



SYNODEX

PRODUCT CATALOG

SynoDrive® Series

Precision. Power. Synodex Intelligence.

SynoDrive® is a multi-axis servo drive family engineered with Synodex's advanced motion control technologies. Optimized for defense, robotics, automotive, and industrial automation applications, SynoDrive® delivers high torque, high speed, and millisecond-level precision for dynamic and reliable motion control.

The Synodex engineering philosophy combines deterministic I/O, high-frequency control loops, and model-based software architectures to redefine performance in real-time systems. The SynoDrive® family stands as the most powerful field-proven embodiment of this philosophy:

Fast. Intelligent. Robust.



- Model-based FOC & Feedforward control
- Automatic torque and inertia estimation
- Jerk-limited motion profiles

- Gravity compensation (tilt axis)
- S-curve, Notch, and anti-resonance filters
- Real-time data monitoring (≥ 5 kHz) via SynoSuite®



SynoCore®

Integrated Fire Control Unit

The decision engine for modern weapon stabilization & fire control.

SynoCore software is designed with the operator in mind — built for ease of use, quick reaction, and mission clarity.

- Fully customizable screen layouts with role-based operator profiles.
- Hybrid control (touchscreen + physical buttons) for reliable operation even with gloves.
- Contextual menus and safety-confirmation workflows reduce operator load.
- Multi-view display: EO/IR, map, system health, and ballistic data synchronized in one screen.

SynoCore includes modular video-tracking algorithms, optimized for each type of target:

- Motion-based tracking for rapid moving targets and low-latency correction.
- Feature-based visual tracking for vehicles, buildings, and static structures.
- Thermal/IR target detection for night and obscured environments.
- Multi-Target Tracking (MTT) with collision resolution and automatic target switching.
- AI-assisted classification to identify target type (personnel, vehicle, UAV, maritime) and adapt the tracking strategy.

Automatic & Assisted Engagement Modes

- Assist Mode: The system stabilizes, predicts firing windows, and guides the operator without autonomous fire.
- Auto-Engage Mode (optional): Executes firing sequences based on pre-defined ROE (Rules of Engagement) and multi-level authorization.
- Each engagement event is timestamped, signed, and logged for full traceability and audit integrity.



Visualization & Analytics

- Web-based dashboard accessible from any device (browser or tablet).
- Multi-layer views: map-based (GIS), time-series graphs, and camera feeds.
- Custom widget builder for sensor groups (rain intensity, water level, radar return strength, etc.).
- Alarm overlays and health-status indicators for each sensor node.

SynoLink®

Multi-Sensor Data Acquisition and Telemetry Suite

Connect. Collect. Comprehend.

SynoLink® is Synodex's next-generation data acquisition and monitoring platform, designed to connect heterogeneous sensors — from radar and weather gauges to optical and hydraulic instruments — into a unified, secure, and intelligent network.

Built with web-based accessibility and real-time synchronization, SynoLink® acts as the digital bridge between distributed sensor nodes and command centers, providing data clarity, predictive insight, and operational awareness in any environment.

Unified Sensor Management

- Centralized configuration, calibration, and firmware updates for all nodes.
- Asset grouping (e.g., "North Sector Waterline", "Radar Hill Station") for structured operations.

Real-Time Data Collection

- Sampling rates up to 100 Hz per channel for high-frequency sensors.
- Data normalization engine standardizes units and timestamps across multiple protocols.
- Built-in data integrity and buffering — ensuring no packet loss during link downtime.