

WHP151 Power Supply



- Ruggedized Mains Power Supply
- Heating and operating power outputs for standard wind sensors and transmitters
- Temperature control of heating power output
 - Compact size with mast mounting
- Outdoor use with IP65 (Nema 4) housing



DESCRIPTION

The WHP151 is a compact mains power supply unit designed for outdoor use. It has three outputs: one provides the shaft heating power for the WA151 wind sensors, and the other two provide the operating power to various data loggers or transmitters measuring the sensors. It is also applicable to many other purposes, where a weather resistant, mast mountable power supply is required.

The heating power supply (HTGV at X6/3-4) has a thermostat control enabling the output only at ambient temperatures below +3 °C (approx.). The output can also be permanently enabled by removing the jumper plug at X7. The HTGV voltage is rectified but unfiltered DC. Two jumper selectable levels are provided, namely 38 V_{RMS} intended for normal 2-sensor applications with series connected heating elements, and 18 V_{RMS} applicable to single sensor cases, for example.

The operating power supply (RDCV at X6/5-6) has a linear fold-back regulator with two jumper-selectable output options. The 13 VDC option, with an 80 mA current limit, can be used for excitation of local WAT11, WAT12 or WAT15 wind transmitters. The 20 VDC option, with a 120 mA current limit, suits for excitation of both local and remote WAT12, WAT15 or DAT12 transmitters.

In addition, an unregulated 30 VDC output is provided at X6/8-7. This is useful for excitation of QLI50 or QLC50 systems. A 220 mA total current can be taken from the 30 VDC and RDCV outputs altogether. This is sufficient, e.g. for a QLC50 (30 VDC) plus two WAT12 or DAT12 transmitters (RDCV). However, all possible sensor power savings should be configured in the QLC50 and 5 mA current loops selected in the WAT12 device(s).

Optionally, the RDCV output may be used for charging a small (12 V, 1...4 Ah) battery. During a mains break the battery will be automatically switched to the 30 VDC output, hence serving as a no-break back-up supply for a QLC50 system, for example.

The WHP151 has a weather-proof, cast aluminium enclosure mountable either to Ø 60 mm or 100 mm pole masts (the Ø 100 mm mounting clamp is included in the delivery).

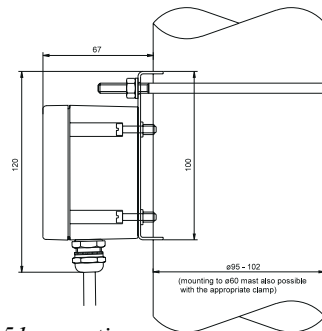


Figure 1. WHP151 mounting

INSTALLATION

Figure 1 illustrates mounting of the WHP151 to a pole mast with the standard mounting clamp. For installation, follow the procedure below:

- 1 Remove the 4 screws attaching the unit cover. Remove the cover.
- 2 Attach the unit to its mounting plate (if not already fixed) with the two M4 screws.
- 3 Attach the unit to the mast at suitable height with the proper mounting clamp.
- 4 Check that the X2 jumper selection corresponds to the local mains voltage level. If not, make proper reselection. Refer to Figure 2 or the instruction label on the unit's cover.
- 5 With the mains voltage disconnected enter the mains cable through the leftmost cable gland and do the input wiring to X1 (L & N, spring loaded terminals) and Earth (crimp & screw). Tighten the input cable gland.
- 6 Enter the output cable(s) through the rightmost cable gland(s). For the best protection against RF interference, follow the earthing instructions in Figure 4. Make sure that no cable shield mesh gets on the circuit board. Tighten the output cable gland(s).
- 7 Do the output wiring to the removable screw terminal block X6. Check for correct jumper settings at X5, X7 and X8 (refer to the instruction label or Figure 2).
- 8 Carefully reattach the enclosure cover with the four screws.

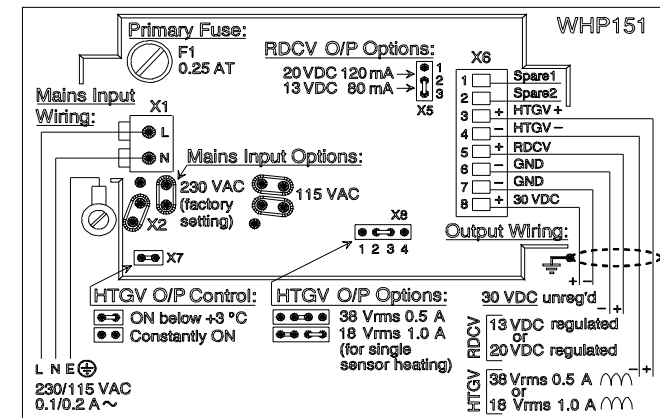


Figure 2. WHP151 wiring instructions

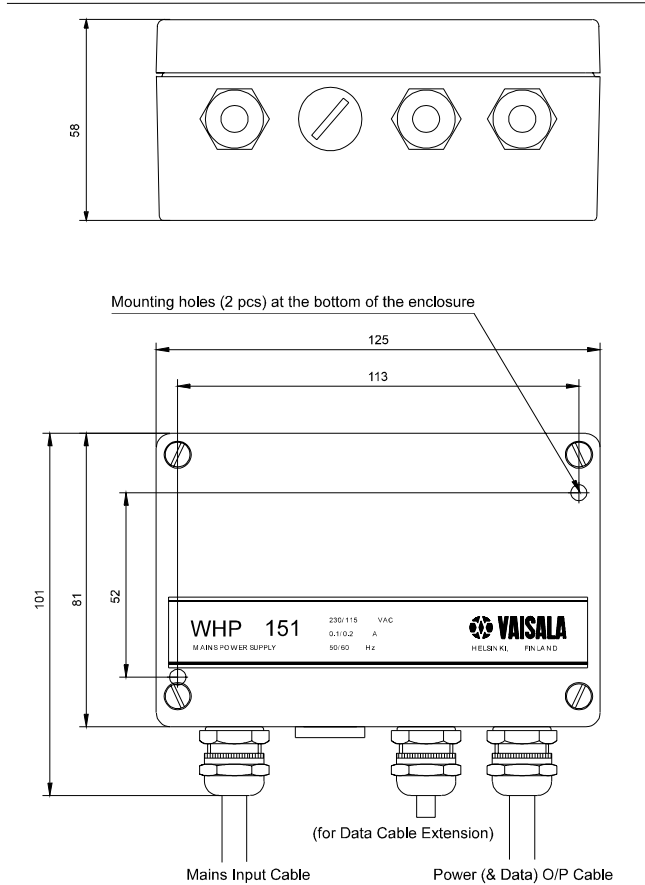


TECHNICAL DATA

Input operating power (X1)	
Nominal	230 VAC ±10 %, 50/60 Hz, 0.1 A max.
Selectable option	115 VAC, 50/60 Hz, 0.2 A max.
Output power	
• RDCV output (X6/3-4)	
Default selection (X5/2-3) (WAT)	13.5 ±0.5 VDC, 80 mA
Optional selection (X5/1-2) (QL)	20.0 ±0.7 VDC, 120 mA
• HTGV output (X6/5-6)	
Default selection (X8/2-3) for wind sensor shaft heating	38 ± 4 V _{RMS} unfiltered DC, 0.5 A max.
Optional selection (X8/1-2, 3-4) for single sensor shaft heating	18 ± 2 V _{RMS} unfiltered DC, 1.0 A max.
Thermostat control output enabled below +3 °C (constantly enabled by removing the jumper at X7)	
• 30 VDC output (X6/8-7) Output voltage 28 ± 4 VDC (unregulated)	
Total current allowed from 30 VDC and RDCV outputs together 220 mA max.	
Fuses	
Primary	0.25 AT replaceable fuse, 5 × 20 mm (F1)
Secondary	0.4 A and 1.1 A solid state PTC-fuses, self recovering
Electrical connections	
• Input/output connectors	
X1:	2-terminal connector for mains i/p (L, N) (and a screw connection for Earth)
X6:	6 terminals for power output, and two spare terminals for data cable extension
• Jumper connectors	
X2:	Mains input voltage selection (230/115 VAC)
X5:	RDCV output voltage selection (13/20 VDC)
X7:	HTGV output enable mode (<+3 °C/constantly)
X8:	Output voltage selection 18/38 V _{RMS}
• Cable glands	
3 glands, each for cable Ø 4 – 8 mm (with coaxial clamping of cable shield)	
Operating temperature	- 50 ... +55 °C
Storage temperature	- 60 ... +70 °C
Humidity	0 ... 100 % RH
Material	
Housing	Cast aluminium, painted grey, IP65 (Nema 4)
Mounting plate	Stainless steel
Dimensions	
Unit	125 × 81 × 58 mm (w × h × d) (cable glands add 20 mm to height)
Mounting	To a Ø 60 or 100 mm pole mast
Weight	1.4 kg with standard mounting accessories



Head Office:
VAISALA Oy
PL 26, FIN-00421 Helsinki
FINLAND
Phone: +358 9 894 91
Telefax: +358 9 894 9227
Telex: 122832 vsala fi



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Figure 3. WHP151 outer dimensions

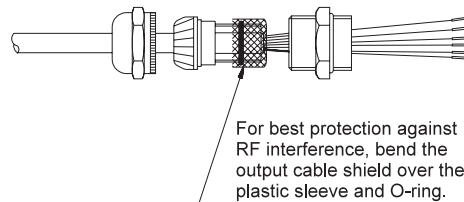


Figure 4. Earthing of power output cable shield

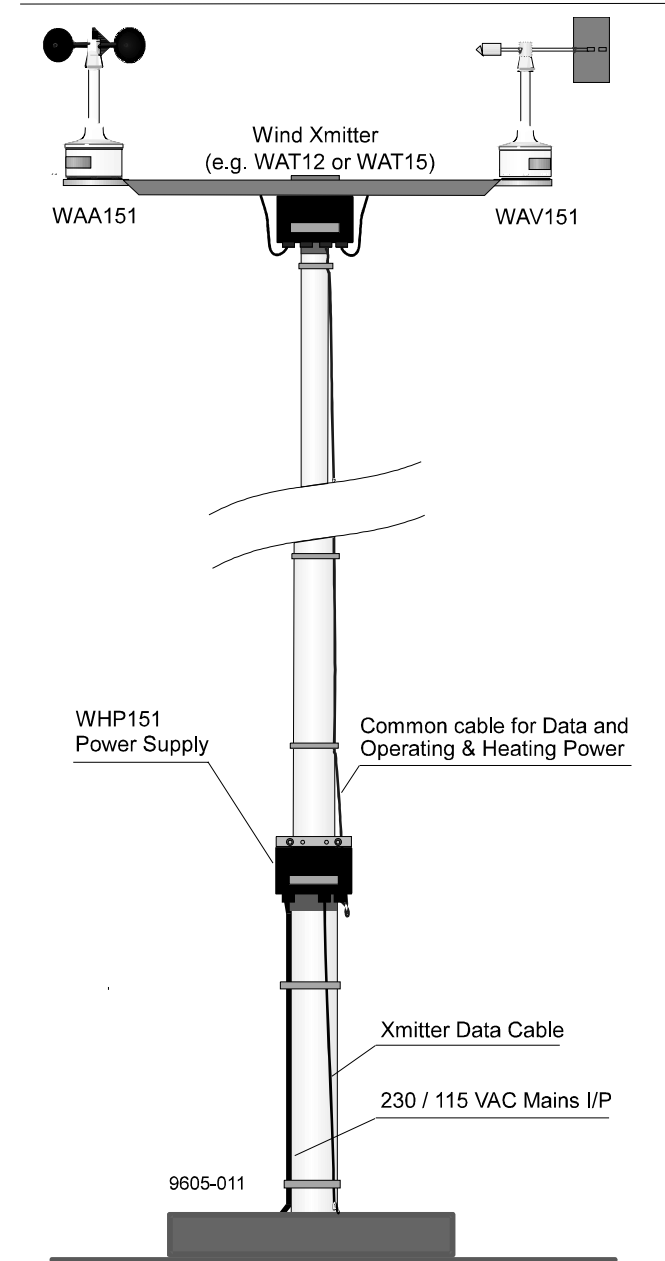


Figure 5. Typical application of the WHP151 Mains Power Supply