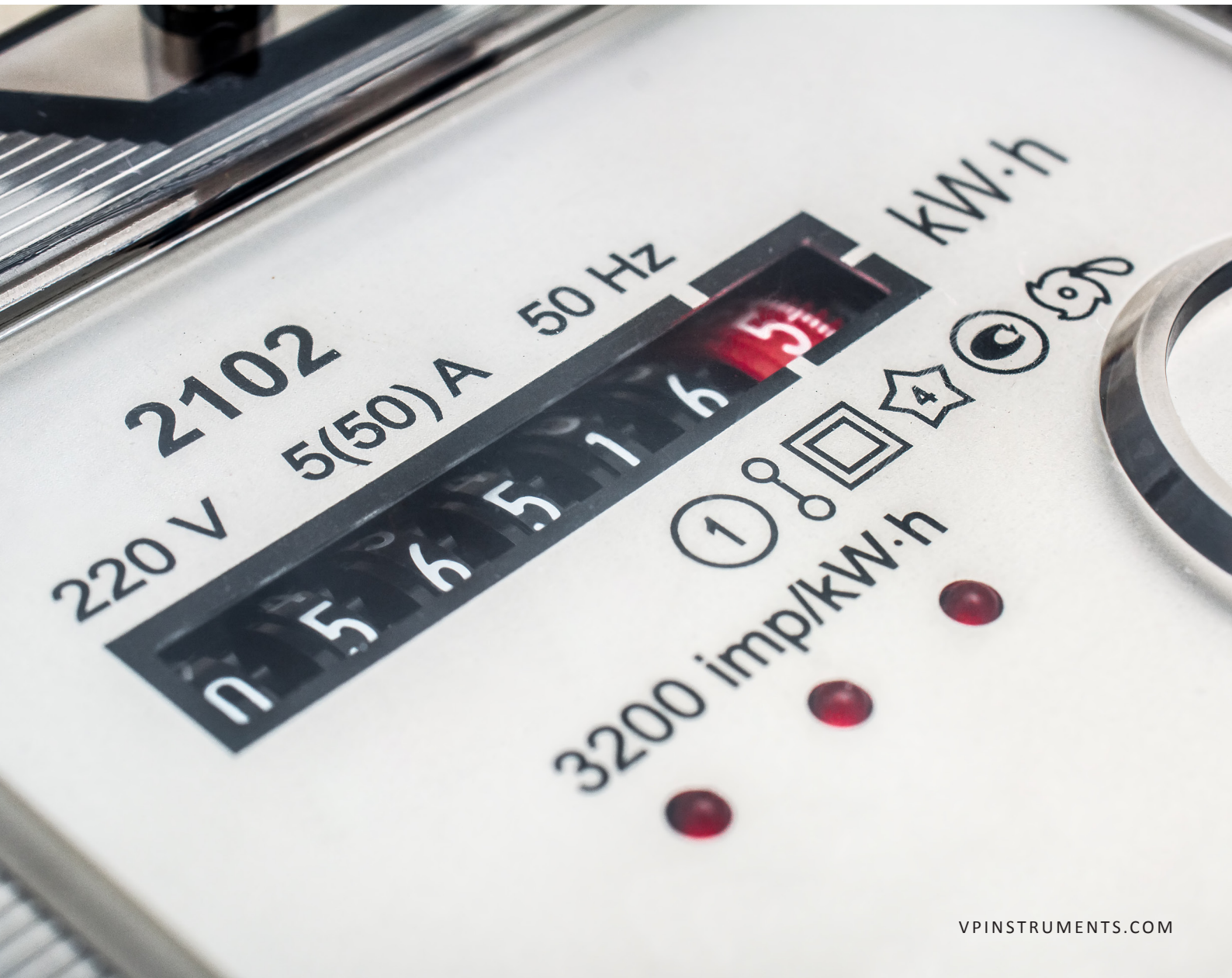
VP INSTRUMENTS

POWER METERS

Easy insight into power consumption



Electricity: an expensive source of power

Your compressed air system, as well as peripheral equipment like air dryers, cooling towers and fans are big consumers of expensive electric power. In most production plants, the compressed air system consumes between 10 and 25 percent of all electricity.

Monitoring the efficiency of your compressed air equipment is key to realizing energy savings. Electricity consumption is not limited to compressed air though. You can measure power consumption of water pumps, HVAC, lighting and other systems in your factory as well. VPInstruments offers two types of meters to measure power consumption: the VPInstruments 3 Phase Power Meter that measures true power, and the VPLog-i that measures amperes.

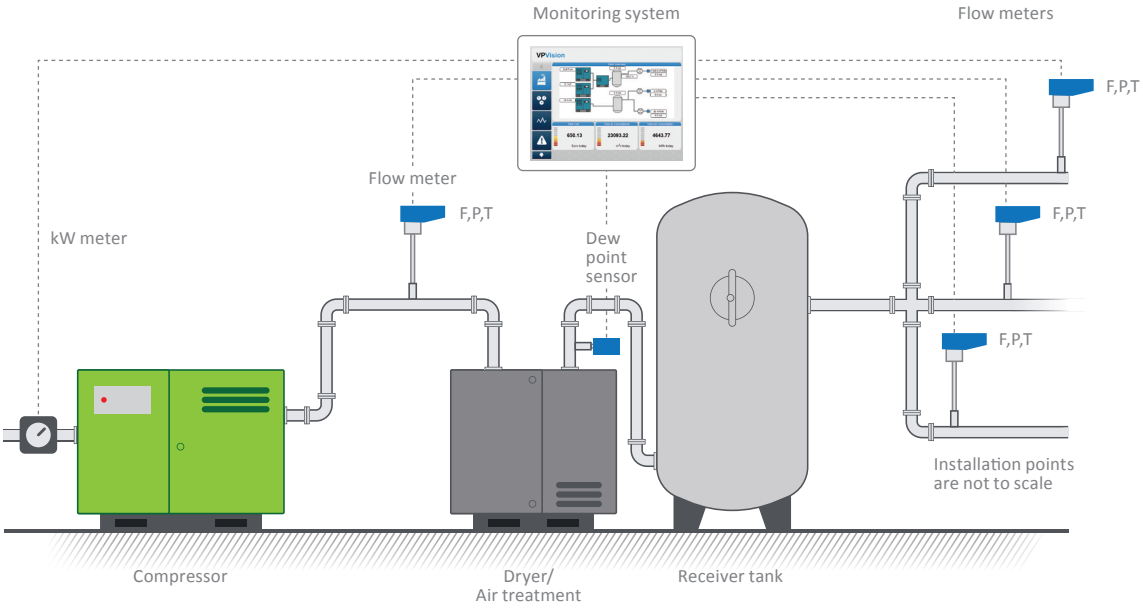
Application examples:

- Power consumption of compressors
- General purpose power measurement
- Electricity sub metering
- Compressor efficiency, when combined with a flow meter.

Monitor your compressor performance and efficiency

In today's world where efficiency is key to maximum savings, it is essential to continuously monitor the power consumption of individual compressors. Depending on the required accuracy, you can choose between our 3 Phase Power Meter and the VPLog-i.

By combining a power meter with a flow meter, which has been installed at the discharge of the compressor, you can monitor the performance and efficiency of the compressor. The efficiency of your compressor can be indicated by a typical Key Performance Indicator (KPI) with units of $kW/m^3_n/min$, Wh/m^3_n or kW/SCFM. By monitoring this KPI continuously you will be able to see changes in efficiency which may be due to clogged inlet filters, cooling problems, malfunctioning drains and other maintenance issues. For centrifugal compressors, we recommend consulting a specialist as you may need to monitor additional parameters.



3 Phase Power Meter vs. VPLog-i

Both the 3 Phase Power Meter and the VPLog-i are great tools to measure power. The 3 Phase Power Meter measures all three phases of a compressor's input; thereby, it provides a high accuracy measurement of the real power consumption. An additional advantage of the 3 Phase Power Meter is its RS485 (Modbus RTU) output, which allows the meter to be easily connected to a monitoring system. We recommend the 3 Phase Power Meter for permanent installations.
The VPLog-i can be installed in a matter of minutes. Just snap it around a power cable to start measuring AC current. Due to easy and quick installation, the VPLog-i is recommended for short-term measurements like air audits. The VPLog-i can also be used for permanent installation.

Short overview

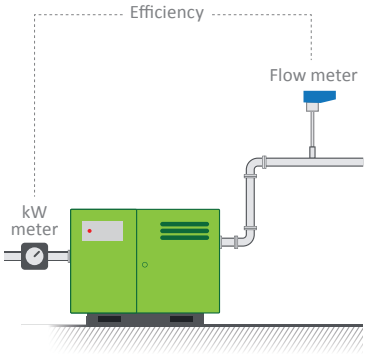
FEATURES	3 PHASE POWER METER	VPLOG-I
True power	X	
Ampere only		X
Single Phase	X	X
Three Phase	X	
RS485 (Modbus RTU)	X	
4 … 20 mA, loop powered		X
Pulse output		X
Audit tool (portable)		X
Permanent installation	X	X

3 Phase Power Meter

With the VPInstruments 3 Phase Power Meter you can measure the voltage and current of all three phases. It provides power, voltage, current, cos(phi) and many more electrical parameters via the RS485 (Modbus RTU) interface. You can combine the power meter with one or more flow meters to monitor the compressor efficiency in real-time.

Product highlights:

- Measures up to three phases
- RS485 (Modbus RTU) output
- For permanent installation
- Delta or Wye types available
- Various voltage ranges available
- 0.333 VAC CT inputs
- LED indicators for CT status and serial communication

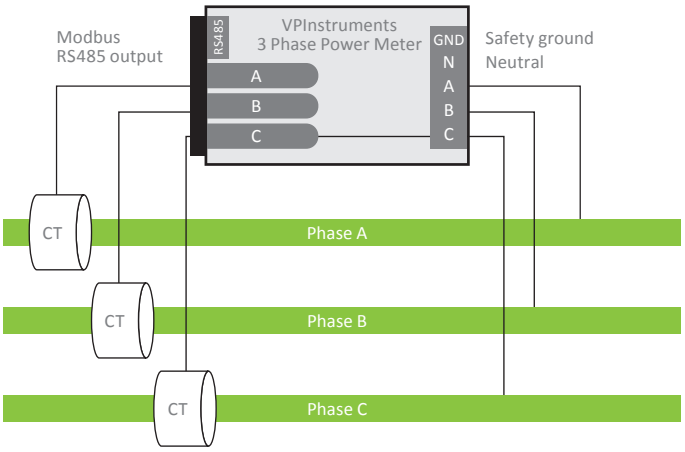


Specifications: 3 Phase Power Meter

POWER METER	
Accuracy	± 0.5% reading
Power supply	Power from measured voltage < 2 W
Voltage input	120…347 (L to N) 208…600 (L to L)
Current input	100…1500 Amp per phase
Output	RS485 (Modbus RTU), 2 wire
Size	153 x 85 x 38 mm | 6.02 x 3.35 x 1.50”
Weight	307…314 g | 10.8...11.1 oz
Environment	Indoor use
Operational temperature	-30...55 °C | -22...131 °F
Operational humidity	Non-condensing, 5 to 90% relative humidity
Operating frequencies	50 / 60 Hz

Order codes

Select the right 3 Phase Power Meter for your application. For each phase measured, you will need an additional current transformer. Check the maximum amperage and select the right transformer for your 3 Phase Power Meter. Be sure to account for the input power factor (cos(phi)), minimum input voltage and other factors when determinizing the size of the current transformer.



3 Phase Power Meter

MODEL	TYPE	L TO N VOLTAGE	L TO L VOLTAGE
VPA.8000.Y208	Wye	120 V	208-240 V
VPA.8000.Y400	Wye	230 V	400 V
VPA.8000.Y480	Wye	277 V	480 V
VPA.8000.Y600	Wye	347 V	600 V
VPA.8000.D240	Delta or Wye	120-140 V	208-240 V
VPA.8000.D400	Delta or Wye	230 V	400 V
VPA.8000.D480	Delta or Wye	277 V	480 V

Current Transformers (CT)

MODEL	AMPERAGE	SIZE
VPA.8075.0100	100 A	19.1 mm | 0.75”
VPA.8125.0400	400 A	31.8 mm | 1.25”
VPA.8200.1000	1000 A	50.8 mm | 2.00”
VPA.8200.1500	1500 A	50.8 mm | 2.00”

VPLog-i

The VPLog-i is a Rogowski type meter that measures AC currents up to 3200A (true-RMS on a single-phase power cable). The VPLog-i is very easy to use; just wrap around one of the three-phase power cables and close the snap fitting. The VPLog-i offers the best solution for power measurements for audits. The VPLog-i is the only sensor on the market that offers both 4 .. 20mA and pulse outputs.

Product highlights

- Very easy and quick installation
- Plug and play
- For short-term and permanent measurements
- Both 4 ... 20mA and pulse output
- Loop powered

Usage

Simple and easy! Just open the sensor and wrap around the power cable you want to measure. The LED on the device blinks when the VPLog-i is powered. The rate at which it blinks is proportional to the output current. You can use one of the two outputs to get accurate measurement results.

Specifications: VPLog-i

POWER METER	
Accuracy	± 1% full scale.
Power supply	6 ... 30 Vdc
Power consumption	4 ... 20 mA
Current input	100 ... 3200 A-rms (50 Hz current) Insulated cables only!
Outputs	4 ... 20 mA: proportional to the measured input. Pulse: pulse frequency is proportional to the current measured.
Pulse rate	0 ... 2.66 Hz
Max Voltage	On open bus bars max 300 Volt
Coil diameter	7 mm | 0.28”
Coil bend radius	35 mm | 1.38”
Housing W x H x D	26.7 x 41.4 x 13.6 mm | 1.1 x 1.6 x 0.6”
Operation temperature range	-20 ... 70 °C | -4 ... 158 °F
Operational relative humidity	Max 95%, non-condensing
Coil length	170 mm | 6.7”, 250 mm | 9.8”, 350 mm | 13.8”
Operating frequencies	50 / 60 Hz

Order codes: VPLog-i

CODE	MAX CURRENT RMS	FREQUENCY	PULSES PER AH	COIL LENGTH
VPA.8000.2100	100 A	50/60 Hz	10	170 mm | 6.69”
VPA.8000.2200	200 A	50/60 Hz	10	170 mm | 6.69”
VPA.8000.2400	400 A	50/60 Hz	10	170 mm | 6.69”
VPA.8000.2800	800 A	50/60 Hz	10	250 mm | 9.84”
VPA.8000.21K5	1500 A	50/60 Hz	1	250 mm | 9.84”

VPVision

Monitor the power consumption of all your devices and more with the VPVision monitoring system. VPVision is the complete real time energy monitoring solution for all utilities within your company. Get a grip on your usage and see the patterns on your supply and demand side. Have data needed to take factual and well-founded decisions on your costs and investments. Reveal the consumption of all utilities, including compressed air, technical gases, steam, vacuum, natural gas, electricity, waste water, heating fuels etc. VPVision enables you to view data on any platform from a PC to a smartphone enabling your organization to raise the energy awareness among staff and management. It will be your guiding hand for individuals, teams or at company-wide level to target energy savings.

easy insight into energy flows™

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