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PCE Instruments PCE-WSAC 50 Airflow Meter Alarm Controller User Manual

Contents

PCE Instruments PCE-WSAC 50 Airflow Meter Alarm Controller

Thank you for purchasing a wind speed alarm controller from PCE Instruments.

Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. Damage or injuries caused by non-observance of the manual are excluded from our liability and not covered by our warranty.

- The device must only be used as described in this instruction manual. If used otherwise, this can cause dangerous situations for the user and damage to the meter.
- The instrument may only be used if the environmental conditions (temperature, relative humidity, …) are within the ranges stated in the technical specifications. Do not expose the device to extreme temperatures, direct sunlight, extreme humidity or moisture.
- Do not expose the device to shocks or strong vibrations.
- The case should only be opened by qualified PCE Instruments personnel.
- Never use the instrument when your hands are wet.
- You must not make any technical changes to the device.
- The appliance should only be cleaned with a damp cloth. Use only pH-neutral cleaner, no abrasives or solvents.
- The device must only be used with accessories from PCE Instruments or equivalent.
- Before each use, inspect the case for visible damage. If any damage is visible, do not use the device.
- Do not use the instrument in explosive atmospheres.
- The measurement range as stated in the specifications must not be exceeded under any circumstances.
- Non-observance of the safety notes can cause damage to the device and injuries to the user.

We do not assume liability for printing errors or any other mistakes in this manual. We expressly point to our general guarantee terms which can be found in our general terms of business. If you have any questions please contact PCE Instruments. The contact details can be found at the end of this manual.

Safety symbols
Safety-related instructions the non-observance of which can cause damage to the device or personal injury carry

a safety symbol.

Symbol	Designation / description
	Warning: hazardous area Non-observance can cause damage to the device and injuries to the user.
	Warning: electrical voltage Non-observance can cause electric shock.

Specifications

Technical Specifications

- **Power supply:** 115 V AC, 230 V AC, 24 V DC
- **Supply voltage for sensors (output):** 24 V DC / 150 mA
- **Measurement range:** 0 … 50 m/s
- **Resolution:** 0.1 m/s
- **Accuracy:** ±0.2 m/s
- **Signal input (selectable):** 4 … 20 mA 0 … 10 V
- **Alarm relay:** 2 x SPDT, 250 V AC / 10 A AC, 30 V DC / 10 A DC
- **Interface (optional):** RS-485
- **Operating temperature:** 0 to 50 °C
- **Dimensions:** N/A

Delivery Contents

- 1 x PCE-WSAC 50 Airflow Meter Alarm Controller
- 1 x User Manual

Order Code

The order code for the PCE-WSAC 50 with different configurations:

- PCE-WSAC 50-ABC
- PCE-WSAC 50-A1C: Wind speed sensor 0 … 50 m/s / Output 4 … 20 mA
- PCE-WSAC 50-A2C: Wind speed sensor 0 … 50 m/s / Output 0 … 10 V

Parameter	A	B	C
Power supply			
230 V AC	1		
115 V AC	2		
24 V DC	3		
Signal input			
4 … 20 mA		1	
0 … 10 V		2	
Communication			
W/o			0
RS-485			1

Example: PCE-WSAC 50-111

- **Power supply:** 230 V AC
- **Signal input:** 4… 20 mA
- **Communication:** RS-485 interface

Accessories
PCE-WSAC 50-A1C:
PCE-FST-200-201-I Wind speed sensor 0 … 50 m/s / Output 4…20 mA

PCE-WSAC 50-A2C:
PCE-FST-200-201-U Wind speed sensor 0 … 50 m/s / Output 0…10 V

System Description
The PCE-WSAC 50 Airflow Meter Alarm Controller features LED alarm indicators, measurement display, enter button, right arrow button, power supply, cable gland, relay connection, wind sensor connection, and RS-485 interface (optional).

Device description
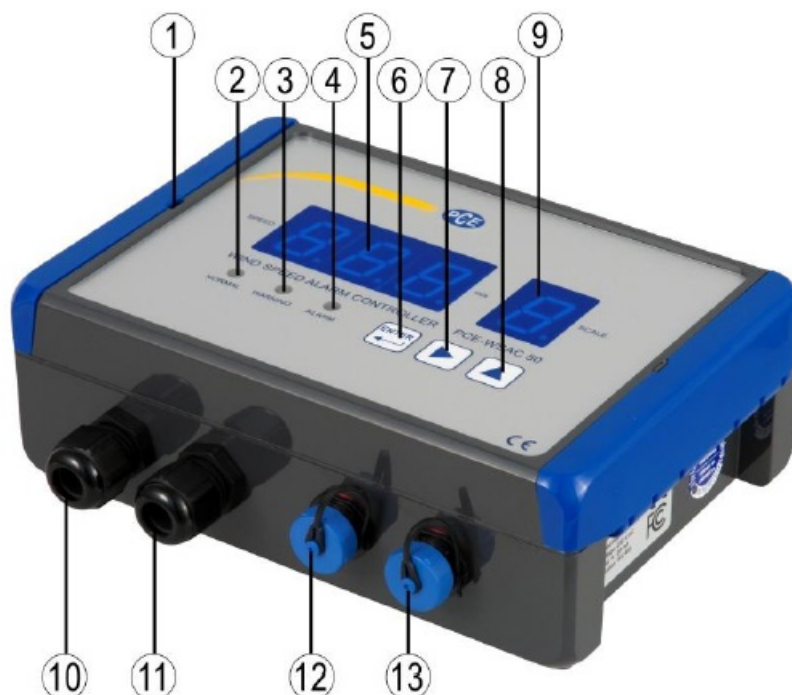
| 1	Opening groove	8	Arrow up key
2	LED „normal"	9	Display wind scale (wind force)
3	LED „pre-alarm"	10	Cable gland power supply
4	LED „alarm"	11	Cable gland relay / wind sensor
5	Display measured value	12	Connection wind sensor
6	Enter key	13	RS-485 interface (optional)
7	Arrow right key		

Electrical Wiring
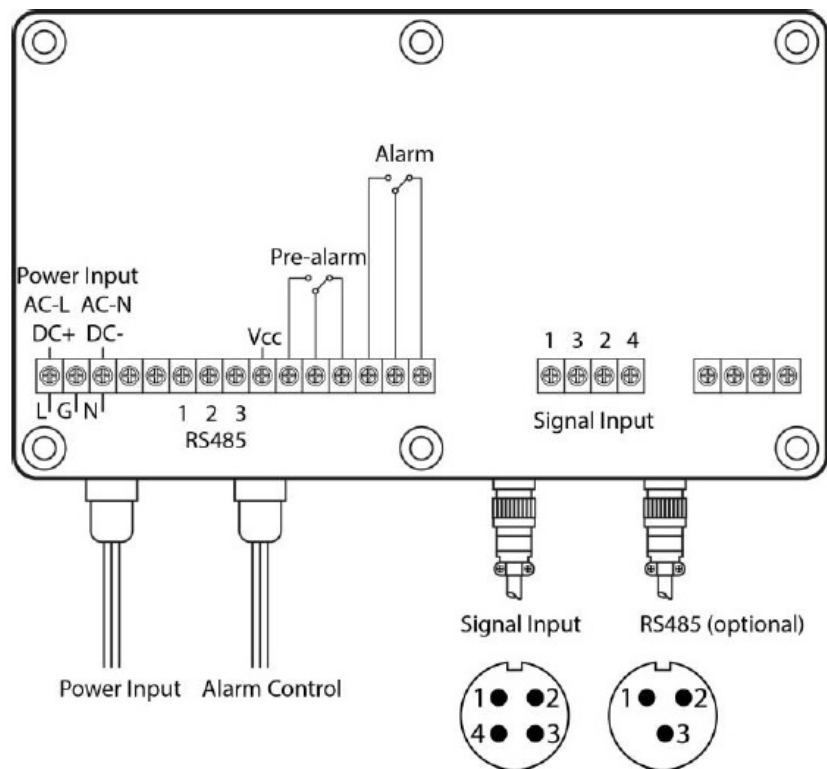
The pin assignment for the „Signal Input plug is as follows:

- **Pin 1:** Vcc (Power supply output)
- **Pin 2:** GND
- **Pin 3:** Signal
- **Pin 4:** Protective earth
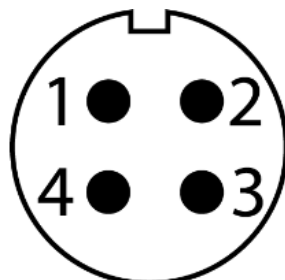
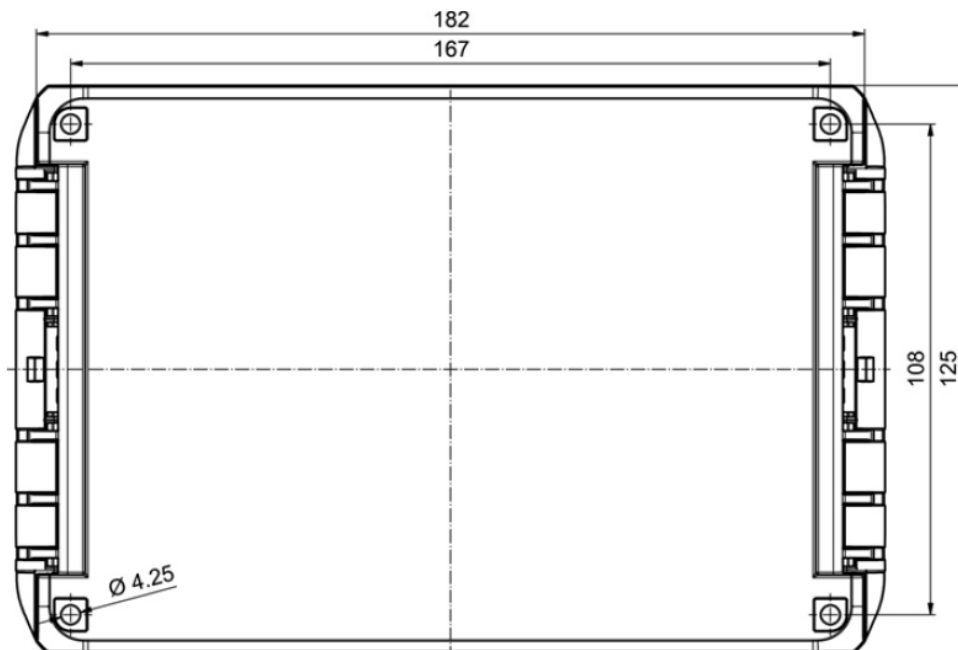**The pin assignment for the RS-485 interface plug is as follows:**

- **Pin 1:** B
- **Pin 2:** A
- **Pin 3:** GND
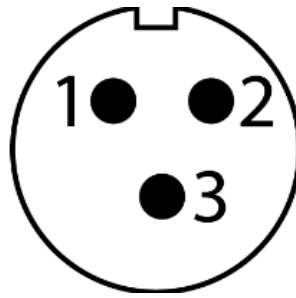
Getting Started

Assembly
Attach the wind speed alarm controller where desired. The dimensions can be taken from the assembly drawing below.

Power Supply
Establish power supply by means of the relevant connections and set up the connection of the relay outputs to your system or signalling device (see 3.2). Make sure that the polarity and the power supply is correct.

ATTENTION: Excessive voltage can destroy the device! Ensure zero voltage when establishing the connection! The device will power on immediately when connected to the power supply. The current reading will be displayed when a sensor has been connected. If no sensor has been attached, the display will show "00,0" if you have one of the PCE-WSAC 50-A2C versions (signal input 0…10 V) or. "Err" if you have a PCE-WSAC 50-A1C version (Signal input 4…20 mA).

Connecting the Sensors
Connect the sensor (not included in the standard package) and the (optional) interface, using the plugs as described in 3.3 and 3.4. Make sure that the polarity and the power supply are correct.

ATTENTION: Non-observance of the polarity can destroy the wind speed alarm controller and the sensor.

Operation

Measurement
The device measures continuously as long as it is connected to the power supply. The factory default setting for the pre-alarm (S1) is from 8 m/s and for the alarm (S2), the default setting is from 10.8 m/s. The pre-alarm will make the pre-alarm relay switch, a yellow LED will glow and a beep sound will be emitted in intervals. In case of an alarm, the alarm relay will switch, the red LED will glow and a continuous beep sound will be activated.

N/A

Settings
The PCE-WSAC 50 has the following settings options:

- **Exit:** Exit the settings menu
- **Voralarm:** Set the pre-alarm threshold
- **Alarm:** Set the alarm threshold
- **Filter:** Set the filter time constant
- **Str**: Factory default settings

To get to the setup menu, press the ENTER key (6) until the first digit flashes. Then enter "888". With the Arrow right key (7), you can navigate through the digits and change the value of the digit with the Arrow up key (8). Confirm with ENTER (6).

The following options can be selected using the Arrow up key (8):

Display	Meaning	Description
Ext	Exit	Back to normal measuring mode
S1	Pre-alarm	Enter the desired value (max. 50 m/s). You can move the cursor with the Arrow right key (7) and change the value of the digits with the Arrow up key (8). Confirm with ENTER (6). Please note: The pre-alarm value must not be higher than the alarm value and the alarm value must not be lower than the pre- alarm value.
S2	Alarm	Enter the desired value (max. 50 m/s). You can move the cursor with the Arrow right key (7) and change the value of the digits with the Arrow up key (8). Confirm with ENTER (6). Please note: The pre-alarm value must not be higher than the alarm value and the alarm value must not be lower than the pre- alarm value.
Flt	Filter	You can use the Arrow right key (7) to navigate through the digits and the Arrow up key (8) to change the value of the digits. Confirm with ENTER (6). The following options can be selected: "000" Current wind speed Change interval of display: 200 ms Change interval of relay: 200 ms "002" 2-minute average value Change interval of display: 120 s Change interval of relay: 120 s "005" 5-minute average value Change interval of display: 300 s Change interval of relay: 300 s
Str	Factory settings	Resets all parameters to factory settings

To enter the relevant menu, select the menu with the Arrow up key (8) and confirm with ENTER (6). You can leave

the menu by selecting "Ext" and confirming with the ENTER (6) key. If no key is pressed for 60 seconds, the device enters normal measuring mode automatically.

RS-485 Interface (optional)

The communication with the wind speed alarm controller PCE-WSAC 50 is enabled by the MODBUS RTU protocol and the serial RS-485 port. This allows different registers containing the measured wind speed, the wind scale and other information to be read.

Communication Protocol

- The registers can be read by means of the Modbus function 03 (03 hex) and written into by the function 06 (06 hex).

The communication protocol for the RS-485 interface supports the following baud rates:

- 1200, 2400, 4800, 9600, 14400, 19200, 38400, 56000, 57600, 115200

Supported baud rates	1200, 2400, 4800, 9600, 14400, 19200,38400, 56000, 57600, 115200
Data bits	8
Parity bit	None
Stop bits	1 or 2
Data type of registers	16-bit unsigned integer

Standard Setting

Baud rate	9600
Parity	None
Stop bit	1
Address	123

The standard setting for the RS-485 interface is 8 data bits, no parity, and 1 or 2 stop bits.

Excerpt from Register Addresses

Register address (dec)	Register address (hex)	Description	R/W
0000	0000	Current wind speed in m/s	R
0001	0001	Current wind scale	R
0034	0022	Pre-alarm	R/W
0035	0023	Alarm	R/W
0080	0050	Modbus address	R/W
0081	0051	Baud rate (12 = 1200 baud, 24 = 2400 baud, etc.)	R/W
0084	0054	Stop bits (1 or 2)	R/W

Contact
If you have any questions, suggestions or technical problems, please do not hesitate to contact us. You will find the relevant contact information at the end of this user manual.

Disposal
For the disposal of batteries in the EU, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose. In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law. For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations. If you have any questions, please contact PCE Instruments.

PCE Instruments contact information
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FAQ

1. **Q: What is the power supply voltage for the PCE-WSAC 50?**

    A: The PCE-WSAC 50 can be powered by 115 V AC, 230 V AC, or 24 V DC.

2. **Q: Does the PCE-WSAC 50 come with a wind speed sensor?**

    A: No, the wind speed sensor is not included in the delivery contents. It needs to be purchased separately.

3. **Q: What is the interface option for the PCE-WSAC 50?**

    A: The PCE-WSAC 50 has an optional RS-485 interface for communication.

Documents / Resources

PCE Instruments PCE-WSAC 50 Airflow Meter Alarm Controller [pdf] User Manual
PCE-WSAC 50 Airflow Meter Alarm Controller, PCE-WSAC 50, Airflow Meter Alarm Controller,
Meter Alarm Controller, Alarm Controller, Controller

References

- 🌐 **France.fr : Actualités, destinations et infos du tourisme en France**
- 🌐 **iberica.es**
- 🌐 **instruments.cn - The domain is available for purchase**
- **Ci Computer Instruments | Home**
- 🇮🇹 **Discover Italy: Official Tourism Website - Italia.it**
- 🌍 **N.E.E.D.S., (Nutritional Ecological Environmental Delivery System) specializes in providing products, information, and education**
- **PCEￜˆåŒ—ä°¬ï¼‰ç§‘æŠ€æœ‰é™å…¬å¸**
- ☞ **Industrial Measurement Products and Solutions | PCE Instruments**
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