

## Series description: Wilo-Star-Z



### Design

Glandless circulation pump with threaded connection

### Application

Potable water circulation systems in industry and building services.  
Ce circulateur convient seulement pour l'eau potable.

### Type key

Example: **Wilo-Star-Z 20/1**Wilo-Star-Z 15 TT

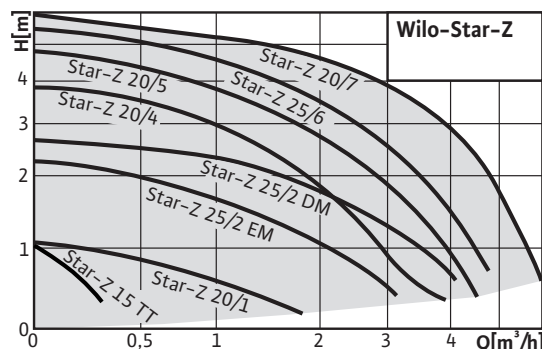
<b>Star</b>	Standard pump
<b>Z</b>	Circulation pump
<b>20/</b>	Nominal connection diameter
<b>1</b>	Nominal delivery head [m]
<b>TT</b>	with built-in time switch and temperature control (only Z 15 TT)
<b>EM</b>	AC motor (1~)
<b>DM</b>	Three phase motor (3~)
<b>-3</b>	3 speed stages

### Special features/product advantages

- AC pumps with electrical quick connection
- All plastic parts that come into contact with the fluid fulfil KTW recommendations
- Thermal insulation as standard for StarZ 15 TT.
- Star-Z 15 TT with integrated timer and thermostat, LC display with symbolic language, red button technology and automatic detection of the thermal disinfection of the warm secondary hot water tank, as well as ball shut-off valve on the suction side and non-return valve on the pressure side.

### Technical data

- Constant speed or, for StarZ...-3, three selectable speed stages
- Fluid temperature:
  - Potable water up to 3.21 mmol/l (18 °dH): max. +65°C, in short-term operation (2 h) up to +70°C
- Mains connection 1~230 V, 50 Hz or, for StarZ 25/2 DM, 3~400 V, 50 Hz
- Protection class IP 44 (IP 42 for Star-Z 15 TT)
- Nominal diameter Rp ½, Rp 1
- Max. operating pressure 10 bar



### Equipment/function

Operating modes

- Speed stage switching (StarZ -3 only)

Manual functions

- Setting of the speed stages (1 speed stage, 3 speed stages with Star-Z...-3 pumps)

Automatic functions

- Time switching function for programming of 3 switch-on or switch-off times (Z 15 TT only)
- Temperature control for maintaining a constant return temperature in the secondary hot water circulation system (Z 15 TT only)
- Thermal disinfection routine (detection and support of thermal disinfection of the warm secondary hot water tank) (only Z 15 TT)
- Blocking protection (only Z 15 TT)

Signal and display functions

- LCD screen for display of pump data and fault codes (Z 15 TT only)

Equipment

- Wrench attachment point on the pump body (StarZ 25 only)
- Cable inlet possible from both sides (StarZ 20/..., StarZ 25/... only)
- Quick connection with spring clips
- Blocking current-proof motor
- Integrated non-return valve on the pressure side (only Star-Z 15 TT)
- Integrated ball shut-off valve on suction side (only Star-Z 15 TT)
- Including time switch (only Z 15 TT)

### Materials

- Pump housing:
  - Brass: Star-Z 15
  - Bronze: StarZ 20, Z 25
- Impeller: Plastic
- Shaft:
  - Stainless steel: Star-Z 15
  - Oxide ceramic: StarZ 20, Z 25
- Bearing: Carbon, synthetic resin impregnated

### Scope of delivery

- Pump
- Including seals for threaded connection
- Including installation and operating instructions
- Including thermal insulation (Star-Z 15 TT only)

### Accessories

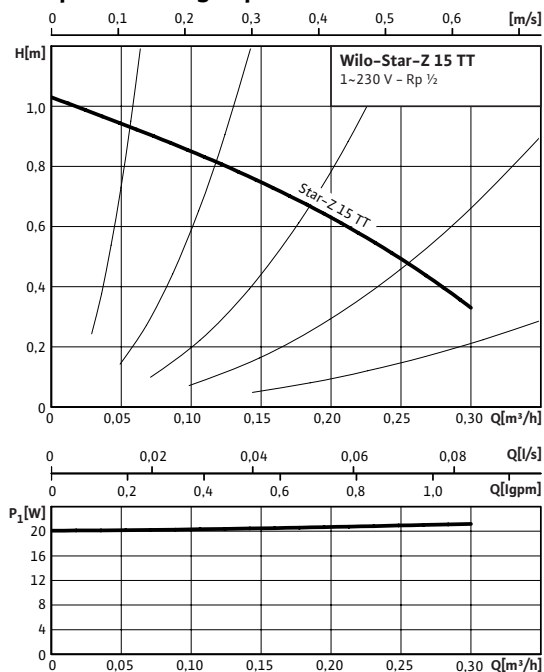
- Screwed connections
- Adapter fittings
- Thermal insulation shells for Star-Z 20, 25
- Special brass inserted parts for screw-end pumps:
  - Male thread/inner soldering connection
- WiloS1Rh switchgear plug-in module for StarZ 20/1, Z 25/2 EM (single-phase version)
- WiloSK 601N switchgear in connection with WiloSK 602N (as contactor) for StarZ 25/2 DM (three-phase version)

## Series description: Wilo-Star-Z

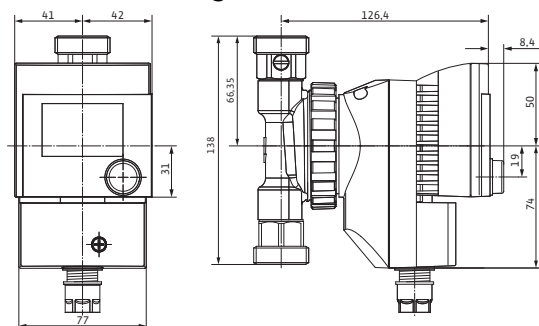
- WiloSK 601N switchgear for timed On/Off switching for StarZ 20, 25

## Data sheet: Wilo-Star-Z 15 TT

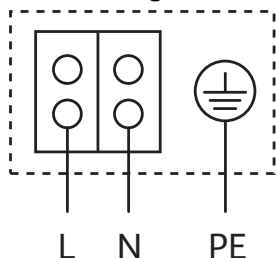
### Pump curves Single-phase current



### Dimension drawing A



### Terminal diagram 1~230 V



Blocking current-proof motor  
Single-phase motor (EM) 2pole 1~230 V, 50 Hz  
With built-in capacitor

### 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)	-
Potable water and water for food-processing companies in accordance with TrinkwV 2001 (drinking water ordinance)	•

### Permitted field of application

Temperature range at max. ambient temperature of +25 °C	-
Temperature range at max. ambient temperature +40 °C	-
Temperature range for applications in secondary hot water circulation systems at maximum ambient temperature of +40 °C	2 - +65 °C
Temperature range for applications in secondary hot water circulation systems at max. ambient temperature of +40 °C in short-term operation 2 h	T 70 °C
Max. permitted total hardness in potable water circulation systems	3.21 mmol/l (18 °dH)
Maximum permissible operating pressure	P <sub>max</sub> 10 bar

### Pipe connections

Threaded pipe union	Rp 1/2
Thread	G 1
Overall length	L <sub>0</sub> 138 mm

### Motor/electronics

Emitted interference	EN 61000-6-3
Interference resistance	EN 61000-6-2
Protection class	IP 42
Insulation class	F
Mains connection	1~230 V, 50 Hz
Speed range	n 1700-2700 rpm
Power consumption	P <sub>1</sub> max. 22 W
Current consumption	I max. 0.25 A
Motor protection	Not required (blocking-current proof)

## Data sheet: Wilo-Star-Z 15 TT

Threaded cable connection	PG	1x9
---------------------------	----	-----

### Materials

Pump housing	Brass (CuZn40Pb2)
Impeller	Plastic (PPO)
Pump shaft	Stainless steel (X35CrMo17)
Bearing	Carbon, synthetic resin impregnated

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

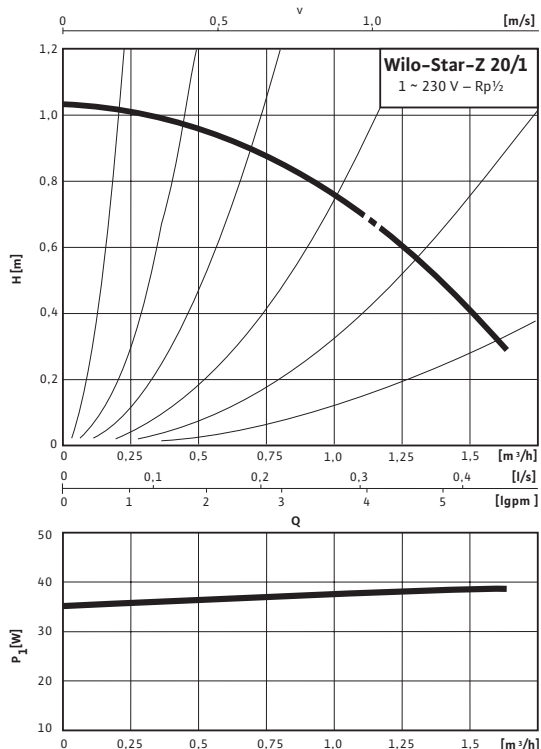
Minimum suction head at 40 / 65 / 110 °C	0.5 / 2 / 0 m
--	---------------

### Information for order placements

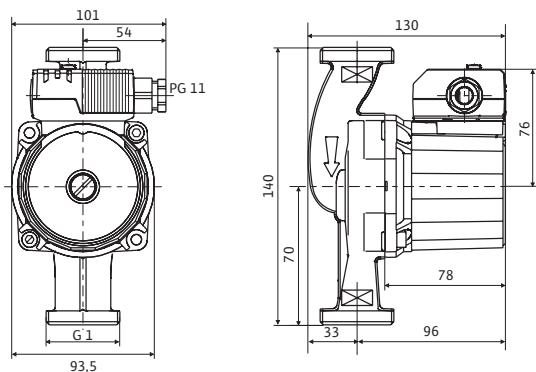
Make	Wilo
Type	Star-Z 15 TT
Art no.	4110919
Weight approx.	<i>m</i> 2.330 kg

## Data sheet: Wilo-Star-Z 20/1

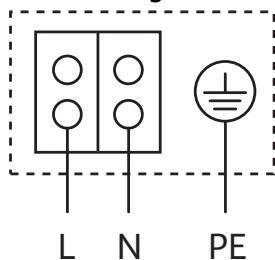
### Pump curves Single-phase current



### Dimension drawing



### Terminal diagram 1~230 V



Blocking current-proof motor  
Single-phase motor (EM) 2pole 1~230 V, 50 Hz  
With built-in capacitor

### 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)
- Potable water and water for food-processing companies in accordance with TrinkwV 2001 (drinking water ordinance)

### Permitted field of application

Temperature range at max. ambient temperature of +25 °C	–
Temperature range at max. ambient temperature +40 °C	–
Temperature range for applications in secondary hot water circulation systems at maximum ambient temperature of +40 °C	2 – +65 °C
Temperature range for applications in secondary hot water circulation systems at max. ambient temperature of +40 °C in short-term operation 2 h	T 70 °C
Max. permitted total hardness in potable water circulation systems	3.21 mmol/l (18 °dH)
Maximum permissible operating pressure	P <sub>max</sub> 10 bar

### Pipe connections

Threaded pipe union	Rp ½
Thread	G 1
Overall length	LO 140 mm

### Motor/electronics

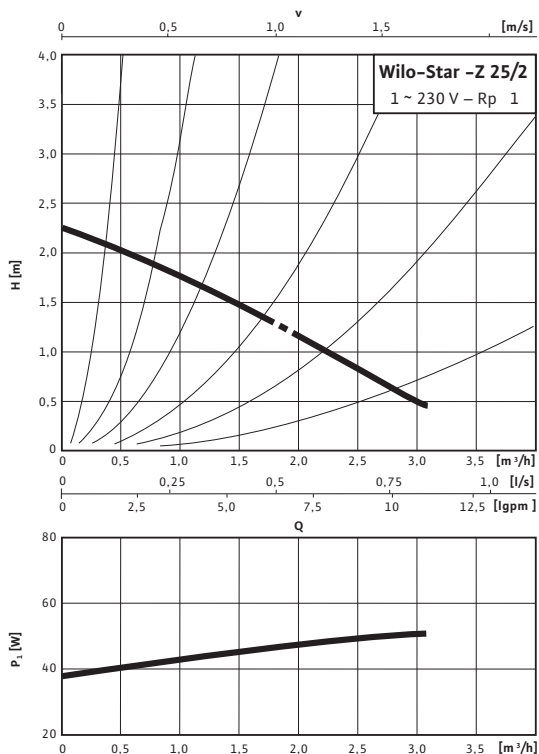
Emitted interference	EN 61000-6-3
Interference resistance	EN 61000-6-2
Protection class	IP 44
Insulation class	F
Mains connection	1~230 V, 50 Hz
Speed range	n 1700–2700 rpm
Power consumption	P <sub>1</sub> 36 – 38 W
Current consumption	I max. 0.18 A
Motor protection	Not required (blocking-current proof)

## Data sheet: Wilo-Star-Z 20/1

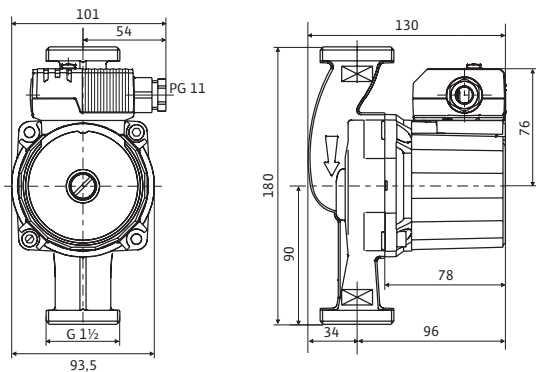
Threaded cable connection	PG	1x11
<b>Materials</b>		
Pump housing	Red brass (CC 499K) according to DIN 50930-6 in accordance with Drinking Water Ordinance	
Impeller	Plastic (PPO)	
Pump shaft	Oxide ceramic, brown (Al <sub>2</sub> O <sub>3</sub> )	
Bearing	Carbon, synthetic resin impregnated	
<b>Minimum suction head at suction port for avoiding cavitation at water pumping temperature</b>		
Minimum suction head at 40 / 65 / 110 °C	0.5 / 3 / 10 m	
<b>Information for order placements</b>		
Make	Wilo	
Type	Star-Z 20/1	
Art no.	4028111	
Weight approx.	<i>m</i>	2.240 kg

## Data sheet: Wilo-Star-Z 25/2 EM

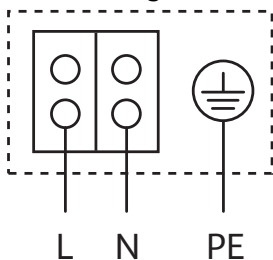
### Pump curves Single-phase current



### Dimension drawing



### Terminal diagram 1~230 V



Blocking current-proof motor  
 Single-phase motor (EM) 2pole 1~230 V, 50 Hz  
 With built-in capacitor

### 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)
- Potable water and water for food-processing companies in accordance with TrinkwV 2001 (drinking water ordinance)

### Permitted field of application

Temperature range at max. ambient temperature of +25 °C	-
Temperature range at max. ambient temperature +40 °C	-
Temperature range for applications in secondary hot water circulation systems at maximum ambient temperature of +40 °C	2 - +65 °C
Temperature range for applications in secondary hot water circulation systems at max. ambient temperature of +40 °C in short-term operation 2 h	T 70 °C
Max. permitted total hardness in potable water circulation systems	3.21 mmol/l (18 °dH)
Maximum permissible operating pressure	P <sub>max</sub> 10 bar

### Pipe connections

Threaded pipe union	Rp 1
Thread	G 1½
Overall length	L <sub>0</sub> 180 mm

### Motor/electronics

Emitted interference	EN 61000-6-3
Interference resistance	EN 61000-6-2
Protection class	IP 44
Insulation class	F
Mains connection	1~230 V, 50 Hz
Speed range	n 1700-2700 rpm
Power consumption	P <sub>1</sub> max. 46 W
Current consumption	I max. 0.22 A
Motor protection	Not required (blocking-current proof)

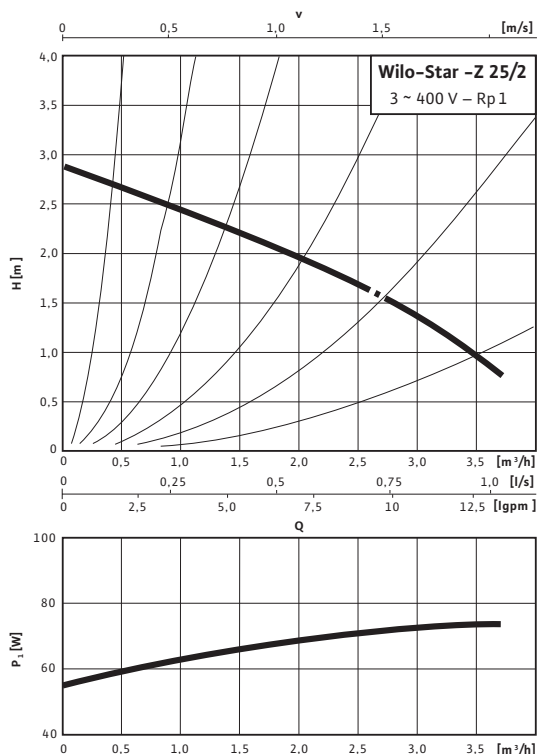
## Data sheet: Wilo-Star-Z 25/2 EM

Threaded cable connection	PG	1x11
<b>Materials</b>		
Pump housing	Red brass (CC 499K) according to DIN 50930-6 in accordance with Drinking Water Ordinance	
Impeller	Plastic (PPO)	
Pump shaft	Oxide ceramic, brown (Al <sub>2</sub> O <sub>3</sub> )	
Bearing	Carbon, synthetic resin impregnated	
<b>Minimum suction head at suction port for avoiding cavitation at water pumping temperature</b>		
Minimum suction head at 40 / 65 / 110 °C	0.5 / 3 / 10 m	
<b>Information for order placements</b>		
Make	Wilo	
Type	Star-Z 25/2 EM	
Art no.	4029062	
Weight approx.	<i>m</i>	2.440 kg

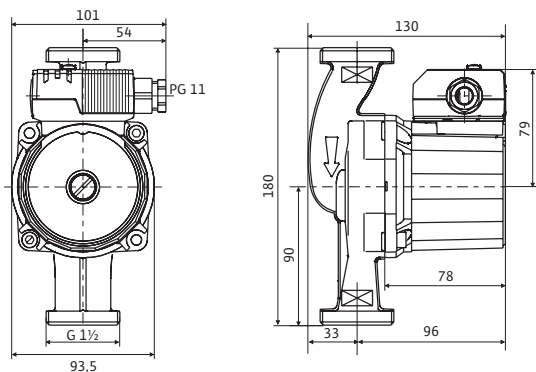


## Data sheet: Wilo-Star-Z 25/2 DM

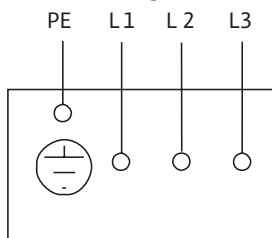
### Pump curves Three-phase current



### Dimension drawing



### Terminal diagram 3~400 V



Three-phase AC motor (DM), 2-pole- 3~400 V, 50 Hz

### 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)
- Potable water and water for food-processing companies in accordance with TrinkwV 2001 (drinking water ordinance)

### Permitted field of application

Temperature range at max. ambient temperature of +25 °C	-
Temperature range at max. ambient temperature +40 °C	-
Temperature range for applications in secondary hot water circulation systems at maximum ambient temperature of +40 °C	2 - +65 °C
Temperature range for applications in secondary hot water circulation systems at max. ambient temperature of +40 °C in short-term operation 2 h	T 70 °C
Max. permitted total hardness in potable water circulation systems	3.21 mmol/l (18 °dH)
Maximum permissible operating pressure	P <sub>max</sub> 10 bar

### Pipe connections

Threaded pipe union	Rp 1
Thread	G 1½
Overall length	L <sub>0</sub> 180 mm

### Motor/electronics

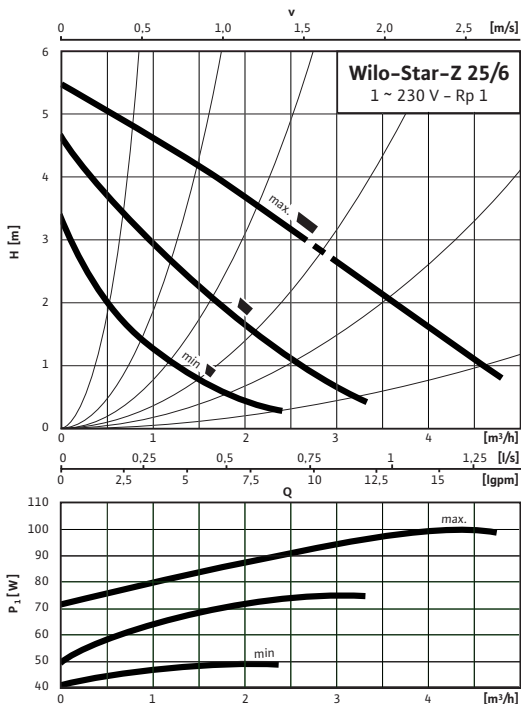
Emitted interference	EN 61000-6-3
Interference resistance	EN 61000-6-2
Protection class	IP 44
Insulation class	F
Mains connection	3~400 V, 50 Hz
Speed range	n 1700-2700 rpm
Power consumption	P <sub>1</sub> 55 - 72 W
Current consumption	I max. 0.16 A
Motor protection	Not required (blocking-current proof)

## Data sheet: Wilo-Star-Z 25/2 DM

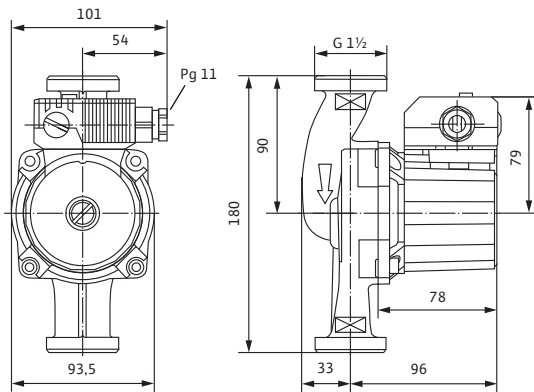
Threaded cable connection	PG	1x11
<b>Materials</b>		
Pump housing	Red brass (CC 499K) according to DIN 50930-6 in accordance with Drinking Water Ordinance	
Impeller	Plastic (PPO)	
Pump shaft	Oxide ceramic, brown (Al <sub>2</sub> O <sub>3</sub> )	
Bearing	Carbon, synthetic resin impregnated	
<b>Minimum suction head at suction port for avoiding cavitation at water pumping temperature</b>		
Minimum suction head at 40 / 65 / 110 °C	0.5 / 3 / 10 m	
<b>Information for order placements</b>		
Make	Wilo	
Type	Star-Z 25/2 DM	
Art no.	4037124	
Weight approx.	<i>m</i>	2.620 kg

## Data sheet: Wilo-Star-Z 25/6-3

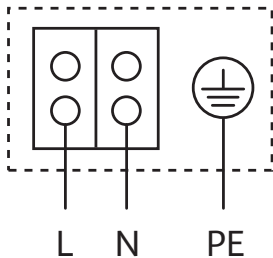
### Pump curves Single-phase current



### Dimension drawing



### Terminal diagram 1~230 V



Blocking current-proof motor  
Single-phase motor (EM) 2pole 1~230 V, 50 Hz  
With built-in capacitor

### 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)
- Potable water and water for food-processing companies in accordance with TrinkwV 2001 (drinking water ordinance)

### Permitted field of application

Temperature range at max. ambient temperature of +25 °C	-
Temperature range at max. ambient temperature +40 °C	-
Temperature range for applications in secondary hot water circulation systems at maximum ambient temperature of +40 °C	2 - +65 °C
Temperature range for applications in secondary hot water circulation systems at max. ambient temperature of +40 °C in short-term operation 2 h	T 70 °C
Max. permitted total hardness in potable water circulation systems	3.21 mmol/l (18 °dH)
Maximum permissible operating pressure	P <sub>max</sub> 10 bar

### Pipe connections

Threaded pipe union	Rp 1
Thread	G 1½
Overall length	LO 180 mm

### Motor/electronics

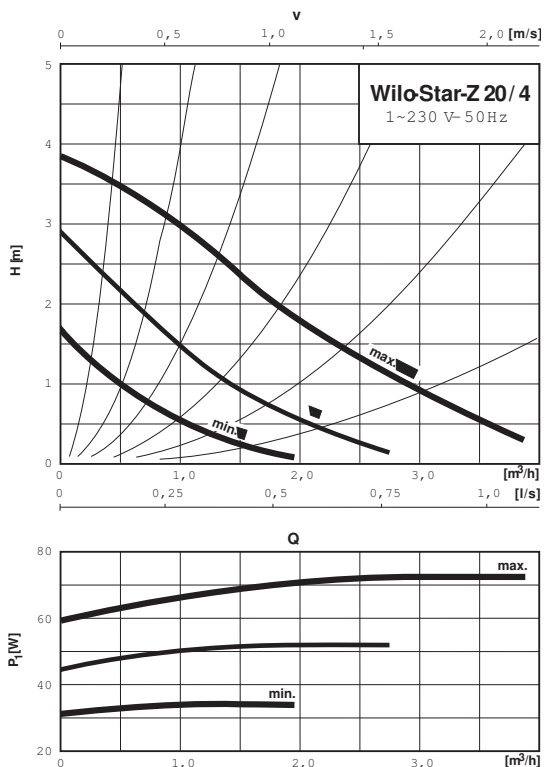
Emitted interference	EN 61000-6-3
Interference resistance	EN 61000-6-2
Protection class	IP 44
Insulation class	F
Mains connection	1~230 V, 50 Hz
Speed range	n 1700-2700 rpm
Power consumption	P <sub>1</sub> 49 / 74 / 99 W
Current consumption	I 0.22 - 0.43 A
Motor protection	Not required (blocking-current proof)

## Data sheet: Wilo-Star-Z 25/6-3

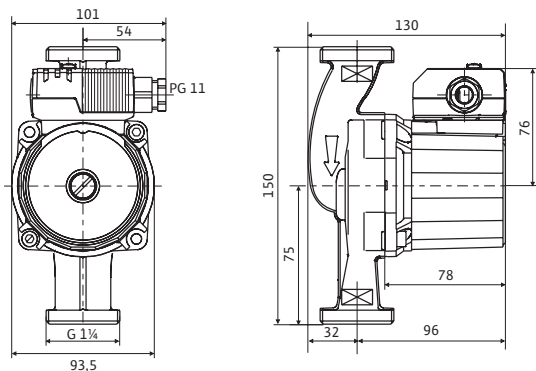
Threaded cable connection	PG	1x11
<b>Materials</b>		
Pump housing	Red brass (CC 499K) according to DIN 50930-6 in accordance with Drinking Water Ordinance	
Impeller	Plastic (PPO)	
Pump shaft	Oxide ceramic, brown (Al <sub>2</sub> O <sub>3</sub> )	
Bearing	Carbon, synthetic resin impregnated	
<b>Minimum suction head at suction port for avoiding cavitation at water pumping temperature</b>		
Minimum suction head at 40 / 65 / 110 °C	0.5 / 3 / 10 m	
<b>Information for order placements</b>		
Make	Wilo	
Type	Star-Z 25/6-3	
Art no.	4047573	
Weight approx.	<i>m</i>	2.660 kg

## Data sheet: Wilo-Star-Z 20/4-3

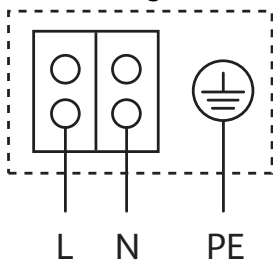
### Pump curves Single-phase current



### Dimension drawing



### Terminal diagram 1~230 V



Blocking current-proof motor  
Single-phase motor (EM) 2pole 1~230 V, 50 Hz  
With built-in capacitor

### 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)
- Potable water and water for food-processing companies in accordance with TrinkwV 2001 (drinking water ordinance)

### Permitted field of application

- Temperature range at max. ambient temperature of +25 °C: -10...+110
- Temperature range at max. ambient temperature +40 °C: -10...+95 °C
- Temperature range for applications in secondary hot water circulation systems at maximum ambient temperature of +40 °C: 0.0 - +65 °C
- Temperature range for applications in secondary hot water circulation systems at max. ambient temperature of +40 °C in short-term operation 2 h: 70 °C
- Max. permitted total hardness in potable water circulation systems: 3.21 mmol/l (18 °dH)

Maximum permissible operating pressure  $P_{max}$  10 bar

### Pipe connections

- Threaded pipe union: Rp 1/2
- Thread: G 1 1/4
- Overall length: LO 150 mm

### Motor/electronics

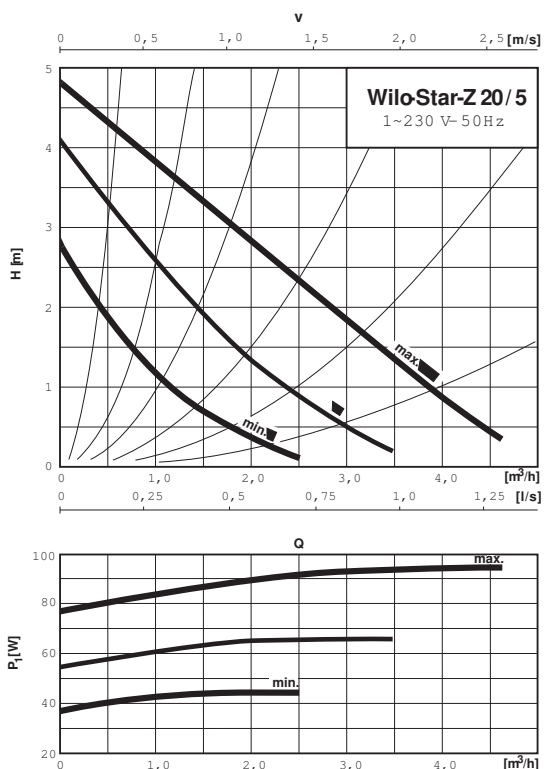
- Emitted interference: EN 61000-6-3
- Interference resistance: EN 61000-6-2
- Protection class: IP 44
- Insulation class: F
- Mains connection: 1~230 V, 50 Hz
- Speed range:  $n$  1700-2600 rpm
- Power consumption:  $P_1$  29 - 71 W
- Current consumption:  $I$  max. 0.31 A
- Motor protection: Not required (blocking-current proof)

## Data sheet: Wilo-Star-Z 20/4-3

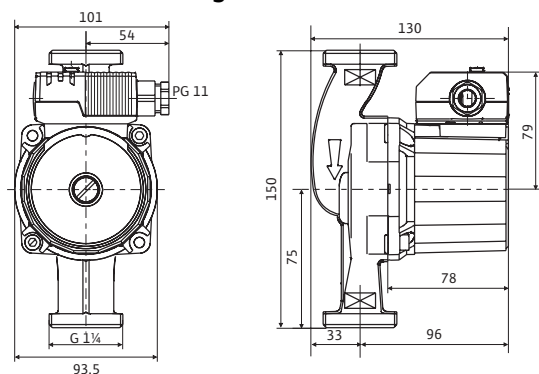
Threaded cable connection	PG	1x11
<b>Materials</b>		
Pump housing	Red brass (CC 491K) according to DIN 50930-6 in accordance with Drinking Water Ordinance)	
Impeller	Plastic (PPO)	
Pump shaft	Oxide ceramic, brown (Al <sub>2</sub> O <sub>3</sub> )	
Bearing	Carbon, synthetic resin impregnated	
<b>Minimum suction head at suction port for avoiding cavitation at water pumping temperature</b>		
Minimum suction head at 40 / 65 / 110 °C	0 / 3 / 10 m	
<b>Information for order placements</b>		
Make	Wilo	
Type	Star-Z 20/4-3	
Art no.	4081193	
Weight approx.	<i>m</i>	2.360 kg

## Data sheet: Wilo-Star-Z 20/5-3

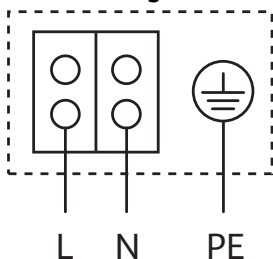
### Pump curves Single-phase current



### Dimension drawing



### Terminal diagram 1~230 V



Blocking current-proof motor  
Single-phase motor (EM) 2pole 1~230 V, 50 Hz  
With built-in capacitor

### 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)
- Potable water and water for food-processing companies in accordance with TrinkwV 2001 (drinking water ordinance)

### Permitted field of application

Temperature range at max. ambient temperature of +25 °C	•	-10...+110
Temperature range at max. ambient temperature +40 °C	•	-10...+95 °C
Temperature range for applications in secondary hot water circulation systems at maximum ambient temperature of +40 °C	•	0.0 - +65 °C
Temperature range for applications in secondary hot water circulation systems at max. ambient temperature of +40 °C in short-term operation 2 h	T	70 °C
Max. permitted total hardness in potable water circulation systems		3.21 mmol/l (18 °dH)
Maximum permissible operating pressure	$P_{max}$	10 bar

### Pipe connections

Threaded pipe union		Rp 1/2
Thread		G 1 1/4
Overall length	LO	150 mm

### Motor/electronics

Emitted interference		EN 61000-6-3
Interference resistance		EN 61000-6-2
Protection class		IP 44
Insulation class		F
Mains connection		1~230 V, 50 Hz
Speed range	n	2000-2600 rpm
Power consumption	$P_1$	43 - 93 W
Current consumption	I	max. 0.40 A
Motor protection		Not required (blocking-current proof)

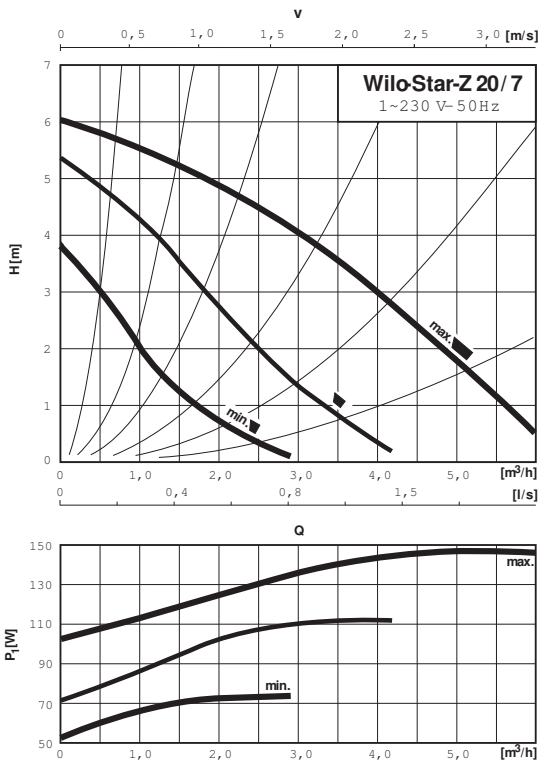
## Data sheet: Wilo-Star-Z 20/5-3

Threaded cable connection	PG	1x11
<b>Materials</b>		
Pump housing	Red brass (CC 491K) according to DIN 50930-6 in accordance with Drinking Water Ordinance)	
Impeller	Plastic (PPO)	
Pump shaft	Oxide ceramic, brown (Al <sub>2</sub> O <sub>3</sub> )	
Bearing	Carbon, synthetic resin impregnated	
<b>Minimum suction head at suction port for avoiding cavitation at water pumping temperature</b>		
Minimum suction head at 40 / 65 / 110 °C	0 / 3 / 10 m	
<b>Information for order placements</b>		
Make	Wilo	
Type	Star-Z 20/5-3	
Art no.	4081198	
Weight approx.	<i>m</i>	2.510 kg

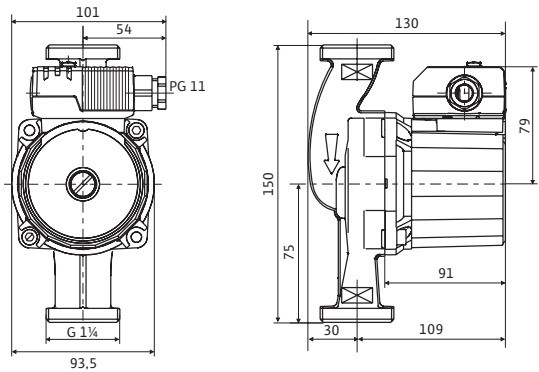


# Data sheet: Wilo-Star-Z 20/7-3

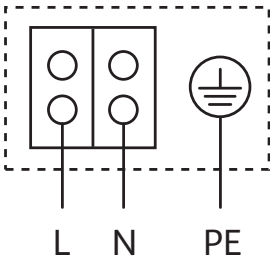
### Pump curves Single-phase current



### Dimension drawing



### Terminal diagram 1~230 V



Blocking current-proof motor  
 Single-phase motor (EM) 2pole 1~230 V, 50 Hz  
 With built-in capacitor

### 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)	•
Potable water and water for food-processing companies in accordance with TrinkwV 2001 (drinking water ordinance)	•

### Permitted field of application

Temperature range at max. ambient temperature of +25 °C	•	-10...+110
Temperature range at max. ambient temperature +40 °C	•	-10...+95 °C
Temperature range for applications in secondary hot water circulation systems at maximum ambient temperature of +40 °C		0.0 - +65 °C
Temperature range for applications in secondary hot water circulation systems at max. ambient temperature of +40 °C in short-term operation 2 h	T	70 °C
Max. permitted total hardness in potable water circulation systems		3.21 mmol/l (18 °dH)
Maximum permissible operating pressure	P <sub>max</sub>	10 bar

### Pipe connections

Threaded pipe union		Rp ½
Thread		G 1¼
Overall length	L <sub>0</sub>	150 mm

### Motor/electronics

Emitted interference		EN 61000-6-3
Interference resistance		EN 61000-6-2
Protection class		IP 44
Insulation class		F
Mains connection		1~230 V, 50 Hz
Speed range	n	2000-2700 rpm
Power consumption	P <sub>1</sub>	52 - 146 W
Current consumption	I	max. 0.65 A
Motor protection		Not required (blocking-current proof)

## Data sheet: Wilo-Star-Z 20/7-3

Threaded cable connection	PG	1x11
<b>Materials</b>		
Pump housing	Red brass (CC 491K) according to DIN 50930-6 in accordance with Drinking Water Ordinance)	
Impeller	Plastic (PPO)	
Pump shaft	Oxide ceramic, brown (Al <sub>2</sub> O <sub>3</sub> )	
Bearing	Carbon, synthetic resin impregnated	
<b>Minimum suction head at suction port for avoiding cavitation at water pumping temperature</b>		
Minimum suction head at 40 / 65 / 110 °C	0 / 3 / 10 m	
<b>Information for order placements</b>		
Make	Wilo	
Type	Star-Z 20/7-3	
Art no.	4081203	
Weight approx.	<i>m</i>	2.90 kg