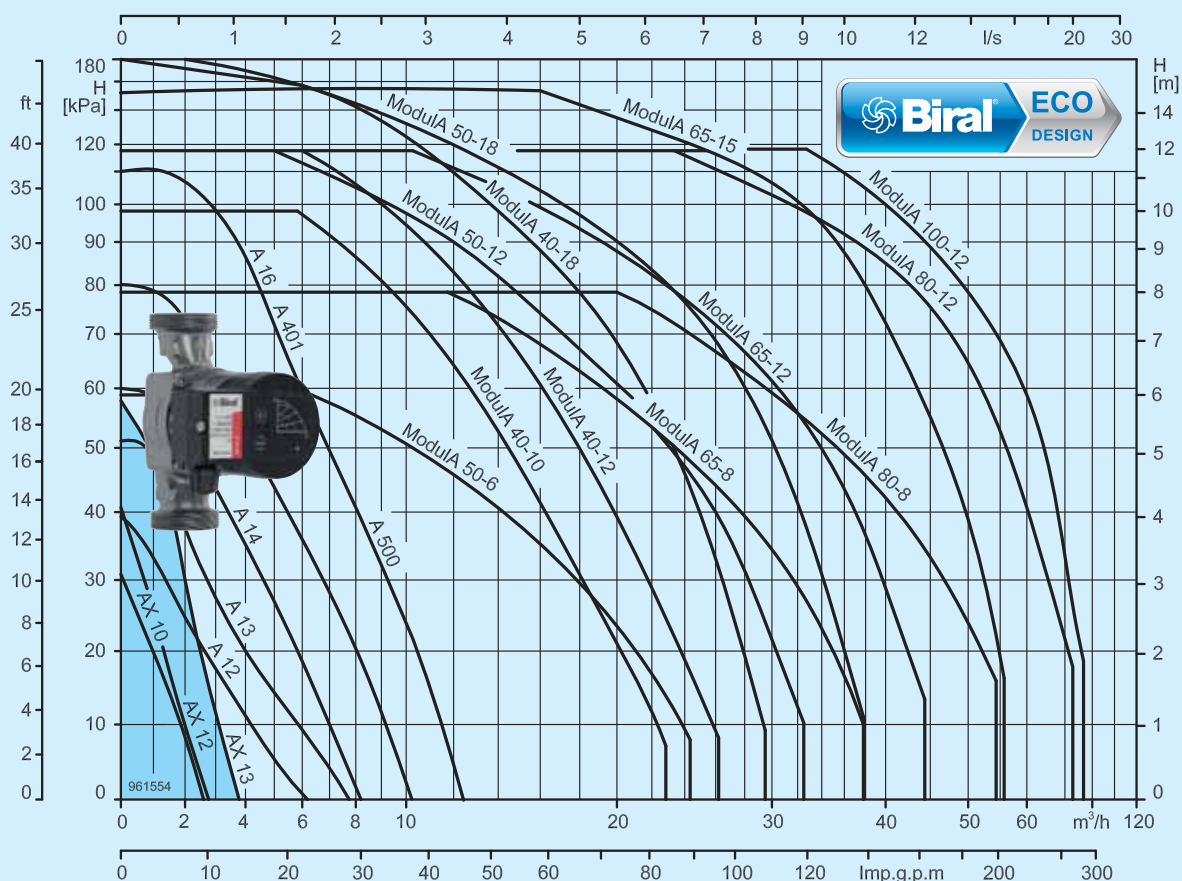
AX 10 ... AX 13



Summary

Type	Connection	Nominal width DN	Discharge head max. mWC	Installation length mm	Operating pressure max./bar	EEL-value
AX 10	G 2"	32	3	170	10	≤0.19
AX 12	G 2"	32	4	170	10	≤0.21
AX 13	G 2"	32	6	170	10	≤0.23
AX 10-1	G 1½"	25	3	180	10	≤0.19
AX 12-1	G 1½"	25	4	180	10	≤0.21
AX 13-1	G 1½"	25	6	180	10	≤0.23
AX 12-2	G 2"	32	4	180	10	≤0.21
AX 13-2	G 2"	32	6	180	10	≤0.23
AX 12-3	G 1½"	25	4	130	10	≤0.21
AX 13-3	G 1½"	25	6	130	10	≤0.23
AX 12-4	G 1"	15	4	130	10	≤0.21
AX 13-4	G 1"	15	6	130	10	≤0.23

Heating



AX 10, -1

Installation length	170/180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +110°C
Required operating pressure at 500 m a.s.l.	
at 75°C water temperature	0.05 bar
at 90°C water temperature	0.30 bar
at 110°C water temperature	1.10 bar
For every ±100 m altitude	±0.01 bar
Weight	2.3 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.05...0.18 A
	min 0.05 A
Power	Regulation 4...21 W
	min 4 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

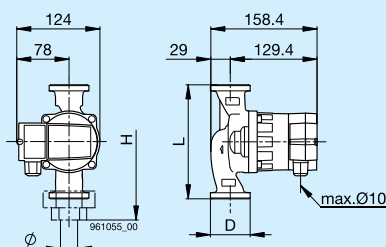
Ambient temp. °C	Media temperature min. °C max. °C	
15	15	110
30	30	110
35	35	90
40	40	70

The pump is fitted with internal electric motor protection and requires no external motor protection.

Options:

– Heat insulation shells

See page 74 for further details

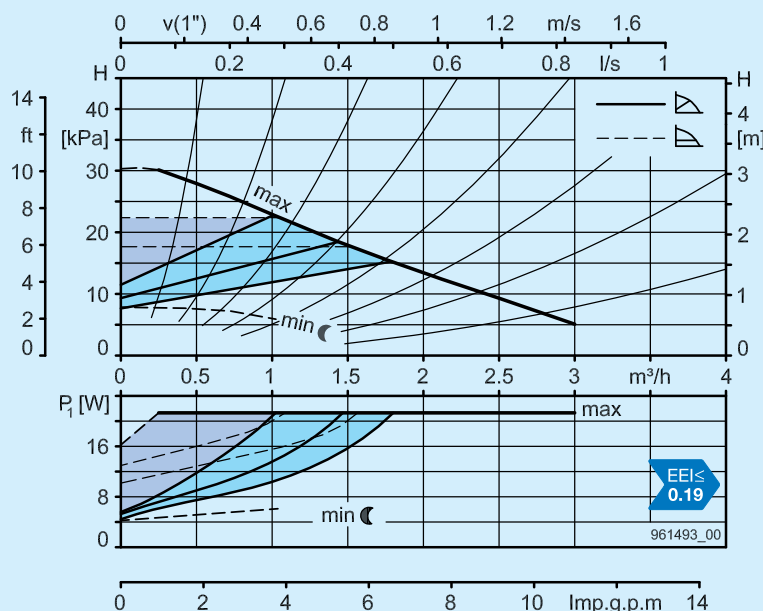


AX 10

Ø = 1 1/2", 1 1/4", 1 3/4"
D = 2"
L = 170 mm
H = 235 mm

AX 10-1

Ø = 1 3/4"
D = 1 1/2"
L = 180 mm
H = 235 mm



AX 12, -1, -2, -3, -4

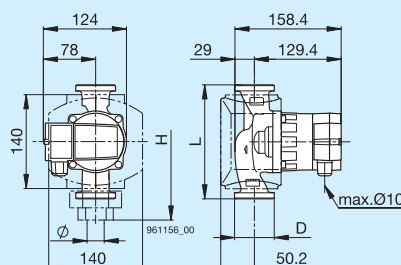
Installation length	130/170/180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +110°C
Required operating pressure at 500 m a.s.l.	
at 75°C water temperature	0.05 bar
at 90°C water temperature	0.30 bar
at 110°C water temperature	1.10 bar
For every ±100 m altitude	±0.01 bar
Weight	2.3 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.05...0.19 A
	min 0.05 A
Power	Regulation 5...22 W
	min 5 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

Ambient temp. °C	Media temperature min. °C max. °C	
15	15	110
30	30	110
35	35	90
40	40	70

The pump is fitted with internal electric motor protection and requires no external motor protection.

The pumps AX 12, -1, -2 are fitted with a thermal insulation shell.



AX 12

Ø = 1 1/2", 1 1/4", 1 3/4"
D = 2"
L = 170 mm
H = 235 mm

AX 12-1

Ø = 1 3/4"
D = 1 1/2"
L = 180 mm
H = 235 mm

AX 12-2

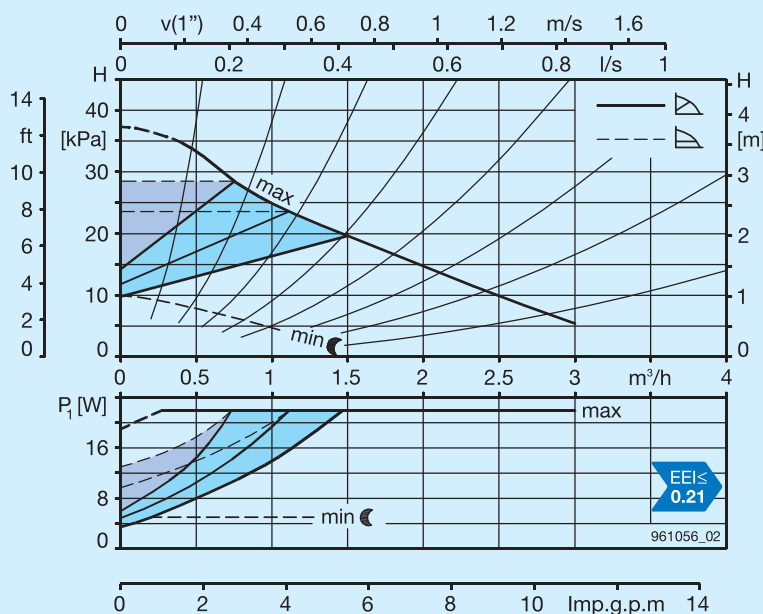
Ø = 1 1/2", 1 1/4", 1 3/4"
D = 2"
L = 180 mm
H = 245 mm

AX 12-3

Ø = 1 3/4"
D = 1 1/2"
L = 130 mm
H = 185 mm

AX 12-4

Ø = 1"
D = 1"
L = 130 mm
H = 178 mm



AX 13, -1, -2, -3, -4

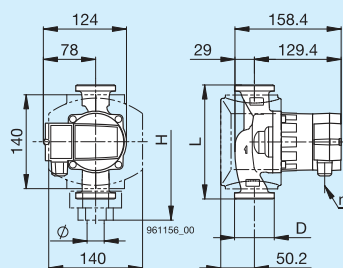
Installation length	130/170/180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +110°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.05 bar
at 90°C water temperature	0.30 bar
at 110°C water temperature	1.10 bar
For every ±100 m altitude	±0.01 bar
Weight	2.3 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.05...0.38 A
	min 0.05 A
Power	Regulation 5...45 W
	min 5 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

Ambient temp.	Media temperature	
°C	min. °C	max. °C
15	15	110
30	30	110
35	35	90
40	40	70

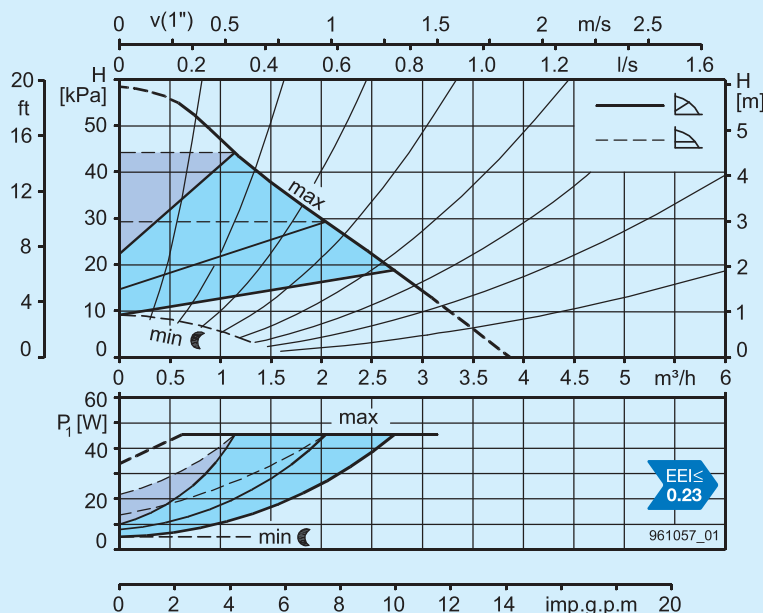
The pump is fitted with internal electric motor protection and requires no external motor protection.

The pumps AX 13,-1,-2 are fitted with a thermal insulation shell.



AX 13	AX 13-1
Ø = 1 1/2", 1 1/4", 1", 3/4"	Ø = 1", 3/4"
D = 2"	D = 1 1/2"
L = 170 mm	L = 180 mm
H = 235 mm	H = 235 mm

AX 13-2	AX 13-3	AX 13-4
Ø = 1 1/2", 1 1/4", 1", 3/4"	Ø = 1", 3/4"	Ø = 1/2"
D = 2"	D = 1 1/2"	D = 1"
L = 180 mm	L = 130 mm	L = 130 mm
H = 245 mm	H = 185 mm	H = 178 mm



Heating circulation pumps

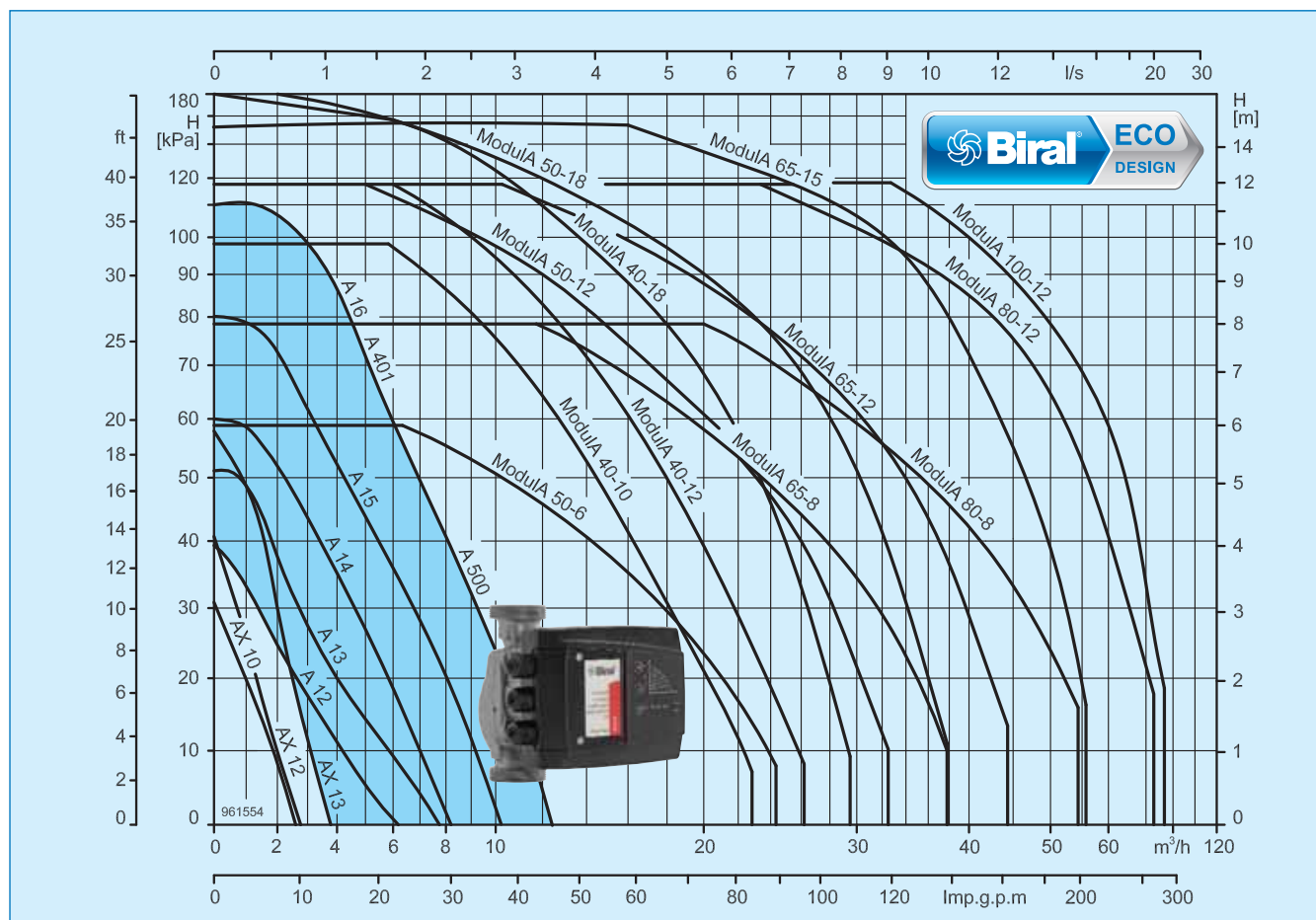
A 12 ... A 401, A 500

Summary



Type	Connection	Nominal width DN	Discharge head max. mWC	Installation length mm	Operating pressure max./bar	EEI-value
A 12	G 2"	32	4	170	10	≤0.21
A 13	G 2"	32	5	170	10	≤0.21
A 14	G 2"	32	6	170	10	≤0.22
A 15	G 2"	32	8	170	10	≤0.22
A 12-1	G 1 1/2"	25	4	180	10	≤0.21
A 13-1	G 1 1/2"	25	5	180	10	≤0.21
A 14-1	G 1 1/2"	25	6	180	10	≤0.22
A 15-1	G 1 1/2"	25	8	180	10	≤0.22
A 16-1	G 1 1/2"	25	11	180	10	≤0.21
A 12-2	G 2"	32	4	180	10	≤0.21
A 13-2	G 2"	32	5	180	10	≤0.21
A 14-2	G 2"	32	6	180	10	≤0.22
A 15-2	G 2"	32	8	180	10	≤0.22
A 16-2	G 2"	32	11	180	10	≤0.21
A 401	PN 6/10	40	11	220	10	≤0.22
A 401-1	PN 6/10	40	11	250	10	≤0.22
A 500	PN 6/10	50	11	220	10	≤0.22

Heating



A 12, -1, -2

Installation length	170/180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +110°C ²⁾
Ambient temperature	max. 40°C
Required operating pressure at at 75°C water temperature at 95°C water temperature For every ±100 m altitude	500 m a.s.l. 0.10 bar 0.55 bar ±0.01 bar
Weight	3.8 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...0.25 A min 0.14 A
Power	Regulation 8...33 W min 8...19 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

Ambient temp.	Media temperature	
°C	min. °C	max. °C
15	15	95/110 ²⁾
30	30	95/110 ²⁾
35	35	90
40	40	70

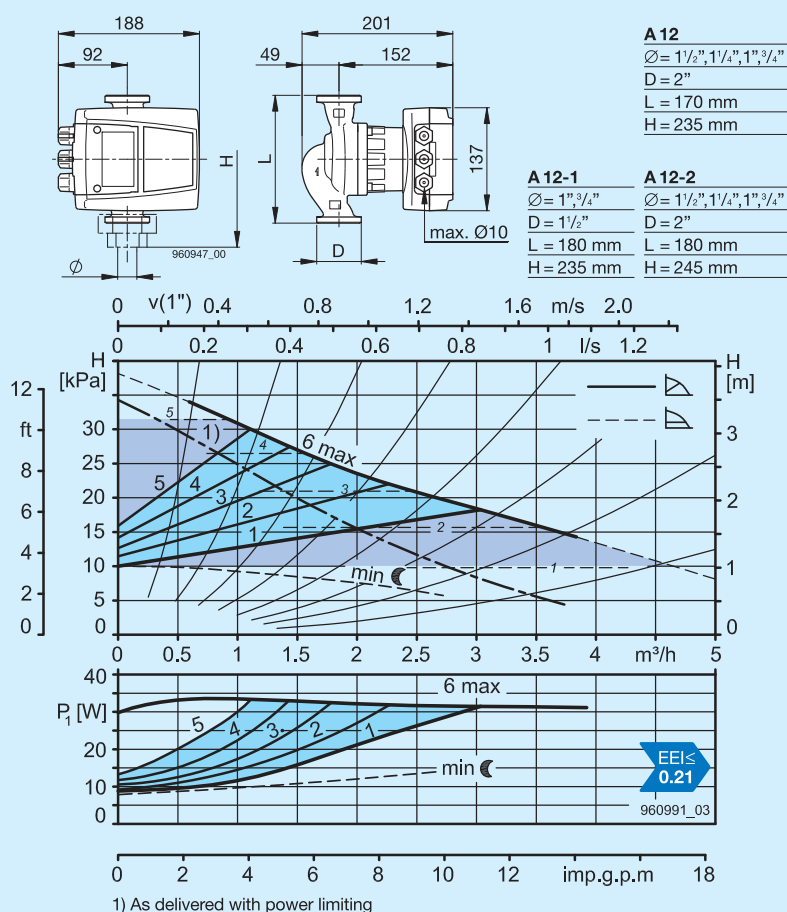
²⁾ for short periods, approx. 30 min

The pump is fitted with internal electric motor protection and requires no external motor protection. The pump is provided with fault or operating message (switchable).

Options:

- Heat insulation shells
- BIM A signal module
- BIM B control module

See page 74 for further details



A 13, -1, -2

Installation length	170/180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +110°C ²⁾
Ambient temperature	max. 40°C
Required operating pressure at at 75°C water temperature at 95°C water temperature For every ±100 m altitude	500 m a.s.l. 0.10 bar 0.55 bar ±0.01 bar
Weight	3.8 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...0.35 A min 0.14 A
Power	Regulation 8...50 W min 8...19 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

Ambient temp.	Media temperature	
°C	min. °C	max. °C
15	15	95/110 ²⁾
30	30	95/110 ²⁾
35	35	90
40	40	70

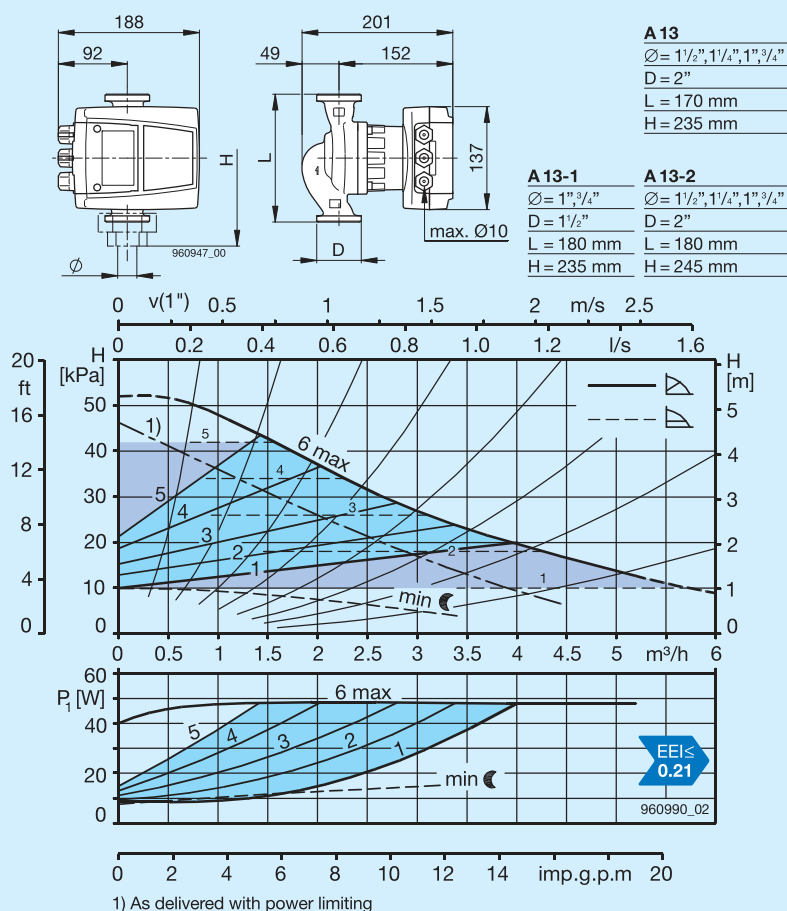
²⁾ for short periods, approx. 30 min

The pump is fitted with internal electric motor protection and requires no external motor protection. The pump is provided with fault or operating message (switchable).

Options:

- Heat insulation shells
- BIM A signal module
- BIM B control module

See page 74 for further details



A 14, -1, -2

Installation length	170/180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +110°C ²⁾
Ambient temperature	max. 40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.55 bar
For every ±100 m altitude	±0.01 bar
Weight	3.8 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...0.5 A
	min 0.14 A
Power	Regulation 8...70 W
	min 8...19 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

Ambient temp.	Media temperature	
°C	min. °C	max. °C
15	15	95/110 ²⁾
30	30	95/110 ²⁾
35	35	90
40	40	70

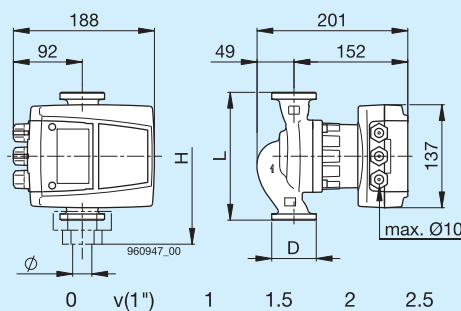
²⁾ for short periods, approx. 30 min

The pump is fitted with internal electric motor protection and requires no external motor protection. The pump is provided with fault or operating message (switchable).

Options:

- Heat insulation shells
- BIM A signal module
- BIM B control module

See page 74 for further details



A 14

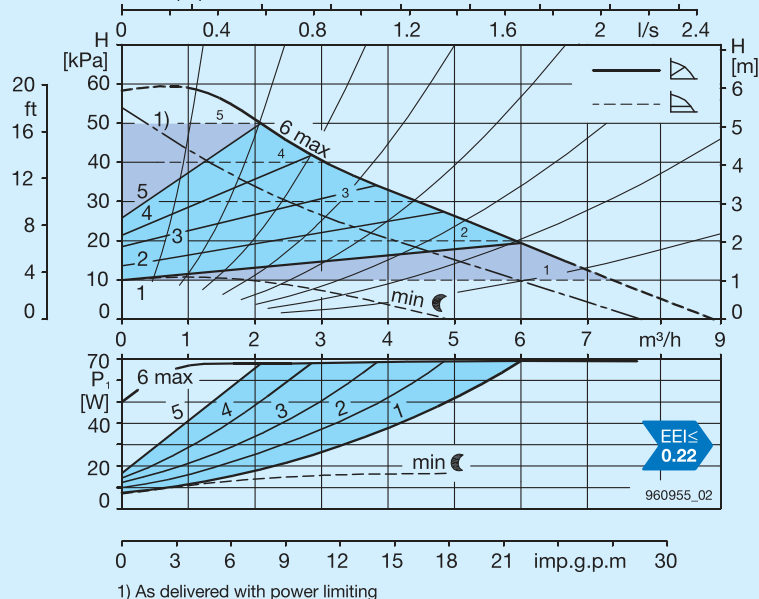
Ø = 1 1/2", 1 1/4", 1 3/4"
D = 2"
L = 170 mm
H = 235 mm

A 14-1

Ø = 1", 3/4"
D = 1 1/2"
L = 180 mm
H = 235 mm

A 14-2

Ø = 1 1/2", 1 1/4", 1 3/4"
D = 2"
L = 180 mm
H = 245 mm



Heating

A 15, -1, -2

Installation length	170/180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +110°C ²⁾
Ambient temperature	max. 40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.55 bar
For every ±100 m altitude	±0.01 bar
Weight	3.8 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...0.8 A
	min 0.14 A
Power	Regulation 8...107 W
	min 8...19 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

Ambient temp.	Media temperature	
°C	min. °C	max. °C
15	15	95/110 ²⁾
30	30	95/110 ²⁾
35	35	90
40	40	70

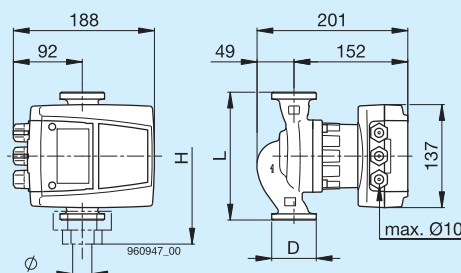
²⁾ for short periods, approx. 30 min

The pump is fitted with internal electric motor protection and requires no external motor protection. The pump is provided with fault or operating message (switchable).

Options:

- Heat insulation shells
- BIM A signal module
- BIM B control module

See page 74 for further details



A 15

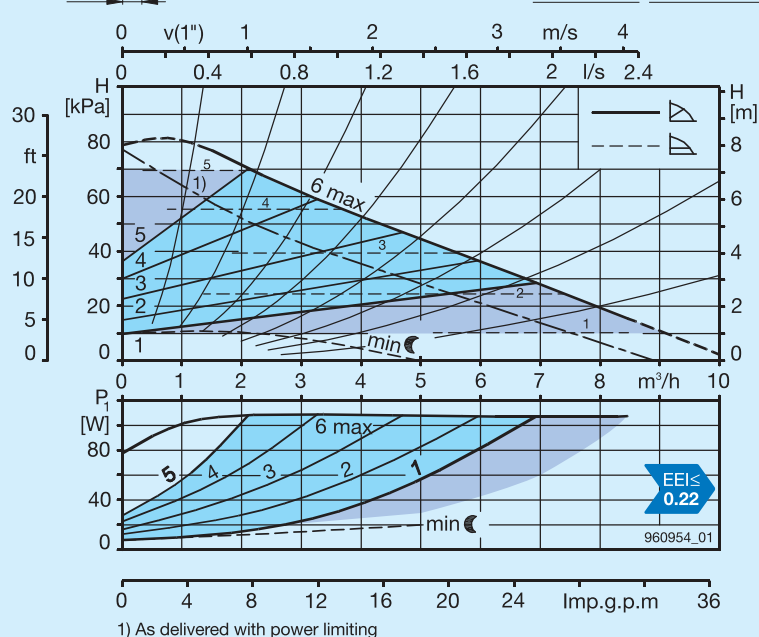
Ø = 1 1/2", 1 1/4", 1 3/4"
D = 2"
L = 170 mm
H = 235 mm

A 15-1

Ø = 1", 3/4"
D = 1 1/2"
L = 180 mm
H = 235 mm

A 15-2

Ø = 1 1/2", 1 1/4", 1 3/4"
D = 2"
L = 180 mm
H = 245 mm



A 16-1, A 16-2

Installation length	180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +110°C ²⁾
Ambient temperature	max. 40°C
Required operating pressure at 500 m a.s.l.	
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.55 bar
For every ±100 m altitude	±0.01 bar
Weight	3.8 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...1.25 A
	min 0.14 A
Power	Regulation 8...174 W
	min 8...19 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

Ambient temp.	Media temperature	
°C	min. °C	max. °C
15	15	95/110 ²⁾
30	30	95/110 ²⁾
35	35	90
40	40	70

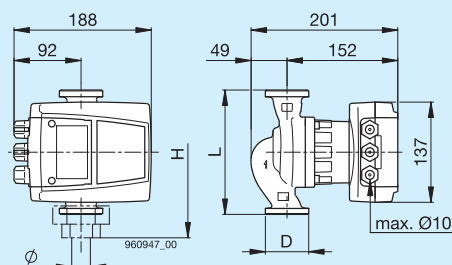
²⁾ for short periods, approx. 30 min

The pump is fitted with internal electric motor protection and requires no external motor protection. The pump is provided with fault or operating message (switchable).

Options:

- Heat insulation shells
- BIM A signal module
- BIM B control module

See page 74 for further details

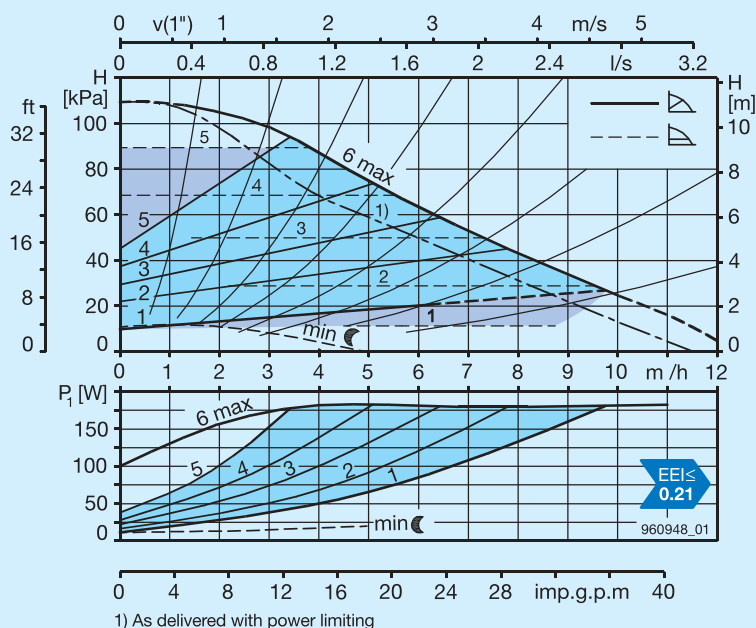


A 16-1

Ø = 1" 3/4"
D = 1 1/2"
L = 180 mm
H = 235 mm

A 16-2

Ø = 1 1/2", 1 1/4", 1" 3/4"
D = 2"
L = 180 mm
H = 245 mm



A 401, A 401-1

Installation length	A 401	220 mm
	A 401-1	250 mm
Operating pressure max.		10 bar
Media temperature		+15°C to +110°C ²⁾
Ambient temperature		max. 40°C
Required operating pressure at 500 m a.s.l.		
at 75°C water temperature		0.10 bar
at 95°C water temperature		0.55 bar
For every ±100 m altitude		±0.01 bar
Weight		9 kg
Voltage		1×230 V, 50 Hz
Current	Regulation	0.1...1.25 A
	min	0.14 A
Power	Regulation	8...174 W
	min	8...19 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

Ambient temp.	Media temperature	
°C	min. °C	max. °C
15	15	95/110 ²⁾
30	30	95/110 ²⁾
35	35	90
40	40	70

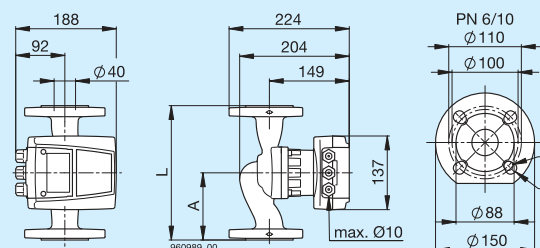
²⁾ for short periods, approx. 30 min

The pump is fitted with internal electric motor protection and requires no external motor protection. The pump is provided with fault or operating message (switchable).

Options:

- Heat insulation shells
- BIM A signal module
- BIM B control module

See page 74 for further details

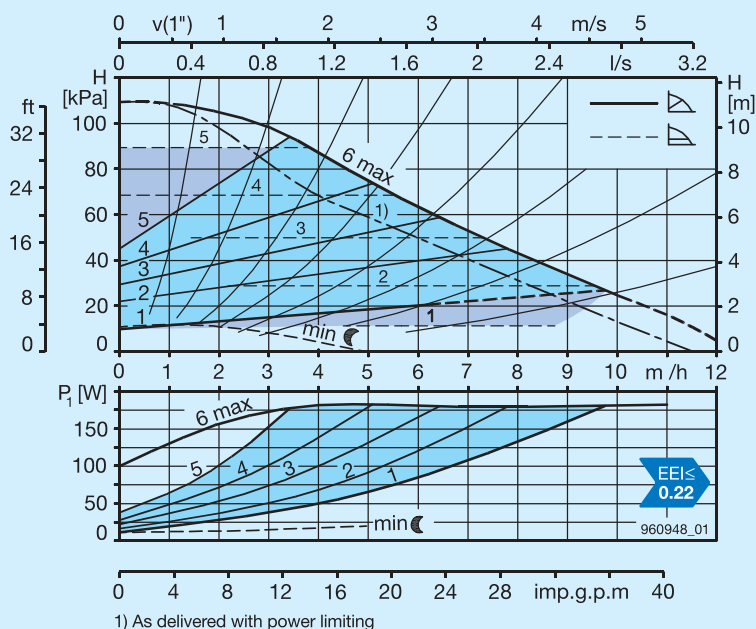


A 401

L = 220 mm
A = 110 mm

A 401-1

L = 250 mm
A = 125 mm



A 500

Installation length	220 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +110°C ²⁾
Ambient temperature	max. 40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.55 bar
For every ±100 m altitude	±0.01 bar
Weight	10.5 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...1.25 A
	min 0.14 A
Power	Regulation 8...174 W
	min 8...19 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

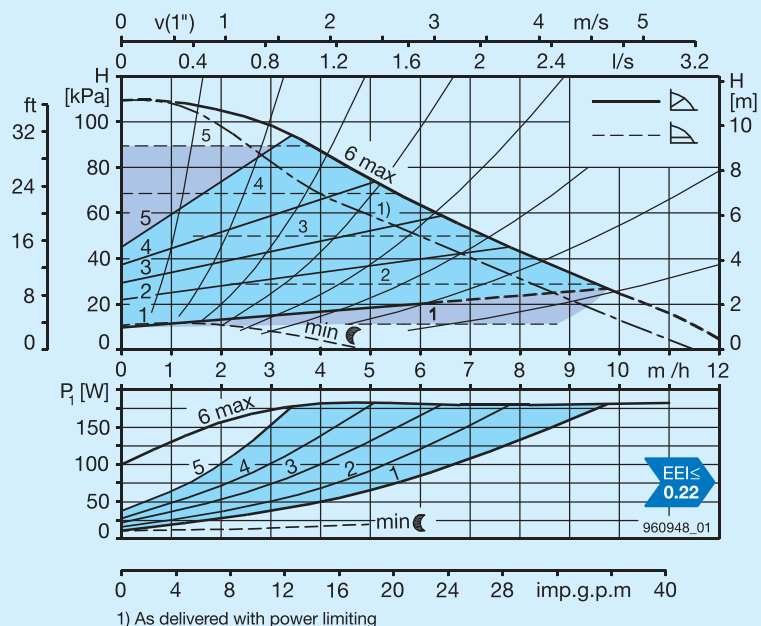
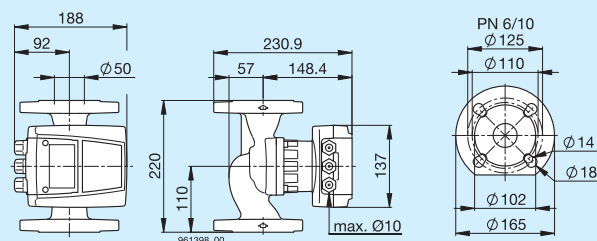
Ambient temp.	Media temperature	
°C	min. °C	max. °C
15	15	95/110 ²⁾
30	30	95/110 ²⁾
35	35	90/110 ²⁾
40	40	70/110 ²⁾

The pump is fitted with internal electric motor protection and requires no external motor protection. The pump is provided with fault or operating message (switchable).

Options:

- Heat insulation shells
- BIM A signal module
- BIM B control module

See page 74 for further details



Heating circulation pumps

ModulA ... RED

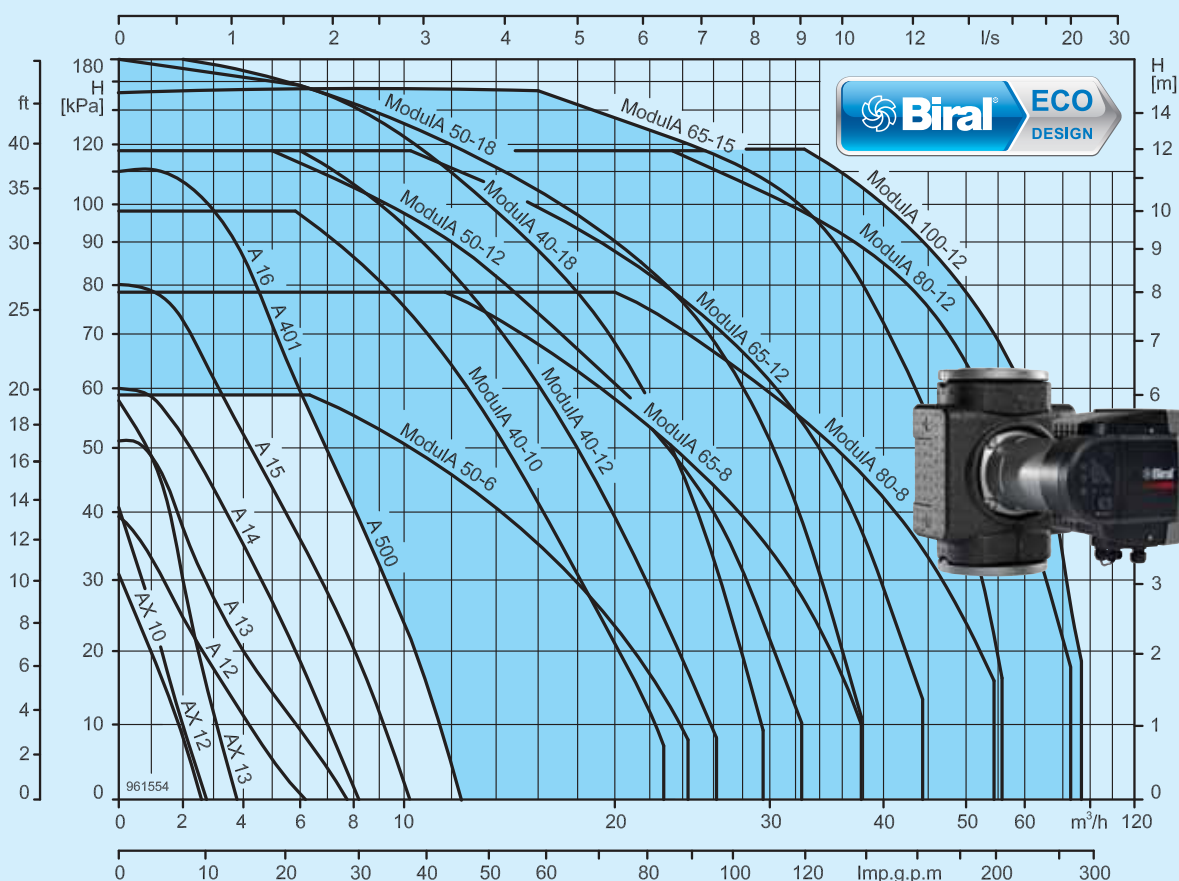
with flange connections

Summary



Type	Connection	Nominal width DN	Discharge head max. mWC	Installation length mm	Operating pressure max./bar	EEL-value
ModulA 40-10 220 RED	PN 6-16	40	10	220	16	≤0.19
ModulA 40-12 250 RED	PN 6-16	40	12	250	16	≤0.18
ModulA 40-18 250 RED	PN 6-16	40	18	250	16	≤0.18
ModulA 50-6 240 RED	PN 6-16	50	6	240	16	≤0.19
ModulA 50-12 270 RED	PN 6-16	50	12	270	16	≤0.18
ModulA 50-18 270 RED	PN 6-16	50	18	270	16	≤0.17
ModulA 65-8 270 RED	PN 6-16	65	8	270	16	≤0.17
ModulA 65-12 340 RED	PN 6-16	65	12	340	16	≤0.17
ModulA 65-15 340 RED	PN 6-16	65	15	340	16	≤0.17
ModulA 80-8 360 RED	PN 6	80	8	360	6	≤0.17
ModulA 80-8 360 RED	PN 10/16	80	8	360	16	≤0.17
ModulA 80-12 360 RED	PN 6	80	12	360	6	≤0.17
ModulA 80-12 360 RED	PN 10/16	80	12	360	16	≤0.17
ModulA 100-12 450 RED	PN 6	100	12	450	6	≤0.17
ModulA 100-12 450 RED	PN 10/16	100	12	450	16	≤0.17

Heating



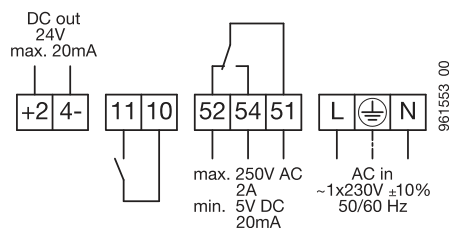
Modula 40-10 220 RED

Diameter nominal	DN 40
Discharge head H max.	10 m
Installation length	220 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	16.3 kg

Electrical data

Voltage	1x230 V
Frequency	50/60 Hz
Power P_1	18-341 W
Rated current	0.19-1.54 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

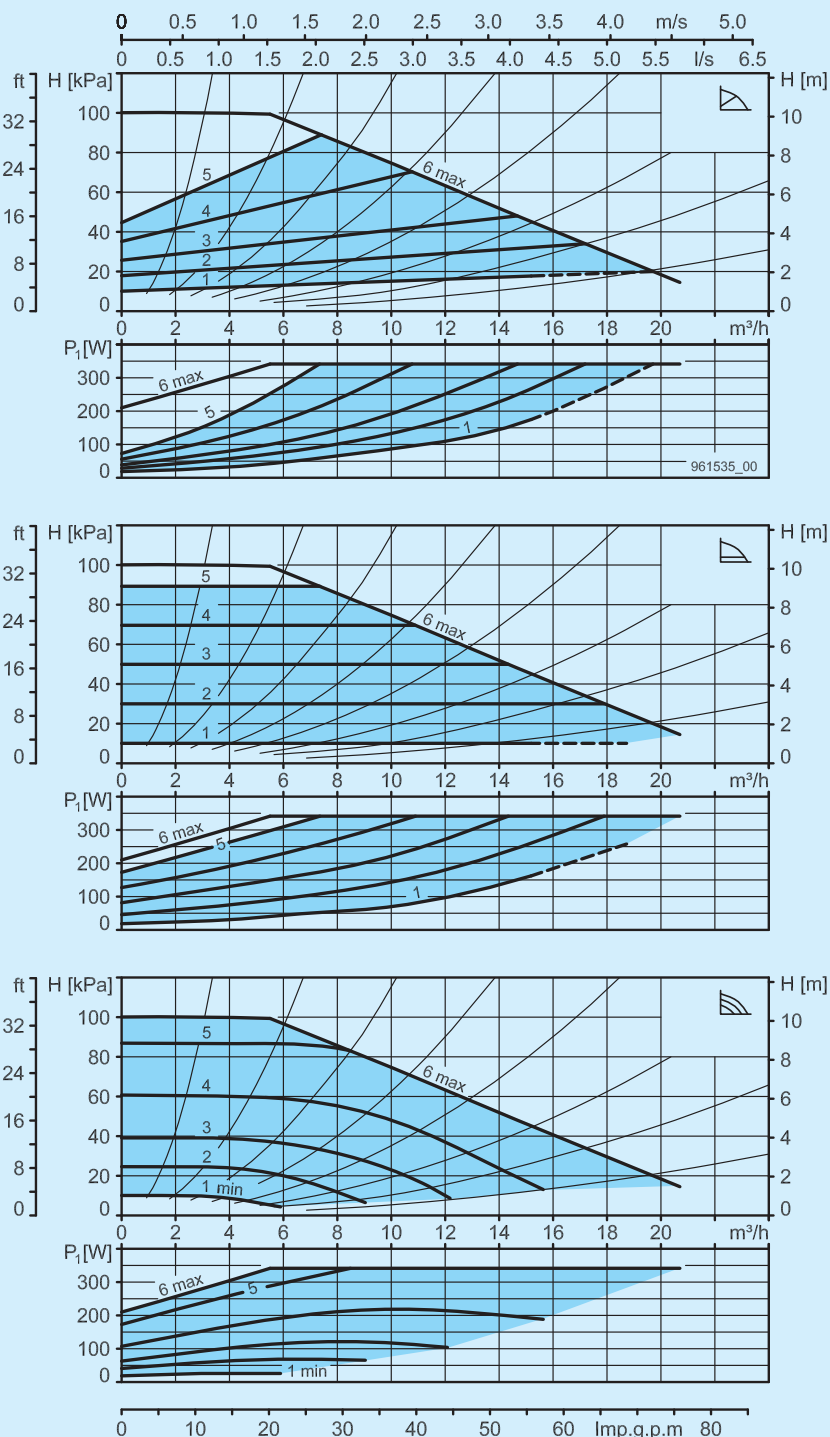
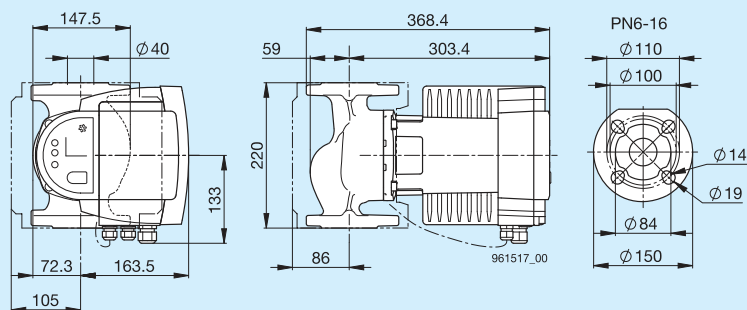
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



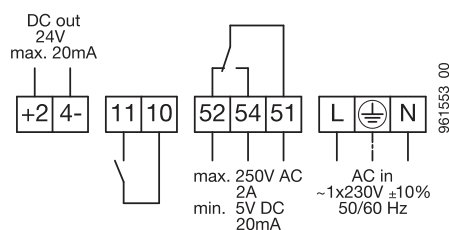
Modula 40-12 250 RED

Diameter nominal	DN 40
Discharge head H max.	12 m
Installation length	250 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	16.1 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	17 - 421 W
Rated current	0.18 - 1.91 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

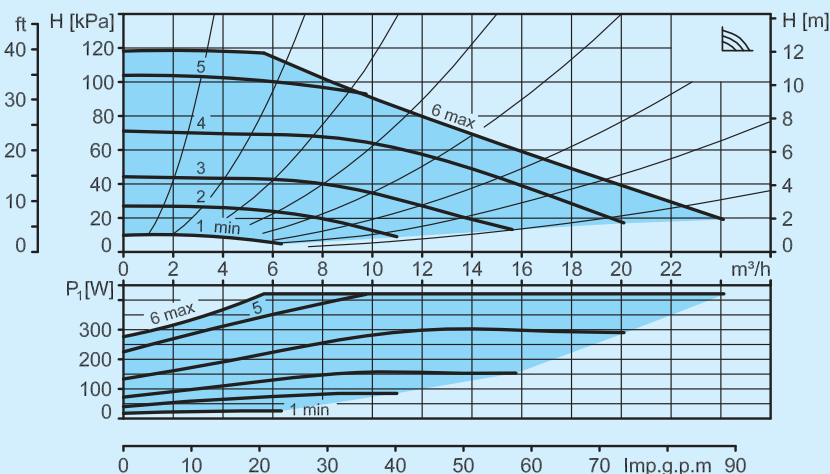
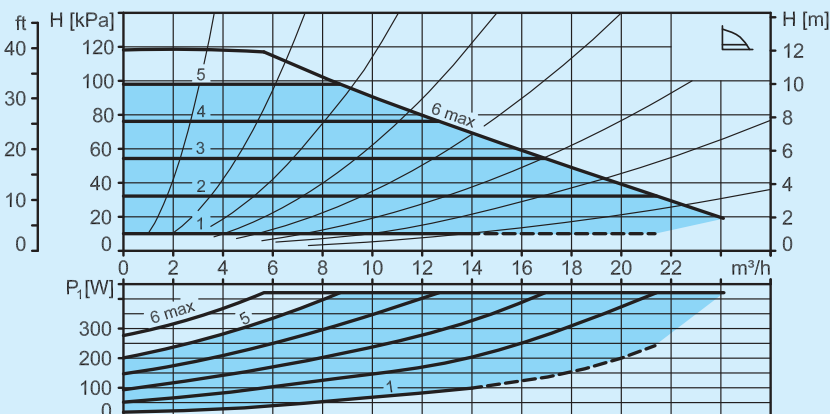
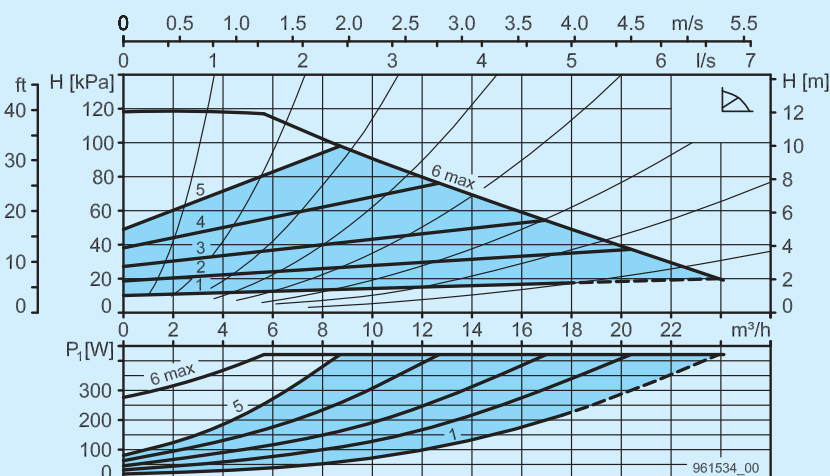
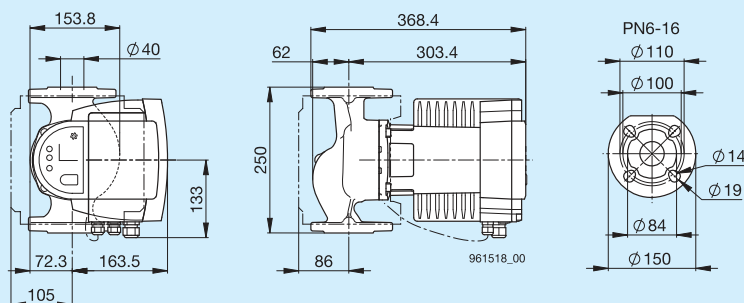
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



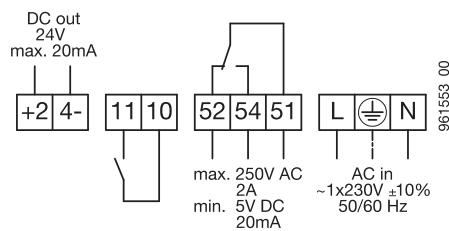
Modula 40-18 250 RED

Diameter nominal	DN 40
Discharge head H max.	18 m
Installation length	250 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	16.1 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	16-594 W
Rated current	0.18-2.63 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

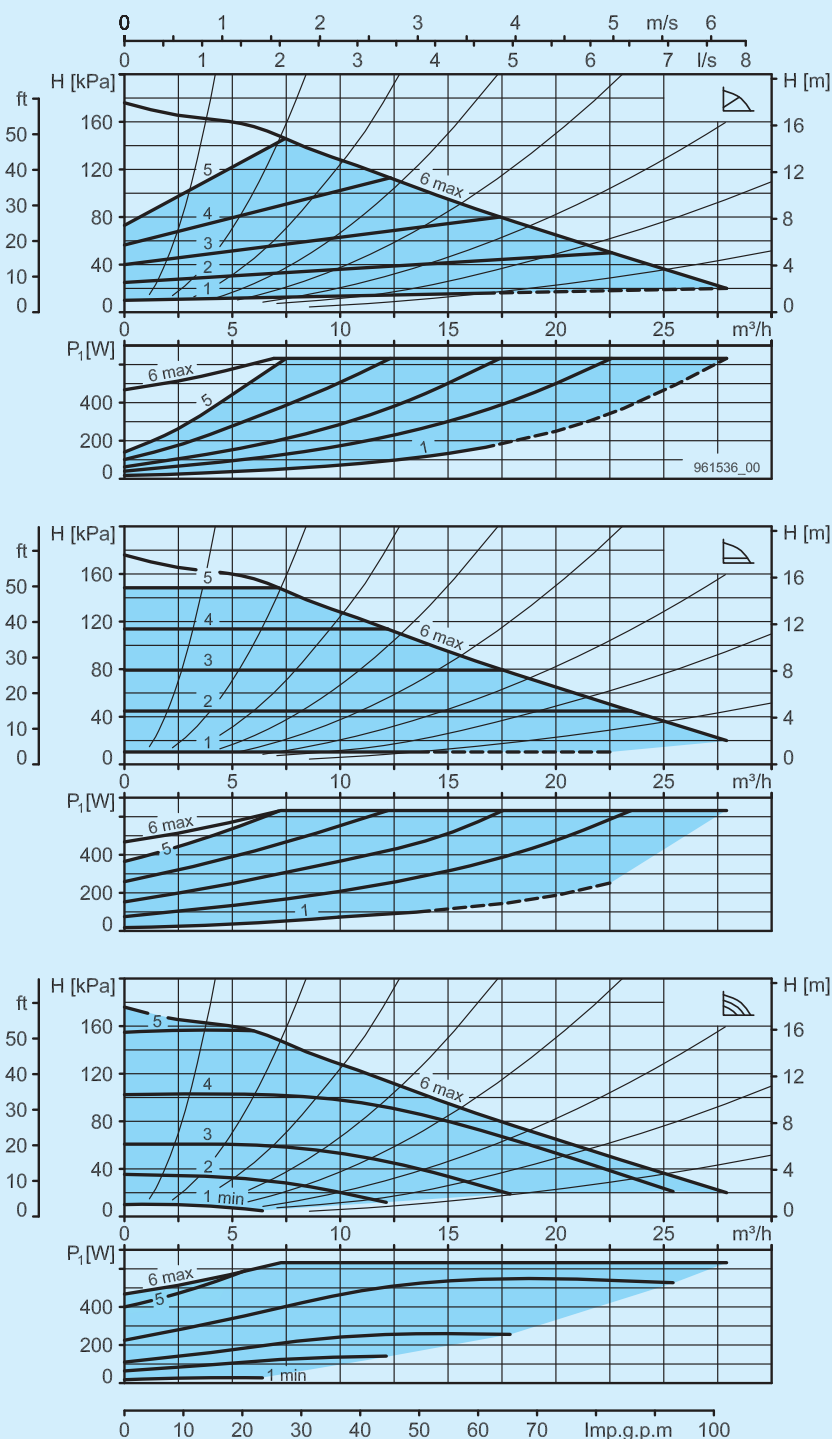
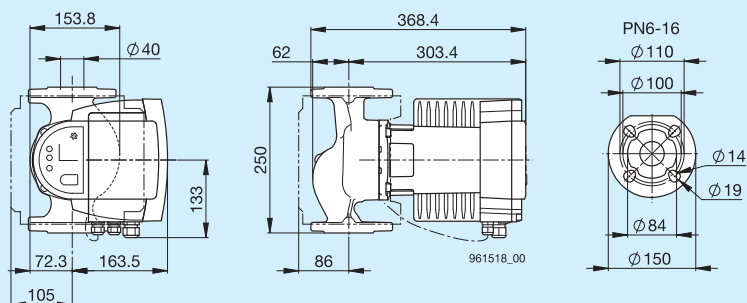
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



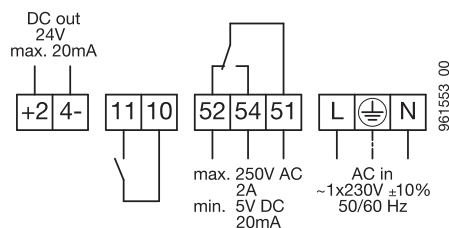
Modula 50-6 240 RED

Diameter nominal	DN 50
Discharge head H max.	6 m
Installation length	240 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	17.6 kg

Electrical data

Voltage	1x230 V
Frequency	50/60 Hz
Power P_1	21-236 W
Rated current	0.21-1.09 A
Motor protection	integrated

Connection diagram



+24- 24 V DC out
11, 10 External OFF or external ON
52, 54, 51 Error or operating message
L, PE, N Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

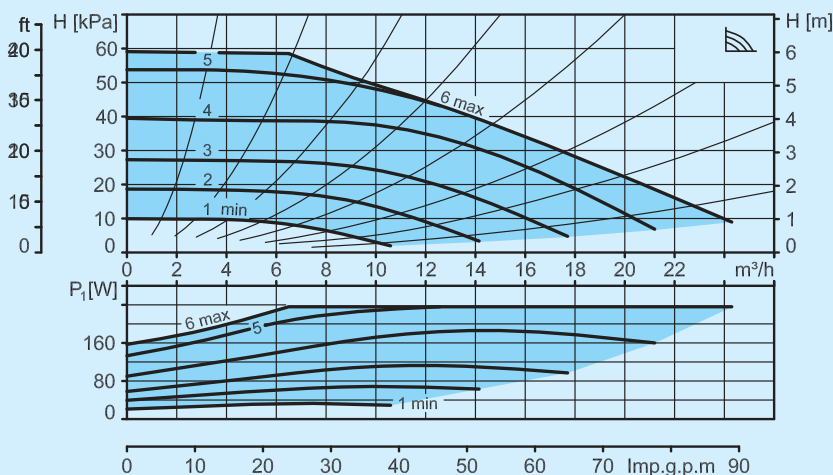
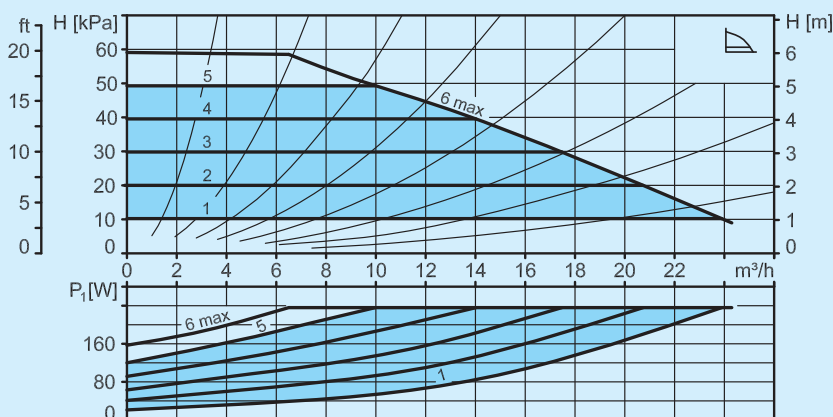
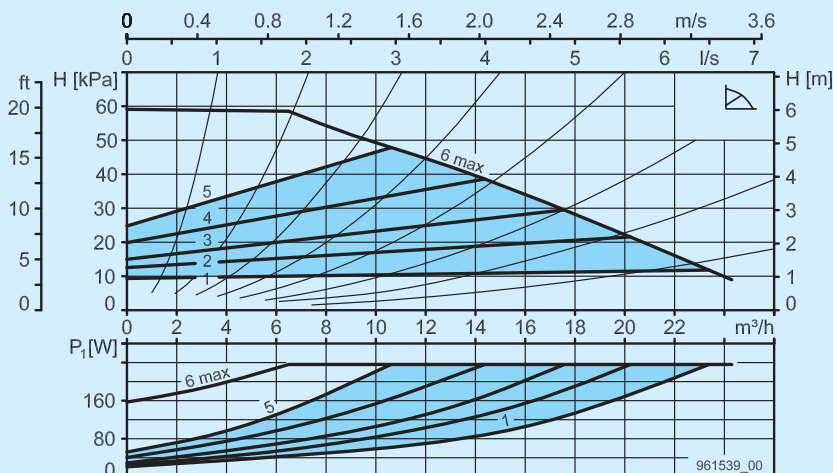
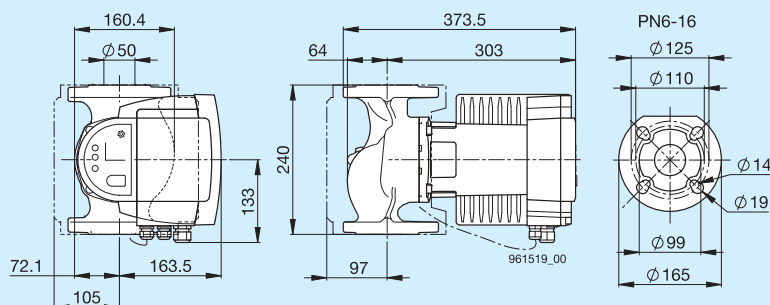
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



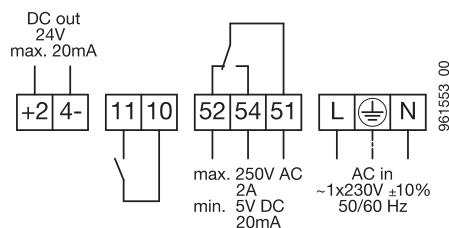
Modula 50-12 270 RED

Diameter nominal	DN 50
Discharge head H max.	12 m
Installation length	270 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	18.1 kg

Electrical data

Voltage	1x230 V
Frequency	50/60 Hz
Power P_1	20-516 W
Rated current	0.21-2.32 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

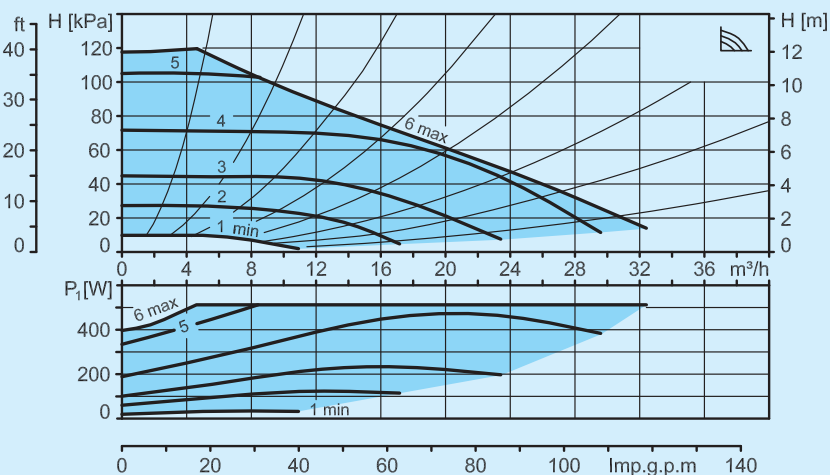
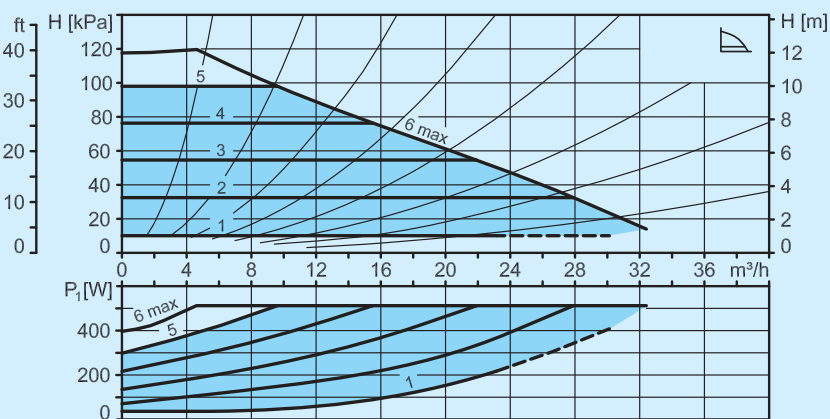
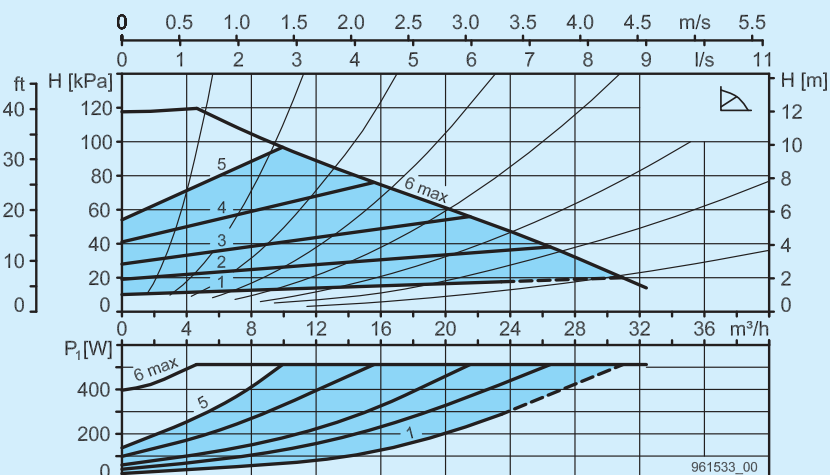
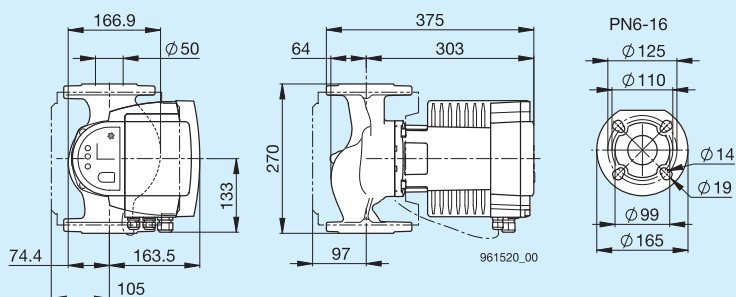
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



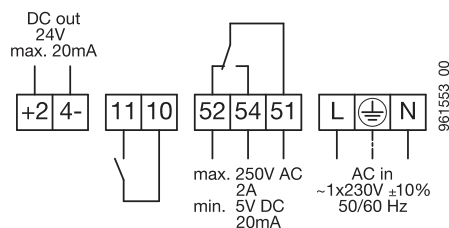
Modula 50-18 270 RED

Diameter nominal	DN 50
Discharge head H max.	18 m
Installation length	270 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	18.8 kg

Electrical data

Voltage	1x230 V
Frequency	50/60 Hz
Power P_1	22 - 742 W
Rated current	0.21 - 3.34 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

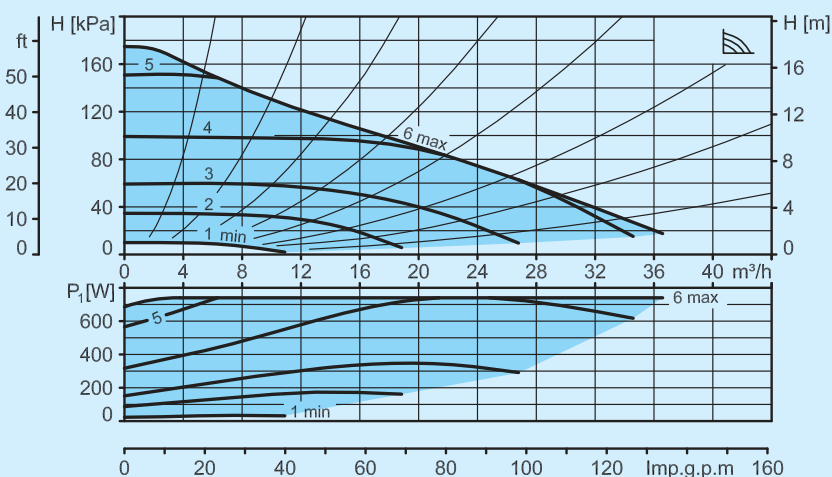
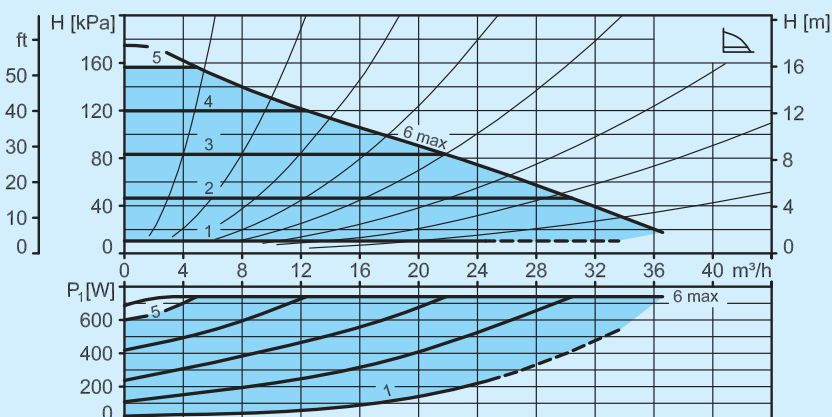
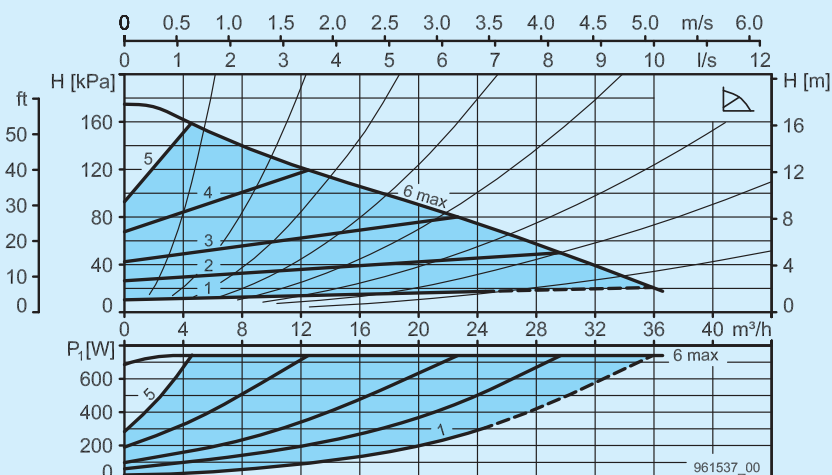
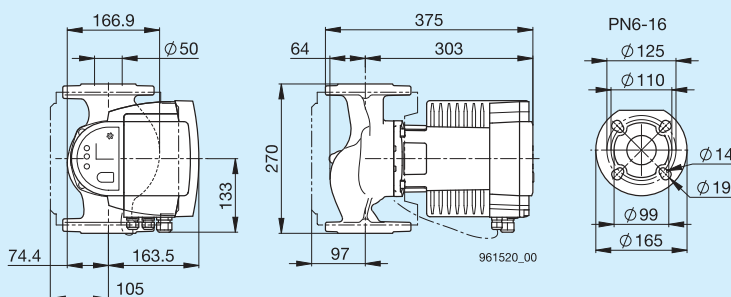
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



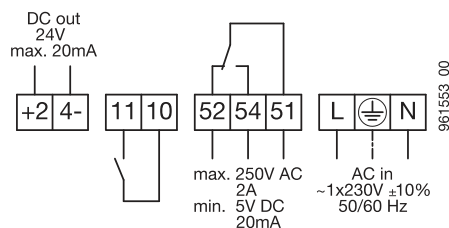
Modula 65-8 270 RED

Diameter nominal	DN 65
Discharge head H max.	8 m
Installation length	270 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	20.6 kg

Electrical data

Voltage	1x230 V
Frequency	50/60 Hz
Power P_1	22 - 464 W
Rated current	0.24 - 2.10 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

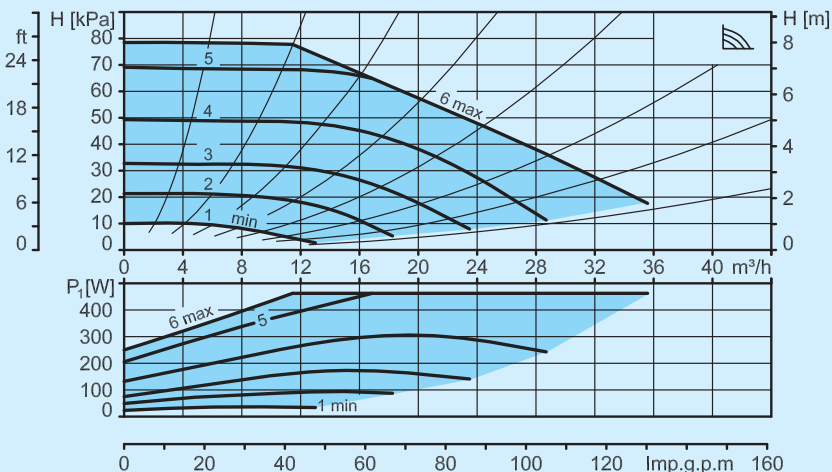
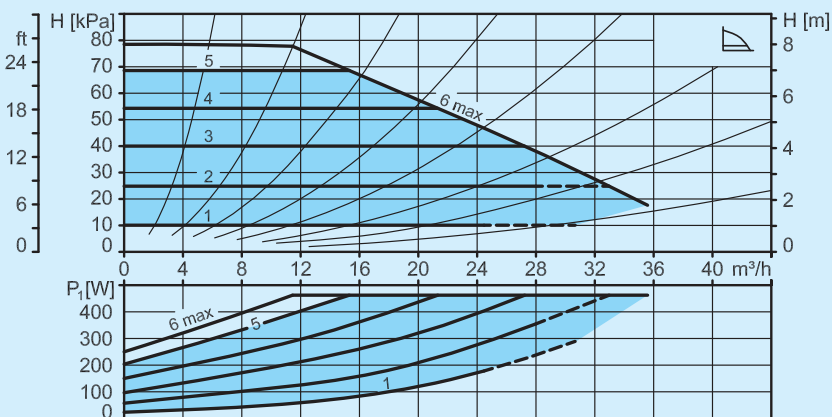
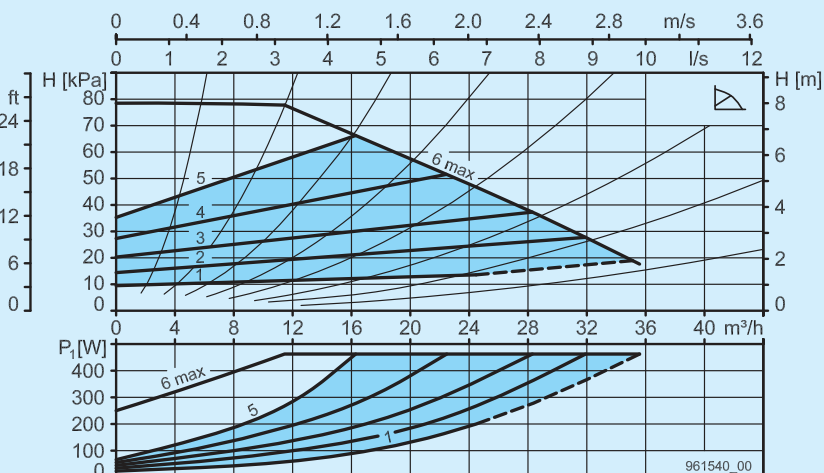
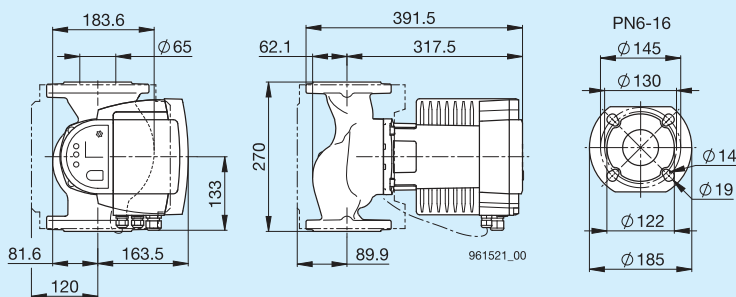
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



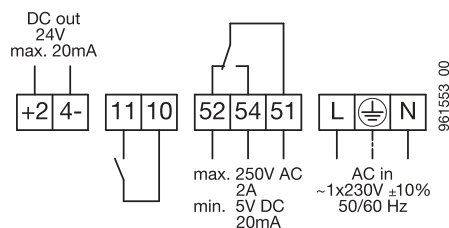
Modula 65-12 340 RED

Diameter nominal	DN 65
Discharge head H max.	12 m
Installation length	340 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	21.5 kg

Electrical data

Voltage	1x230 V
Frequency	50/60 Hz
Power P_1	21-736 W
Rated current	0.22-3.32 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

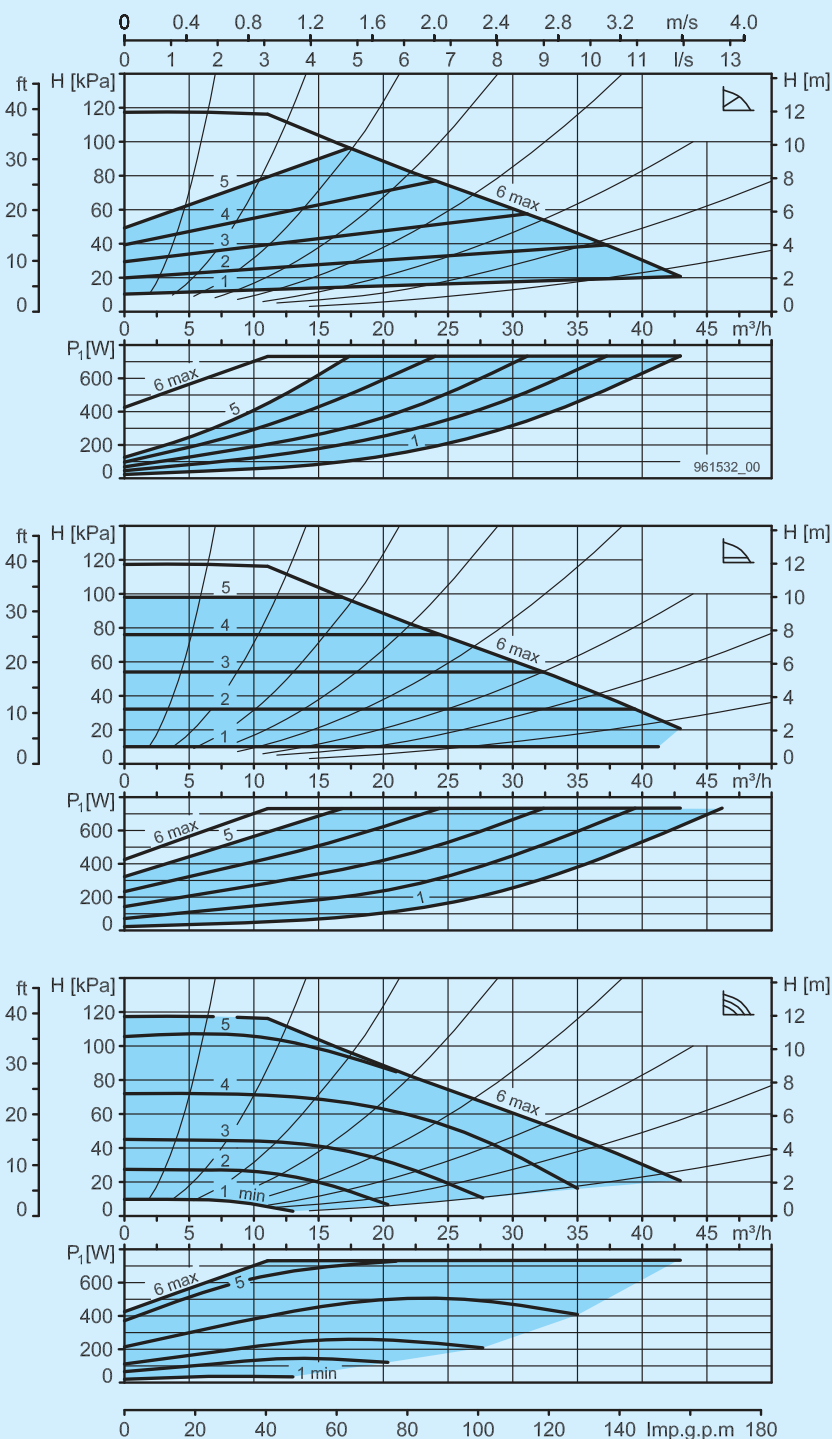
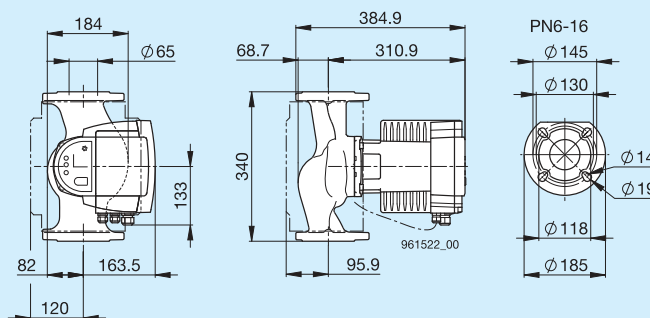
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



Heating

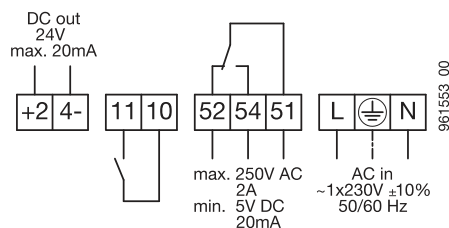
Modula 65-15 340 RED

Diameter nominal	DN 65
Discharge head H max.	15 m
Installation length	340 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	24.0 kg

Electrical data

Voltage	1x230 V
Frequency	50/60 Hz
Power P_1	30-1254 W
Rated current	0.28-5.68 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

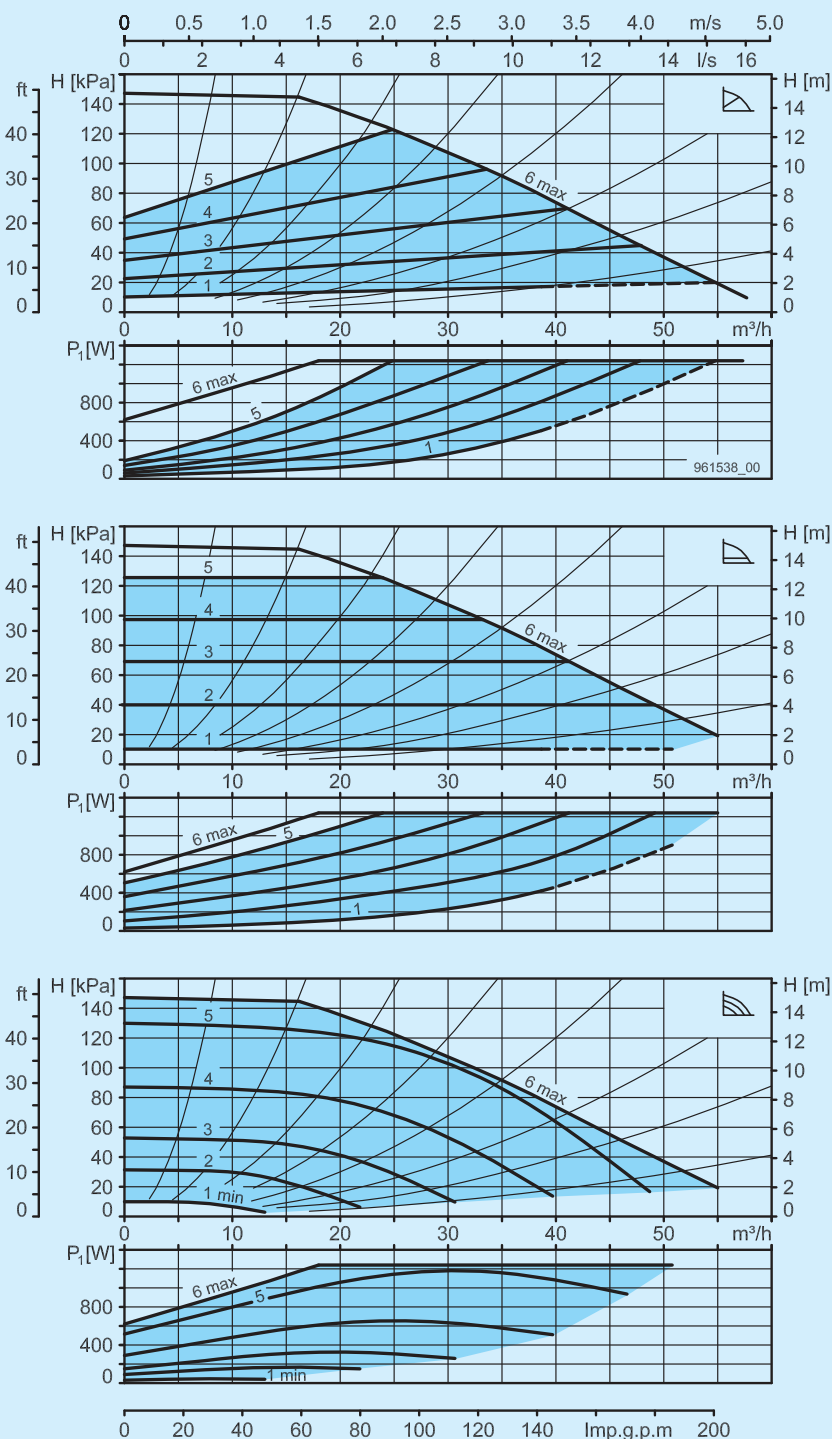
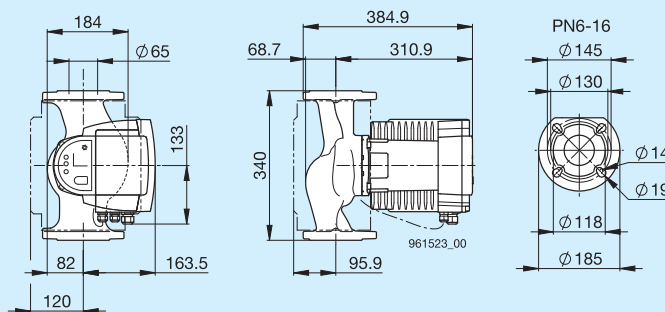
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



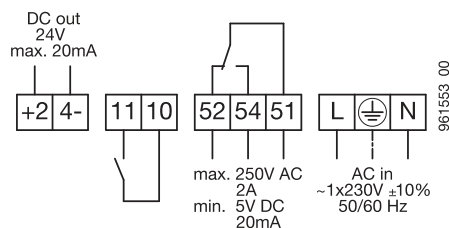
Modula 80-8 360 RED

Diameter nominal	DN 80
Discharge head H max.	8 m
Installation length	360 mm
Flange connection	PN 6 PN 10/16
Operating pressure max.	6 bar 16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	29.1 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	29-704 W
Rated current	0.29-3.08 A
Motor protection	integrated

Connection diagram



+24- 24 V DC out
11, 10 External OFF or external ON
52, 54, 51 Error or operating message
L, PE, N Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

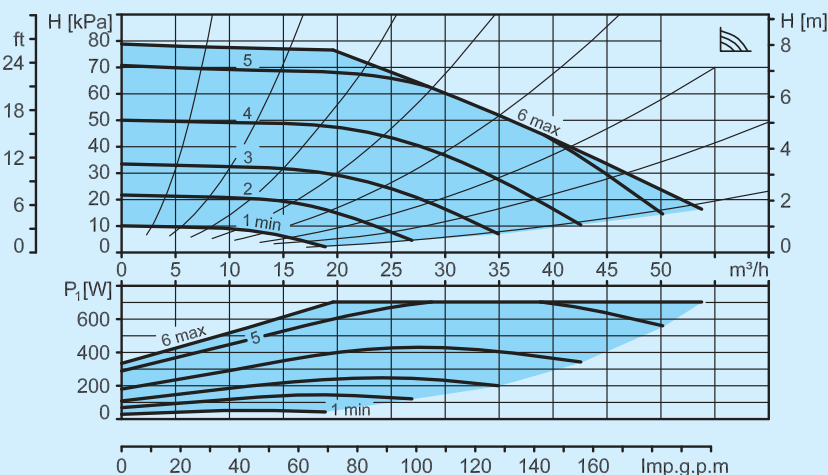
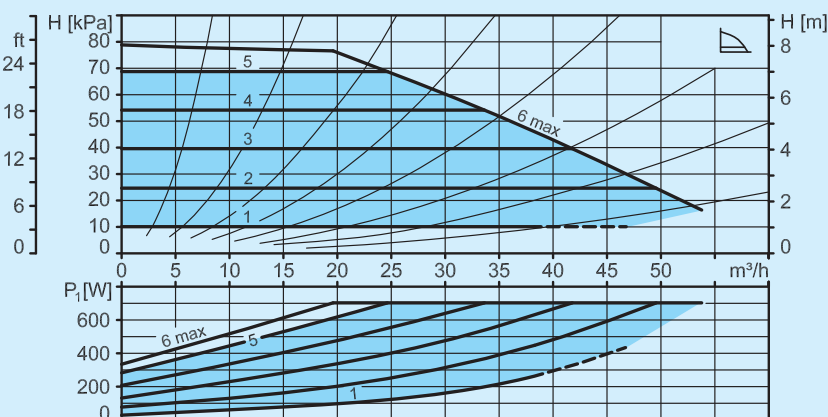
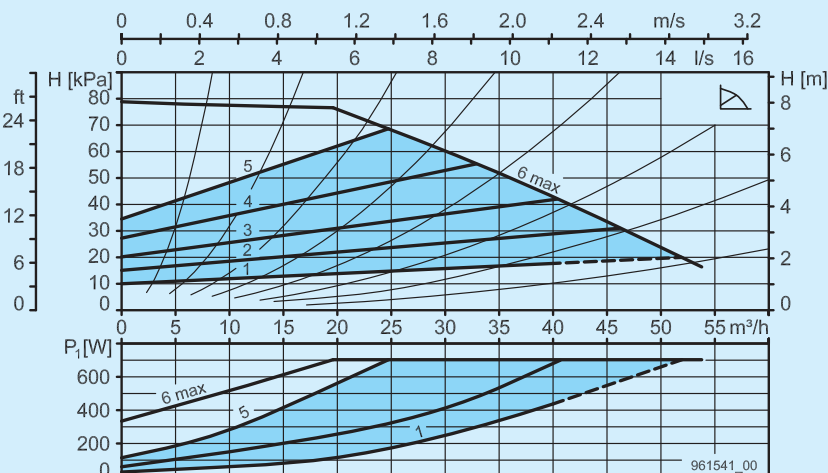
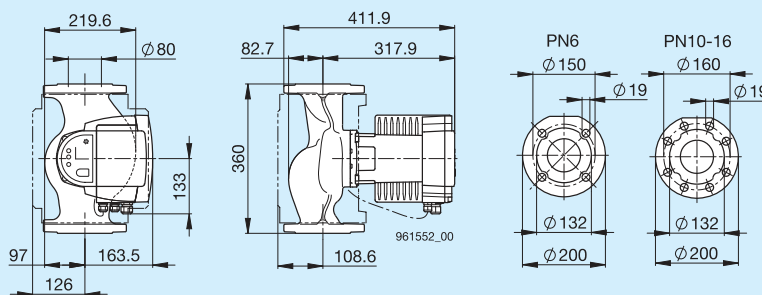
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6 or PN 10/16

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote

See page 74 for further details



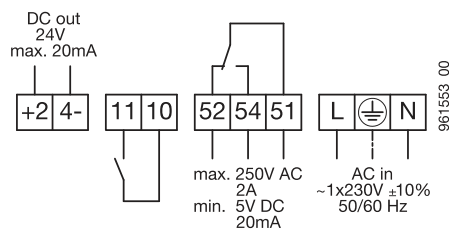
Modula 80-12 360 RED

Diameter nominal	DN 80
Discharge head H max.	12 m
Installation length	360 mm
Flange connection	PN 6 PN 10/16
Operating pressure max.	6 bar 16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	29.1 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	35 - 1282 W
Rated current	0.32 - 5.56 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

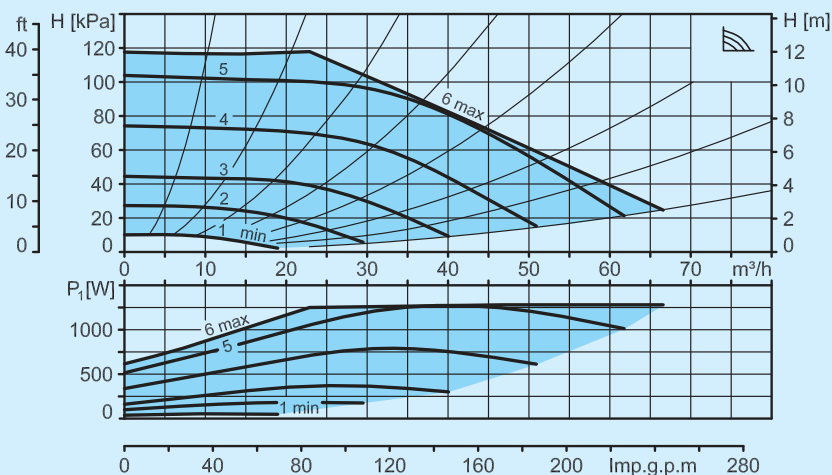
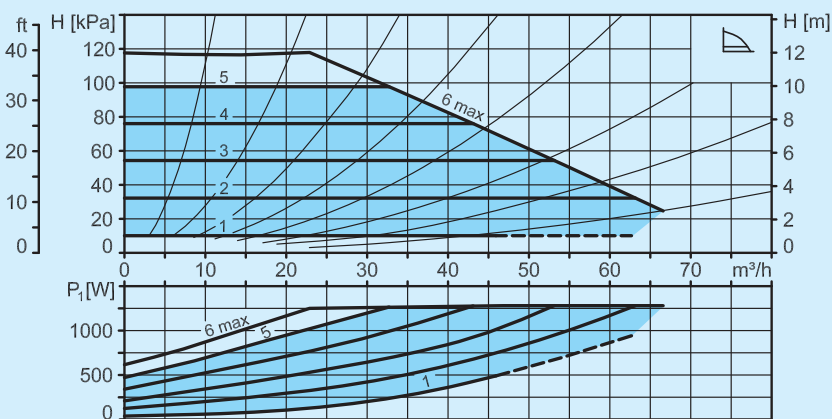
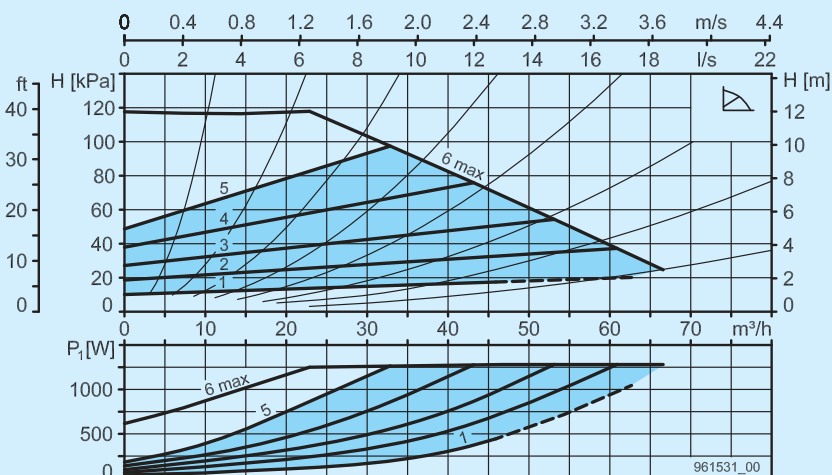
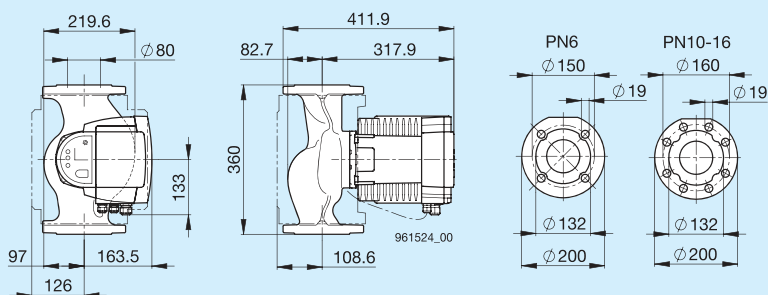
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6 or PN 10/16

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote

See page 74 for further details



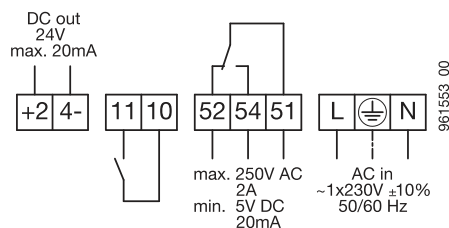
Modula 100-12 450 RED

Diameter nominal	DN 100
Discharge head H max.	12 m
Installation length	450 mm
Flange connection	PN 6 PN 10/16
Operating pressure max.	6 bar 16 bar
Media temperature	+15°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	34.0 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	35 - 1563 W
Rated current	0.32 - 6.78 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

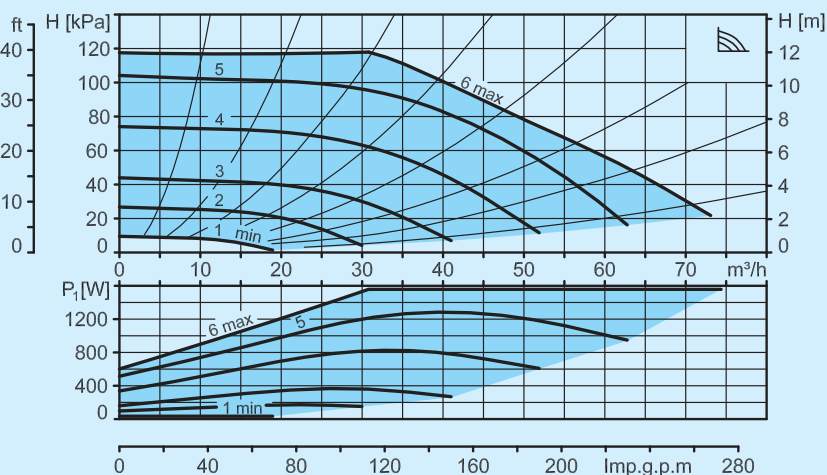
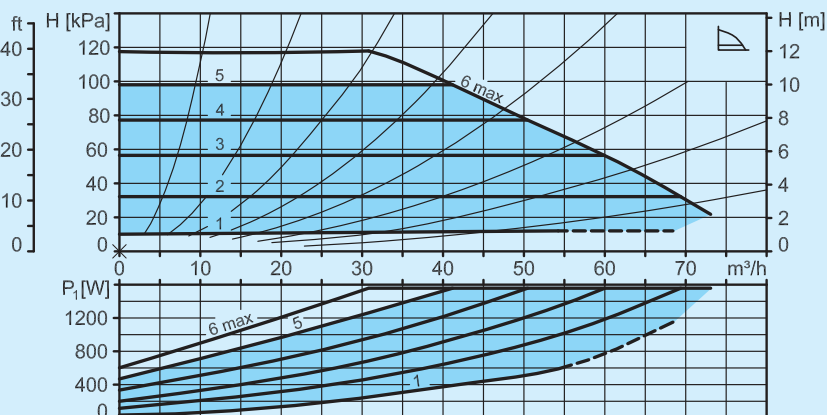
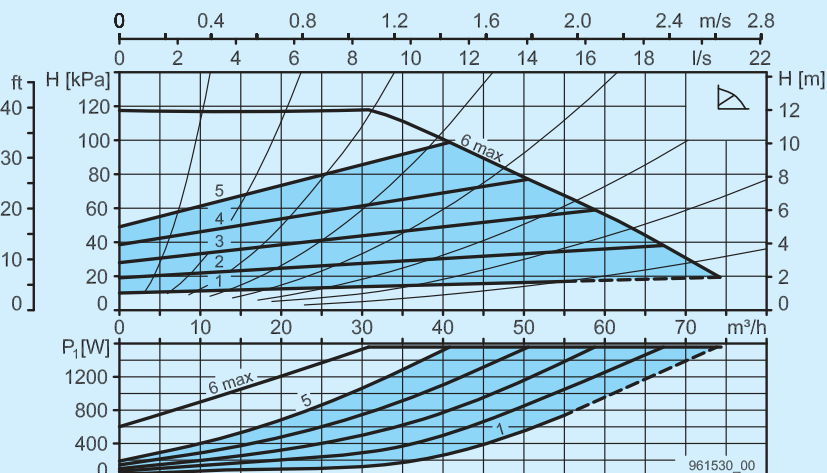
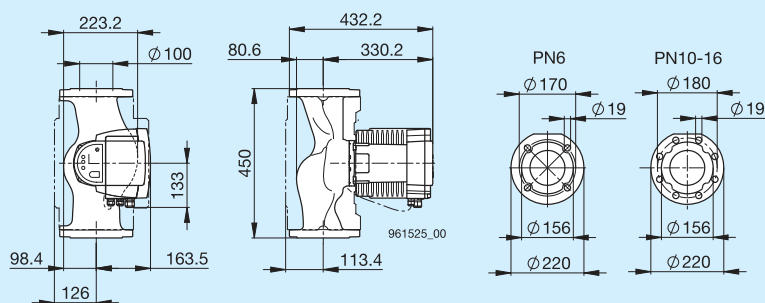
Included in the scope of delivery

- Heat insulation shells
- Sealing set for flange PN 6 or PN 10/16

Options

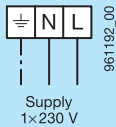
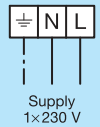
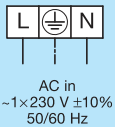
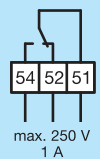
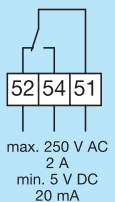
- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote

See page 74 for further details



Standard

	 AX 10, AX 12, AX 13 4...45 W	 A 12...A 401, A 500 8...174 W	 ModulA... RED 16...1563 W
Fault or operating message (switchable)	-	✓	✓
External OFF or external ON (switchable)	-	-	✓ ²⁾
Power Limit (activatable)	-	-	✓
Power limiting (can be deactivated)	-	✓	-
Automatic night reduction (activatable)	✓	✓	-
Thermal insulation shells	✓ ¹⁾	-	✓

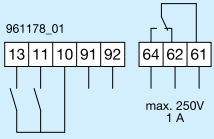
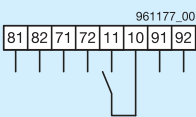
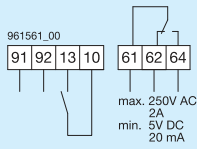
Connection diagram Pump L = Lead N = Neutral line  = PE wire, protective conductor			
51-54 Fault or operating message (switchable) as closing contact: closes at fault/operation message 51-52 Fault or operating message (switchable) as opening contact: opens at fault/operation message			
10-11 External OFF or external ON (switchable) with closing contact			

1) The pumps AX 10, -1, AX 12-3, -4, AX 13-3, -4 are supplied without heat insulation shells.

2) We recommend switching ModulA pumps via contacts 10/11 (external OFF/ON).

Options

	 AX 10, AX 12, AX 13 4...45 W	 A 12...A 401, A 500 8...174 W	 ModulA... RED 16...1563 W
Biral interface module BIM A signal module - Operating or ready message - External OFF - External minimum speed - Twin pump function	-	✓	-
Biral interface module BIM B control module - External speed specification 0–10 V/0–20 mA - PWM/multi-thermal interface - External OFF - Twin pump function	-	✓	-
Biral interface module BIM A2 signal module - Operating or ready message - External minimum speed - Twin pump function	-	-	✓
Biral interface module BIM B2 control module - External speed specification 0–10 V/0–20 mA - External minimum speed - Twin pump function	-	-	✓
Thermal insulation shells	AX 10, -1	✓	-
Set for recessed installation of electronics	-	-	✓

Connection diagram BIM A signal module 10-11 External OFF with closed contact 10-13 External minimum speed with closing contact 61-64 Operating or ready message (switchable) as a closing contact: Closes at operating/ready message 61-62 Operating or ready message (switchable) as opening contact: opens at operating/ready message 91-92 Twin pump function		
BIM B control module 10-11 External OFF with closing contact 81-82 Multi-thermal/PWM interface for external speed specification 71-72 Analogue input 0...10 V or 0...20 mA for external speed specification 91-92 Twin pump function		
BIM A2 signal module 10-13 External minimum speed with closing contact 61-64 Operating or ready message (switchable) as a closing contact: closes at operating/ready message 61-62 Operating or ready message (switchable) as opening contact: opens at operating/ready message 91-92 Twin pump function		
BIM B2 control module 81-82 Multi-thermal /PWM interface for external speed specification 71-72 Analogue input 0...10 V or 0...20 mA for external speed specification 91-92 Twin pump function		

Twin pumps

AD...

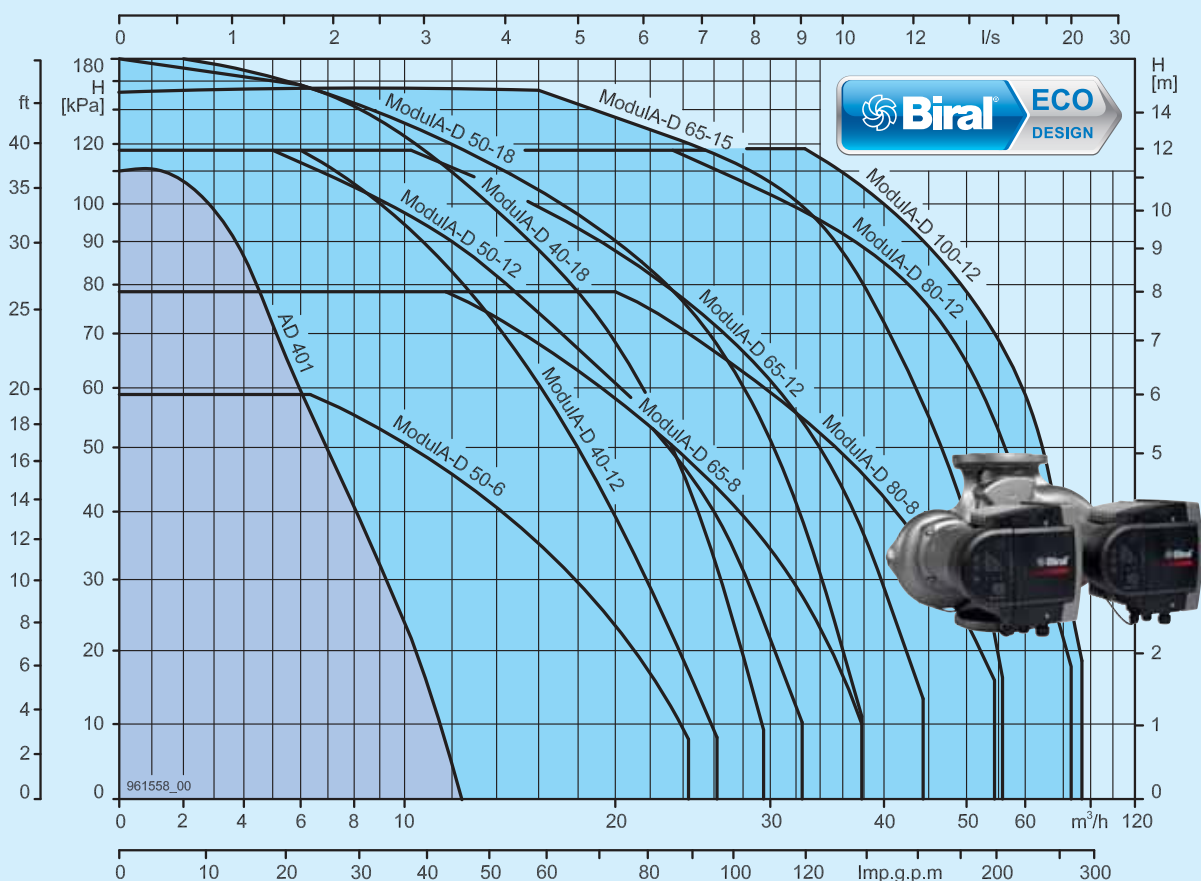
ModulA-D... RED

Summary



Type	Connection	Nominal width DN	Discharge head max. mWC	Installation length mm	Operating pressure max./bar	EEL-value
AD 401	PN 6/10	40	11	220	10	≤0.22
ModulA-D 40-12 250 RED	PN 6-16	40	12	250	16	≤0.18
ModulA-D 40-18 250 RED	PN 6-16	40	18	250	16	≤0.18
ModulA-D 50-6 240 RED	PN 6-16	50	6	240	16	≤0.19
ModulA-D 50-12 270 RED	PN 6-16	50	12	270	16	≤0.18
ModulA-D 50-18 270 RED	PN 6-16	50	18	270	16	≤0.17
ModulA-D 65-8 340 RED	PN 6-16	65	8	270	16	≤0.17
ModulA-D 65-12 340 RED	PN 6-16	65	12	340	16	≤0.17
ModulA-D 65-15 340 RED	PN 6-16	65	15	340	16	≤0.17
ModulA-D 80-8 360 RED	PN 6	80	8	360	6	≤0.17
ModulA-D 80-8 360 RED	PN 10/16	80	8	360	16	≤0.17
ModulA-D 80-12 360 RED	PN 6	80	12	360	6	≤0.17
ModulA-D 80-12 360 RED	PN 10/16	80	12	360	16	≤0.17
ModulA-D 100-12 450 RED	PN 6	100	12	450	6	≤0.17
ModulA-D 100-12 450 RED	PN 10/16	100	12	450	16	≤0.17

Heating



AD 401

Characteristics, see single pump, A 401

Alternating operation (22h/22h) or reserve operation (22h/2h)

The pumps are designed for single operation in systems with increased safety requirements (pump 1 or pump 2). The switching of pumps occurs based on time or failure of a pump. The BIM A signal module (2x) is required.

Parallel operation with constant speed (cs)

(pump 1 + pump 2) are only permitted with constant speed (cs), however, not with proportional pressure (pp) or constant pressure (cp). In this type of operation, no Biral interface module is required.

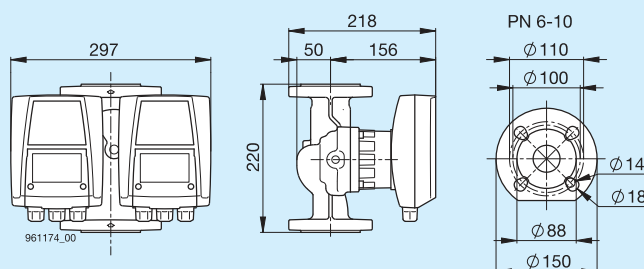
Parallel operation with external speed specification

(0–10 V/0–20 mA/PWM) can be operated via the BIM B2 control module (2x).

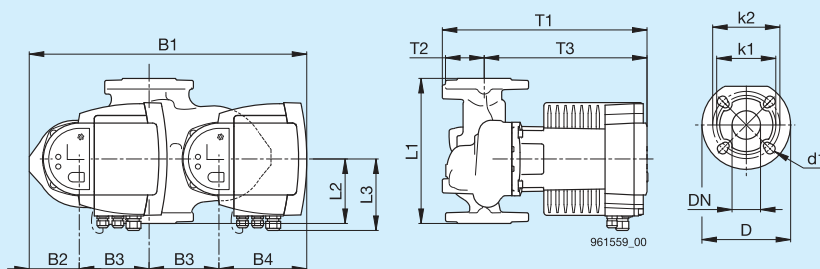
Options:

- BIM A signal module (2x)
- BIM B control module (2x)

AD 401



ModulA-D



ModulA-D ... RED

Characteristics, see single pumps, module A...RED

Required operating pressure at 500 m a.s.l.
at 75°C water temperature 0.90 bar
at 95°C water temperature 1.20 bar
at 110°C water temperature 1.50 bar
For every ±100 m altitude ±0.01 bar

Alternating operation (22h/22h) or reserve operation (22h/2h)

The pumps are designed for single operation in systems with increased safety requirements (pump 1 or pump 2). The switching of pumps occurs based on time or failure of a pump.

Parallel operation with constant speed (cs)

(pump 1 + pump 2) only permitted with constant speed (cs), however, not with proportional pressure (pp) or constant pressure (cp). In this type of operation no Biral interface module is required.

Parallel operation with external speed specification

(0–10 V/0–20 mA/PWM) can be operated via the BIM B2 control module (2x).

Included in the scope of delivery:

- BIM A2 signal module (2x)
- and a 2-wire, shielded connection cable.

Options:

- BIM B2 control module (2x)

ModulA-D ... RED

	40-12 250 40-18 250	50-6 240	50-12 270 50-18 270	65-8 340 65-12 340	65-15 340	80-8 360 80-12 360	80-8 360 80-12 360	100-12 450	100-12 450
	PN 6-16	PN 6-16	PN 6-16	PN 6-16	PN 6-16	PN 6	PN 10/16	PN 6	PN 10/16
DN	40	50	50	65	65	80	80	100	100
L1	250	240	270	340	340	360	360	450	450
B1	512	515	517	522	522	538	538	546	546
B2	88	91	93	98	98	114	114	122	122
B3	130	130	130	130	130	130	130	135	135
B4	164	164	164	164	164	164	164	164	164
D	150	165	165	185	185	200	200	220	220
k1 (PN 6)	100	110	110	130	130	150	–	170	–
k2 (PN 10/16)	110	125	125	145	145	–	160	–	180
d1	4x14/19	4x14/19	4x14/19	4x14/19	4x14/19	4x19	8x19	4x19	8x19
L2	115	125	120	140	140	160	160	190	190
L3	133	133	133	133	133	133	133	133	133
T1	376	383	381	391	391	418	418	436	436
T2	65	71	72	74	74	94	94	99	99
T3	304	303	303	311	311	318	318	330	330
Weight [kg]	32	35	36	42	48	58	58	68	68

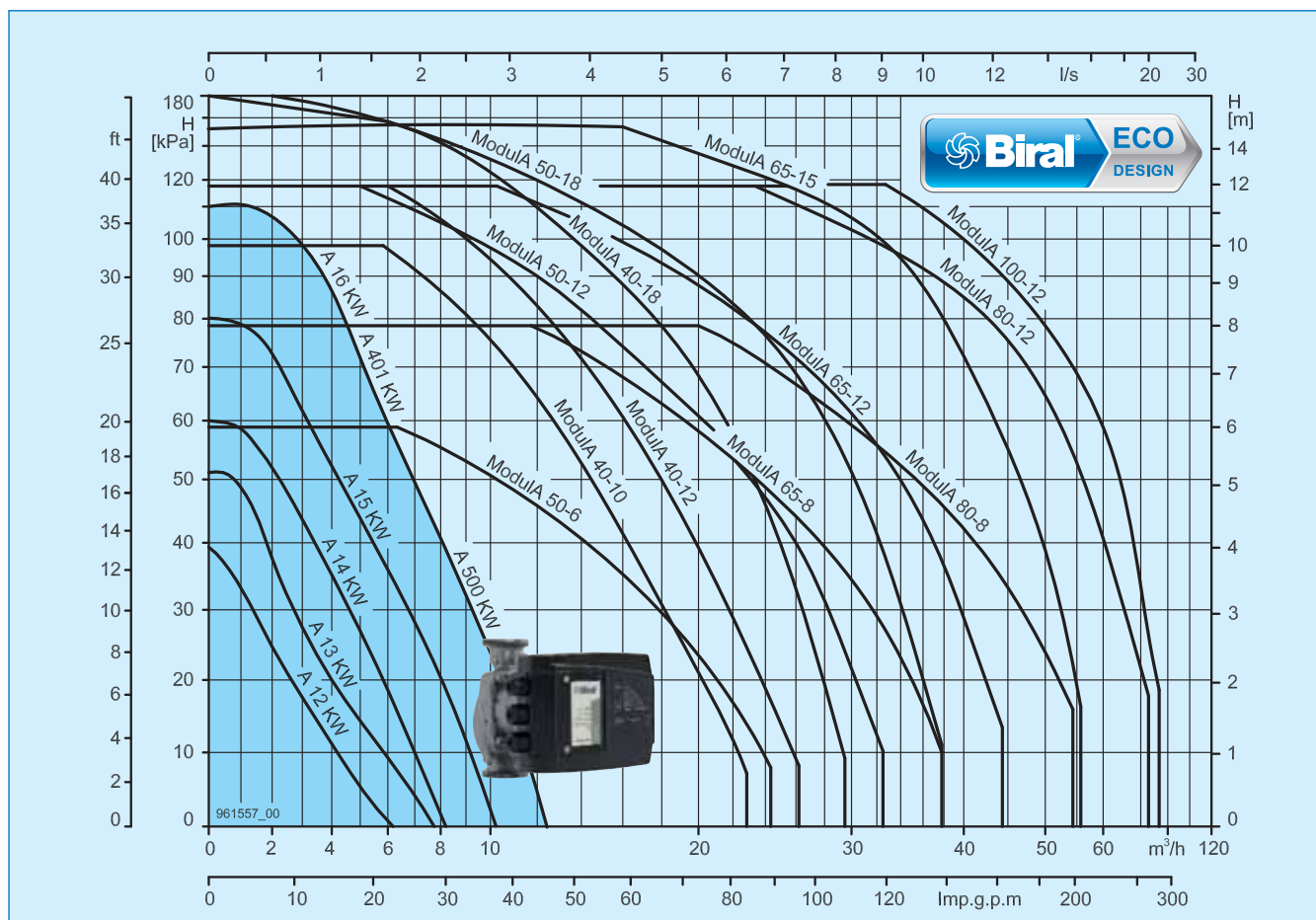
Cold water circulation pumps

A 12 KW ... A 401 KW, A 500 KW

Summary



Type	Connection	Nominal width DN	Discharge head max. mWC	Installation length mm	Operating pressure max./bar	EEL-value
 A 12 KW	G 2"	32	4	170	10	≤0.21
A 13 KW	G 2"	32	5	170	10	≤0.21
A 14 KW	G 2"	32	6	170	10	≤0.22
A 15 KW	G 2"	32	8	170	10	≤0.22
A 12-1 KW	G 1 1/2"	25	4	180	10	≤0.21
A 13-1 KW	G 1 1/2"	25	5	180	10	≤0.21
A 14-1 KW	G 1 1/2"	25	6	180	10	≤0.22
A 15-1 KW	G 1 1/2"	25	8	180	10	≤0.22
A 16-1 KW	G 1 1/2"	25	11	180	10	≤0.21
A 12-2 KW	G 2"	32	4	180	10	≤0.21
A 13-2 KW	G 2"	32	5	180	10	≤0.21
A 14-2 KW	G 2"	32	6	180	10	≤0.22
A 15-2 KW	G 2"	32	8	180	10	≤0.22
A 16-2 KW	G 2"	32	11	180	10	≤0.21
 A 401 KW	PN 6/10	40	11	220	10	≤0.22
A 401-1 KW	PN 6/10	40	11	250	10	≤0.22
A 500 KW	PN 6/10	50	11	220	10	≤0.22



Air-conditioning/
Refrigeration

A 12 KW, -1, -2

Installation length	170/180 mm
Operating pressure max.	10 bar
Media temperature	-10°C to +95°C
Ambient temperature	max. 40°C
Required operating pressure at at 75°C water temperature at 95°C water temperature For every ±100 m altitude	500 m a.s.l. 0.10 bar 0.55 bar ±0.01 bar
Weight	3.8 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...0.25 A min 0.14 A
Power	Regulation 8...33 W min 8...19 W

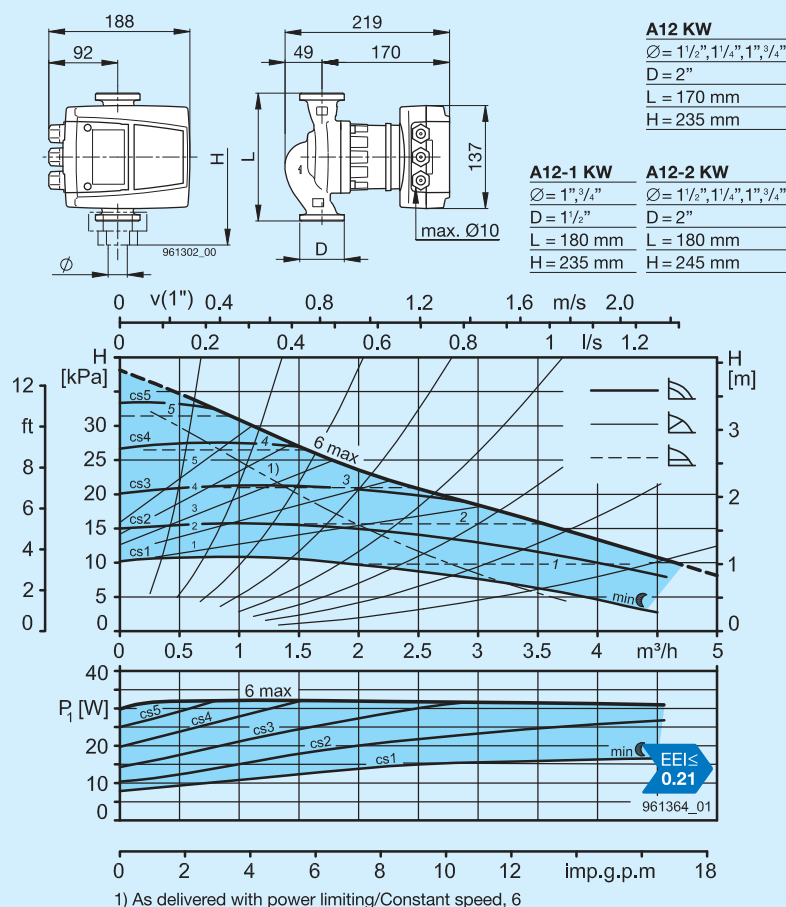
Ambient temp.	Media temperature	
°C	min. °C	max. °C
30	-10	95
35	-10	90
40	-10	70

The pump is suitable for cold water application.
The pump is fitted with internal electric motor protection and requires no external motor protection.
The pump is provided with fault or operating message (switchable).

Options:

- BIM A signal module
- BIM B control module

See page 74 for further details



A 13 KW, -1, -2

Installation length	170/180 mm
Operating pressure max.	10 bar
Media temperature	-10°C to +95°C
Ambient temperature	max. 40°C
Required operating pressure at at 75°C water temperature at 95°C water temperature For every ±100 m altitude	500 m a.s.l. 0.10 bar 0.55 bar ±0.01 bar
Weight	3.8 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...0.35 A min 0.14 A
Power	Regulation 8...50 W min 8...19 W

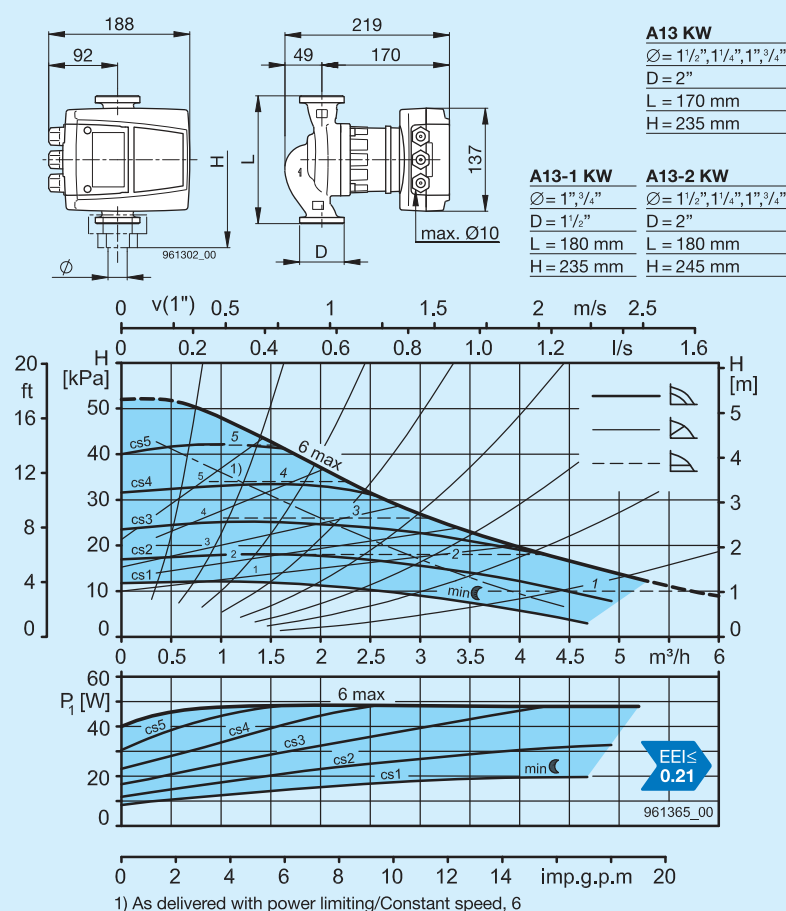
Ambient temp.	Media temperature	
°C	min. °C	max. °C
30	-10	95
35	-10	90
40	-10	70

The pump is suitable for cold water application.
The pump is fitted with internal electric motor protection and requires no external motor protection.
The pump is provided with fault or operating message (switchable).

Options:

- BIM A signal module
- BIM B control module

See page 74 for further details



A 14 KW, -1, -2

Installation length	170/180 mm
Operating pressure max.	10 bar
Media temperature	-10°C to +95°C
Ambient temperature	max. 40°C
Required operating pressure at at 75°C water temperature at 95°C water temperature For every ±100 m altitude	500 m a.s.l. 0.10 bar 0.55 bar ±0.01 bar
Weight	3.8 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...0.5 A min 0.14 A
Power	Regulation 8...70 W min 8...19 W

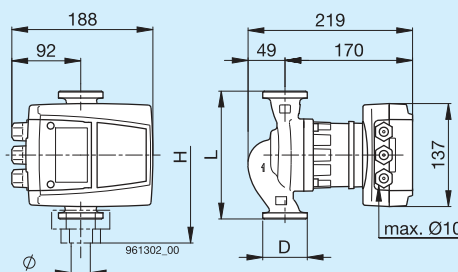
Ambient temp. °C	Media temperature min. °C	Media temperature max. °C
30	-10	95
35	-10	90
40	-10	70

The pump is suitable for cold water application.
The pump is fitted with internal electric motor protection and requires no external motor protection.
The pump is provided with fault or operating message (switchable).

Options:

- BIM A signal module
- BIM B control module

See page 74 for further details



A14 KW

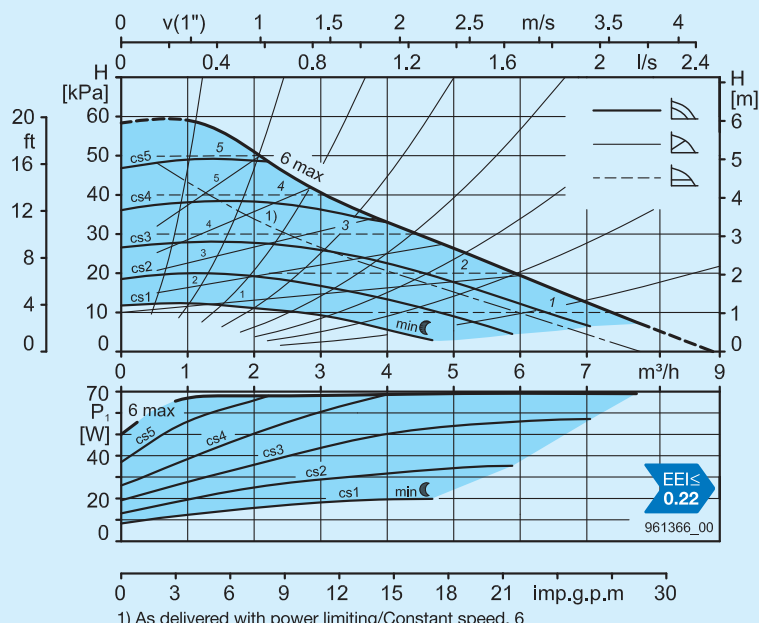
Ø = 1 1/2", 1 1/4", 1 3/4"
D = 2"
L = 170 mm
H = 235 mm

A14-1 KW

Ø = 1 3/4"
D = 1 1/2"
L = 180 mm
H = 235 mm

A14-2 KW

Ø = 1 1/2", 1 1/4", 1 3/4"
D = 2"
L = 180 mm
H = 245 mm



A 15 KW, -1, -2

Installation length	170/180 mm
Operating pressure max.	10 bar
Media temperature	-10°C to +95°C
Ambient temperature	max. 40°C
Required operating pressure at at 75°C water temperature at 95°C water temperature For every ±100 m altitude	500 m a.s.l. 0.10 bar 0.55 bar ±0.01 bar
Weight	3.8 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...0.8 A min 0.14 A
Power	Regulation 8...107 W min 8...19 W

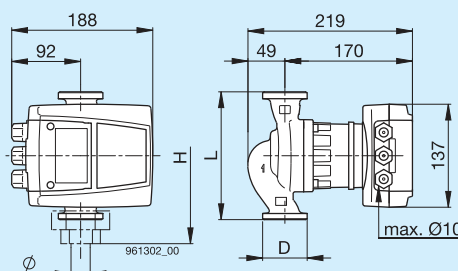
Ambient temp. °C	Media temperature min. °C	Media temperature max. °C
30	-10	95
35	-10	90
40	-10	70

The pump is suitable for cold water application.
The pump is fitted with internal electric motor protection and requires no external motor protection.
The pump is provided with fault or operating message (switchable).

Options:

- BIM A signal module
- BIM B control module

See page 74 for further details



A15 KW

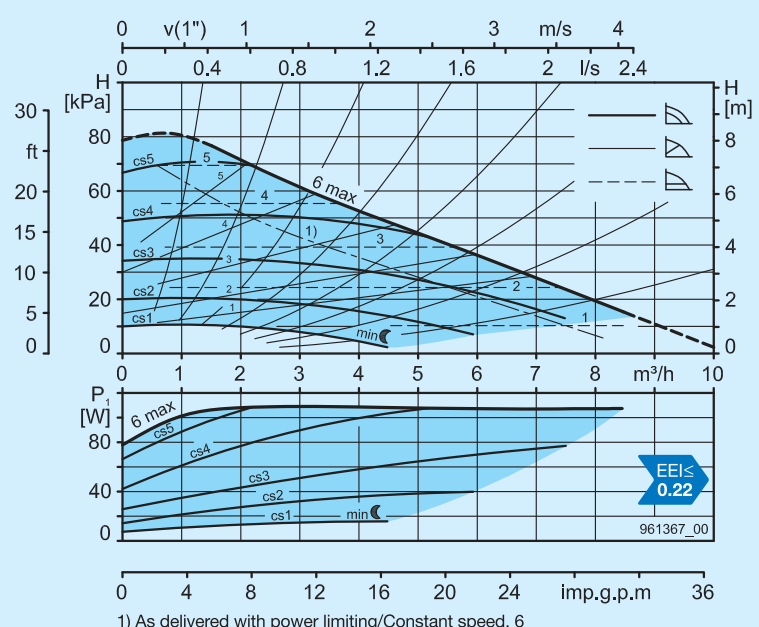
Ø = 1 1/2", 1 1/4", 1 3/4"
D = 2"
L = 170 mm
H = 235 mm

A15-1 KW

Ø = 1 3/4"
D = 1 1/2"
L = 180 mm
H = 235 mm

A15-2 KW

Ø = 1 1/2", 1 1/4", 1 3/4"
D = 2"
L = 180 mm
H = 245 mm



A 16-1 KW, A 16-2 KW

Installation length	180 mm
Operating pressure max.	10 bar
Media temperature	-10°C to +95°C
Ambient temperature	max. 40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.55 bar
For every ±100 m altitude	±0.01 bar
Weight	3,8 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...1.25 A
	min 0.14 A
Power	Regulation 8...174 W
	min 8...19 W

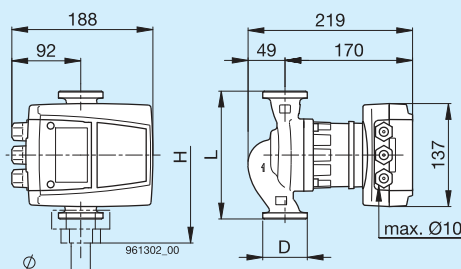
Ambient temp.	Media temperature	
°C	min. °C	max. °C
30	-10	95
35	-10	90
40	-10	70

The pump is suitable for cold water application.
The pump is fitted with internal electric motor protection and requires no external motor protection.
The pump is provided with fault or operating message (switchable).

Options:

- BIM A signal module
- BIM B control module

See page 74 for further details

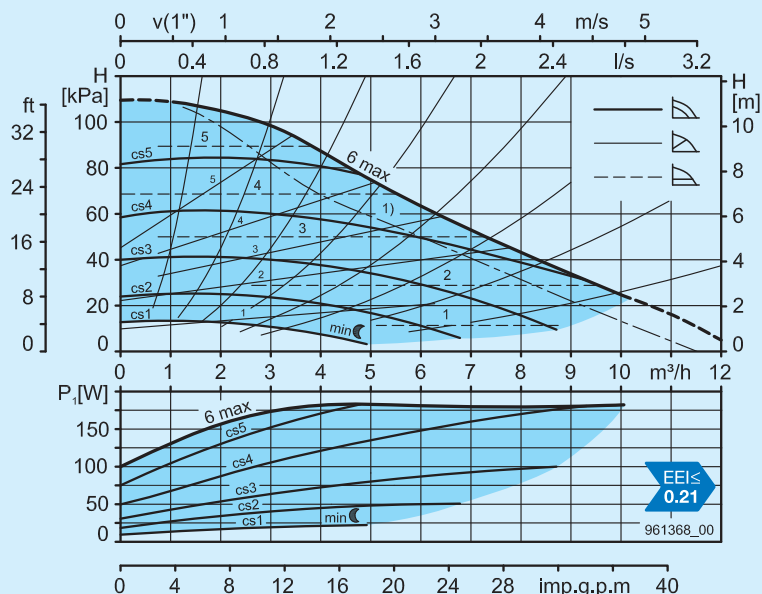


A 16-1 KW

Ø = 1", 3/4"
D = 1 1/2"
L = 180 mm
H = 235 mm

A 16-2 KW

Ø = 1 1/2", 1 1/4", 1 3/8"
D = 2"
L = 180 mm
H = 245 mm



1) As delivered with power limiting/Constant speed, 6

A 401 KW, A 401-1 KW

Installation length	A 401 KW 220 mm	A 401-1 KW 250 mm
Operating pressure max.	10 bar	
Media temperature	-10°C to +95°C	
Ambient temperature	max. 40°C	
Required operating pressure at	500 m a.s.l.	
at 75°C water temperature	0.10 bar	
at 95°C water temperature	0.55 bar	
For every ±100 m altitude	±0.01 bar	
Weight	9 kg	
Voltage	1×230 V, 50 Hz	
Current	Regulation 0.1...1.25 A	
	min 0.14 A	
Power	Regulation 8...174 W	
	min 8...19 W	

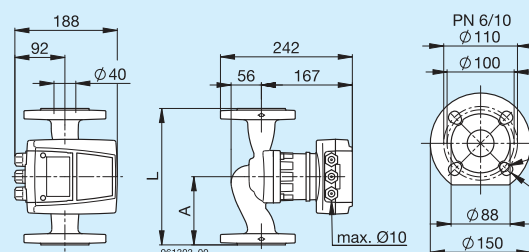
Ambient temp.	Media temperature	
°C	min. °C	max. °C
30	-10	95
35	-10	90
40	-10	70

The pump is suitable for cold water application.
The pump is fitted with internal electric motor protection and requires no external motor protection.
The pump is provided with fault or operating message (switchable).

Options:

- BIM A signal module
- BIM B control module

See page 74 for further details

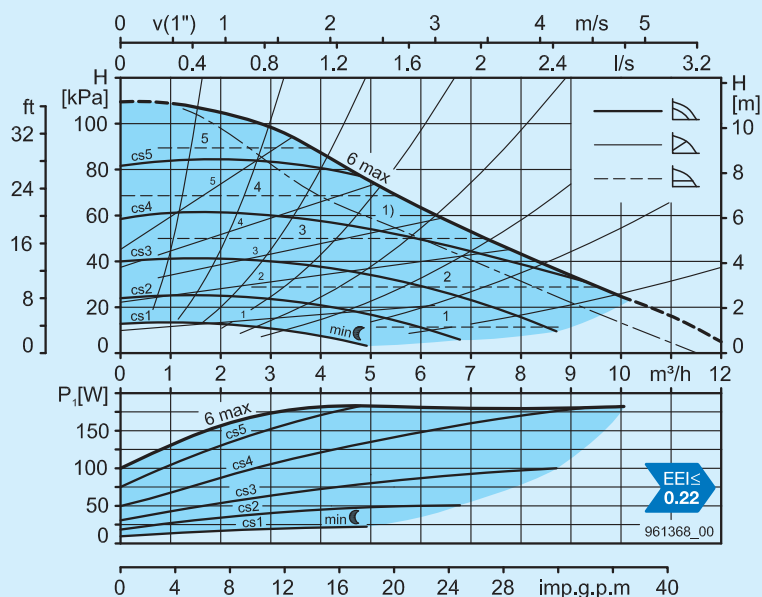


A 401 KW

L = 220 mm
A = 110 mm

A 401-1 KW

L = 250 mm
A = 125 mm



1) As delivered with power limiting/Constant speed, 6

A 500 KW

Installation length	220 mm
Operating pressure max.	10 bar
Media temperature	-10°C to +95°C
Ambient temperature	max. 40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.55 bar
For every ±100 m altitude	±0.01 bar
Weight	11 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...1.25 A
	min 0.14 A
Power	Regulation 8...174 W
	min 8...19 W

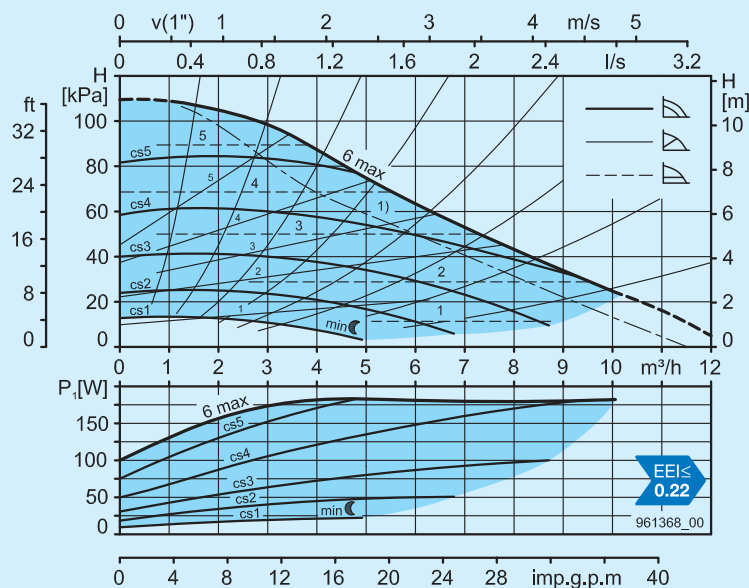
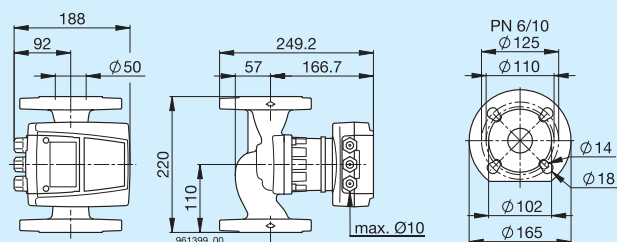
Ambient temp.	Media temperature	
°C	min. °C	max. °C
30	-10	95
35	-10	90
40	-10	70

The pump is suitable for cold water application.
The pump is fitted with internal electric motor protection and requires no external motor protection.
The pump is provided with fault or operating message (switchable).

Options:

- BIM A signal module
- BIM B control module

See page 74 for further details



1) As delivered with power limiting/Constant speed, 6

Cold water circulation pumps

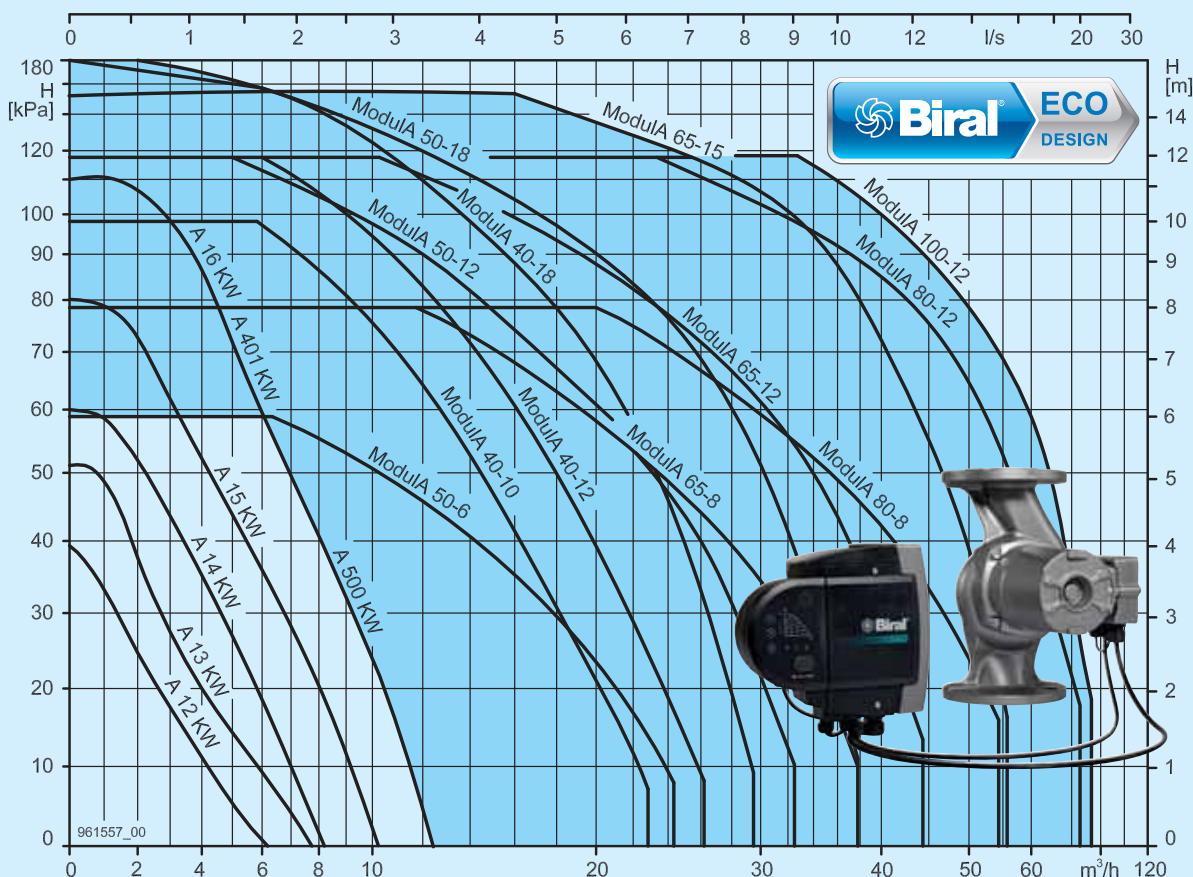
ModulA ... GREEN

with flange connections

Summary



Type	Connection	Nominal width DN	Discharge head max. mWC	Installation length mm	Operating pressure max./bar	EEL-value
ModulA 40-10 220 GREEN	PN 6-16	40	10	220	16	≤0.19
ModulA 40-12 250 GREEN	PN 6-16	40	12	250	16	≤0.18
ModulA 40-18 250 GREEN	PN 6-16	40	18	250	16	≤0.18
ModulA 50-6 240 GREEN	PN 6-16	50	6	240	16	≤0.19
ModulA 50-12 270 GREEN	PN 6-16	50	12	270	16	≤0.18
ModulA 50-18 270 GREEN	PN 6-16	50	18	270	16	≤0.17
ModulA 65-8 270 GREEN	PN 6-16	65	8	270	16	≤0.17
ModulA 65-12 340 GREEN	PN 6-16	65	12	340	16	≤0.17
ModulA 65-15 340 GREEN	PN 6-16	65	15	340	16	≤0.17
ModulA 80-8 360 GREEN	PN 6	80	8	360	6	≤0.17
ModulA 80-8 360 GREEN	PN 10/16	80	8	360	16	≤0.17
ModulA 80-12 360 GREEN	PN 6	80	12	360	6	≤0.17
ModulA 80-12 360 GREEN	PN 10/16	80	12	360	16	≤0.17
ModulA 100-12 450 GREEN	PN 6	100	12	450	6	≤0.17
ModulA 100-12 450 GREEN	PN 10/16	100	12	450	16	≤0.17



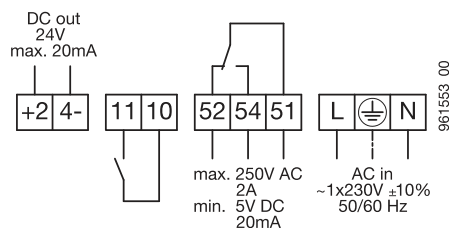
ModulA 40-10 220 GREEN

Diameter nominal	DN 40
Discharge head H max.	10 m
Installation length	220 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	18.3 kg

Electrical data

Voltage	1x230 V
Frequency	50/60 Hz
Power P_1	18-341 W
Rated current	0.19-1.54 A
Motor protection	integrated

Connection diagram



+24- 24 V DC out
11, 10 External OFF or external ON
52, 54, 51 Error or operating message
L, PE, N Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

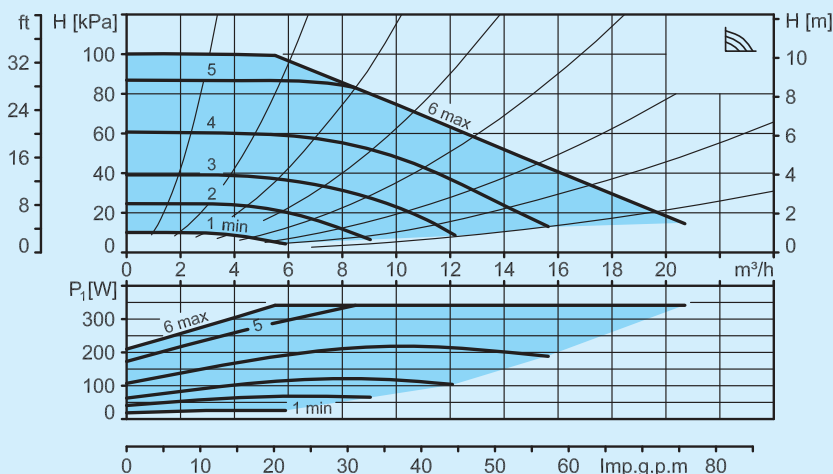
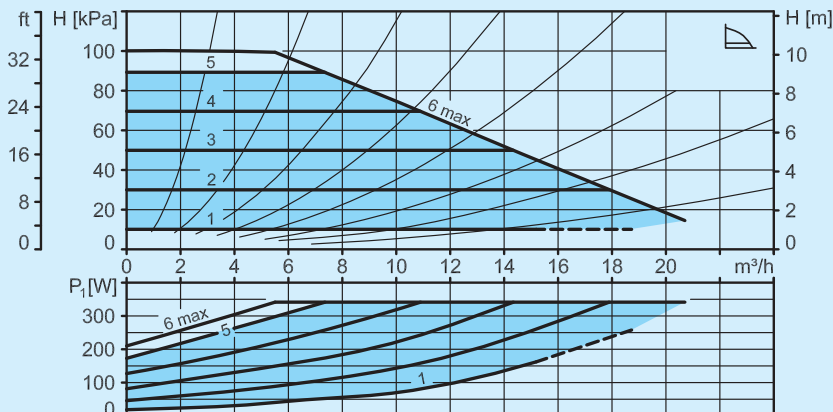
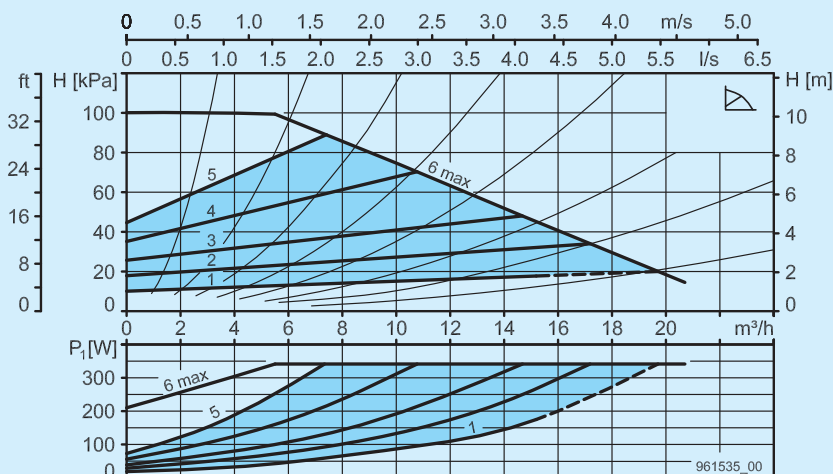
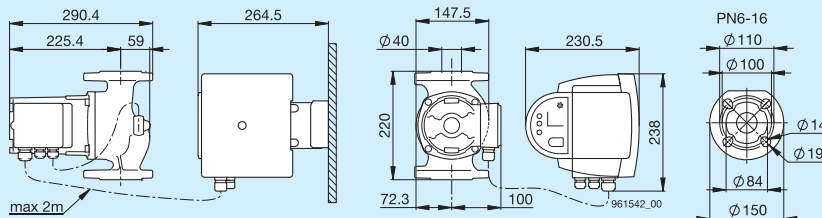
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



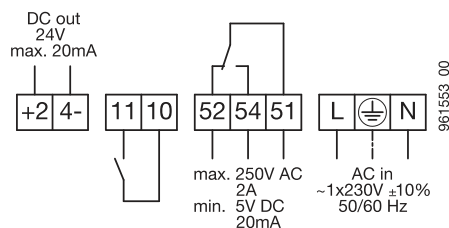
Modula 40-12 250 GREEN

Diameter nominal	DN 40
Discharge head H max.	12 m
Installation length	250 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	18.1 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	17 - 421 W
Rated current	0.18 - 1.91 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

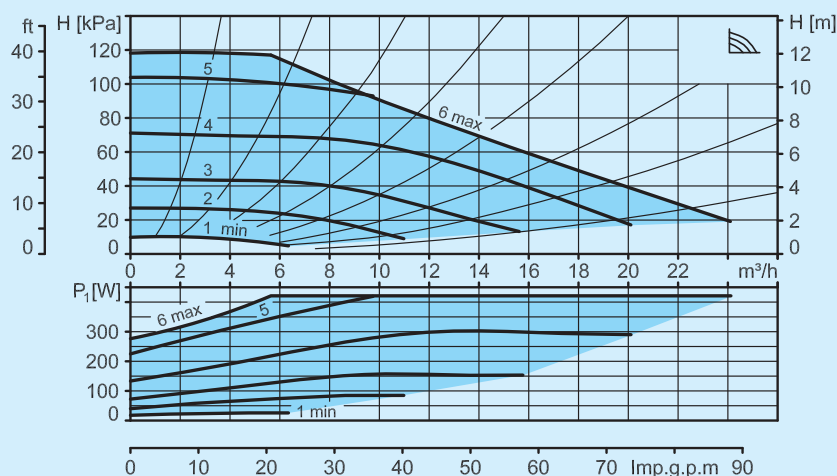
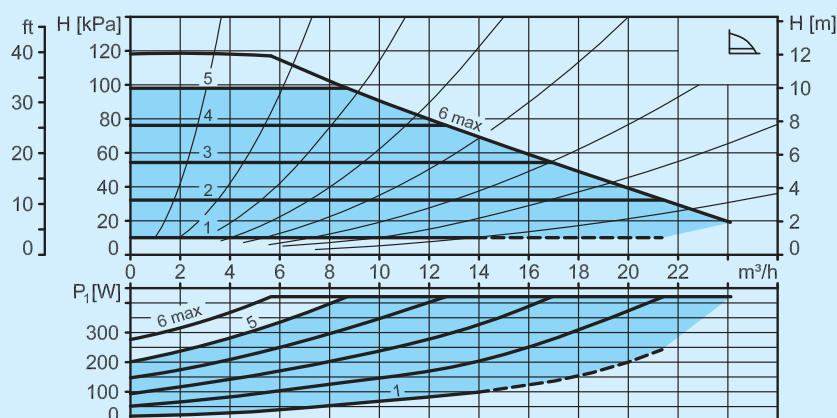
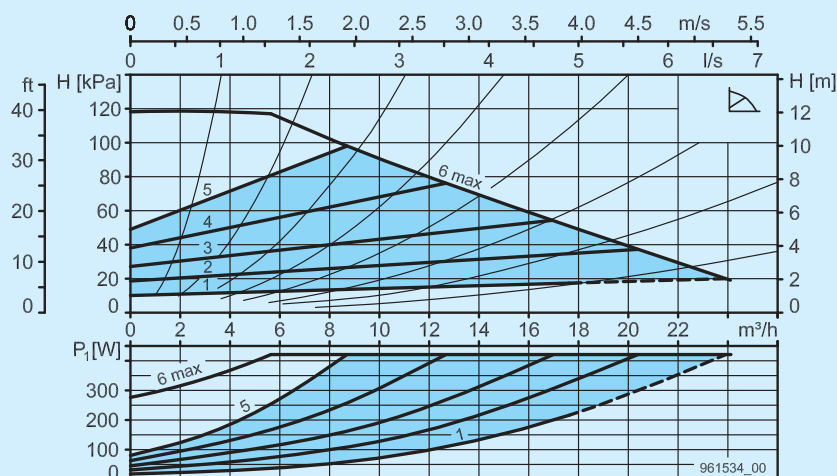
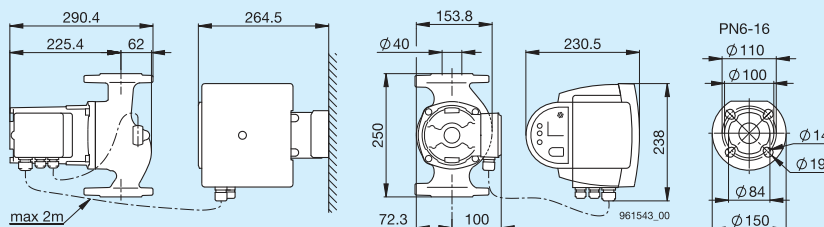
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



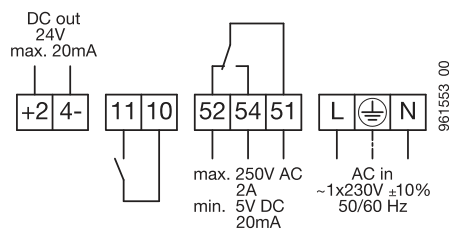
Modula 40-18 250 GREEN

Diameter nominal	DN 40
Discharge head H max.	18 m
Installation length	250 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	18.1 kg

Electrical data

Voltage	1x230 V
Frequency	50/60 Hz
Power P_1	16-594 W
Rated current	0.18-2.63 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

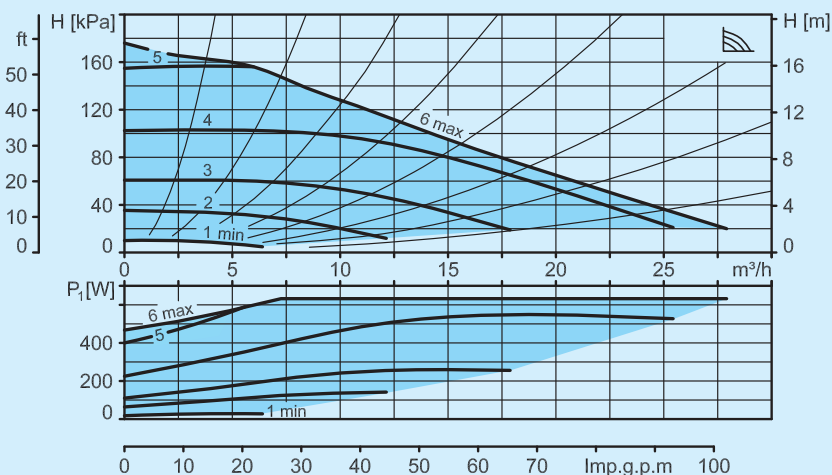
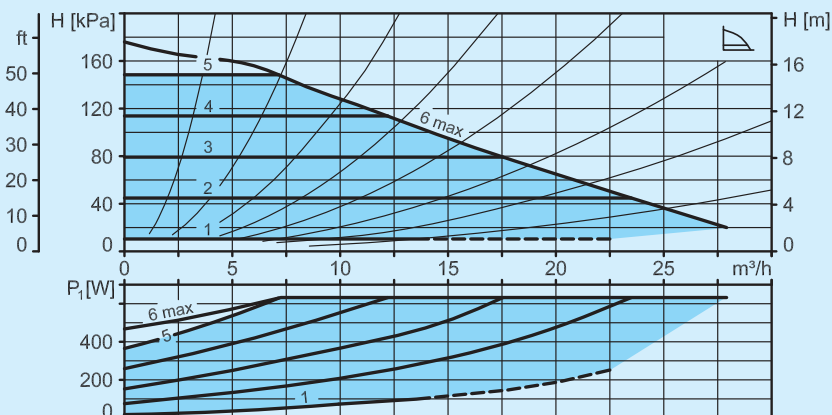
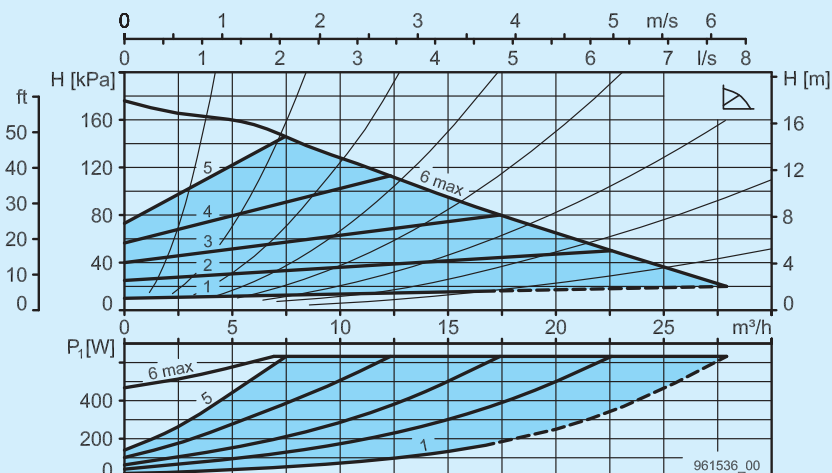
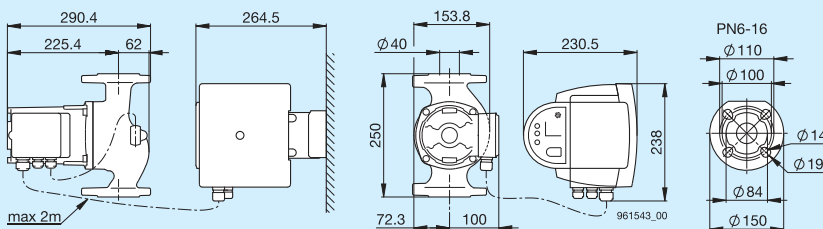
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



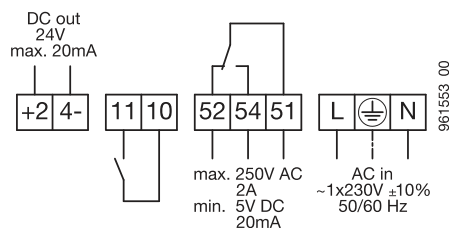
ModulA 50-6 240 GREEN

Diameter nominal	DN 50
Discharge head H max.	6 m
Installation length	240 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at at 75°C water temperature	500 m a.s.l. 0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	19.6 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P ₁	21-236 W
Rated current	0.21-1.09 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

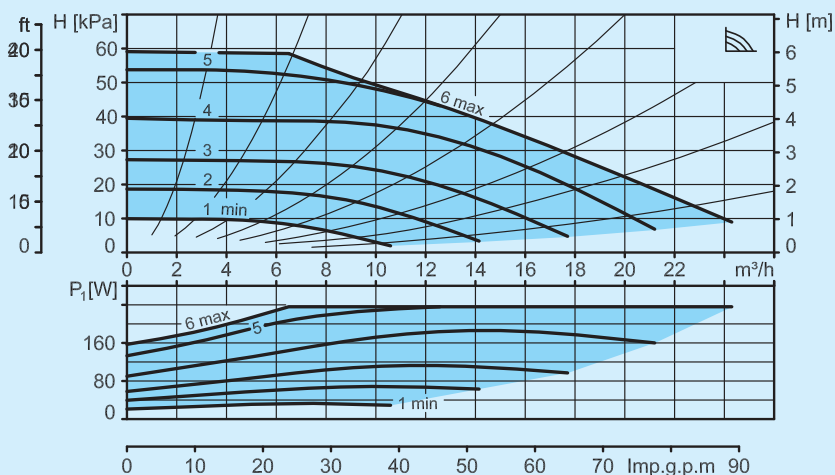
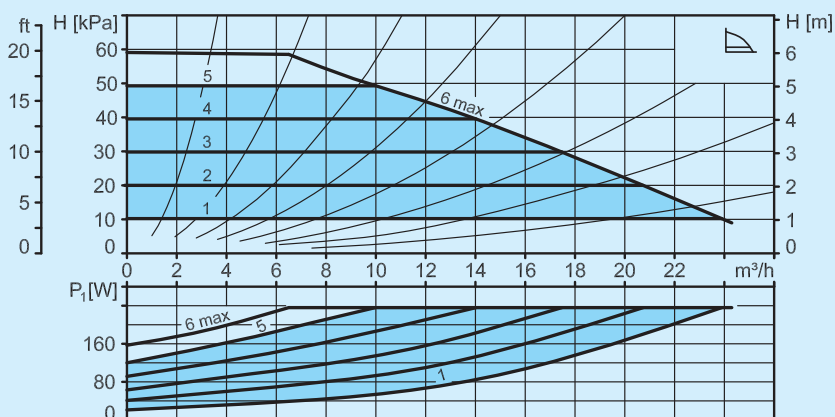
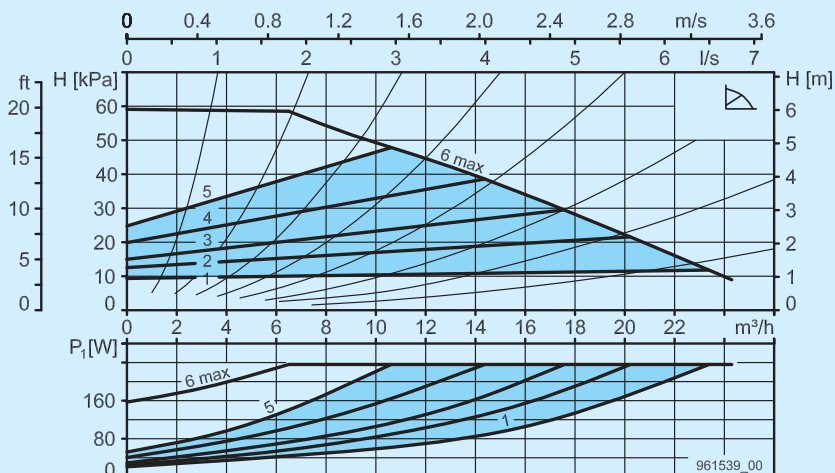
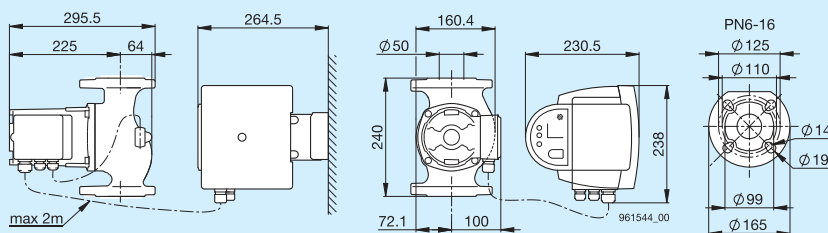
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



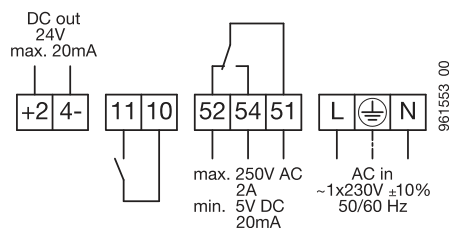
Modula 50-12 270 GREEN

Diameter nominal	DN 50
Discharge head H max.	12 m
Installation length	270 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	20.1 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	20-516 W
Rated current	0.21-2.32 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

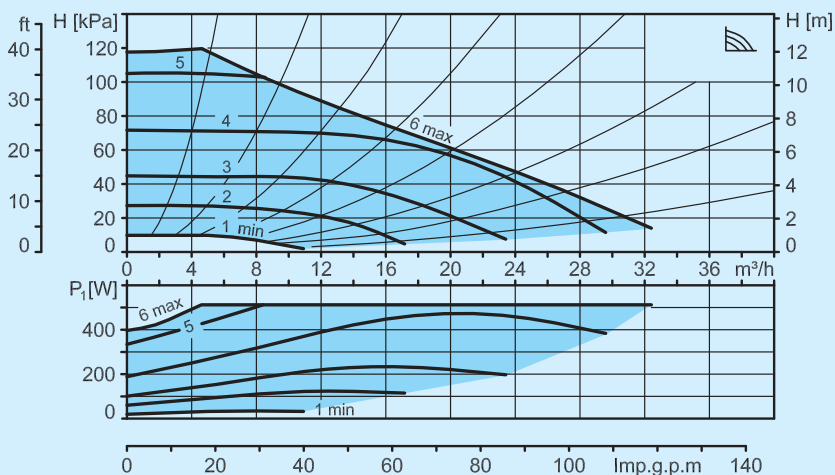
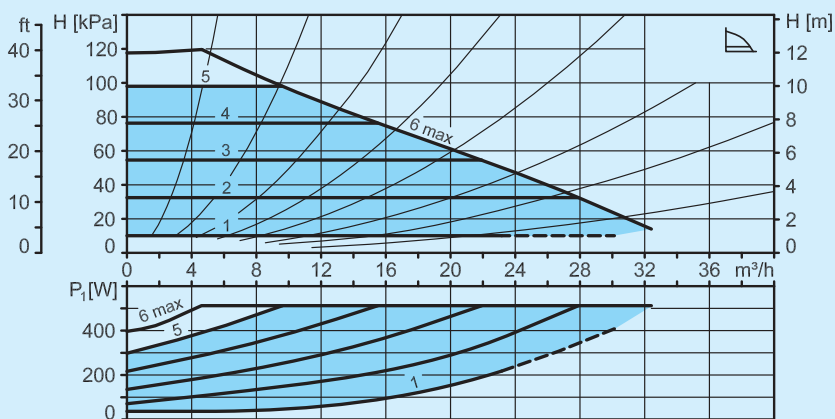
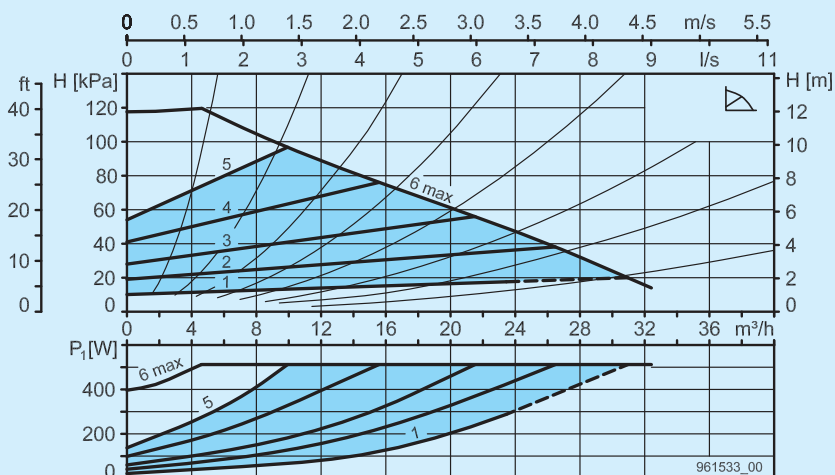
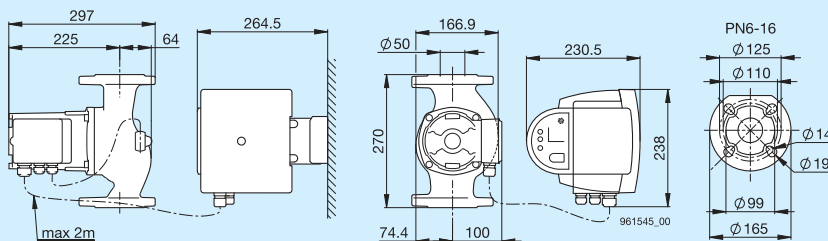
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



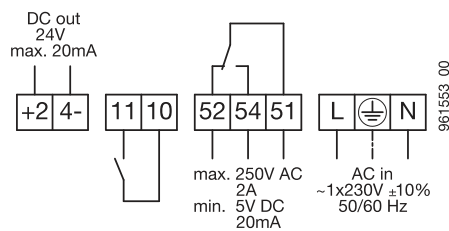
Modula 50-18 270 GREEN

Diameter nominal	DN 50
Discharge head H max.	18 m
Installation length	270 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	20.8 kg

Electrical data

Voltage	1x230 V
Frequency	50/60 Hz
Power P_1	22 - 742 W
Rated current	0.21 - 3.34 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

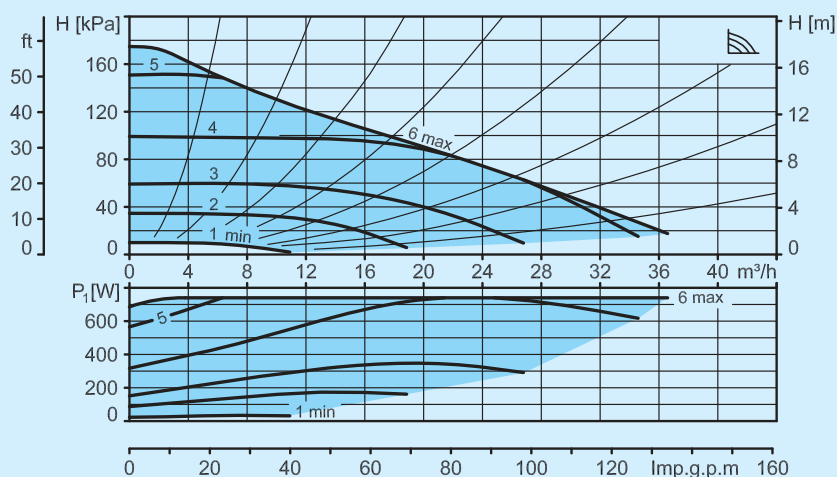
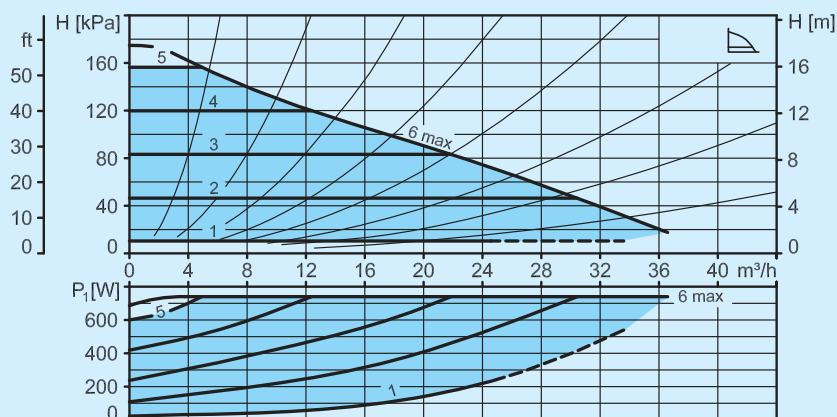
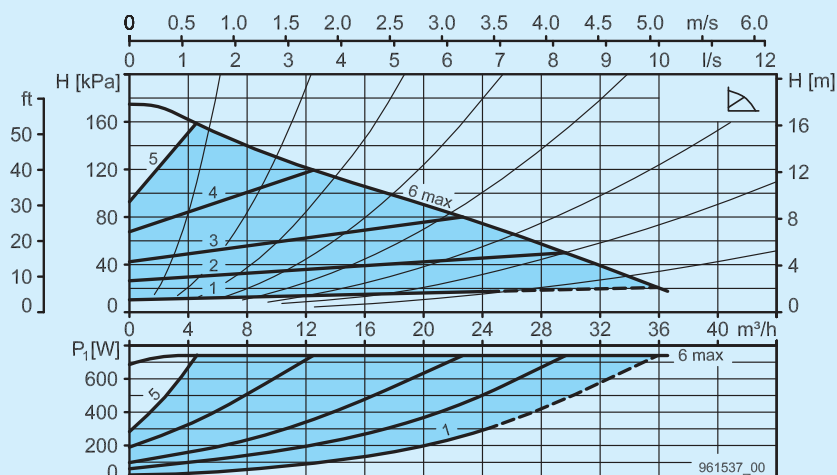
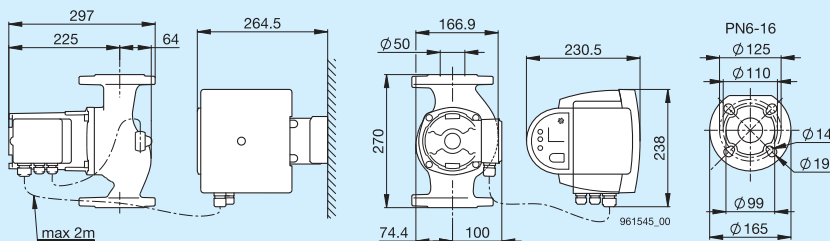
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



Air-conditioning/
Refrigeration

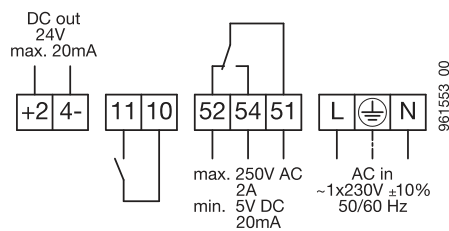
Modula 65-8 270 GREEN

Diameter nominal	DN 65
Discharge head H max.	8 m
Installation length	270 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	22.6 kg

Electrical data

Voltage	1x230 V
Frequency	50/60 Hz
Power P_1	22 - 464 W
Rated current	0.24 - 2.10 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

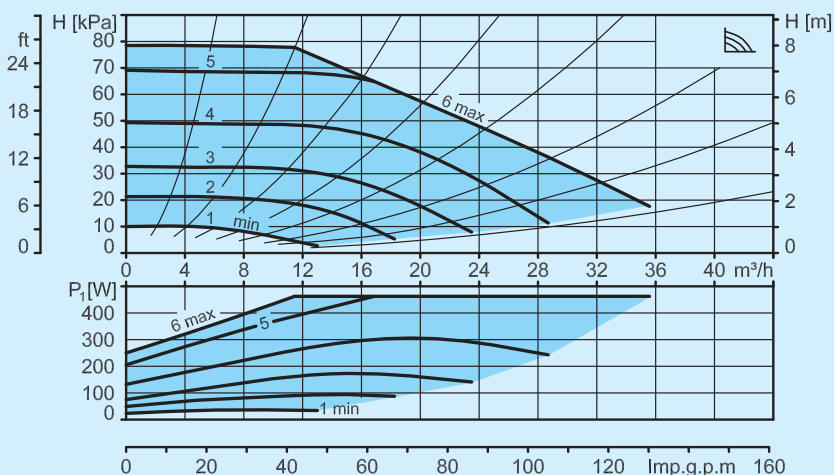
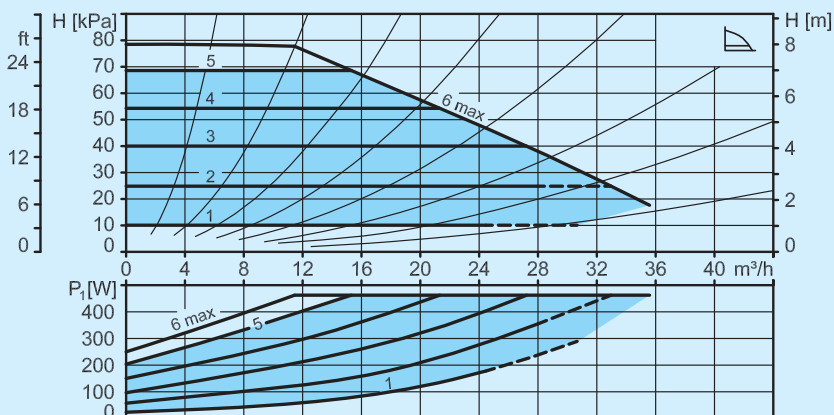
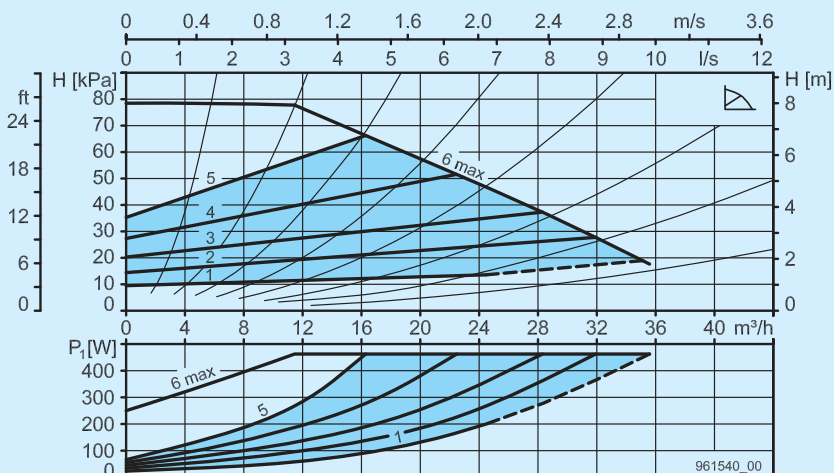
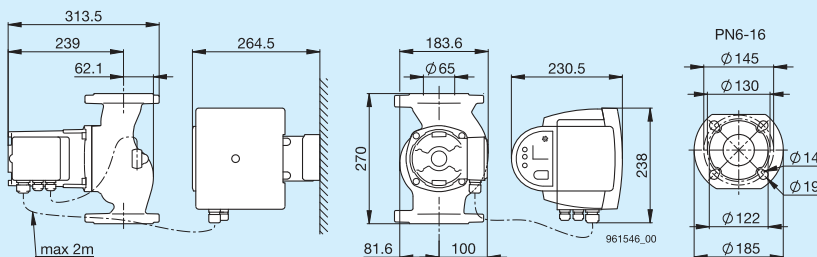
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



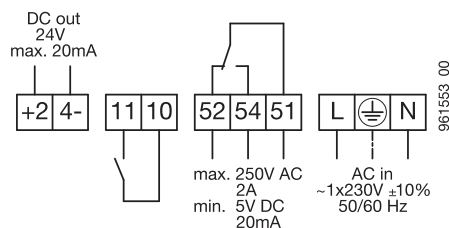
Modula 65-12 340 GREEN

Diameter nominal	DN 65
Discharge head H max.	12 m
Installation length	340 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	23.5 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	21-736 W
Rated current	0.22-3.32 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

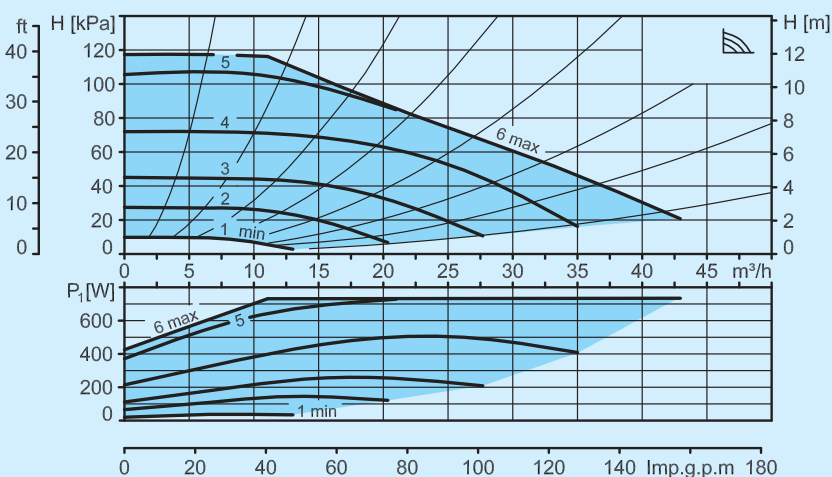
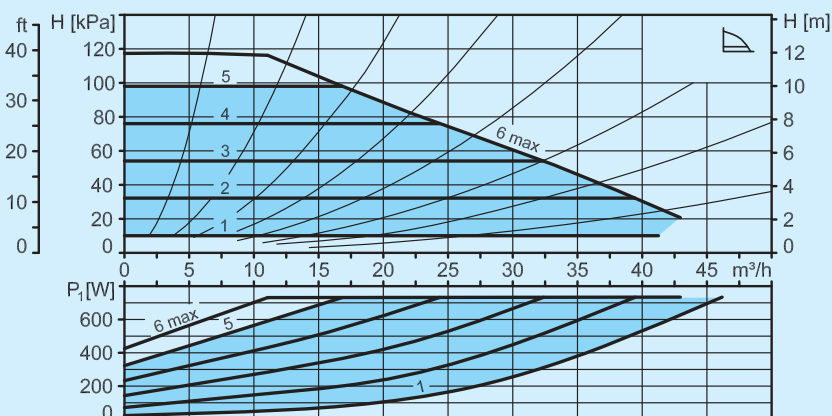
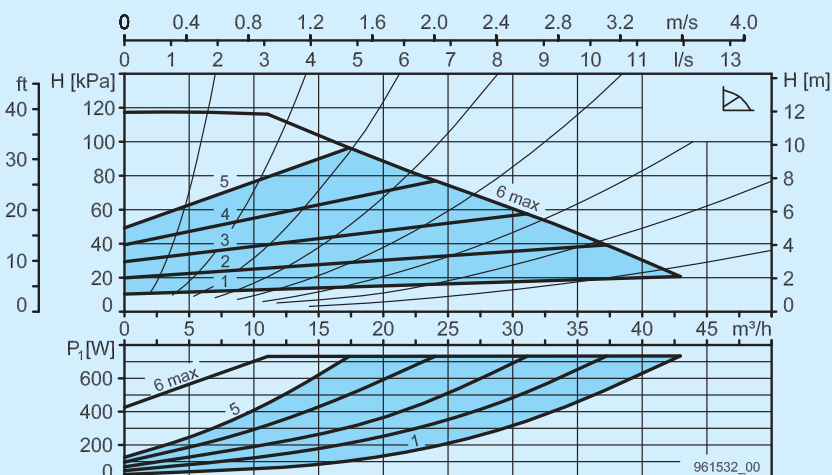
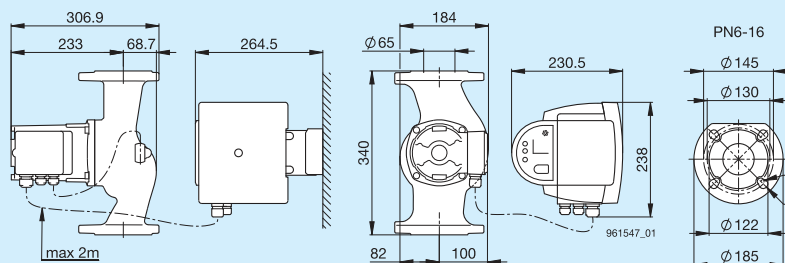
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



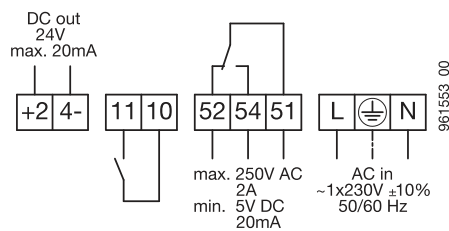
Modula 65-15 340 GREEN

Diameter nominal	DN 65
Discharge head H max.	15 m
Installation length	340 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	26.0 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	30-1254 W
Rated current	0.28-5.68 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

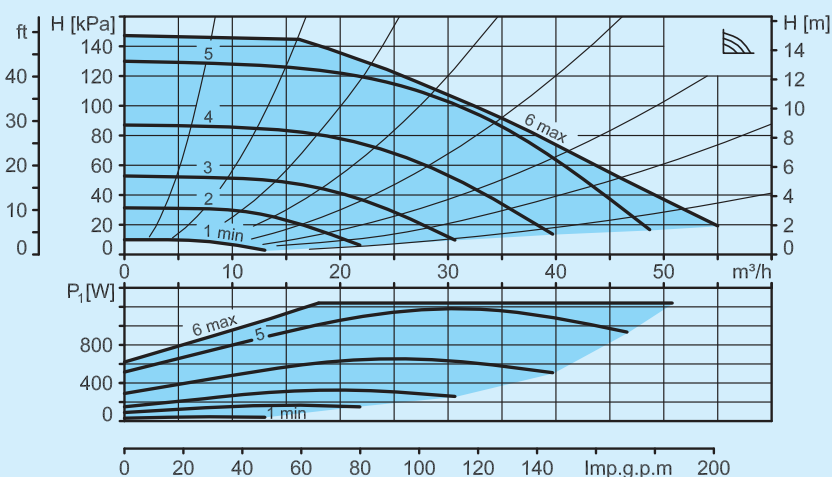
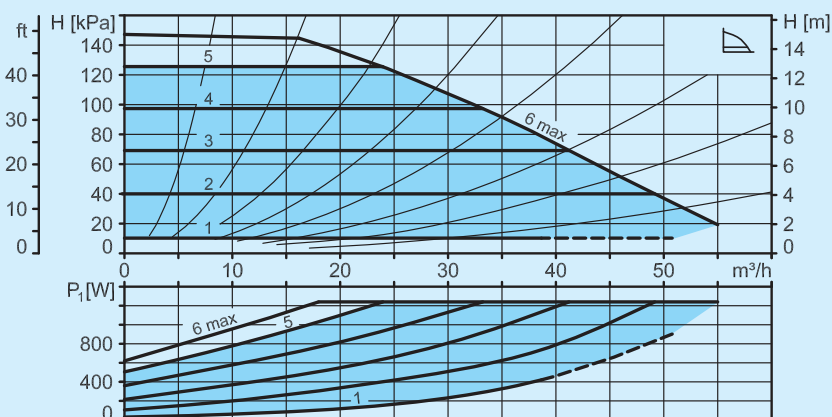
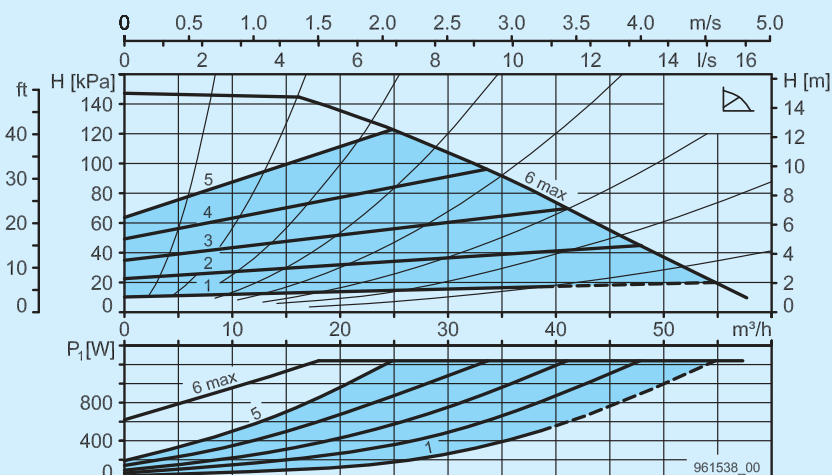
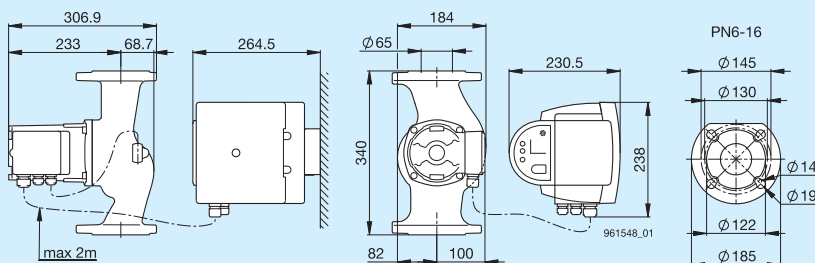
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



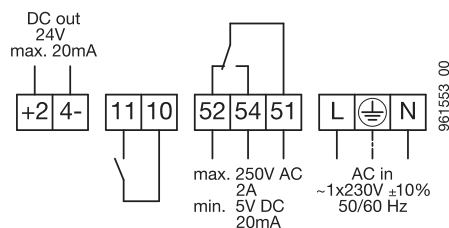
Modula 80-8 360 GREEN

Diameter nominal	DN 80
Discharge head H max.	8 m
Installation length	360 mm
Flange connection	PN 6 PN 10/16
Operating pressure max.	6 bar 16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	31.1 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	29-704 W
Rated current	0.29-3.08 A
Motor protection	integrated

Connection diagram



+24- 24 V DC out
11, 10 External OFF or external ON
52, 54, 51 Error or operating message
L, PE, N Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

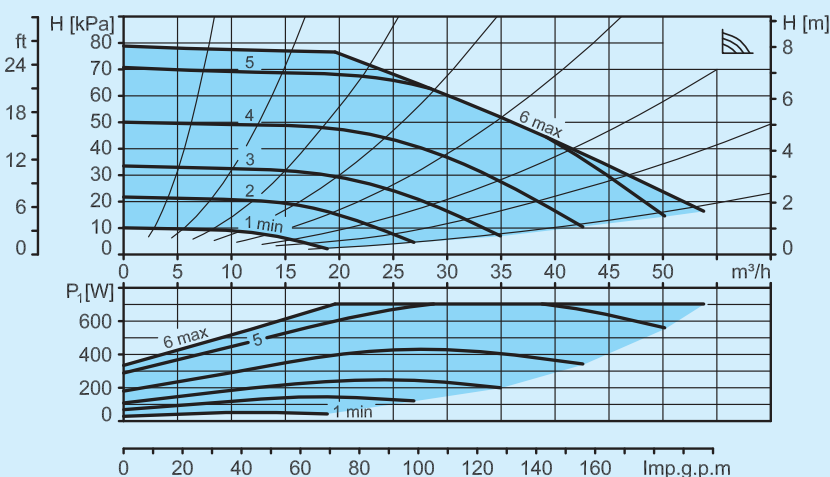
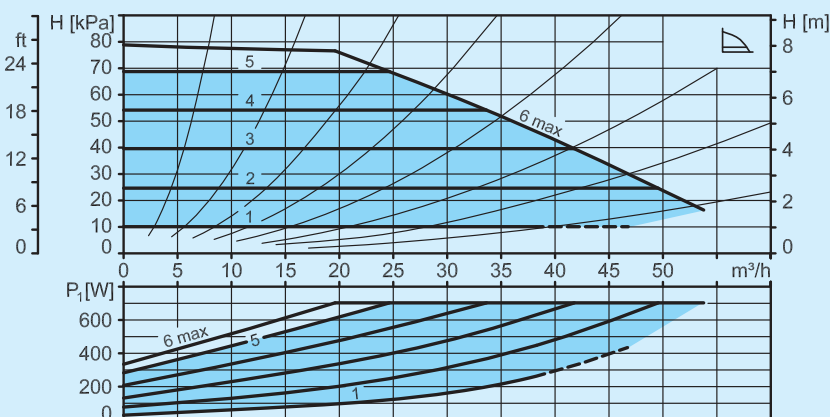
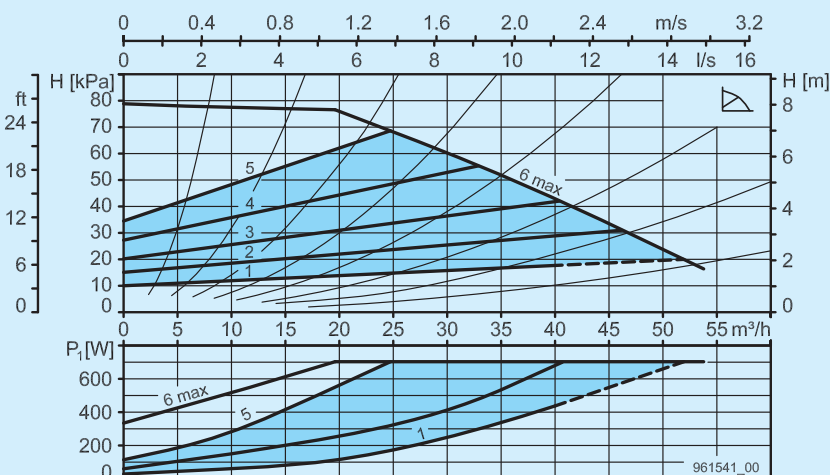
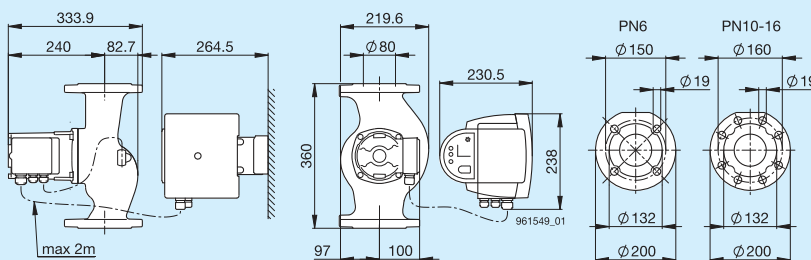
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6 or PN 10/16

Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote

See page 74 for further details



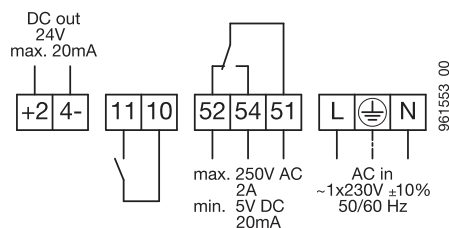
Modula 80-12 360 GREEN

Diameter nominal	DN 80
Discharge head H max.	12 m
Installation length	360 mm
Flange connection	PN 6 PN 10/16
Operating pressure max.	6 bar 16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	31.1 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	35 - 1282 W
Rated current	0.32 - 5.56 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

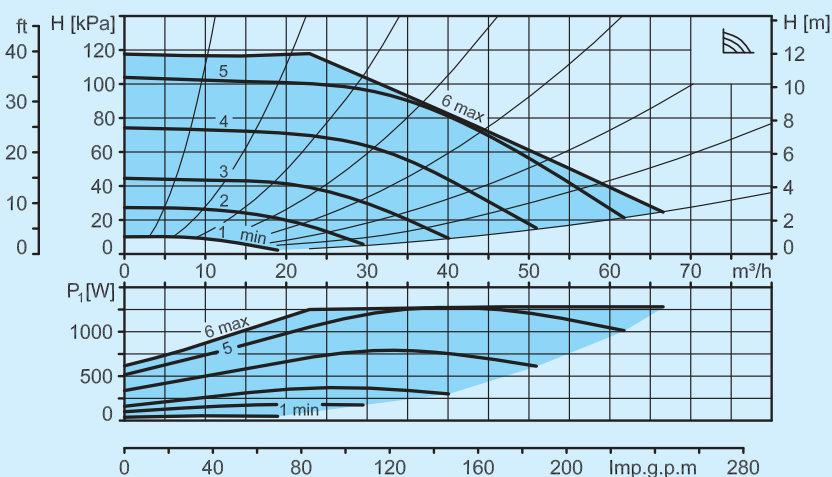
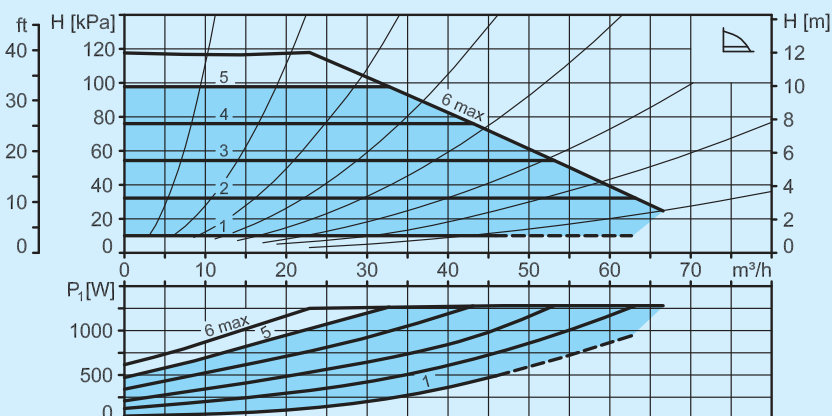
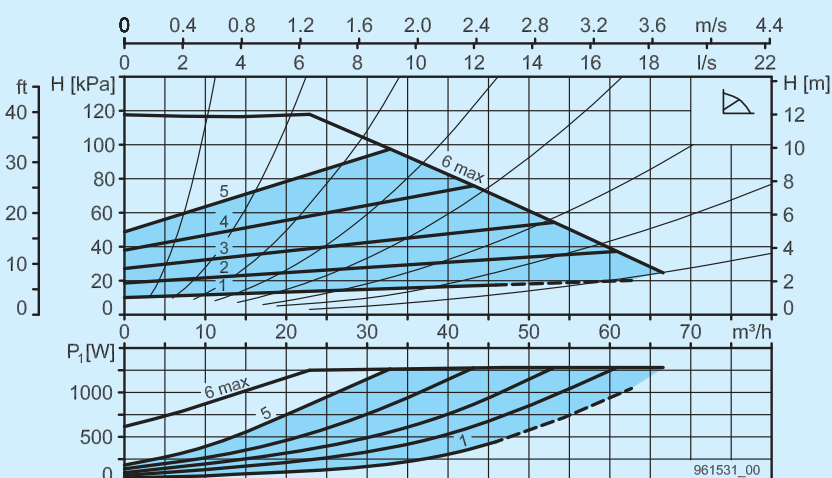
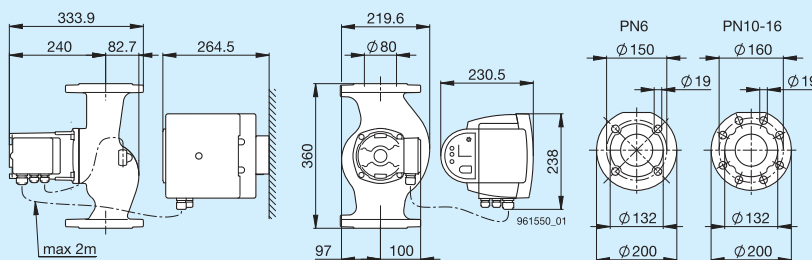
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6 or PN 10/16

Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote

See page 74 for further details



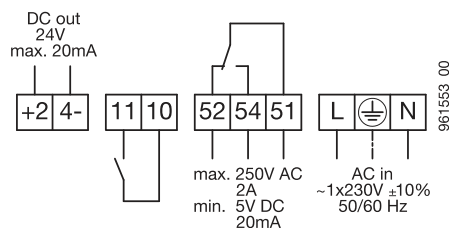
Modula 100-12 450 GREEN

Diameter nominal	DN 100
Discharge head H max.	12 m
Installation length	450 mm
Flange connection	PN 6 PN 10/16
Operating pressure max.	6 bar 16 bar
Media temperature	-10°C to +110°C
Ambient temperature	0°C to +40°C
Required operating pressure at	500 m a.s.l.
at 75°C water temperature	0.10 bar
at 95°C water temperature	0.35 bar
at 110°C water temperature	0.65 bar
For every ±100 m altitude	±0.01 bar
Weight	36.0 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	35 - 1563 W
Rated current	0.32 - 6.78 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

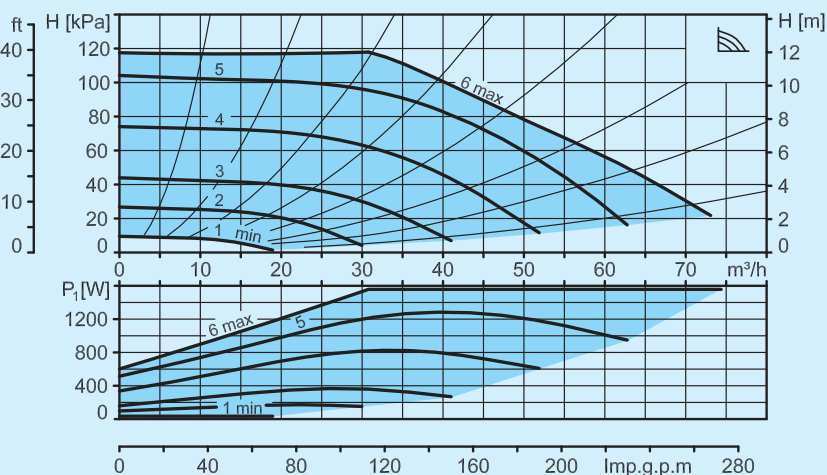
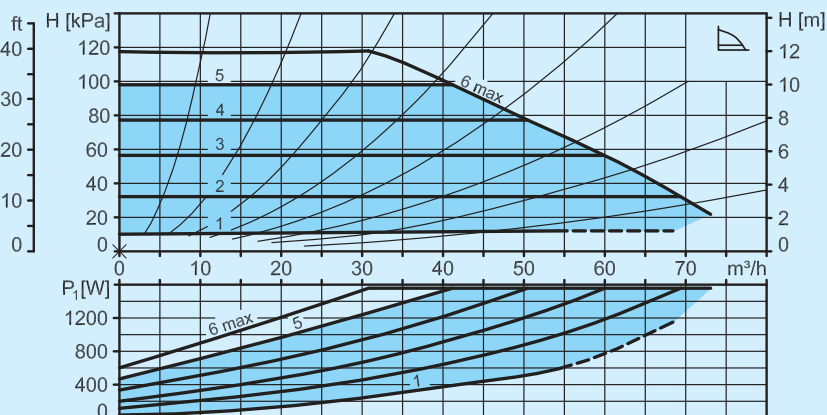
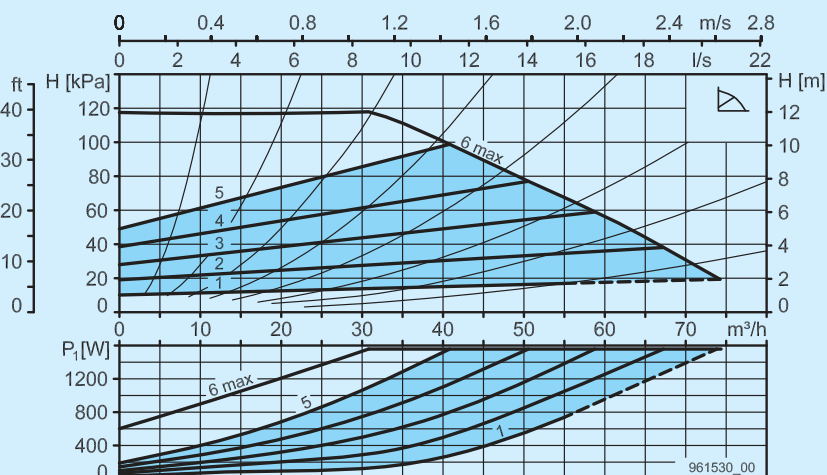
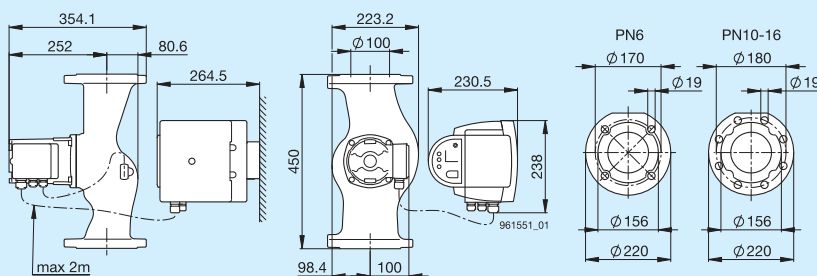
Included in the scope of delivery

- Kit for recessed installation of electronics (pre-installed)
- Sealing set for flange PN 6 or PN 10/16

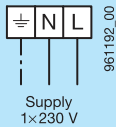
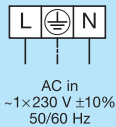
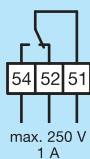
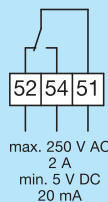
Options

- BIM A2 signal module
- BIM B2 control module
- Biral Remote

See page 74 for further details

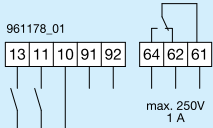
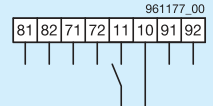
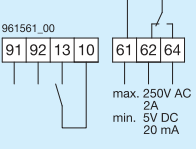
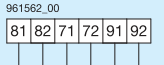


Standard

	 A12 KW...A401 KW A500 KW 8...174 W	 ModulA...GREEN 16...1563 W
Fault or operating message (switchable)	✓	✓
External OFF or external ON (switchable)	–	✓ ³⁾
Power Limit (activatable)	–	✓
Power limiting (can be deactivated)	✓	–
Automatic night reduction (activatable)	✓	–
Media temperature: up to –10 °C	✓	✓
Connection diagram Pump L = Lead N = Neutral line  = PE wire, protective conductor	 Supply 1×230 V	 AC in ~1×230 V ±10% 50/60 Hz
51-54 Fault or operating message (switchable) as closing contact: closes at fault/operation message 51-52 Fault or operating message (switchable) as opening contact: opens at fault/operation message	 max. 250 V 1 A	 max. 250 V AC 2 A min. 5 V DC 20 mA
10-11 External OFF or external ON (switchable) with closing contact		 11 10

³⁾ We recommend switching ModulA pumps via contacts 10/11 (external OFF/ON).

Options

	 A 12 KW... A401 KW A500 KW 8 ... 174 W	 ModulA... GREEN 16 ... 1563 W
Biral interface module BIM A signal module – Operating or ready message – External OFF – External minimum speed – Twin pump function	✓	–
Biral interface module BIM B control module – External speed specification 0–10 V/0–20 mA – PWM/multi-thermal interface – External OFF – Twin pump function	✓	–
Biral interface module BIM A2 signal module – Operating or ready message – External minimum speed – Twin pump function	–	✓
Biral interface module BIM B2 control module – External speed specification 0–10 V/0–20 mA – External minimum speed – Twin pump function	–	✓
Connection diagram		
BIM A signal module 10-11 External OFF with closed contact 10-13 External minimum speed with closing contact 61-64 Operating or ready message (switchable) as a closing contact: Closes at operating/ready message 61-62 Operating or ready message (switchable) as opening contact: opens at operating/ready message 91-92 Twin pump function		
BIM B control module 10-11 External OFF with closing contact 81-82 Multi-thermal/PWM interface for external speed specification 71-72 Analogue input 0...10 V or 0...20 mA for external speed specification 91-92 Twin pump function		
BIM A2 signal module 10-13 External minimum speed with closing contact 61-64 Operating or ready message (switchable) as a closing contact: closes at operating/ready message 61-62 Operating or ready message (switchable) as opening contact: opens at operating/ready message 91-92 Twin pump function		
BIM B2 control module 81-82 Multi-thermal /PWM interface for external speed specification 71-72 Analogue input 0...10 V or 0...20 mA for external speed specification 91-92 Twin pump function		

Intelligent service water pumps

AXW smart

The smart technology recognises the consumption habits in the home and switches the pump on and off as required.

1×230 V

Summary



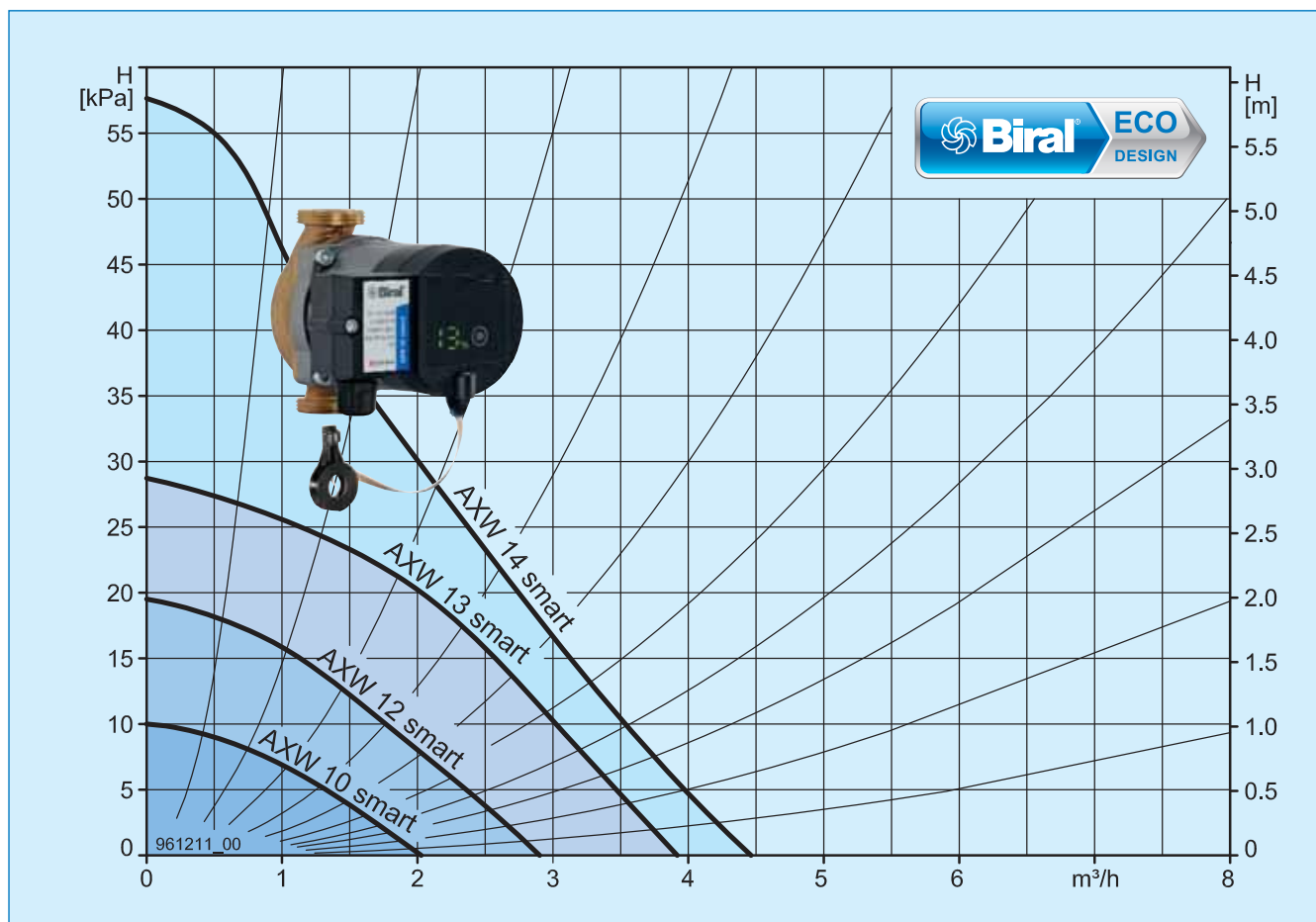
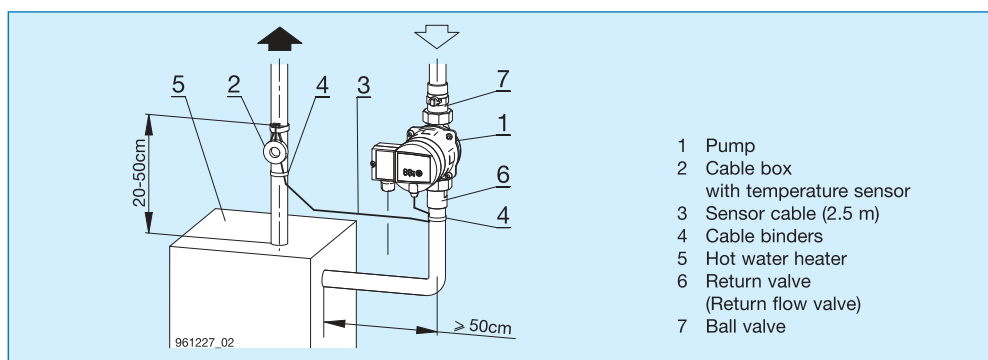
Type	Connection	Nominal width DN	Discharge head max. mWC	Installation length mm	Operating pressure max. bar
AXW smart 10	G 1 1/4"	20	1	120	10
AXW smart 12	G 1 1/4"	20	2	120	10
AXW smart 13	G 1 1/4"	20	3	150	10
AXW smart 14	G 1 1/4"	20	6	150	10

Installation conditions

Optimum spacing of cable box with temperature sensor from hot water heater: 20 to 50 cm

Determine spacing from pump to fitting position of cable box with temperature sensor.

Draw sensor cable from cable box with the required cable length. The length of the sensor cable is 2.5 m



Standard



High-efficiency permanent magnet technology	✓
«Experiential» smart technology recognises and anticipates your consumption habits to make hot water available	✓
Variable comfort setting from maximum energy saving to maximum comfort	✓
Legionella protection	✓
Information via LED display	✓
Weekend and holiday recognition	✓
Shut-off set Non-return valve and ball valve	✓
Types of control (Proportional pressure, contact pressure and constant speed)	–
Fault or operating message (switchable)	–
Power limiting (can be deactivated)	–

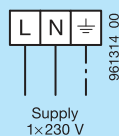
Electrical connection

Pump

- L** = Lead
N = Neutral line
 = PE wire, protective conductor

Note:

Continuous voltage of 230 V required



Options

Sensor cable (5 m)	✓
Signal module	–
Control module	–
Thermal insulation shells	–

AXW 10 smart

Installation length	120 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +65°C (for short periods max. 85 °C for thermal disinfection).
To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.	
Ambient temperature	max. 40 °C
Water hardness	max. 35°fH (20°dH)
Required operating pressure at at 65°C water temperature	500 m a.s.l. 0.05 bar
at 85°C water temperature	0.30 bar
For every ±100 m altitude	±0.01 bar
Weight	2.4 kg
Voltage	1×230 V, 50 Hz
Current	0.04...0.1 A
Power	4.7...8.4 W

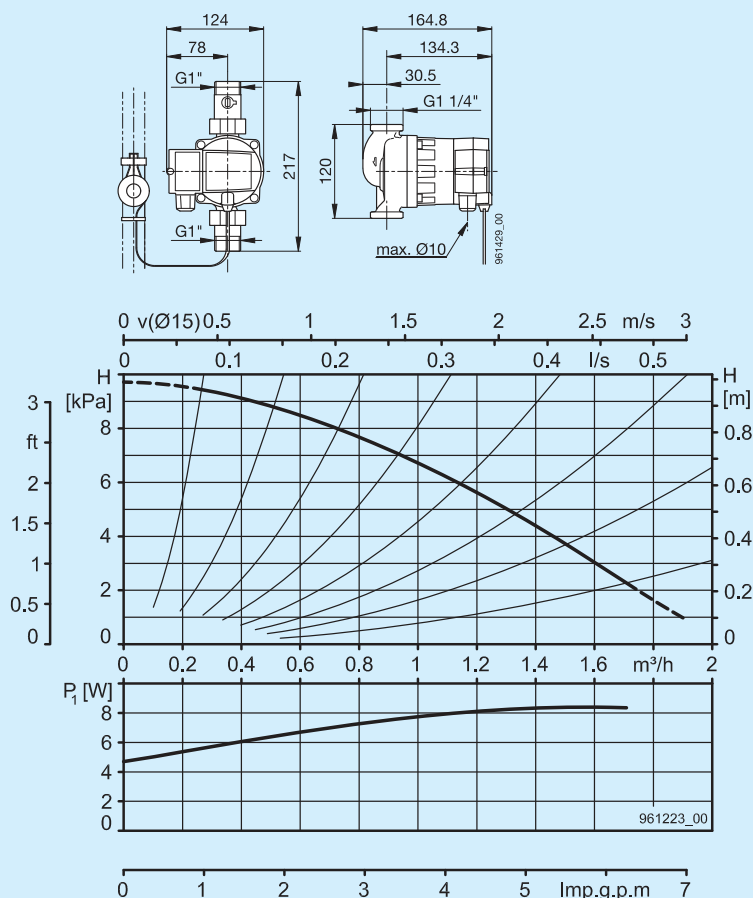
The pump is fitted with internal electric motor protection and requires no external motor protection. The pump always starts with a high torque.

Pump housing: bronze

Included in the scope of delivery:

- Shut-off set
(Non-return valve and ball valve)

See page 74 for further details



AXW 12 smart

Installation length	120 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +65°C (for short periods max. 85 °C for thermal disinfection).
To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.	
Ambient temperature	max. 40 °C
Water hardness	max. 35°fH (20°dH)
Required operating pressure at at 65°C water temperature	500 m a.s.l. 0.05 bar
at 85°C water temperature	0.30 bar
For every ±100 m altitude	±0.01 bar
Weight	2.4 kg
Voltage	1×230 V, 50 Hz
Current	0.07...0.15 A
Power	8.7...19 W

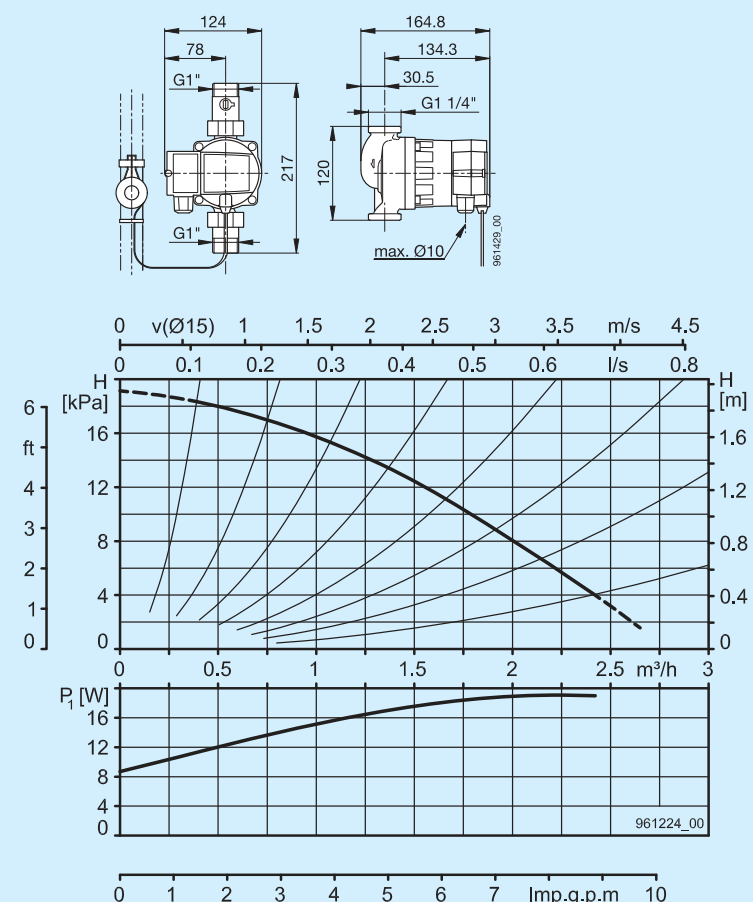
The pump is fitted with internal electric motor protection and requires no external motor protection. The pump always starts with a high torque.

Pump housing: bronze

Included in the scope of delivery:

- Shut-off set
(Non-return valve and ball valve)

See page 74 for further details



AXW 13 smart

Installation length	150 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +65°C (for short periods max. 85 °C for thermal disinfection).
To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.	
Ambient temperature	max. 40 °C
Water hardness	max. 35°fH (20°dH)
Required operating pressure at	500 m a.s.l.
at 65°C water temperature	0.05 bar
at 85°C water temperature	0.30 bar
For every ±100 m altitude	±0.01 bar
Weight	2.6 kg
Voltage	1×230 V, 50 Hz
Current	0.12...0.3 A
Power	14.3...32.7 W

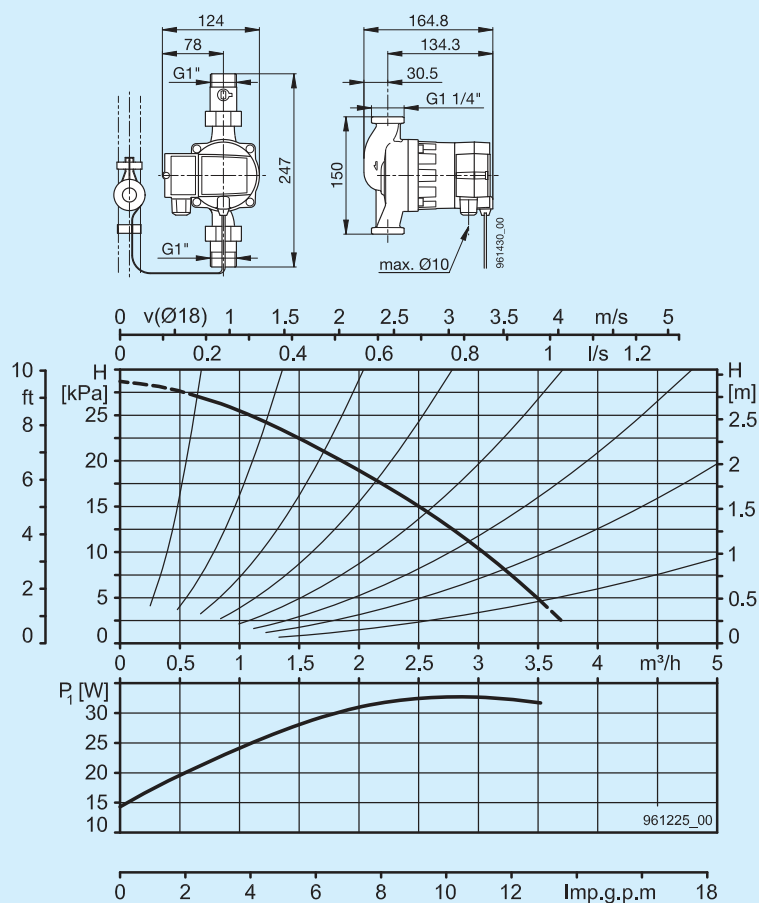
The pump is fitted with internal electric motor protection and requires no external motor protection. The pump always starts with a high torque.

Pump housing: bronze

Included in the scope of delivery:

- Shut-off set
(Non-return valve and ball valve)

See page 74 for further details



AXW 14 smart

Installation length	150 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +65°C (for short periods max. 85 °C for thermal disinfection).
To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.	
Ambient temperature	max. 40 °C
Water hardness	max. 35°fH (20°dH)
Required operating pressure at	500 m a.s.l.
at 65°C water temperature	0.05 bar
at 85°C water temperature	0.30 bar
For every ±100 m altitude	±0.01 bar
Weight	2.6 kg
Voltage	1×230 V, 50 Hz
Current	0.28...0.38 A
Power	32...45 W

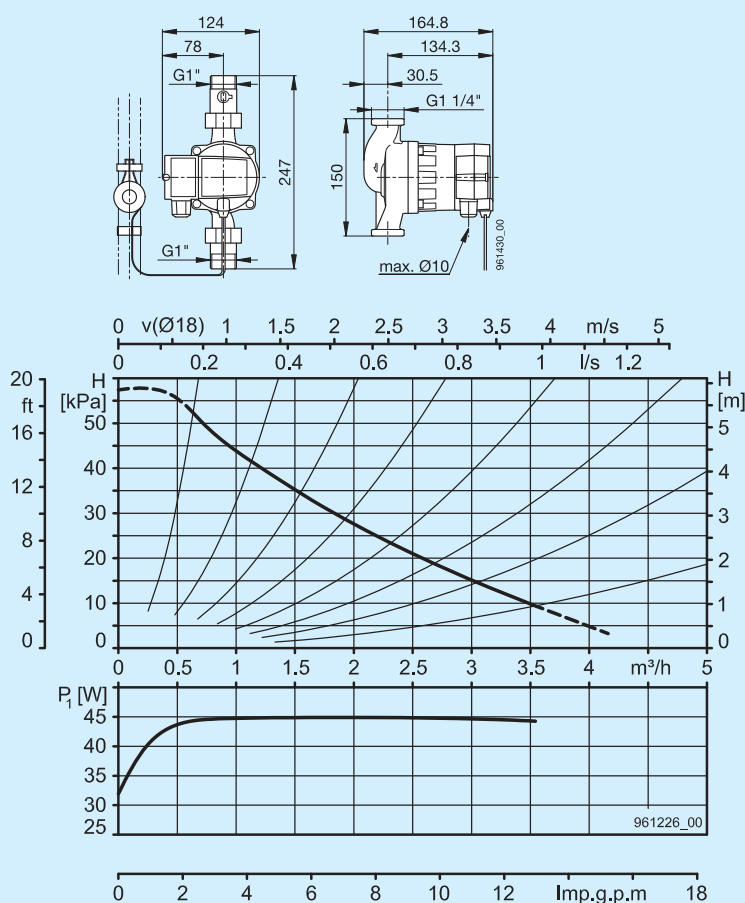
The pump is fitted with internal electric motor protection and requires no external motor protection. The pump always starts with a high torque.

Pump housing: bronze

Included in the scope of delivery:

- Shut-off set
(Non-return valve and ball valve)

See page 74 for further details



Service water pumps

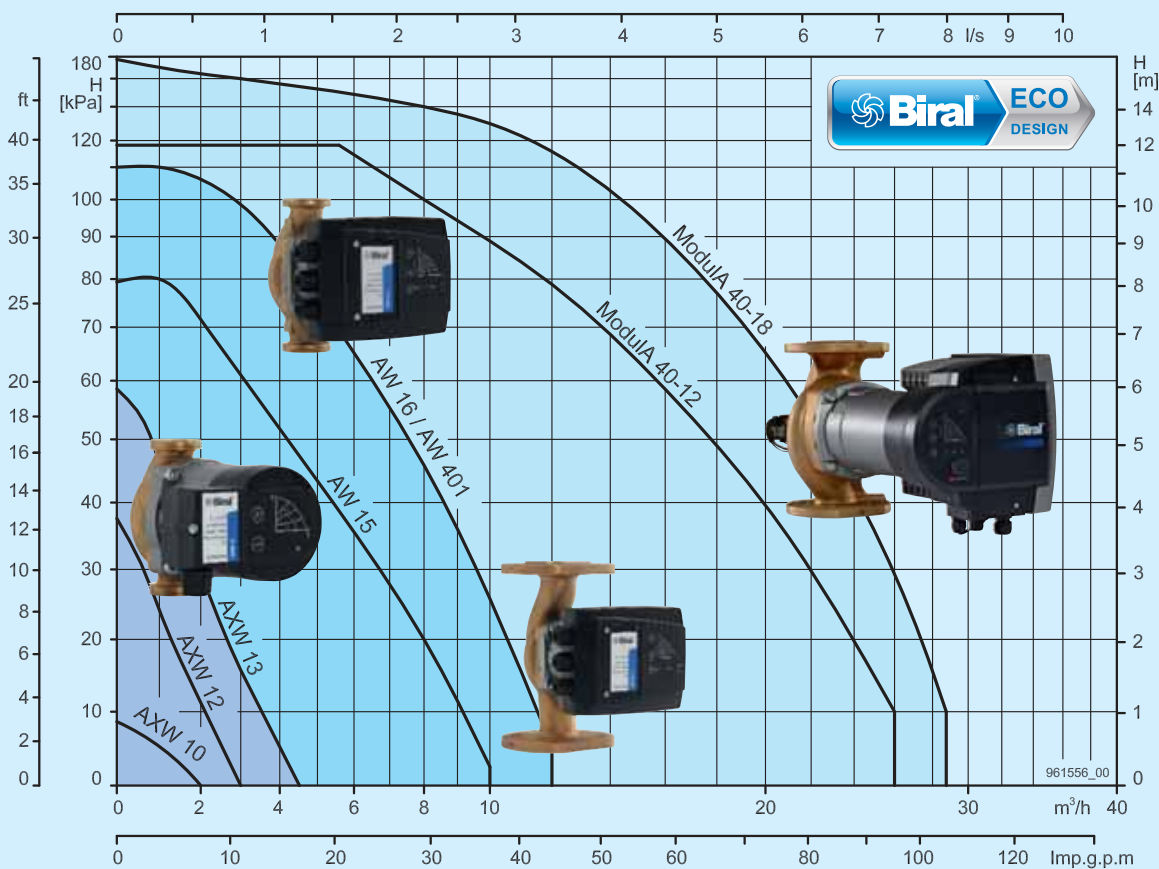
AXW / AW

ModulA BLUE

Summary



	Type	Connection	Nominal width DN	Discharge head max. mWC	Installation length mm	Operating pressure max./bar
	AXW 10	G 1 1/4"	20	1	120	10
	AXW 12	G 1 1/4"	20	4	120	10
	AXW 13	G 1 1/4"	20	6	150	10
	AXW 12-1	G 1 1/2"	25	4	180	10
	AXW 13-1	G 1 1/2"	25	6	180	10
	AW 15-2	G 2"	32	8	180	10
	AW 16-2	G 2"	32	11	180	10
	AW 401-1	PN 6/10	40	11	250	10
	ModulA 40-12 250 BLUE	PN 6-16	40	12	250	16
	ModulA 40-18 250 BLUE	PN 6-16	40	18	250	16



AXW 10

Installation length	120 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +85°C
Permissible water hardness	65°C (max. 35°FH = 20°dH) 85°C (max. 25°FH = 14°dH)

Required operating pressure at 500 m a.s.l.	
at 75°C water temperature	0.05 bar
at 85°C water temperature	0.30 bar
For every ±100 m altitude	±0.01 bar

Weight	2.3 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.04...0.08 A min 0.04 A
Power	Regulation 4...7 W min 4 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

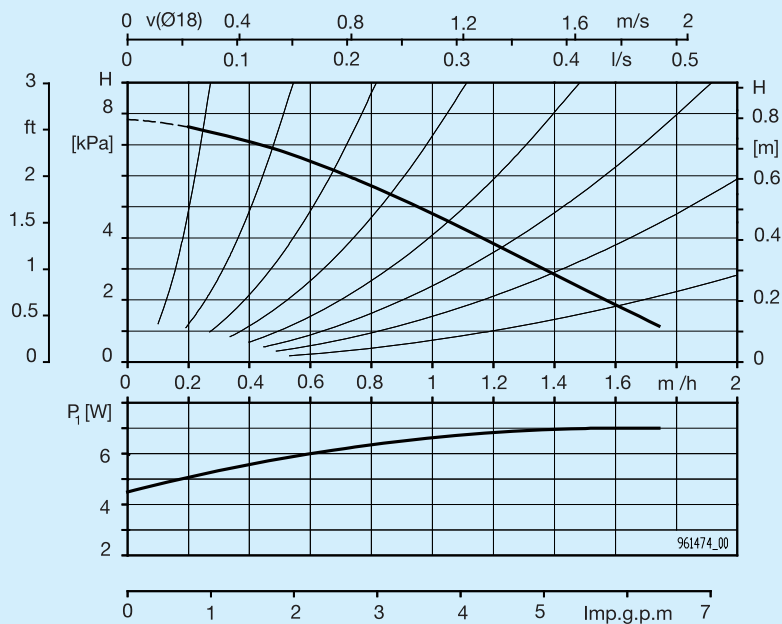
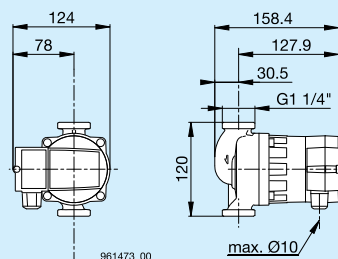
Ambient temp. °C	Media temperature min. °C	Media temperature max. °C
15	15	85
30	30	85
35	35	85
40	40	70

The pump is fitted with internal electric motor protection and requires no external motor protection.

Pump housing: bronze

Optional:

– Shut-off set



AXW 12, AXW 12-1

Installation length	120/180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +85°C
Permissible water hardness	65°C (max. 35°FH = 20°dH) 85°C (max. 25°FH = 14°dH)

Required operating pressure at 500 m a.s.l.	
at 75°C water temperature	0.05 bar
at 85°C water temperature	0.30 bar
For every ±100 m altitude	±0.01 bar

Weight	2.3 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.05...0.19 A min 0.05 A
Power	Regulation 5...22 W min 5 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

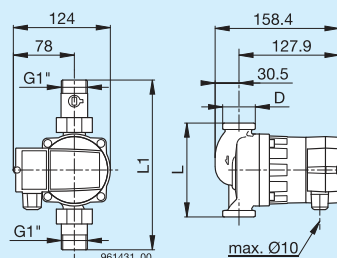
Ambient temp. °C	Media temperature min. °C	Media temperature max. °C
15	15	85
30	30	85
35	35	85
40	40	70

The pump is fitted with internal electric motor protection and requires no external motor protection.

Pump housing: bronze

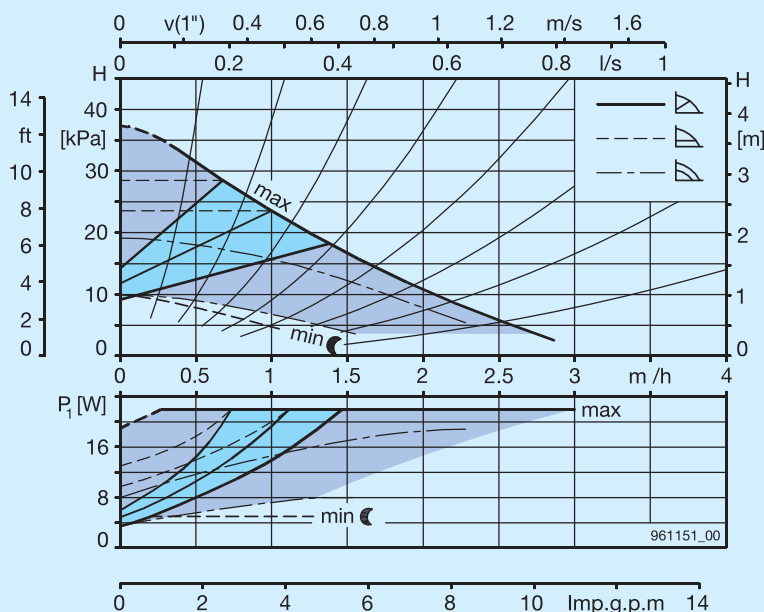
AXW 12: incl. shut-off set

AXW 12-1: Shut-off set not available



AXW 12
D = 1 1/2"
L = 120 mm
L1 = 217 mm

AXW 12-1
D = 1 1/2"
L = 180 mm



AXW 13, AXW 13-1

Installation length	150/180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +85°C
Permissible water hardness	65°C (max. 35°FH = 20°dH) 85°C (max. 25°FH = 14°dH)

Required operating pressure at 500 m a.s.l.	
at 75°C water temperature	0.05 bar
at 85°C water temperature	0.30 bar
For every ±100 m altitude	±0.01 bar

Weight	2.3 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.05...0.38 A min 0.05 A
Power	Regulation 5...45 W min 5 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

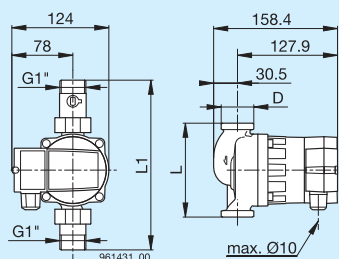
Ambient temp.	Media temperature	
°C	min. °C	max. °C
15	15	85
30	30	85
35	35	85
40	40	70

The pump is fitted with internal electric motor protection and requires no external motor protection.

Pump housing: bronze

AXW 13: incl. shut-off set

AXW 13-1: Shut-off set not available



AXW 13

D = 1 1/4"

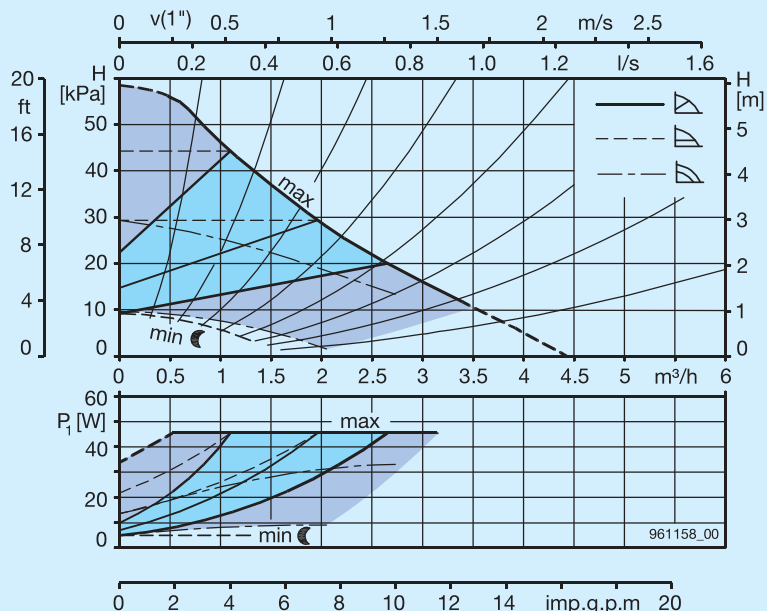
L = 150 mm

L1 = 247 mm

AXW 13-1

D = 1 1/2"

L = 180 mm



AW 15-2

Installation length	180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +85°C
Permissible water hardness	65°C (max. 35°FH = 20°dH) 85°C (max. 25°FH = 14°dH)

Required operating pressure at 500 m a.s.l.	
at 75°C water temperature	0.10 bar
at 85°C water temperature	0.55 bar
For every ±100 m altitude	±0.01 bar

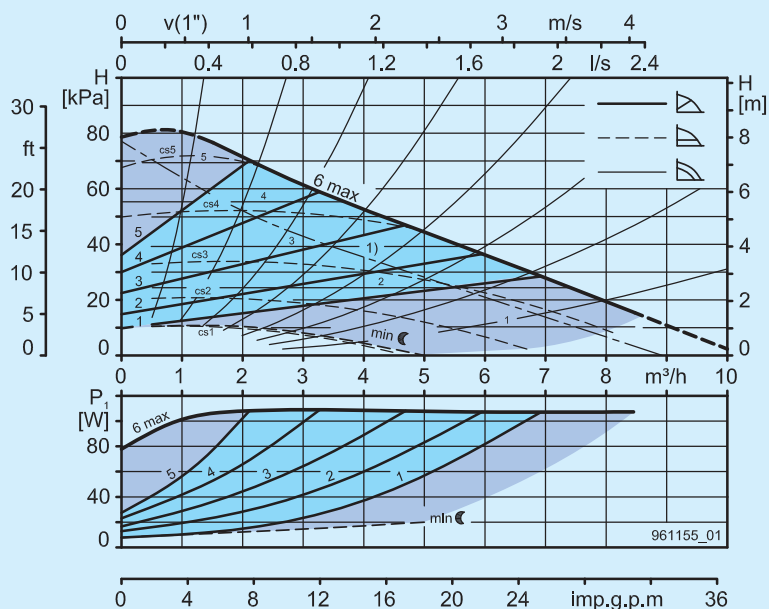
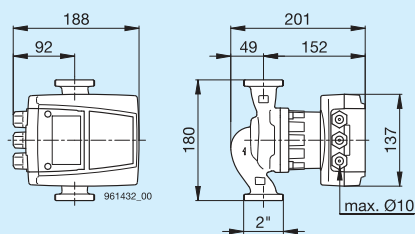
Weight	4.2 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...0.8 A min 0.14 A
Power	Regulation 8...107 W min 8...19 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

Ambient temp. °C	Media temperature min. °C	max. °C
15	15	85
30	30	85
35	35	85
40	40	70

The pump is fitted with internal electric motor protection and requires no external motor protection. The pump is fitted with fault or ready indication (switchable).

Pump housing: bronze



1) As delivered with power limiting

AW 16-2

Installation length	180 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +85°C
Permissible water hardness	65°C (max. 35°FH = 20°dH) 85°C (max. 25°FH = 14°dH)

Required operating pressure at 500 m a.s.l.	
at 75°C water temperature	0.10 bar
at 85°C water temperature	0.55 bar
For every ±100 m altitude	±0.01 bar

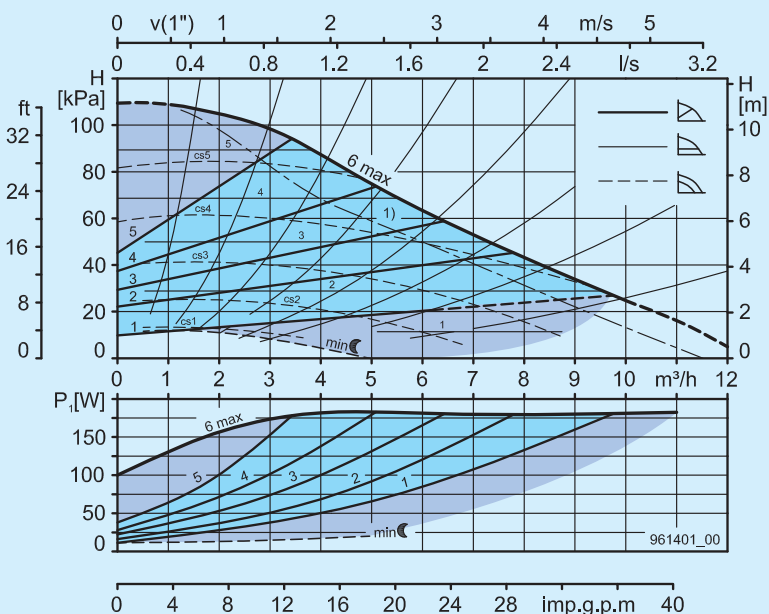
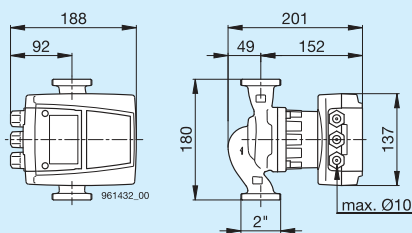
Weight	4.2 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...1.25 A min 0.14 A
Power	Regulation 8...174 W min 8...19 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

Ambient temp. °C	Media temperature min. °C	max. °C
15	15	85
30	30	85
35	35	85
40	40	70

The pump is fitted with internal electric motor protection and requires no external motor protection. The pump is fitted with fault or ready indication (switchable).

Pump housing: bronze



1) As delivered with power limiting

AW 401-1

Installation length	250 mm
Operating pressure max.	10 bar
Media temperature	+15°C to +85°C
Permissible water hardness	65°C (max. 35°FH = 20°dH) 85°C (max. 25°FH = 14°dH)

Required operating pressure at 500 m a.s.l.	
at 75°C water temperature	0.10 bar
at 85°C water temperature	0.55 bar
For every ±100 m altitude	±0.01 bar

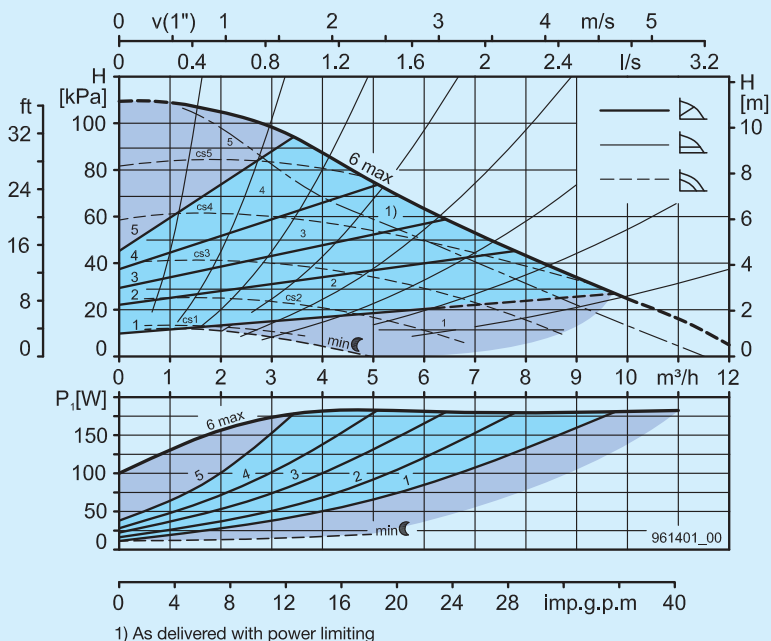
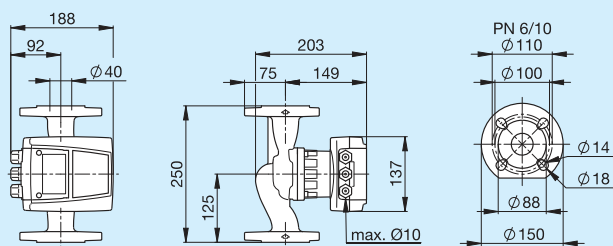
Weight	9 kg
Voltage	1×230 V, 50 Hz
Current	Regulation 0.1...1.25 A min 0.14 A
Power	Regulation 8...174 W min 8...19 W

To avoid the formation of condensation the media temperature must always be higher than the ambient temperature.

Ambient temp. °C	Media temperature min. °C	max. °C
15	15	85
30	30	85
35	35	85
40	40	70

The pump is fitted with internal electric motor protection and requires no external motor protection. The pump is fitted with fault or ready indication (switchable).

Pump housing: bronze



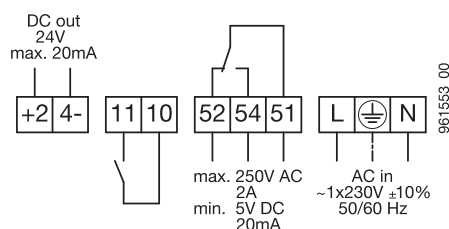
Modula 40-12 250 BLUE

Diameter nominal	DN 40
Discharge head H max.	12 m
Installation length	250 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	+15°C bis +85°C 65°C (max 35°dH =20°dH) 85°C (max 25°dH =14°dH)
Ambient temperature	0°C to +40°C
Required operating pressure at at 75°C water temperature	500 m a.s.l. 0.10 bar
at 85°C water temperature	0.25 bar
For every ±100 m altitude	±0.01 bar
Weight	18.1 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	17 - 421 W
Rated current	0.18 - 1.91 A
Motor protection	integrated

Connection diagram



+24-	24 V DC out
11, 10	External OFF or external ON
52, 54, 51	Error or operating message
L, PE, N	Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

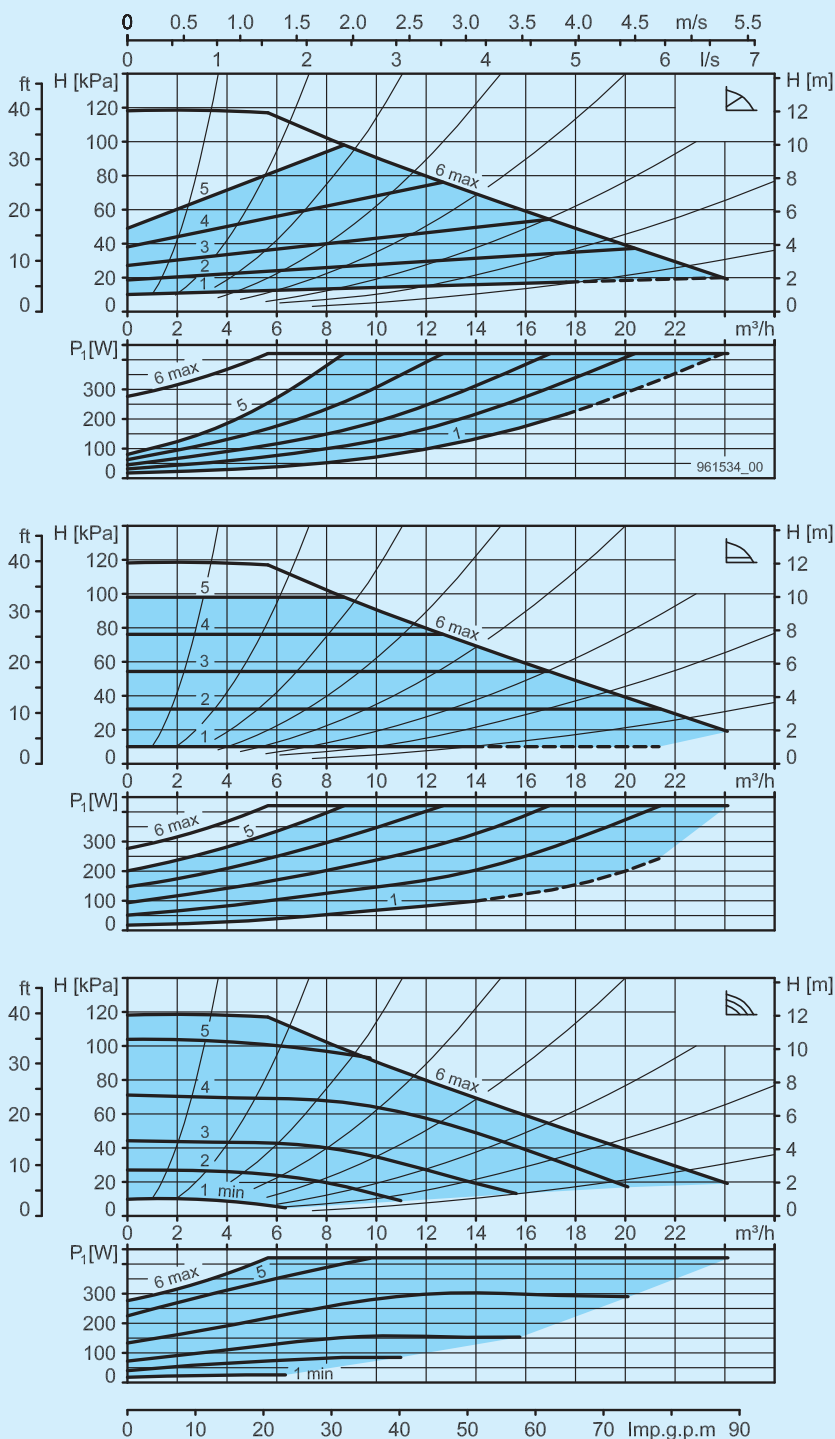
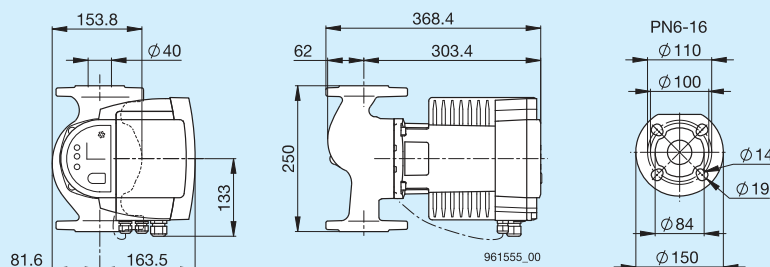
Included in the scope of delivery

- Sealing set for flange PN 6

Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



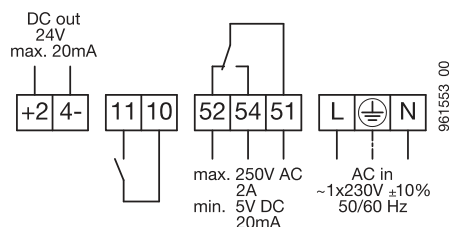
Modula 40-18 250 BLUE

Diameter nominal	DN 40
Discharge head H max.	18 m
Installation length	250 mm
Flange connection	PN 6-16
Operating pressure max.	16 bar
Media temperature	+15°C bis +85°C 65°C (max 35°dH =20°dH) 85°C (max 25°dH =14°dH)
Ambient temperature	0°C to +40°C
Required operating pressure at at 75°C water temperature at 85°C water temperature For every ±100 m altitude	500 m a.s.l. 0.10 bar 0.25 bar ±0.01 bar
Weight	18.1 kg

Electrical data

Voltage	1×230 V
Frequency	50/60 Hz
Power P_1	16-594 W
Rated current	0.18-2.63 A
Motor protection	integrated

Connection diagram



+24- 24 V DC out
11, 10 External OFF or external ON
52, 54, 51 Error or operating message
L, PE, N Power supply

Switch

- Fault or operating message (switchable)
- External OFF or external ON (switchable)
- Power Limit (activatable)

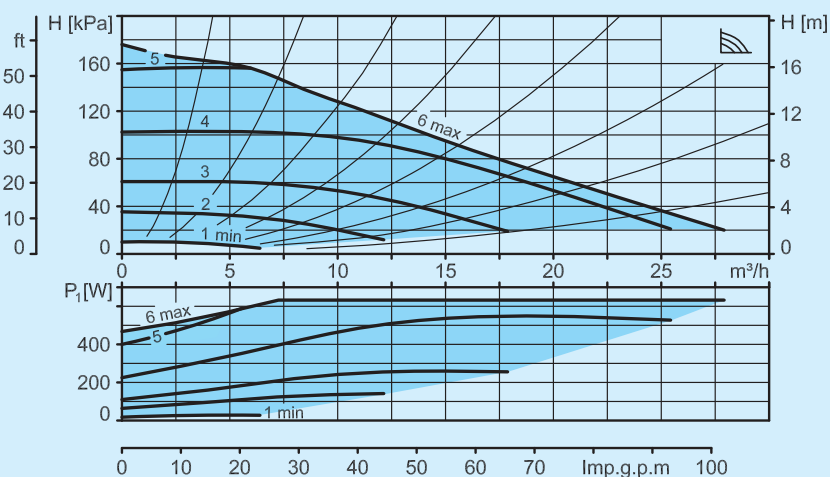
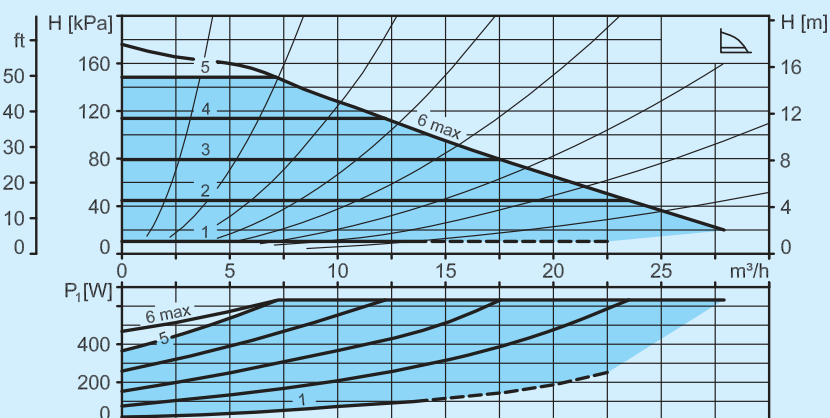
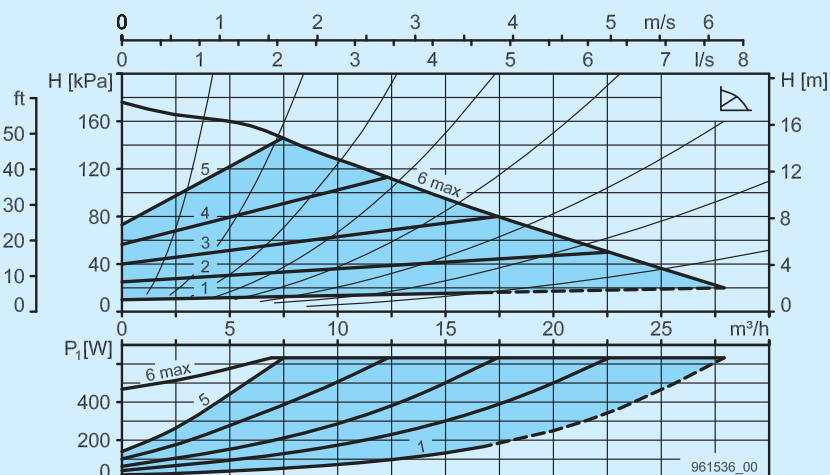
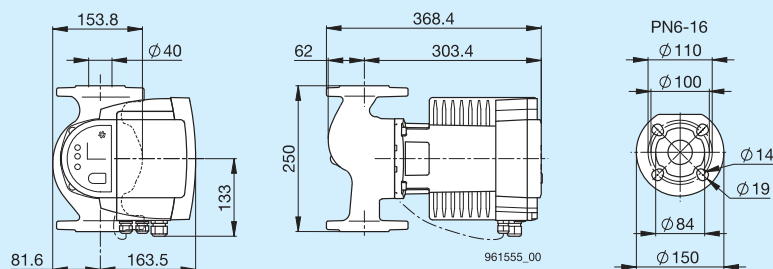
Included in the scope of delivery

- Sealing set for flange PN 6

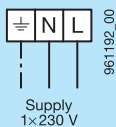
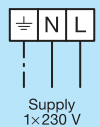
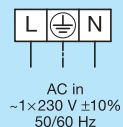
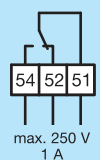
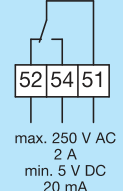
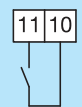
Options

- BIM A2 signal module
- BIM B2 control module
- Set for recessed installation of electronics
- Biral Remote
- Sealing set for flanges PN 10/16

See page 74 for further details



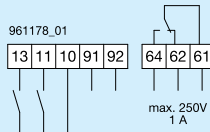
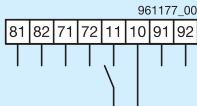
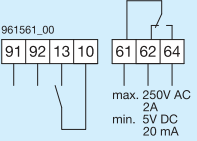
Standard

	 AXW 10, AXW 12, AXW 13 4...45 W	 AW 15...AW 401 8...174 W	 ModulA...BLUE 16...594 W
Fault or operating message (switchable)	–	✓	✓
External OFF or external ON (switchable)	–	–	✓ ²⁾
Power Limit (activatable)	–	–	✓
Power limiting (can be deactivated)	–	✓	–
Automatic night reduction (activatable)	✓	✓	–
Thermal insulation shells	–	–	–
Shut-off set Non-return valve and ball valve	only for the G 1 1/4" design	–	–
Types of control (Proportional pressure, contact pressure and constant speed)	✓ AXW 10 Constant speed	✓	✓
Connection diagram Pump L = Lead N = Neutral line  = PE wire, protective conductor			
51-54 Fault or operating message (switchable) as closing contact: closes at fault/operation message 51-52 Fault or operating message (switchable) as opening contact: opens at fault/operation message			
10-11 External OFF or external ON (switchable) with closing contact			 

²⁾ We recommend switching ModulA pumps via contacts 10/11 (external OFF/ON).

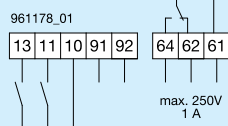
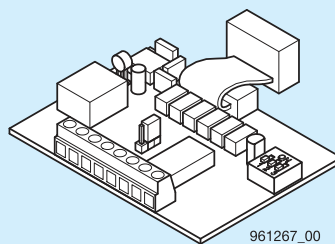
Options

	 AXW 10, AXW 12, AXW 13 4...45 W	 AW 15...AW 401 8...174 W	 ModulA...BLUE 16...594 W
Biral interface module BIM A signal module - Operating or ready message - External OFF - External minimum speed - Twin pump function	-	✓	-
Biral interface module BIM B control module - External speed specification 0–10 V/0–20 mA - PWM/multi-thermal interface - External OFF - Twin pump function	-	✓	-
Biral interface module BIM A2 signal module - Operating or ready message - External minimum speed - Twin pump function	-	-	✓
Biral interface module BIM B2 control module - External speed specification 0–10 V/0–20 mA - External minimum speed - Twin pump function	-	-	✓
Thermal insulation shells	AXW 12-1, 13-1	✓	✓
Kit for recessed installation of electronics	-	-	✓

Connection diagram BIM A signal module 10-11 External OFF with closed contact 10-13 External minimum speed with closing contact 61-64 Operating or ready message (switchable) as a closing contact: Closes at operating/ready message 61-62 Operating or ready message (switchable) as opening contact: opens at operating/ready message 91-92 Twin pump function		
BIM B control module 10-11 External OFF with closing contact 81-82 Multi-thermal/PWM interface for external speed specification 71-72 Analogue input 0...10 V or 0...20 mA for external speed specification 91-92 Twin pump function		
BIM A2 signal module 10-13 External minimum speed with closing contact 61-64 Operating or ready message (switchable) as a closing contact: closes at operating/ready message 61-62 Operating or ready message (switchable) as opening contact: opens at operating/ready message 91-92 Twin pump function		
BIM B2 control module 81-82 Multi-thermal /PWM interface for external speed specification 71-72 Analogue input 0...10 V or 0...20 mA for external speed specification 91-92 Twin pump function		

Options

**Biral interface module
BIM A signal module
for A pumps**



BIM A

- Operating or ready message
- External OFF
- External minimum speed
- Twin pump function

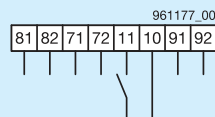
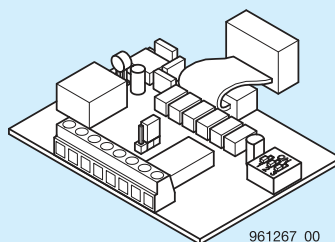
Note:

Not possible in combination with control module

Connection diagram

- 10-11** External OFF with closed contact
- 10-13** External minimum speed with closing contact
- 61-64** Operating or ready message (switchable) as a closing contact: Closes at operating/ready message
- 61-62** Operating or ready message (switchable) as opening contact: opens at operating/ready signal
- 91-92** Twin pump function

**Biral interface module
BIM B control module
for A pumps**



BIM B

- External speed specification 0–10 V/0–20 mA
- PWM/multi-thermal interface
- External OFF
- Twin pump function

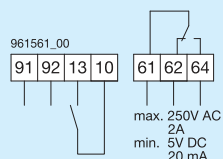
Note:

Not possible in combination with signal module

Connection diagram

- 10-11** External OFF with closing contact
- 81-82** Multi-thermal/PWM interface for external speed specification
- 71-72** Analogue input 0...10 V or 0...20 mA for external speed specification
- 91-92** Twin pump function

**Biral interface module
BIM A2 signal module
for Modula**



BIM A2

- Operating or ready message
- External minimum speed
- Twin pump function

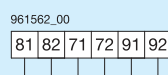
Note:

Not possible in combination with control module

Connection diagram

- 10-13** External minimum speed with closing contact
- 61-64** Operating or ready message (switchable) as a closing contact: closes at operating/ready message
- 61-62** Operating or ready message (switchable) as opening contact: opens at operating/ready message
- 91-92** Twin pump function

**Biral interface module
BIM B2 control module
for modula**



BIM B2

- External speed specification 0–10 V/0–20 mA
- External minimum speed
- Twin pump function

Note:

Not possible in combination with signal module

Connection diagram

- 81-82** Multi-thermal /PWM interface for external speed specification
- 71-72** Analogue input 0...10 V or 0...20 mA for external speed specification
- 91-92** Twin pump function

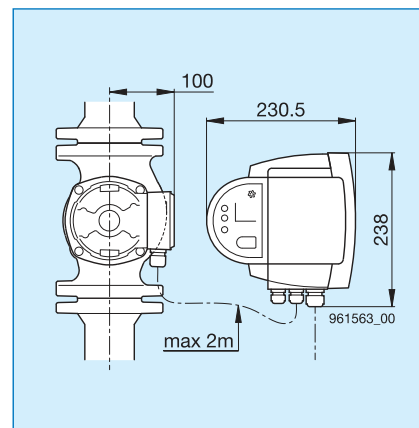
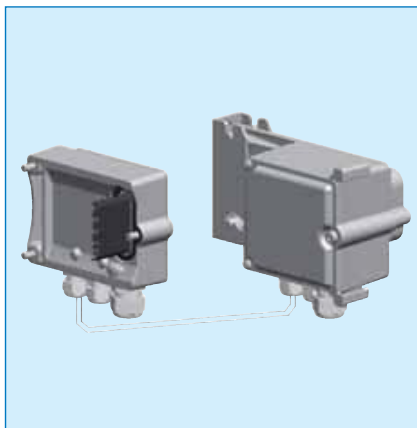
Options

Construction set for offset electronics installation for Modula

Media temperature: up to 110 °C
Ambient temperature: max. 40 °C
Pump can be insulated
up to 100 °C medium temperature

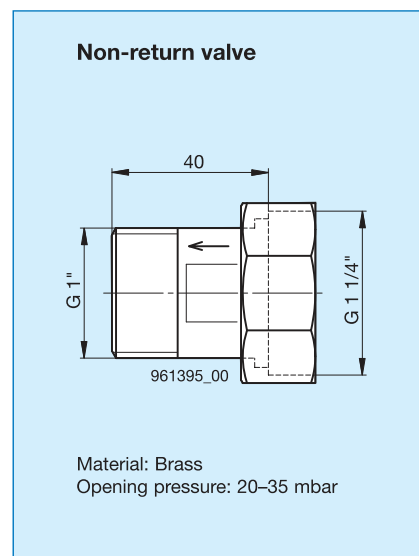
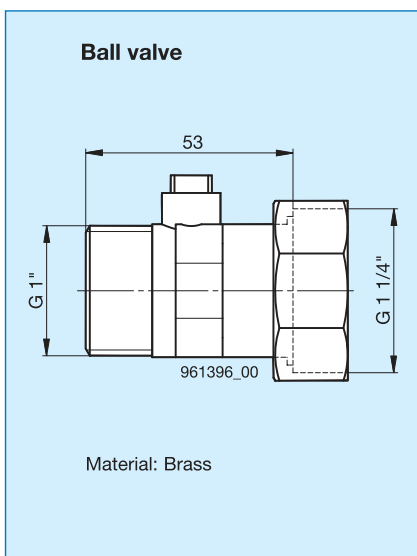
Note:

If condensation forms (medium temperature lower than ambient temperature) it is recommended to use the cold water version (KW) with coating resistant to condensation.



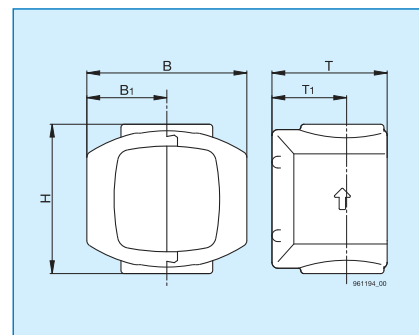
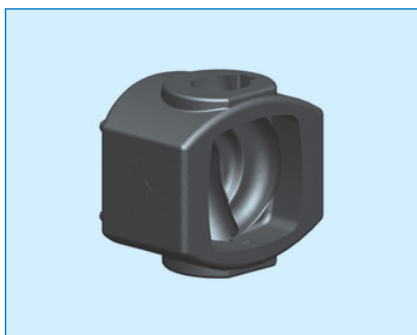
Shut-off set for service water (Non-return valve and ball valve)

The shut-off set is included as standard with the following pumps:
AXW 10 smart, AXW 12 smart
AXW 13 smart, AXW 14 smart AXW 12, AXW 13
For AXW 12-1 and AXW 13-1 not available



Thermal insulation shells

Fire protection class B2 to DIN 4102



Pump type	Type	B	B1	H	T	T1
AX 10, AX 10-1, AX 12, AX 12-1, AX 12-2	WD 1 ¹⁾	140	70	140	90	50
AX 13, AX 13-1, AX 13-2						
AXW 12-1, AXW 13-1						
A 12, A 12-1, A 12-2	WD 2	150	75	140	108	70
A 13, A 13-1, A 13-2						
A 14, A 14-1, A 14-2						
A 15, A 15-1, A 15-2						
A 16-1, A 16-2						
AW 15-2, AW 16-2						
A 401, A 401-1, AW 401-1	WD 3	150	75	178	140	78

¹⁾ The AX 12, -1, -2 and AX 13, -1, -2 pump is supplied with thermal insulation WD 1

Options

Biral Remote for Modula

Biral Remote enables configuration and analysis of Modula.
Wireless communication is via a Wi-Fi connection Modula, which is fitted with an interface for the Biral Remote adapter.



Biral Remote app

Status

- Operating data displays
- Readout and sending of data via e-mail

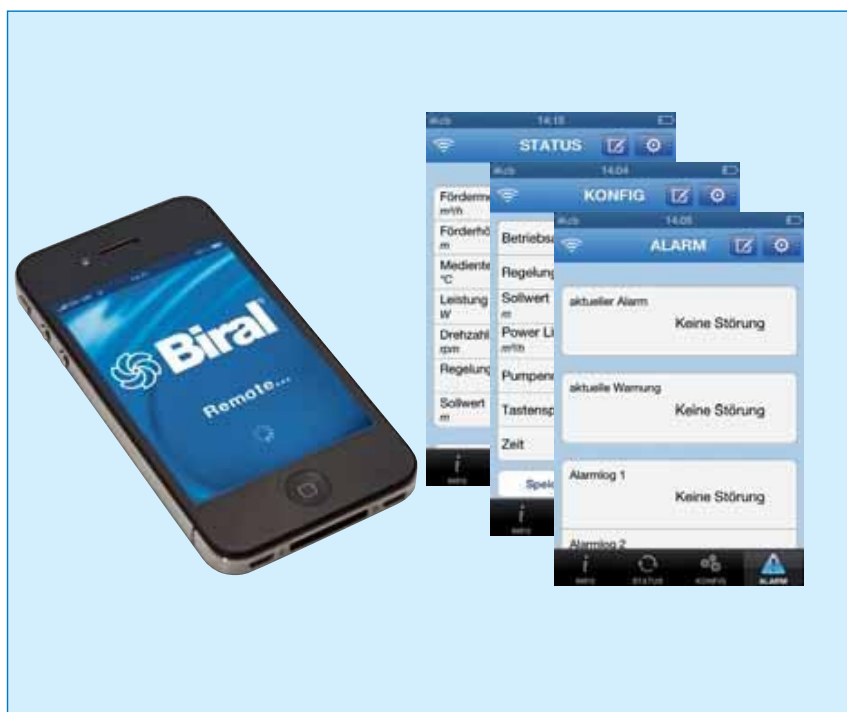
Configuration

- Setting of control type
- Setting of Power Limit
- Setting a target value
- Give the pump a clear pump number (1 to 64), to recognise the pumps connected to the bus system

Alarm

- Readout of alarm and warning messages

The Biral Remote app can be downloaded on iTunes and Play-Store free of charge. They only work with the relevant Biral Remote adapter (hardware).



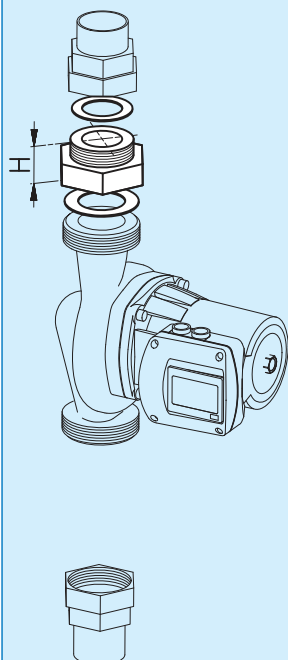
Biral Remote adapter

The Biral Remote adapter is fitted with Wi-Fi and is required for wireless communication between the smartphone and pump.



Options

Intermediate piece



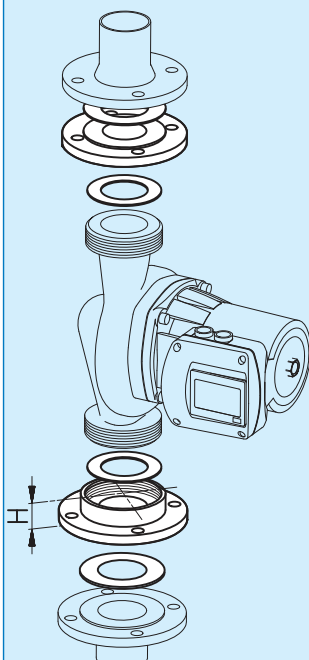
Intermediate piece

Z	G	H	No.
10	1 1/4" / 1 1/2"	30	11 2912.0150
11	1 1/4" / 2"	20	11 2491.0150
12	1 1/2" / 2"	20	11 3297.0150
13	2" / 2"	10	11 1477.0150
14	2" / 2"	15	11 2219.0150
15	2" / 2"	20	11 1019.0150
16	2" / 2"	34	11 1675.0150
17	2" / 2"	40	11 1020.0150
21	2" / 2 1/4"	20	11 1021.0150
81	1 1/4" / 2"	40	11 4302.0162*
82	1 1/4" / 2"	60	11 4306.0162*
83	1 1/4" / 1 1/2"	30	11 4358.0162*
84	1 1/4" / 2"	30	11 4359.0162*
85	1 1/4" / 1"	30	11 4357.0150

* brons

The adapter kit includes an intermediate piece and gaskets.

Threaded flange (PN 6)



Threaded flange (PN 6)

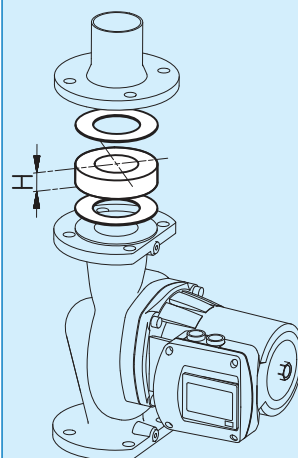
Z	G/DN	H	No.
25	2" / 32	40	11 3819.0150
26	2" / 32	16	11 3990.0150
28	2" / 32	10	11 3873.0150
29	2" / 40	30	11 3949.0150
30	2" / 50	40	11 6044.0150

Square screwed flange (PN 6)

	G/DN	H	No.
70	2" / 32	20	11 6045.0150

The adapter kit includes two flanges, gaskets and bolts.

Intermediate piece

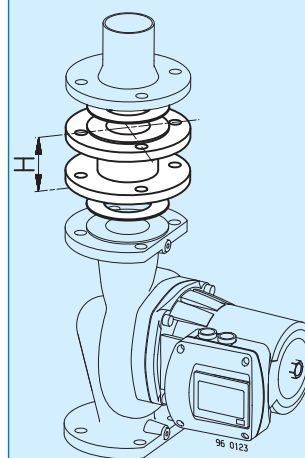


Intermediate piece

Z	DN	H	No.
32	40	10	11 3259.0150
33	40	20	11 1575.0150
34	40	30	11 1574.0150
35	40	40	11 1577.0150
36	40	50	11 2218.0150
41	50	10	11 2217.0150
47	50	20	11 3999.0150
42	50	30	11 0990.0150
43	50	50	11 2058.0150
56	65	10	11 4000.0150
50	65	30	11 0991.0150
51	65	40	11 2216.0150
59	80	10	11 0992.0150
60	80	30	11 1115.0150
65	100	20	11 2264.0150
66	100	50	11 1576.0150

The adapter kit includes an intermediate piece, gaskets and bolts.

Intermediate flange (PN 6)



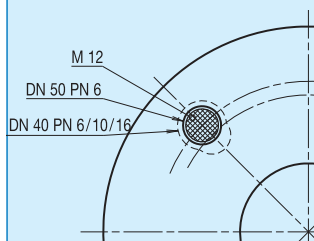
Intermediate flange (PN 6)

Z	DN	H	No.
37	40	73	11 1676.0150
44	50	65	11 2753.0150
45	50	85	11 1677.0150
46	50	135	11 1677.0250
52	65	70	11 2754.0150
53	65	85	11 1678.0150
54	65	125	11 2754.0250
55	65	155	11 1678.0250
61	80	80	11 2752.0150

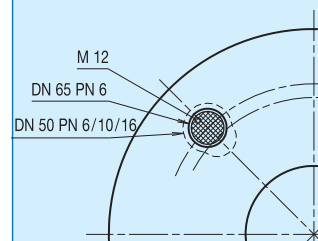
The adapter kit includes an intermediate flange, gaskets and bolts.

Exchange of pump for differing nominal diameter

Existing pipeline DN 50, PN 6
Pump DN 40, PN 6/10/16



Existing pipeline DN 65, PN 6
Pump DN 50, PN 6/10/16



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