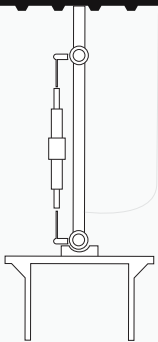
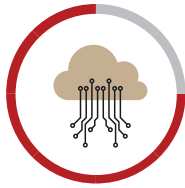
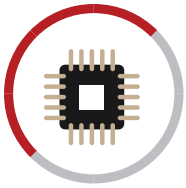
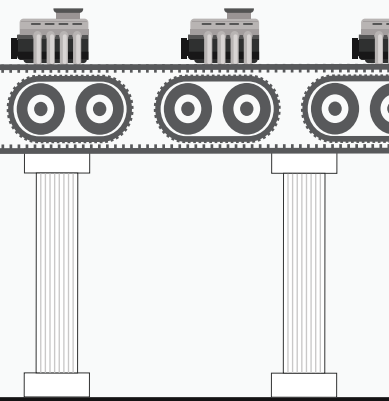
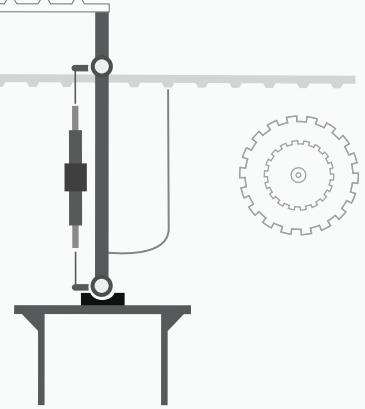
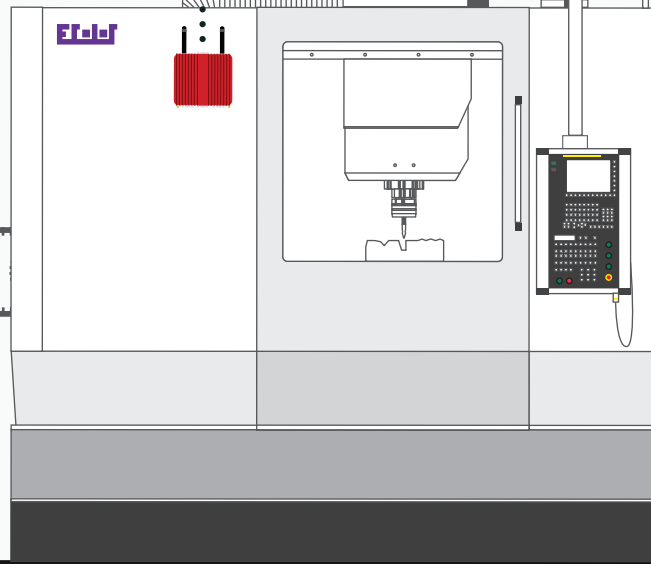




Industrial Information + Control Technology
Totally Integrated Automation



Active BlackBox



-
- ✓ Edge Device
 - ✓ Network
 - ✓ Solution
 - ✓ Cloud
 - ✓ Web, Mobile Ver.
- Application

The Start of Industry Information
+ Control Technology

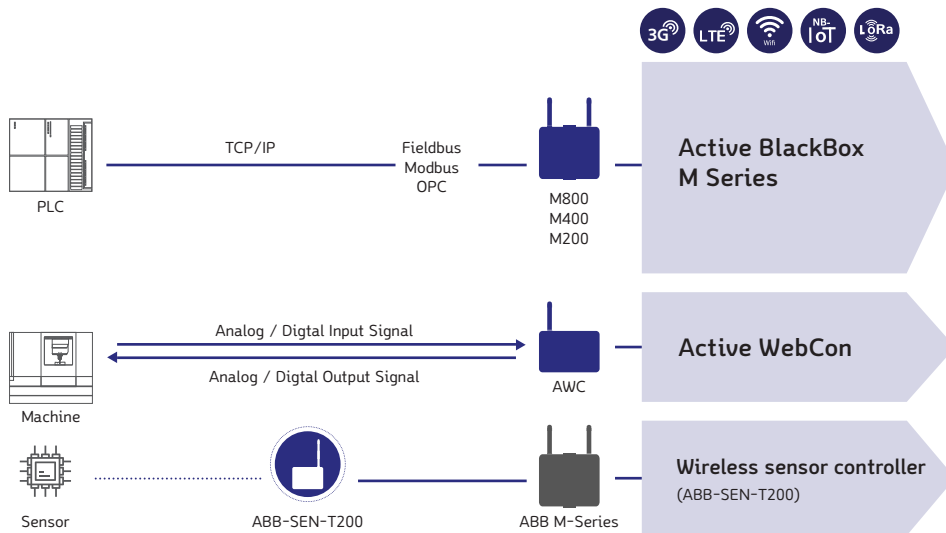
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Active WebCon		
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Active TIA Plant		
FMS (Factory Manufacturing System)		
TMS (Tool Management System)		
QTS (Quality Tracking System)		
PMT (Part Monitoring&Tracking)		
MCS (Maintenance Call System)		
EMS (Energy Management System)		
OEE (Overall Equipment Effectiveness)		
PM (Prevent Maintenance)		
MRO (Maintenance Repair Operation)		
MFS (Machine Fault System)		
ANDON (Equipment Status Board)		
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01 | Business overview

H / W

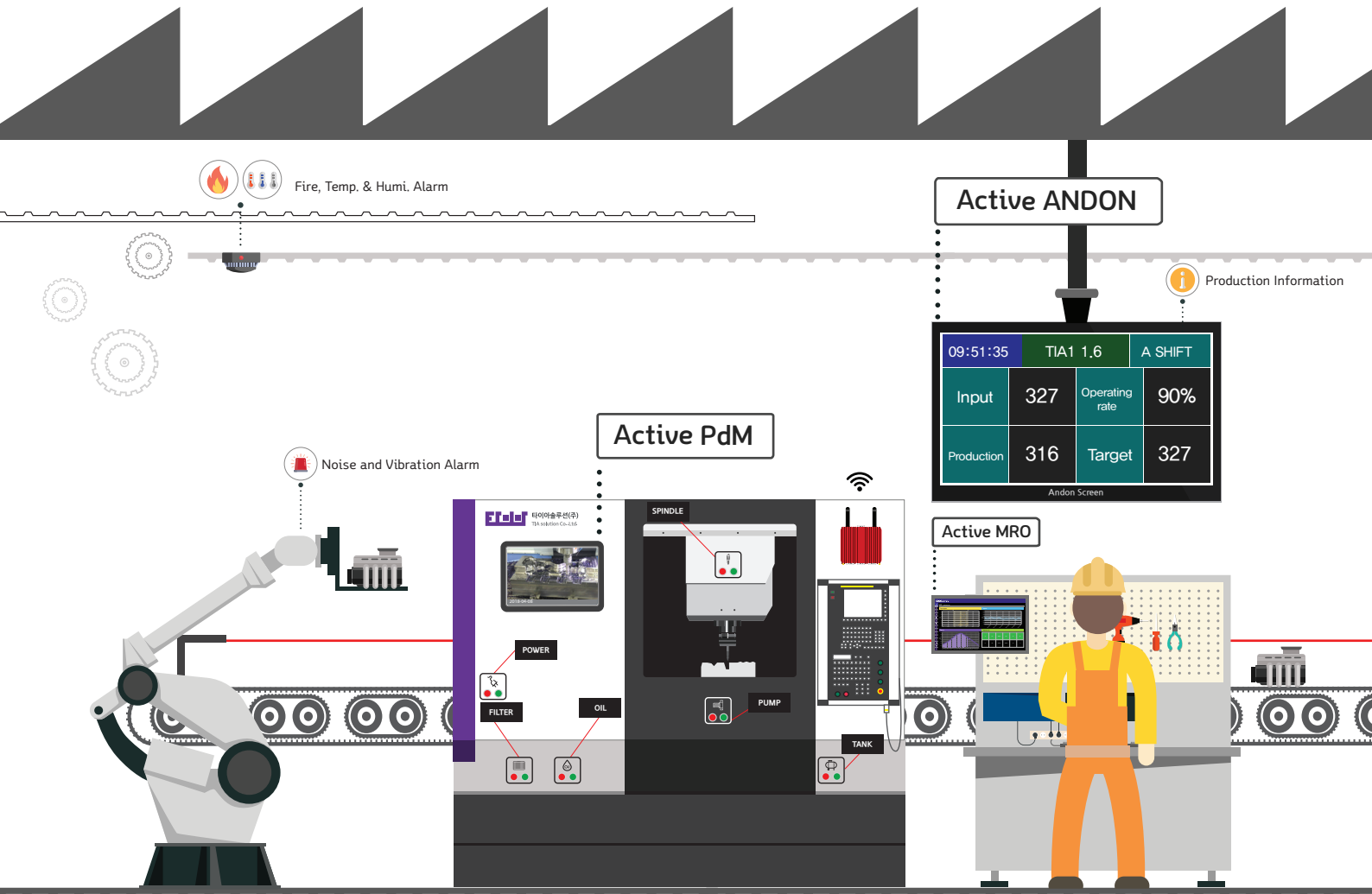
S / A



* Model name depends on telecommunication method (M200+Z [ZIGBEE])

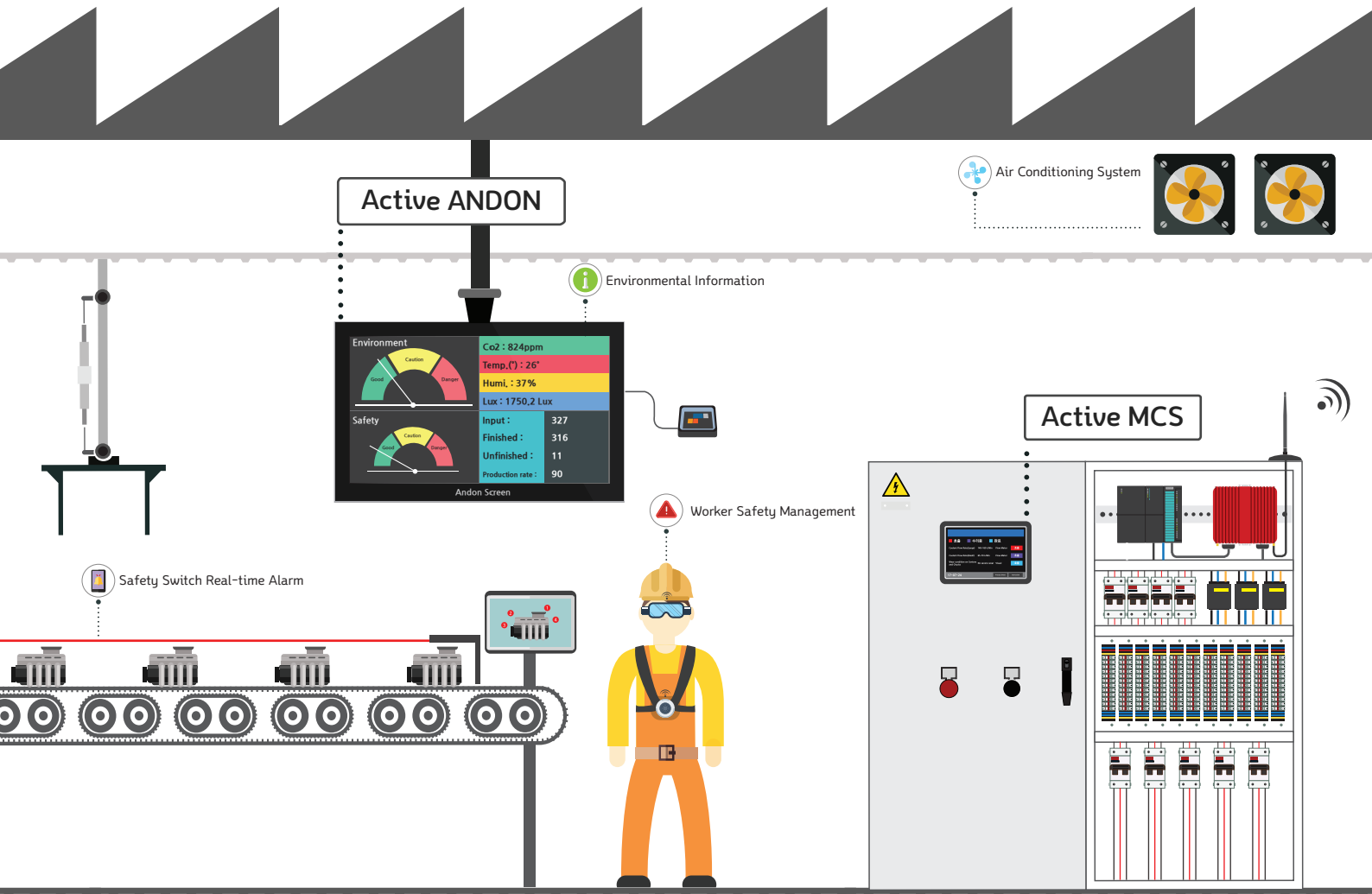
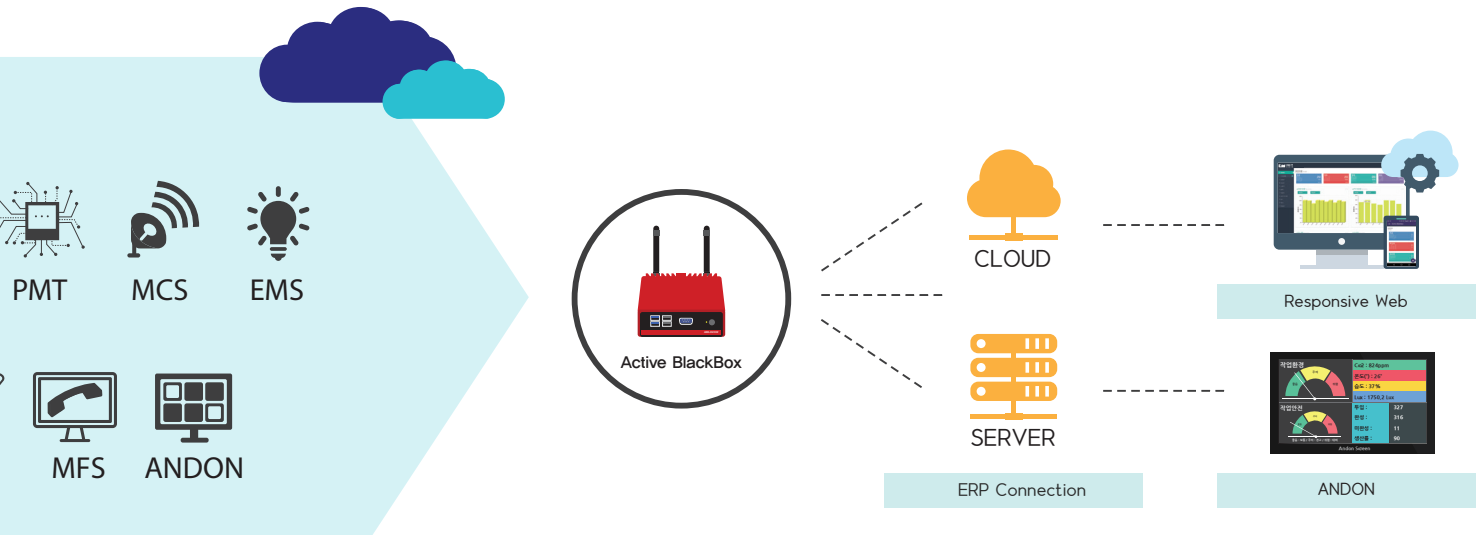
Active TIA Plant

The Active TIA Plant includes several key modules: FMS (Financial Management System), TMS (Tool Management System), QTS (Quality Management System), OEE (Overall Equipment Effectiveness), PM (Predictive Maintenance), and MRO (Maintenance, Repair, and Overhaul).



W

IIoT Total Solution

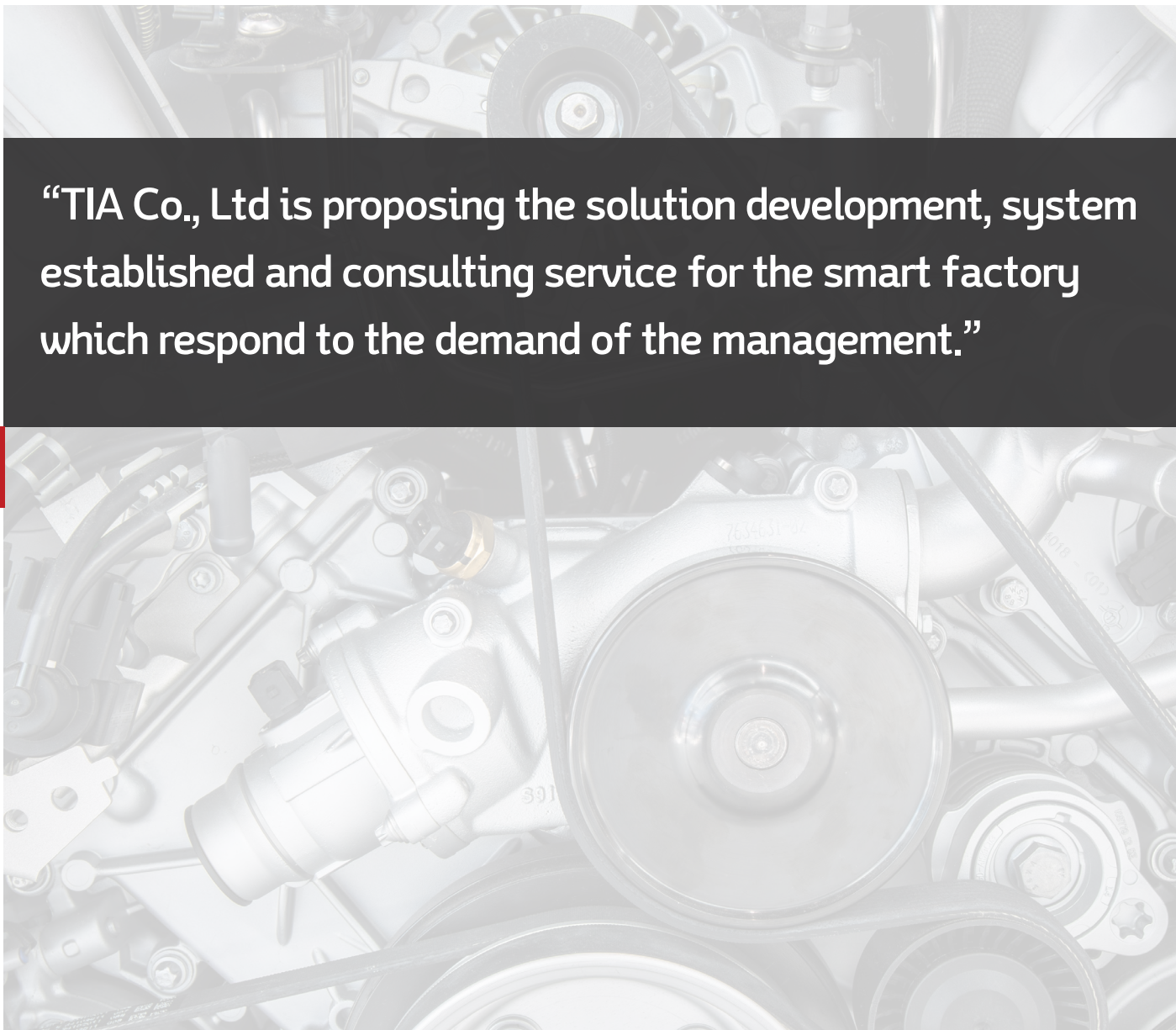


02 | **TIA** (Totally Integrated Automation)

Industrial Information + Start of Control Technology

Provides smart factory integrated solution utilizing IIoT devices.

It consists of a software solution that can monitor, analyze, control and manage IIoT base edge device (ABB-M Series, Wireless sensor controller, Active WebCon) and collected data by module. It contains a knowhow of MES establishment and a technology to collect wireless network data. Only with the introduction of IIoT Total Solution, the productivity and quality can be enhanced. Moreover, it is a total solution to improve your manufacturing competitiveness.



“TIA Co., Ltd is proposing the solution development, system established and consulting service for the smart factory which respond to the demand of the management.”

» Partners



- MES(Manufacturing Execution System) Established

» Features



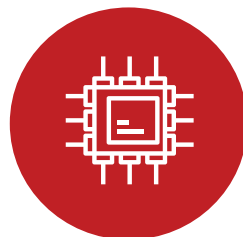
IoT Smart factory consulting

PLC/Establish a smart factory solution utilizing a sensor data collection device (ABB)



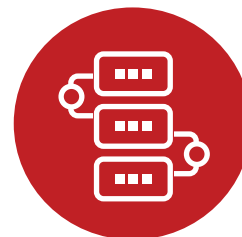
Object oriented component

The MES solution is a multi-modular, multi-device, bootstrap-based component.



Sensor data collection

Available to collect wire & wireless data utilizing Wi-Fi, Zigbee and Bluetooth



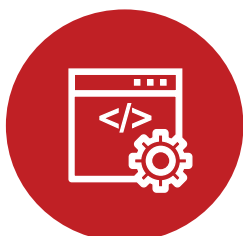
Heterogeneous system compatibility

Compatible with the device that uses the industrial protocols such as MODBUS & FILEDBUS



Data synchronization

Easy to manage the integrated data through the data synchronization between DB and cloud



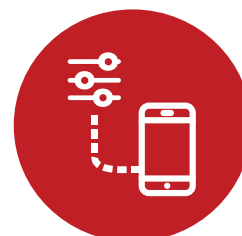
Built-In PLC driver

Cost reduction of PLC driver as it has various built-in PLC drivers such as Siemens, Faunac, and Mitsubishi



Self developed protocol

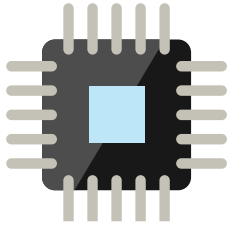
Available for customizing suitable for the data protection from external access and the customer's



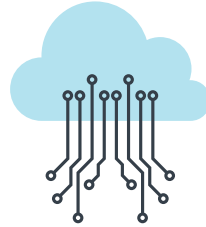
Remote Integrated Management

Available for the integrated management per cell unit, line unit and factory unit from a remote site

03 | IIoT Total Solution



Edge Device



Network



Platform

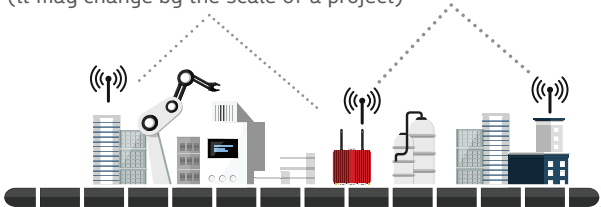
“ S/W, H/W Total solution to establish IIoT Smart Factory ”

It is a total solution to establish a smart factory adjusted to various manufacturing & production processes, which provides a hardware and a software set for the client’s needs who hopes for the service introduction. Participating in entire stages from the design of a smart factory to the mass production, a system is established according to the characteristic of the factory and the demand of a worker.

» Features

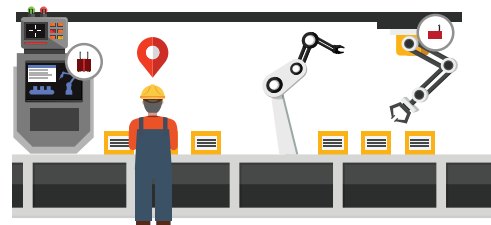
Reduction of cost & Construction period

- About 10 to 33% reduction of establishment cost compared to the wire construction
- Decreased construction period by maximum one fourth (it may change by the scale of a project)



Expandability

- Easy to add such as equipment, sensor and terminal device
- Available to expand functions such as the tracking of worker’s location and safety management



Data integrated management

- Integration of mass data & establishment of intelligent production basis
- Minimization of the loss in process and equipment through KPI monitoring



Customized solution

- Provision of a white label function (logo, color, etc)
- Composition of a solution per module unit & Available for a customer to select and compose



» Offer

Collection & transmission



Support various network method

Support various telecommunication methods such as LTE, Wi-Fi, Ethernet, Zigbee, and Bluetooth



Upper and lower system interface

Available to freely design the connection between the subsystem of equipment, sensor and SPC and the host system of MES and ERP



Transmission Security

Application of WPA2PSK + AES encoding type, Use of Hidden SSID, Certification of MAC Address, Block the unauthorized access in advance

Data management



Composition of DB Replication

Replication with ABB self built-in DB and local server/cloud server DB to recover without data omission even at the network interference.



Data Distribution

Distributing a control function for each small unit system to improve the reliability and to minimize the ripple effect at abnormality



Provision of Statistics & Analysis Data

Provide data that can be utilized for KPI such as the general efficiency of equipment and the lifespan management for equipment

Set/HW Management



Remote Control

Available to control ABB/sensor installed at a remote site through ABB Manager Program & web



Alarm and Reporting

Provide Smartphone, web push alarm transmission and reporting at the abnormality of equipments or the abnormality of ABB data collection

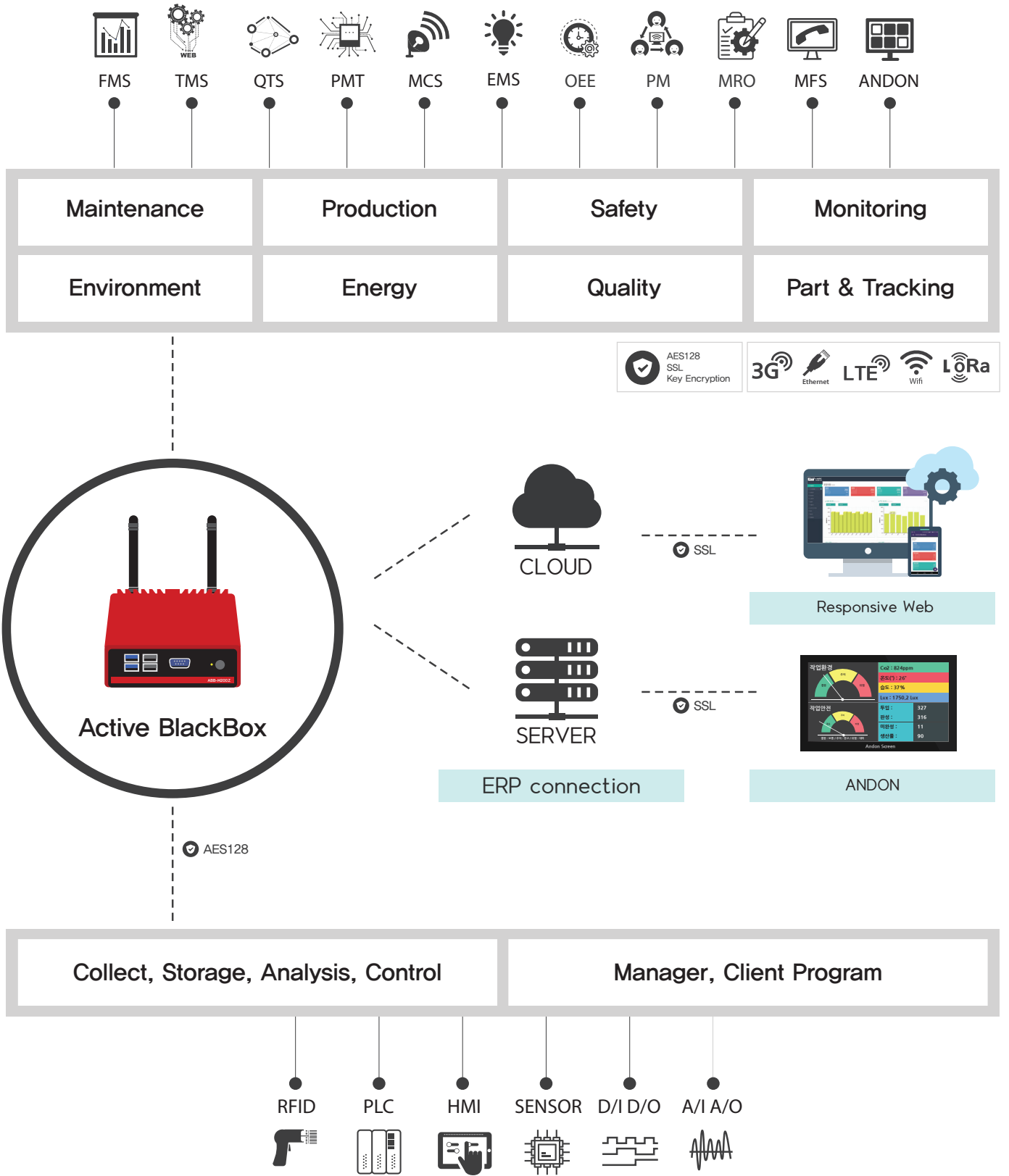


White Label

Available for the application of customer's logo and the customizing such as menu, table, layout and color

- It is a service to analyze and visualize collected data through H/W and provide for each S/W module. The industrial device is available for communications such as 3G, LTE, Ethernet, Wi-Fi, Zigbee, and Bluetooth. It is available to collect, save and control the informations such as PLC, RFID, sensor, AI/AO, and DI/DO.

>> System diagram



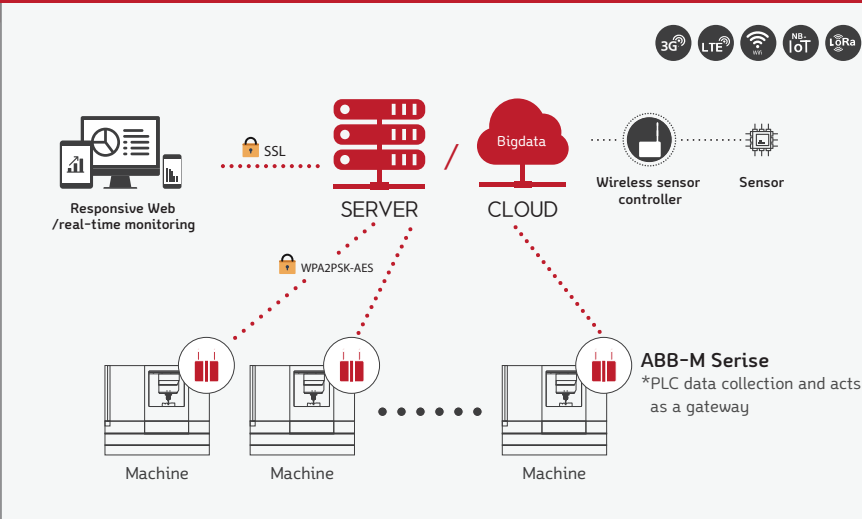
FMS | Factory Manufacturing System
PMT | Part Monitoring & Tracking
OEE | Overall Equipment Effectiveness
MFS | Machine Fault System

TMS | Tool Management System
MCS | Maintenance Call System
PM | Prevent Maintenance
ANDON | BIG Screen Display Station

QTS | Quality Tracking System
EMS | Energy Management System
MRO | Maintenance Repair Operation

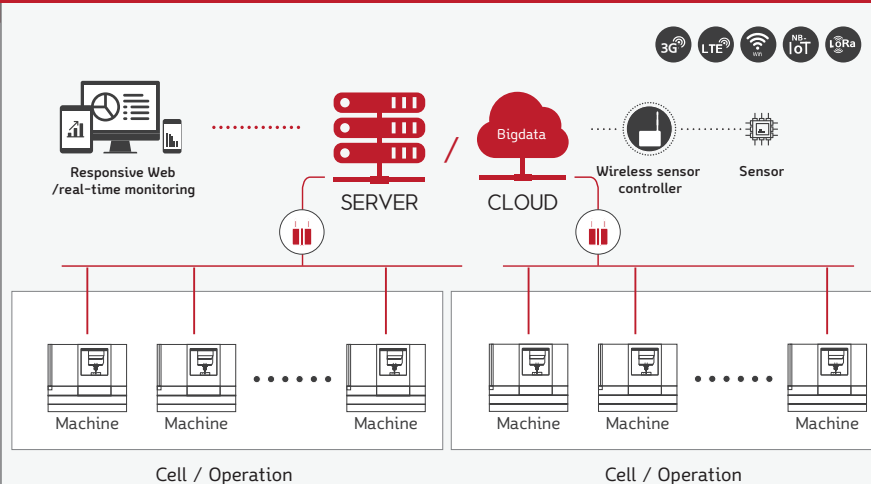
» Build model

Active BlackBox(M200) : Machine / 1:1



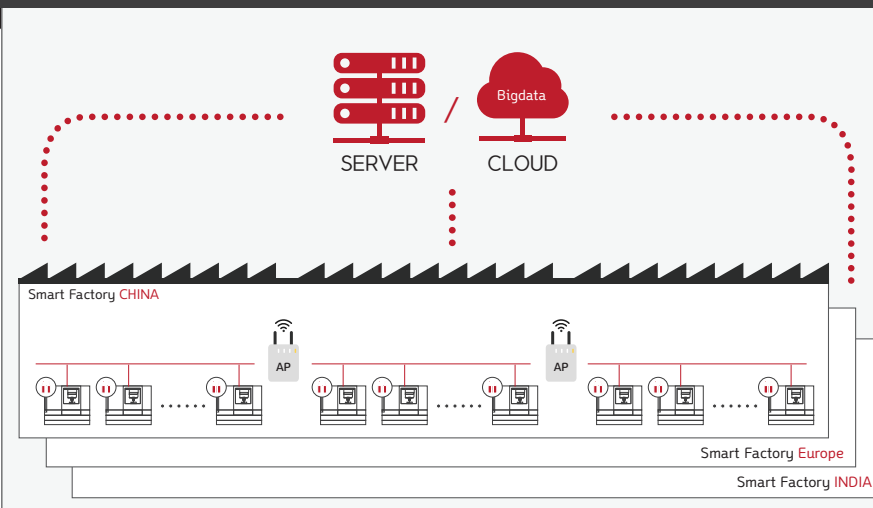
- The equipment and ABB are configured as 1: 1, and each unit is smart machineized.
- Improved abb's information gathering performance
- Easy wireless network configuration

Active BlackBox(M400, M800) : Machine / 1:N



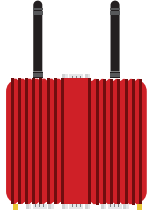
- Collecting information on cell / operation units in a single ABB
(Up to 3 units of M400, Up to 7 units of M800)
- Suitable for large plant or integrated system implementation
- It is easy to add facilities, sensors, terminals, etc.

Active BlackBox IIoT Total Solution



- ABB's collected data can be collected from local or cloud servers and can be used to build plant integration systems
- Expansion of wireless network area by installing AP at regular interval in factory

04 | H/W



**Active BlackBox
M - Series**
(M200, M400, M800)



**Wireless
Sensor Controller**
(ABB-SEN-T200)













Active WebCon

“**Changed to smart machine with one edge device**”

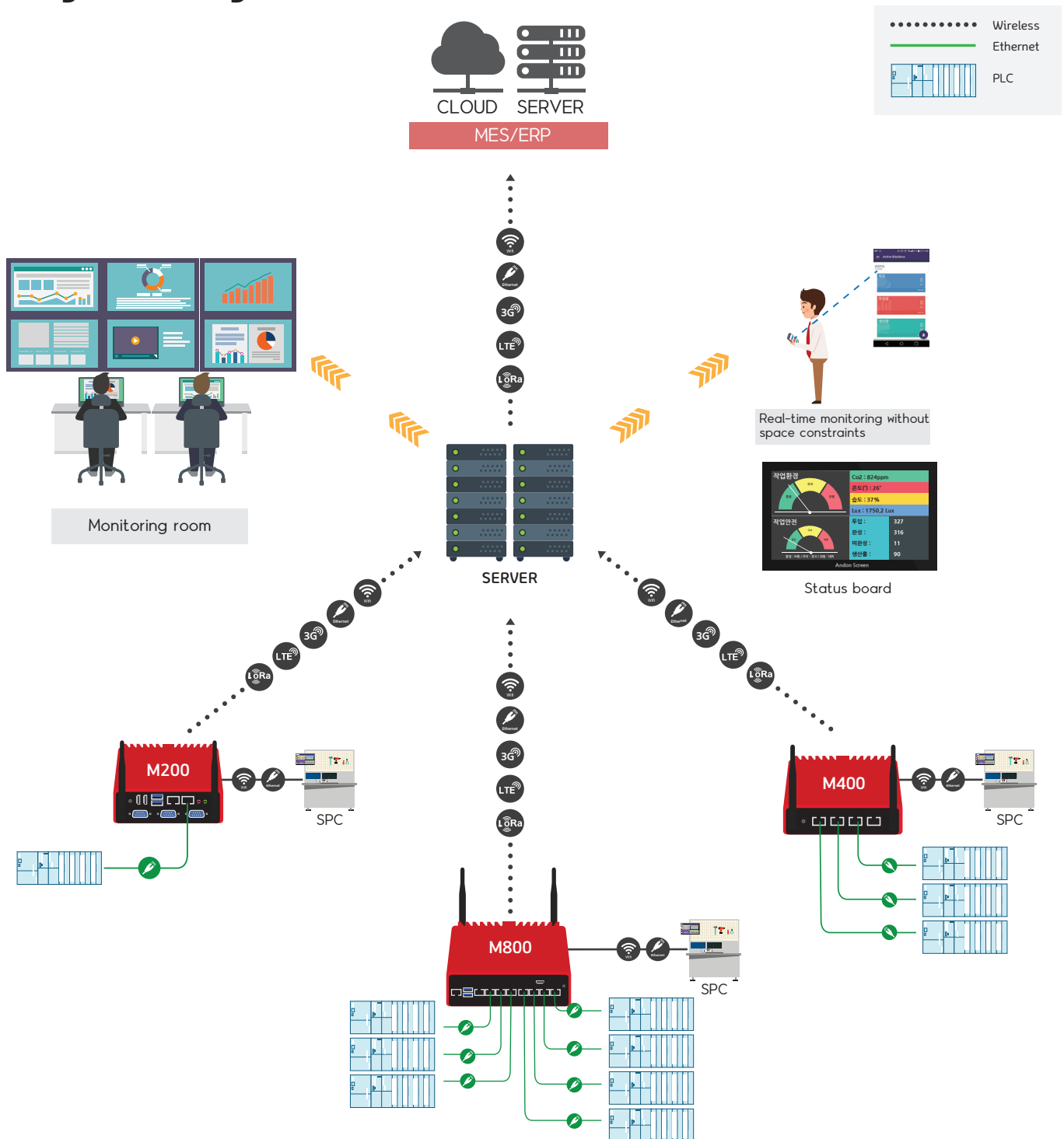
The hardware consists of [Active BlackBox - M Series](#) that collects, stores and transmits data, [Wireless Sensor Controller](#) and LCD which converts analog sensor data into digital data and transmits it wirelessly, and [Active Webcon](#) which can control digital / PLC.

»» Effect of application

* For a processing line with 60 facilities

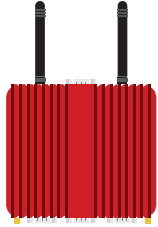
LIST	New system with ABB (LMS/FMS/MES)	Comparison
 Hardware	 43% Save When including ABB in device at a device manufacturer	Expensive servers, network equipment, No other hardware required
 Software	 42% Save	DB, OS, OPC program No license required
 Installation Cost	 33% Save	Network construction, facility construction X
 Program Development Cost	 100% Save	As a standardized program of TIA Any factory can work right away
 Engineering Cost	 25% Save	Non-experts can easily install and Settable
	45% Save	

System diagram (Active BlackBox M-Series)



- ABB collects and analyzes PLC data and SPC data of the equipment with the connection of 1:1, 1:3, and 1:7 types according to the model. Analyzed data will be transmitted to the host server through the wire and wireless telecommunications. A real-time inquiry is available for transmitted data without a spatial restriction with PC, tablet PC and Smartphone. Data gathered in the server can be connected with other systems such as MES or ERP

Active BlackBox M- Series



Active BlackBox
M - Series

“Industrial Sensor, PCL Data Collection Device”

It is a device that collects various sensor data and PLC data to manage, analyze and control. It is possible to realize a smart factory with high efficiency and low cost by accurately and stably collecting and analyzing various informations that are generated at industrial field.

» Features

Various Built-in PLC drivers

- Unnecessary to purchase OPC software separately
- Available to connect various PLCs (SIEMENS, FANUC, MITSUBISHI-SHI, LSIS Co., Ltd.)
- CNC internal domain Data Memory Analysis, Spindle use hours Servo moving distance (X.Y.Z) Power, RPM



PLC



ABB - M Series

Function for automatic data backup and automatic update

- Recover to a backup file at interference to secure the continuity of the system and secure
- its safety through automatic update



ABB - M Series



SERVER



DOWNLOAD
UPLOAD

Real-time monitoring Andon, Web, App

- Available to inquire and alarm in the device of various platforms of Smartphone, tablet PC, notebook, and PC
- As it is available for a real-time monitoring without a spatial restriction, available for an immediate response at failure through a real-time alarm
- Informing collected dat (production, alarm, operation rate, production information, environment information) in real-time through LCD TV for prompt response



Available to connect various devices

- Available to connect systems such as MES, GETIS, SPC
- Wireless sensor controller (Available to connect B-SEN-T200)
- Supporting various digital and analogue sensors such as pressure, flow, level, weight, vibration, temperature, humidity and gas
- Reducing cost and period by connecting host system (LMS, FMS, MES) at the installation of ABB inside the equipment
- Easy to connect with the host DB with a self built-in DB inside ABB



» Functions

compatible
integrated H/W
with peripheral
devices

Available to
connect with
different
networks

Various wireless
connection with
Mini PCI-e type

Function to
collect data
in PLC system

Collection of
wireless sensor
data

» Specifications

M200	M400	M800
<p>SYSTEM CPU : Intel Celeron Processor 3215U (2M Cache, 1.70 GHz, Broadwell) GPU : Onboard VGA (Intel HD Graphics) Memory : 4GB DDR3L Storage : mSATA 64GB <small>*Memory, Storage can be Changed(max 8GB,mSATA 128GB)</small></p>	<p>SYSTEM CPU : Intel Celeron Processor J1900 (Quad-Core 2M Cache, 2 GHz, up to 2.41 GHz) GPU : Onboard VGA (Intel HD Graphics) Memory : 4GB DDR3L Storage : mSATA 64GB <small>*Memory, Storage can be Changed(max 8GB,mSATA 128GB)</small></p>	<p>SYSTEM CPU : Intel Pentium Processor G4600 (3M Cache, 3.60 GHz, Kabylake) GPU : Onboard VGA (Intel HD Graphics) Memory : 8GB DDR3L Storage : mSATA 128GB <small>* Memory, Storage can be Changed (max 16GB, SATA3 256GB)</small></p>
<p>I/O INTERFACE Display : 2 x HDMI Audio : 1 x MIC In, 1 x Speak Out LAN : 2 x RJ-45 10/100 Base-T USB Port : 2 x USB 2.0, 4 x USB 3.0 COM Port : 4 x COM SIM Card : 1 x SIM card socket (internal)</p>	<p>I/O INTERFACE Display : 1 x HDMI LAN : 4 x RJ-45 10/100/1000 Base-T USB Port : 3 x USB 2.0, 4 x USB 3.0 SIM Card : 1 x SIM card socket (internal)</p>	<p>I/O INTERFACE Display : HDMI LAN : 8 x RJ-45 10/100 Base-T USB Port : 2 x USB 3.0 COM Port : 1 x COM SIM Card : 1 x SIM card socket (internal)</p>
<p>WIRELESS NETWORK OPTIONAL CONFIGURATION WLAN : IEEE802.11 b/g/n 2.4GHz (Range 50~100m) ZIGBEE : IEEE802.15.4 2.4GHz (Range 120m) (ABB-SEN-T200WZ Maximum Connections 30) -Support Mini PCIe Type : Bluetooth, LTE(3G)</p>	<p>WIRELESS NETWORK OPTIONAL CONFIGURATION WLAN : IEEE 802.11 b/g/n, Range 50~100m -Support Mini PCIe Type : Bluetooth, LTE(3G)</p>	<p>WIRELESS NETWORK OPTIONAL CONFIGURATION WLAN : IEEE 802.11 b/g/n, Range 50~100m</p>
<p>POWER REQUIREMENT Power Input : DC 12V / 3A Power Consumption : 15W Adapter Input : 100 ~ 240 (50 / 60Hz) VAC Adapter Output : DC 12V, 3A</p>	<p>POWER REQUIREMENT Power Input : DC 12V / 3A Power Consumption : 10W Adapter Input : 100 ~ 240 (50 / 60Hz) VAC Adapter Output : DC 12V, 3A</p>	<p>POWER REQUIREMENT Power Input : DC 12V / 10A Power Consumption : 100W Adapter Input : 100 ~ 240 (50 / 60Hz) VAC Adapter Output : DC 12V, 10A</p>
<p>MECHANICAL & ENVIRONMENTAL Operation Temperature : -10 ~ 50°C Non-Operating Temp. : -20 ~ 80°C Operating Humidity : 10 ~ 90% Dimension(WxDxH) : 152.2 x 127 x 47.4 mm Mounting : VESA-75/100 compatible (Optional DIN rail 35mm fixed clamp)</p>	<p>MECHANICAL & ENVIRONMENTAL Operation Temperature : -10 ~ 50°C Non-Operating Temp. : -20 ~ 80°C Operating Humidity : 10 ~ 90% Dimension(WxDxH) : 155.2 x 127 x 37.4 mm Mounting : VESA-75/100 compatible (Optional DIN rail 35mm fixed clamp)</p>	<p>MECHANICAL & ENVIRONMENTAL Operation Temperature : -10 ~ 60°C Non-Operating Temp. : -20 ~ 85°C Operating Humidity : 10 ~ 90% Dimension(WxDxH) : 195.8 x 194.5 x 74 mm Mounting : VESA-75/100 compatible (Optional DIN rail 35mm fixed clamp)</p>
<p>OS SUPPORT Window 10 IoT Enterprise</p>	<p>OS SUPPORT Window 10 IoT Enterprise</p>	<p>OS SUPPORT Window 10 IoT Enterprise</p>

Active WebCon



Active WebCon

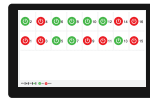
“Digital Input, Output Management device”

It is a system to collect and manage the condition of digital input and to control the digital output. It monitors with web and app and check data in real-time. It is available to transmit data to PLC memory domain and it supports wire/wireless interfaces.

» Features

Digital input 16 channels, output 16 channels

- Monitoring the conditions of digital input & output ports
- Controlling the digital output port
- Maximum 60VDC input / Maximum 40VDC output



7 inch Touch Screen

- Electrostatic touch control
- 1024 x 600 high resolution IPS Display



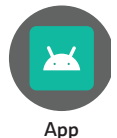
Provision of wide range wireless environment

- Outdoor max. 300M access environment (14dBi directional antenna)
- * It may differ by visual distance standard and installation place.

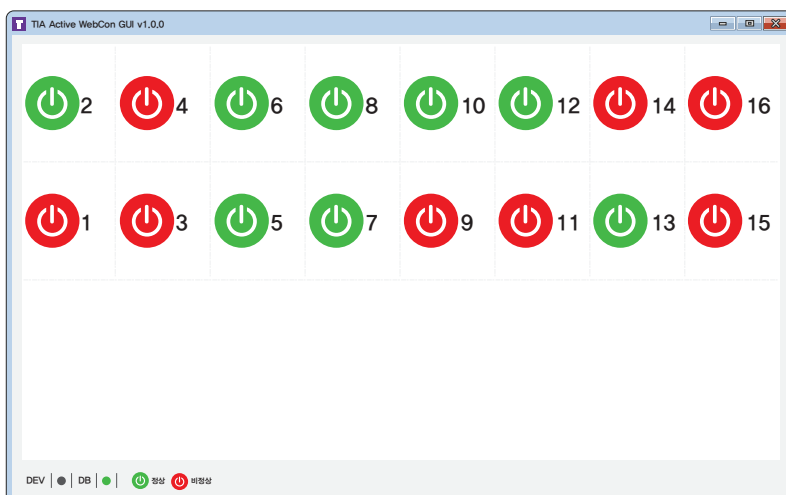


Provision of Mobile Application

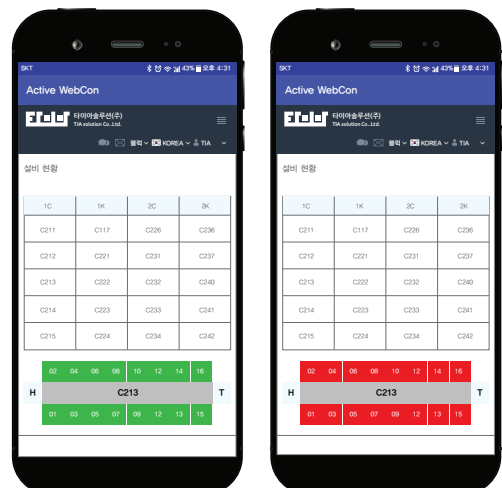
- Wireless network access and condition monitoring management system
- Integrated provision of website



» Screen

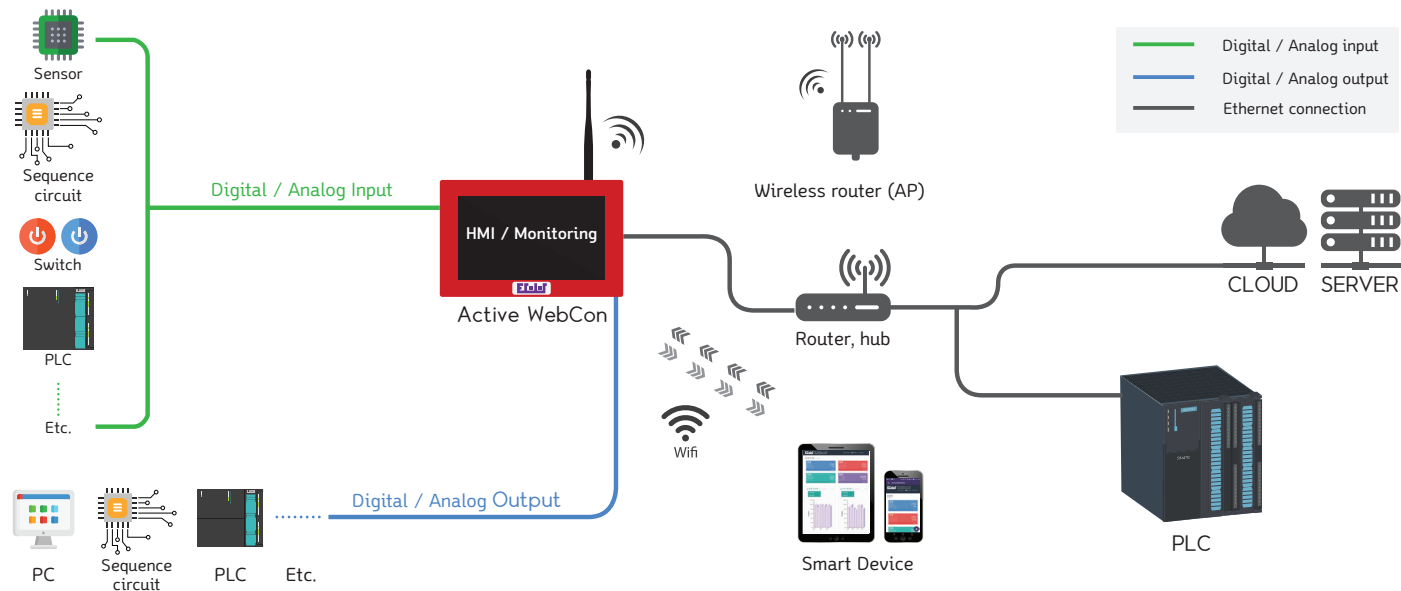


- Check the conditions of input sensors through 7 inch screen



- Check the conditions of input sensors through installed application

» System diagram



» Specifications

Active WebCon

SYSTEM

CPU : Intel Cherry Trail Quad Core 1.8GHz
 GPU : Onboard VGA (Intel HD Graphics)
 Memory : 4GB DDR3L
 Storage : eMMC 64GB

I/O INTERFACE

Display : 1 x HDMI
 LAN : 1 x RJ-45 10/100 Base-T
 USB Port : 1 x USB 2.0

DIGITAL INPUT / OUTPUT MODULE

16 input channels
 Max input voltage : 60VDC
 Isolation voltage : 2500VDC
 16 output channels (Sink NPN)
 output range : 5~40 VDC

WIRELESS NETWORK CONFIGURATION

WLAN : IEEE 802.11 b/g/n

POWER REQUIREMENT

Power Input : DC 48V / 1A
 Adapter Input : 100 ~ 240 (50 / 60Hz) VAC
 Adapter Output (Micro USB type) : DC 5V, 3A

MECHANICAL & ENVIRONMENTAL

Operation Temp. : 0 ~ 50°C
 Operating Humi. : 20 ~ 80%
 Dimensions (WxHxD) : 193.5 x 125.5 x 62.3mm
 Mounting : 'D' bracket

OS SUPPORT

Window 10 IoT Enterprise

Sensor Controller

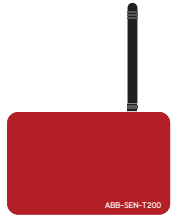


ABB-SEN-T200

“Industrial Wireless Sensor Controller”

It is available to transmit through wireless telecommunication by converting collected analogue signal collected through the wire analogue sensor to digital signal. A separate power supply is not necessary as it has a built-in battery. It is applicable to the industrial environment with the waterproof & dustproof class IP65.



ABB-S100

“General Environmental Sensor, PLC Data Collect”

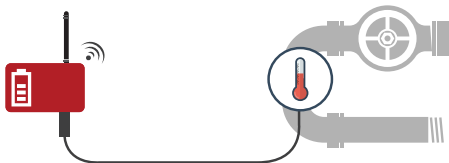
It collects, manage, and analyze PLC data for one unit equipment. It collects peripheral environmental data by attaching a general environmental sensor. It is available to collect and analyze various informations generated in industrial fields stably and accurately to realize a smart factory.

» Features

Low Power Wireless Sensor Node

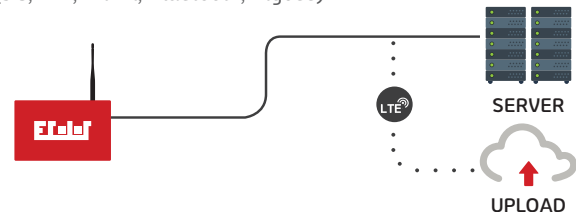
- Collecting data with PT100 temperature sensor (1 channel)
- Available for max. 30 wireless connection with ABB-M200Z
- Low power ZIGBEE telecommunication and AES128bit
- Available to use for one year with a collection interval per minute (8500mAh built-in battery)

* It may differ by peripheral environment and collection setting



Environmental sensor, PLC data transmission device

- Built-in PLC driver (Siemens, Faunac, Mitsubishi)
- Transmission of temperature, humidity, illuminance, CO2 sensor and sensor data inside PLC memory to the host (CLOUD, DB SERVER, MES, ERP)
- Supporting various wireless connections (3G, LTE, Wi-Fi, Bluetooth, Zigbee)



» Connectable sensor



Temp./Humi



Gas



Co2



Illuminance



Noise



Vibration



Pressure

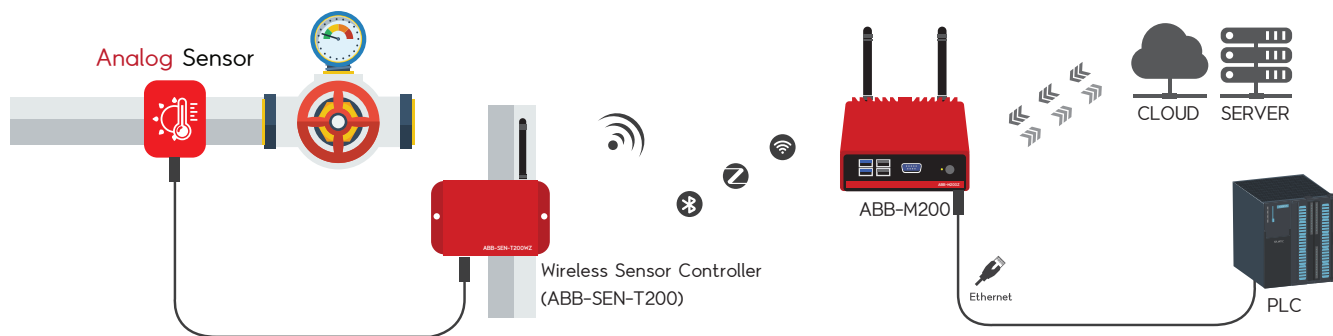


Flux

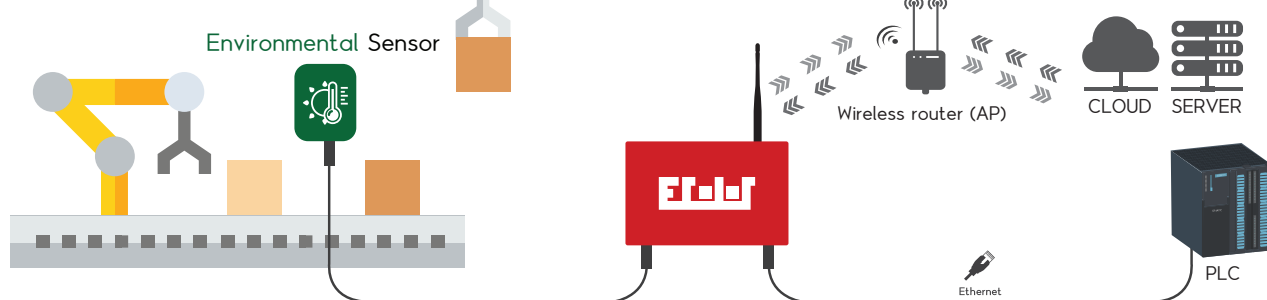
■ in development, please inquire for details

» System diagram

■ ABB-SEN-T200



■ ABB-S100



» Specifications

ABB-SEN-T200

RESPONSE RATE

5 Seconds interval (Settings Available)

SUPPORT SENSOR

3-Wire RTD PT100

* Support option (completion of ~2018)

- 0 ~ 5V Analog Sensor / 4~20mA Analog Sensor / Thermocouple Sensor

WIRELESS NETWORK CONFIGURATION

ZIGBEE, IEEE802.15.4, Maximum Range ~120m (Connection ABB-M200Z)

POWER REQUIREMENT

Battery : 3.6V 8500mAh

Battery Lifetime : Response Rate 1 min / 1 year

*Data Response Rate, Each installation environment varies.

MECHANICAL & ENVIRONMENTAL

Operating Temp. : -10 ~ 70°C

Non-Operating Temp. : -20 ~ 80°C

Operating Humidity : 10~90%

Dimensions(WxHxD) : 115(145) x 90 x 55 mm

Mounting : 'D' bracket

Waterproof : IP65

ABB-S100

SYSTEM

CPU : ARM Quad Core 1.2GHz 64bit

GPU : Onboard VGA(Intel HD Graphics)

Memory : 1GB Onboard

Storage : MicroSD 32GB

I/O INTERFACE

Sensor : 1 x Environment Sensor(Temp, Humi, Lux, Co2)

Temperature Measure Range : -20 ~ 120 °C

Humidity Measure Range : 0~ 100 %RH

Lux Measure Range : 0 ~ 54000 Lux

Co2 Measure Range : 0 ~ 3,000 ppm

LAN : 1 x RJ-45 10/100 Base-T

WIRELESS NETWORK CONFIGURATION

WLAN : IEEE802.11b/g/n, Range 50~100m

POWER REQUIREMENT

Power Input : DC 5V / 2A

Adapter Input : 110 ~ 220 (50 / 60Hz) VAC, 0.5A

Adapter Output : DC 5V, 2A

MECHANICAL & ENVIRONMENTAL

Operating Temp. : -10 ~ 50°C

Operating Humidity : 10~90%

Dimensions(WxHxD) : 172x107x53mm

Mounting : 'D' bracket

*Optional DIN-rail 35mm fixed clamp

OS

Linux

05 | S/W (Active TIA Plant)

“ Software Package for smart factory establishment ”

It is a system composed for a module unit to establish the production informatization system by customizing to the customer's diverse demands. It analyzes productivity, quality management, production equipment management, equipment monitoring, and industrial sensor information to provide KPI (Key Performance Indicator) and the controllable interface.

» Active TIA Plant Module



Summary Information

- ✓ Available to check real-time condition, condition, alarm information
- ✓ Providing analyzed data such as production goal, input, ship-out, operation rate
- ✓ Supporting components of graph, gauge, time chart
- ✓ Dashboard for customizing fit to customer's needs
- ✓ Check collected data from the field in real-time



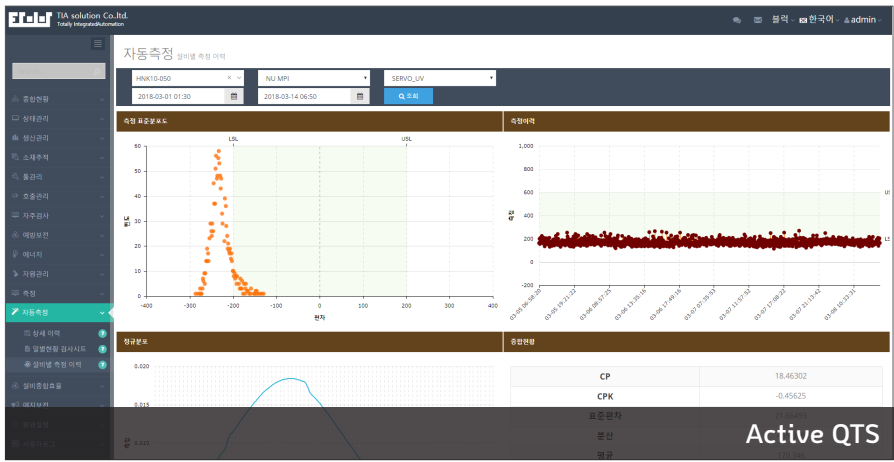
The screenshot displays the Active TMS tool management interface with the following table:

번호	설비명	동명	동시량	차장 일자	POCKET	원재료	예보일
1	HNK20-010A	DN05611.516-16.3A93X14055	11.5	2017-12-21 19:31:00	21	1216	10
2	HNK20-010A	R05612.95X1320	12	2017-12-12 11:53:00	22	9887	10
3	HNK20-010A	DN0506.8110-21.5120X19055	6.8	2017-12-21 19:30:00	23	3767	10
4	HNK20-010A	DN0508.0110-25.5110X1265	6.8	2017-12-21 19:32:00	24	4767	10
5	HNK20-010A	E25617.720-9.219520055	17.7	2017-12-21 19:32:00	25	6767	10
6	HNK20-010A	R05618-100X180	16	2017-12-21 19:32:00	26	9767	10
7	HNK20-010A	DN0516.4718.825-200X25055	16.4	2017-12-21 19:32:00	27	2767	10
8	HNK20-010C	DN05611.516-16.3A93X14055	11.5	2017-12-21 14:28:00	21	4633	10
9	HNK20-010C	R05612.95X1320	12	2017-12-12 11:53:00	22	5185	10
10	HNK20-010C	DN0506.8110-21.5120X19055	6.8	2017-12-21 14:27:00	23	3949	10



Tool Management

- ✓ History management for tool exchange per equipment
- ✓ Proposing the exchange period through the use information of the tool
- ✓ Tool exchange time, analysis on its cause
- ✓ Supporting management plan



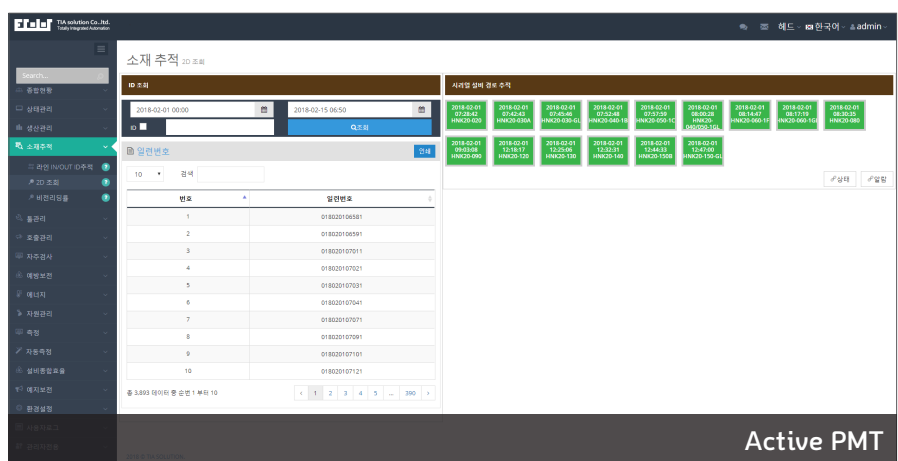
Quality Management

- ✓ Securing the process quality through the
- ✓ Analysis on the scatter for measured values
- ✓ CP and CPK the process capability index
- ✓ Checking quality measurement data, process inspection result and defective products information collected in real-time



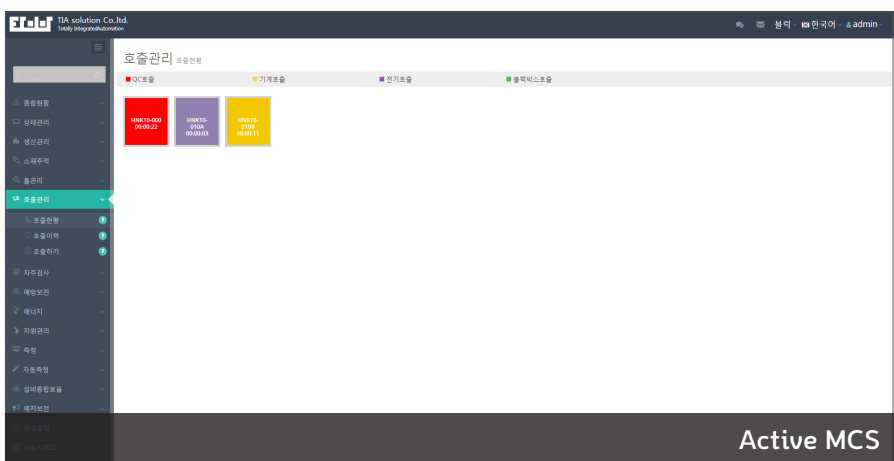
Part Tracking

- ✓ Ship-in of the entire materials in the factory
- Available to track the condition of ship-out
- ✓ Search with a serial number of material
- ✓ Real-time monitoring of ship-in
- ✓ Managing an inquiry of ship-in time and a duration time



Call Management

- ✓ Preservation call management
- ✓ Analysis on the response time to interference
- ✓ Call history management
- ✓ Call a man in charge necessary for each QC/Machine/Electricity





Energy Management

- ✓ Provision of analysis data for energy consumption per won unit
- ✓ Management in the peak energy to reduce the energy consumption
- ✓ Measurement of the valid & invalid energy of equipments
- ✓ Measurement and analysis on temperature, humidity and carbon emission
- ✓ Measurement and analysis on total demanding energy per system & equipment

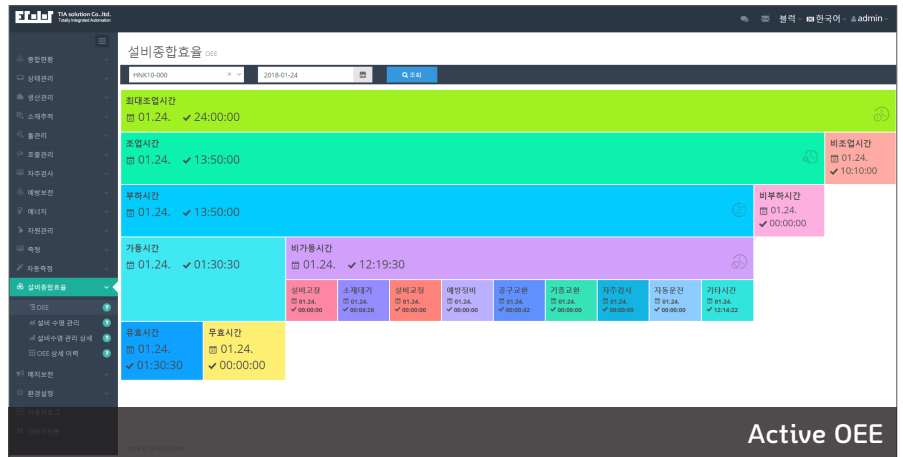


Active EMS



Overall equipment effectiveness

- ✓ Minimization of the pause hour of operation and the unplanned maintenance
- ✓ Available to maintain the operation within the allowable range of the machine and to reduce the reworking
- ✓ Available to manage the operation plan for equipments within the same condition to create higher output
- ✓ Available to simplify the production process, minimize the inventory, and reduce the energy consumption and cost



Active OEE

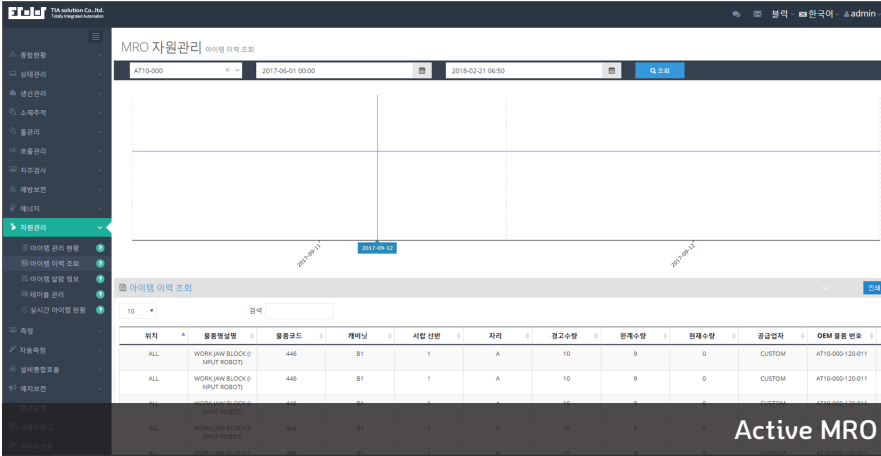
번호	라인	설비	사항	통	유형	이행지	상한	하한	수정	삭제
1	HEAD	CHILLER	동작 상태 이상여부 확인?		OKING		20.0	25.0	수정	삭제
2	HEAD	조각반	라운드 버튼 홈을 청소해 LAMP 수 체크유무인가?		OKING		0.0	0.0	수정	삭제
3	HEAD	공급 유닛	전동 ON/A 제어 유닛 상태 및 입력계 측정		OKING		4.0	4.0	수정	삭제
4	HEAD	유압 유닛	필터 유압 입력은 양호한가?		OKING		65.0	75.0	수정	삭제
5	HEAD	공구	작동/정지용 TRAMPOL LEVEL 확인 이상없는가?		OKING		0.0	0.0	수정	삭제
6	HEAD	역지	동작 상태 이상여부 확인?		OKING		30.0	35.0	수정	삭제
7	HEAD	회전 SW	전서 정상작동 유무		OKING		0.0	0.0	수정	삭제
8	HEAD	회전 클램프	회전 클램프 입력은 양호한가?		OKING		25.0	35.0	수정	삭제
9	HEAD	APP 리프트	APP 리프트 입력은 양호한가?		OKING		65.0	75.0	수정	삭제
10	HEAD	필터	작업 전 후 청결도측정 결과		OKING		0.0	0.0	수정	삭제

Active PM



Prevention Maintenance

- ✓ Available to manage the equipment and item for prevention & preservation
- ✓ Available to remove the unnecessary maintenance work
- ✓ Establishment of the maintenance plan based on the equipment's condition
- ✓ Reduction of the cost by detecting the problem within the warranty period



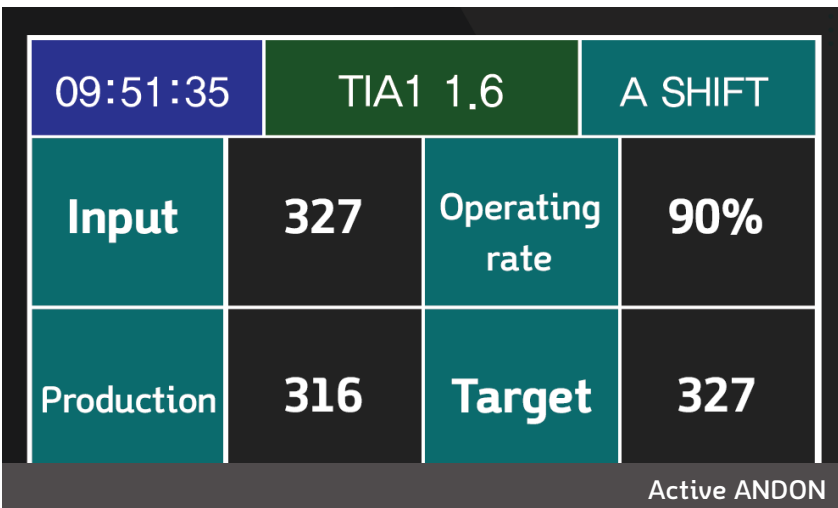
Maintenance repair operation

- ✓ Tracking MRO inventory
- ✓ Registration, correction, and deletion of the master data for consumables
- ✓ Tracking of maintenance management cost and improvement in the exactness of the report



Equipment Lifecycle Management

- ✓ Reduction of the reading time
- ✓ Management in the lifespan period of equipments
- ✓ Checking the real-time production status and equipment condition
- ✓ Checking the history of interference time and alarm for equipment, and supporting its action
- ✓ Maximizing the equipment's production rate by analyzing the operation condition for equipment



Status Board

- ✓ Provision of the condition, alarm, operation rate and information of equipments
- ✓ Marking the safety of sensor data, the discomfort index and the working environment
- ✓ Monitoring a real-time giant LCD TV
- ✓ Prompt response for the generation of error
- ✓ Provision of a real-time alarm

» Safety Management



Work plan sharing

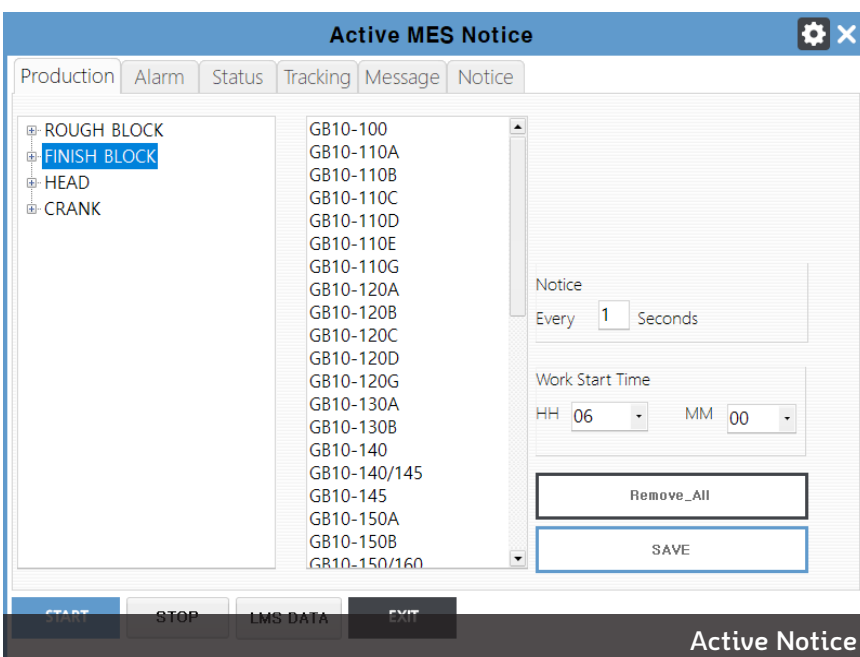
- ✓ Management in the registration & history of work site & construction
- ✓ Creation of a report for the history of works at the work site
- ✓ Transmission through alarm message regarding the information about the construction to a worker within the construction range



Monitoring work status

- ✓ Available for a real-time monitoring on the status of construction in progress at the situation room
- ✓ Easy to identify the construction in progress, the construction in completion and the construction in schedule

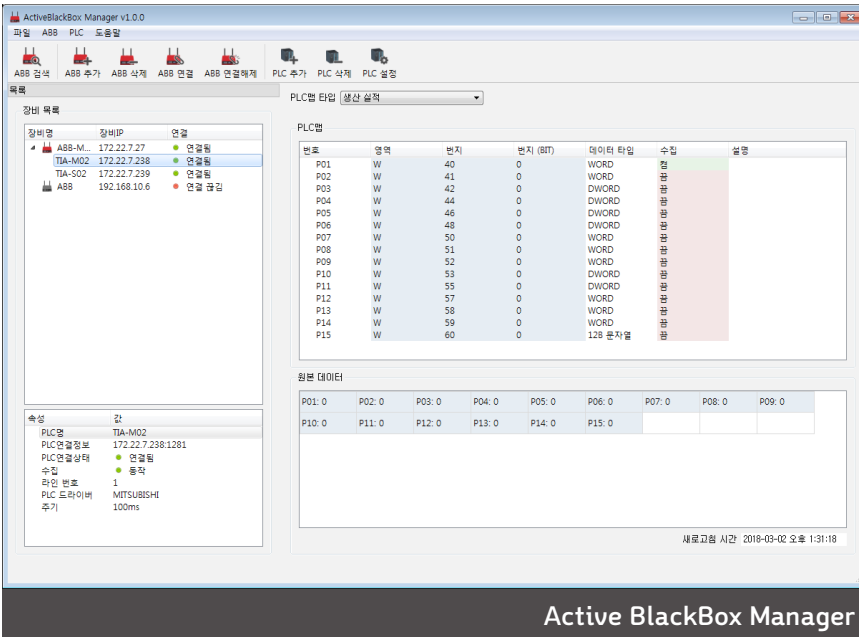
» Active Notice



Notice

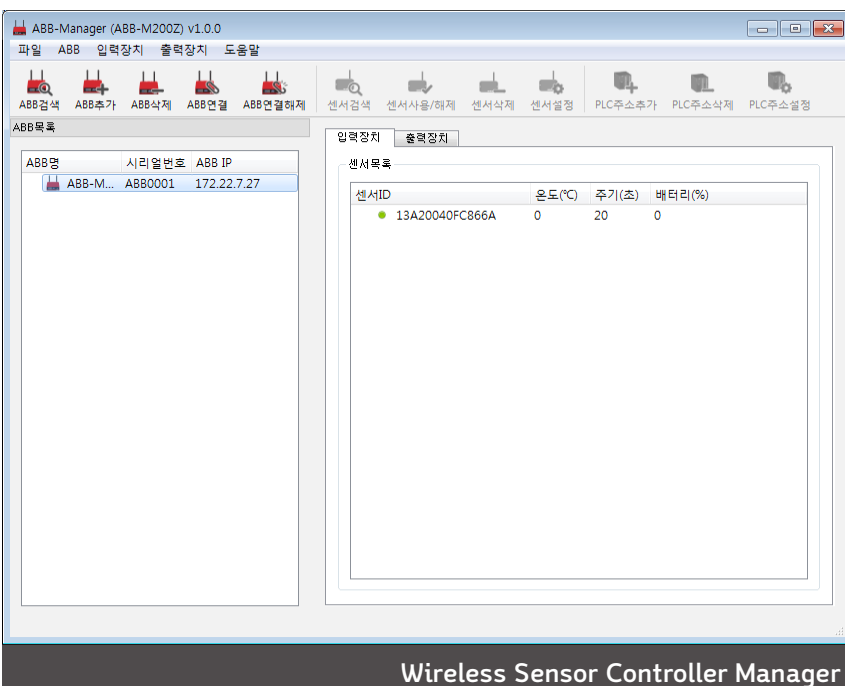
- ✓ Transmission of a real-time alarm at the generation of assigned events such as the production generated at the selected equipment and the passing through IN/OUT equipments
- ✓ Provision of chatting and notice

» H/W Management Program



Active BlackBox Manager

- ✓ Integrated Management Program
- ✓ Inquiry & Setting of PLC Connection
- ✓ Real-Time Inquiry for PLC Data
- ✓ Management in PLC Map for Data Collect
- ✓ Backup & Recovery of PLC Map
- ✓ Supporting ABB Update



Wireless Sensor Controller Manager

- ✓ Real-Time Inquiry of Sensor Information
- ✓ Peripheral Sensor Search & Environmental Setting
- ✓ PLC Information Management for Data Recording

06 | Company Information

TIA Co., Ltd has been establishing the industrial information system for the domestic & overseas automobiles' power train factories for 10 years. We are the company with the establishment of an industrial control information system who procures the establishment consulting for IIoT base smart factory, the software which is the representative of Active TIA Plant, and the technology of edge computing device so called Active BlackBox based on the experience of establishing several industrial information systems.

2017

- Engine Plant 1 in Kia Motors in Slovakia Remodeled LMS
- Engine Part 4 in Hwasung of Kia Motors Remodeled LMS
- HIPIS work at Plant 3 in Hyundai Motor Company in India
- Plant 2 in Hyundai Motor Company in India & LMS work
- Maintenance & Repair for LMS in Transmission Part
- 3 Case of Ulsan Hyundai Motor
- Maintenance & Repair of LMS in Georgia of Power Tech
- Added LMS Function to Plant 2 of PowerTech in China
- Maintenance & Repair of LMS in DCT Factory of Dymos

2016

- Concluded MOU with KEPCO
- Added model to KMC Hwasung & remodeling of PJT LMS & Andon
- Established SPC integration of UR process line in Hwasung of Kia
- Changcheng Motors Xiushui Manufactured EB Crank, LMS
- Added FR T-GDI model to KMC Hwasung Theta Headline
- Construction of HEAD Line Andon and H/W construction in Yancheng Plant 2 of Kia Motors in China
- Added a model of the front wheel 6 speed case to PTC 2 PJT
- LMS in Hyundai Motor Company in Czechoslovakia PDE Project
- Established LMS for Seosan Plant 2 of Hyundai Dymos

2013

- LMS contract with Yancheng of Kia
- Established MES in Alibama of Hyundai
- Made a LMS contract of Hyundai Dymos
- Made a LMS contract Tianjin 1 & 2 of Changcheng Xiushui in China
- Established LMS for Engine1 in Kia Slovakia
- Made a LMS contract for transmission 2 with Hyundai PowerTech in China
- LMS contract for Engine3 Hyundai in India
- MLS contract for CRANK with Changcheng Xiushui in China

2012

- Made a LMS remodeling & construction contract Hwasung Gama Engine of Kia
- Made a LMS contract for CRANK Tianjin Changcheng Xiushui in China
- Made a LMS contract for Engine 2 HEAD Yancheng Plant 2 of Kia in China
- OEM contract for Inductive Automation
- Made a web based INDUSOFT contract for CASE/HOUSING, GEAR, HEAT with Hyundai in Czechoslovakia

2011

- Made a web based INDUSOFT contract with Slovakia Plant 2 of Kia
- Made a contract for remote control system with SIEMENS
- Made a MES contract with Hyundai AutoEver System
- Made a contract for INDUSOFT Reseller

» Certificates



- Monitoring System & Method for Factory Equipments using Active BlackBox: Patent No. 10-1730450
- Management System & Method for Factory Equipment using Wireless Telecommunication: Patent No. 10-1730451
- Energy Management System & Method in Production Field using Control Server: Patent No. 10 - 1781164

2015

- Hyundai Motor Company Slovakia Engine Plant 1 & 2 GETIS
- Processing by Hyundai in Engine Plant 2 in India MES & SPC
- Established SPC for UR processing line in Kia Hwasung
- Hyundai Dymos Seosan Plant 2/ established HEV Line
- Established LMS in Changcheng Xiushui of China EC2 LINE
- Expanded GDI engine in Hwasung of Kia & MES contract
- Expanded 100 thousands HEAD in Yancheng Plant 2 of Kia in China
- Established LMS in Plants 2 & 4 of Hyundai Power Tech
- Added a model to HMC Ulsan

2014

- Added a model to the factory of Hyundai
- Added a model to PowerTech in China (PTC)
- Established LMS in Changcheng Xiushui of China
- MES contract for Theta engine in Hwasung of Kia
- Established MES in Alibama Engine Plant 2 of Hyundai
- Added CASE Line model to Ulsan Factory of Hyundai
- Added CASE model to Czechoslovakia of Hyundai
- Added HEAD HIPIS model to Engine Plant 2 in Yancheng of Kia in China

2010

- Made a contract for delivering Virtual CP with Hyundai AutoEver
- POSCO Gwangyang 1.2 Corks/Made a contract for power surveillance
- POSCO Gwangyang 1 Corks coal preparation dust collector
- Made a contract for remote surveillance system

2009

- POSMade a contract for the coal preparation & production control system with POSCO Gwangyang 1
- Made a contract for the development of Virtual CP Hyundai AutoEver
- Made a contract for the standard OPC server with K-Water
- Developed Modbus TCP/IP OPC server

2008

- LSIS Co., Ltd. Master-K, XGT, Glofa OPC Server Development
- Made an agency contract with Parsec Automation in Korea
- Made an agency contract with Incuity Software in Korea
- Made an agency contract with ProSCADA in Korea
- Established a Legal Firm, TIA Co., Ltd.



- ✓ Edge Device
- ✓ Network
- ✓ Solution
- ✓ Cloud
- ✓ Web, Mobile Ver.
Application

