

VPLog-i

User manual
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VPLog-i

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Table of Contents

1 Warning - Read this first	4
2 Introduction	5
3 Product overview	6
4 Mechanical	7
5 Electrical	8
1 Current output	8
2 Pulse output	9
6 Specifications	10
7 Order information	11

1 Warning - Read this first

	Safety This device should only be installed by qualified persons, who are trained and comply with local legislations for work on electrical installations. The clamp should be used on insulated cables and it is not recommended to use this clamp on open buzz bars. If it is used on open bars the max voltage is 300V (This is the limit of signal cable)
	To avoid electric shock, use caution during installation and use of this product; high voltages and currents may be present in circuit under test.
	Before each use, inspect the VPLog-i. Do not use the VPLog-i if damaged.
	Use the VPLog-i only as specified in the operating instructions; otherwise the safety features may not protect you.
	The clamp should be used on insulated cables and it is not recommended to use this clamp on open bus bars. If it is used on open bars the maximum voltage is 300V to ground. (This is the limit of signal cable)
	Adhere to local and national safety codes. Individual protective equipment must be used to prevent the shock and arc blast injury where hazardous live conductors are exposed.
	Use caution when working with voltages above 60VDC, 30VAC rms or 42V AC peak. Such voltages pose a shock hazard. The VPLog-i should ONLY be installed when power is shut down.
	Do not use VPLog-i in wet environments or in locations that hazardous gases exists
	Feedback leads to product improvement. Please share your experience with us, as we are continuously improving our products in our commitment to quality, reliability and ease of use. Let us know via sales@vpinstruments.com !

2 Introduction

The VPLog-i is a 4-20mA AC current sensor that measures AC currents up to 1500A (true-rms on a single phase power cable).

Great products deserve great user manuals. We have done our best to make this user manual as complete as possible. New users, please read it carefully to familiarize yourself with our products.

Check the packaging box for any inconsistencies. Should there be any shipping damage, notify the local carrier. At the same time a report should be submitted to Van Putten Instruments BV, Buitenwatersloot 335, 2614 GS DELFT, The Netherlands.

This manual is dedicated to:

VPA.8000.2XX where x indicates the measurement range

Do you like our products and this user manual? Tell others! Do you miss something? Let us know via [sales@vpinstruments.com!](mailto:sales@vpinstruments.com)

3 Product overview

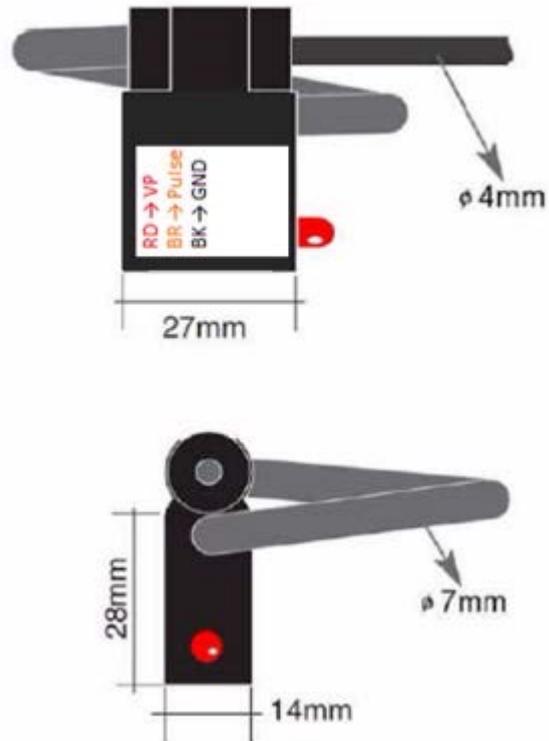
The VPLog-i is a 4-20mA AC current sensor that measures AC currents up to 1500A (true-rms on a single phase power cable). The sensor has 2 outputs:

- The analogue output is proportional to measured input and ranges from 4 to 20 mA.
- The pulse output generates a pulse frequency proportional to the current measured. This allows that the VPLog-i can be used as a simple power meter if a pulse counter is attached to the pulse output.
 - The pulse outputs of up to 3 VPLog-i sensors can be connected together. The hard and software assures that there is no overlap between the pulses of different sensors. The sensor has an indication LED. This blinks when the VPLog-i is powered. The rate at which it blinks is proportional to the output current.

The VPLog-i is not intended for fiscal metering.

4 Mechanical

The following figure shows the module dimensions. The area of the loop formed by the measurement coil (light grey on the figure) depends on the full range capacity. For large currents, the area is larger to cope with wide power cables.



5 Electrical

Signal	Wire color	Description
GND	Black	Ground
PWR	Red	6 to 30 VDC
Pulse	Brown	Pulse If pulse is not used: To GND or To supply with a pull-up resistor

The VPLog-i sensor has 3 wires. Two of these are used for the powered loop. The third is a pulse output.

This sensor has 2 outputs:

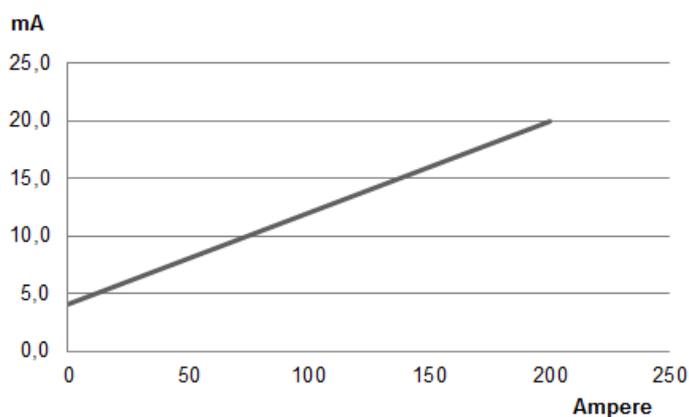
- One 4 to 20mA current loop
- One pulse output

5.1 Current output

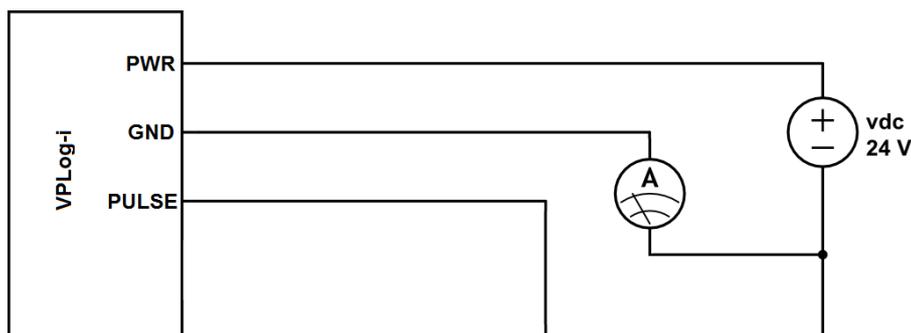
The VPLog-i features a powered loop linearised output that can be used to connect the VPLog-i to a control system, a building management system or any 4..20mA based system.

4mA will correspond with 0A, 20mA will correspond with the maximum range of the VPLog-i. The graph below shows the output of a VPLog-i with a measurement range of 200A

The output of 4 to 20mA flows in the supply lines. The current can be measured either in the power line or the ground line. When the pulse output is used, the ground line is not suited because it carries extra current from the pulse output.



Electrical scheme:



Connect the pulse output to ground, or via a pull-up to supply

5.2 Pulse output

The VPLog-i measures the amount of current and generates a pulse every amount of measured current. The amount of current per pulse is shown in the table below.

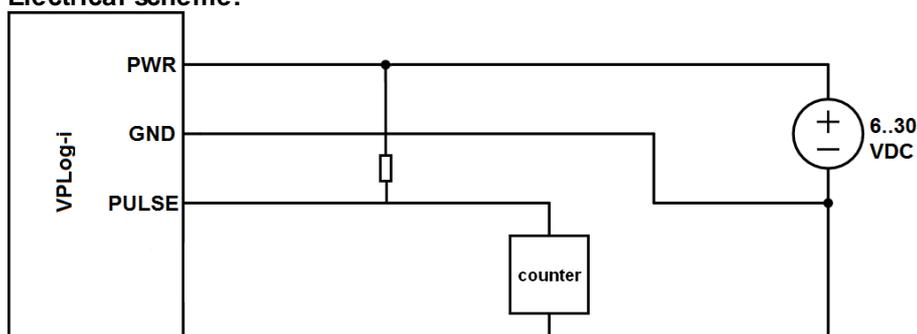
Measurement range	Pulses/Ah
100A	10
200A	10
400A	10
800A	10
1500A	1

The pulse output requires a pull-up resistor. The pull-up resistor shall be calculated for a current of +/- 10mA

Example: A power supply of 24V = 2.2K ohm

The pulse output can be connected to a counter input. The pulse output generates some extra current consumption. When the pulse output is not used, connect it directly to GND or through a pull-up resistor to a supply. Never connect it directly to the supply, the supply will then be shorted to GND whenever a pulse is sent.

Electrical scheme:



6 Specifications



Please always check the label of your product for the specifications.
Specifications are subject to change as we are continuously improving our products.
Please contact us to obtain the latest specification sheet.

Environmental

Position sensitivity	0.7% of full scale for sensor rotated over 5 degrees	
Operational ambient temperature	-20...70 °C	-4...158 °F
Operational relative humidity	Max 95%, non condensing	
Storage ambient temperature	-20...70 °C	-4...158 °F
Storage relative humidity	Max 95%, non condensing	

Mechanical

Coil length (100A)	170mm	6.69 inch
Coil length (200A)	170mm	6.69 inch
Coil length (400A)	170mm	6.69 inch
Coil length (800A)	250mm	9.84 inch
Coil length (1500A)	250mm	9.84 inch
Coil diameter	7mm	0.28 inch
Coil bend radius	35mm	1.38 inch
Housing (W x H x D)	26.7 x 41.4 x 13.6 mm	1.05 x 1.63 x 0.54 inch
Output cable	3m, UL-LiYY, Double insulation	9.84ft, UL-LiYY, Double insulation
Total weight	120gr	0.265 pounds

Technical specifications

Supply Voltage	6..30 VDC
Pulse supply voltage	6..30 VDC
Power consumption	4 to 20 mA
LED blink frequency	0.4 Hz, No current 2.8Hz, Full Range
Power-on delay unit valid	1.2 Seconds
Crest factor	2.8
Measurement bandwidth	720Hz
Noise	0.2 A-rms
Supply coefficient	160 ppm/V
Accuracy	+/- 1% FSS

7 Order information

VPLog-i

VPA.8000.2100 VPLog-i AC current sensor 100A-rms
VPA.8000.2200 VPLog-i AC current sensor 200A-rms
VPA.8000.2400 VPLog-i AC current sensor 400A-rms
VPA.8000.2800 VPLog-i AC current sensor 800A-rms
VPA.8000.21K5 VPLog-i AC current sensor 1500A-rms

EASY INSIGHT IN ENERGY FLOWS

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