endrich Coreless Current Sensors Instructions

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INTRODUCTION

Wolfgang Endrich.

Do you know how much…

…laws exist? The economic situation is bad. You shouldn't make hasty judgments, because the inheritance, the current government started, was full of holes. One is that Putin didn't take the annexation of Crimea seriously. The railway system was neglected Roads and bridges too and then came Corona. After that, a lot was different. The starting conditions for the new government were real Not rosy, but the filling of the ministerial positions was – to put it mildly – unfortunate. In February 2022 Ukraine was invaded, and it was discovered that unfortunately, the staffing not having the expertise was the priority, but rather the merits in party work and/or other reasons.

Examples: A defense minister runs into high heels around the military training area When war breaks out, she offers Ukraine 5,000 steel helmets. Another is an expert in poetry, but his knowledge of bankruptcy law is not very developed. Another person showed despite having studied law for many years enormous gaps in knowledge. The coalition argues and enacts Laws that became a real hit with the public, like this Heating law. It turned out that our chosen government many cases the expertise and the feeling for the people's needs and desires. China has been broken, the population is highly unsettled and dissatisfied. Party political wishes in Social areas could not be met. Germany has become a regulatory state in which everything is regulated.

The energy transition is necessary because We cannot be indifferent to global warming, however, without the understanding and consent of the population, the most beautiful party political ideologies are nothing. Why did the energy crisis have to be ideological Reasons the nuclear power plants shut down affect us would have protected us from energy price increases? Why do you burden the industry with a supply chain law that… can only be followed at great cost? In the countries, Those affected by it have no effect. Listen daily we hear about new laws from Berlin or Brussels. An example from housing construction: How many building regulations are there? In Germany? The Association of Cities and Municipalities estimates 20,000, including 4,000 DIN standards alone. One reason why the construction industry is currently doing so badly. One Solution to many problems affecting our economy in all Areas that would be enormously burdened would be the entire body of legislation to clear out and downsize the Federal Republic. This would mean fewer officers would be needed to Monitor compliance with these laws. Many authorities are hopelessly overwhelmed!
Dismantling the mountain of legislation would cost the federal treasury to dramatically relieve the burden! You would like to have a company again to lead or become self-employed. The mood in the country would improve very quickly and it would be an incentive for the industry to invest and new to develop technologies.

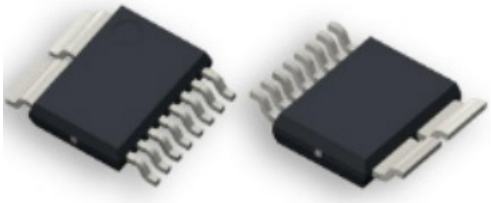
CORELESS CURRENT SENSORS FROM SINOMAGS

As a subsidiary of the Sinomags Group, Sensitec has a comprehensive product portfolio of current sensors. This portfolio meets the requirements of a wide range of industries and applications and includes sensors for charging infrastructure, onboard chargers, leakage current sensors for photovoltaic systems, and broadband current sensors for modern drive technology. The product portfolio is divided into two areas: Module-level based current sensors for THT mounting on PCBs or with cable connection and chip-level based sensors that can be assembled as SMD components on the PCB. In addition to TMR technology, Hall or flux-gate sensor elements are also used as the underlying sensor technology. SMD chip sensors especially do not require flux concentrators (coreless current sensors) and are now able to reliably measure currents in the mA range.

Picture: The comprehensive product portfolio of current sensors from Sensitec / Sinomags

- In addition, the SMD versions are available at a price range that also allows them to be used in price-sensitive applications. With SMD chip sensors, there are variants with an internal current path and variants in which the current path runs outside the housing. As no additional flux concentrator is used in either case, the sensor must be placed in immediate proximity to the current conductor, which requires innovative concepts for stray field rejection and isolation. This is achieved, for example, by differential measurement at two points with separate TMR half-bridge chips.
- The technical advantages of coreless current sensors compared to shunt solutions are the reduction in the size of the measuring system due to the elimination of peripheral circuitry and heat sinks, as well as lower primary conductor impedances and therefore lower heat generation with galvanic isolation.
- While the insulation to external conductors is easy to realize, the safe, reinforced insulation according to standard specifications is a challenge for compact IC housing solutions. The STK-616-M series sensors use a multifunctional PCB chip carrier made of BT material as an insulator, shielding, and wiring layer. A standard reflow soldering process can be used for processing.
- The STK-616 series offers high product flexibility in coreless current sensors through additional functionalities such as OCD (Current Detection) and filtering, as well as variants for high frequency ranges with a bandwidth of up to 2 MHz. Sensors with an additional measuring range for AFCI (Arc Fault Circuit Interrupter) detection, such as the STK-616TMWD, are also part of the Sinomags Group’s portfolio. This allows arcs to be detected as a cause of fire in PV installations, for example.

The latest product STK-616AM is equipped with extra-wide solder tags for the primary current, which also enables it to be used with higher currents of up to 100 A.



THERMAL MANAGEMENT SOLUTIONS FROM CELERA FIBERS

About Celera Fibras: Celera Fibras, a leading player in thermal management solutions, is strategically positioning

itself to capitalize on the burgeoning market demand, particularly in the electronics, lighting, and electric vehicle (EV) industries. With a focus on innovation and a commitment to research and development (R&D), the company is set to elevate its presence both nationally and internationally. In a statement, Alex Souza, CEO of Celera Fibras, highlighted the pivotal role of thermal management in addressing the challenges posed by electrification, quantum computing, and 5G technology. Souza emphasized the heightened significance of this technological aspect, especially with the increasing miniaturization of devices.

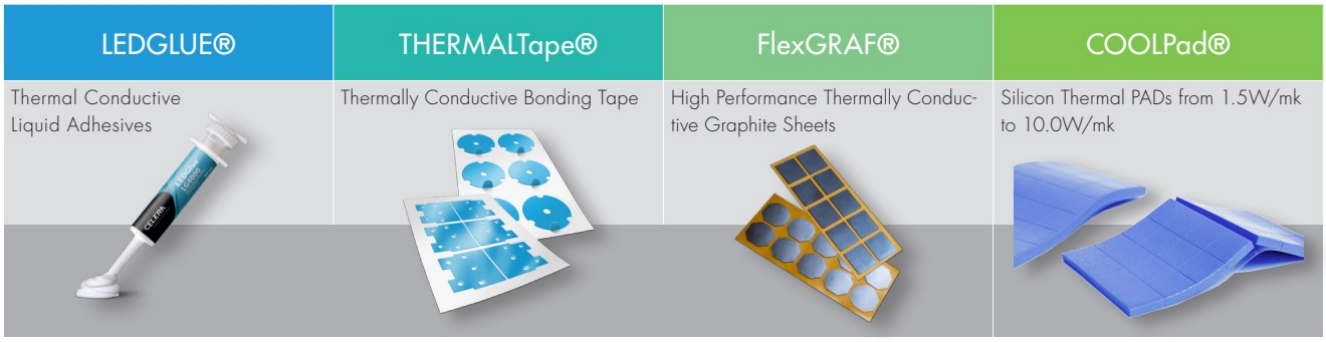
MSG Sphere Las Vegas: Established in 2015 through the spin-off of a German firm that operates in the field of electrical insulation materials. Celera recently secured an international tender triumph, securing a prestigious contract for supplying LED panel solutions to the Sphere arena in Las Vegas – recognized as the structure with the largest LED-lit surface globally. Celera's prowess in heat dissipation technology extends to diverse sectors, including electronics, aerospace projects, automation, medical devices, and data centers. Souza emphasized the critical role of thermal management in preventing overheating, reducing energy consumption, and improving system efficiency. The company employs various techniques such as heat sinks, fans, thermal interface materials, and liquid cooling systems tailored for different industries.

Investing significantly in R&D, Celera benefits from its proximity to the nanomaterial laboratory of Universidade Estadual de Campinas in São Paulo. With national and international patents under its belt, Celera recently received recognition for developing an innovative heat-transporting glue. Following successful patenting, the company is gearing up for commercial-scale testing, with plans to make the product available to device development companies starting January 2024, initially targeting the lighting and electric vehicle markets. Celera Fibras stands at the forefront of innovation, poised to meet the evolving needs of industries navigating the challenges of advancing technologies. The company's commitment to excellence and cutting-edge solutions positions it as a key player in the dynamic landscape of thermal management.

Thermal Interface Materials

Celera has the most suitable solution for the thermal profile of your application.

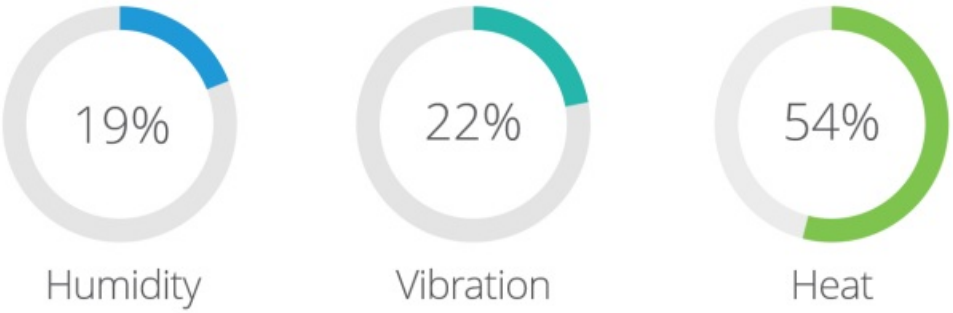
- **LEDGlue®** is a fluid silicone adhesive, which has been developed to provide excellent thermal conductivity, besides the mechanical attachment of the electronic components.
- **THERMALTape®** is a double-sided adhesive tape with ultra-high adhesion strength that can be used to attach components and PCI to heatsinks,\ eliminating the use of mechanical fixing elements.
- **FlexGRAF®** is the ideal solution for applications such as COB LEDs, Tablets, and Smartphones, where there is high demand for speed of dissipation, in limited spaces.
- **COOLPad®** has been developed to meet the increasing demands of the electrical, electronic, and automotive industries for materials with higher thermal performance and ease of assembly line application.



Heat – the enemy of electronics

- Proper thermal management is crucial for high-quality, durable electronic products since heat is the leading cause of electronic component failure in over 50% of cases (Source: www.globalmarketmonitor.com).

Electronic Equipment Failure Causes



APPLICATION

- LED modules, general lighting
- Electronic components
- power devices and modules
- PCB
- industry
- Sensors

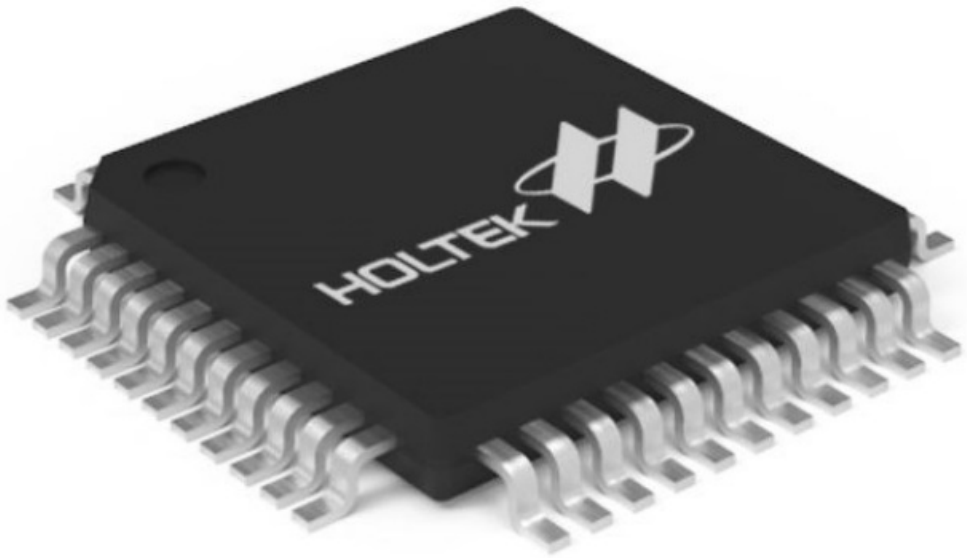
FEATURES

- Very high heat dissipation
- Very high operating temperature
- high flexibility and conformability
- Can be supplied as die-cut parts
- Excellent mechanical and chemical stability
- RoHS and REACH compliant

HT32F59041 ENHANCED 24-BIT A/D ARM® CORTEX®-M0+ MCU

The HT32F59041 from Holtek is a delta-sigma A/D converter with an impressive 24-bit resolution. This high resolution allows for the precise detection of subtle differences in the measured signals, and the delta-sigma design further enhances accuracy.

A special feature of this device is the integrated PGA (Programmable Gain Amplifier), which allows flexible adjustment of the gain. This makes the HT32F59041 particularly suitable for applications requiring high precision acquisition of analog signals.



APPLICATION

- controllers,
- power monitors,
- alarm systems,
- consumer products,
- handheld equipment,
- data logging applications,
- motor controllers

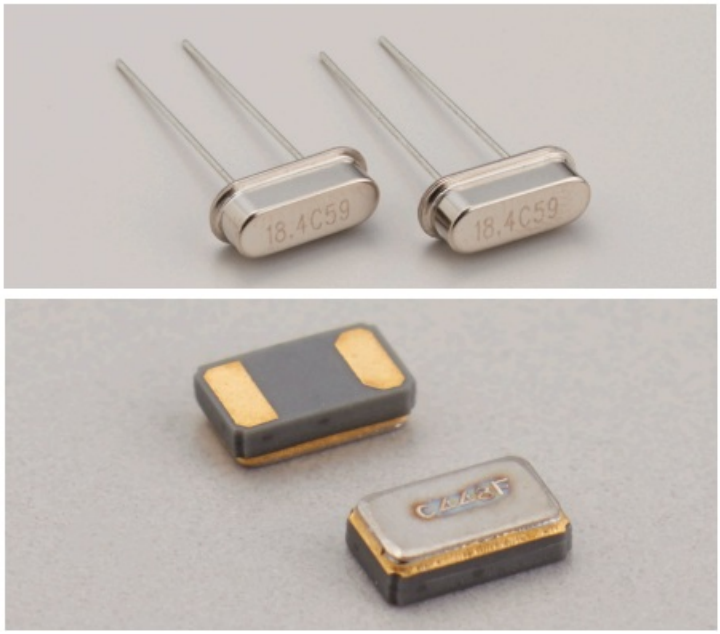
FEATURES

- 32-bit Arm® Cortex®-M0+ processor core
- 24-bit Delta Sigma A/D
- 64 KB Flash memory
- 8 KB SRAM memory
- High operating frequency up to 20 MHz
- programmable gain amplifier
- power supply 2.5 V to 5.5 V
- 48-pin LQFP package
- Operation temperature ranges from -40 °C to + 85 °C

TIMING – WE HAVE THE HEARTBEAT OF YOUR APPLICATION FOR YOU!

n the dynamic landscape of precision engineering, where every microsecond counts, quartz crystals and oscillators emerge as the bedrock of cutting-edge timekeeping technology. The pivotal role these components play in synchronizing industrial processes and revolutionizing our understanding of timing accuracy is often overlooked, but it should not be. Leveraging the stable oscillation of quartz crystals, our industry has witnessed a paradigm shift in timekeeping precision. Quartz watches, long admired for their accuracy, owe their reliability to the consistent vibrations of these crystals, providing a robust foundation for applications that demand unfaltering temporal precision.

In the industrial realm, the integration of quartz technology extends beyond watches, influencing sectors ranging from telecommunications to aerospace. The inherent stability of quartz oscillation has become instrumental in calibrating and synchronizing a multitude of critical processes, ensuring that our industrial operations unfold with impeccable accuracy. Complementing quartz in this symphony of precision are oscillators, the unsung



heroes orchestrating the rhythmic pulse of our timekeeping devices. Oscillators are more complex timing systems with a great variety of specifications and technologies ranging from temperature to voltage-controlled oscillators. Meanwhile, the digital age witnessed the rise of microelectromechanical systems (MEMS) oscillators, revolutionizing electronic synchronization with their compact yet powerful design. In an era where efficiency is paramount, MEMS oscillators have found their place as indispensable components in modern electronics. From network synchronization to data processing, these semiconductor-based oscillators exemplify the pinnacle of precision engineering, enabling industries to operate seamlessly in our interconnected world. We at Endrich have the timing component that fits your application – from the classic quartz (oscillator) solution provided by our well-known partners Citizen, SMI, Chequers, or TaiSaw to the state-of-the-art MEMS-based solution by the pioneer and world market leader SiTime – contact us and we will find the perfect match for your needs.

APPLICATIONS

- Automotive
- Aerospace
- Medical
- Consumer
- Metering
- Industry
- Smart Home

FEATURES

- Highest Precision
- Smallest Package Sizes
- All Industry Standard Certificates

WE ARE AT EMBEDDED WORLD IN NUREMBERG – FROM 9-11. APRIL 2024

Dear readers,

We warmly invite you to the embedded world trade fair from April 9th to 11th in Nuremberg. Our stand 464 in Hall 1 is all about IoT, displays, and embedded systems. This year our highlights are “Intelligent Sensor Networks”, “IoT Gateway Solutions” and “Environmental Parameter Sensing”. Based on the Endrich IoT platform, we show the latest solutions for the existing cellular IoT gateway with a sub-GHz sensor mesh network. In the area of displays and embedded systems, we present the latest generation of transflective and reflective systems TFT modules, industrial touch monitors, and our ARM® based System-on-Modules (SoM).

We are happy to take time for your individual needs! Let’s Make an appointment in advance. You can reach us at: **embedded@endrich.com.**

You can already book a ticket for yours Reserve a visit. So that you can get your ticket in front of you To receive the start of the trade fair, it is necessary to activate this by registering. Scan the QR code below, to go to the Embedded login page To get to World:

Your personal one Coupon code: ew24517746

CONTACT INFORMATION

- **HEADQUARTERS**
  - endrich Bauelemente Vertriebs GmbH P.O.Box 1251 · 72192 Nagold,

- **Germany**
  - T +49 7452 6007-0
  - E endrichnews@endrich.com
  - www.endrich.com

SALES OFFICES IN EUROPE

- **France**
  - **Paris:**
    - T +33 1 86653215
    - france@endrich.com
  - **Lyon:**
    - T +33 1 86653215
    - france2@endrich.com
  - **Spain**
    - **Barcelona:**
      - +34 93 2173144
      - spain@endrich.com
  - **Hungary**
    - **Budapest:**
      - T +36 1 2974191
      - hungary@endrich.com
  - **Austria & Slovenia Gmunden:**
    - +43 1 6652525
    - austria@endrich.com
  - **Switzerland – Novitronic**
      - **Zurich:**
        - T +41 44 30691-91
        - info@novitronic.ch

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  - Sales GmbH, Hauptstr. 56, 72202
  - Nagold, Germany, Tel: +49 7452
  - 6007 0, Fax: +49 7452 6007 70,
  - Email: endrich@endrich.com,
  - Web: www.endrich.com,

Managing Director: Dr. Christiane Endrich, headquarters: Nagold, HRB Stuttgart 340213, VAT no.:DE144367280,

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Documents / Resources

	endrich Coreless Current Sensors [pdf] Instructions Coreless Current Sensors, Current Sensors, Sensors

References

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- Global Market Monitor - Business Consultancy, Customized Research
- User Manual