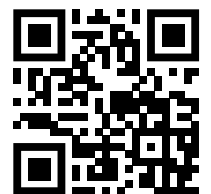




 **Return flow temperature maintenance thermal / with actuator**



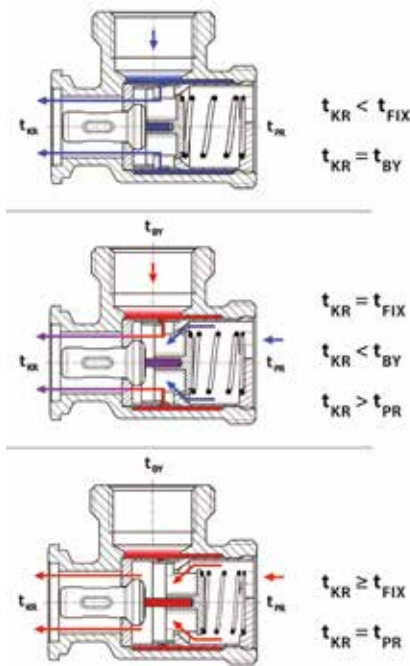


## Application ranges

- Heating installations with return flow temperature maintenance
- Solid fuel boilers, wood firing / stove heating systems

The pump sets for the return flow temperature maintenance are groups of fittings for pumps that can be isolated. They consist of:

- High-efficiency pump
- Control valve with opening temperature 50 °C or 60 °C
- 1 thermometer ball valve with red thermometer integrated in the handle, can be pulled off
- 2 thermometer ball valves with blue thermometer integrated in the handle, can be pulled off
- connections DN 20: 3/4" int. thread
- connections DN 25: 1" int. thread



Temperatures

- $t_{BY}$  = bypass
- $t_{KR}$  = boiler return
- $t_{PR}$  = return buffer tank
- $t_{FIX}$  = opening temperature

## Thermal control valve with automatic bypass

1. The thermal valve shuts off the connection to the buffer tank, as long as the water in the boiler circuit is colder than the opening temperature of the thermal control valve. The pump circulates the water in the boiler circuit through the bypass. The small quantity of water in the boiler circuit can now heat up quickly.
2. When the boiler circuit reaches the opening temperature of the control valve, the valve reduces the bypass flow rate and opens the buffer tank circuit. The cold water from the buffer tank return is mixed with the hot boiler circuit water in the control valve. This leads to an increase of the return temperature in the boiler circuit to the desired level and avoids condensation in the boiler.
3. When the buffer tank return temperature is higher than the opening temperature, the control valve completely shuts off the bypass. Thus, the water from the buffer tank flows directly into the boiler circuit.

## Mounting versions 1 and 2:

Separate assembly of the group of fittings in the flow and return. This version permits an easy isolation of the heat generator without further shut-off valves. Consider the position of the safety group before mounting.

## Additionally required for mounting version 2:

- 1 x seal: DN 20 item no. 2057, DN 25 item no. 2157
- 1 x screw-in fitting: DN 20 item no. 2053, DN 25 item no. 2153
- 1 x pump fitting DN 20 item no. 2049, DN 25 item no. 2149.

## Please note:

If the boiler output is controlled by the boiler temperature, the boiler should heat up 20 °C above the opening temperature of the return flow temperature maintenance. Otherwise the boiler might reduce the output even before the thermal control valve is completely open.





**Thermometer ball valve**

- one-piece housing made of brass
- spindle can be replaced under pressure
- temperature measuring by means of the spindle in the fluid

**High-efficiency pump**

- fitted with 2 m cable
- with serial number

**Thermometer ball valve**

- high Kvs value
- 3 ball valves per return flow temperature maintenance allow to shut off the group
- no draining necessary for service work at the pump or at the control valve

**Immersion thermometer**

- with handle, 0 - 120 °C

**Thermal control valve**

- high Kvs value for energy-saving use

**Serial numbers  
Return flow temperature maintenance and pump**

- reliable identification, fast service



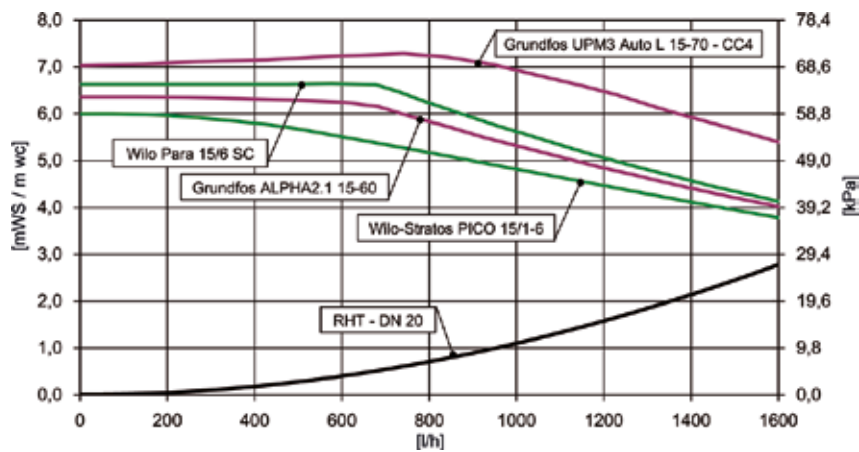


## Application ranges

- for heating installations with return flow temperature maintenance
- for solid fuel boilers, wood firing, stove heating systems

### Technical data

<b>Recommended application range</b>		<b>Dimensions</b>	
up to 11 kW		Nominal diameter	DN 20 (3/4")
10 K to 950 l/h		Connection generator	3/4" int. thread
		Connection consumer	3/4" int. thread
		Installation height	112 mm
		Installation length	336 mm
<b>Operating data</b>		<b>Materials</b>	
Max. operating pressure	6 bar	Valves and fittings	Brass
Operating temperature	110 °C	Seals	EPDM
Kvs value	4.7	Insulation	EPP
<b>Equipment</b>			
red and blue dial thermometer, integrated into black plastic handles (0 - 120 °C)			



Return flow temperature maintenance with thermal control valve – DN 20 (3/4")		EEl*	Item no.	
	Opening temperature: 45 °C	Wilo Para SC 15/6-43	< 0.20	960250WP6
		Wilo Yonos PICO 15/1-6	< 0.20	960250WN06
		Grundfos UPM3 Auto L 15-70	< 0.20	960250GM6
		Grundfos ALPHA2.1 15-60	< 0.17	960250GH6
		without pump - for pumps with 1" ext. thread		960250
	Opening temperature: 60 °C	Wilo Para SC 15/6-43	< 0.20	960260WP6
		Wilo Yonos PICO 15/1-6	< 0.20	960260WN06
		Grundfos UPM3 Auto L 15-70	< 0.20	960260GM6
		Grundfos ALPHA2.1 15-60	< 0.17	960260GH6
		without pump - for pumps with 1" ext. thread		960260



## Application ranges

- for heating installations with return flow temperature maintenance
- for solid fuel boilers, wood firing, stove heating systems

### Technical data

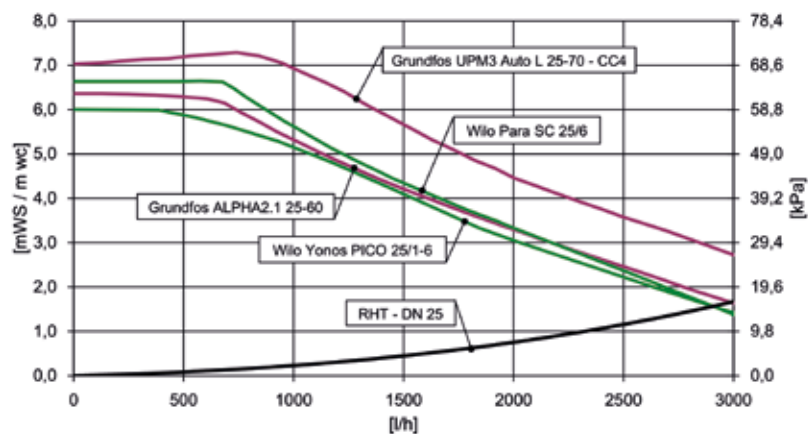
Recommended application range	
up to 26 kW	
10 K to 2250 l/h	

Operating data	
Max. operating pressure	6 bar
Operating temperature	110 °C
Kvs value	7.2

Equipment	
red and blue dial thermometer, integrated into black plastic handles (0 - 120 °C)	

Dimensions	
Nominal diameter	DN 25 (1")
Connection generator	1" int. thread
Connection consumer	1" int. thread
Installation height	128 mm
Installation length	428 mm

Materials	
Valves and fittings	Brass
Seals	EPDM
Insulation	EPP



Return flow temperature maintenance with thermal control valve – DN 25 (1")		EEI*	Item no.	
	Opening temperature: 45 °C	Wilo Para SC 25/6-43	< 0.20	961250WP6
		Wilo Yonos PICO 25/1-6	< 0.20	961250WN06
		Grundfos UPM3 Auto L 25-70	< 0.20	961250GM6
		Grundfos ALPHA2.1 25-60	< 0.17	961250GH6
		without pump - for pumps with 1½" ext. thread		961250
	Opening temperature: 60 °C	Wilo Para SC 25/6-43	< 0.20	961260WP6
		Wilo Yonos PICO 25/1-6	< 0.20	961260WN06
		Grundfos UPM3 Auto L 25-70	< 0.20	961260GM6
		Grundfos ALPHA2.1 25-60	< 0.17	961260GH6
		without pump - for pumps with 1½" ext. thread		961260



## Application ranges

- for heating installations with return flow temperature maintenance
- for solid fuel boilers, wood firing, stove heating systems

### Technical data

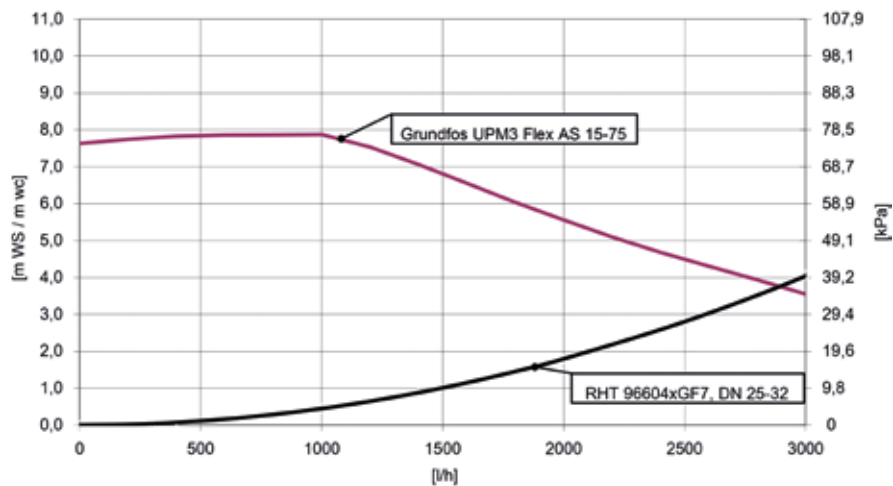
Recommended application range	
up to 26 kW	
10 K to 2250 l/h	

Operating data	
Max. operating pressure	6 bar
Operating temperature	110 °C
Kvs value	7.2

Equipment	
red and blue dial thermometer, integrated into black plastic handles (0 - 120 °C)	

Dimensions	
Nominal diameter	DN 25 (1") - DN 32 (1¼")
Connection generator	1¼" int. thread
Connection consumer	1¼" int. thread
Installation height	116 mm
Installation length	274 mm

Materials	
Valves and fittings	Brass
Seals	EPDM
Insulation	EPP



Return flow temperature maintenance with thermal control valve – DN 25 (1") – 32 (1¼")		EEI*	Item no.	
	Opening temperature: 45 °C	Grundfos UPM3 Flex AS 15-75 GGES3	< 0.20	966041GF7
	Opening temperature: 60 °C	Grundfos UPM3 Flex AS 15-75 GGES3	< 0.20	966042GF7





## Application ranges

- for heating installations with return flow temperature maintenance
- for solid fuel boilers, wood firing, stove heating systems



## Product description:

The return flow temperature maintenance with actuator is a preassembled group of fittings for heating circuits. The pump and the mixing valve can be isolated by means of the ball valves. Thus, you can maintain the pump without draining the heating circuit.

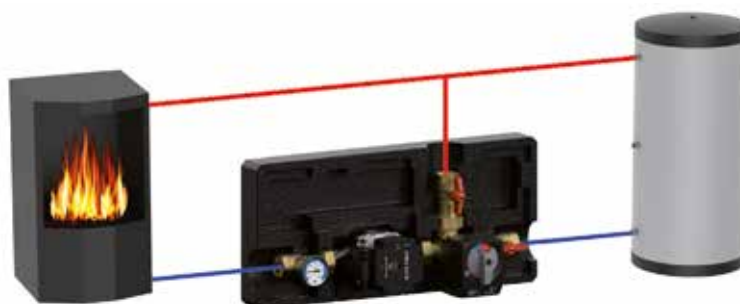


## Description of function:

The pump set prevents the temperature in the boiler from falling under the dew point, thus reducing contamination of the boiler. The pump set is mounted between the buffer tank and the boiler.

The actuator is controlled by an external controller. The actuator opens the 3-way valve only when the boiler circuit has reached the opening temperature set.

By means of the mixing valve, the return flow temperature in the boiler is kept at a constant level and the maximum amount of energy for the storage tank charging is provided.



**Mounting example  
Return flow temperature  
maintenance DN 25  
with actuator**



## Application ranges

- for heating installations with return flow temperature maintenance
- for solid fuel boilers, wood firing, stove heating systems

### Technical data

#### Recommended application range

up to 19,5 W
10 K to 1650 l/h

#### Operating data

Max. operating pressure	6 bar
Operating temperature	110 °C
Kvs value	5.45

#### Equipment

with actuator
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#### Actuator

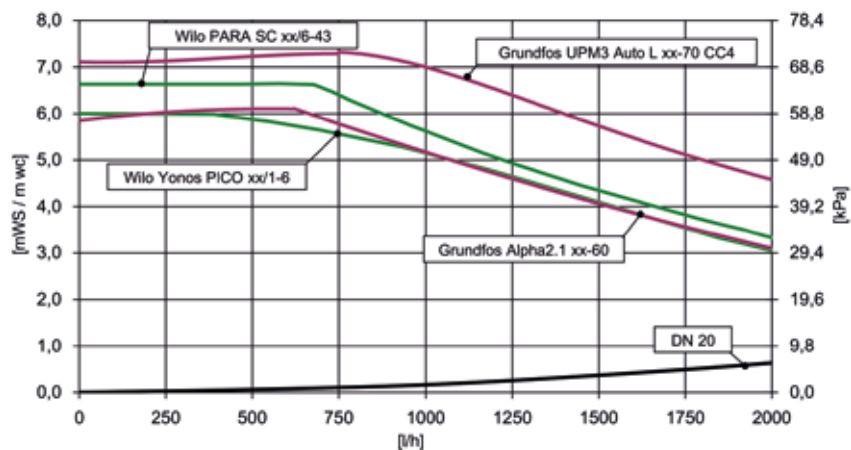
Electrical data	230 V / 50 Hz
Power consumption	19,5 W
Torque	2 Nm
Setting time 90°	105 s

#### Dimensions

Nominal diameter	DN 20 (¾")
Connection generator	¾" int. thread
Connection consumer	¾" int. thread
Installation height	134 mm
Installation length	359 mm

#### Materials

Valves and fittings	Brass
Seals	AFM 34
Insulation	–



### Return flow temperature maintenance with actuator – DN 20 (¾")

	EEl*	Item no.	
	<b>Grundfos ALPHA2.1 15-60</b>	< 0.17	<b>96083GH6</b>
	<b>Grundfos UPM3 Auto L 15-70</b>	< 0.20	<b>96083GM6</b>
	<b>Wilo Para SC 15/6-43</b>	< 0.20	<b>96083WP6</b>
	<b>Wilo Yonos PICO 15/1-6</b>	< 0.20	<b>96083WN06</b>





## Application ranges

- for heating installations with return flow temperature maintenance
- for solid fuel boilers, wood firing, stove heating systems

### Technical data

#### Recommended application range

up to 31 W  
10 K to 2670 l/h

#### Operating data

Max. operating pressure	6 bar
Operating temperature	110 °C
Kvs value	10

#### Equipment

with actuator

#### Actuator

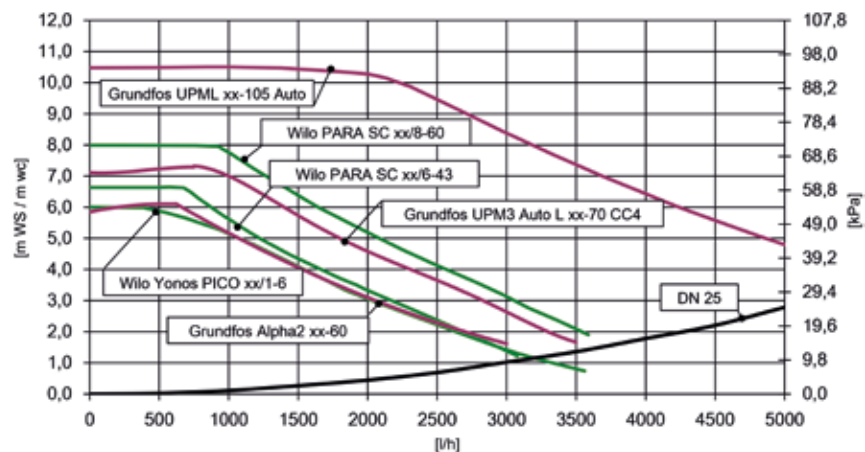
Electrical data	230 V / 50 Hz
Power consumption	31 W
Torque	5 Nm
Setting time 90°	140 s

#### Dimensions

Nominal diameter	DN 25 (1")
Connection generator	1" int. thread
Connection consumer	1" int. thread
Installation height	187 mm
Installation length	437 mm

#### Materials

Valves and fittings	Brass
Seals	AFM 34
Insulation	EPP



### Return flow temperature maintenance with actuator – DN 25 (1")

	EEI*	Item no.
	<b>Grundfos ALPHA2.1 25-60</b>	< 0.17 <b>960841GH6</b>
	<b>Grundfos UPM3 Auto L 25-70</b>	< 0.20 <b>960841GM6</b>
	<b>Grundfos UPML 25-95 AUTO</b>	< 0.23 <b>960841GL9</b>
	<b>Wilo Para SC 25/6-43</b>	< 0.20 <b>960841WP6</b>
	<b>Wilo Para SC 25/8-60/O</b>	< 0.20 <b>960841WP8</b>
	<b>Wilo Yonos PICO 25/1-6</b>	< 0.20 <b>960841WN06</b>



## Application ranges

- for heating installations with return flow temperature maintenance
- for solid fuel boilers, wood firing, stove heating systems

### Technical data

Recommended application range	
up to 50 W	
10 K to 4310 l/h	

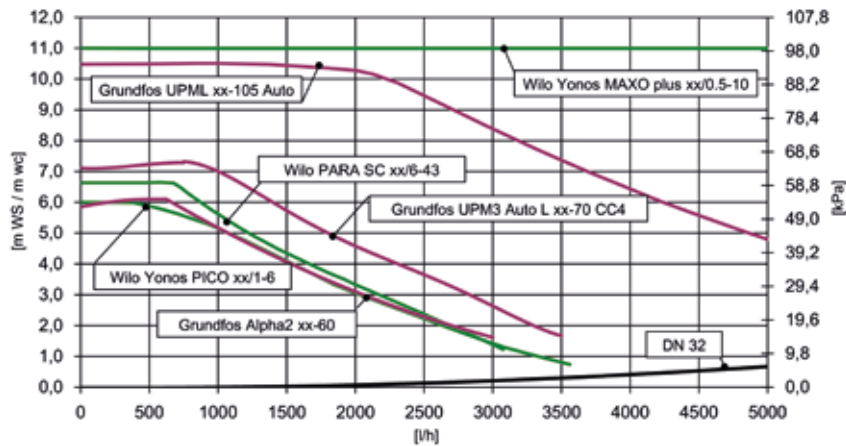
Operating data	
Max. operating pressure	6 bar
Operating temperature	110 °C
Kvs value	16

Equipment	
with actuator	

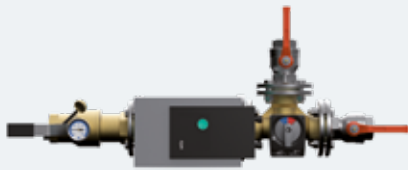
Actuator	
Electrical data	230 V / 50 Hz
Power consumption	50 W
Torque	5 Nm
Setting time 90°	140 s

Dimensions	
Nominal diameter	DN 32 (1¼")
Connection generator	1¼" int. thread
Connection consumer	1¼" int. thread
Installation height	217 mm
Installation length	497 mm

Materials	
Valves and fittings	Brass
Seals	AFM 34
Insulation	EPP



Return flow temperature maintenance with actuator – DN 32 (1¼")		EEL*	Item no.
	<b>Grundfos ALPHA2.1 32-60</b>	< 0.20	<b>960851GH6</b>
	<b>Grundfos UPML3 Auto L 32-70</b>	< 0.20	<b>960851GM6</b>
	<b>Grundfos UPML 32-105 AUTO</b>	< 0.23	<b>960851GL9</b>
	<b>Wilo Para SC 30/6-43</b>	< 0.20	<b>960851WP6</b>
	<b>Wilo Yonos PICO 30/1-6</b>	< 0.20	<b>960851WN06</b>
	<b>Wilo Yonos MAXO plus 30/0.5-10</b>	< 0.20	<b>960851WY10</b>



## Application ranges

- for heating installations with return flow temperature maintenance
- for solid fuel boilers, wood firing, stove heating systems

### Technical data

#### Recommended application range

up to 80 W
10 K to 6890 l/h

#### Operating data

Max. operating pressure	6 bar
Operating temperature	110 °C
Kvs value	23

#### Equipment

with actuator
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#### Actuator

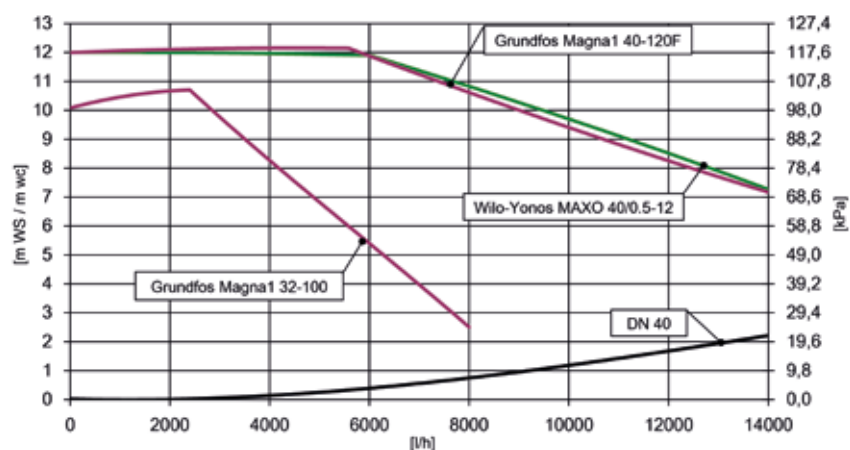
Electrical data	230 V / 50 Hz
Power consumption	80 W
Torque	5 Nm
Setting time 90°	140 s

#### Dimensions

Nominal diameter	DN 40 (1½")
Connection generator	1½" int. thread
Connection consumer	1½" int. thread
Installation height	266 mm
Installation length	735 mm

#### Materials

Valves and fittings	Brass
Seals	AFM 34
Insulation	–



Return flow temperature maintenance with actuator – DN 40 (1½")		EEI*	Item no.
	Grundfos MAGNA1 32-100	< 0.21	960861GL10
	Grundfos MAGNA1 40-120 F	< 0.21	960861GL12
	Wilo Yonos MAXO plus 40/0.5-12	< 0.20	960861WY12



## Application ranges

- for heating installations with return flow temperature maintenance
- for solid fuel boilers, wood firing, stove heating systems

### Technical data

#### Recommended application range

up to 120 W
10 K to 10340 l/h

#### Operating data

Max. operating pressure	6 bar
Operating temperature	110 °C
Kvs value	25

#### Equipment

with actuator
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#### Actuator

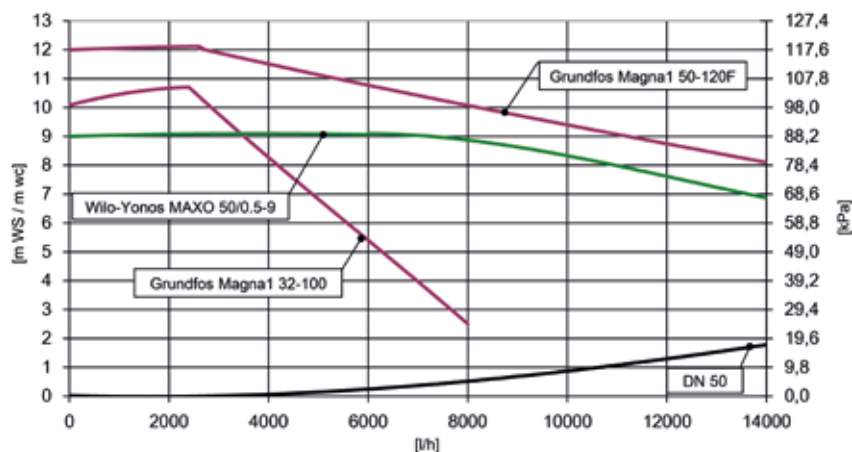
Electrical data	230 V / 50 Hz
Power consumption	120 W
Torque	5 Nm
Setting time 90°	140 s

#### Dimensions

Nominal diameter	DN 50 (2")
Connection generator	2" int. thread
Connection consumer	2" int. thread
Installation height	296 mm
Installation length	792 mm

#### Materials







Valves and fittings	Brass
Seals	EPDM / AFM 34
Insulation	–



### Return flow temperature maintenance with actuator – DN 50 (2")

	EEl*	Item no.
	<b>Grundfos MAGNA1 32-100</b>	< 0.21 <b>960871GL10</b>
	<b>Grundfos MAGNA1 50-120 F</b>	< 0.21 <b>960871GL12</b>
	<b>Wilo Yonos MAXO plus 50/0.5-9</b>	< 0.20 <b>960871WY9</b>



Accessories return flow temperature maintenance		Item no.
	<b>Seal for nut – DN 20 (¾")</b> asbestos-free; outside diameter: 30 mm; inside diameter: 21 mm; height: 2 mm	<b>2057</b>
	<b>Seal for nut – DN 25 (1")</b> asbestos-free; outside diameter: 44 mm; inside diameter: 32 mm; height: 2 mm	<b>2157</b>
	<b>Screw-in fitting DN 20 (¾")</b> 1" external thread, flat-sealing x ¾" internal thread	<b>2053</b>
	<b>Screw-in fitting 25 (1")</b> 1½" external thread, flat-sealing x 1" internal thread	<b>2153</b>
	<b>Pump fitting DN 20 (¾")</b> with union nut, insert fitting and seal; length: 30 mm	<b>2049</b>
	<b>Pump fitting 25 (1")</b> with union nut, insert fitting and seal; length: 28 mm	<b>2149</b>
	<b>Cutting-ring compression fitting DN 20 (¾"), d = 15 mm</b>	<b>561215</b>
	<b>Cutting-ring compression fitting DN 20 (¾"), d = 18 mm</b>	<b>561218</b>
	<b>Cutting-ring compression fitting DN 20 (¾"), d = 22 mm</b>  ¾" external thread, self-sealing with o-ring, with support sleeve, suitable for soft copper pipes. For temperatures up to 150 °C.	<b>561222</b>
	<b>Cutting-ring compression fitting DN 25 (1"), d = 15 mm</b>	<b>562915</b>
	<b>Cutting-ring compression fitting DN 25 (1"), d = 18 mm</b>	<b>562918</b>
	<b>Cutting-ring compression fitting DN 25 (1"), d = 22 mm</b>  1" external thread, self-sealing with o-ring, with support sleeve, suitable for soft copper pipes. For temperatures up to 150 °C.	<b>562922</b>









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