

QUICK REFERENCE GUIDE

DESCRIPTION

Mains Power Supply WHP425 provides heating and operating power for a WS425 Ultrasonic Wind Sensor or other equipment managing with 36VDC 0.8A and 12VDC 0.03A supplies. The WHP425 adapts automatically to all common mains power inputs (100/115/120/230) with no need for adjustment or setting of selector switches.

The WHP425 has a weather, water, and fire resistant housing with ingress protection rating IP66/67 and fire resistance class UL 94-5V. The equipment can be mounted on a wall or on a pole mast with \varnothing 60 mm, \varnothing 75 mm, or \varnothing 100 mm mounting kits available. For installation to a pole mast see Figure 2.

WIRING

The detailed instructions for wiring the Mains cord, WS425 sensor cable, and Data line cable are in Figure 4, on the reverse.

There are spare screw terminals inside the WHP425 enclosure for signal wire chaining between the data line and sensor cable. Wiring for the WS425 various data transmit modes to the spare screw terminals (1, 2, 3, and 4) is also illustrated in Figure 4.

A simplified wiring principle is shown in Figure 1. The standard sensor cable length is 10 meters.

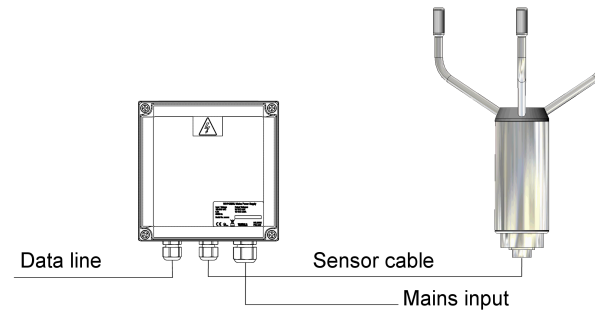


Figure 1 Wiring principles

For long sensor cables, with power line total resistance $> 20\Omega$, it is advisable to connect a 100...220 μ F capacitor across +12VDC and respective GND at the sensor end. This is to avoid power fluctuation in the cable. An 18V transient zener diode should be connected across the capacitor for protection.

With long sensor cables it should also be noted that part of the heating power is stolen by the cable. For example, 20 Ω line resistance drops the sensor heating power to half of nominal. For such cases we recommend either larger diameter wires or multiple wires in parallel for +36VDC and respective GND.

INSTALLATION

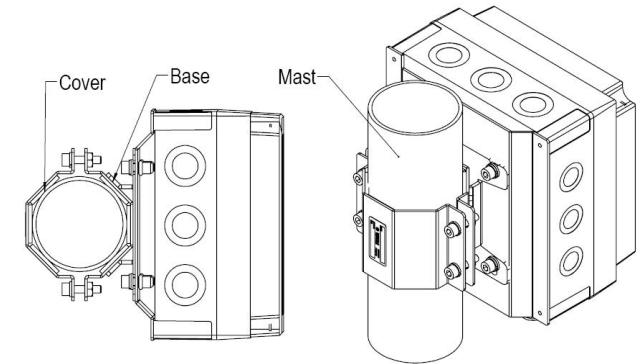


Figure 2 Installing WHP425 to pole mast

Figure 2 illustrates mounting of the WHP425 to a pole mast with one of the available mounting kits. Note that the equipment is intended only for installation in a restricted access location. Follow the procedure below:

1. Attach the mounting kit base part with the four screws to the metallic rear wall plate of the unit.
2. Place the unit to the mast at suitable height, and fasten it there by means of the mounting kit cover part attached to the base part with the other four screws in the kit.
3. Switch off all live voltages! Remove the unit front cover by first removing its four plastic fastening screws.
4. The outlet for the mains cable shall be near the unit and easily accessible. In case the original mains cable is too short for the application, replace it with another, carefully observing the L/ N/ PE markings on the screw terminals and in the diagram of Figure 4. Use the rightmost cable gland and lastly tighten it carefully.
5. Enter the sensor cable through the middlemost cable gland and make the cable wiring as instructed in Figure 4. Carefully tighten the sensor cable gland.
6. Enter the data line cable through the leftmost cable gland and make the cable wiring as instructed in Figure 4, depending on the data transmit mode of the WS425. Carefully tighten the data line cable gland.
7. Carefully reattach the enclosure cover with the four plastic screws.

Mains Power Supply WHP425



- Especially for WS425 Ultrasonic Wind Sensors
- Both heating and operating power available (36VDC 0.8A, 12VDC 0.03A)
- Universal power input 100... 230VAC
- Spare screw terminals and cable gland for data line connections
- Fire resistant, non-metallic enclosure (UL 94-5V)
- Ingress protection IP66/67 (NEMA 4X)
- Mounting kits available for \varnothing 60 mm, \varnothing 75 mm, and \varnothing 100 mm masts



TECHNICAL DATA

Property	Description / Value
Input power	100-230VAC max. 0.7A, 50/60Hz
Output power	36VDC 0.8A, 12VDC 0.03A
Installation & service work temperature	-40...+55°C (-40...+131°F)
Operating and storage temperature	-52...+55°C (-60...+131°F)
Environmental protection classes	IP66/67 (NEMA 4X) UL 94-5V
Dimensions (w×h×d)	180 × 180 × 102 mm
With cable glands & rear mounting plate	180 × 208 × 116 mm
Weight	1.6 kg
Housing materials	Polycarbonate, stainless steel
Cable dimensions	∅ 5 - 10 mm, ∅ 7 - 13 mm
Wire dimensions	0.2 - 4 mm ²

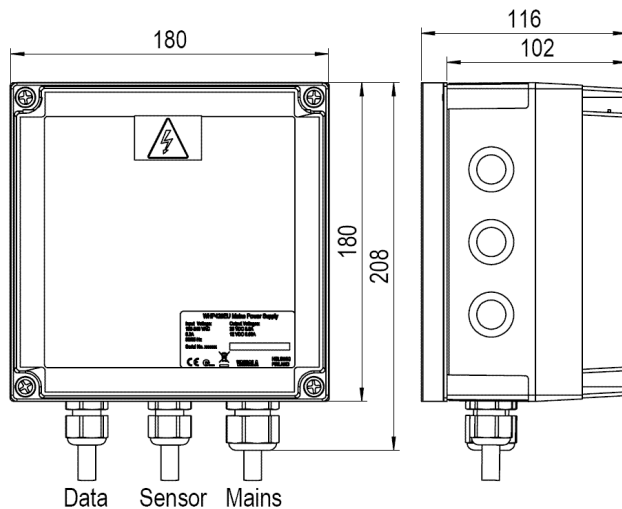


Figure 3 Dimensions

SPARE PARTS and ACCESSORIES

- Switching Power Supply assembly 224500SP
- Mast mounting kit, ∅ 60 mm APPK-SET60
- Mast mounting kit, ∅ 75 mm APPK-SET75
- Mast mounting kit, ∅ 100 mm APPK-SET100

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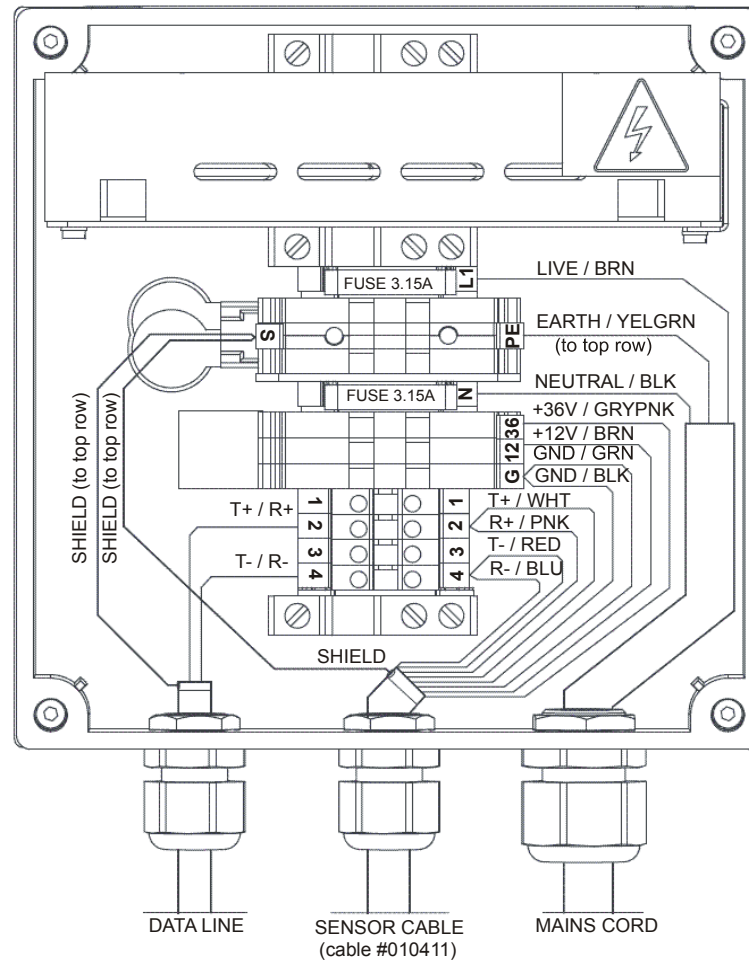


Figure 4 Wiring diagram with RS-485 cable

Wiring for other WS425 data transmit modes is defined in the tables on the right. Operating power is taken from terminals 12 and G in all cases other than *SDI-12 with power feed from Data line*. Heating power is always taken from terminals 36 and G.

WARRANTY

For certain products Vaisala normally gives a limited one-year warranty. Please observe that any such warranty may not be valid in case of damage due to normal wear and tear, exceptional operating conditions, negligent handling or installation, or unauthorized modifications. Please see the applicable supply contract or Conditions of Sale for details of the warranty for each product.

RS-422 (Cable 010411):

#	Sensor cable	Data line
1	T+ / WHT	T+
2	R+ / PNK	R+
3	T- / RED	T-
4	R- / BLU	R-

RS-232 (Cable ZZ45203):

#	Sensor cable	Data line
2	SGND / YEL	SGND
3	TxD / RED =>	TxD
4	RxD / BLU <=	RxD

SDI-12 (Cable WS425CABSDI) with power feed from Data line:

#	Sensor cable	Data line
2	Data / YEL	Data
3	GND / BLK	GND
4	+12V / BRN	+12V

WARNING: In this case do NOT wire GND/BLK and +12V/BRN to screw terminals G and 12.

SDI-12 (Cable WS425CABSDI) with power feed from WHP425:

#	Sensor cable	Data line
2	Data / YEL	Data
3	Jumper to terminal G	GND

Analog (Cable ZZ45204):

#	Sensor cable	Data line
1	WD Ref / WHT	WD Ref
2	SGND / YEL	SGND
3	WD Vout / GRY	WD Vout
4	WS Fout / PNK	WS Fout
or	WS Vout / VIO	WS Vout

NOTE This manual does not create any legally binding obligations for Vaisala towards the customer or end user. All legally binding commitments and agreements are included exclusively in the applicable supply contract or Conditions of Sale.