Short description

PIERBURG

Short description: pump CWA-200-12

Validity of description

This description refers to the following pumps:

Serial – No.:
Manufacturing date: KW xx/yyy
Software: --
Hardware: --

Technical data

Operating voltage:	13,5V (9V to 16V)
Current consumption in nominal duty point:	max. 15A
Current consumption in stand-by operation:	max. 20mA
Current consumption in energy saving mode:	max. 100µA
Ambient working temperature:	max. 140 °C
Medium working temperature:	max. 128 °C
Flow rate:	7 m^3/h (116 l/min)
Pressure:	0,45 bar
min. speed	18 rpm
Max. speed	4500 rpm

Connections :

Description	Connection	Meaning
UB	1	Supply voltage
GND	4	Ground
U_{CSI}	3	CSI - Control input
U_{PWM} / Kl.15	2	PWM - Control input

Plug

Manufacturing company:	Kostal
Kostal – No.:	09441491
Coding:	A
Contacts:	4 * SLK 2,8 ELA high performance

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Installation

The pump must be mounted at a horizontal mounting position with a max deviation of 30 degrees.

This side up: right !

30° max.

**This side down: wrong !**

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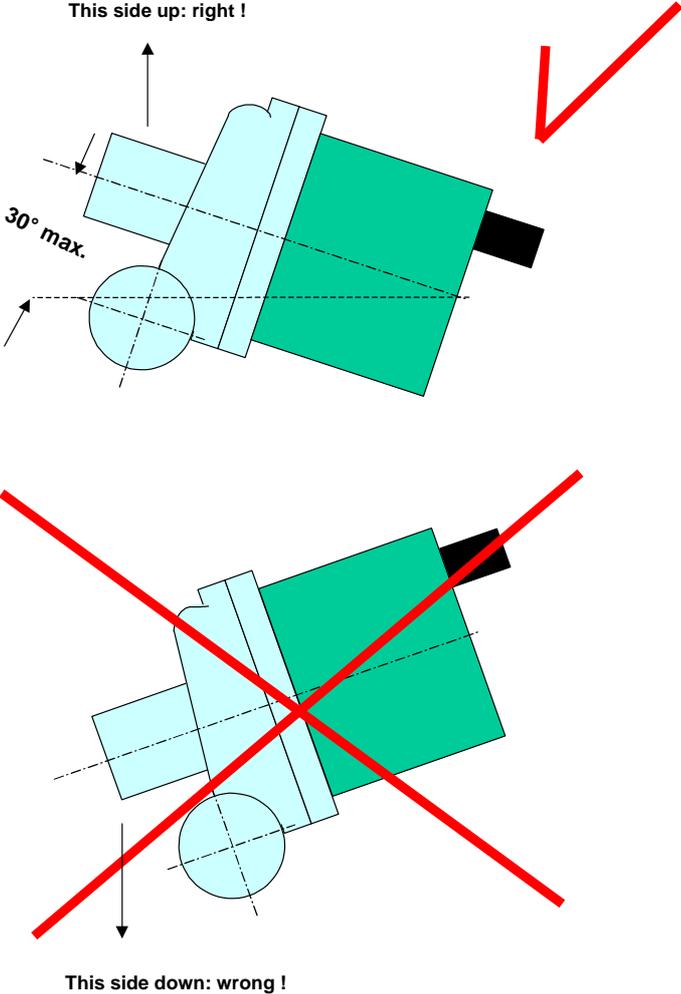
Description of the control signals

The pump can be controlled via two different electrical signals.
1.) PWM signal:
- a simple PWM signal without the capability of sending error messages

2.) Emergency running input and customer specific interface (CSI)

The Pump detects automatically which Interface (CSI or PWM) is used. Customer specific interface has priority. If no CSI signal is applied, the pump switches after 3 seconds automatically to the PWM Interface. If the pump is in PWM mode and a CSI signal is applied, the pump switches immediate back to CSI mode.

PWM Interface
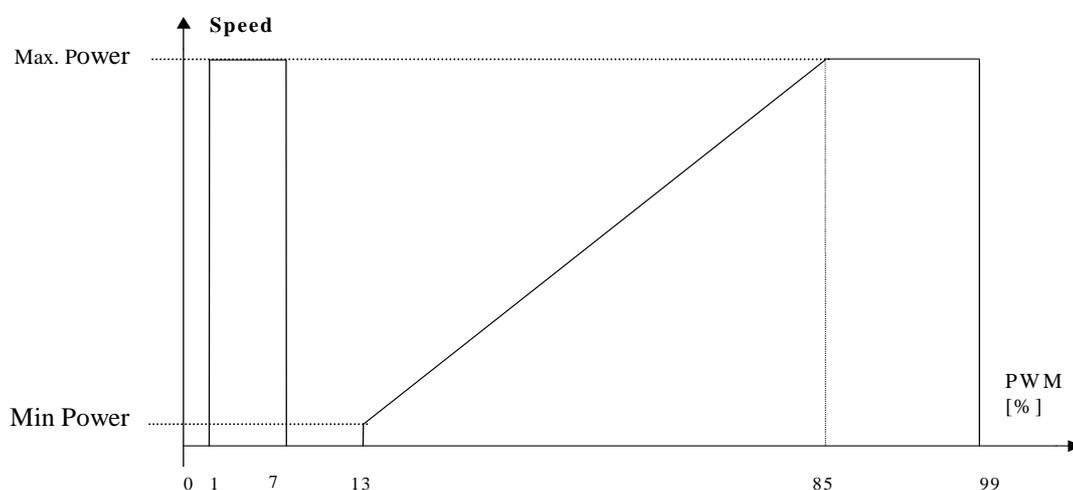
PWM interface frequency range: 45 Hz - 1100 Hz.
PWM high level voltage range: 8V – 45V
Input impedance: 22 kΩ

Following relations are valid:

PWM-value	Potential in PWM-control input
0% PWM	Ground (<2V)
100% PWM	U_{BAT} (>10V)

Mode	PWM value	RPM	Description
0	0 - 1%	--------------	Don't use
1	1 - 7%	Max	Maximum operation as mode 4
2	8 -12%	0	Stop and error reset
3	13 - 85%	Min-Max	Controlled operation. The speed is proportional to the duty cycle.
4	86 - 100%	Max	Maximum operation

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Interaction of the interfaces:

CSI	PWM	Speed
+ UB	signal	after 2,5sec. according PWM
no signal	signal	after 2,5sec. according PWM
+UB	+ UB	after 2,5sec. full speed
no signal	+ UB	after 2,5sec. full speed
+ UB	no signal	after 2,5sec. full speed
No signal	no signal	after 2,5 sec. sleep mode

Error handling

Over temperature

Between 150°C to 154°C speeds limitation to 3500rpm
Between 155°C to 159°C speeds limitation to 2500 rp m
Above 160°C over temperature shut down.
Pump will return to normal operation if temperature falls under values specified above.

Under temperature behaviour

On temperatures below 0°C the pump automatically re duce maximum speed in two steps.

Important instructions:

How to start the pump:

To start the pump it is necessary to connect the supply voltage and to apply a signal on one of the interface inputs to control the speed.

If no signal (PWM or CSI) is applied to the pump and one of the signal inputs is connected to U_B* the pump began to run after 3 seconds with full speed.

Energy saving function:

The pump possesses an energy saving Mode. In this Mode the pump absorbs less than 100µA. The pump runs in this mode when both control inputs are shut-off (to Ground) for a period longer than 2,5 s. After the Voltage supply is switched on, the pumps runs in energy saving mode. This mode is abandoned as soon as one of the control input is connected to U_B for a period longer than 0.5 s.
To raise the pump from energy saving function it is recommended to switch the unused signal input to U_B.

*U_B – Battery or supply voltage within the range specified on page 1