

French innovator CEDRAT TECHNOLOGIES launches MICA™, its new range of linear actuators

CEDRAT TECHNOLOGIES is unveiling its linear **Moving Iron Controllable Actuator (MICA™)** product line onto the market, with associated drive electronics, in response to requirements in the industrial sector for highly reliable, long-life solutions.

The MICA™ linear actuators have been specifically developed for extremely long lifetime use, designed for zero maintenance over several years of continuous operation. This level of performance is achieved thanks to fixed coil and magnet designs, without electric flying leads and an efficient contact-free flexure bearing design. The 1KVA CSA96 power amplifier has been developed alongside the MICA™ product range. It features reactive power recovery, achieving more than 90% energy efficiency and it is able to drive both single and multiple MICA™ configurations.



The moving iron actuator designs created by CEDRAT TECHNOLOGIES are the highest performing in the sector compared to other classical magnetic actuators. The MICA™ actuator range is designed for high controllability, with higher force levels within more compact volumes and greater electrical efficiency. Their high efficiency results in heat dissipation through the very low Joule effect, together with easy and direct cooling on dedicated interfaces.

The MICA™ actuators' extremely long lifetime is a remarkable performance achievement, which is the result of CEDRAT TECHNOLOGIES's knowhow and experience in flexure bearing designs, built up over years of working with mechanisms as well as developing long-lifetime products in the aerospace and defence sectors. The moving mechanism assembly of the MICA™ range, with no sliding contact or friction losses, is able to accomplish almost perpetual movement on the flexure bearings, close to resonance, providing clients with very high powered, very low energy consuming and very low heat dissipating actuators.

Significant efforts have been made on the actuator casing, to achieve an efficient fixed coil heat sinking design onto an aluminium structure, able to dissipate the coil's Joule effect heat load by conduction towards the mechanical interfaces, cooled by either natural convection using blades, or by forced convection using air, or refrigerant cooling loop interfaces. This design offers the possibility of using the maximum force of the actuator and the maximum electrical power over very long periods of time, which cannot be achieved by commercial moving coil actuators currently on the market which have low cooling capabilities.

The MICA™ design incorporates high thermal cooling, is lubricant-free, with no limited life ball bearings or plain bushing guiding devices. These features make it compatible with low maintenance devices and long lifetime performance requirements used in harsh environments such as warm and dusty conditions in isolated places without natural convection. Therefore, the MICA™ range is fully adapted for continuous operation with a high level of integrated functionality in production machines, machining processes requiring vibration assistance, or precision control such as active chatter suppression. Equally, the range is suitable for internal thermal fluid machines such as pumps, compressors, valves, linear alternators, or as standalone devices for vibration cancellation and energy recovery in transportation applications.

About CEDRAT TECHNOLOGIES:

CEDRAT TECHNOLOGIES SA is a high tech SME, part of ACTIVE STRUCTURE FINANCE, with 40 employees. The firm is based in the French Innovation Valley, close to Grenoble, and is supported by BPI France.

CEDRAT TECHNOLOGIES is specialised in the innovation of smart actuators, smart sensors, mechatronic systems, detection systems and technological training courses. Its compact, dynamic and accurate products for mechatronics systems in challenging environments are recognised and appreciated worldwide by customers operating in varied fields such as aerospace, biomedical sciences, automated manufacturing, optronics and more.

For further information about our MAGNETIC ACTUATORS please visit our dedicated web pages:

[CTEC magnetic actuators](#)

[CTEC MICA™ actuators](#)

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