



Pioneering for You

*Wilo-OEM Solutions*

# Wilo-Para STG \*\*-\*\*\*/7-50 Datasheet

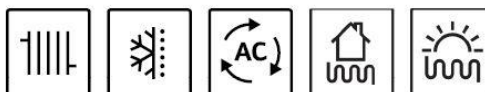


# Wilo-Para STG \*\*-\*\*\*/7-50



One fit-all

## Field of application



Heating  
Cooling  
Air-conditioning  
Geothermal  
Solar

## Type key example

Para STG 15-130/7-50

### WILO

### High Efficiency pump for heating application

STG	Inline cast iron pump housing
15	Threaded connection DN15 (25, 30: also available)
130	Pump housing length 130 (180: also available)
7	8 = delivery head in [m] at Q = 0 m <sup>3</sup> /h
50	Max power consumption
-	The pump is controlled by Push button technology SC = ΔP-c, constant speed I, II, III or iPWM1/2
12	Control box orientation 12 o'clock (3, 6, 9 o'clock: also available)

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)
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**Power**

Energy Efficiency Index (EEI)	≤ 0.20
Max. delivery head	8 m
Max. volume flow	3,5 m³/h

**Permitted field of application**

Temperature range for applications in HVAC systems at max. ambient temperature. Limit values for continuous operation at maximum rated power	Of 50°C = 0 to 105°C Of 55°C = 0 to 90°C Of 60°C = 0 to 77°C Of 65°C = 0 to 60°C Min fluid temp: -20°C
Maximum static pressure	PN 10

**Electrical connection**

Mains connection	1~230 V +10%/-15%, 50/60 Hz (IEC 60038 standard voltage)
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**Motor/electronics**

Low voltage directive	2014/95/EC Conform
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
Protection class	IPx4D
Insulation class	F

**Minimum suction head at suction port to avoid cavitation at water pumping temperature**

Minimum suction head at 50/95°C	0.5/4.5 m
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**Motor data**

Para	Speed	Power consumption 1-230 V	Current at 1-230 V	Motor protection
	n	P1	I	-
	rpm	W	A	-
STG ** /7-50	700 - 4700	1-50	0.02-0.44	Integrated

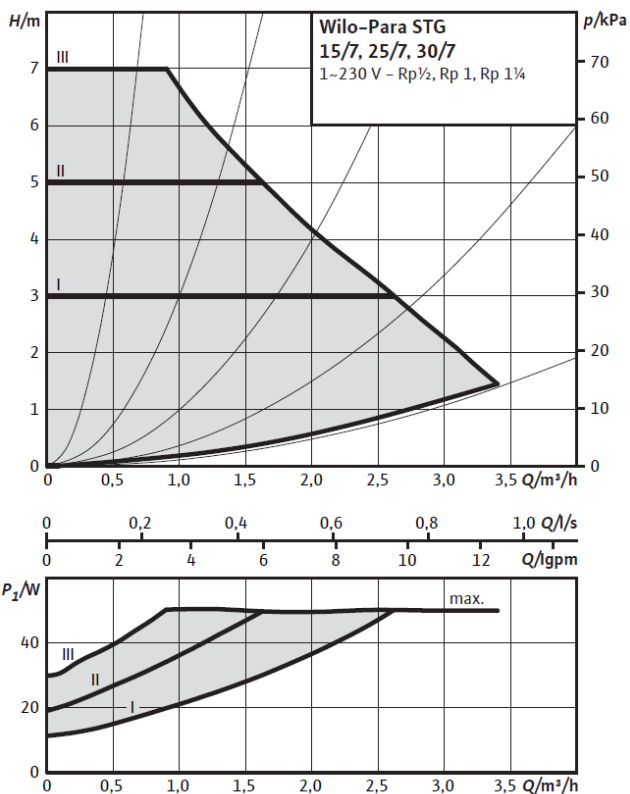
**Materials**

Para	Pump housing	Impeller	Pump shaft	Bearing
STG ** /7-50	Cast iron with cataphoresis treatment	PP composite with GF 40%	Stainless steel	Carbon

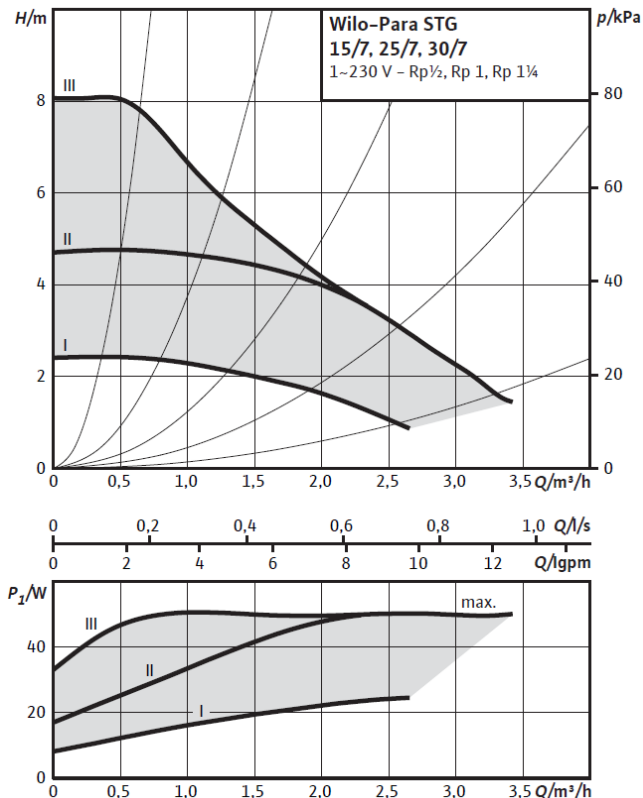
# Hydraulic operational area



$\Delta P$ -c (constant)



Constant speed I, II, III



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Datasheet Wilo-Para \*\* 8/SC 03/07

### Hydraulic operational area

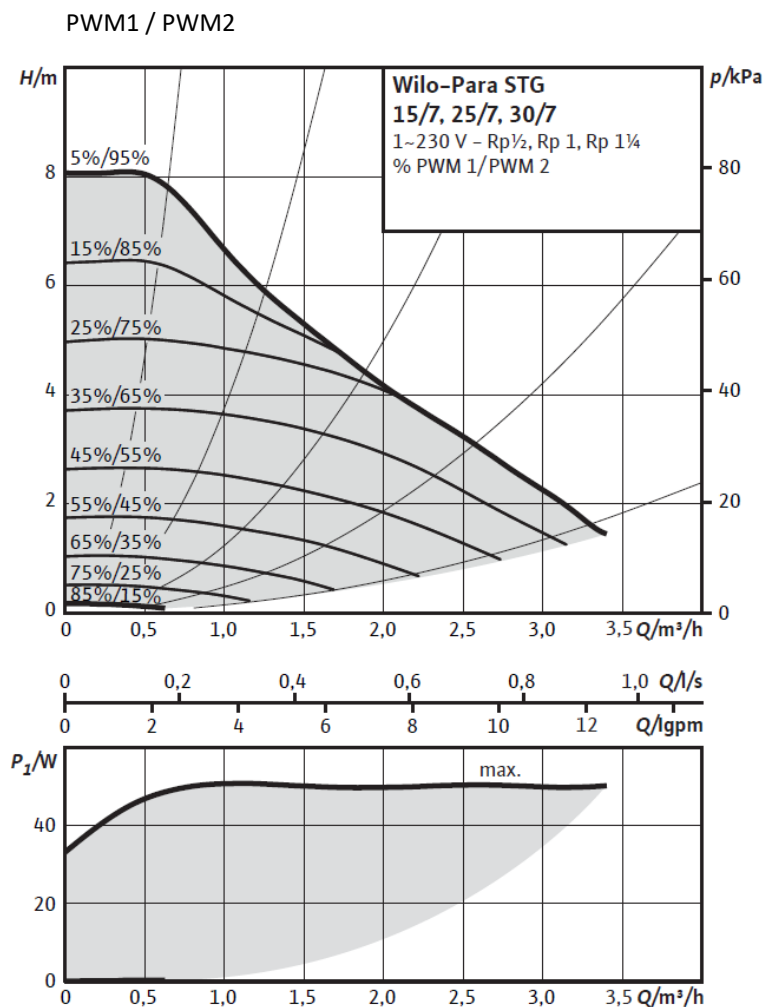
Heating

Standard factory setting



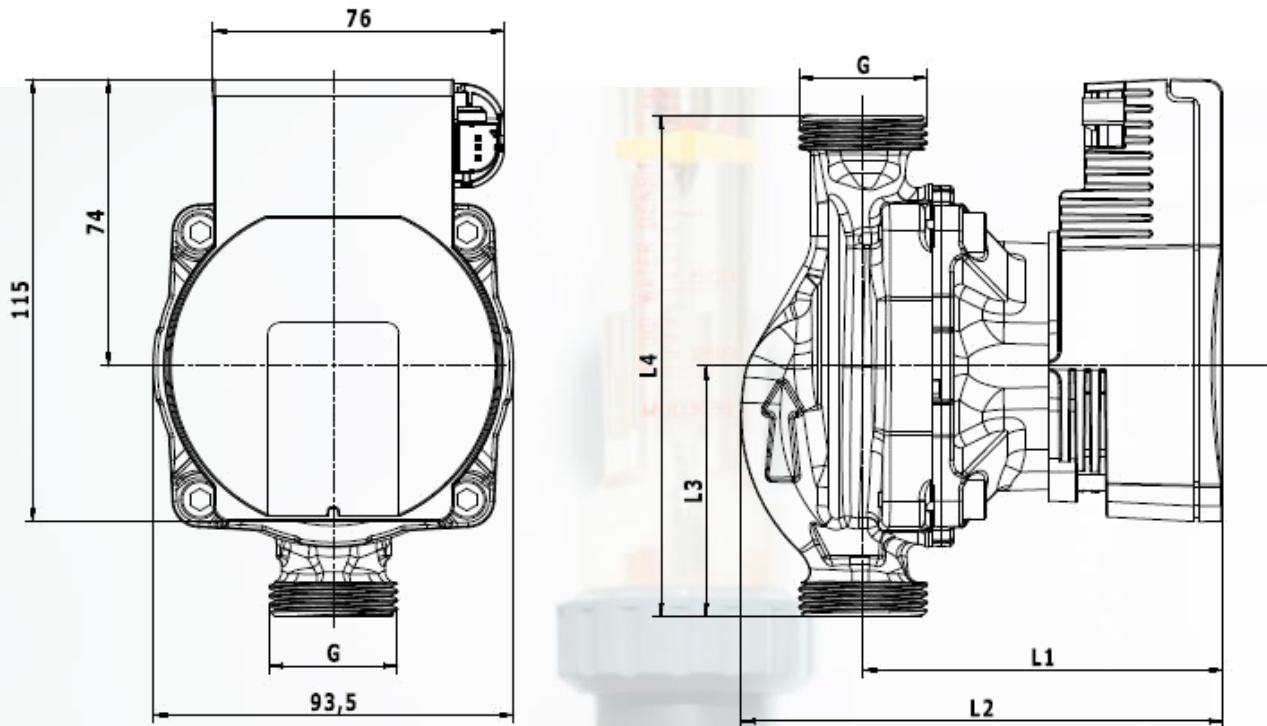
# Hydraulic operational area

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# Dimensions



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## Technical data

Designation	Para STG 15-130/7-50	Para STG 25-130/7-50	Para STG 25-180/7-50	Para STG 30-180/7-50
Threaded pipe union	Rp 1/2	Rp 1	Rp 1	Rp 1 1/4
Thread	G 1	G 1 1/2	G 1 1/2	G 2
Dimensions L1	94 mm	94 mm	94 mm	94 mm
Dimensions L2	125 mm	127 mm	127 mm	127 mm
Dimensions L3	65 mm	65 mm	90 mm	90 mm
Dimensions L4	130 mm	130 mm	180 mm	180 mm
Weight approx. m	1.5 kg	1.7 kg	1.8 kg	2 kg





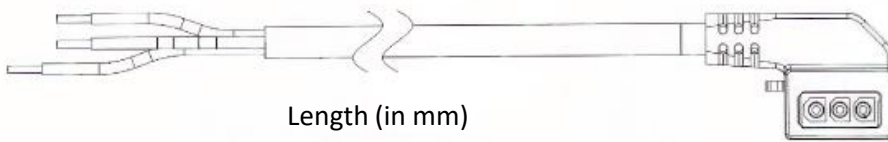
# Electrical Power connections

## Integrated Molex 3-way connector

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### Accessories power cable



### Available mains cables

**Overmoulded power connector with brass end splices and type Facon PR260 on terminal box side (disconnection possible)**

cable length 500mm	4530966
cable length 1000mm	4524578
cable length 1500mm	4530763
cable length 2000mm	4527857

**Not assembled**



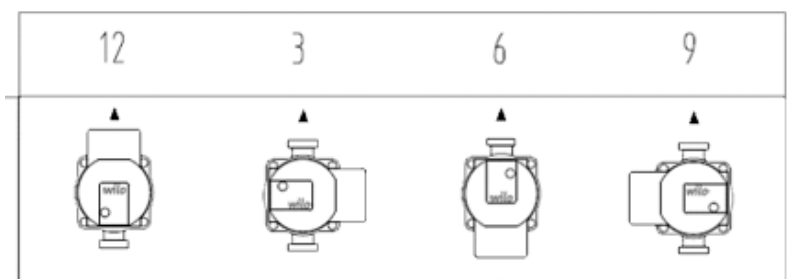
Molex 3 ways



WS8

### Electrical Box orientation

▲ Flow direction



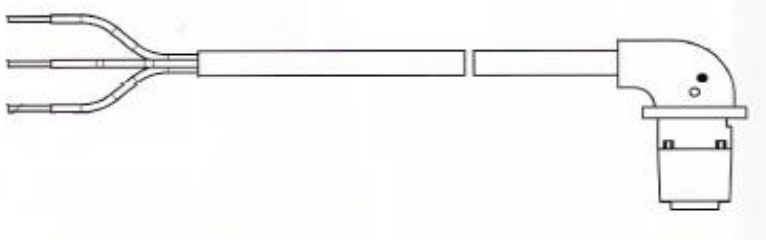


# Electrical Signal connections

## Front signal connection



## Accessories signal cable



### Available mains cables

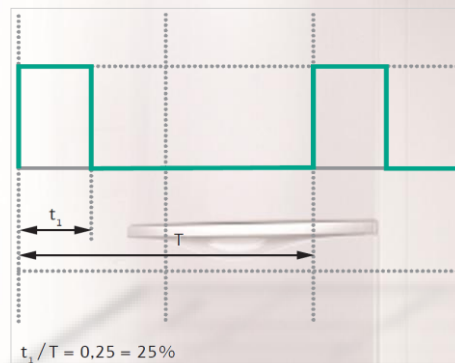
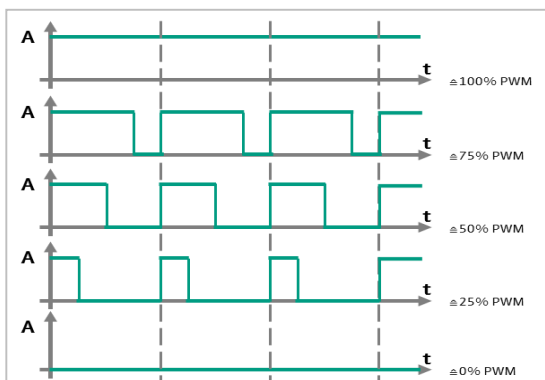
	cable length 500mm	4530965	
<b>Overmoulded signal connector with brass end splices and type Facon PR72 (3 wires) on terminal box side (disconnection possible)</b>	cable length 1000mm	4530663	<b>Not assembled</b>
	cable length 1500mm	4530764	
	cable length 2000mm	4530664	





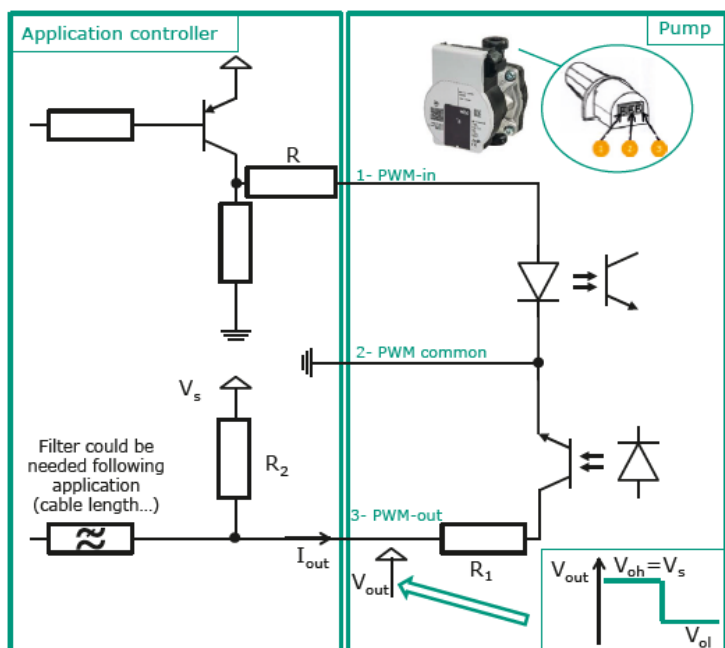
## External control via a iPWM system

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-Para. The PWM signal generator gives a periodic pulse order to the pump (the duty cycle) according to DIN IEC 60469-1. The actuating variable is determined by the ratio between pulse duration and 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.



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## iPWM interface



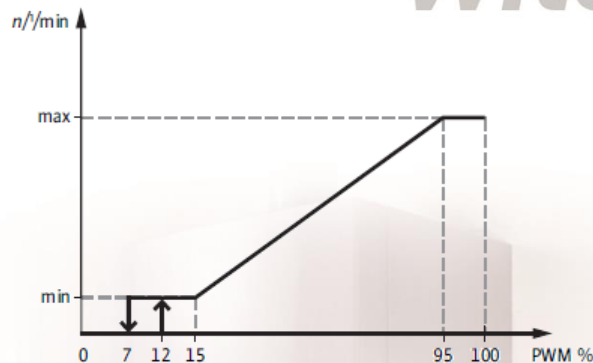
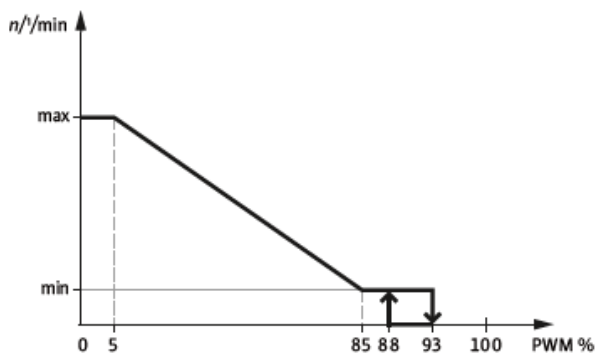
<b>PWM-in</b>	
<b>Signal frequency:</b>	100Hz-5000Hz (1000Hz nominal)
<b>Signal amplitude:</b>	Minimum 3.6 V at 3 mA Up to 24 V for 7.5 mA absorbed by the pump interface
<b>Output resistance [R]:</b>	> 50 $\Omega$ (100 $\Omega$ nominal).
<b>PWM-in :</b>	> 50 $\Omega$ (100 $\Omega$ nominal)
<b>PWM-out</b>	
<b>Vs</b>	$3 V \leq V_s \leq 24 V$
<b>R2</b>	$(V_s - 0,2) / I_{out} - R1$
<b>R2C</b>	$\leq 1$
<b>C=filter capacitor</b>	$1000 \times \ln(0.3) \times 75$ for rise time impact < 0.1 %
<b>Signal frequency:</b>	75 Hz +/- 2 Hz
<b>R1</b>	470 W +/- 5 %
<b>Vol =Vout low</b>	<1V for Iout<1 mA
<b>Signal polarity:</b>	yes

### iPWM-in signal logic 1 (heating) (%)

### iPWM-in signal logic 2 (Solar) (%)



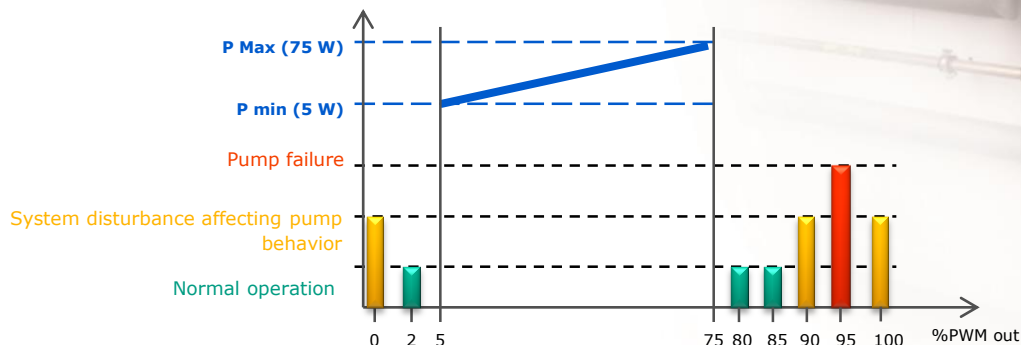
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< 5	Pump runs at maximum speed
5-85	Pump speed decreases linearly from maximum to minimum
85-93	Pump runs at minimum speed (operation)
85-88	Pump runs at minimum speed (start-up)
93-100	Pump stops (Standby)

< 7	Pump stops (Standby)
7-15	Pumps runs at minimum speed (operation)
12-15	Pump runs at minimum speed (start-up)
15-95	Pump speed increases linearly from min to max
> 95	Pump runs at maximum speed

### iPWM-out signal logic (Brine) (%)



% PWM-out	Status	Potential causes
0	Pump output iPWM interface damaged	iPWM interface in short circuit
2	Stand-by, pump is ready to run	/
5-75	Pump is running normally, flow information is supplied	/
80	Abnormal running mode Pump is running but not at optimal performance	- Undervoltage 160/170-194V - Self thermal protecting mode
85	Abnormal function mode Pump has stopped but is still functional	- Undervoltage <160/170V - Overvoltage - Unexpected external flow
90	Abnormal function mode Pump has stopped but is still functional Check the installation setup and medium	- Failure on another component than pump - Debris in the installation - Bad temperature setup
95	The pump has stopped due to permanent failure	- Pump blocked - Electronic module out of order
100	Problem of iPWM connection	iPWM interface in open circuit

# wilo

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