OPCO1000H3

Technical Specification

Close Loop current sensors OPCO1000H3

Features :

- High accuracy
- Very good linearity
- Easy installation
- Can be customized
- Low temperature drift
- Optimized response time
- High immunity to external interference

The OPCO 1000 is a closed-loop current sensor (also known as a compensated current transducer), designed for the precise measurement of AC and DC currents up to 1000A. This sensor uses Hall Effect technology in a closed-loop configuration, providing high accuracy and excellent linearity in the measurement of both alternating and direct currents.
The OPCO1000 operates with a typical supply voltage of (±15V to ±24V) ±5% and ensures full galvanic isolation between the primary and secondary circuits. This isolation is crucial for protecting sensitive equipment in industrial and high-power environments, where large potential differences can exist between circuits.

Code	Part Number	Connector
1010223301004C1	OPCO1000H3	3P-3.81 phoenix contact type

Standars:

- IEC60950-1:2001
- EN 50155
- EN50178:1998
- Plastic material: PBT G30/G15, UL94- V0

Application Domaine:

- Industrial
- Railway

Applications :

- Battery supplie applications.
- Uninterruptible Power Supplies (UPS).
- Static Converter for Motor drives.
- Inverter and variable frequency drives.
- Power supplies for welding application.
- Switching power suppliers
- Renewable Energy (solar & Wind)
- Propulsion converters.
- Railway application , substation

Part Number	Primary Nominal Current	Pimary Current Measuring Range
OPCO1000H3	**1000A**	**±1500 A**

Adisens
27 Rue Maurice Flandin – 69444 Lyon CEDEX 03 France
contact@adisens.fr - www.adisens.fr

Version 1.0
04.2024

Specifications:

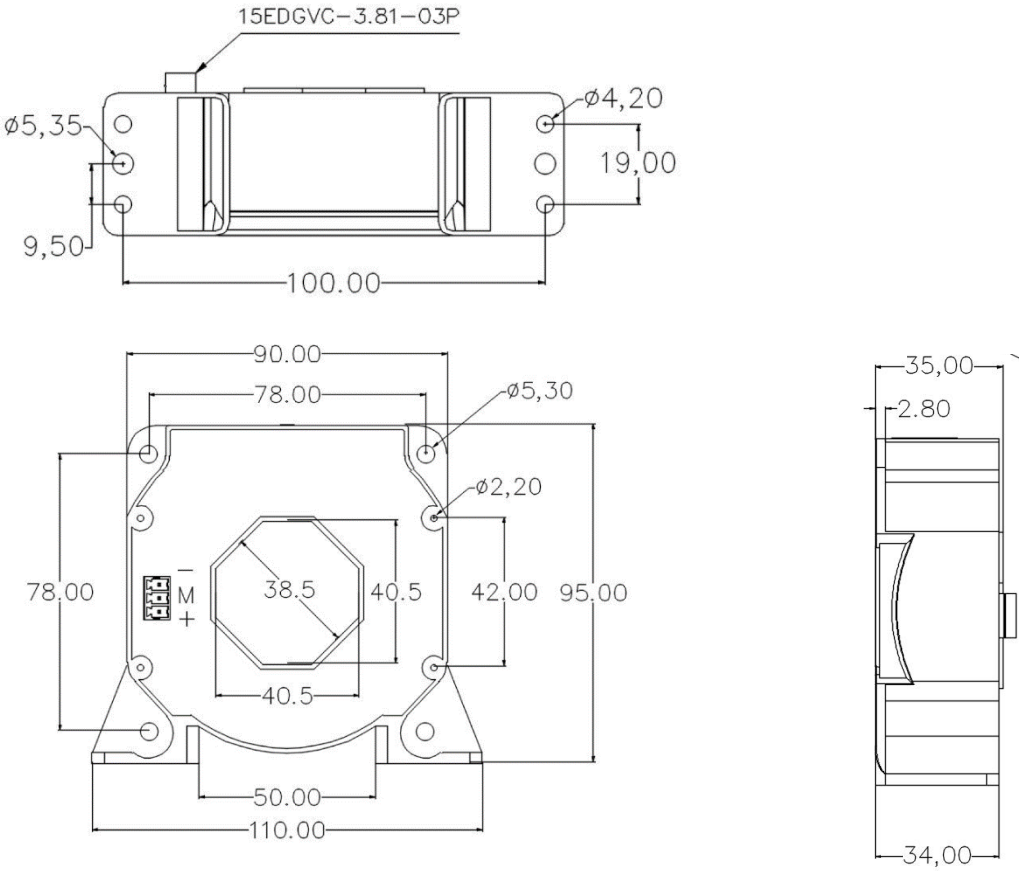
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Primary nominal r.m.s Current	I_{PN}		-	1000	-	A
Primary Current measuring range	I_{PM}		-1500	-	1500	A
Turns ratio Np/NS	Np/Ns		-	1:5000	-	
Secondary nominal r.m.s. current	I_{SN}		-	±200	-	mA
Secondary coil resistance	R_S		-	39	-	Ω
Supply Voltage	V_{CC}	±5%	±15	-	±24	V
Offset Current	I_{OE}	@I_{PN},T=25°C	-	< ± 0.2	-	mA
Temperature variation of I_{OE} I_{OT}		@I_P=0,-40 ~ +85° C	-	< ± 0.5	-	mA/°C
Linearity Error	ε_L		-	< 0.1	-	%
Accuracy	XG	@I_{PN},T=25° C	-	< ± 0.2	-	%I_{PN}
di/dt accurately followed	di/dt	-		>100	-	A/µs
Frequency Bandwidth	Bw	-3 dB, I_{PN}	DC	-	150	kHz
Response Time	Tr	90% of V_{PN}	-	< 1.0	-	µs
Power consumption	I_C		-	20 + I_S	-	mA
Insultation Voltage	Vd	@50/60Hz,1min,AC	-	6.0	-	kV
Operating temperature	T_A		-50	-	+85	°C
Storage temperature	T_S		-55	-	+125	°C
Mass	M		-	620	-	g

T_A = +25°C , V_{CC} = ± 15V

Adisens
27 Rue Maurice Flandin – 69444 Lyon CEDEX 03 France
contact@adisens.fr - www.adisens.fr

Version 1.0
04.2024

DIMENSIONS



- General tolerance : < ± 0.5 mm
- Transducer Fasting : Vertical position - 6 holes ø 4.20 mm
  6 M4 steel screws
  : Horizontal position – 4 holes ø 5.3 mm
  4 M4 steel screws
- Recommended fastening torque : 2.1 Nm (± 10%)
- Connection of secondary : 15EDGVC-3.81-03P

Adisens
27 Rue Maurice Flandin – 69444 Lyon CEDEX 03 France
contact@adisens.fr - www.adisens.fr

Version 1.0
04.2024

- When the current goes through the primary pin of a sensor, the voltage will be measured at the output end.
- Custom design is available for the different rated input current and the output voltage.
- The dynamic performance is the best when the primary hole if fully filled with.
- The primary conductor should be <100° C

1. General Safety Warnings

- **Intended Use**: This transducer is designed for installation in electrical and electronic systems. It must be used in compliance with applicable international standards, such as **IEC 61010-1**, as well as local regulations and codes.
- **Applicable Standards**: The transducer must be operated according to the Adisens's operating instructions to ensure compliance with relevant safety standards, including:
    - **IEC 61010-1**: Safety requirements for electrical equipment for measurement, control, and laboratory use.
    - **EN 50178**: Safety requirements for electronic equipment for power installations.
- **Installation by Qualified Personnel**: Only qualified professionals, trained in handling high-voltage systems and electrical components, should install, commission, and maintain the transducer. Misuse or incorrect installation may result in electric shock, fire, or severe equipment damage.

---

2. Electrical Shock Risk

- **Risk of Electric Shock**: This transducer operates in high-voltage environments. It must be handled with care to avoid direct contact with live electrical components. There is a risk of serious injury or death from electric shock if proper precautions are not taken.
- **Limited-Energy Secondary Circuits**: To ensure safe operation, this transducer must be used exclusively within limited-energy secondary circuits, as specified by **IEC 61010-1**, which governs the safe design of electrical circuits to reduce the risk of injury and electrical hazards.
- **Isolation Requirements**: This transducer provides galvanic isolation between the primary (high-power) and secondary (low-power) circuits. However, the device should not be assumed to provide absolute protection against electric shock. Always de-energize circuits before installation or maintenance.

---

3. Installation Precautions

- **Environmental Conditions**: The transducer is designed to operate in controlled environments. Ensure that the operating temperature, humidity, and surrounding conditions comply with the transducer's specifications provided in the technical datasheet. Avoid exposure to moisture, corrosive environments, or areas prone to electrical interference.
- **Mounting**: Secure the transducer properly in a location that prevents movement or vibration during operation. Improper mounting may cause electrical arcing or contact with live components.

Adisens
27 Rue Maurice Flandin – 69444 Lyon CEDEX 03 France
contact@adisens.fr - www.adisens.fr

Version 1.0
04.2024

- **Grounding**: Ensure that the transducer is correctly grounded in accordance with the electrical system design. This will help prevent electric shock and improve system safety and performance.

---

4. Operational Guidelines

- **Operating Limits**: Operate the transducer strictly within the specified voltage, current, and temperature ranges. Overloading the transducer beyond its rated capacity may result in equipment failure or create safety hazards.
- **Routine Maintenance**: Inspect the transducer regularly for signs of wear, damage, or abnormal operation. Discontinue use if any issues are detected and consult the manufacturer for replacement or repair.

---

5. Handling and Storage

- **Handling Precautions**: Avoid direct contact with transducer terminals during handling. Always handle the device with protective gear, including insulated gloves, to avoid accidental electric shock.
- **Storage Conditions**: Store the transducer in a clean, dry, and temperature-controlled environment. Prolonged exposure to harsh conditions may degrade performance and compromise safety.

---

6. Emergency Procedures

- **Power Disconnection**: In case of a malfunction, electrical fault, or other emergency, immediately disconnect the power supply to the transducer and seek professional assistance for inspection and repair.
- **First Aid**: If an electric shock occurs, follow established first aid protocols and seek emergency medical assistance immediately.

---

7. Disposal

- **Environmental Considerations**: Dispose of the transducer according to local regulations for electronic waste. Do not incinerate, and avoid disposing of the device in general waste, as it may contain hazardous materials.

---

8. Manufacturer's Support

For additional information, technical support, or to report any issues with the transducer, please contact un on contact@adisens.fr . Ensure that you have the model number, serial number, and installation details on hand for a prompt response.

Adisens
27 Rue Maurice Flandin – 69444 Lyon CEDEX 03 France
contact@adisens.fr - www.adisens.fr

Version 1.0
04.2024