Protocol	***Architecture***	***Determinism***	***Use Cases***
ModBus	The master polls each slave sequentially. Each device must receive and process full frames. Latency accumulates per device. Not deterministic under heavy load.	Polling-based. Timing varies depending on the number of slaves. Suitable for slow industrial monitoring.	Simple sensor networks Low-speed monitoring Cost-sensitive system No strict real-time constraints
EtherCAT	The master sends one frame per cycle. Slaves read/write data as frame passes. No full-frame processing delay. Deterministic timing. Very low latency.	Hard real-time. Predictable cycle time. Suitable for motion control, robotics, synchronized drives.	Multi-axis motor control Robotics joints Coordinated motion systems Sub-millisecond synchronization required