Installation and Operation Manual | **EN**
CSE OTS ZV W-iPWM PUMP STATION
with non-return valve, for heating systems

CSE OTS ZV W-iPWM

1. Introduction

The CSE OTS ZV W-iPWM pump station is intended for installation in unmixed hydraulic heating circuits where a non-return valve is required. The pump station ensures circulation through the hydraulic circuit while preventing circulation in the opposite direction. The circulation pump is switched from an external controller, the pump speed is controlled by a PWM signal. When the PWM signal is disconnected, the pump runs at its maximum speed. The controller is not included in the scope of supply. The pump station is designed to be installed directly on the piping, with a 100 mm minimum distance of the pipe axis from a wall.

2. Description of the pump station

The pump station consists of a Wilo PARA iPWM1 pump including power and control cables, a ball valve with a non-return valve, fittings with a ball shut-off valve, thermometer and insulation.

Main features	
Application	on a flow pipe in heating systems
Description	consists of a Wilo Para iPWM1 pump, a ball valve with a non-return valve, fittings with a ball valve, thermometer and insulation
Working fluid	water, water-glycol mixture (max. 1:1) or water-glycerine mixture (max. 2:1)
Installation	on a flow pipe in heating systems, the min. distance of the pipe axis from a wall is 100 mm
Code	**18127**

Technical data of CSE OTS ZV W-iPWM pump station	
Fluid working temperature	0 - 100 °C
working pressure	6 bar
Max. ambient temperature	58 °C
Power supply	230 V, 50 Hz
Insulation material	EPP RG 60 g/l
Overall dimensions	305 x 165 x 170 mm
Total weight	2.8 kg
Connections	2x G 1" F

Ball valve with non-return valve Operation data	
Max. fluid temperature	120 °C
Max. working pressure	16 bar

3. Flow direction

FLOW DIRECTION

4. Wilo-Para iPWM1 Pump

4.1. General Information

The Wilo Para 25/8 iPWM1 is a wet running circulation pump. The pump speed is controlled by the PWM signal. When the PWM signal is disconnected, the pump runs at its maximum speed. The operating status and possible faults of the pump are indicated by LEDs directly on the pump. The pump can send the current flow rate electronically to an external controller. The controller needs to be equipped with an iPWM read input and a flow rate calculation function.

The high efficiency circulation pumps of the PARA iPWM1 series are used exclusively for the circulation of liquids in hot water heating systems. Operating the pump in other systems or in systems containing too little water, air bubbles or not pressurized can lead to its rapid destruction.
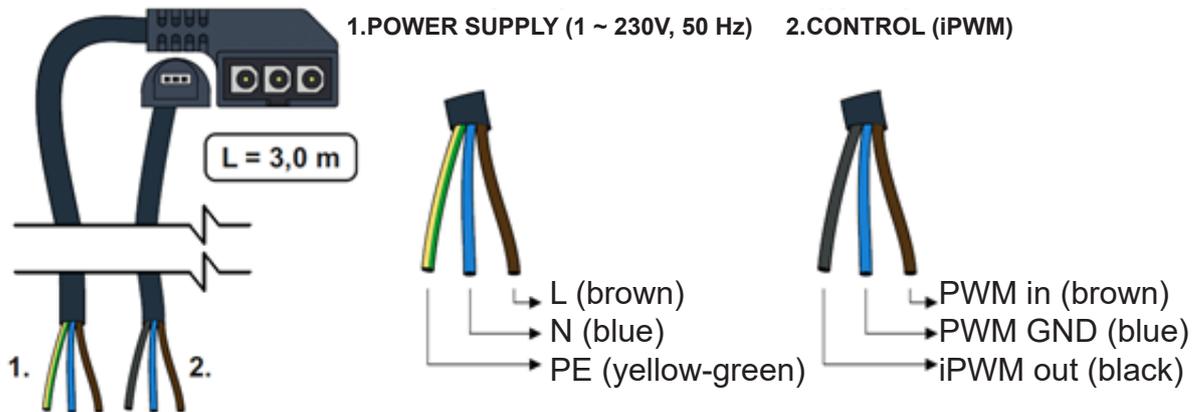
4.2. Permitted and Prohibited Pump Positions
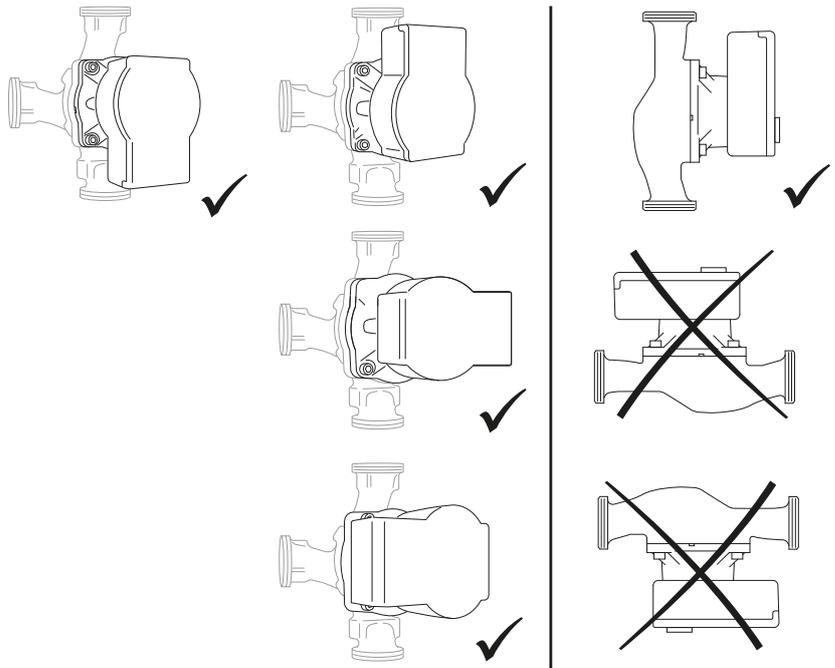
4.3. Pump Wiring

The pump must be wired / disconnected by a qualified person in compliance with EN 50110-1!

Wilo PARA 25/8 iPWM1 pump wiring

L = 3,0 m

1. POWER SUPPLY (1 ~ 230V, 50 Hz)

└→ L (brown)
→ N (blue)
→ PE (yellow-green)

2. CONTROL (iPWM)

└→ PWM in (brown)
→ PWM GND (blue)
→ iPWM out (black)

4.4. Technical Data

Wilo PARA 25/8 iPWM1	
Electric Data	
Electric Data	230 V, 50 Hz
Power input (min./max.)	2 / 75 W
Current (min./max.)	0.03 / 0.66 A
Max. speed	4800 rpm
Speed control	frequency converter
Energy Efficiency Index	≤ 0.21 by EN 16 297/3
IP rating	IPX4D
Motor protection	integrated
Min. pressure at the suction port to avoid cavitation	
Min. pressure at the pump suction port	0.5 mH_2O at 50 °C
	4.5 mH_2O at 95 °C
Operating Parameters	
Fluid working temperature	0 - 95 °C
Max. static pressure	10 bar
Max. head	8.4 m

4.5. FAULTS AND THEIR REASONS

The LED light signals a defect. The pump will switch off (depending on the defect type) and try to restart.

LED signals		State description and possible fault reasons
	GREEN IS LIT	1 - pump is running in trouble-free operation
	RED IS LIT	1 - rotor is blocked
		2 - electric motor winding defect
	FLASHING RED	1 - power supply lower/higher than 230 V
		2 - electric short circuit in pump
		3 - pump overheated
	FLASHING RED AND GREEN	1 - unforced fluid circulation through the pump
		2 - pump speed lower than desired
		3 - air in pump

4.6. Performace curves for Wilo Para 25/8 iPWM1 pump

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