



Pumpen Intelligenz.

Catalogue

# Yonos PARA

## The new standard in High Efficiency

Glandless Pumps  
and Accessories

**ErP**  
**READY**  
**2015** APPLIES TO  
EUROPEAN  
DIRECTIVE  
FOR ENERGY  
RELATED  
PRODUCTS



Version 12.01

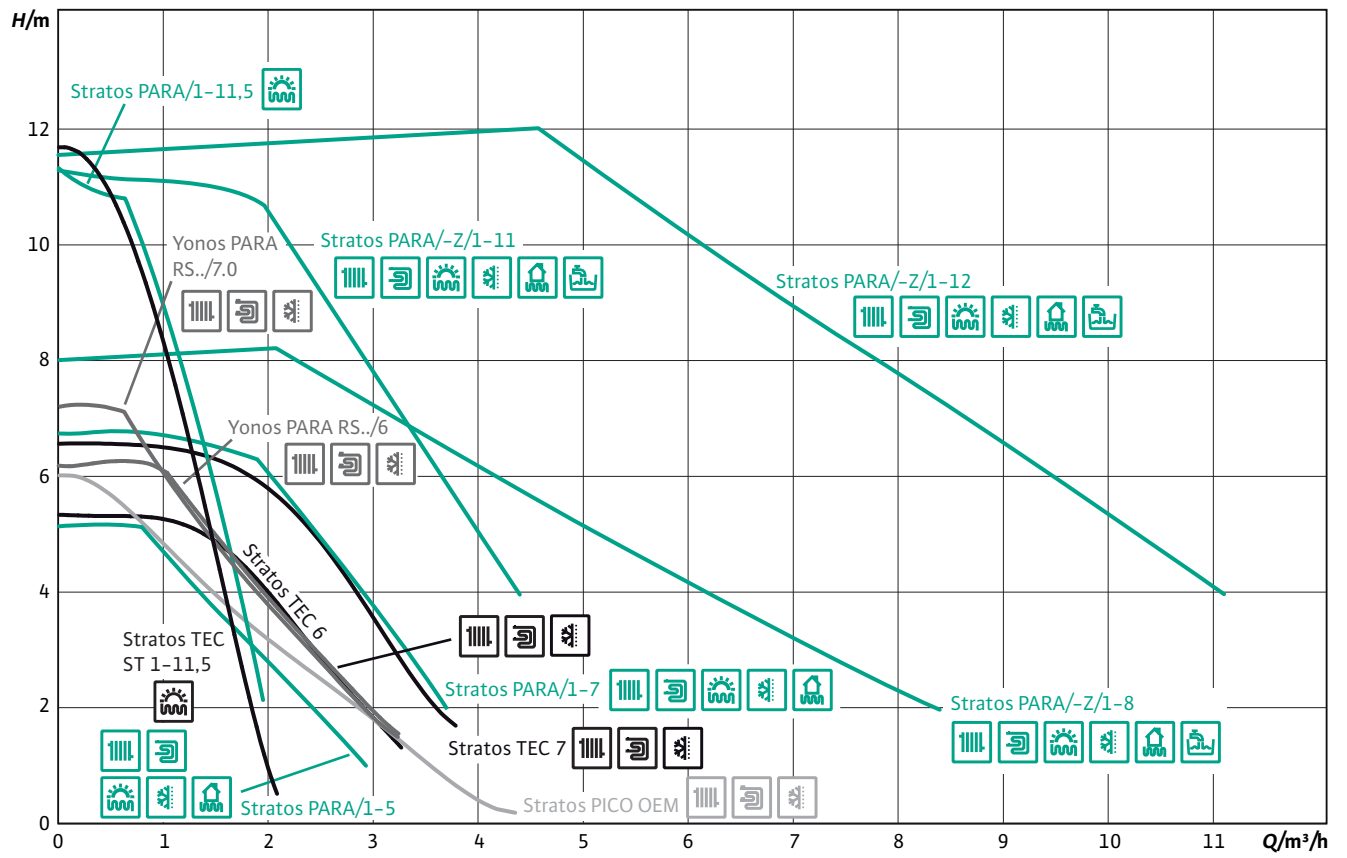


*Pumpen Intelligenz.*

## Heating and cooling



## Hydraulic operational areas



Tolerances of each curve according to EN 1151-1:2006



## Wilo-Yonos PARA



The Wilo-Yonos PARA is the latest high-efficiency pump series which is specially designed in order to fulfill the special demands of the OEM industry. The Wilo-Yonos PARA sets the standard for energy-saving solutions required for integrated hydraulic systems. Equipped with a self controlled Red button or externally PWM control, the Wilo-Yonos PARA is the perfect choice for a one-to-one replacement of most existing electronic pumps. This series is available in various cast iron and composite (available 09/2012) pump housings and is thus highly versatile. At the leading edge of technology, the Wilo-Yonos PARA provides best-in-class performances: it has a three times higher starting torque than most comparable heating pumps and fulfils highest mechanical, electrical and hydraulic requirements.

### Special features/product benefits

- "Best in class" High Efficiency pump of the market due to ECM technology
- Up to 80% electricity savings compared to previous uncontrolled range of heating pumps
- Self controlled pump (Red button) or externally controlled (PWM signal)
- Unique LED user interface gives information about the pump functioning
- High starting torque for reliable start-up
- Hot water heating systems of all kinds, in the temperature range of 0 °C to +95 °C
- Designed for easy integration due to compact design
- Inrush current peak less than 3A
- Self protecting modes of electronic motor
- Preventing flow noises
- Stand-by consumption less than 1 W
- Functions adapted specially to the demands of the OEM market
- Standard delivery with power cable and signal cable
- Cathaphoretically coated (KTL) cast iron pump housing to prevent corrosion when condensation occurs, or OEM composite (available 09/2012) pump housing

### Heating application

In nearly all circulation systems, correctly sized controlled glandless pumps ensure adequate heat supply at all times at significantly reduced energy costs, while at the same time preventing noise generation.

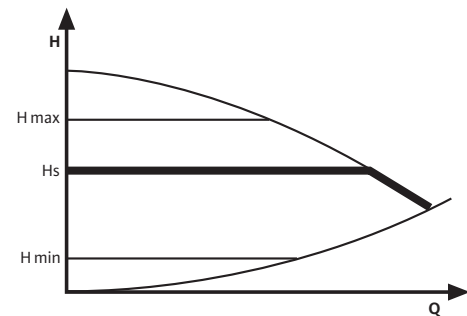
## Electronic performance control

### Self controlled model with Red button (Type RKA/RKC)

#### Available control modes

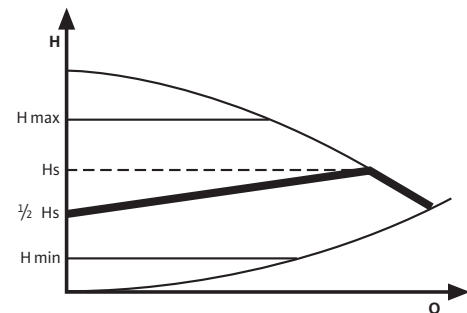
##### Control mode $\Delta p-c$ :

In the  $\Delta p-c$  control mode, the electronic module keeps the differential pressure generated by the pump constant at the set differential pressure setpoint  $H_s$  over the permissible volume flow range.



##### Control mode $\Delta p-v$ :

In the  $\Delta p-v$  control mode, the electronic module changes the differential pressure setpoint to be maintained by the pump in linear fashion between  $H_s$  and  $\frac{1}{2} H_s$ . The differential pressure setpoint value  $H$  varies with the volume flow  $Q$ .



### Venting routine

The integrated venting routine supports a bleeding of the overall heating system. After a manual setting, the routine runs for 10 minutes alternating at low and high speed of the pump. At the end of the process, the pump switches automatically to a pre-set speed. After that, the desired control mode can be set at the red button.

### Constant speed I, II, III

In this operating mode the pump is not self regulating its speed. The pump is operating constantly with a fixed speed in pre-set position.

## Wilo-Yonos PARA

### Manual control panel

#### Control button

The control mode and the differential pressure setpoint at  $\Delta p-c$  for constant differential pressure,  $\Delta p-v$  for variable differential pressure and pre-setting the constant speed can be set easily and safely, directly at the pump. Depending on customer wishes, a pre-setting of the control mode/setpoint can be done at the factory.

#### RKA type



#### RKA

- Local setting of the constant differential pressure setpoint at  $\Delta p-c$  on the right side
- Local setting of the variable differential pressure setpoint at  $\Delta p-v$  on the left side
- Medium position for activating the venting function

#### RKC type



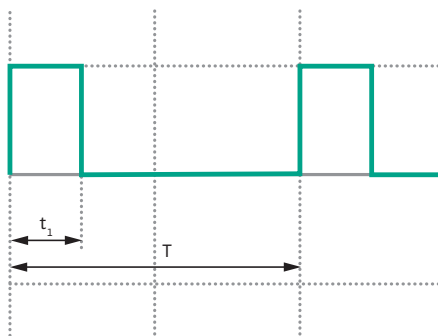
#### RKC

- Local setting of the variable differential pressure setpoint at  $\Delta p-v$  on the left side
- A fixed constant speed is set on the right side. In this operating mode the pump is not self regulating its speed.
- Medium position for minimum speed

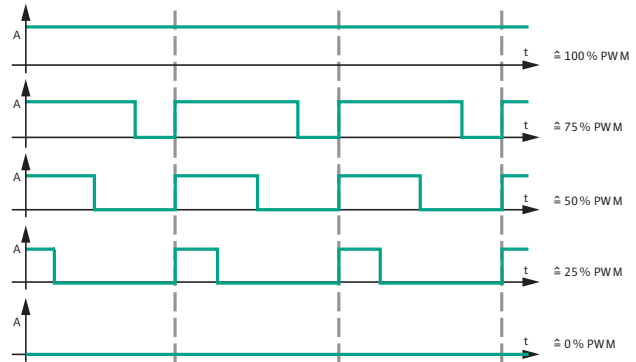
### External control via a PWM signal

The actual/setpoint level assessment required for control is referred to a remote controller. The remote controller sends a PWM signal as an actuating variable to the Wilo-Stratos PARA.

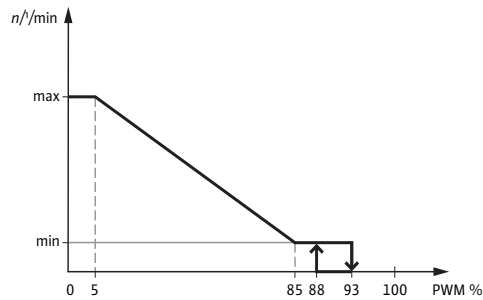
The PWM signal generator gives a periodic order of pulses to the pump (the duty cycle), according to DIN IEC 60469-1. The actuating variable is determined by the ratio between pulse duration and the pulse period. The duty cycle is defined as a ratio without dimension, with a value of 0 ... 1 % or 0 ... 100 %. This is explained in the following with ideal pulses which form a rectangular wave.



$$t_1 / T = 0,25 = 25\%$$



### PWM signal logic 1 (heating):



### PWM input signal [%]

- < 5 Pump runs at maximum speed
- 5-85 Pump speed decreases linearly from maximum to minimum
- 85-93 Pump runs at minimum speed (operation)
- 85-88 Pump runs at minimum speed (start-up)
- 93-100 Pump stops (Standby)

Signal frequency: 100 Hz-5000 Hz (1000 Hz nominal)

Signal amplitude: 5V-15V (min. power 5mA)

Signal polarity: single

## Wilо-Yonos PARA

### Electrical connection

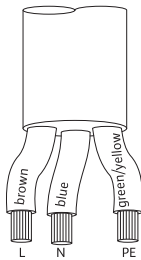
To ensure a safe and easy electrical connection, the Wilо-Yonos PARA pumps are equipped with a mains cable or, depending on the available functions, with a mains and control cable as standard.

### Mains connection

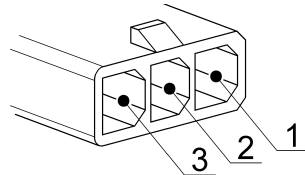
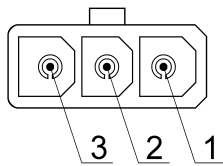
For mains power supply 1~230 V/50 Hz

**Standard: 3-core cable**

black/brown: L1, 1~230V/50Hz  
 blue: Neutral N  
 yellow/green: Earth conductor



### Optional: OEM plug



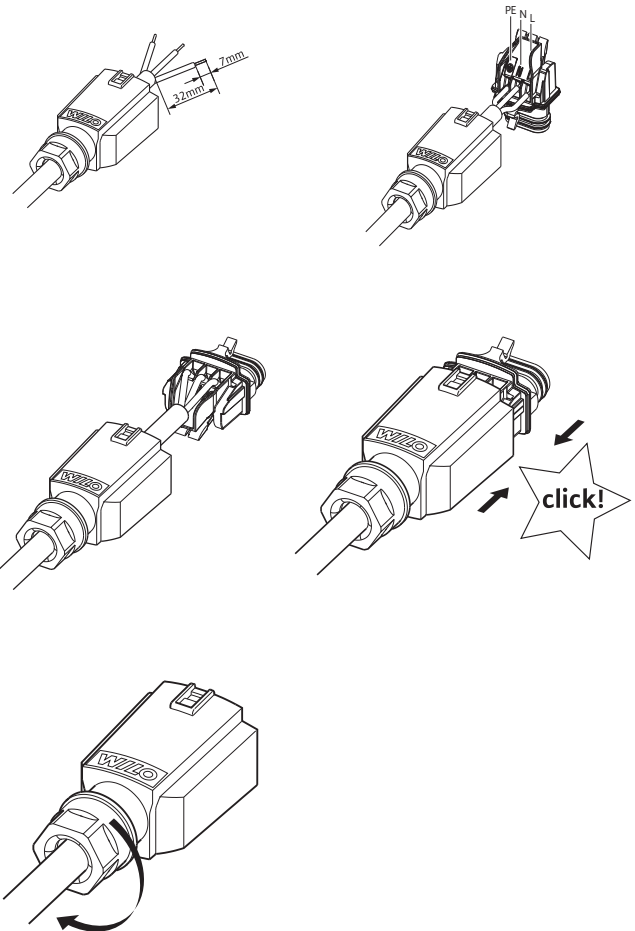
- 1) L1, 1~230 V/50 Hz
- 2) Neutral N
- 3) Earth conductor

The mating plug to the OEM-plug can be ordered with one of the following suppliers. (Wilо does not assume any liability for the products supplied by these manufacturers):

LTE ([www.lte.it](http://www.lte.it))  
 FACON ([www.facon.it](http://www.facon.it))

### Optional: Wilо Connector

No tools are required to connect the mains cable to the Wilо-Connector:



### Control cables

#### 2-core cable

For connecting the analogue interface PWM

PWM + (brown)  
 PWM - (blue)



# Planning guide

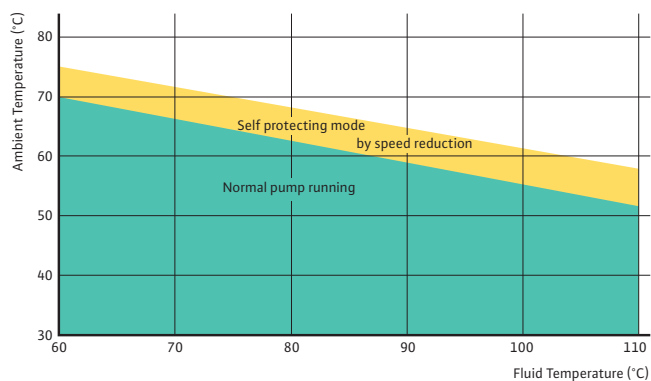
## Wilo-Yonos PARA

### Available cable versions

Mains connection	
Standard	3-core cable 1 m with brassed end splices
Optional	<ul style="list-style-type: none"><li>- 0.5 m cable with end splices</li><li>- 1.5 m cable with end splices</li><li>- 2 m cable with end splices</li><li>- according to customer specification</li></ul>
2-core control cable	
Standard	1 m with brassed end splices
Optional	<ul style="list-style-type: none"><li>- 0.5 m with end splices</li><li>- 1.5 m with end splices</li><li>- 2 m with end splices</li><li>- according to customer specification</li></ul>

### Permissible temperature range

The Wilo-Yonos PARA range is equipped with a self protecting mode: In the event of too high temperature, outside the permissible temperature range, the electronics reduces automatically the power consumption until normal operating conditions return.

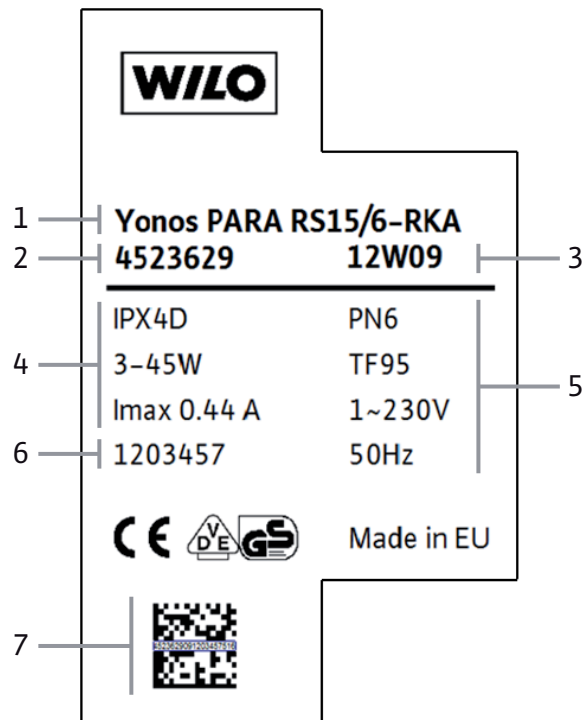


Example: at a fluid temperature of 90 °C and at an ambient temperature of 59 °C, the delivery head can decrease by 0.5 m depending on the pressure losses of the system.



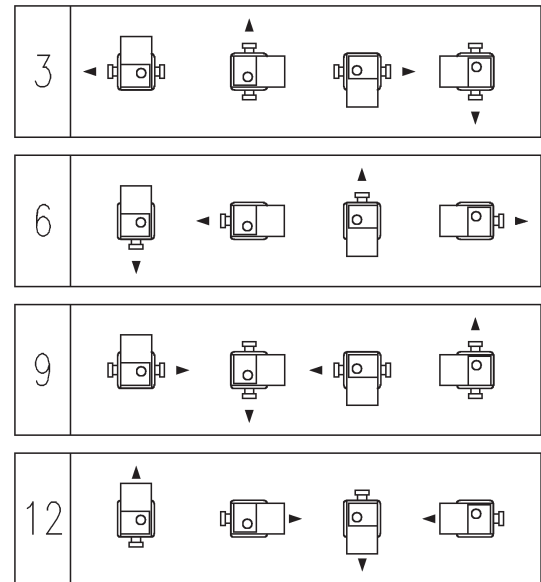
## Wilo-Yonos PARA

### Designation, name plate of the Wilo-Stratos PARA/-Z series



### Permitted installation positions

#### Wilo-Yonos PARA



3, 6, 9 and 12 o'clock are the electronic module positions for the indicated direction of flow at the pump housing.

- 1 Pump type
- 2 Article number
- 3 Production date (year/week)
- 4 Protection class IP/Power consumption/Electricity
- 5 Operating pressure/max. Fluidtemperature/Voltage/Frequency
- 6 Wilo Label number
- 7 Code and serial number

# Heating and cooling

## High-efficiency pumps

### Series overview

#### Series: Wilo-Yonos PARA



#### > Application

Hot-water heating systems of all kinds, cooling applications

#### > Special features/product advantages

- Red Knob technology or PWM controlled
- Unique LED user interface
- Self-protecting modes
- Designed for optimised integration
- Water temperature range: 0°C to 95°C
- Ambient temperature range: 0°C to 70°C
- Self controlled pump (Red Knob) or externally controlled (PWM signal)

#### > Additional information

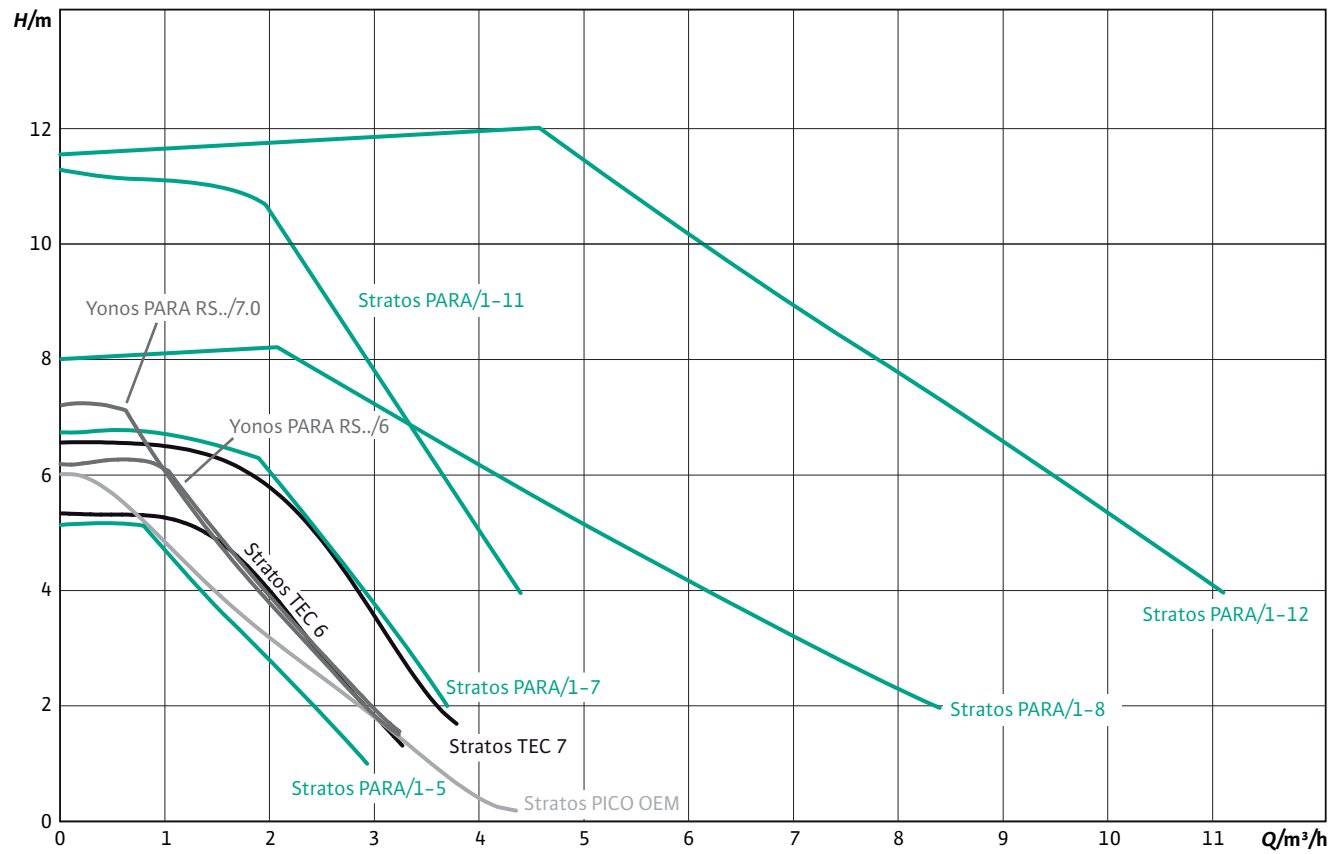
- Yonos PARA Red Knob 15/6, 20/6, 25/6, 30/6 ..... 13
- Yonos PARA PWM 15/7.0, 20/7.0, 25/7.0, 30/7.0 ..... 16

#### Page



### Series overview

#### Hydraulic operational areas



Tolerances of each curve according to EN 1151-1:2006

# Heating and cooling

## High-efficiency pumps

Equipment/function	Wilo-Yonos PARA...	
	RKA /RKC	PWM
<b>Operating modes</b>		
Manual control mode (n=constant)	• (RKC)	• via PWM
$\Delta p$ -c for constant differential pressure	• ( $H_{min.} = 1 \text{ m}$ , $H_{max.} = 6 \text{ m}$ )	–
$\Delta p$ -v for variable differential pressure	• ( $H_{min.} = 1 \text{ m}$ , $H_{max.} = 6 \text{ m}$ )	–
<b>Manual functions</b>		
Operating mode setting	•	–
Differential-pressure setpoint setting	•	•
<b>Automatic functions</b>		
Infinitely variable power adjustment depending on the operating mode	•	•
Deblocking function	•	•
Soft start	•	•
Full motor protection with integrated trip electronics	–	–
Venting routine	• (RKA)	–
<b>External control functions</b>		
Control input "Analogue In 0 ... 10 V" with cable break function (remote speed adjustment)	–	–
Control input "Analogue In 0 ... 10 V" without cable break function (remote setpoint adjustment)	–	–
Control input PWM	–	•
<b>Signal and display functions</b>		
Collective fault signal (potential-free NC contact)	–	–
Individual run signal (potential-free NO contact)	–	–
<b>Equipment/scope of delivery</b>		
Red button	•	–
Version without red button (=external control)	–	•
Wrench attachment point on pump body	•	•
Including power cable	•	•
Including power plug	–	–
Including control cable	–	•
Including seals for threaded connection	on request	on request
Including installation and operating instructions	on request	on request
Including thermal insulation	on request	on request
Incl. KlimaForm for cooling	–	–
Individual packaging	on request	on request
Collective packaging	•	•

• = available, – = not available

\* see table "Possible combinations of functions and equipment"

### Series description Wilo-Yonos PARA Red Knob 15/6, 20/6, 25/6, 30/6



#### Design

Glandless circulation pump with cast iron pump housing and threaded connection. EC-motor with automatic power adjustment and self-protecting modes. Operation by Red Knob technology and delivered with power cable.

#### Application

Hot-water heating systems of all kinds, cooling applications

#### Type key

Example:	<b>Wilo-Yonos PARA RS 15/6 RKA FS 130 12 I</b>
<b>Yonos</b>	Electronically controlled high-efficiency pump
<b>PARA</b>	pump range adapted to requirements of the OEM market
<b>RS</b>	Heating inline cast iron pump housing
<b>15/</b>	Nominal diameter: 15 threading 1" <ul style="list-style-type: none"> <li>20 threading 1 1/4"</li> <li>25 threading 1 1/2"</li> <li>30 threading 2"</li> </ul>
<b>6</b>	Max delivery height in [m] at Q = 0 m <sup>3</sup> /h
<b>RKA</b>	The pump is controlled by Red Knob technology: ΔP-v / ΔP-c RKC = ΔP-v, constant speed I, II, III
<b>FS</b>	Overmoulded cable with brassed end splices. Optional: connector
<b>130</b>	Pump housing length: 130 mm or 180 mm
<b>12</b>	Box orientation
<b>I</b>	Individual packaging
<b>(not specified)</b>	Collective packaging (standard)

#### Technical data

##### Approved fluids (other fluids on request)

Heating water (in accordance with VDI 2035)	•
Water-glycol mixtures (max. 1:1; above 20% admixture, the pumping data must be checked)	•

##### Power

Max. delivery head	6.2 m
Max. volume flow	3.3 m <sup>3</sup> /h

##### Permitted field of application

Temperature range for applications in HVAC systems at max. ambient temperature	of 57°C = 0° C to 95° C of 59°C = 0° C to 90° C of 67°C = 0° C to 70° C
Maximum static pressure	6 bar

##### Electrical connection

Mains connection	1~230 V, 50/60 Hz
------------------	-------------------

##### Motor/electronics

Electromagnetic compatibility	EN 61800-3
Emitted interference	EN 61000-6-3/EN 61000-6-4
Interference resistance	EN 61000-6-2/EN 61000-6-1
Speed control	Frequency converter
Protection class	IPX 4D
Insulation class	F

##### Minimum suction head at suction port for avoiding cavitation at water pumping temperature

Minimum suction head at 50 / 95 / 110 °C	0.5 / 4.5 / 11 m
--	------------------

• = available, - = not available

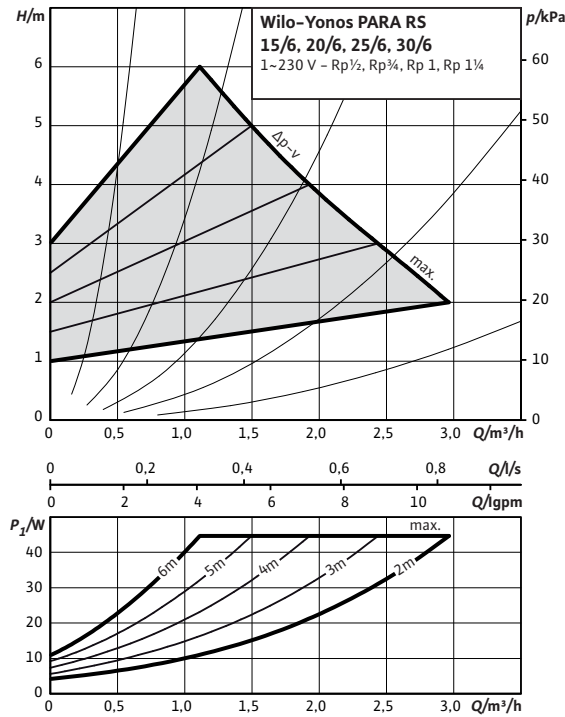
# Heating and cooling

## High-efficiency pumps

### Pump curves Wilo-Yonos PARA Red Knob 15/6, 20/6, 25/6, 30/6

#### Wilo-Yonos PARA 15/6, 20/6, 25/6, 30/6

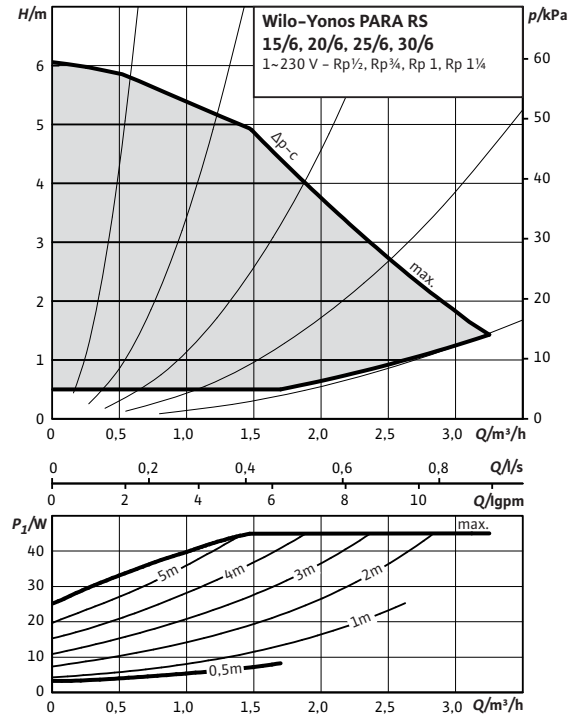
##### $\Delta p-v$ (variable)



Tolerances of each curve according to EN 1151-1:2006

#### Wilo-Yonos PARA 15/6, 20/6, 25/6, 30/6

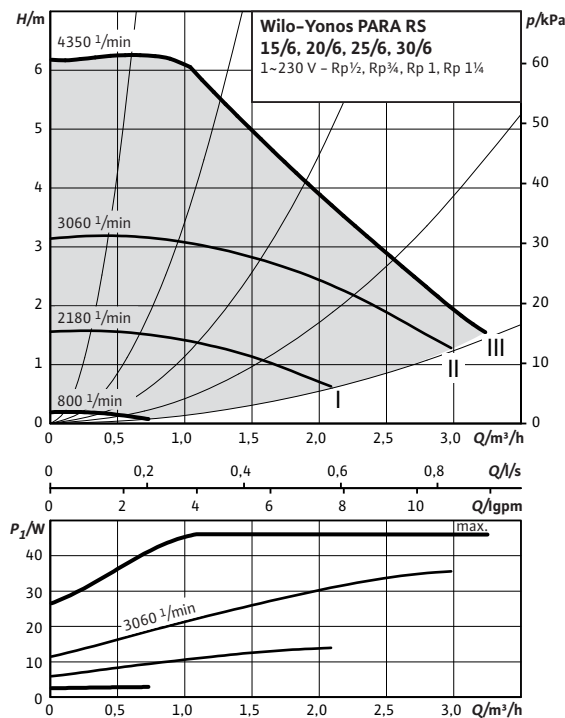
##### $\Delta p-c$ (constant)



Tolerances of each curve according to EN 1151-1:2006

#### Wilo-Yonos PARA 15/6, 20/6, 25/6, 30/6

##### Constant speed I, II, III



Tolerances of each curve according to EN 1151-1:2006

### Dimensions, motor data Wilo-Yonos PARA Red Knob 15/6, 20/6, 25/6, 30/6

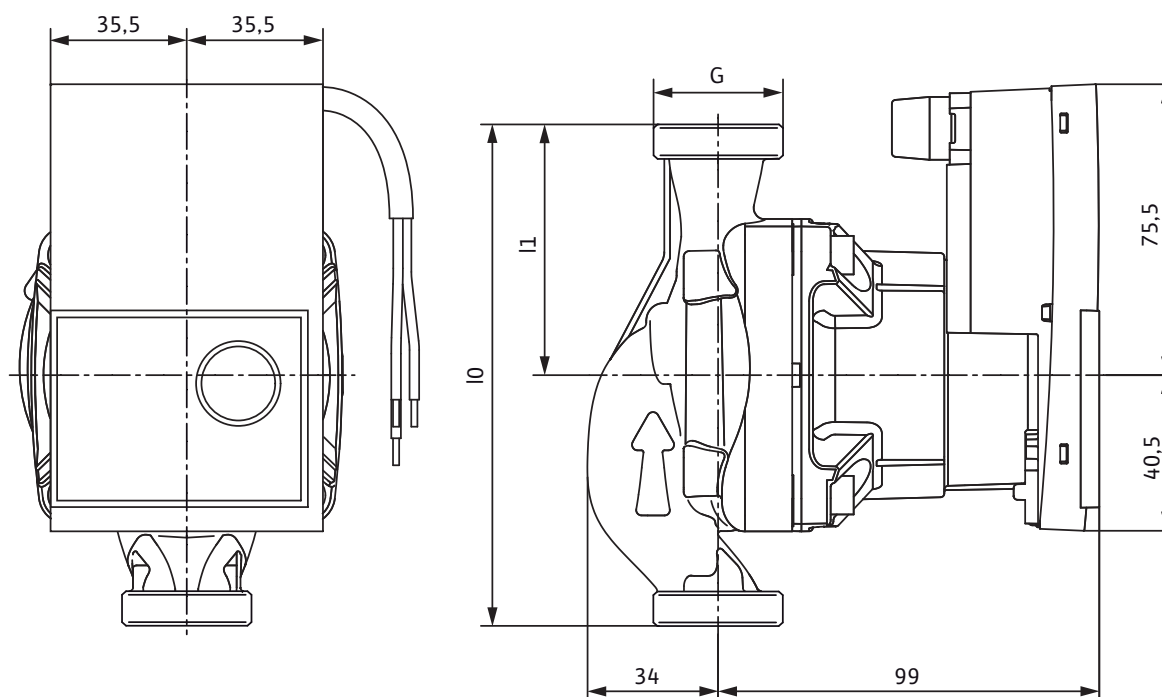
#### Motor data

Wilo-Yonos PARA...	Nominal motor power	Speed	Power consumption 1~230 V	Current at 1~230V	Motor protection
	$P_2$	$n$	$P_1$	$I$	–
	W	rpm	W	A	–
RS .../6 RKA/RKC	37	800 - 4250	3-45	0.03 - 0.44	integrated

#### Materials

Wilo-Yonos PARA...	Pump housing	Impeller	Pump shaft	Bearing
RS .../6 RKA/RKC	Cast iron with cathaphoresis treatment	PP composite with GF 40%	Stainless steel	Carbon, metal impregnated

#### Dimension drawing



#### Dimensions, weights

Wilo-Yonos PARA...	Threaded pipe union	Thread	Overall length	Dimensions	Weight approx.
	–	–	$l_0$	$l_1$	$m$
	–	–	mm		kg
RS 15/6	Rp 1/2	G 1	130	65	1.6
RS 20/6	Rp 3/4	G 1 1/4	130	65	1.6
RS 25/6	Rp 1	G 1 1/2	130	65	1.7
RS 25/6	Rp 1	G 1 1/2	180	90	2
RS 30/6	Rp 1 1/4	G 2	180	90	2,1

# Heating and cooling

## High-efficiency pumps

### Series description Wilo-Yonos PARA PWM 15/7.0, 20/7.0, 25/7.0, 30/7.0



#### Design

Glandless circulation pump with cast iron pump housing and threaded connection. EC-motor with automatic power adjustment. Standard delivery with OEM-plug and PWM-cable. Remote Control via external PWM signal. LED user interface.

#### Application

Hot-water heating systems of all kinds, cooling applications

#### Type key

Example:	<b>Wilo-Yonos PARA RS 15/7.0 PWM FS 130 12 I</b>
<b>Yonos</b>	Electronically controlled high-efficiency pump
<b>PARA</b>	pump range adapted to requirements of the OEM market
<b>RS</b>	Heating inline cast iron pump housing
<b>15/</b>	Nominal diameter: 15 threading 1" <ul style="list-style-type: none"> <li>20 threading 1 1/4"</li> <li>25 threading 1 1/2"</li> <li>30 threading 2"</li> </ul>
<b>7.0</b>	Nominal delivery head range [m]
<b>PWM</b>	The pump is controlled by an external system via PWM signal
<b>FS</b>	Overmoulded cable with brassed end splices Optional: connector
<b>130</b>	Pump housing length: 130 mm or 180 mm
<b>12</b>	Box orientation
<b>I</b>	Individual packaging
<b>(not specified)</b>	Collective packaging (standard)

#### Technical data

##### Approved fluids (other fluids on request)

Heating water (in accordance with VDI 2035)	•
Water-glycol mixtures (max. 1:1; above 20% admixture, the pumping data must be checked)	•

##### Power

Max. delivery head	7.2 m
Max. volume flow	3.3 m <sup>3</sup> /h

##### Permitted field of application

Temperature range for applications in HVAC systems at max. ambient temperature	of 57°C = 0° C to 95° C of 59°C = 0° C to 90° C of 67°C = 0° C to 70° C
Maximum static pressure	6 bar

##### Electrical connection

Mains connection	1~230 V, 50/60 Hz
------------------	-------------------

##### Motor/electronics

Electromagnetic compatibility	EN 61800-3
Emitted interference	EN 61000-6-3/EN 61000-6-4
Interference resistance	EN 61000-6-2/EN 61000-6-1
Speed control	Frequency converter
Protection class	IPX 4D
Insulation class	F

##### Minimum suction head at suction port for avoiding cavitation at water pumping temperature

Minimum suction head at 50 / 95 / 110 °C	0.5 / 4.5 / 11 m
--	------------------

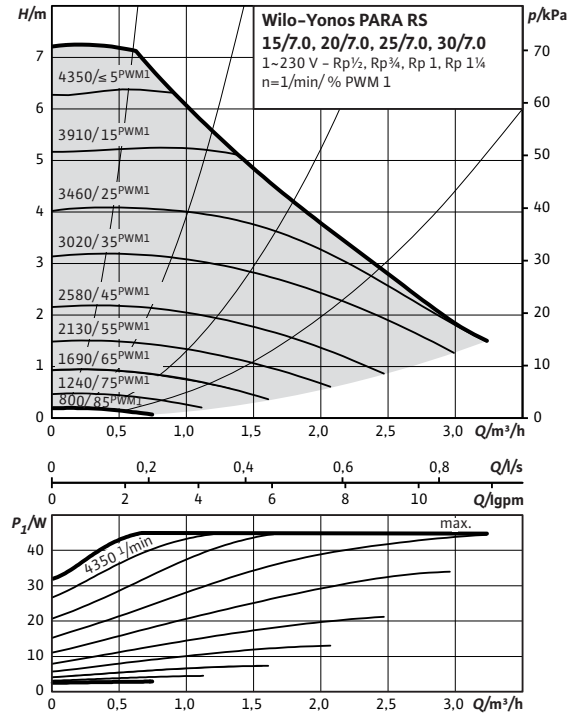
• = available, - = not available



### Pump curves Wilo-Yonos PARA PWM 15/7.0, 20/7.0, 25/7.0, 30/7.0

#### Wilo-Yonos PARA 15/7.0, 20/7, 25/7.0, 30/7.0

##### External control via PWM



Tolerances of each curve according to EN 1151-1:2006

# Heating and cooling

## High-efficiency pumps

### Dimensions, motor data Wilo-Yonos PARA PWM 15/7.0, 20/7.0, 25/7.0, 30/7.0

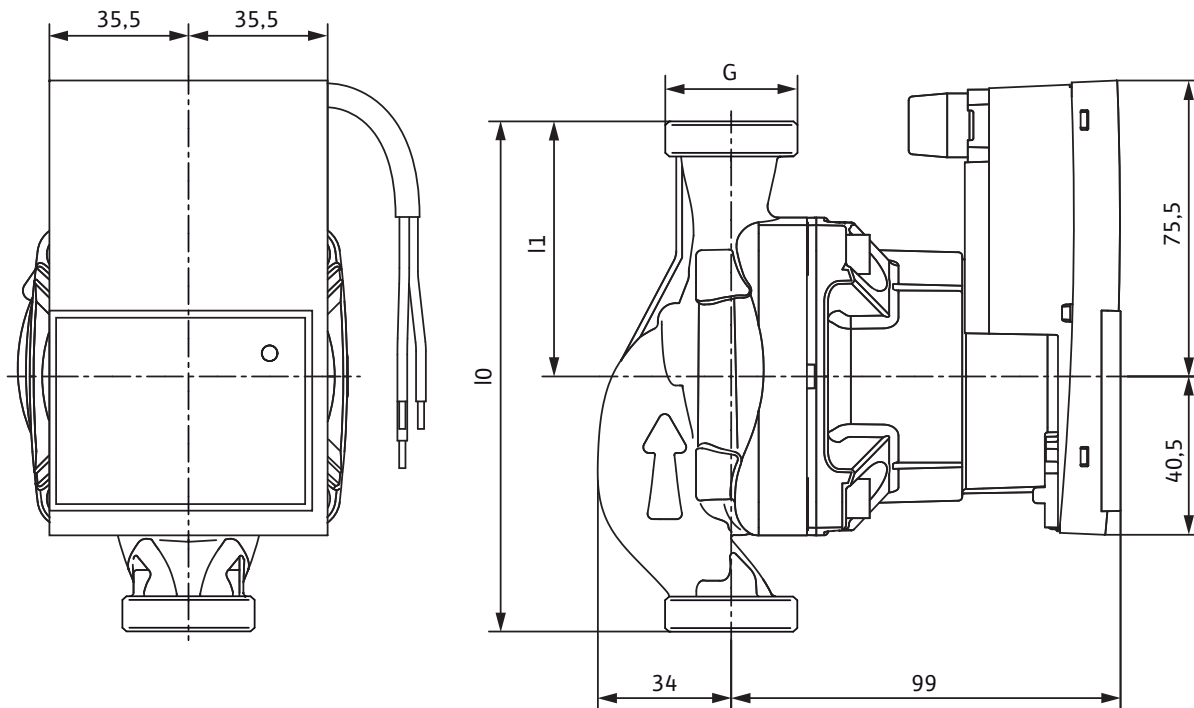
#### Motor data

Wilo-Yonos PARA...	Nominal motor power	Speed	Power consumption 1~230 V	Current at 1~230V	Motor protection
	$P_2$	$n$	$P_1$	$I$	–
	W	rpm	W	A	–
RS .../7.0 PWM	37	800 - 4250	3-45	0.03 - 0.44	integrated

#### Materials

Wilo-Yonos PARA...	Pump housing	Impeller	Pump shaft	Bearing
RS .../7.0 PWM	Cast iron with cataphoresis treatment	PP composite with GF 40%	Stainless steel	Carbon, metal impregnated

#### Dimension drawing



#### Dimensions, weights

Wilo-Yonos PARA...	Threaded pipe union	Thread	Overall length	Dimensions	Weight approx.
	–	–	$l_0$	$l_1$	$m$
	–	–		mm	kg
RS 15/7.0	Rp 1/2	G 1	130	65	1.6
RS 20/7.0	Rp 3/4	G 1 1/4	130	65	1.6
RS 25/7.0	Rp 1	G 1 1/2	130	65	1.7
RS 25/7.0	Rp 1	G 1 1/2	180	90	2
RS 30/7.0	Rp 1 1/4	G 2	180	90	2,1





Pumpen Intelligenz.

Wilo Intec  
50 av. Casella  
F-18700 Aubigny sur Nère  
T +33 2 48 81 62 62  
F +33 2 48 58 20 29  
information@wilointec.com  
www.wilointec.com

Vincent FLEURIER  
Sales & Marketing Director  
T: +33 2 48 81 62 74  
vincent.fleurier@wilointec.com

Hakan ARPINAR  
Key Account Manager Turkey  
T: +90 530 035 8439  
hakan.arpinar@wilo.com.tr

Pierre BEQUET  
Key Account Manager  
T: +33 2 48 81 62 85  
pierre.bequet@wilointec.com

Robert CARRE  
Key Account Manager France & Spain  
T: +33 2 48 81 62 72  
robert.carre@wilointec.com

Dario FRAZZA  
Key Account Manager Italy  
T: +39 335 762 6181  
dario.frazza@wilointec.com

Thomas MERSCHEIM  
Key Account Manager Germany  
T: +49 172 352 3933  
thomas.merscheid@wilo.com

Gilles MOULIN  
Sales Coordinator Subsidiaries  
T: +33 2 48 81 62 25  
gilles.moulin@wilointec.com

Kevin PADMORE  
Sales Manager UK  
T: +44 776 801 8879  
kevin.padmore@wilointec.com

Ronald RIJKHOFF  
Key Account Manager Netherlands  
T: +31 653 126 749  
ronald.rijkhoff@wilo.nl