

Intelligent Force Sensing Solution

Extending robot capabilities for advanced tactile applications

Complex assembly and machining applications today demand advanced tactile control beyond what traditional robots can provide, in terms of force sensing and robot dexterity. Omron's Intelligent Force Sensing Solution enables full automation of applications that require precise tactile feedback, by combining a state-of-the-art force sensor with Omron's superior suite of enterprise robots.

Key features:

- Precise measurement of forces and moments in all three dimensions
- Fast and simple installation for any type of robot (SCARA, parallel, or articulated)
- Easy integration with Omron's ACE software platform
- Several functions and operating modes to monitor and control forces



Key benefits:

- Automate processes that require force control and increased productivity
- Ensure product quality without creating process bottlenecks
- Decrease downtime risk associated with loss and training of skilled labor
- Increase safety and flexibility of the work cell

Applications	Sample processes
Assembly	Precise component fitting (shafts, gears, clutch), screwdriving, riveting, press fitting, friction welding, alignment, and face matching
Machining and forming	Grinding, deburring, contouring, polishing, bending, forming, cutting, drilling, and tapping
Material handling	Tool exchange, component loading, and fragile product packaging
Inspection and quality control	Contour validation, property measure (weight, center of mass, elasticity, stiffness), product testing, and force monitoring

Force sensing custom applications:

As part of the product release, a sample white paper for a Force Guided Part Insertion application is available. The objective is to use the Force Sensor to automatically locate the edges and orientation of a box that can hold shafts, generate a frame of reference, and insert a shaft in the target while ensuring the applied force does not exceed a predefined threshold.

More applications are coming soon!

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