

SUPCON

SUPCON

## Webfield<sup>®</sup> JX-300XP

The Key to an extended intelligent age

A smart distributed control system



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# FEATURES

Webfield JX-300XP DCS brings in a friendly operating environment that keeps every operator clearly informed and makes it easy to control the process.

## Intelligent Data Delivery

JX-300XP delivers the plant information intelligently.

JX-300XP captures plant-wide data in real time and delivers the right information to the right people at the right time. With SUPCON rich process industry experience and careful engineering design, JX-300XP keeps operator's attention focused on operational targets.

## Intelligent Performance Assistance

JX-300XP helps to implement decisions throughout the historical information in process.

JX-300XP brings necessary historical information for operators, making it easy to anticipate process changes and make fast, intelligent decisions.

## Intelligent Engineering Assistance

JX-300XP brings powerful engineering tools for engineers, making it easy to configure and maintain the process intelligently.

JX-300XP assists engineers with powerful and intelligent tools of total plant, ensures your engineering configuration and maintenance in very high efficient way, and makes it possible to have more time to focus on strategy target instead of programming.

## Operation

### Safe and intelligent plant operation

JX-300XP employs User Authority Management to ensure the safety of operation. Enhanced design of JX-300XP makes your process immune to virus and reduces other internet risks.

With a variety of interconnection facilities (OPC, VBA, TCP/IP), JX-300XP provides you a very open application environment, and offers your operator an easy access to the total plant information.

With embedded mechanisms and numerous dedicated process functions, the process is allowed to run intelligently.

## Project

### Safe and efficient project management

JX-300XP is a reliable and efficient platform of process control, and provides your engineer with an easy integration solution consisting of DCS, SIS, RTU, SCADA, MMS, LDS, and TGS, etc.

- Distributed Control System (DCS)
- Safety Instrument System (SIS)
- Plant information management system (PIMS)
- Intelligent RTU & SCADA
- Machinery Monitoring System (MMS)

## Maintenance

### Non-stop improvement of maintenance

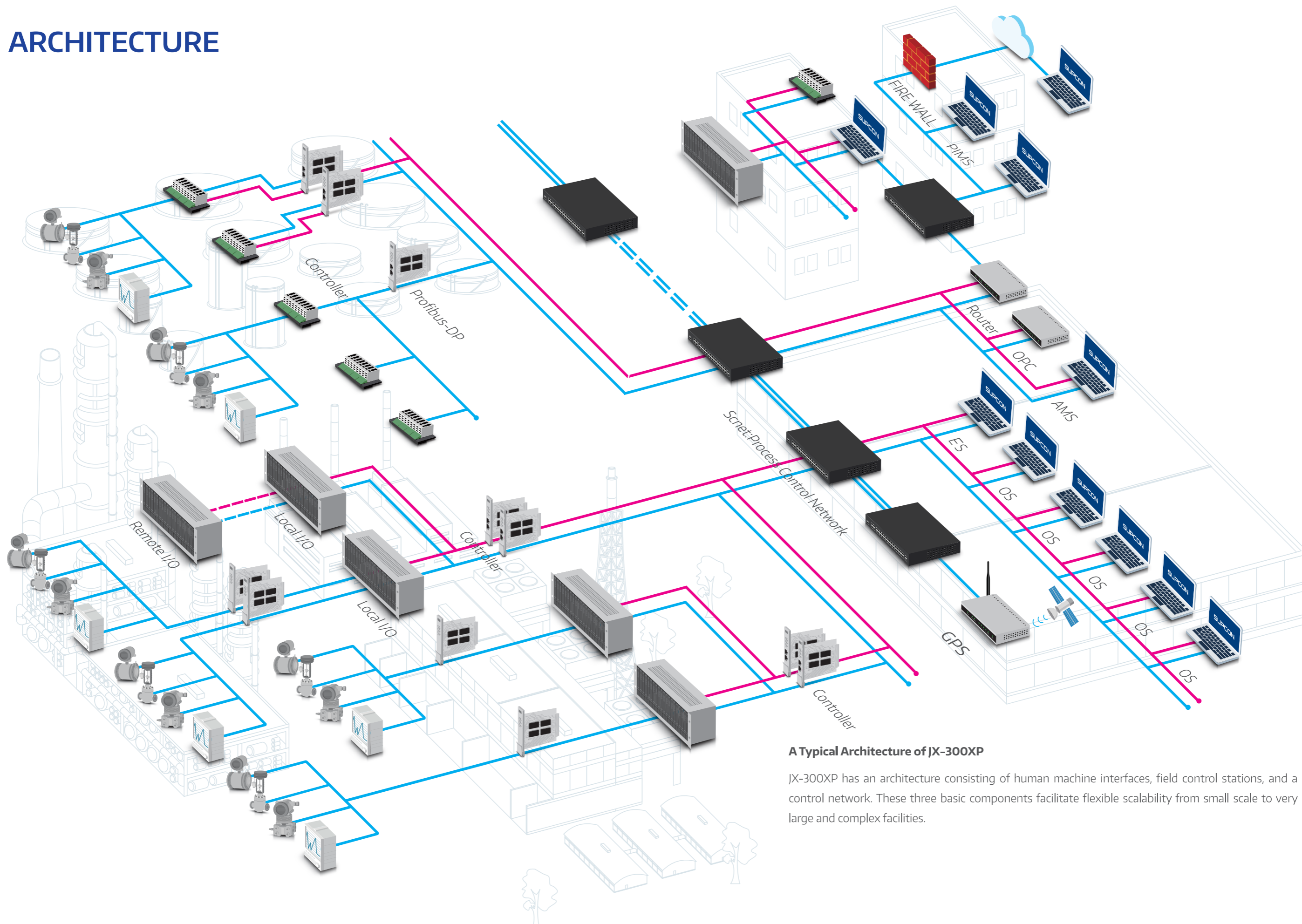
JX-300XP improves personnel's handling ability of emergency with powerful operation and maintenance functions such as the friendly operating environment, alarm management system, real-time database platform, and remote system diagnose assistance from SUPCON after-sales team.

## Production

### Reliable production control platform

JX-300XP contributes to high reliability and availability of the control system. Thanks to a dual-redundant design, the DCS continues running even if a single failure occurs, avoiding hardware failure to interfere with the process control.

# ARCHITECTURE



### A Typical Architecture of JX-300XP

JX-300XP has an architecture consisting of human machine interfaces, field control stations, and a control network. These three basic components facilitate flexible scalability from small scale to very large and complex facilities.

# HARDWARE

## Highly Reliable and Flexible Product

With professional and endeavored design, Webfield JX-300XP DCS maintains the availability of 99.9999%.

## Openness and Integration

JX-300XP integrates various industry communication interfaces such as Modbus, Profibus, HART, EPA, and OPC, etc., making it easy to connect with third-party system and various intelligent field instruments.

## Security

Designed in compliance with European Community EMC Directive II, the hardware of JX-300XP has special anti-corrosion coating complied with ISA71.04 standard G3. In addition, JX-300XP system has EMC and LVD CE certificates.

## Fault Diagnosis

JX-300XP is capable of diagnosing failures concerning module, channel, and transducer/sensor in a highly intelligentized way detecting the fault like thermocouple disconnection. The diagnose system obtains the system states timely and accurately, such as network status and hardware status.

## Offline Simulation

JX-300XP provides debugging and simulation environment offline, which can shorten commissioning time on site and reduce risks during designing period.

## High Accuracy

I/O modules adopt the state-of-the-art high-accuracy Analog-to-Digital Sampling technology ( $\Sigma$ -A/D), advanced signal isolation technology, strictly proven hot-plugging technology, and multi-layer board & surfaced mounting technology, which makes high-accuracy analog signal measured and modules more stable.

## On-line Download

JX-300XP allows engineers to implement online downloading after modifying the configuration and compiling successfully. A bumpless switchover between old and new configurations is realized by SUPCON patented technology.

## Event Recording Function

JX-300XP has powerful event recording functions, which can record the process sequence event, operator's operation, alarm of process parameter, etc., and work with the software to access, analyze, print and recall the event.



## □ CONTROLLER

### G3 Standard Design

Controller is designed according to G3 standard for enhanced anti-corrosion, dust-proof and anti-seismic ability of the system, increasing its reliability.

### On-line Download

The bumpless switchover between old and new configuration allows engineers to perform on-line downloading.

### Flexible Control Cycle

Range from 100ms to 5s optional.

### Fault Tolerance

Capability of diagnosing failures concerning module, channel, and transmitter or transducer, so that failures such as open-circuits of thermocouple can be eliminated easily and timely.

### Openness and Integration

Integration of various industry communication interfaces such as Modbus, Profibus, HART, EPA and OPC, etc., which makes it easy to connect with third-party systems and various intelligent field instruments.

### Specification of XP243X

Item	Performance	Item	Performance
CPU	32-bit RISC CPU	Fault-diagnosis	Support
Frequency	500MHz	On-line downloading	Support
RAM	256MB	Programming language	LD, FBD, SFC, ST
Scanning period	Range from 100ms to 5s	Startup	Cold/hot startup
Loop	192 control loops	Li-battery backup	Support
Power consumption	5V±5%, 3W	Hart protocol	Support
Communication rate	10M/100Mbps self-adapted	Expansion capacity	8 module cages, 128 I/O modules
Communication protocol	UDP/IP	I/O capacity	2048 DI, 2048 DO, 512 AI and 192 AO
Topology	Bus, star and ring	Network scale	72 operation nodes and 63 control stations
Redundancy type	1:1 hot standby		

## □ COMMUNICATION

### MODBUS

Via Modbus interface module, Modbus-RTU/TCP and self-defined protocol communication is supported.

### PROFIBUS

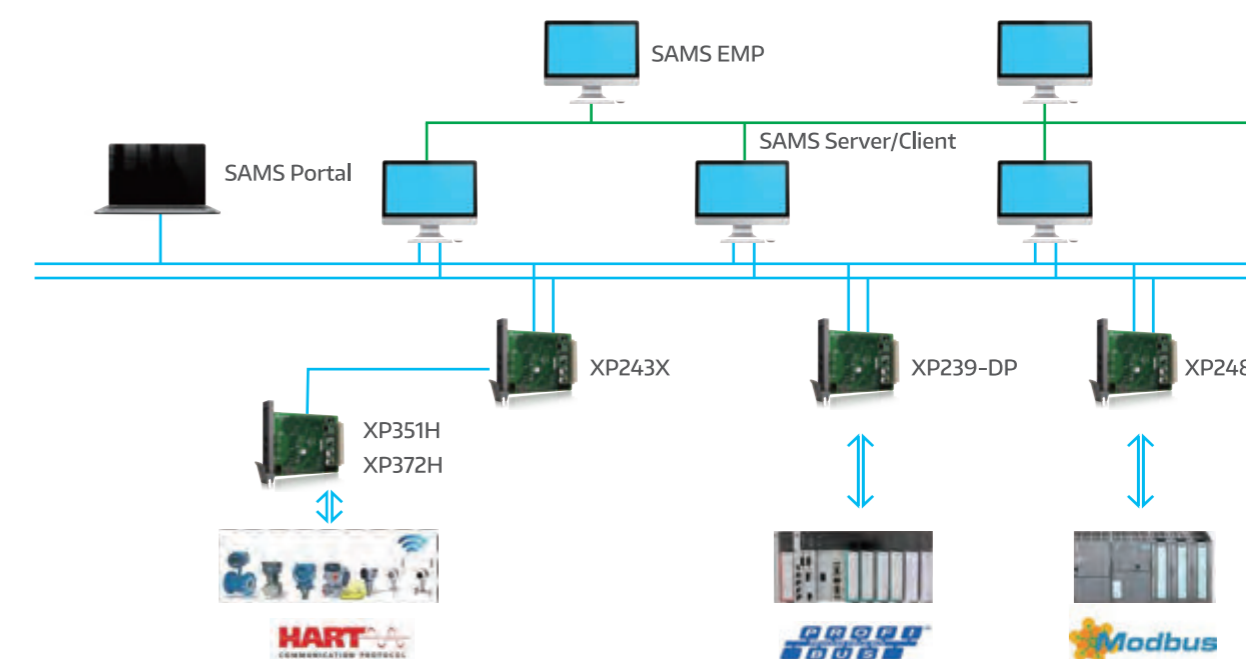
Via PROFIBUS interface module, PROFIBUS-DP/PA protocol communication is supported.

### HART

AI/AO modules support HART, and acquire conventional 4~20mA signals and HART signal simultaneously.

### List of Communication Modules

Module	Description
XP248 Multi-Serial Interface Multi-Protocol Module	Protocol Supported: -Modbus    -Self defined protocol
XP239-DP PROFIBUS-DP Master Interface Module	Protocol Supported: -PROFIBUS-DP   -PROFIBUS-PA
XP351H 8-channel HART & Current Input Module	Current signal (4~20mA) input, 8 channels, support HART protocol.
XP372H 8-channel HART & Current Output Module	Current signal (4~20mA) output, 8 channels, support HART protocol.





## □ I/O MODULE

### High Performance

SOE resolution: 1ms  
 Cycle time: 100ms  
 Analog accuracy: 0.1%

### High Reliability

Fail-safe design  
 Fully redundant

### High Availability

Self-diagnose  
 Hot-swapping, plug & play

#### List of I/O Modules

Module	Description
<b>A:Typical I/O Module</b>	
XP313	Analog input: 6 channels, current input signals XP313: group isolation. XP313(I): channel-channel isolation
XP351	Analog input: 8 channels, current input signals XP351: conventional signal input. XP351H: support smart HART instrument

Module	Description
<b>A:Typical I/O Module</b>	
XP314	Analog input: 6 channels, thermocouple signals XP314: group isolation. XP314(I): channel-channel isolation
XP316	Analog input: 4 channels, RTD signals XP316: group isolation. XP316(I): channel-channel isolation
XP322	Analog output: 4 channels, 4~20mA current output signals
XP372	Analog output: 8 channels, 4~20mA current output signals XP372: conventional signal input. XP372H: support smart HART instrument
XP361	Digital input: 8 channels, 24/48V DC, wet contact Support proximity switch signal
XP363(B)	Digital input: 8 channels, 24/48V DC, dry contact Support proximity switch signal
XP366	Digital input: 16 channels, 24V DC, dry/wet contact
XP362(B)	Digital output: support 8-channel transistor output; support redundancy
XP367	Digital output: support 16-channel transistor output; support redundancy
<b>B:SOE Module</b>	
XP369(B)	SOE slave module: 8 channels, 24/48V DC, 1ms resolution
XP422	SOE master module: support at most 16 slave SOE modules; support 10,000 items for SOE recorded storage 1ms SOE resolution in the same SOE master module 2ms SOE resolution in different SOE master modules

# SOFTWARE

## Friendly Human Machine Interface for Plant Operation

JX-300XP provides a HMI (human machine interface) which makes process information access fast and easy.

## Dedicated Operation Keyboard

Optimized allocation of the function keys and buttons enables operators to call up or switch graphics and control loops by pressing a single key. It is specially designed to avoid intentional quit of HMI.

## Compatibility

Supporting Windows 7 and Windows XP, it may exchange information with the DCS via open interfaces such as Excel software, VBA language, OPC data communication protocol and TCP/IP network protocol in different hierarchies.

## User-friendly

Graphical operation & maintenance interface, and graphical configuration & programming software are in compliance with IEC61131-3, such as Ladder diagram (LD), Function block diagram (FBD), Sequence function chart (SFC), and Structured text (ST), which enables system maintenance and various control strategies to be implemented easily.

## Fault Diagnosis

Capability of diagnosing failures concerning module, channel, and transducer or sensor, which is highly intelligentialized and can detect the fault like thermocouple disconnected, etc.

## Offline Simulation

Debugging and simulation environment offline, which can shorten commissioning time on site and reduce risks during production period.

## Alarm Management

Distributed alarm management system, including functions like alarm information bar, pop-up alarm, alarm banner, and alarm summary, etc., which allows operators can make a quick decision easily whenever a critical alarm arises.







## □ SAMS SOFTWARE

### Solutions

SUPCON developed a variety of automation solutions to enhance your plant performance, such as SAMS, OPC, PIMS, APC, OTS, etc.

### SAMS

SAMS (SUPCON Asset Management System) Software, as part of SUPCON intelligent device management solution, is to realize the management of HART, FOUNDATION Fieldbus and other intelligent instruments. SAMS has functions including device status monitoring, device configuration, fault diagnosis, device alarm and operation record, etc.

### SAMS Function

- Output failure
- Excessive loop variability
- Local override
- Device out of service reports
- Loop in manual
- Input failure/process variable has bad status



### List of Software

#### Configuration Software Packages includes

User Authority Management Software (SCReg)	Report Configuration Software (SCFormEx)
System Configuration Software (SCKey)	Extended Configuration Software(SCTask)
Graphical Control Language Software (SCControl)	Modbus Protocol Based External Data Configuration Software(AdvMBLink)
SCX Language Software (SCLang)	
Graphics Configuration Software (SCDrawEx)	

#### Operation Supervision Software Packages includes

Real-time Supervision Software (AdvanTrol)	OPC Based Data Communication Software (AdvOPCLink)
Data Service Software (AdvRTDC)	OPC server software (AdvOPCServer)
Data Communication Software (AdvLink)	Network management and real-time data transmitting software (AdvOPNet)
Alarm Recording Software (AdvHisAlmSvr)	
Trend Recording Software (AdvHisTrdSvr)	History data transmitting software (AdvOPNetHis)
Modbus Data Connection Software (AdvMBLink)	



Your plant is unlike any other, yet all plants require regular service to maintain ongoing safety and productivity. SUPCON offers a range of flexible service contracts that allow us to proactively deliver the service your operations require. We'll help you preempt the hassle and expense of unexpected breakdowns and potential inefficiencies. Depending on your needs, SUPCON's scheduled service and maintenance contracts may cover routine repairs, period upgrades, recalibration and wireless network diagnostics and services.

**Tailor Our Service Modules for Your Plants**

SUPCON defines several service modules that contain all the right elements to tailor a program to fit your specific support needs by addressing your specific availability, performance improvement, and sustainability requirements.

Our main service modules include:

- Training
- Repair service
- On-Site service
- Spares management
- Project start-up support
- Security assessment service
- Backup and recovery service
- System upgrade/migration service
- Control performance improvement & modernization consulting studies

# SERVICE

**Delivering Just What Your Plant Needs**

SUPCON as a service partner ensures that your plant undergoes regular scrutiny by local SUPCON certified technicians. You'll come to rely on them as valuable advisors who know every detail of our devices and understand the unique nuances of your processes.

**What is Lifecycle Agreement**

Lifecycle Agreement is an integrated package of solution services that optimizes maintenance by tailoring it to the customer's equipment lifecycle. This program meets diverse needs by creating a lifecycle plan for each customer's system, and based on which selects and combines the most suitable services from a variety of options.

**Make a Need-oriented Decision**

Experts from the nearest Regional Service Center can provide a full appraisal of your facility and help you make an informed decision for the level of service you truly need.

**Lifecycle Service Solution Diagram**

**Production Excellence Centered Service**

Process improvement and optimization solutions.

**Asset Excellence Centered Service**

To minimized down-time, and enhanced protection for your investment.

**Safety Excellence Centered Service**

Comprehensive solutions for cyber security.

