EcoStruxure Maintenance Advisor

EcoStruxure™ Maintenance Advisor

Platform for condition-based maintenance and decision support
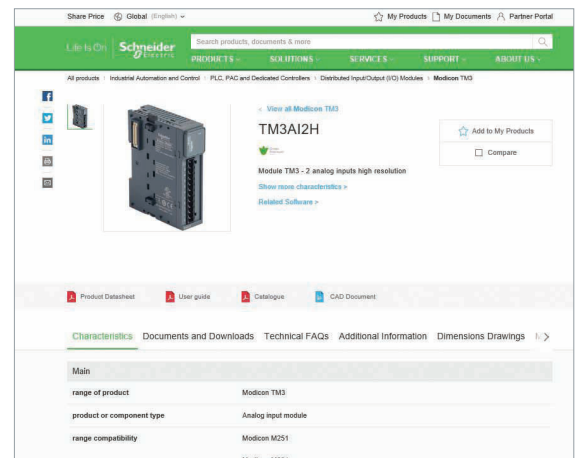
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Quick access to product information

Get technical information about your product

Each commercial reference presented in a catalog contains a hyperlink. Click on it to obtain the technical information of the product:

– Characteristics, Dimensions and drawings, Mounting and clearance, Connections and schemas, Performance curves
– Product image, Instruction sheet, User guide, Product certifications, End of life manual

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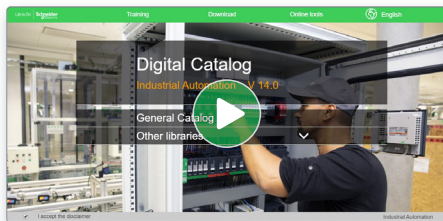
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> Consult digital automation catalogs at Digi-Cat Online
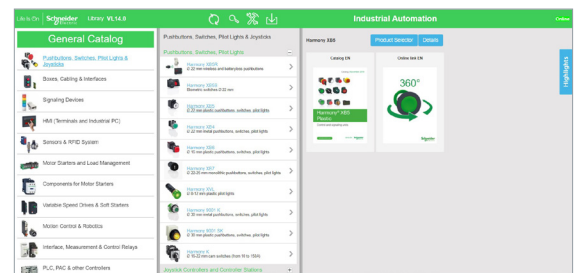
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> Find the right Training for your needs on our Global website
> Locate the training center with the selector tool, using this link

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General contents

EcoStruxure™
Innovation At Every Level

Schneider Electric's IoT-enabled, plug-and-play, open, secure, interoperable architecture and platform, in Industries, Infrastructures, Data Centers, and Buildings.

Innovation at every level

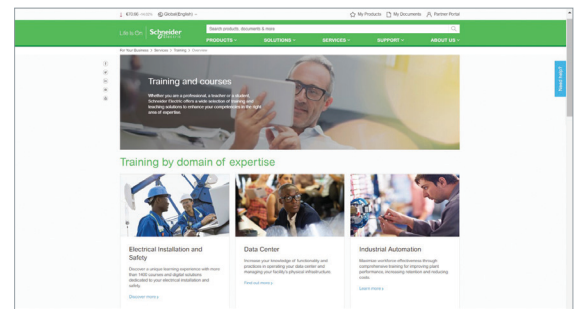EcoStruxure is based on a three-tiered technology stack delivering innovation at every level, from connected products to edge control and apps, analytics, and services.

Together with our hybrid segments approach, this enhances your value around safety, reliability, operational efficiency, sustainability, and connectivity across 6 domains of expertise:

- Power
- IT
- Building
- Machine
- Plant
- Grid

Dedicated architectures and IoT

We tailor our solutions in the form of dedicated reference architectures for plants:

- Management systems
- Power systems
- Data center systems
- Industrial plant and machine systems
- Smart grid systems

The Industrial Internet of Things (IIoT) gives an additional boost to technologies. That's why we provide our customers with an IoT-enabled architecture and platform offering simple, reliable, productive, and cost-efficient solutions.

Cybersecurity solutions

Robust cybersecurity protection is a must, and Schneider Electric's solutions can deliver it, regardless of business type or industry.

The vendor-agnostic services provided by our skilled professionals help to protect your entire critical infrastructure. We help to assess your risk, implement cyber-specific solutions, and maintain your onsite defenses over time, while integrating appropriate IT policies and requirements.

This is our difference and your advantage.

Enhanced safety

With the release of M580 Safety, Schneider Electric further expands the EcoStruxure platform.

This consolidates our position as one of the most trusted industrial safety vendor, with thousands of Modicon and Triconex safety systems protecting the most critical industrial processes globally.

EcoStruxure™ Innovation At Every Level for Industry

EcoStruxure™ Architecture

Machinery	Consumer Packaged Goods	Water & Wastewater	Mining, Minerals & Metals	Oil & Gas

Apps, Analytics & Services

Engineering Planning & Operations — AVEVA Software (1) Asset Performance Monitoring and Control — EcoStruxure Maintenance Advisor / EcoStruxure Machine Advisor / EcoStruxure Profit Advisor / EcoStruxure Asset Advisor — EcoStruxure Control Advisor / EcoStruxure Power Advisor / EcoStruxure Resource Advisor — EcoStruxure Augmented Operator Advisor

Edge Control

Harmony IIoT Box & Industrial PC — PacDrive — Modicon — EcoStruxure Hybrid DCS — EcoStruxure Foxboro DCS — EcoStruxure Triconex Safety System — SCADA Systems — EcoStruxure Power Monitoring Expert

Connected Products

Harmony — Harmony — Sensors & RFID — Process Instrumentaton — Tesys — Altivar — Preventa — Lexium — Okken & Blokset iPMCC

End-to-end Cybersecurity

Cloud and/or On Premise

(1) The Schneider Electric industrial software business and AVEVA have merged to trade as AVEVA Group plc, a UK listed company. The Schneider Electric and Life is On trademarks are owned by Schneider Electric and are being licensed to AVEVA by Schneider Electric.

EcoStruxure Maintenance Advisor
Platform for condition-based maintenance and decision support

EcoStruxure™ Maintenance Advisor

EcoStruxure Maintenance Advisor enables maintenance supervisors to monitor the condition of automation assets in real time to provide early insight into impending failure enabling maintenance to act on it proactively thus preventing a failure. Embedded workflow and mobility allows easy dissemination of maintenance decisions from anywhere in the plant.

EcoStruxure Maintenance Advisor solution applies to the following market segments:

*Oil & Gas Mining*   *Minerals & Metals*   *Water & Waste water*   *Consumer Packaged Goods*

Benefits

Improved availabilty of plant assets

On average, up to 5 percent of production is lost annually due to unscheduled downtime and poor quality; 80 percent of that downtime is preventable. Maintenance Advisor enables condition-based maintenance preventing unscheduled slowdown and shutdown thus improving asset reliability and availability. Maintenance activities are also captured for the operational life of the asset, providing knowledge management capability for future reference.
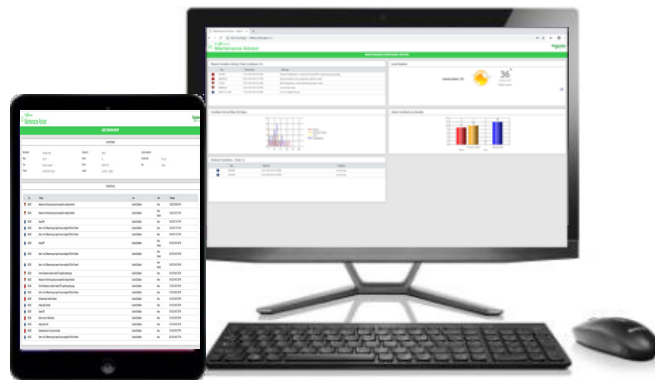

Display of device health

Reduced maintenance efforts

Preventive maintenance is not only labor-intensive. Also, studies have found that up to 63 percent of all instrument periodic maintenance efforts can be avoided.

Maintenance Advisor enables plants to switch from currently prevalent preventive maintenance practice to more effective condition-based maintenance program. which can result in significant operations and maintenance cost savings. According to studies, implementation of condition-based maintenance can result up to 12 percent cost saving in regard to traditional time-based maintenance programs.
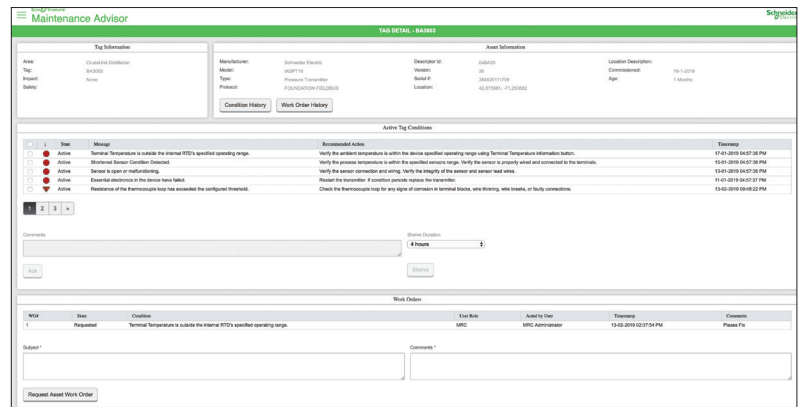
Detailed information with tag

Condition-based maintenance for profitable operations

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EcoStruxure Maintenance Advisor
Platform for condition-based maintenance and decision support

Benefits (continued)
Enhanced workforce productivity and security

Preventive maintenance check involves field trips : it results in increased chances of accidents and less safety to workers.

EcoStruxure Maintenance Advisor empowers plant personnel with capability to monitor asset health condition from a remote location. This drastically reduces the need for field trips thus decreasing the probability of an accident.

Common look & feel dashboard for plant wide asset acts as a 'command center' supporting day to day maintenance needs.

It also reduces the training needs. The embedded workflow results in improved collaboration between various teams increases organization efficiency and results in effective and fast response to emerging problems.

Device condition summary displayed with clear alert pictograms (NAMUR 107 conformant)

Features

EcoStruxure Maintenance Advisor is a vendor-neutral platform to provide condition monitoring for plant-wide assets, with the following main features:

□ Single Unified Workspace with a simple architecture for easy access to the most up-to-date status of plant-wide asset conditions and actionable early insight, with clear, concise alerts and recommendations.

□ Scalable to the size of your plant, from one to unlimited number of automation devices, whether mechanical, electrical, safety or control devices.

□ Supports OPC DA and Fieldbus protocol such as HART, FF etc. protocols.

□ Security is leveraged with Windows Active Directory.

□ Mobility brings the plant to a mobile workforce, empowering users with the capability to access anything anywhere.

□ Streamlines processes thanks to embedded workflow and integration support

□ Eiminates paperwork by digitizing maintenance activity assignment and tracking to the correct technique.

A one-stop, plant-wide asset management solution

EcoStruxure Maintenance Advisor
## Platform for condition-based maintenance and decision support

Components

EcoStruxure Maintenance Advisor platform presents the 2 following basic layers:

■ Layer 1: Maintenance Response Center (MRC) **1** provides a single-unified workspace for health of plant-wide devices, acting as a "command center for maintenance".

It offers real-time device health information in an intuitive, easy-to-understand way, with recommended corrective action to enable effective decisions. Context is added to alerts to indicate criticality levels, for example by using standard NAMUR 107, ISA 108 categories.

Smart analytics and comparison with historical data for the operational life of an asset help identify failure modes to reduce time to repair and eliminate unnecessary trips to the field.
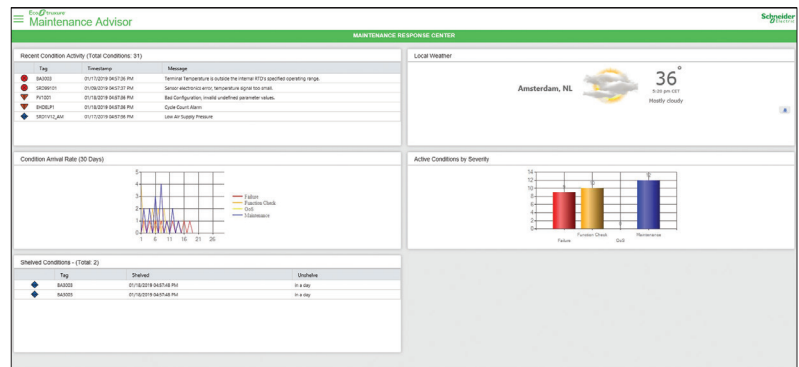

Display of automation device conditions and recommended actions

■ Layer 2: Condition Advisor **2** includes 2 components:

☐ Condition Engineer **3** as a standalone configuration tool used to configure Condition Monitor *(1)*.

☐ Condition Monitor **4** supports multiple built-in condition monitoring engines which are available to monitor the health of various assets automatically:

- In the case of intelligent automation assets, Condition Monitor leverages predictive context awareness available in intelligent assets.
- For configuring non-intelligent assets, Condition Monitor leverages simple to complex rule engines *(1)*.

For stranded, non-instrumented assets, condition monitoring is achieved using AVEVA Mobile Operator Rounds function (formerly Intelatrac) **5** to digitize operator rounds maintenance requests and record-keeping *(2)*.
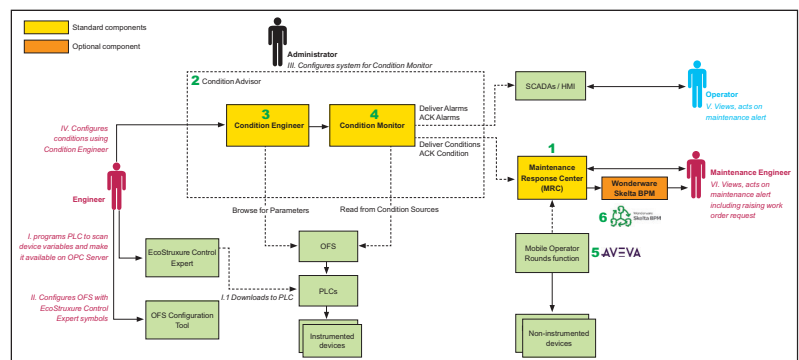
The optional Wonderware Skelta BPM **6** provides tools to act on maintenance decisions for proactive action.

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(1) Configuration deals with expressing simple or complex rules depending on the automation device and/or plant topology. It may be performed by Schneider Electric engineers as an additional service: contact our Customer Care Center (https://pasupport.schneider-electric.com/Home.asp) or our website https://www.se.com/ww/en/work/support/.

(2) AVEVA is member of Schneider Electric's TPP (Technology Partner Program). For more information about AVEVA tools, see https://www.se.com/ww/en/work/solutions/software/aveva/.
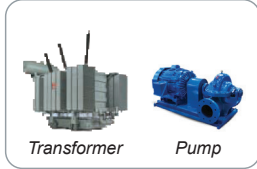
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Installation

According to the type of assets, EcoStruxure Maintenance Advisor can be integrated within various environments for condition-based maintenance on a plant-wide scale:

Non intelligent assets

Transformer *Pump*

Intelligent assets

Motor Starter *Switchgear* *Drive* *Controller* *Intelligent Transmitter* *Valve, etc.*

Maintenance Advisor platform is purchased in the form of a perpetual license (one-time payment) managed by OneLicensing brick. As the software price is based on the number of assets you need to monitor, you will have to select:

☐ The software Standard kit license (**ZMAKSQLSTD**).
The software kit license can be updated with additional licenses (**ZMAU●●●**) when necessary, to adjust to software evolution.

☐ A volume license, based on how many devices you need to monitor (**ZMAA●●●**: up to 250, 1,000, 2,500, 5,000, 25.000, or unlimited number of devices). The volume license can be upgraded if the predefined number of devices is too far from your actual need or if your plant has evolved since first purchase (**ZMAAADD●●●**: additional 250 or 1,000 devices).

You can also try a demo license with the software Express kit license (**ZMAKSQLEXP**), limited in number of assets (250 assets) and activated by a time-based license (6 months: **ZMATLTFU**, 1 year: **ZMAT1YEAR250**).

The software can be complemented with optional Wonderware Skelta BPM workflow. The Skelta software is included within both Standard and Express kits (**ZMAKSQLSTD** and **ZMAKSQLEXP**), but you need to purchase an additional license to activate it (**ZMAAWF5**).

Standard deployment of the MRC requires two Windows *(1)* systems Server 2016:

■ One system running Microsoft Domain Controller (can be avoided if customer already has a Domain Controller),

■ Other system containing Internet Information Services (IIS) which hosts the MRC web application, SQL Server 2019 (Standard or Express depending on use case) which is used for the Asset Repository.

While the domain controller must reside on its own computer, all other components (Internet Information Server, SQL Server Standard Edition, and Wonderware Skelta Workflow BPM) can reside on the same computer or on any combination of computers (physical or virtualized).

Web browser compatibility

EcoStruxure Maintenance Advisor is a web application that can be run with the following browsers:

■ Desktop: Internet Explorer 11
■ Windows *(2)*:   Internet Explorer 11
■ iPad: Safari
■ Android tablets: Google Chrome

(1) Recommended
(2) With Windows 10

References

EcoStruxure Maintenance Advisor media kit options

Maintenance Advisor kit with SQL Standard and Workflow

Description	Software included		Hardware requirements	Reference
Recommended for asset count more than 250	□ Maintenance Advisor 1.5 □ SQL Standard 2019 □ Wonderware Skelta BPM 2017 *(1)*		- Active Directory Server - 2GB RAM; C drive with 100GB minimum hard disk space - Internet Information Server - 4GB RAM; C drive with 100GB minimum hard disk space - SQL Server 2019 - 8GB RAM minimum; 16GB recommended; C drive with 100GB minimum hard disk space, D drive with 100GB minimum hard disk space	**ZMAKSQLSTD**
Condition Advisor	□ Condition Engineer		Workstation-class hardware with: - Dual core processor - 8 GB RAM - 100 GB min hard disk space	
	□ Condition Monitor	<50,000 conditions	Workstation-class hardware with: - Dual core processor - 8 GB RAM - 100 GB min hard disk space	
		>50,000 conditions	Server-class hardware with: - Quad core processor - 16 GB RAM - 100 GB min hard disk space	

Maintenance Advisor kit with SQL Express and Workflow

Description	Software included	Hardware requirements	Reference
Recommended for asset count less than 250, 6 months free trial license (for customer trial use) and 1 year license for internal demo	□ Maintenance Advisor 1.5 □ SQL Express 2019 □ Wonderware Skelta BPM 2017 *(1)*	- Active Directory Server - 2GB RAM; C drive with 100GB minimum hard disk space - Internet Information Server - 4GB RAM; C drive with 100GB minimum hard disk space - SQL Express Server 2019 - 8GB RAM minimum; 16GB recommended; C drive with 100GB minimum hard disk space; D drive with 100GB minimum hard disk space	**ZMAKSQLEXP**

Maintenance Advisor license per number of assets

Description	Paper license type	Reference
Maintenance Advisor perpetual license	250 devices	**ZMAA250**
	1,000 devices	**ZMAA1000**
	2,500 devices	**ZMAA2500**
	5,000 devices	**ZMAA5000**
	25,000 devices	**ZMAA25000**
	Unlimited nb of devices	**ZMAAUNLIMITED**
Maintenance Advisor license update	250 devices	**ZMAU250**
	1,000 devices	**ZMAU1000**
	2,500 devices	**ZMAU2500**
	5,000 devices	**ZMAU5000**
	25,000 devices	**ZMAU25000**
	Unlimited nb of devices	**ZMAUUNLIMITED**
	250 additional devices	**ZMAUADD250**
	1,000 additional devices	**ZMAUADD1000**
Maintenance Advisor additional devices license	250 devices	**ZMAAADD250**
	1,000 devices	**ZMAAADD1000**

(1) The Wonderware Skelta BPM software is activated by purchasing an additional license (see page 9).

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EcoStruxure Maintenance Advisor
Platform for condition-based maintenance and decision support

Wonderware
Skelta BPM

References (continued)			
Maintenance Advisor demo licenses			
Description	**Volume configuration**	**Purpose**	**Reference**
Maintenance Advisor 6 months free trial license	250 devices	Customer trial / Proof of concept	**ZMATLTFU**
Maintenance Advisor 1 year license	250 devices	For internal demo	**ZMAT1YEAR250**

Optional Wonderware Skelta BPM workflow		
Description	**Paper license type**	**Reference**
License for Wonderware Skelta BPM 2017 activation	5 users	**ZMAAWF5**

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