

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

Automation Platform

A Comprehensive Controls Solution

The MKS Automation Platform provides a modular, scalable and configurable solution to meet your automation and control requirements. Designed to provide a complete automation solution to improve operational and productivity efficiencies, the Automation Platform enables faster implementations, provides lowest total cost of ownership, and improves utilization of existing tools and assets. Additionally, the MKS Controls Workbench (CWB) software application is provided with the Automation Platform. The CWB software is a simple, customizable integrated solution for device configuration, process monitoring, data storage, system diagnostics and auto-tuning.

The Automation Platform can be configured to meet the needs of any automation application, ranging from those requiring simple I/O distributed over EtherCAT® or other control networks all the way up to applications requiring a fully programmable controller, supporting a standard IEC 61131-3 programming interface or a fieldbus master, running advanced data analytics. The platform can be customized providing an optimum automation solution in a number of different application areas, the most common categories and uses for the platform being:

- Fully Programmable Automation Control
- Seamless Interface to MKS Instrumentation
- Multi-Zone Temperature Control
- Process Monitoring
- Remote Process Control
- Remote or Distributed I/O



Product Features

- Leverages advanced data analytics; improved process tuning, optimization, monitoring, troubleshooting and fault detection
- Seamless interface to MKS subsystems and instrumentation, such as Mass Flow Controllers (MFCs), direct and indirect pressure gauges, etc., resulting in significantly faster time to market and ease of use
- Support in Industry 4.0 and Internet of Things (IoT) environments, seamless connectivity between operations systems and IT/ERP systems, along with data analytics solutions maximizing value
- Compatible Controls Workbench (CWB) software included with the Platform:
  - Access all MKS controllers simultaneously and from one central interface
  - Remotely configure MKS Automation devices
  - Create views and charts from multiple MKS devices
  - Perform data logging, monitoring, and data exporting
- MKS Integration Services for recipe and logic development, integrated testing and training
- Compact, high density design reduces the number of modules and/or controllers required, saving cost and tool real estate

Key Benefits

- Lowest total cost of ownership, compared to standard off-the-shelf PLCs and PACs
- Scalable and expandable; modular open architecture and support for many fieldbuses and control networks
- Broad portfolio of I/O modules interfaces to all types of sensors
- Off-the-shelf availability shortens delivery times

PROPRIETARY

The Automation Platform consists of a number of building blocks that can be configured to provide specific functionality meeting the custom requirements of most markets or applications. An overview of the building blocks and modules is illustrated below.

Programmable Automation Controllers (PACs)

MKS Programmable Automation Controllers (PAC) solutions merge the features of a Programmable Logic Controller (PLC) and an Industrial Personal Computer (IPC) leveraging benefits such as industrial environments, open standards, system component networking, open software/programmability, flexibility and scalability, all in a modular, DIN rail mountable plastic enclosure. Compared to standard PLCs and IPCs, PACs provide a more compact, customizable, high performance, and cost effective programmable solution for your controls and automation tasks.

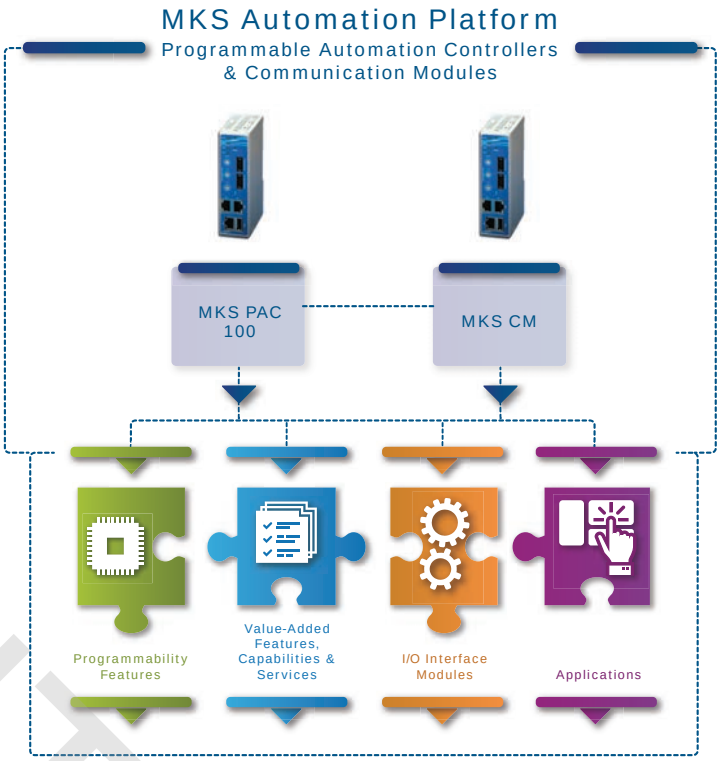
MKS Power Supply Modules are a compact solution for supplying additional power to the Automation Platform. Each power module requires two 24 VDC power inputs rated at 5A for the core and rated at 12A current for the I/Os. The Power Supply Module supplies additional power to the I/O modules connected to the PAC 100 and the Communication and Coupler Modules.

Communication & Fieldbus Coupler Modules (CMs)

MKS Communication and Fieldbus Coupler Modules (CM) provide a compact, customizable, and cost effective solution for standalone manual control, data logging, or distributed I/O. The CM can be implemented as a standalone unit, supporting manual, remote control capabilities with the Controls Workbench application, with built in data logging and process monitoring, or with Labview. Alternatively, it can be implemented over a variety of fieldbuses (EtherCAT and Modbus TCP/IP) to support distributed I/O applications, where the CMs are integrated with a PLC or PAC.

Input/Output Modules

The Automation Platform can be configured with a variety of MKS I/O modules, depending on the type of sensors, actuators, valves, and other devices that are integrated with the PAC or CM. The I/O modules communicate to the PAC or CM via the System Bus or EtherCAT, creating a scalable distributed I/O system, all from MKS.



MKS PAC 100

- 100 MHz CPU
- EtherCAT, Modbus TCP/IP slave or stand alone control
- Run standard logic and algorithms

MKS CM

- EtherCAT or Modbus TCP/IP slave
- Remote or Distributed I/O
- Manual control capabilities via the MKS workbench
- Interface and control with Labview

DISCONTINUED

Controls Workbench Software: This integrated, customizable software application is included with the MKS Automation Platform.

The CWB is a central, powerful interface that provides users a simple, complete solution for device configuration along with the ability to view, data log, chart and export process data, perform manual process control, process troubleshooting, and advanced tuning of the MKS controllers (PAC 100, Communications Module, and MultiTherm 2000).

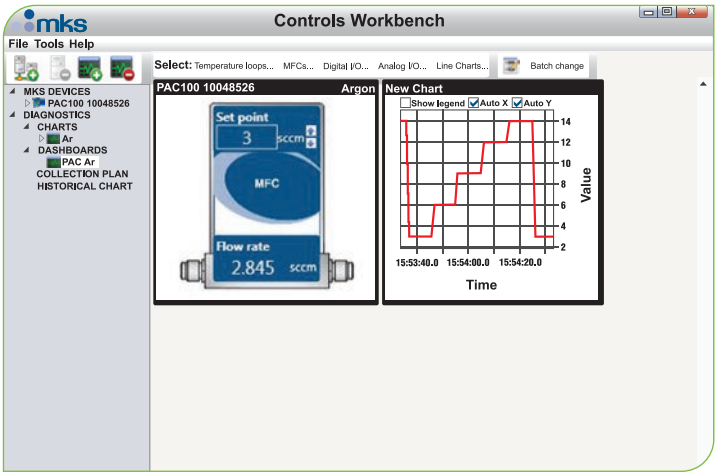
Advanced Data Analytics: The Automation Platform can be configured to support the MKS SenseLink™ QM application, for real-time Multivariate Analytics for prediction and containment of process defects.

Design of Experiments (DoE) and Optimization Tools: The platform also leverages experience in DoE through MODDE software and process optimization and applies it to controls and automation.

Advanced Process Control Algorithms: Additionally, the platform also can be configured to support advanced control algorithms, supporting both MKS algorithms and third party algorithms. One example is the use of a Model Based Control (MBC) approach to provide significantly improved temperature control compared to common PID control.

Seamless Integration with MKS Devices and Instruments: MKS has designed custom I/O modules for direct interface to various MKS instruments including Pressure Gauges, Mass Flow Controllers, Valves, and Gas Analysis solutions. As a result, the Automation Platform provides significant benefits including ease of use and faster time to market when implemented with other MKS subsystems and instruments. Additionally, the IEC61131-3 programming environment comes equipped with existing libraries and function blocks specifically developed for a variety of MKS devices.

Training and Systems Integration Testing: MKS provides advanced remote and onsite training programs to support all aspects of integrating and implementing our Automation Platform. With 20 customer support centers and 15 manufacturing facilities, MKS has the knowledge and presence to support you on a global level. Additionally, MKS provides advanced integrated testing, which can be extremely valuable in applications where the solution combines sensors (MFCs, pressure gauges, valves, etc.), automation and controls, analytics, etc.



Compatible Controls Workbench Software

Access all MKS controllers simultaneously and from one central interface



DISCONTINUED

Specifications and Ordering Information

Controls Workbench Specifications

Operating System	Windows 7 (32-bit or 64-bit)
Processor	1 gHz or faster x86- or x64-bit processor
Memory	1 gigabyte (GB) RAM (32-bit); 2 GB RAM (64-bit)
Hard Disk	3.0 GB of hard drive space available
Graphics	Graphics hardware acceleration requires a DirectX 10 graphics card
Display	1024 x 576 or higher resolution monitor
.Net Version (optional)	3.5, 4.0 or 4.5
Other	Need at least one network interface card (NIC) on PC (one for connection to MultiTherm and second (optional) for external internet connection)

Ordering Information

MKS Programmable Automation Controllers

Part Number	Description
AS11870G-03	PAC 100 Modbus TCP/IP Slave
AS11870G-05	PAC 100 EtherCAT Slave

MKS Power Modules

Part Number	Description
AS11840G-02	Power Supply Module

MKS Communication & Fieldbus Coupler Modules

Part Number	Description
AS11870G-02	CM Modbus TCP/IP Slave
AS11870G-04	CM EtherCAT Slave
AS11870G-10	EtherCAT Coupler Module

MKS Input/Output Modules

Part Number	Description
AS11893G-02	DIO (12 Digital Inputs/12 Digital Outputs) Source MKS System Bus
AS11893G-11	DIO (12 Digital Inputs/12 Digital Outputs) Sink MKS System Bus
AS11893G-21	DIO (12 Digital Inputs/12 Digital Outputs) Source EtherCAT Bus
AS11893G-31	DIO (12 Digital Inputs/12 Digital Outputs) Sink EtherCAT Bus
AS11880G-03	AIO (8 Analog Inputs/4 Analog Outputs) Voltage Inputs/Current Outputs EtherCAT Bus
AS11880G-12	AIO (8 Analog Inputs/4 Analog Outputs) Voltage Inputs/Current Outputs MKS System Bus
AS11880G-22	AIO (8 Analog Inputs/4 Analog Outputs) Current Inputs/Voltage Outputs EtherCAT Bus
AS11880G-32	AIO (8 Analog Inputs/4 Analog Outputs) Current Inputs/Voltage Outputs MKS System Bus
AS11890G-02	MFC Module 15 Pin D-Sub MKS System Bus
AS11890G-11	MFC Module four 9 Pin D-Sub MKS System Bus
AS11860G-40	Temperature Input - 8 TC or PT100 RTD Inputs
AS11860G-50	Temperature Input - 8 TC or PT1000 RTD
AS11860G-60	Temperature Input - 8 TC or PT100 RTD - Removable terminal block
AS11860G-70	Temperature Input - 8 TC or PT1000 RTD - Removable terminal block
AS11893G-41	PWM (12 Pulse Width Modulation Outputs/12 Digital Inputs) Module
AS11899G-01	Serial Module MKS System Bus (Interface up to 4 RS232 or RS485 devices)
AS11900G-03	Pressure Input Module Four 15 Pin D-sub MKS System Bus

DISCONTINUED

www.MKSINST.com
+1-978-645-5500 | +1-800-227-8766

Automation Platform_02/20
©2020 MKS Instruments, Inc.
Specifications are subject to change without notice.

MKS products provided subject to the US Export Regulations. Export, re-export, diversion or transfer contrary to US law (and local country law) is prohibited.

mksinst™, MultiTherm™, and SenseLink™ are trademarks of MKS Instruments, Inc., Andover, MA. EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP