

New VAC High Current Sensor $I_{rms} = 1000\text{ A}$ and I_{max} up to $\pm 2500\text{ A}$

VAC is the technology leader in DC and AC current sensing, providing a wide range of products to the industry. VAC owns state of the art R&D facilities and worldwide manufacturing sites, offering outstanding product quality at low cost. The VAC-invented measuring principle of the closed – loop sensor with magnetic probe as a zero field detector is distinguished by maximum precision of the current detection. Major applications for the VAC current sensors are variable speed drives, photovoltaic inverters, welding inverters, uninterruptable power supplies (UPS) and switched mode power supplies. The detected currents range from 6 A_{rms} to 700 A_{rms} .

Today's trend towards ever higher power in applications such as wind power generation, utility grade solar inverters and large drives however leads to even higher currents to be measured. VAC has now adapted its excellent operating principle to this challenge and therefore offers a sensor for a current of 1000 A_{rms} and with a measuring range of up to 2500 A peak. The VAC solution offers the following benefits:

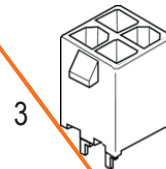
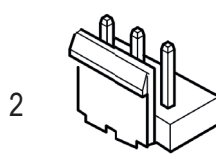
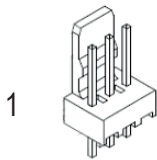
- Low offset and gain errors, low temperature drift, excellent long-term stability
- Low power consumption due to PWM compensation current driver stage
- Wide measuring range up to 2500 A
- Excellent dynamic properties (rise time, pulse response) due to a low winding capacity of the compensation current winding
- Low dependence of the sensor accuracy on the position of the phase current return conductor in proximity to the sensor
- Greatest reliability by concentrating the electronic functions in a single monolithic IC
- Compact dimensions of approx. $95\text{ mm} \times 34\text{ mm} \times 90\text{ mm}$ (L x W x H without baseplate)
- Large aperture $40 \times 40\text{ mm}^2$ (with bevels), giving more space for e.g.
 - Aluminum bus bars
 - Bus bar stacks
 - Angled bus bars
 - Cables with lugs
- Mechanical and electrical replacement of existing closed-loop Hall-effect sensors without changes in the application
- Turns ratio: 5000:1, signal output: current
- Variants for $\pm 15\text{ V}$ - and $\pm 24\text{ V}$ -supply
- Variants with different connectors



Model variants

VAC offers the following model variants of the 1000 A sensor:

- ± 15 Volts supplied models with a measuring range of ± 1580 A @ $T_{amb} = 25$ °C and ± 1340 A @ $T_{amb} = 85$ °C. Ordering code range T60404-P4640-X10x.
- ± 24 Volts supplied models with a measuring range of ± 2500 A @ $T_{amb} = 25$ °C and ± 2150 A @ $T_{amb} = 85$ °C. Ordering code code range T60404-P4640-X15x.
- Connector styles
 - 1 - Molex 6410: 3 pole, friction-holding, 2.54 mm pin distance
 - 2 - JST B 3P-VH: 3 pole, locking, 3.96 mm pin distance
 - 3 - Molex Mini Fit Jr 5566: 4 pole, locking, square arrangement



More details on the new high-current sensors can be found in the corresponding data sheets.

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