



# Transform Your Manufacturing Operations with the **Top Communication Protocols and Device Integration** by Smart Factory



A communication protocol is a set of rules that enables two or more entities in a communication system to exchange information. To be considered a communication protocol, it should include the following features:

- ✓ Machine connectivity for efficient data transfer.
- ✓ Defined syntax and semantics.
- ✓ Communication synchronization between sender and receiver, as well as the communication channel.
- ✓ Mechanisms for error recovery.



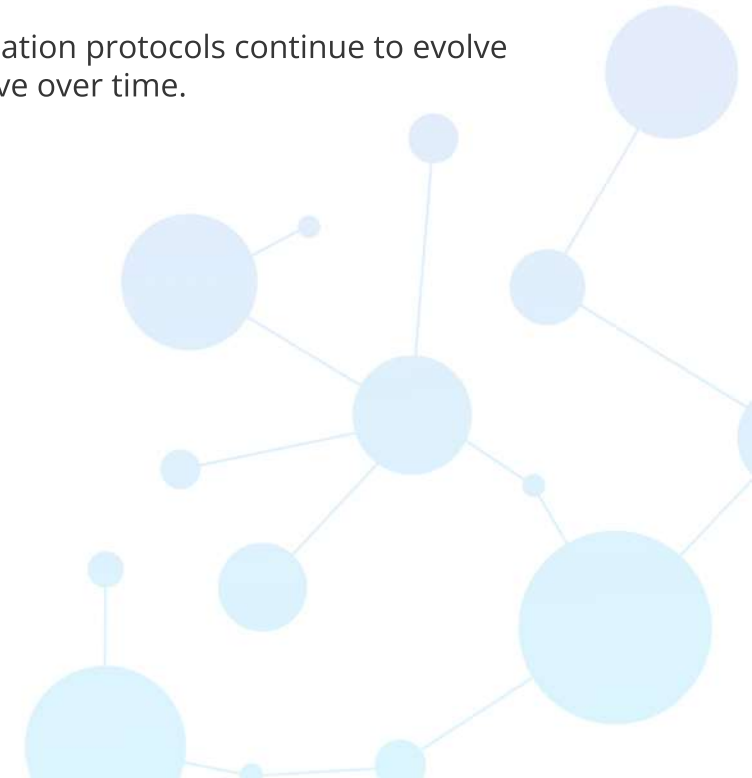
# Communication Protocol History

- ✓ The first PLC, MODICON 084, was developed in 1968 by Bedford Associates to address automation needs in the industry.
- ✓ In 1979, MODICON (now Schneider Electric) introduced Modbus, the first communication system between PLCs.
- ✓ The 80s saw the emergence and progress of various protocols and control systems, including proprietary protocols, leading to integration issues.
- ✓ Gateways were created to convert information from one protocol to another.



# Current Communication Protocol

- ✓ Communication protocols are a key component of the fourth industrial revolution, facilitating automation and digitalization of processes.
- ✓ Communication protocols and industrial communication networks are critical for control, monitoring, and interconnectivity of processes.
- ✓ Communication protocols continue to evolve and improve over time.



# Bridging the Gap Between IT and OT with Smart Factory Communication Protocols

Smart Factory enables compliance with Manufacturing 4.0 by integrating isolated systems and converging IT/OT in a user-friendly interface. This guarantees the capture, visibility, management, and analysis of data from automated equipment and control devices, leading to improved business performance and efficiency through active communication between production floor and business administration.

Through Smart Factory, departments can integrate with effective communication between IT and OT systems. This applies to all departments with automated devices (such as PLCs or actuators on production and quality floors) and those with devices for data visualization (such as offices and supervision or management areas). This effective communication translates into a positive impact on achieving business KPIs, with total control from quality and compliance to speed and efficiency.

Historically, IT and IoT systems were isolated or separated by a technological barrier, but it is now essential to have technological solutions that integrate them. Smart Factory provides optimal options for businesses to achieve this integration effectively and easily using communication protocols and data collection. Specifically, in the context of Smart Factory, Manufacturing Execution Systems (MES) communication protocols are crucial for ensuring seamless communication between systems, devices, and departments.



# Unlocking the Benefits of Smart Factory Integration and Communication Protocols for IT/IoT and Enhancing Production Efficiency...

Smart Factory integration and communication protocols play a significant role in IT/IoT, which can bring about significant improvements to production. By integrating and communicating production data in a standardized and accessible manner, it enables effective management of industrial operations. This, in turn, makes industrial operations more efficient, thereby improving business immediately.

Some of the benefits of Smart Factory MOM integration and communication protocols include:

- ✓ Ensuring that equipment is operating to SLAs, standards, specifications, performance, uptime, and more.
- ✓ Improving visibility and responsiveness to prevent unplanned downtime.
- ✓ Allowing full control over parameters, specifications, rules, restrictions, and policies.
- ✓ Analyzing the status and data to understand and predict how the equipment works at all times based on conditions and historical data.

By leveraging Smart Factory integration and communication protocols, businesses can enhance their operational technology and make better decisions based on real-time data. This results in improved efficiency, higher production quality, and a reduction in costs.



# Compatible Protocols, Devices, Drivers and Brands with Smart Factory

In order to achieve a robust digital transformation of manufacturing processes and comply with the requirements of Industry 4.0, it is essential to establish a reliable communication network capable of exchanging data, facilitating data control, and connecting devices or machines from different manufacturers in a single installation. Smart Factory MOM recognizes the importance of this and has integrated various brands, devices, and protocols used in the manufacturing industry. The integration includes approximately 80 equipment and machine brands, ranging from 250,000 to 120 million devices, and over a hundred protocols.

Some of the most important protocols include:

## Equipment and Device Brands



**80+ Equipment  
and Device  
Brands**

- ✓ Allen Bradley
- ✓ EFM
- ✓ Fanuc Focas
- ✓ Fisher ROC
- ✓ GE Suite
- ✓ Honeywell
- ✓ Mitsubishi
- ✓ Omron
- ✓ Siemens Plus and normal
- ✓ Toshiba
- ✓ Yaskawa
- ✓ Yokogawa



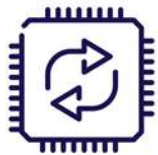
# Protocols



100+  
Protocols

- ✓ MTConnect
- ✓ Serial(Port COM)
- ✓ RTSP
- ✓ Data reading
- ✓ Rest full (HTTP)
- ✓ ODBC (Data bases)
- ✓ OPC protocol
- ✓ Allen Bradley Df1
- ✓ BUSWARE Modbus Ethernet
- ✓ Dynamic Data Exchange (DDE)

# Drivers



100+  
Drivers

- ✓ ABB Totalflow
- ✓ Advanced simulator
- ✓ AllenAllen-Bradley 1609 UPS
- ✓ Analog Devices
- ✓ BACnet/IP
- ✓ Bristol/IP
- ✓ Custom Interface
- ✓ DDE Client
- ✓ EUROMAP 63
- ✓ Fisher ROCethernet



**Are you tired of dealing  
with disconnected devices  
and unreliable data  
exchange in your  
manufacturing process?**

**It's time to upgrade to Smart Factory.  
Reach out to us now to get started.**

**Contact Us Now!**

