

# Wilo-Yonos PARA Red Knob & PWM

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## The new standard in High Efficiency!



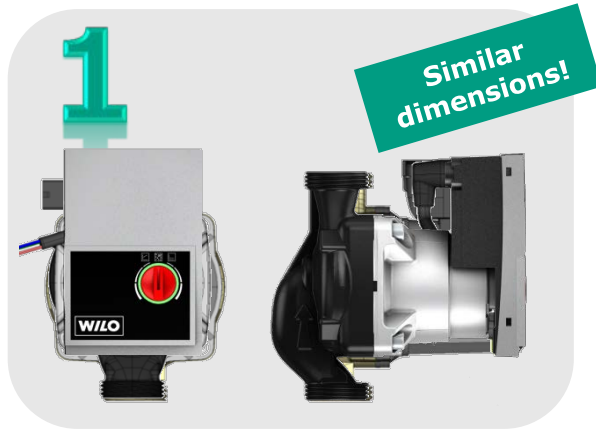
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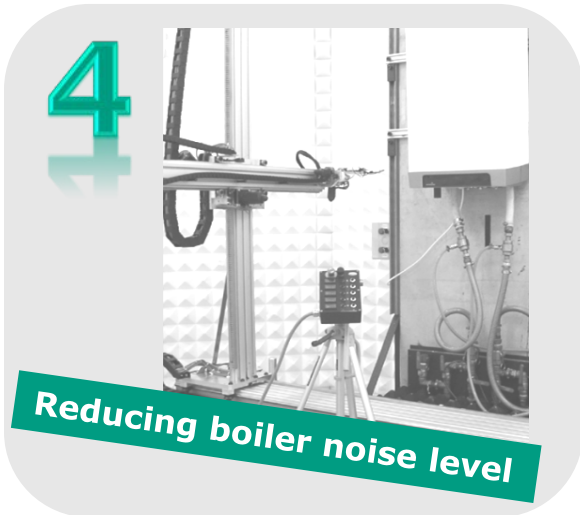
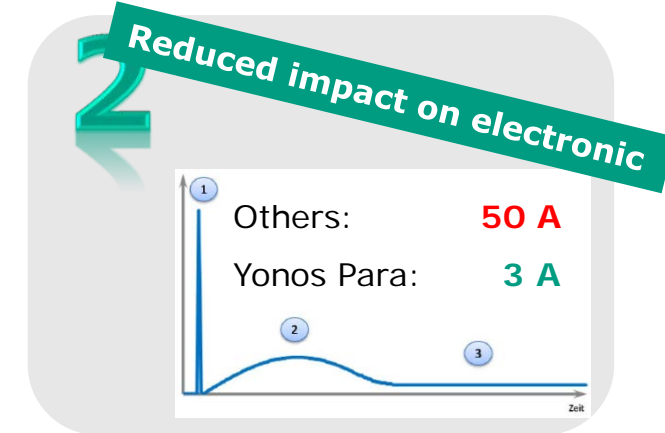
# Integration Aspects

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- "difficulties can exist e.g. concerning
- space requirements
  - electrical compatibility
  - operation strategy
  - time constants
  - ambient temperature constraints"



# WILO-Yonos PARA 6 Red Knob

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# Yonos PARA Red Knob applications



Wall Hung Boilers



Heating and Solar Stations



Heat Pumps



# Designed for integration

## AC technology



## EC technology



Similar dimensions

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# Electronic Module Orientation



12H



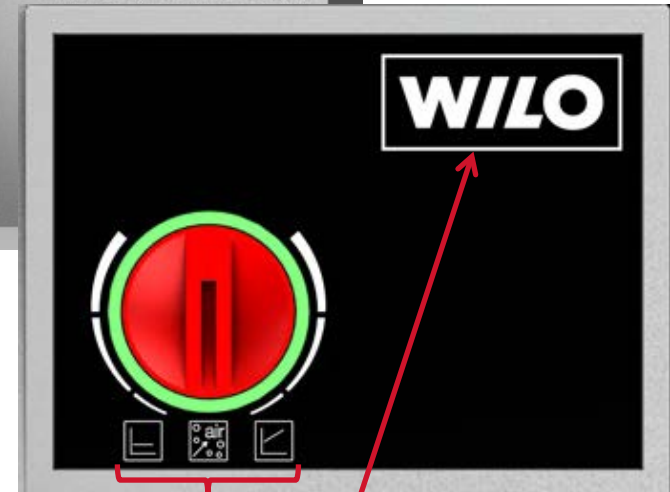
9H



3H



6H



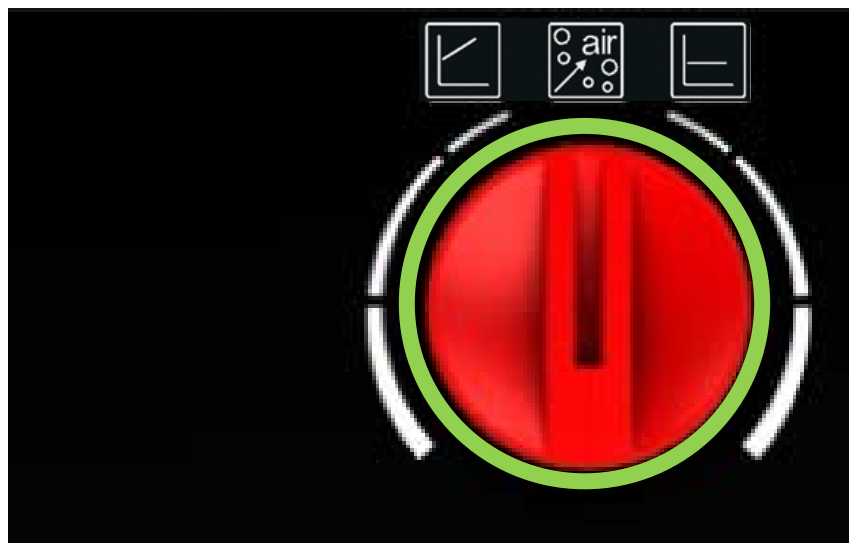
All markings always readable



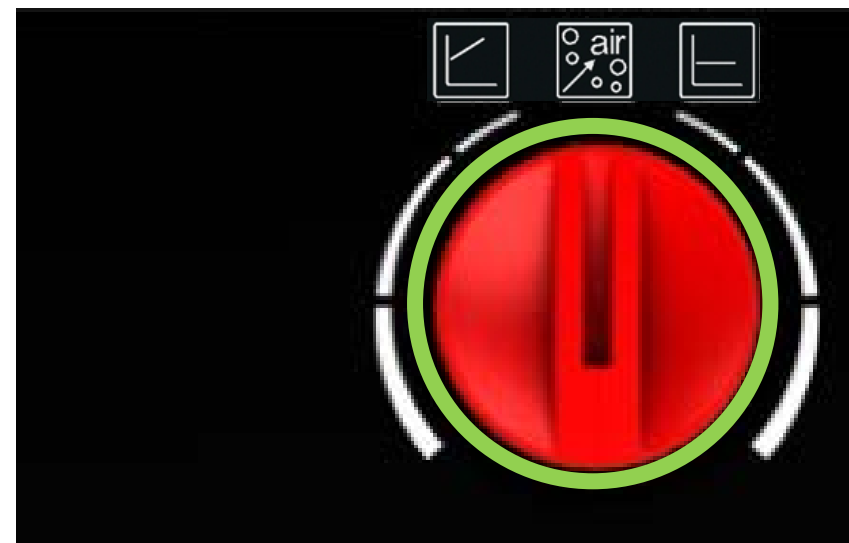
# Easy-to-understand LED display

The Wilo-Yonos PARA is the first heating circulation pump in the OEM range to have a LED user interface – this makes it easy for the technician to search for the cause of a fault in the pump functioning.

*If the LED display lights up continuously green... If the LED display is flashing green...*



> ...the pump is working normally



> ...the pump is in venting routine mode

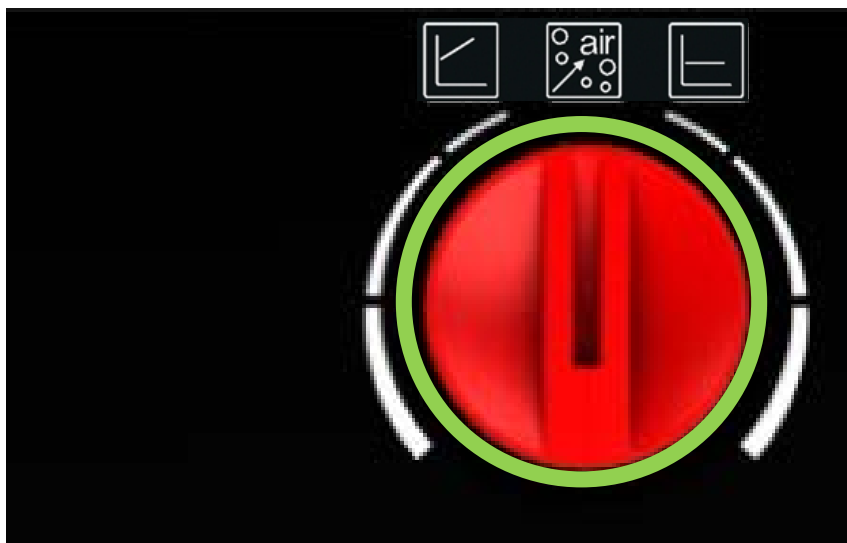




# Easy-to-understand LED display

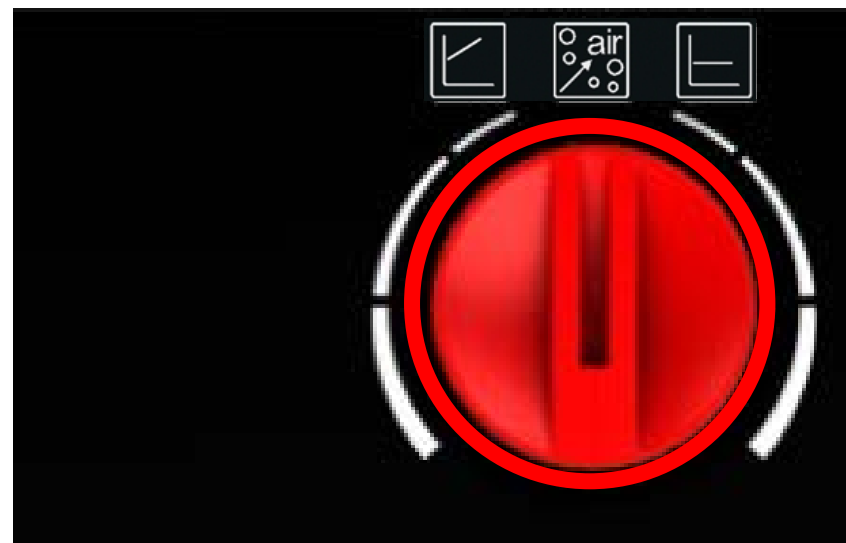
The Wilo-Yonos PARA is the first heating pump in the OEM range to have a LED user interface – this makes it easy for the technician to search for the cause of a fault in the pump functioning

*If the LED display is flashing green/red...*



➤...the pump has stopped operation, but is functional. Check connections

*If the LED display is flashing red...*



> ...there is a serious fault. Ask for assistance








# LED diagnose and remedy

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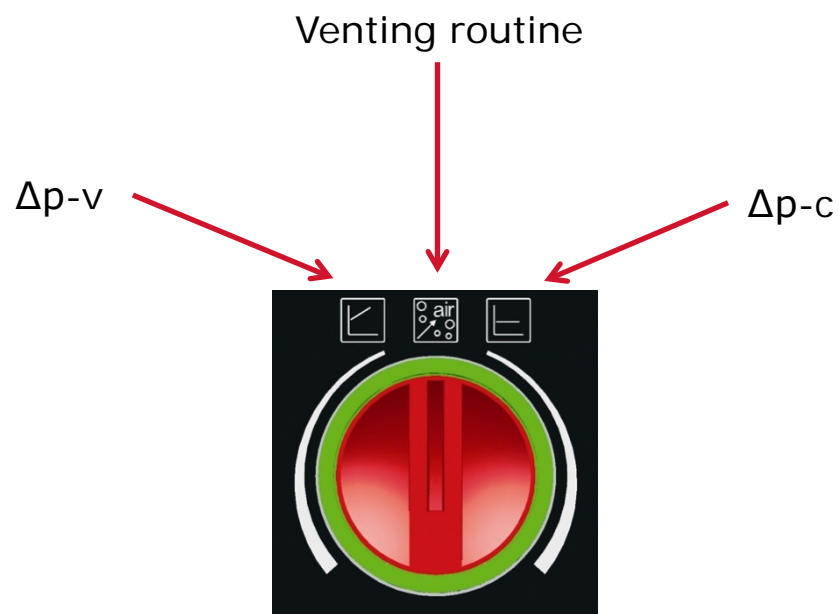


Led color	Meaning	Diagnostic	Cause	Remedy
<b>Continuous green</b> 	Normal running	Pump run as expected or is faced to a phenomenon that shortly affects its running	<u>Normal operation</u>	
<b>Quick green blinks</b> 	Air venting routine running 	Pump runs during 10min in air venting function  Afterwards the installer has to adjust the targeted performance		
<b>Red /green blinking</b> 	Abnormal situation (pump functional but stopped)	Pump will restart by itself after the abnormal situation disappeared	<ol style="list-style-type: none"> <li><u>Undervoltage or Overvoltage</u> : <math>U &lt; 160V</math> or <math>U &gt; 253V</math></li> <li><u>Module overheating</u> : <math>T^\circ</math> inside motor too high</li> </ol>	<ol style="list-style-type: none"> <li>Check voltage supply : <math>195V &lt; U &lt; 253V</math></li> <li>Check water &amp; ambient <math>T^\circ</math></li> </ol>
<b>Red blinking</b> 	Stopped (e.g. pump blocked)	Reset the pump Check LED signal	Pump cannot restart itself due to a permanent failure	Change pump
<b>No LED</b>	No power supply	No voltage on electronics	<ol style="list-style-type: none"> <li>Pump is not connected to power supply</li> <li>LED is damaged</li> <li>Electronics are damaged</li> </ol>	<ol style="list-style-type: none"> <li>Check cable connection</li> <li>Check if pump is running</li> <li>Change pump</li> </ol>

\* Subject to change

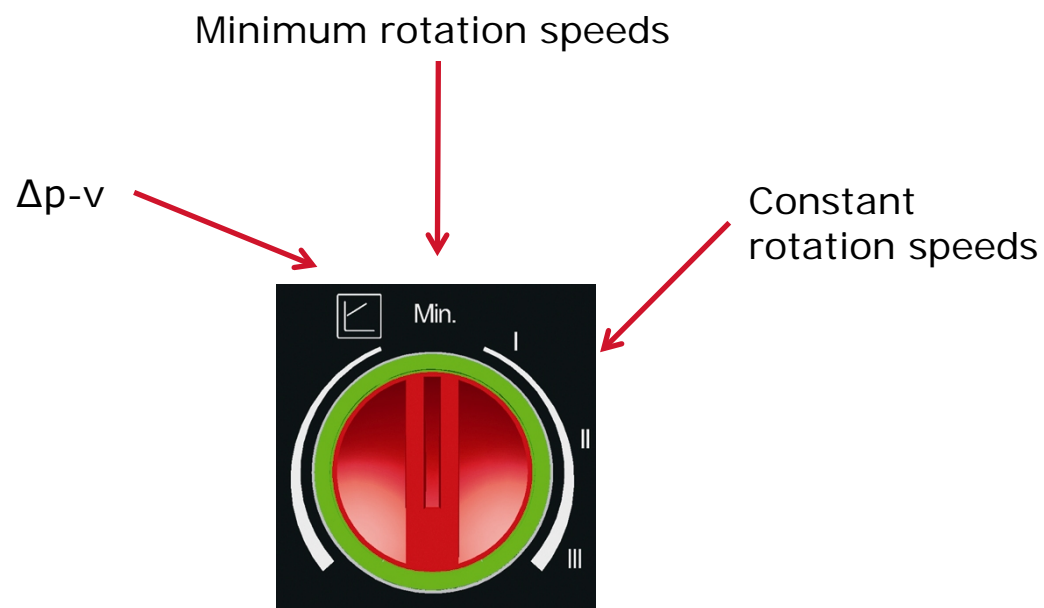


# Wilo-Yonos PARA Red Knob version



**RKA**

Red **K**nob for Delta-P var, **A**ir venting, Delta-**P** const



**RKC**

Red **K**nob for Delta-P var, min speed, **C**onstant speed

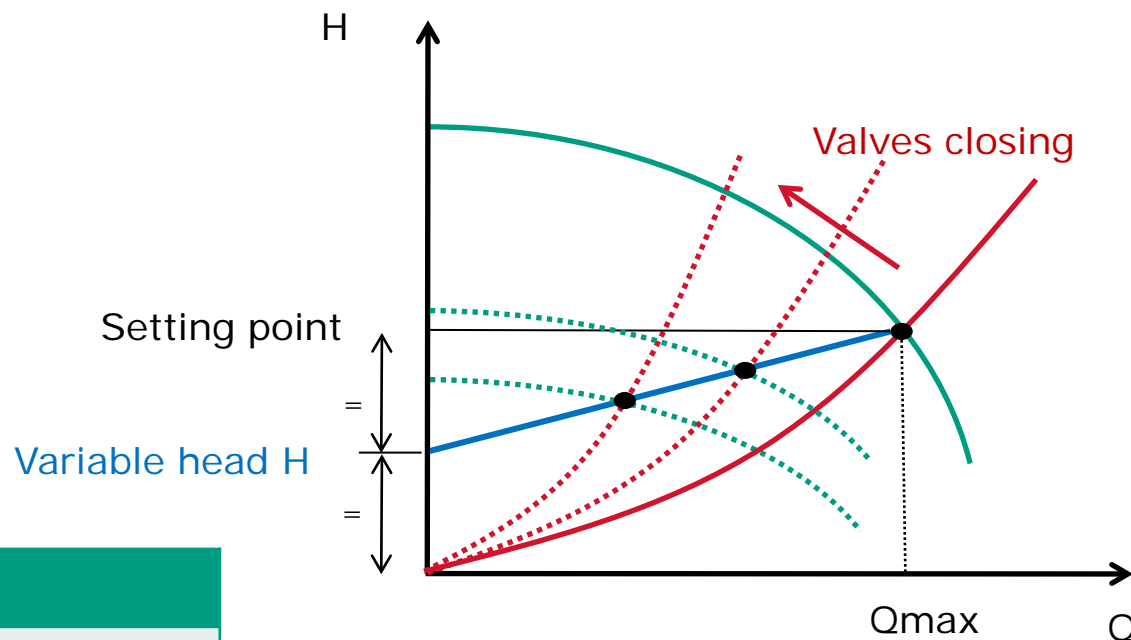


# How does it work?

# $\Delta p-v$



## Variable Pressure Head Difference ( $\Delta p-v$ )



### $\Delta p-v$

The pump is able to adapt the head pressure between setting point  $H$  and  $H/2$  by reducing the speed when the pressure losses of the system increase

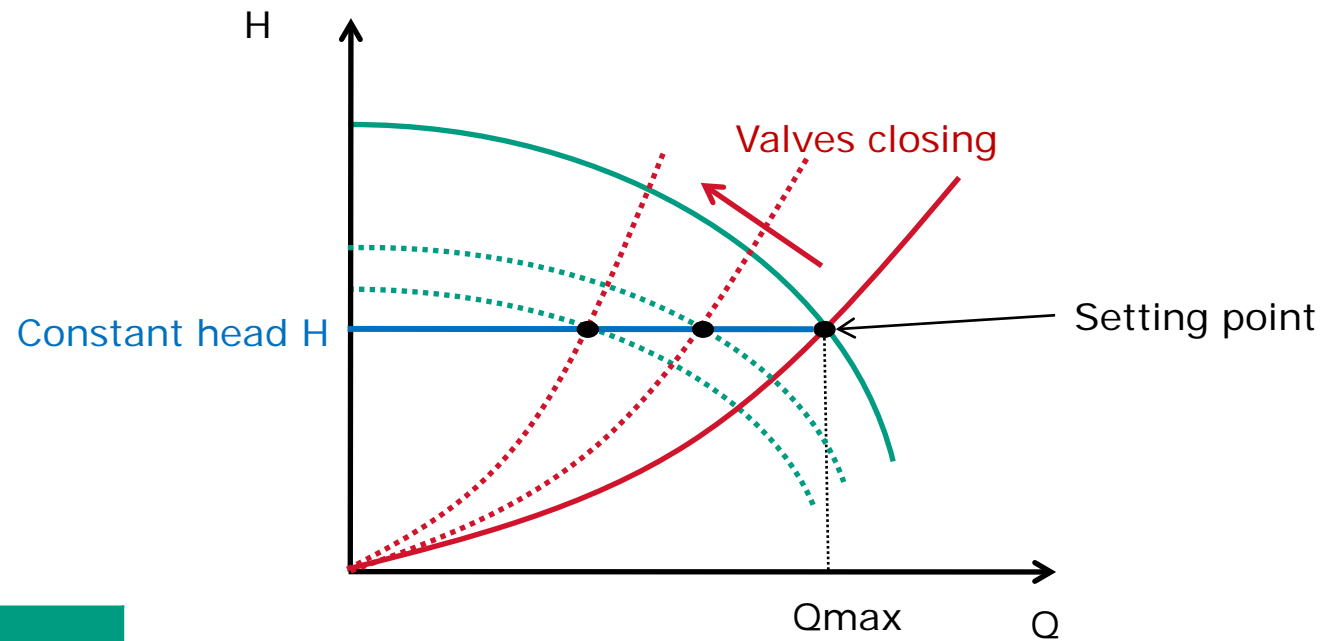
# $\Delta p-c$

## How does it work?

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### Constant Pressure Head Difference ( $\Delta p-c$ )



### $\Delta p-c$

The pump is able to maintain a constant pressure by reducing the speed when the pressure losses of the system increase



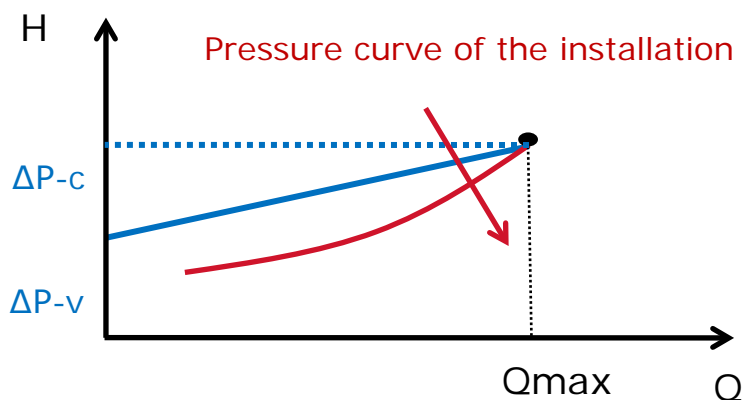


# $\Delta p-v$ or $\Delta p-c$ ?

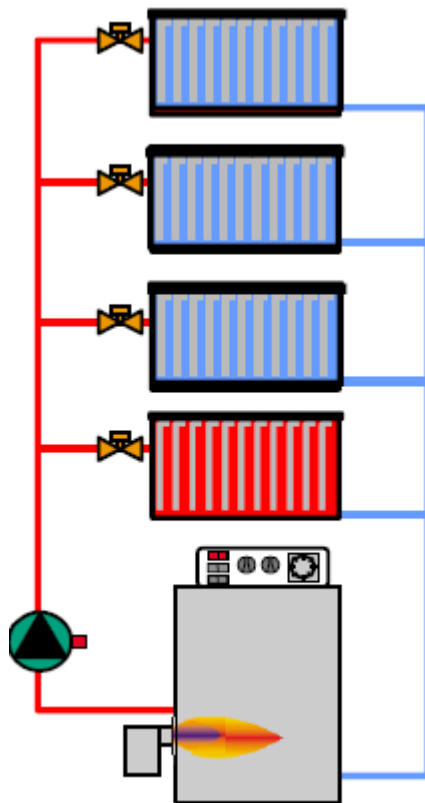
If the pressure losses of the installation (pipes) are higher than the ones of the heating system:  
Setting  $\Delta p-v$  is recommended



Pipes have big influence by valve changing



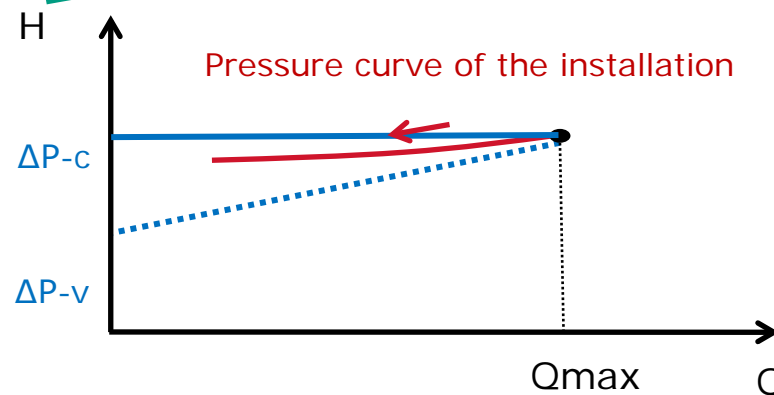
**Applications:**  
Thermostatic radiators



If the pressure losses of the installation (pipes) are much lower than the ones of the heating system:  
Setting  $\Delta p-c$  is recommended



Pipes have low influence by valve changing



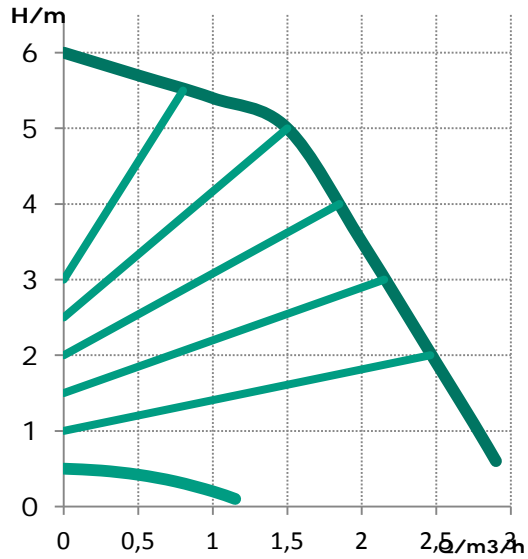
**Applications:**  
Floor heating, Old installation with big pipes

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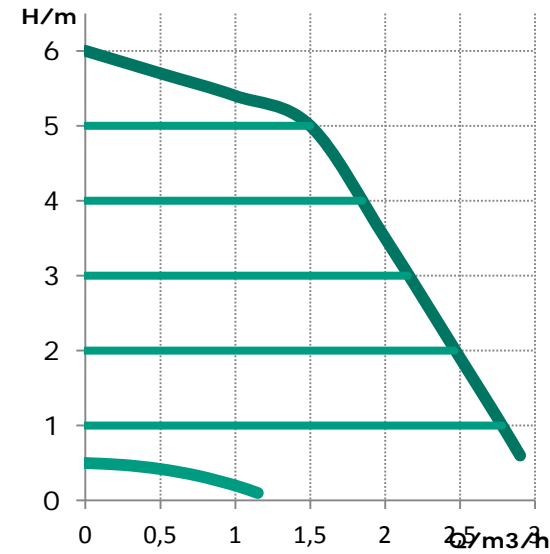
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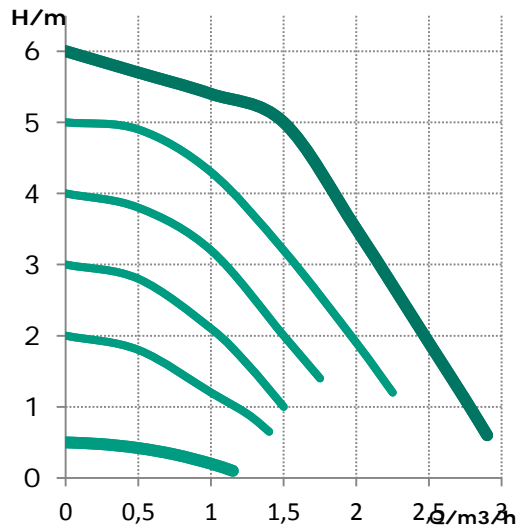
# Wilo-Yonos PARA 6 Red Knob



$\Delta p-v$



$\Delta p-c$



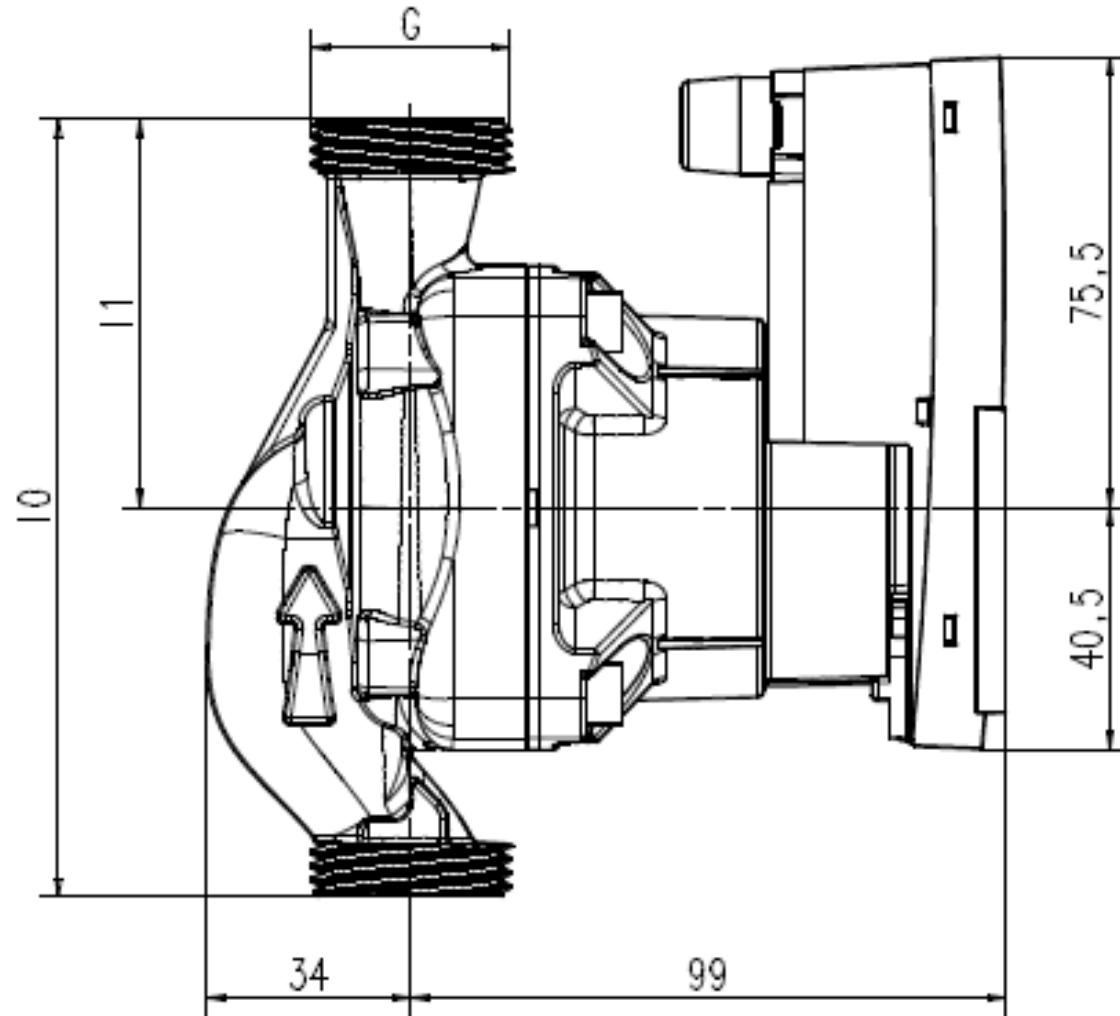
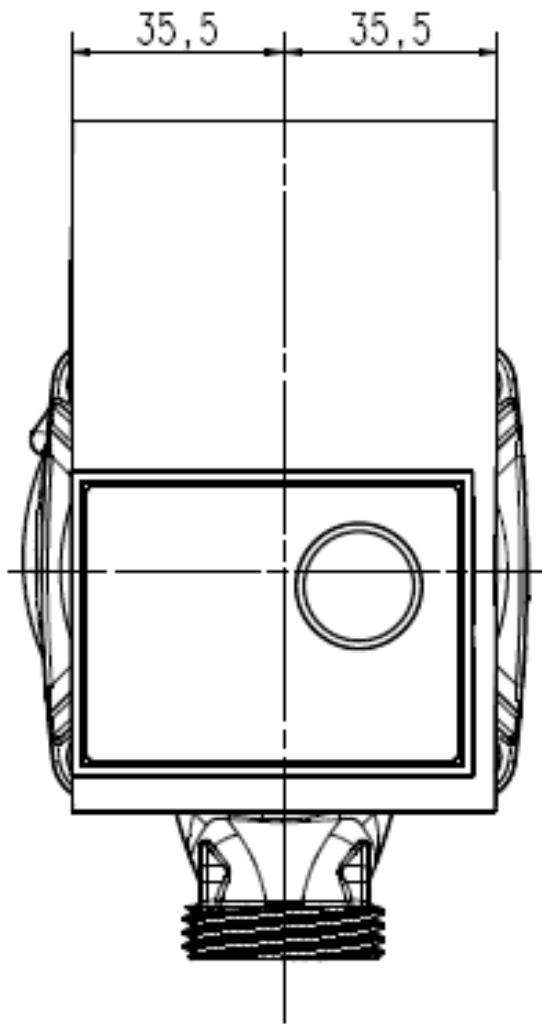
Constant  
speed

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# Dimensions Yonos PARA 6 Red Knob



# WILO-Yonos PARA 7.0 PWM

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# Yonos PARA PWM applications



Wall Hung Boilers



Heating and Solar Stations



Heat Pumps



# Electronic Module Orientation

9H



3H

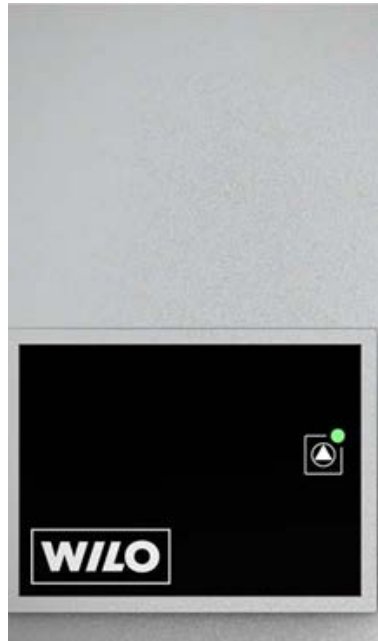
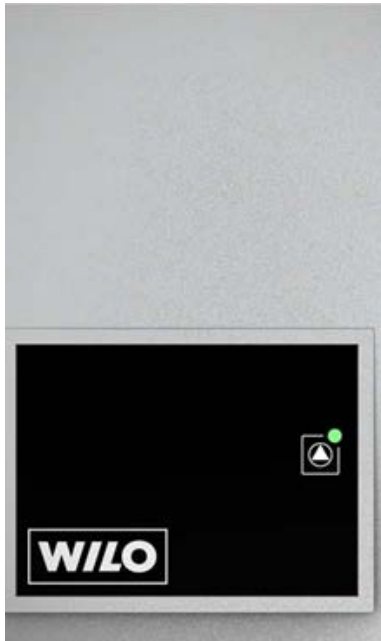
6H



12H



# LED communication with customer



**Normal mode:**  
Green continuous, pump  
running  
Green blinking, pump standby



**1<sup>st</sup> Error Mode:**  
Red /green blinking  
*I've stopped working but I'm still trying  
to work again! Can you help me?*



**2<sup>nd</sup> Error Mode:**  
Red blinking  
*I've stopped working and I'm not  
trying to work again. Call someone  
who can replace / help me.*








# LED diagnose and remedy

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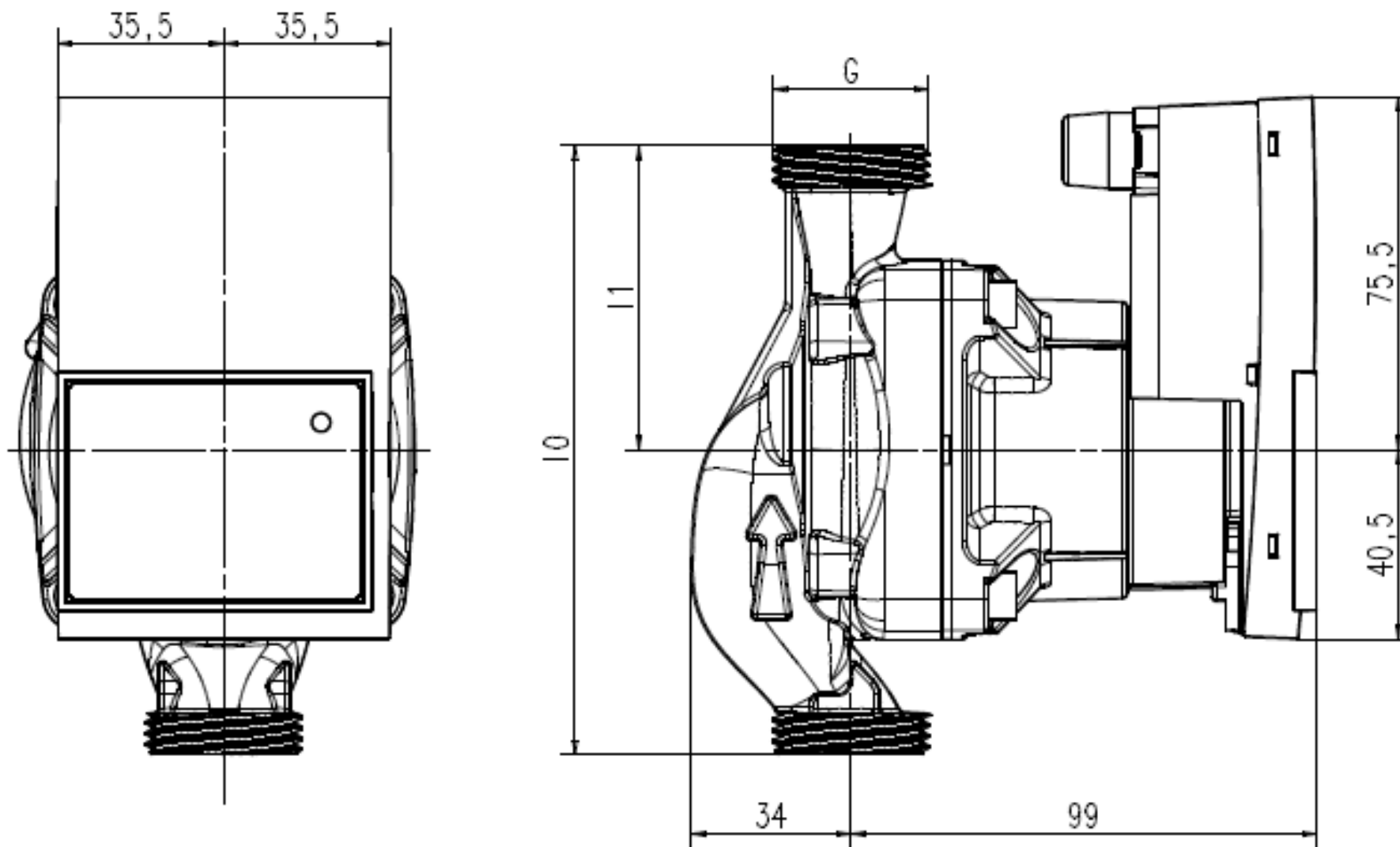
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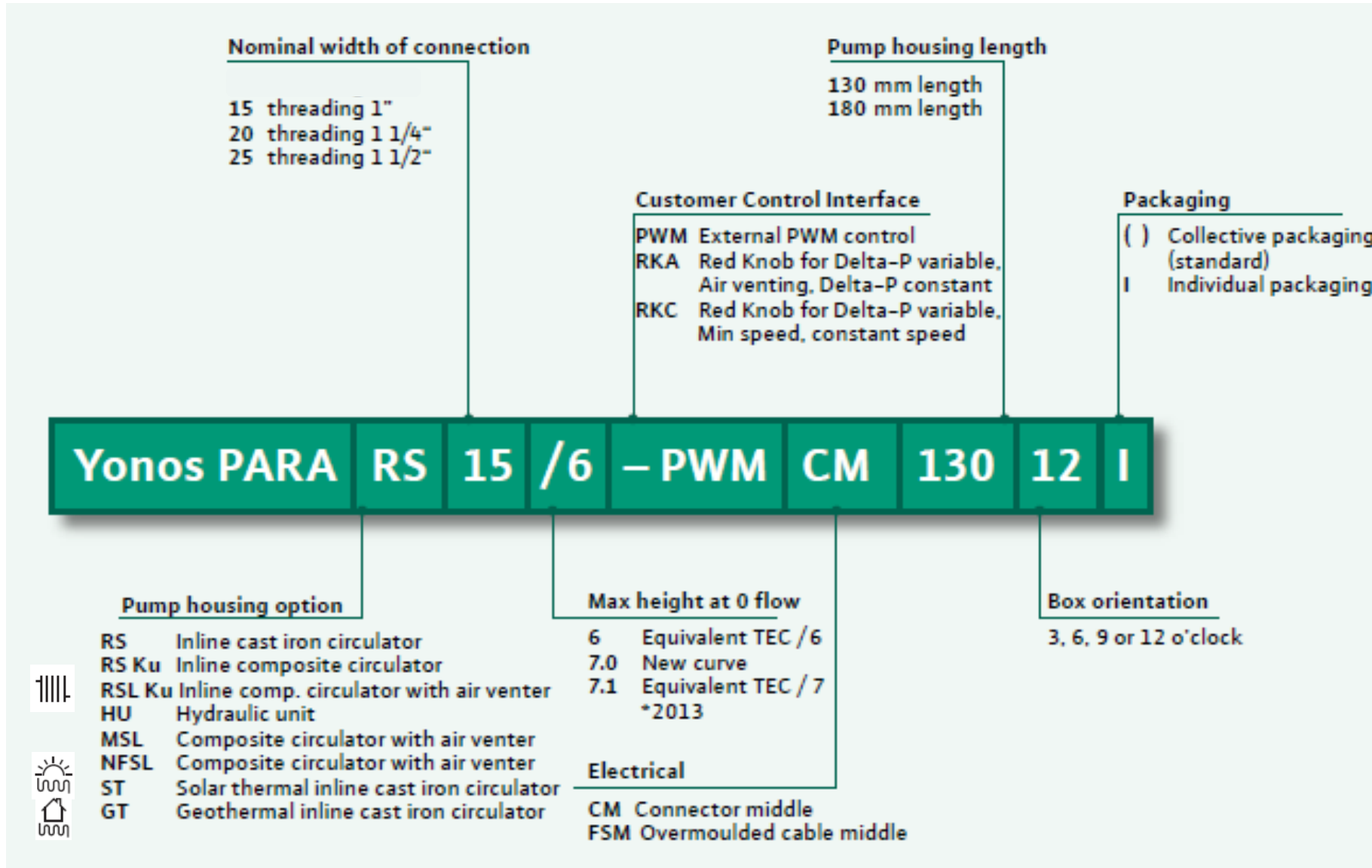


# Dimensions Yonos PARA 7.0 PWM



# Define your own Yonos PARA

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## The benefits in a nutshell

- > Heating, solar (ST) & geothermal (GT) applications
- > Unique LED user interface
- > “Best-in-class” High Efficiency pump of the market
- > Inrush current peak less than 3A
- > Self-protecting modes
- > Designed for optimised integration
- > Water temperature range: -10°C to 110°C
- > Ambient temperature range: 0°C to 70°C
- > Self controlled pump (Red Knob) or externally controlled (PWM signal)
- > Stand-by consumption less than 1W
- > Wide range of cast iron and composite housings
- > Reduced noise level



# Wilo-Yonos PARA Features

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Feature	Description
Admissible pressure	PN6
Degree of protection	IPx4D
Water temperature range	-10°C to +110°C
Ambient temperature	0°C to +70°C (max 60°C at water temp. 90°C)
Power supply	~230 V +10%/-15%, 50/60 Hz (IEC 60038 standard voltage)
Power supply extreme conditions	Pump during start up, minimum voltage: 170 V Pump when running , minimum voltage: 150 V Pump works up to 280 V
Standby consumption (PWM version)	< 1 W
ON / OFF on power supply	300 000 switches during 80 000 duty hours (life time) 5 sec. waiting time
Inrush current peak	< 3 A
Allowed Fluid	<ul style="list-style-type: none"> <li>• Heating Water according to VDI 2035</li> <li>• Water/Glycol mix up to 1:1</li> </ul>
LED user interface	Green: normal; red blinking: abnormal operation
RoHS	Conform



# The right product for each OEM application.



**Wilo-Yonos PARA**

## Application

Hot-water heating systems of all kinds, closed circuits, circulation in solar thermal and heat pump systems.

## Special features/product benefits

- Compact dimensions: easy replacement of asynchronous pumps
- In the temperature range of  $-10^{\circ}\text{C}$  to  $+110^{\circ}\text{C}$
- Convenient setting of the pump via Red Knob technology with operating mode  $\Delta p\text{-c}$  and  $\Delta p\text{-v}$  or constant speeds
- Venting routine
- Optimised design for high ambient temperatures



**Wilo-Stratos TEC (ST)**

## Application

Circulation in solar thermal systems in the medium temperature range of  $0^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$  with peak  $120^{\circ}\text{C}$

## Special features/product benefits

- Electronic performance control via external control signals PWM
- Standard delivery with OEM plug and PWM control cable
- Optimised for high ambient temperatures
- For pressurized and drainback solar systems
- Insulation shell for heating or cooling application



**Wilo-Stratos PARA**

## Application

Hot-water heating systems of all kinds, closed cooling circuits, industrial circulation systems, circulation in solar thermal and geothermal systems.

## Special features/product benefits

- Application in the medium temperature range of  $-10^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$
- Electronic performance control via external control signals 0-10V or PWM
- Convenient setting of the pump via Red Button technology with operating mode  $\Delta p\text{-c}$  and  $\Delta p\text{-v}$ .
- Standard delivery with cable