Biral T2 M/L Modula RED T2 With Flange Connection Instruction Manual

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Declaration of Conformity

We Biral AG declare under our sole responsibility that the products
ModulA… RED, ModulA-D… RED
ModulA… BLUE
to which this declaration relates, are in conformity with the Council Directives on the approximation of the laws of the EC Member States relating to:

- Machinery (2006/42/EG) Standard: 12100-1:2010
- Electrical equipment designed for use within certain voltage limits (2014/35/EU) Norms: EN 60335-1:2012, EN 60335-2-51:2003 + A1:2008 + A2:2012
- Electromagnetic compatibility (2014/30/EU) Norms: EN 61000-6-2:2005, EN 61000-6-3:2007
- Only for types marked with the EEI. (See the pump nameplate): Ecodesign (2009/125/EC) Circulator Pumps Commission Regulation No 641/2009 Standards: EN 16297-1:2012, EN16297-2:2012

Dimensions	SeriesModulA… RED ModulA… BLUE								
	32F-12 220 PN 6-16	40-8 22 0 PN 6-16	40-10 2 20 PN 6 -16	40-12 2 50 PN 6 -16	40-18 2 50 PN 6 -16	50-6 24 0 PN 6-16	50-6 27 0 PN 6-16	50-8 24 0 PN 6-16	50-12 2 70 PN 6 -16
DN	32	40	40	40	40	50	50	50	50
L1	220	220	220	250	250	240	270	240	270
B1	144.6	147.5	147.5	153.8	153.8	160.4	166.9	160.4	166.9
B2	72.3	72.3	72.3	72.3	72.3	72.1	74.4	72.1	74.4
B3	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5
B4	105	105	105	105	105	105	105	105	105
D	140	150	150	150	150	165	165	165	165
k1 (PN 6)	90	100	100	100	100	110	110	110	110
k2 (PN 10/16)	100	110	110	110	110	125	125	125	125
d	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19
T1	365.5	368.4	368.4	368.4	368.4	373.5	375	373.5	375
T2	55.6	59	59	62	62	64	64	64	64
T3	300.5	303.4	303.4	303.4	303.4	303	303	303	303
T4	86	86	86	86	86	97	97	97	97
kg (RED)	15.3	16.3	16.3	16.1	16.1	17.6	18.1	17.6	18.1
kg (BLUE)	–	–	–	18.1	18.1	–	–	–	–

	50-18270PN 6-16	65-8270PN 6-16	65-8340PN 6-16	65-12340PN 6-16	65-15340PN 6-16
DN	50	65	65	65	65
L1	270	270	340	340	340
B1	166.9	184	184	184	184
B2	74.4	82	82	82	82
B3	163.5	163.5	163.5	163.5	163.5
B4	105	120	120	120	120
D	165	185	185	185	185
k1 (PN 6)	110	130	130	130	130
k2 (PN 10/16)	125	145	145	145	145
d	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19
T1	375	391.5	384.9	384.9	384.9
T2	64	62.1	68.7	68.7	68.7
T3	303	317.5	310.9	310.9	310.9
T4	97	90	96	96	96
kg (RED)	18.8	20.6	24	21.5	24

Dimensions	Series **ModulA… RED**							
	80-8360 PN 6	**80-8360 PN 10-16**	**80-12360 PN 6**	**80-12360 PN 16**	**100-8450 PN 6**	**100-8450 PN 16**	**100-1245 0PN 6**	**100-1245 0PN 16**
DN	80	80	80	80	100	100	100	100
L1	360	360	360	360	450	450	450	450
B1	219.6	219.6	219.6	219.6	223.2	223.2	223.2	223.2
B2	97	97	97	97	98.4	98.4	98.4	98.4
B3	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5
B4	126	126	126	126	126	126	126	126
D	200	200	200	200	220	220	220	220
k1 (PN 6)	150	–	150	–	170	–	170	–
k2 (PN 10/16)	–	160	–	160	–	180	–	180
d	4×19	8×19	4×19	8×19	4×19	8×19	4×19	8×19
T1	411.9	411.9	411.9	411.9	432.2	432.2	432.2	432.2
T2	82.7	82.7	82.7	82.7	80.6	80.6	80.6	80.6
T3	317.9	317.9	317.9	317.9	330.2	330.2	330.2	330.2
T4	108.6		108.6	108.6	113.4	113.4	113.4	113.4
kg	29.1	29.1	29.1	29.1	34	34	34	34

Dimensions	Series ModulA-D… RED									
	32F-12220 PN 6-16	**40-8220PN 6-16**	**40-10220PN 6-16**	**40-12250PN6-16**	**40-18250PN6-16**	**50-6240PN6-16**	**50-8240PN 6-16**	**50-12270PN6-16**	**50-18270PN6-16**	**65-8340PN6-16**
DN	32	40	40	40	40	50	50	50	50	65
L1	220	220	220	250	250	240	240	270	270	340
B1	504	505	505	512	512	515	515	517	517	522
B2	80	81	81	88	88	91	91	93	93	98
B3	130	130	130	130	130	130	130	130	130	130
B4	164	164	164	164	164	164	164	164	164	164
D	140	150	150	150	150	165	165	165	165	185
k1 (PN6)	90	100	100	100	100	110	110	110	110	130
k2 (PN10/16)	100	110	110	110	110	125	125	125	125	145
d1	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19	4×14/19
L2	130	120	120	115	115	125	125	120	120	140
L3	133	133	133	133	133	133	133	133	133	133
T1	373	382	382	376	376	383	383	381	381	391
T2	65	65	65	65	65	71	71	72	74	74
T3	301	304	304	304	304	303	303	303	311	311
kg	31	31	31	32	32	35	35	36	36	42

	65-12340PN6-16	65-15340PN6-16	80-8360PN6	80-8360PN10/16	80-12360PN6	80-12360PN10/16	100-8450PN6	100-8450PN10/16	100-12450PN6	100-12450PN10/16
DN	65	65	80	80	80	80	100	100	100	100
L1	340	340	360	360	360	360	450	450	450	450
B1	522	522	538	538	538	538	546	546	546	546
B2	98	98	114	114	114	114	122	122	122	122
B3	130	130	130	130	130	130	135	135	135	135
B4	164	164	164	164	164	164	164	164	164	164
D	185	185	200	200	200	200	220	220	220	220
k1 (PN 6)	130	130	150	–	150	–	170	–	170	–
k2 (PN10/16)	145	145	–	160	–	160	–	180	–	180
d1	4×14/19	4×14/19	4×19	8×19	4×19	8×19	4×19	8×19	4×19	8×19
L2	140	140	160	160	160	160	190	190	190	190
L3	133	133	133	133	133	133	133	133	133	133
T1	391	391	418	418	418	418	436	436	436	436
T2	74	74	94	94	94	94	99	99	99	99
T3	311	311	318	318	318	318	330	330	330	330
kg	42	48	58	58	58	58	68	68	68	68

Contents

Safety information

Warning
This product may only be installed and used by people who have adequate knowledge and experience. People with limitations in their physical or mental capacity or sensory perception, may not use the product, unless they have been sufficiently trained by a person who is responsible for their safety.
The product must be kept out of the reach of children. The product must not be used by children, e.g. as a toy

General remarks

These installation and operating instructions contain items of information of fundamental importance which must be taken into account during assembly, operation and maintenance. They should therefore be read without fail before installation and commissioning by the fitter and also the responsible specialist staff/operator. They must always be available for consultation at the plant's place of deployment. Not only are the general safety hints included in this «Safety Hints» section to be observed, but also the special items of safety information included in the other sections.

Identification of notices
Information signs mounted directly on the plant, such as, for example

- rotating direction arrow
- symbols for fluid connections must be obeyed without fail and be kept in a fully legible state.

Staff qualification and training
The staff deployed for assembly, operating, maintenance and inspection tasks must show that they have the appropriate qualifications for such work. The field of responsibility, competence and supervision of the staff must be stipulated exactly by the operator.

Risks in the event of non-compliance with the safety information
Non-compliance with the safety information can result in both danger for persons and also for the plant and the environment. Non-compliance with the safety information can lead to the loss of claims for damages of any kind.
In detail, non-compliance, for example, may result
in the following risks:

- failure of important functions in the plant
- failure of prescribed methods for servicing and maintenance

  danger to persons through electrical and mechanical causes

Safety-conscious work
The safety information contained in these installation and operating instructions, the existing national regulations for the prevention of accidents, as well as any internal working, operating and safety regulations stipulated by the operator must be observed.

Safety information for the operator/operating personnel
Any risks from electric power must be eliminated (For details see, for example, the regulations published by NIN (CENELEC) and the I.E.E.).

Safety information for installation, maintenance and inspection works
The operator has to ensure that all installation, maintenance and inspection works are carried out by authorised and qualified specialist personnel who have informed themselves adequately about the requirements by a thorough study of the installation and operating instructions.
Basically, any works on the plant should only be carried out when it is at a standstill and not carrying any electrical current. Directly after completion of the works, all safety and protective installations must be mounted or activated again.
Before re-commissioning, the points listed in the section «Electrical connection» must be observed.

Unauthorised reconstruction and production of spares
Reconstruction of or changes to pumps are only permissible after consultation with the manufacturer. Genuine spare parts and accessories authorised by the manufacturer serve the cause of safety.
The use of other parts can cancel any liability for the resultant consequences of this.

Improper operating methods
The operating reliability of the pumps supplied is only guaranteed with appropriate application of the section

«Intended application» of the Installation and Operating Instructions. The limit values given in the technical data must not be exceeded on any account.

Symbols used

Warning
Serious personal injury may result from not adhering to these safety notes.
Warning
Danger from dangerous electrical voltage.
If these safety instructions are not adhered to, there is a risk of electric shock, which may lead to serious injury or death.
Warning
Risk of injury or burns from hot surfaces!
Warning
Risk of injury from falling objects!
Warning
Risk of injiury from escaping steam
Not adhering to these safety notes may cause malfunctioning or material damage.
This contains advice or notes that facilitate work and ensure safe operation.

General information

The Biral series, ModulA consists of a complete range of circulation pumps with integrated frequency converter, which enable independent or controlled adaptation of output to the actual requirement of each system. Therefore, in many systems, energy consumption will be reduced and the control behaviour of the system improved. Besides this, current noise from control cabinets can be reduced effectively. All necessary settings can be adjusted using the control panel for the pump.

Purpose
Biral circulation pumps of the ModulA series are intended for the circulation of liquids in the following systems:

- ModulA… RED in heating units
- ModulA… BLUE in domestic hot water systems

The pumps can also be used in the following systems:

- Geothermal heat pumps
- Thermal solar equipment

The pumps are suitable for use in systems with variable and constant delivery volumes.

Requirements of the delivery medium
The pump is suitable for delivery of pure, thin, non-explosive and non-aggressive media without fixed or long-fibred elements, which do not affect the pump either mechanically or chemically.

Heating water:
Requirements according to current standards that apply to water quality in heating systems: (e.g. VDI 2035)

Glykol:
The pump can be used for delivering water-glycol mixes. Maximum permissible viscosity: 50 mm²/s (cSt). This corresponds to a water-ethylene-glycol mix with a glycol content of around 50% at –10°C.
The pump is controlled via an output-limiting function that protects against overload. The delivery of glycol mixes

affects the MAX characteristic curve because the delivery capacity is reduced accordingly, based on the glycol content and temperature of the media. So that the effect of the glycol is not reduced, temperatures above the nominal temperature given for the medium should be avoided. Generally, the operating duration with high media temperatures should be minimised.
Before adding the glycol mix, it is vital that the system is cleaned and rinsed. To avoid corrosion or precipitations, the glycol mix should be checked regularly and changed if necessary. If the glycol mix has to be further thinned, the specifications from the glycol manufacturer should be adhered to.

For the delivery of a liquid with density that differs from water and/or kinematic viscosity, the delivery output is reduced.

Domestic hot water:
Permissible water hardness:
max. 35 °fH (20 °dH) (water temperature below 65 °C)
max. 25 °fH (14 °dH) (water temperature below 85 °C)

To counter the risk of lime deposits, for domestic hot water systems we recommend: Hardness level max. 25 °fH (14 °dH) Medium temperature <65 °C

Warning
The pump may not be used to deliver combustible media such as diesel and fuel.
Warning
The pump may not be used to deliver aggressive liquids such as acids or seawater.

Operating conditions

Medium temperature:

- ModulA… RED +15 °C to +110 °C
- ModulA… BLUE +15 °C to +85 °C (recommended for domestic hot water systems: max 65 °C)

Operating pressure:
The maximum permissible operating pressure is indicated on the nameplate. (6 bar, 10 bar or 16 bar) Minimum operating pressure at the pump intake ports (intake pressure) at 500 m above sea level:

Medien temperature

	75 °C	95 °C	110 °C
ModulA…	**Supply pressure [bar]**		
ModulA 32F-12 220	0.1	0.35	1.0
ModulA 40-8 220	0.1	0.50	1.0
ModulA 40-10 220	0.1	0.50	1.0
ModulA 40-12 250	0.1	0.50	1.0
ModulA 40-18 250	0.1	0.50	1.0
ModulA 50-6 240	0.1	0.40	1.0
ModulA 50-6 270	0.1	0.40	1.0
ModulA 50-8 240	0.1	0.40	1.0
ModulA 50-12 270	0.1	0.50	1.0
ModulA 50-18 270	0.7	1.20	1.7
ModulA 65-8 270	0.7	1.20	1.7
ModulA 65-8 340	0.7	1.20	1.7
ModulA 65-12 340	0.7	1.20	1.7
ModulA 65-15 340	0.7	1.20	1.7
ModulA 80-8 360	0.5	1.00	1.5
ModulA 80-12 360	0.5	1.00	1.5
ModulA 100-8 450	0.7	1.20	1.7
ModulA 100-12 450	0.7	1.20	1.7

Per ±100 m height ± 0.01 bar

In the dual pump operation the supply pressure required must be increased by 0.1 bar in line with the values in the table.

Ambient temperature:
0 °C to 40 °C

Non-return valve

If a non-return valve is fitted, the pump must be adjusted (see 7.2), so that the discharge pressure of the pump exceeds the closing pressure of the valve at all times.
This must be adhered to in particular for the proportional pressure control (reduced delivery height for decreasing delivery flow).

Protection from the effects of frost

Where there is a risk of frost during downtime periods, measures required to avoid frost damage must be taken.

Heat insulation (ModulA… RED, ModulA… BLUE)

Heat is lost via the pump casing and pipes. These heat losses should be limited to a minimum.

Heat losses can be reduced by insulating the pump casing and pipes.

For ModulA… RED, heat insulation shells are included in the delivery.

Heat insulation shells can only be supplied for single pumps

1. Never cover the frequency converter or the control panel with insulation.
2. Keep the drainage outlet at the motor free..

Flow direction

The arrow on the pump casing indicates the flow direction.

Installation

General notes
ModulA is only intended for installation indoors. The pumps must be mounted voltage-free so that no energy can be transferred from the pipes to the pump casing. The pumps can be installed directly in the pipe, provided the pipes are designed for the weight of the pump.
Installation is only possible after completion of all welding and soldering work on the system. Avoid drops of water on the pump motor, especially the frequency converter.

Warning
The local regulations for the lifting and carrying of loads must be adhered to. The weight of the pump is given on the packaging.

Flushing heating equipment (for extended pump)
To avoid unwanted interruptions to operations and non-running of the pump after longer periods of inactivity, we recommend thoroughly flushing out the equipment following the new installation or adaptation of heating and refilling.
The equipment must correspond with the latest technology. (Placement of expansion vessel or safety flow).

Installation
Install only after completion of all welding or soldering work on the equipment. Water drops should be avoided on the pump motor, especially on the electronics. The pump casing should be installed voltage-free in the equipment.

Permissible installation positions
The installation position of the rotor shaft must always be horizontal.

To guarantee adequate cooling, the frequency converter must always be in a horizontal position. (A, B, C, D). It is delivered in position A.

Changing the installation position of the frequency converter
To ensure the correct installation position of the frequency converter, for installation positions E to P (see 4.4) the pump head must be rotated 90°, 180° or 270°.

The sensor cable must be separated from the frequency converter in advance!

1. Unplug the sensor cable
2. Unscrew the cable screws

Rotate the pump head ModulA M

For pumps of a smaller design (P1 small 750 W) it is not necessary to take out the frequency converter, the pump head can be turned fully.
The sensor cable must also be separated in advance from the frequency converter!

Turning the pump head without taking out the frequency converter:

ModulA Typ:
32F-12 220 40-8 220, 40-10 220, 40-12 250, 40-18 250, 50-6 240, 50-6 270, 50-8 240, 50-12 270, 50-18 270, 65-8 270, 65-8 340, 65-12 340, 80-8 360

Rotate the pump head ModulA L

ModulA Typ:
65-15 340, 80-12 360, 100-8 450, 100-12 450

1. Remove the three Torx screws
2. Carefully pull out the electronics

   Warning

   Do not drop the disassembled pump parts!
3. Remove the four inner hexagonal screws
4. Turn the pump head carefully to the position required without lifting it from the pump casing. (If the pump head is firmly connected to the pump casing, release the pump head using light blows with a rubber hammer).
5. Put in four inner hexagonal screws and tighten. (18Nm)
6. Carefully push in the electronics:

   «A»: connector plug

   «B»: Holder
7. Put in three Torx screws and tighten (8Nm)

If the motor is lifted from the pump casing, care should be taken when replacing it due to the movable ring otherwise the impeller may be damaged.

1. Ensure correct positioning of the O-ring.
2. The ring in the pump casing must be centred again before fitting the motor.
3. Fit the pump head carefully so that the motor lies flat on the pump casing without any gaps.
4. Insert four hexagon socket bolts and tighten the screws. (18Nm)

Install the pump in the unit

1. Close the shut-off valves and ensure that the system is without pressure when fitting the pump.
2. Install the pump in the pipe with seals.

Warning
Risk of injury from escaping steam!

Flange connection
The pump flanges are drilled with mounting holes, PN6/PN10/PN16. For safe screwing of the flanges, the shims supplied (B) must be fitted.

Safety elements (e.g. snap rings) are not permissible. For PN 10/16, special seals and screws must be used.

Warning
Use the relevant screws for nominal pressure PN.

<table>
<tr><td></td><td colspan="2"></td><td colspan="2"></td><td rowspan="8"></td></tr>
<tr><td></td><td>PN 6</td><td>PN 10/16</td><td>PN 6</td><td>PN 10/16</td></tr>
<tr><td>DN 32</td><td rowspan="4">M 12</td><td rowspan="4">M 16</td><td rowspan="4">Ø 14</td><td rowspan="4">Ø 18</td></tr>
<tr><td>DN 40</td></tr>
<tr><td>DN 50</td></tr>
<tr><td>DN 65</td></tr>
<tr><td>DN 80</td><td rowspan="2">M 16</td><td rowspan="2">M 16</td><td rowspan="2">–</td><td rowspan="2">–</td></tr>
<tr><td>DN 100</td></tr>
</table>

Recommended screw tightening torque:

- for M 12 <40 Nm
- for M 16 <95 Nm

Installation of combined flange with combined flange is not permissible.

After installation is completed, put on the heat insulation shells and secure with cable bands.

Electrical connection

Electrical connection should be carried out in accordance with the local regulations.
It is vital to ensure that the voltage and frequency indicated on the nameplate are compatible with the mains supply available.

Warning
Before carrying out any electrical connection work, the voltage supply must be switched off.
The pump must be connected to an external network switch with a contact opening on all poles of minimum 3 mm.
The protection against indirect contact can be achieved by earthing or potential equalisation.

The pump does not require any external motor protection. The motor has integrated over-temperature protection, which offers safeguarding against overloading that appears slowly and against blocking according to IEC 34-11: TP 211.

Additional safety features
If the pump is connected to an electrical installation, which has an FI circuit breaker for additional protection, the FI circuit breaker must trigger with a pulsing direct current component if earthing fault currents arise.
The FI circuit breaker must be marked with the following symbol:

Symbol	Description
	Highly sensitive residual current circuit breaker type A in accordance with IEC 605
	Highly sensitive residual current circuit breaker type B in accordance with IEC 605

Supply voltage
1×230V ±10%, 50/60 Hz, PE
The voltage tolerances are set for equalising voltage fluctuations on the mains. They are not for operating pumps with voltages other than those shown on the nameplate.

With direct mains connection, the pump may not be switched on and off at the mains more than four times an hour. If the pump is switched on directly via the mains, it only starts after a 5-second delay

Connection of the power supply
The pump must be protected on-site and must be connected to an external mains switch. All cables used must have a heat resistance of up to 85 °C. They must not be in contact with the pipe or the pump and motor casing. All cables must be connected in accordance with EN 60204-1 and EN 50174-2: 2000. The electrical connection must be made as indicated on the nameplate.

ModulA…	Nominal current [A]	Output P1 [W]
ModulA 32F-12 220, ModulA-D 32F-12 220	0.17 – 1.51	15 – 329
ModulA 40-8 220, ModulA-D 40-8 2 20	0.19 – 1.23	18 – 264
ModulA 40-10 220, ModulA-D 40-1 0 220	0.18 – 1.60	18 – 352
ModulA 40-12 250, ModulA-D 40-1 2 250	0.17 – 1.93	16 – 423
ModulA 40-18 250, ModulA-D 40-1 8 250	0.17 – 2.70	16 – 600

ModulA 50-6 240, ModulA-D 50-6 2 40	0.20 – 1.16	21 – 247
ModulA 50-6 270	0.20 – 1.16	21 – 247
ModulA 50-8 240, ModulA-D 50-8 2 40	0.20 – 1.49	21 – 326
ModulA 50-12 270, ModulA-D 50-1 2 270	0.20 – 2.23	21 – 488
ModulA 50-18 270, ModulA-D 50-1 8 270	0.24 – 3.44	21 – 767
ModulA 65-6 270	0.22 – 1.58	23 – 355
ModulA 65-8 340, ModulA-D 65-8 3 40	0.24 – 2.06	24 – 450
ModulA 65-12 340, ModulA-D 65-1 2 340	0.23 – 3.36	25 – 759
ModulA 65-15 340, ModulA-D 65-1 5 340	0.27 – 6.08	30 – 1343
ModulA 80-8 360, ModulA-D 80-8 3 60	0.24 – 3.09	25 – 685
ModulA 80-12 360, ModulA-D 80-1 2 360	0.27 – 6.63	30 – 1476
ModulA 100-8 450, ModulA-D 100-8 450	0.28 – 4.85	30 – 1082
ModulA 100-12 450, ModulA-D 100 -12 450	0.28 – 6.81	30 – 1551

Connection drawing Clamp description

Terminals:

- **+24-:** DC out 24 V
- **11, 10:** External OFF and external ON
- **52, 54, 51:** Fault notification or operation notification
- **L, N, PE:** Mains connection, 1x230V +/– 10%, 50/60Hz

Switch (Bold lettering = as delivered

1. **fault notification (SSM):** or operation notification (BM)

2. **External OFF:** or external ON
3. **Power limit ON:** or Power Limit OFF

Switch settings

Switch 1, Fault or operating signal (switchable)
The pump has a signal relay with potential-free changeover contact for external fault notification.
The signal relay can be switched over to operation notification via switch 1.

		Connection52 5 4 51	Status	Connection52 54 51	Status
fault notification (SSM)	Switch 1OFF ON1	52 54 51	Impeller greenfault signal inactive	52 54 51	Impeller greenfault signal inactive
		52 54 51	Impeller redfault signal active	52 54 51	Impeller redfault signal active
operating notification (BM)	Switch 1 ON ON1	52 54 51	turning impelleroperating signal	52 54 51	turning impelleroperating signal
		52 54 51	stationary impelleroperating signal inactive	52 54 51	stationary impelleroperating signal inactive

Switch 2, external OFF or external ON (switchable)

The digital input can be used for external ON/OFF switching of the pump. Using switch 2, it is possible to switch over from external OFF to external ON.

Note: If no external ON/OFF switch is connected, the pump runs if switch 2 is in the OFF position and no bridge is plugged in at terminals 11 or 10. This is the factory setting.

		Connection	**Status**	**Connection**	**Status**
external OFF	Switch 2OFFON 2	11 10	operation ON	11 10	operation OFF
external ON	Switch 2 ONON 2	11 10	operation OFF	11 10	operation ON

Switch 3, power limit (can be activated)

The power limit (volume flow limit) can be activated in the pump.

The pre-set maximum volume flow is at the end of characteristic curve 3 (proportional pressure).
The volume flow limit can be set from 25 … 90 % via Biral Remote.

Start-up

General

Before start-up, it is vital that the unit is filled with the delivery medium and ventilated. Close to the inlet nozzles of the pump, it should also be the required minimum intake pressure. The system can be ventilated via the pump. The pump itself is self-ventilating.

Operational control
After switching on the power supply the pump must start up independently: the Biral impeller turns and flashes green.

The pump runs according to basic settings (see paragraph 7.10)

Settings

Warning
There is a risk of burning! For high media temperatures the pump may become so hot that only the keys may be touched.

Control panel

Control panel for setting the type of control (see para. 7.2)
Keys for setting (delivery height) with illuminated symbols (LED) to display delivery height and delivery flow, (see para. 7.3)

Display control curve characteristics set (phase)
Display the current delivery height (25…100%)
Biral impeller displays the status of the pump (see para 7.10)
Bluetooth (see para 7.9)

Types of control

Operating key

Controlled operation: proportional pressure (pp) may be used in the following systems:

- Dual pipe systems with thermal valves and
- long stretches of pipe
- valves with large working area
- high pressure loss
- Primary circulation pumps with high pressure loss

Controlled operation: constant pressure (cp)
may be used in the following systems:

- Dual pipe systems with thermal valves and
- Delivery height >2m
- Natural circulation
- With very low pressure loss
- Primary circulation pumps in systems with low pressure loss
- Floor heating with thermostatic valves
- Single pipe heating

Non-controlled operation: constant speed (cs)
The operating point can be optimally set by adjusting the speed (key A2) optimal. May be used for systems with constant volume flow: air-conditioning applications, heat pumps and boiler feed pumps, etc.

Delivery height (A2)

The target value of the pump can be set by pressing the key or .

Example:
LED 3 lights up (green): characteristic curve 3
LED 3 and 4 light up (green): characteristic curve between 3 and 4

If any radiators are not sufficiently hot, set the next highest characteristic line.

Display of the current delivery height (LED V•)

Summary of maximum delivery height and delivery amount

ModulA…	**Hmax [m]**	**V-max [m3 /h]**
ModulA 32F-12 220, ModulA-D 32F-12 220	12	17
ModulA 40-8 220, ModulA-D 40-8 2 20	8	18
ModulA 40-10 220, ModulA-D 40-1 0 220	10	20
ModulA 40-12 250, ModulA-D 40-1 2 250	12	24
ModulA 40-18 250, ModulA-D 40-1 8 250	18	28
ModulA 50-6 240, ModulA-D 50-6 2 40	6	22
ModulA 50-6 270	6	22

ModulA 50-8 240, ModulA-D 50-8 240	8	25
ModulA 50-12 270, ModulA-D 50-12 270	12	32
ModulA 50-18 270, ModulA-D 50-18 270	18	37
ModulA 65-6 270	6	29
ModulA 65-8 270	8	34
ModulA 65-8 340, ModulA-D 65-8 340	8	34
ModulA 65-12 340, ModulA-D 65-12 340	12	44
ModulA 65-15 340, ModulA-D 65-15 340	15	55
ModulA 80-8 360, ModulA-D 80-8 360	8	48
ModulA 80-12 360, ModulA-D 80-12 360	12	66
ModulA 100-8 450, ModulA-D 100-8 450	8	59
ModulA 100-12 450, ModulA-D 100-12 450	12	67

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Documents / Resources

	Biral T2 M/L Modula RED T2 With Flange Connection [pdf] Instruction Manual T2 M L Modula RED T2 With Flange Connection, T2 M L, Modula RED T2 With Flange Connection, With Flange Connection, Flange Connection

References

- Biral AG: biral.ch
- Biral: biral.de