



Wilo-Star-Z

Centrifugal pump

Screwed-end domestic hot water pumps with single-speed motor

Identification Code

e.g. Wilo-Star-Z 20/1

- Z** Screwed-end service water circulating pump
- 20** Connection size
- /1** Pump shut-off head [m]

Fields of Application

Domestic hot water circulating systems, secondary circulating systems for mechanical building and industrial services.

Technical Data

Approved fluids

- Domestic hot water up to +65°C
- Heating water to VDI 2035 up to +110 °C
- Water/glycol mixtures to max. 1:1 mixing ration. Mixtures of more than 20% glycol content require reassessment of hydraulic data

Performance

- Speed range: 1700-2700 rpm
- Connection sizes: 1/2" – 1"

Permissible temp. range

- Domestic HW up to 18° dH T_{max.} +65 °C
- Heating/chilled water -10°C to +110 °C

Ambient temperature

max. +40 °C

Electrical

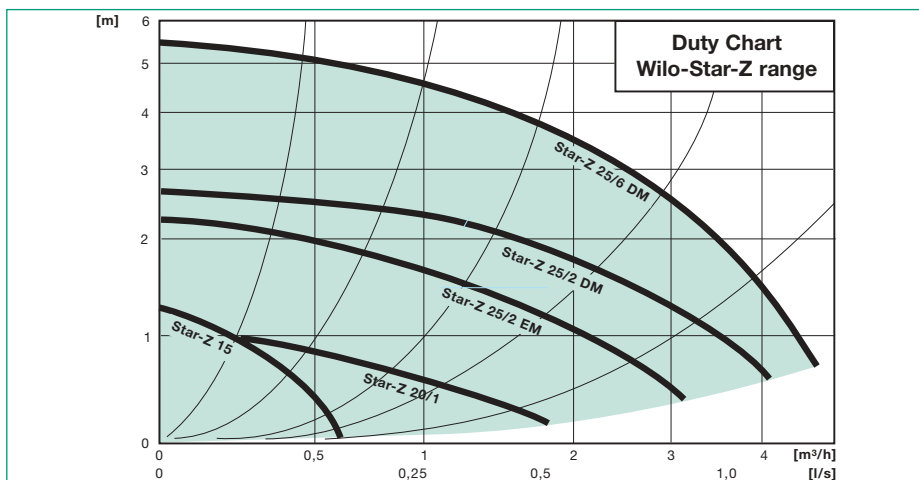
- Mains power 1 ~ 230 V, 50 Hz
- 3 ~ 400 V, 50 Hz

Motor

- Degree of protection IP 44
- Insulation class F
- Interference emission EN 50081-1
- Interference resistance EN 50081-2

Materials

- Impeller GF-PP
- Bearings Graphite



Scope of Supply

Pump, including packing and O&M-manual

Wilo-Star-Z 15

Pump Star-Z 15

Wilo-Star-Z 15 A

Wilo-Star-Z 15, check and ball isolating valves

Wilo-Star-Z 15 Apress

Pump Star-Z 15, pump body for system VIEGA lock-on union connections and with integrated check and ball isolating valve

Wilo-Z 15 C

Pump Z 15, plug-in Wilo-S1h 24 h time switch, 1.8 m power lead with plug, check valve, ball isolating valve.

Pump Equipment

- Non overloading motor, no overload protection required
- Wilo-Star-Z 20/1 and Z 25/2(6) with optional left or right cable entry
- Wilo-Star-Z 25/6 with manual 3-speed control

Accessories

- Union connector fittings
 - Thermal insulation pods for Star-Z 20/1, -Z 25/2(6)
 - Special brass union inserts with screwed-end pumps: male thread outside, solder joint inside
 - Wilo-S1R-h plug-in timer module for Wilo-Star Z 20/1, Z 25/2 EM (1-phase motor)
 - Wilo-SK 601 time switch for use in conjunction with Wilo-SK 602 contactor box for Wilo-Star-Z 25/2 (3-phase motor)
 - Wilo-SK 601 time switch for time-actuated Start/Stop control of Z 25/6 pumps
- See also catalogue section 'Switchgear - Automatic Control Systems'

Wilo-Z 15 Service-Motor

For super-fast replacement, also of other make pumps.

Wilo-Star-Z		Pump data							
		Z 15	Z 15 A Z 15 C	Z 15 Apress	Z 20/1	Z 25/2 EM	Z 25/2DM	Z 25/6	
Connection sizes DN		Rp 1/2"	Rp 1/2"	Ø15	Rp 1/2"	Rp 1"	Rp 1"	Rp 1"	
Max. working pressure		10 bar							
Tolerable water temperature range:									
Secondary water		up to +65 °C		+20 °C to +65 °C		-10 °C to +110 °C		+20 °C to +110 °C	
		●	●	●	● ¹⁾	● ¹⁾	-	-	
		-	-	-	● ¹⁾	● ¹⁾	-	-	
Standard construction materials									
Pump body		brass		bronze		ceramics		stainless steel	
		●	●	●	-	-	-	-	
		-	-	-	●	●	●	●	
		●	●	●	-	-	-	-	
Minimum inlet pressure (m) at the pump suction inlet to avoid cavitation noise at +40 °C ambient and water temperatures ϑ_{max} :		40 °C/0.5 m		50 °C/0.5 m		65 °C/ 2 m		95 °C/ 3 m	
		-		110 °C/10 m					

● Standard design 1) When used in conjunction with the Wilo-S1R-h plug-in module

Wilo-Star-Z

Automatic Time-Controlled Start/Stop Switchgear



Wilo-S1R-h

Wilo-Star-Z 20/1 and Z 25/2 EM pumps are suitable to be refitted with the **Wilo-S1R-h plug-in timer module** *)

Degree of protection: IP 42



Wilo-SK 601

Three phase pumps can be fitted with the **Wilo-SK 601 time switch box** in conjunction with the **Wilo-SK 602** contactor box. *)



Wilo-Star-Z 15 APress

Wilo-Star-Z 15 APress

The **first ever** secondary water circulator with clip-on union fittings

The **Wilo-S1R-h timer box** is part of the supply with **Wilo-Star-Z 15 C** pumps

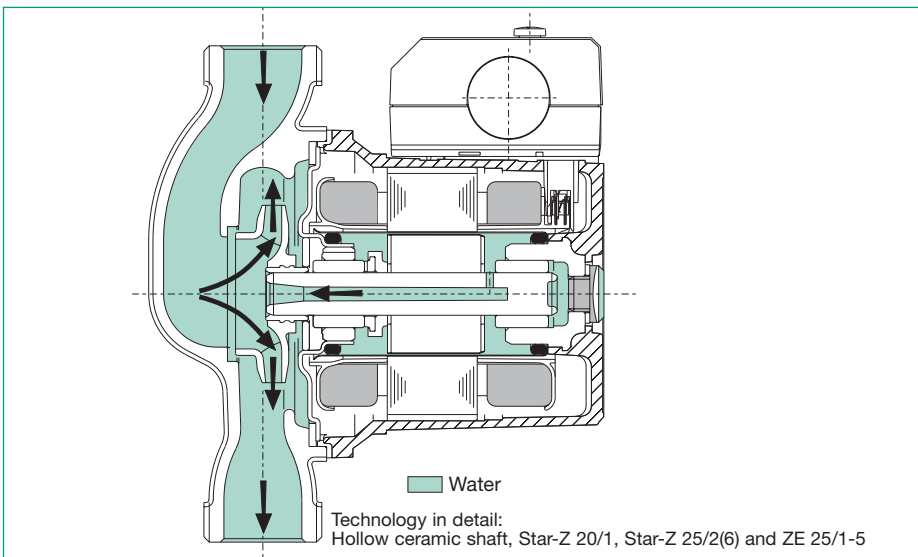
*) See also section 'Switchgear and Automatic Pump Control Systems'

Installation Guide

Domestic water installations call for intelligent combinations and individual solutions.

The Wilo-Star-Z 15 Apress circulator features cold lock-on union connectors for easy, faster and more convenient connections to the domestic water pipe system.

Bronze lock-on connector fittings (System Viega) with integrated check and ball isolating valves.



Construction features and product benefits

Wilo-Star-Z 20/1, Star-Z 20/2(6) and Star-ZE 25/1-5 DHW circulating pumps are equipped with a hollow oxide ceramic shaft and a transverse bore. The advantage of this material is its high resistance to corrosive fluids. High surface hardness and good gliding properties of the ceramic shafts used by Wilo lead to longer life expectancies and also prove excellent resistance in installations handling oxygen-enriched water.

Construction

– Graphite bearings / ceramic shaft effect very much quieter running.

The bored shaft design offers further advantages:

- The steady circulation of the fluid within the pump benefits more constant temperature stratification reducing the harmful calcium deposits and ensuring a trouble-free pump operation
- An improved exchange rate of motor heat emission to the fluid of the new Wilo-Star-Z pumps leads to an overall improved motor design.

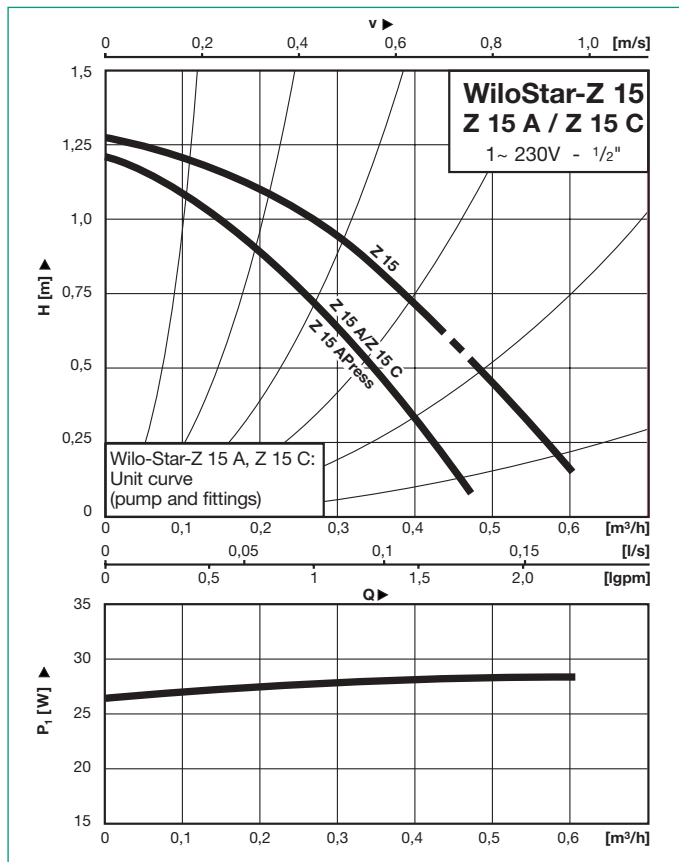
Glandless Pumps

Domestic Hot Water Circulating Pumps

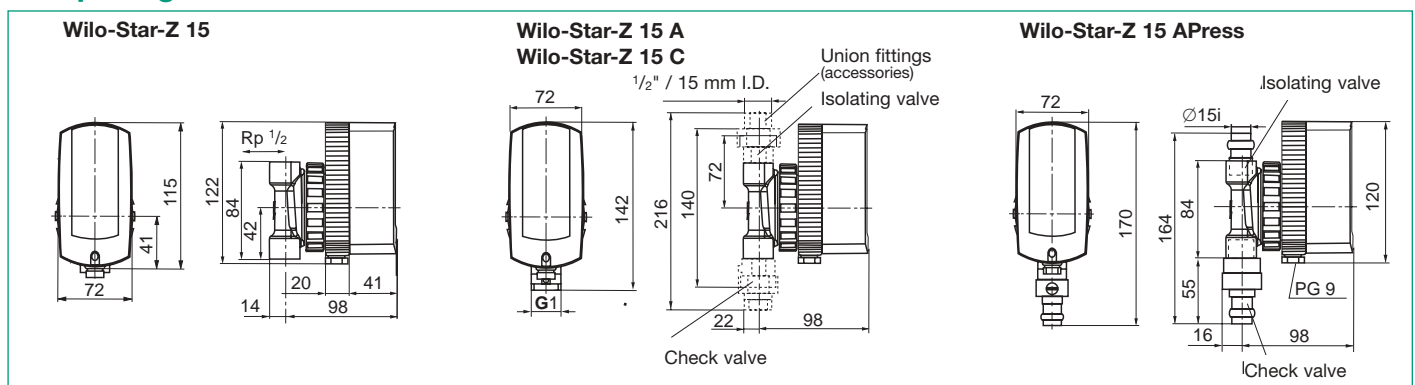


Wilo-Star Z 15, Z 15 A, Z-15 C, Z 15 APress

Duty Graph



Pump Diagrams



Measurements - Weights

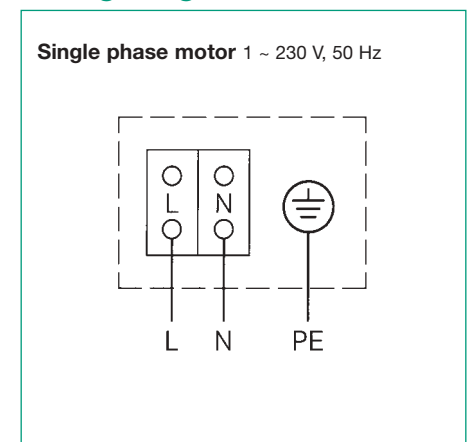
Wilo-Star-Z		Weight ca. kg
Z 15		1.6
Z 15 A, Z 15 APress	see Pump Diagram	1.8
Z 15 C		2.1

Motor Data

Single phase motor (EM), 2-pole - 1 ~ 230 V, 50 Hz

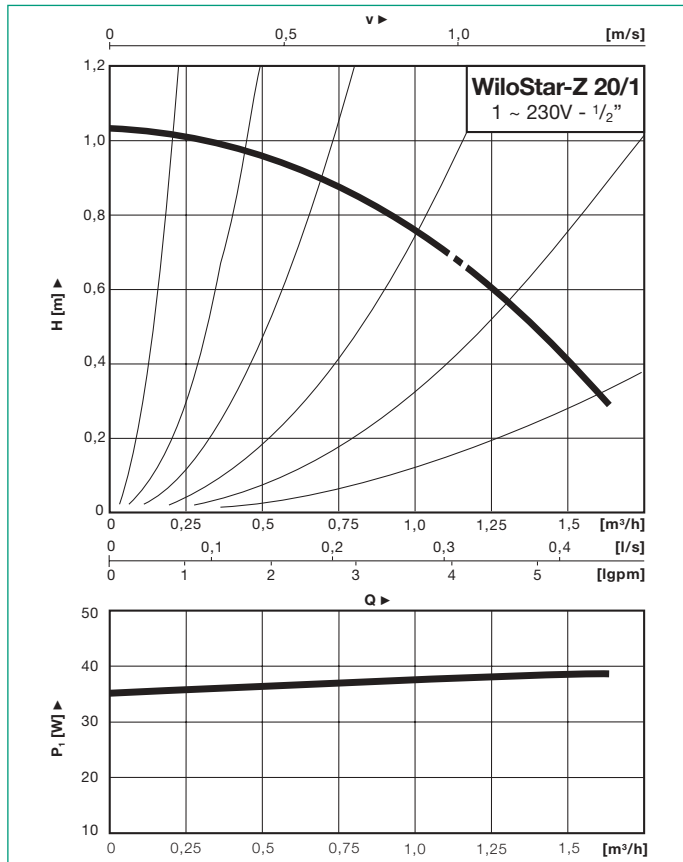
Wilo-Star-Z	Steps/Speed n r.p.m.	Power input P ₁ W	F.L.C. I A	Capacitor μF/VDB	PG Cable gland size	Overload protection
Z 15 Z 15 A, APress Z 15 C	2600	27 - 28	0.34	-	9	1)

Wiring Diagram

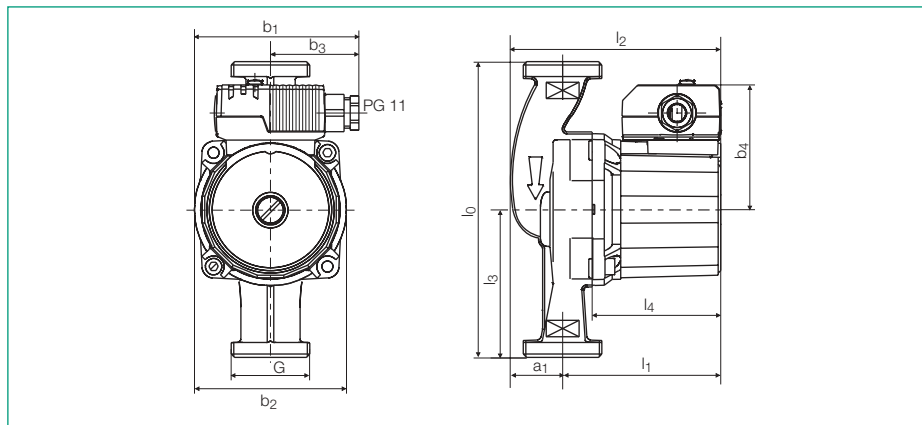


Wilo-Star-Z 20/1

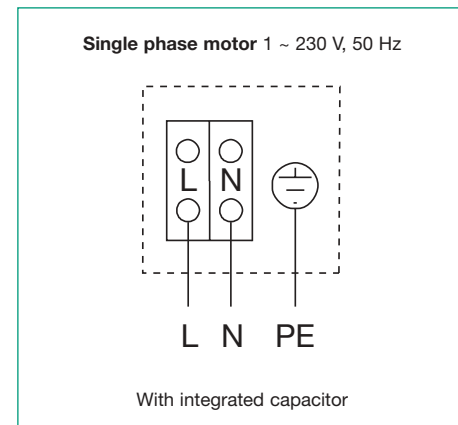
Duty Graph – Single Phase



Pump Diagram



Wiring Diagram



Measurements – Weights

Wilo-Star-Z	Rp	G	l ₀	l ₁	l ₂	l ₃	l ₄	a ₁	b ₁	b ₂	b ₃	b ₄	Weight ca. kg
Z 20/1	1/2"	1"	140	97	130	70	79	34	100	92.5	54	73	2.2

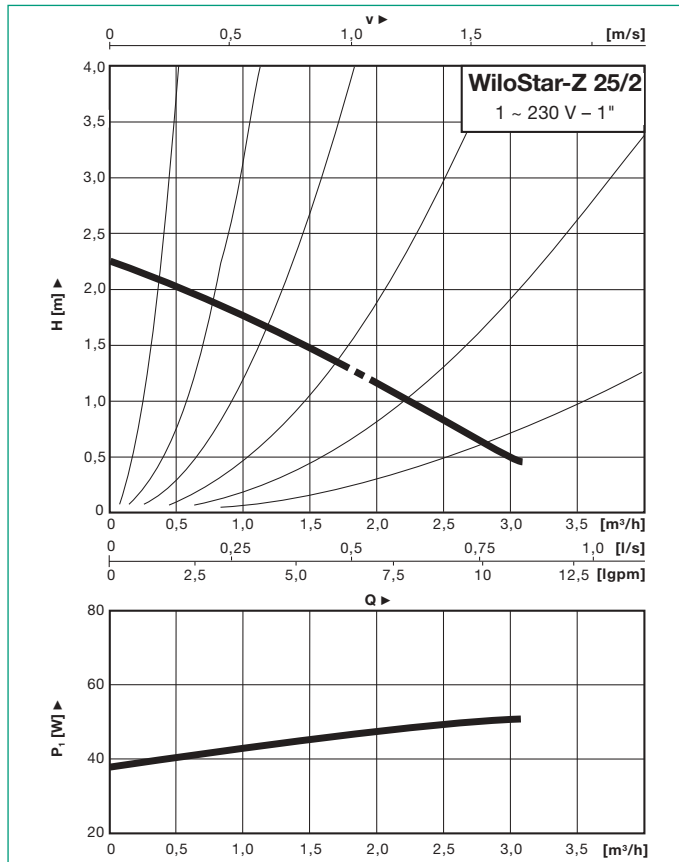
Motor Data

Single phase motor (EM), 2-pole - 1 ~ 230 V, 50 Hz

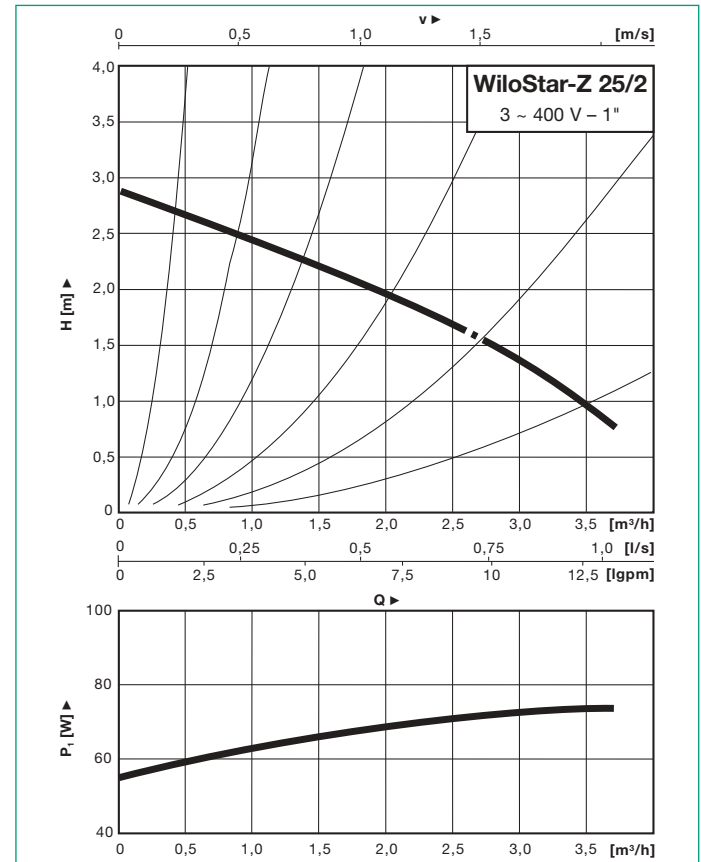
Wilo-Star-Z	Rated power P ₂ max. W	Steps/Speed n r.p.m.	Power input P ₁ W	F.L.C. I A	Capacitor μF/VCD	PG Cable gland size	Overload protection
Z 20/1	4	1700	36 – 38	0.18	1/400	11	1)

1) Non overloading motor - no overload protection required
Always refer to name plate data!

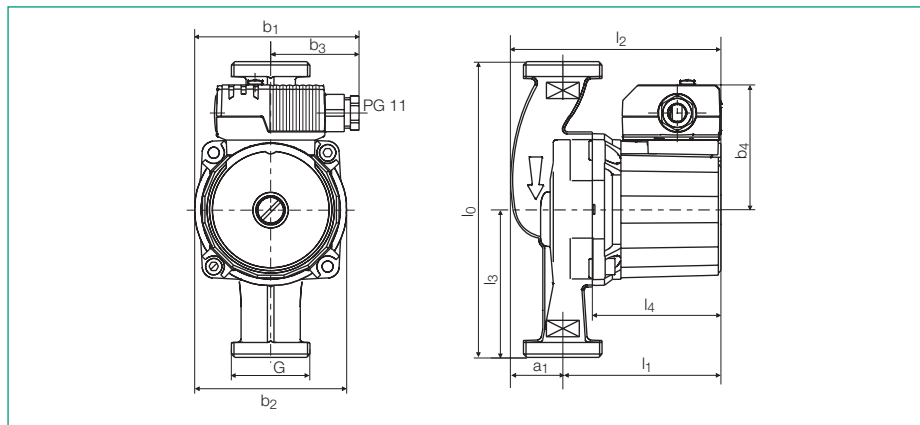
Duty Graph – Single Phase



Duty Graph – Three Phase

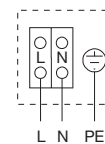


Pump Diagram



Wiring Diagram

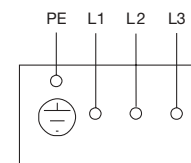
Single phase motor 1 ~ 230 V, 50 Hz



Non overloading -
no overload
protection required

With integrated capacitor

Three phase motor 3 ~ 400 V, 50 Hz



Non overloading -
no overload
protection required

Mains power 3 ~ 400 V, 50 Hz-Y

Measurements – Weights

Wilo-Star-Z	Rp	G	I ₀	I ₁	I ₂	I ₃	I ₄	a ₁	b ₁	b ₂	b ₃	b ₄	Weight ca. kg
			mm										
Z 25/2 EM	1"	1 1/2"	180	97	130	70	79	34	100	92.5	54	73	2.4
Z 25/2 DM	1"	1 1/2"	180	97	130	70	79	34	100	92.5	54	73	2.7

Motor Data

Single phase motor (EM), 2-pole - 1 ~ 230 V, 50 Hz

Wilo-Star-Z	Rated power P ₂ max. W	Steps/Speed n r.p.m.	Power input P ₁ W	F.L.C. I A	Capacitor µF/VDB	PG Cable gland size
Z 25/2	12	2300	38 - 49	0.22	1/400	11

Always to refer to name plate data!

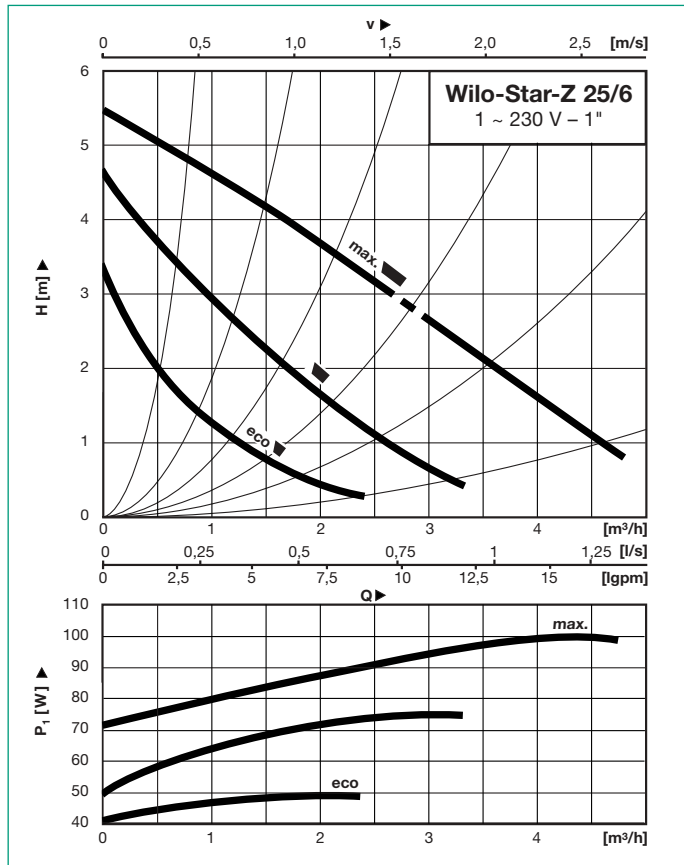
Motor Data

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

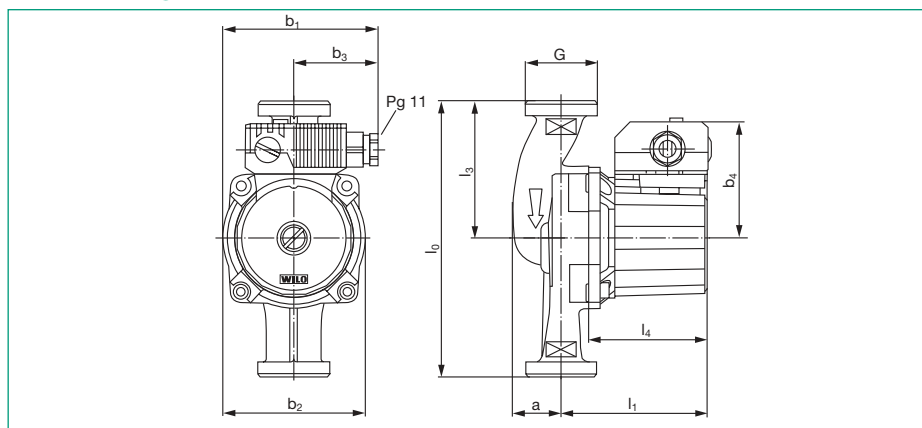
Wilo-Star-Z	Rated power P ₂ max. W	Steps/Speed n r.p.m.	Power input P ₁ W	F.L.C. I A	PG Cable gland size
Z 25/2	12	2650	55 - 72	0.16	11

Wilostar-Z 25/6

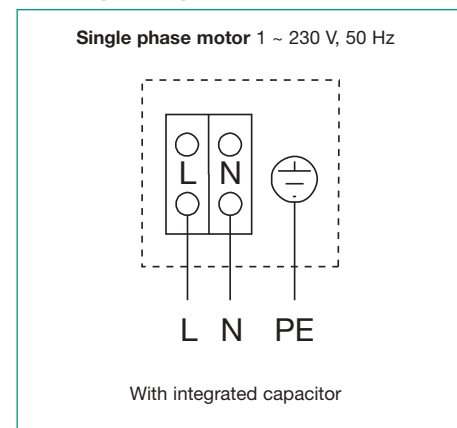
Duty Graph – Single Phase



Pump Diagram



Wiring Diagram



Weights – Measurements

Wilo-Star-Z	Rp	G	l_0	l_1	l_3	l_4	a	b_1	b_2	b_3	b_4	Weight
												ca. kg
Z 25/6	Rp 1"	1 1/2"	180	97	90	79	33	100	92.5	54	76	2.8

mm

PN 10

Motor Data

Single phase motor (EM), 2-pole – 1 ~ 230 V, 50 Hz

Wilo-Star-Z	Rated power P_2 max. W	Step/speed n r.p.m.	Power input P_1 W	F.L.C. I A	Capacitor $\mu F/VDB$	Motor protec- tion
Z 25/6	35 21 12	max. 2700 2500 eco 2100	72 – 99 52 – 74 39 – 49	0.41 0.32 0.22	2.6/400	1)

1) Non overloading – no motor protection required
Always refer to name plate data!