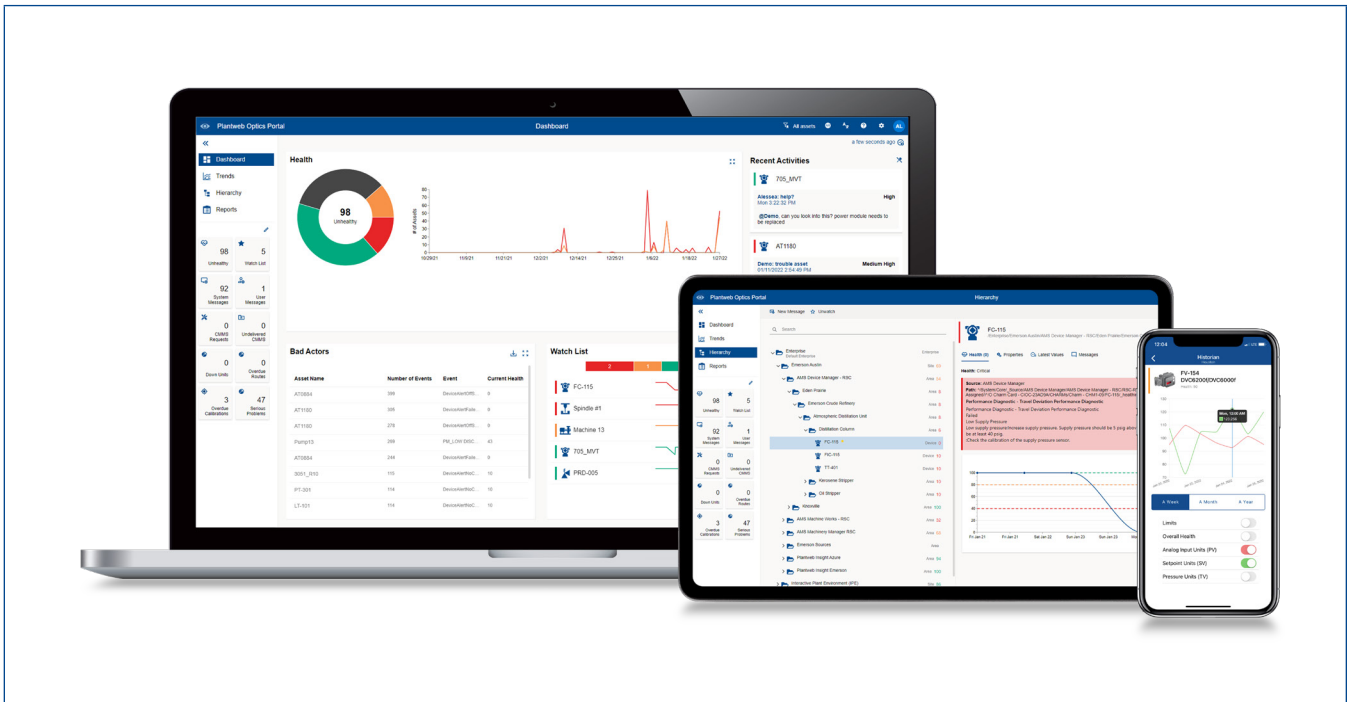# AMS Optics

AMS Optics Benefits

- Provides a collaborative environment to improve plant reliability and operational performance

- Offers workflow integration to drive proactive operations with CMMS integration

- Securely integrate with anything, store everything, and scale-out easily with flexible deployment options

- Built on a modern data repository to store structured and unstructured data types

- Historian functionality enables immediate asset health and parameter history

Connect, Store, and Contextualize Operational Data

AMS Optics provides a modern OT data connectivity, data management, and data repository solution built to accelerate your digital transformation programs. Eliminate OT data silos, collect and contextualize structured and unstructured data, and easily integrate OT data with IT tools and cloud applications to improve production, reliability, safety, and energy usage.

AMS

EMERSON.

The first step in creating a centralized location for operational data is providing connectivity to industry standard interfaces. AMS Optics provides an enterprise-level aggregation solution for all your operational data and supports all major interfaces, including:

- Classic OPC (DA/HDA/A&E)

- OPC UA

- OleDB

- Modbus

- Relational Databases (ODBC)

- XML-DA

- MQTT

- Unstructured data

- Direct PLC connections

Refer to the AMS Optics Connectivity flyer and AMS Optics System Connectivity List for details on supported data sources.

Powered by a NoSQL data repository, all types of operational data can be stored, including measurements, states, aggregates, alarms & events and more.

Another critical path to success is being able to securely move your operational data wherever you need. AMS Optics supports various methods of egress, including OPC and Web API, so you can send data to applications in the cloud or on-premise.

Manage your Assets and Enable an Integrated Workflow

AMS Optics can combine data from multiple applications into asset-centric information to deliver persona-based alerts and KPIs for improving the reliability of assets throughout the facility. Health scores for assets are calculated automatically to start providing immediate insights to the assets that need attention most.

With enhanced visibility into asset health, experts in the facility are always connected to the assets they care about most. Data is delivered with personalized content and dashboards in a collaborative environment to improve workflows and drive corrective actions.

AMS Optics uses native Emerson Connectors to connect and contextualize asset data. This secure connectivity creates more visibility into asset status.

Built on a NoSQL data repository and utilizing thin clients, AMS Optics installation and maintenance processes are simple and non-intrusive to allow for flexible installations within complex network architectures.

Emerson Connectors

Functionality is added to AMS Optics with native Emerson Connectors to include contextualized data such as asset hierarchy, health, events, parameters, and properties specific to the asset class. Available Emerson Connectors include:

AMS Device Manager Data Collector – Connect existing AMS Device Manager installations to AMS Optics and allow users to monitor device health from anywhere.

AMS Machinery Manager Data Collector – Connect existing AMS Machinery Manager installations to AMS Optics for discovery, monitoring, and reporting of rotating equipment assets.

AMS Machine Works Data Collector – Gather predictive analytics from AMS Machine Works to provide quick and accurate assessments of machinery health.

Plantweb Insight Data Collector – Gain analytics based on decades of process and industry experience into AMS Optics for key assets such as Pumps, Heat Exchangers, Steam Traps, Air-Cooled Heat Exchangers, Pressure Relief Devices, Cooling Towers, Network Management, and Power Modules.

DeltaV Control Loop Data Collector – Understand which loops need maintenance or tuning and have full insight into which processes are currently running in manual mode.

AMS Optics Applications

AMS Optics is built using intuitive interfaces and applications to streamline setup and navigation.

The **AMS Optics DataStudio** application allows convenient, secure, and rapid access to your data source network. It is a fully integrated, single UI to perform all system engineering tasks, object configuration, mass engineering, data analysis, and coding in one application. AMS Optics periodically polls the I/O Model in DataStudio to discover wired, and wireless assets added to or removed from installation and makes the appropriate adjustments. The ISA-95 Equipment Model is used to further contextualize data based on asset classes and hierarchy. Additional capabilities include:

- Creating composite assets from individual primary assets. For example, a pump may consist of vibration, chassis temperature, and acoustic transmitters.

- Defining site turnarounds by allowing users to set specific assets that are scheduled to be fixed as "Out of Service".

- Historizing objects to track health and parameters over time.

The **AMS Optics** application provides a dashboard view and valuable KPIs of monitored assets and alerts on developing issues on any asset defined in the ISA-95 Equipment Model. The interface is similar across desktop/tablet/smart phone views for ease of use, while the AMS Optics Mobile App provides a multi-site view for easy review of alerts across the enterprise. AMS Optics allows users to drill down on individual alerts for more details, trend historized parameters, and launch diagnostic applications for further troubleshooting. In addition, the asset hierarchy provides a top-down view with rolled-up health scores to easily identify which areas need attention. The persona-based viewing makes sure users can quickly focus on the asset they care about most, and notifications can be setup for critical assets for immediate alert of degrading health around assets needed for production.

AMS Optics Historian

To improve process reliability, you need to be able to see the status of your critical assets and know how they've performed over time. Being able to trend historical values can provide insights that will help you troubleshoot and identify the root cause faster.

Historian capabilities are embedded into AMS Optics to enable trending in DataStudio dashboard views for the most complete view of historical health and performance. Users can plot parameters from multiple assets on a single chart to allow for easy comparison, and data can be easily exported for further analysis. With minimal configuration and the ability to store all parameter information associated with an asset, AMS Optics provides the insights needed to fully monitor assets and make informed decisions.
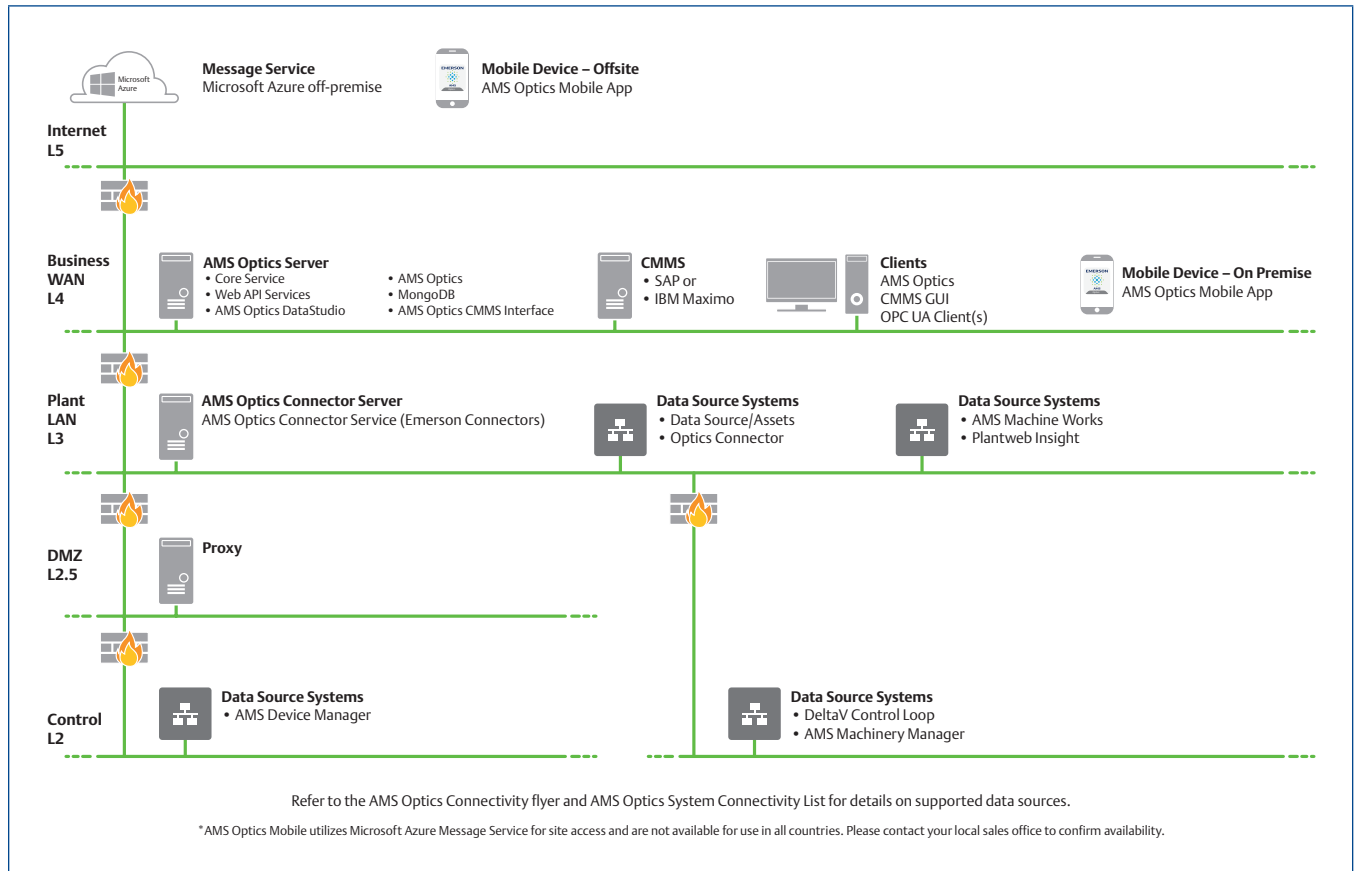
AMS Optics CMMS Interface

The AMS Optics CMMS interface integrates directly to SAP or IBM Maximo. This significantly reduces the time spent generating work requests, so experts can spend their valuable time focused on the most productive activities.

The AMS Optics CMMS interface maps assets from AMS Optics to your CMMS, so work requests are created proactively before process upsets occur in the facility. This allows you to integrate your workflow and drive corrective actions.

AMS Optics also allows for creation of CMMS work requests directly from alerts. With a mobile solution, CMMS work requests can be created from anywhere, and the status of existing requests can be viewed from anywhere. The ability to see open and completed requests reduces the chance of a duplicate entry and can help identify any bad actors in the facility.

AMS Optics Architecture

Message Service
Microsoft Azure off-premise

Mobile Device – Offsite
AMS Optics Mobile App

Internet L5

Business WAN L4

AMS Optics Server
- Core Service
- Web API Services
- AMS Optics DataStudio
- AMS Optics
- MongoDB
- AMS Optics CMMS Interface

CMMS
- SAP or
- IBM Maximo

Clients
AMS Optics
CMMS GUI
OPC UA Client(s)

Mobile Device – On Premise
AMS Optics Mobile App

Plant LAN L3

AMS Optics Connector Server
AMS Optics Connector Service (Emerson Connectors)

Data Source Systems
- Data Source/Assets
- Optics Connector

Data Source Systems
- AMS Machine Works
- Plantweb Insight

DMZ L2.5

Proxy

Control L2

Data Source Systems
- AMS Device Manager

Data Source Systems
- DeltaV Control Loop
- AMS Machinery Manager

Refer to the AMS Optics Connectivity flyer and AMS Optics System Connectivity List for details on supported data sources.

*AMS Optics Mobile utilizes Microsoft Azure Message Service for site access and are not available for use in all countries. Please contact your local sales office to confirm availability.

AMS Optics runs in a secure network environment to deliver the information you need from your plant assets.

AMS Optics Deployment Services

To take advantage of AMS Optics as quickly as possible, Emerson offers install services performed by certified AMS Optics experts. Customized to your installation, these services include:

- Pre-install readiness plan and onsite kick-off meeting
- Network setups
- Installation and database import for software applications and connectors
- Configuration and setup for AMS Optics and the mobile app
- Basic training for your team
- Documentation band backup of configurations

Emerson-certified experts in AMS Optics installation will customize a plan for your site or enterprise.

AMS Optics Deployment Services

For more details, refer to **AMS Optics System Requirements.**

AMS Optics Server Requirements	
Operating System	Windows Server 2019 Datacenter Windows Server 2019 Standard Windows Server 2016 Datacenter Windows Server 2016 Standard
CPU Architecture	64-bit
Internet Information Services (IIS)	v8.5, v10 (supplied with OS)
Data Repository	MongoDB v4.0 and above
Browsers	Google Chrome (latest version) Microsoft Edge
Processor	3.2 GHz, 8-core processor, Intel Xeon-scalable or faster (recommended) 2.4 GHz, 4-core processor, Intel Xeon-scalable or faster (minimum)
RAM	32 GB (recommended) 16 GB (minimum)
Hard Drive	SSD hard drive (recommended) SAS hard drive (10K RPM) (minimum)
Available Disk Space	100 GB (minimum)
Screen Resolution	Full HD (1920 x 1080 pixels) (maximum) SXGA (1280 x 1024 pixels) (minimum)
Network	2 x 1 GB NIC (use 2 NICs to isolate Tier 3 traffic from Tier 2 traffic) (recommended) 1 x 1 GBNIC (supported)

Contact Us
⊕ www.emerson.com/contactus

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