



Allegro MicroSystems Unveils 48V Power and Precision Sensing Solutions to Enhance Physical AI in Humanoid Robotics

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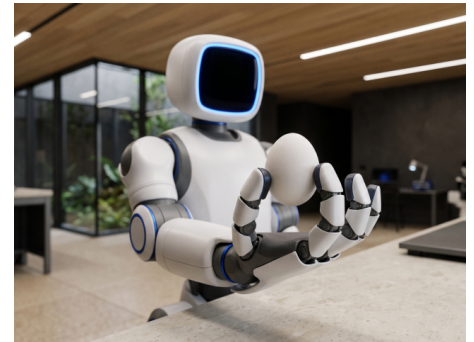
New portfolio addresses critical size, weight, and safety challenges in humanoid robots, as Sarcomere Dynamics collaboration enables near-human dexterity

MANCHESTER, N.H., Oct. 20, 2026 (GLOBE NEWSWIRE) -- Allegro MicroSystems, Inc. ("Allegro") (Nasdaq: ALGM), a global leader for motion control and energy-efficient systems, is expanding its robotics portfolio with precision sensing and 48V power architectures to address key hardware challenges in physical AI, including torque density, thermal management, and functional safety for human-robot collaboration.

Key Portfolio Innovations Include:

- **48V Power Integration:** The [A81481](#) 48V power management IC (PMIC) reduces overall system footprint and hardware costs by 50% while accelerating time-to-market for robotics OEMs.
- **High-Torque Joint Precision:** The [A17802](#) and [A17803](#) inductive position sensors deliver stray-field immunity without supplemental shielding and tolerate mechanical air-gap variations.
- **Micro-Joint Dexterity:** The [CT310](#) XtremeSense™ TMR and [A33023](#) Hall-effect angle sensors deliver sub-degree, solid-state accuracy to replace bulky wire-wound resolvers and optical encoders.

Allegro MicroSystems Robotics Solutions



Allegro MicroSystems expands portfolio to address critical size, weight, and safety design challenges in humanoid robots.

"Precise motion control, accurate sensing, and efficient power management are fundamental to advanced robotic manipulation," said Harpal J.S. Mandahar, CEO and co-founder of Sarcomere Dynamics Inc. "We're proud to partner with Allegro to integrate their advanced motion controllers, sensors, and power ICs into our Scorpion gripper and are on track to extend this collaboration to our next-generation ARTUS Dex – a 24-degree-of-freedom (DoF) robotic hand that delivers near-human dexterity for advanced physical AI applications."

Single-Chip PMIC Simplifies and Shrinks 48V Robotic Power Design

As humanoid designs adopt 48V architectures to reduce cabling weight and minimize resistive losses, engineers face the challenge of safely stepping down higher voltages within tight enclosures. Leveraging decades of automotive engineering experience, Allegro's [A81481](#) addresses this directly. As a single-chip 48V PMIC engineered for safety-critical robotics, it delivers complete system power and safety regulation directly from a 48V bus, eliminating the need for external pre-regulators.

By integrating dual buck regulators, five low-dropout (LDO) outputs, and ASIL-D-capable safety diagnostics (including a triple-watchdog architecture) into a 6x6 mm compact package, the [A81481](#) powers remote sensing clusters while simplifying board layout and cutting total system footprint and BOM costs by roughly 50%.

Sub-Degree Precision for Fluid, Natural Motion

For high-torque actuators like shoulder, hip, and knee joints, the [A17802](#) and [A17803](#) inductive position sensors provide accurate and reliable position measurement in demanding motor control environments. The [A17803](#) is also available in an ultra-compact QFN package, and both sensors deliver reliable operation under varying air gaps through on-chip compensation and advanced filtering, while built-in stray-field immunity eliminates the need for expensive shielding.

For the tighter mechanical constraints of robotic hands and fingers, Allegro's [CT310](#) XtremeSense™ TMR and [A33023](#) Hall-effect angle sensors offer greater resilience to contamination, mechanical shock, and runout that can degrade traditional encoder technologies. The [CT310](#) delivers sub-degree accuracy in a 2x2 mm DFN package, while the [A33023](#) adds low-latency, stray-field immunity, and multiple digital output options for applications requiring robust diagnostics and functional safety support.

"In fixed industrial robots, weight and space are less constrained because thick cables, large external drives and liquid cooling are practical," said Andreas Friedrich, Senior Director of Technology & Strategy at Allegro MicroSystems. "But in autonomous humanoids with 30-plus degrees of freedom, every gram and millimeter matters. By combining true 48V power management, robust motor and gate drivers, stray-field-immune inductive and compact TMR sensors, we give robotics engineers integrated, safety-ready building blocks to maximize torque, manage tight tolerances, and enable fluid motion."

Availability

For more information about the [A17802](#) and [A17803](#) QFN package variant inductive position sensors, the [CT310](#) TMR angle sensor, the [A33023](#) Hall-effect angle sensor, and the [A81481](#) PMIC, including samples and evaluation support, visit [Allegro Robotics Building Blocks](#). Attendees at

electronica 2026 can also see Allegro's latest robotics power and sensing solutions at Hall C6, Booth 129.

About Allegro MicroSystems

Allegro MicroSystems, Inc. is leveraging more than three decades of expertise in magnetic sensing and power ICs to propel [electrification](#), [automation](#), [AI data center](#), and [robotics](#) forward with solutions that enhance efficiency, performance and sustainability. Allegro's commitment to quality drives transformation across industries, reinforcing our status as a pioneer in "automotive-grade" technology and a partner in our customers' success. For additional information, visit allegromicro.com.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts contained in this press release, including statements regarding the anticipated performance, customer benefits, cost savings, and customer collaboration potential of Allegro's products and the timing of such collaborations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as "will," "expect," "anticipate," "plan," "project," "believe," "estimate," "potential," or other similar expressions. No forward-looking statement is a guarantee of future performance, and you should avoid placing undue reliance on these statements.

Forward-looking statements are based on management's current expectations and assumptions and are subject to risks and uncertainties. Actual results may differ materially from those expressed or implied in the forward-looking statements due to various factors, including, but not limited to: our ability to successfully develop and commercialize new products; customer adoption rates of emerging technologies; the timing and success of customer design wins; our ability to compete effectively; and other risk factors identified in our Annual Report on Form 10-K for the year ended March 27, 2026, as updated by our Quarterly Reports on Form 10-Q and other filings with the Securities and Exchange Commission. All forward-looking statements speak only as of the date of this press release, and except as required by law, we assume no obligation to update them.

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