

Metco™ IIoT

You can only manage what you can measure

Create more value from your thermal spray systems with Metco™ IIoT. Connect your thermal spray systems to an Industry 4.0 platform and build the foundation for data analysis and monitoring.

1 General Description

Oerlikon Metco IIoT enables you to improve your production process and enables an easier, faster and more efficient operation. Your company benefits from access to machine data improving availability, reducing scrap rate and increasing throughput.

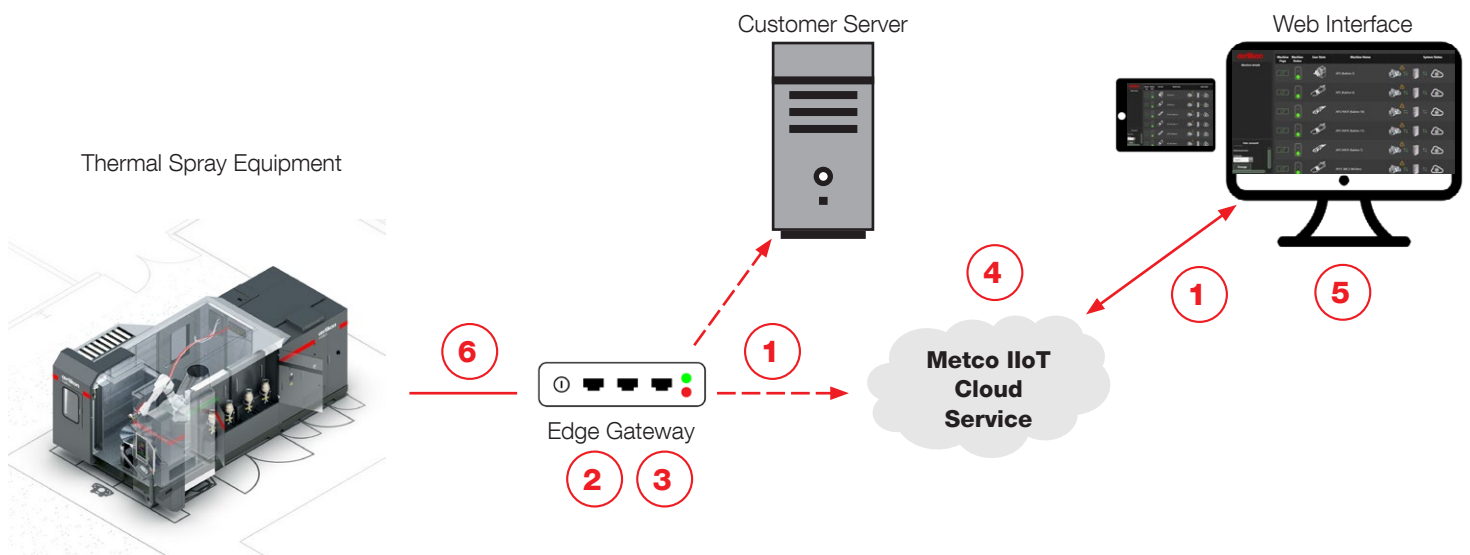
- Possibility to consolidate process related machine data from one or multiple systems for easy access
- Access to raw data for further analysis in case of quality issues
- No need to physically access one or multiple machines
- Enables customers to locally store and centralize data to extract raw data for historical analysis and quality control purposes, or optionally in the Metco IIoT cloud service.

Metco IIoT allows transmission of relevant process data using OPC UA protocol.

The following data^a is transmitted in one second intervals:

- | | |
|------------------------------|--|
| ■ Current | ■ Air jet |
| ■ Voltage at power supply | ■ Silvent air knife |
| ■ Voltage at gun | ■ Feeder carrier gas |
| ■ Power (net) | ■ Feeder hopper pressure |
| ■ Primary process gas flow | ■ Feeder vibrator pressure |
| ■ Secondary process gas flow | ■ Feeder disk speed |
| ■ Shroud gas flow | ■ Feeder stirrer speed |
| ■ Cooling gas flow | ■ Feeder powder flow |
| ■ Cooling water flow | ■ Machine status |
| ■ Cooling water conductivity | ■ Info, warning and alarm messages, machine statuses |
| ■ Kerosene back pressure | |

^a available data dependent on actual system configuration



1. HTTPS protocol is used to secure communication between the Metco IIoT device installed in the Metco machine and the cloud platform.
2. All inbound ports blocked. (except OPC-UA Server port for on-premises data collection)

3. Secured and patched Operating System
4. There is a designated destination in the cloud for data. Destination is secured by PTC.
5. 2FA (Two-factor Authentication) for user access.
6. One-directional data transfer.

2 Features and Benefits

Efficient

- Data at your hands
- Data generated and accessible in real time
- Improve performance of maintenance and service

Economical

- Plug and play solution
- Directly embedded into existing equipment
- Remote monitoring and maintenance of the Metco IIoT Edge Gateway (Internet connection required)
- Increase uptime, decrease downtime

Effective

- Quickly identify downtimes
- Identify irregularities
- Continuous recording of your production process

Environmental

- Reduce your scrap rate
- Improve quality
- Understand consumption of resources to optimize their use

3 System Options

3.1 Metco IIoT Cloud Service

Calculate, store, and display accurately the following parameters: Production cost (total and per part), Number of coated items, consumption of energy, powder, gases, and many more based upon shift, day, week, and month.

Calculate machine KPIs such as availability, performance, quality, RPT (Relative Process Time), and OEE (Overall Equipment Effectiveness).

Provide accurate and detailed break-down of the machine performance over time in terms of coating time, part ex-

change, idle time, unavailable time, planned and unplanned down-time.

Graph available machine signals for a selected period of time.

Provides specifics of coating runs such as start time, duration, gun life and recipe along with coating quality report for each coated component.

Consolidation of machine alarms sorted by frequency occurrence based on the equipment that initiated the alarms.

3.2 Metco IIoT Retrofit

Upgrade Kit ^a		Order Number
UniCoatPro	Edge Gateway Hardware	2362914
	Activation Fee	2429584
MultiCoat ^b	Edge Gateway Hardware	2367648
	Activation Fee	2429584
MultiCoatPro ^c	Edge Gateway Hardware	2367649
	Activation Fee	2429584
MP200 Pro	Edge Gateway Hardware	2367560
	Activation Fee	2429584

^a Any associated costs to upgrade existing equipment to reach minimum requirements (See section 4.1 Platform Compatibility) are excluded and must be purchased separately. Consult with MCH-product-support@oerlikon.com to assess total cost of retrofit.

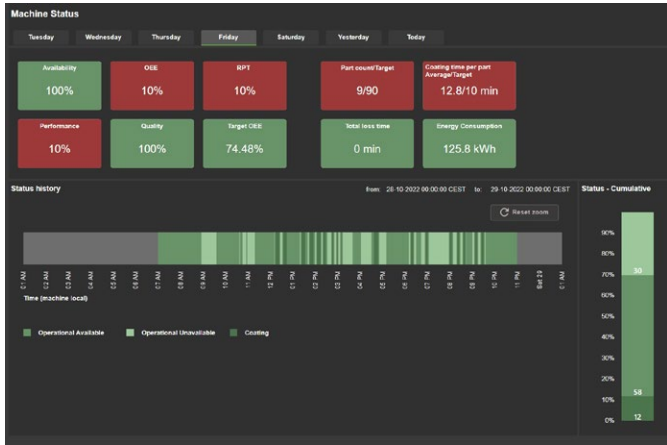
^b Limited to Atmospheric thermal spray Consultation with MCH-product-support@oerlikon.com for Controlled Atmosphere Systems (LPPS, VPS, LVPS)

^c Consultation with MCH-product-support@oerlikon.com to determine location installation prior to ordering.

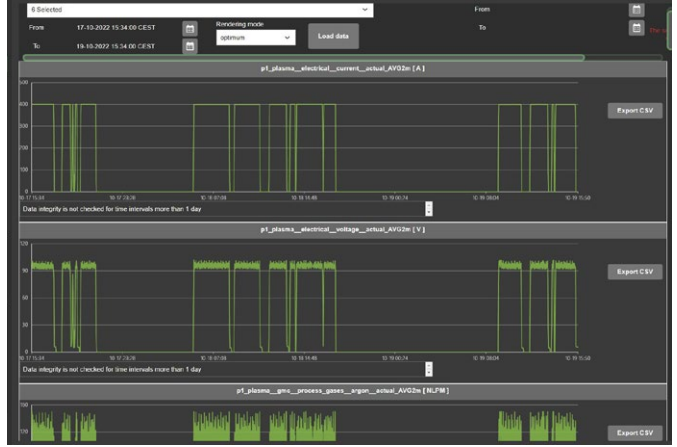
3.3 Metco IIoT Web Interface

An optional web interface allows user with proper permissions to globally access the data of one or multiple systems from their workstation computer or a tablet with a compatible web browser.

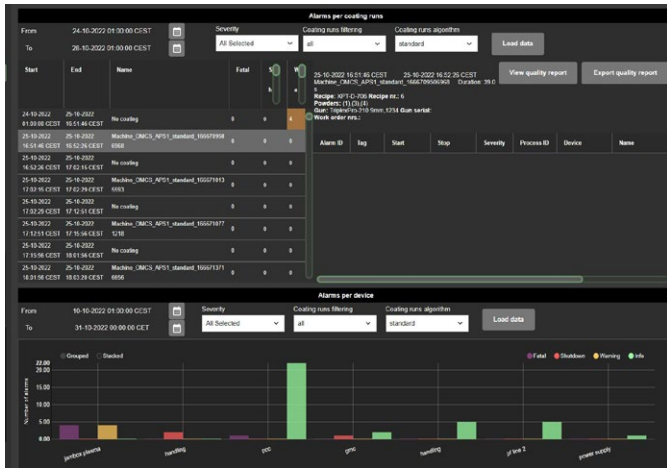
- Dashboard
- Data hub
- Analytics
- Quality report



Metco IIoT Dashboard



Metco IIoT Data Hub



Metco IIoT Analytics

CD_name	CD_unit	CD_setPoint	CD_tolerance	CD_aveargeValue	CD_min	CD_max	CD_stdDev	CD_exceptions
Venturi1	bar	0.0	+- 0.0	0.0	0.0	0.0	0	0
Venturi2	bar			0.0	0.0	0.0	0	0
Argon	NLFM	150.0	+- 14.0	150.0	140.5	150.9	0.3	0
Hydrogen	NLFM	3.0	+- 0.9	3.0	3.0	0.0	0	0
Current	A	400.0	+- 64.0	400.2	400.2	400.3	0.0	0
Power	W	0.0	+- 1000000.0	40632.2	40554.4	40709.4	33.2	0
Voltage		0.0	+- 1000000.0	10115	10113	10117	0.1	0
Carriergas 1	NLFM	2.0	+- 0.9	2.0	2.0	0.0	0	0
Disk 1	%	0.0	+- 4.0	0.0	0.0	0.0	0	0
Hopper_pressure 1		0.0	+- 1000000.0	0.3	0.3	0.3	0.0	0
Slirer 1	%	0.0	+- 4.0	0.0	0.0	0.0	0	0
Carriergas 2	NLFM	11.5	+- 1.3	11.5	11.5	11.5	0.0	0
Disk 2	%	60.0	+- 6.4	60.0	59.8	60.2	0.1	0
Hopper_pressure 2		0.0	+- 1000000.0	0.4	0.4	0.5	0.0	0
Slirer 2	%	60.0	+- 6.0	60.1	59.9	61.4	0.3	0
Carriergas 3	NLFM	0.0	+- 0.8	0.0	0.0	0.0	0	0
Disk 3	%	0.0	+- 1000000.0	0.0	0.0	0.0	0	0
Hopper_pressure 3		0.0	+- 1000000.0	0.0	0.0	0.0	0	0
Slirer 3	%	0.0	+- 4.0	0.0	0.0	0.0	0	0

Metco IIoT Quality Report

4 Technical Data

4.1 Specifications

Power Requirements

Input Voltage	8 to 36 V DC ^a
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Device Connectors

Wired	USB 2.0, RS232, RS485, 2 Ethernet ports
Wireless	N/A

Software

Operating System	netFIELD OS
Application	Metco IIoT Edge
OPC-UA Server	OPC-UA standard protocol

Data

Type	time series data
Resolution	1 second

Protocol

OPC-UA for data connectivity, HTTPS for cloud connectivity

Environment

Temperature	-20 to 60 °C	14 to 140 °F
Humidity	< 90%, non-condensing	

Platform Compatibility

MultiCoat	
HMI Version	V10_07b_3745 V8_32a_3747
UniCoatPro	
HMI Version	A5.0.1
MultiCoatPro	
HMI Version	V1.20.1
MP200 Pro	
HMI Version	V3.1.3

IT Security

^a Supplied through the existing controller - installed inside your existing thermal spray controller