Product Data Sheet
MultiCoat5 and UniCoat3 Thermal Spray Controllers

Oerlikon Metco's MultiCoat™ 5 (MC5) and UniCoat™ 3 (UC3) controllers set the industry benchmark for advanced thermal spray process management. Whether in high-volume production or R&D applications, these systems deliver precision, reliability, and ease of use. With modular expansion capabilities and seamless integration with Oerlikon Metco's extensive spray gun portfolio, the MC5 and UC3 controllers provide the flexibility needed for today's demanding coating environments.

1 General description

The Oerlikon Metco MultiCoat5 (MC5) and UniCoat3 (UC3) controllers provide high-performance thermal spray process control, offering versatility and robust operation for a range of industrial applications. Designed for both R&D and high-volume production, these controllers integrate advanced user management, real-time monitoring, and data analytics capabilities.

The MC5 and UC3 platforms utilize the latest PLC technology for enhanced reliability. MC5, as a high-end solution, features dual-core processing with dedicated data communication, while UC3 provides a streamlined solution for applications requiring precise and repeatable process control. Both systems leverage ProfiNet-based communication networks with managed switches, ensuring top-tier reliability and efficiency.

Embedded Metco IIoT connectivity (available on MC5) enables seamless integration into smart factory environments. Advanced user access control ensures compliance with security and industry regulations across automotive, aerospace, and medical applications. Additionally, an automated hopper pressure leak test (MC5 only) helps maintain consistent coating quality.

Comprehensive System Features

The MultiCoat5 and UniCoat3 controllers are designed to meet current and future coating needs with a strong focus on customer-centric features, including:

- Absolute Process Reliability: Ensuring consistent, repeatable coating performance.
- Maximized Coating Quality and Reproducibility: Advanced process control minimizes variation.
- Advanced Maintenance Features: Predictive and automated maintenance tools enhance system longevity.
- Enhanced Process Versatility and Adaptability: Modular expansion allows for additional processes.
- Smart Factory Readiness: MC5 is equipped with Metco IIoT capabilities for real-time monitoring and analytics.

The MC5 builds upon the proven architecture of its predecessor, MultiCoat™, offering enhanced connectivity, improved data management, and a streamlined system layout. Key control functions from legacy JAM Boxes (HVOF GF, HVOF LF, CPS) are now integrated into the Media Management Center (MMC), improving space utilization and serviceability. Additionally, the new Gun Connection Points (GCP) can be installed in spray booth walls with integrated flame arrestors for improved safety and easier maintenance.

MultiCoat5 – Process Control Center (PCC) with dual 21.5 inch Touchpanel

Both controllers support a wide range of spray guns and feeders, offering compatibility with Oerlikon Metco's entire portfolio. Available feeders include gravimetric options such as the Single Pro and 9MP feeders, as well as the ergonomic Twin 160 feeder. For power supply needs, the PtPro 120 is available in both high-profile and low-profile versions, ensuring versatility for various applications.

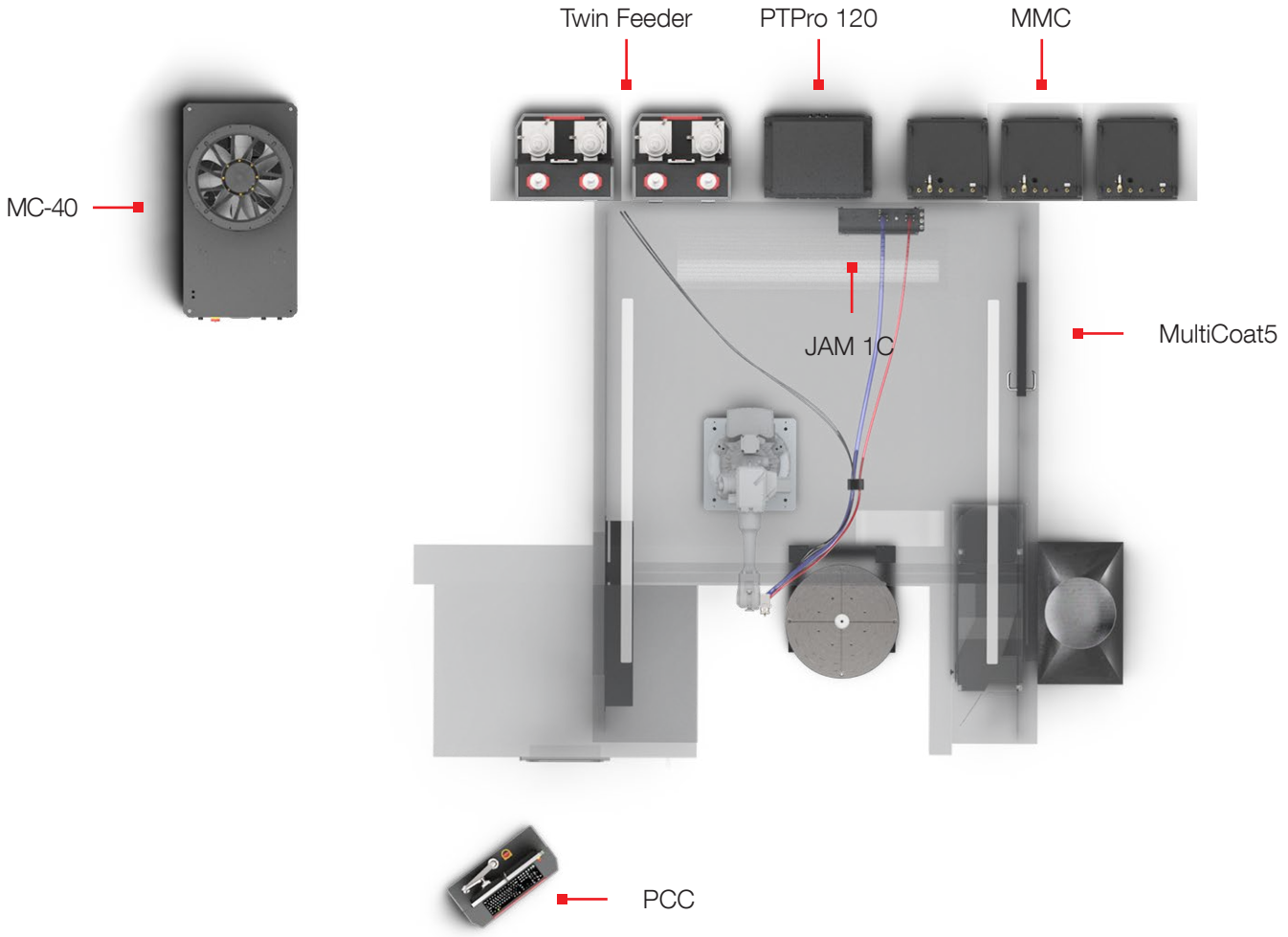
System Architecture and Expandability
The modular design of both controllers allows expansion to accommodate additional processes by integrating Media Management Centers (MMC). The MC5 system consolidates functions previously found in separate JAM Boxes, while the UC3 system maintains a compact and efficient layout. Both controllers support Oerlikon Metco's extensive portfolio of spray guns and powder feeders, ensuring broad compatibility.

Coating processes
- Plasma spray (single and triple cathode guns)
- HVOF spray (gas and liquid fuel)
- Combustion powder spray
- Combustion wire spray

1.1 Process Control and User Interface
The MC5 Process Control Center (PCC) features dual 21.5-inch touchscreen monitors for intuitive operation, while UC3 offers a streamlined interface suitable for less complex environments. Both controllers utilize Clarity 2 software for easy parameter setup, process visualization, and data management.

Key Features:
- Multi-process Capability: MC5 supports up to five spray processes in sequence, while UC3 is optimized for focused, single-process applications.
- Advanced User Management: MC5 enables customizable access rights for different operator levels.
- Comprehensive Data Logging & Reporting: Both UC3 and MC5 includes trending, statistical analysis, and process validation features.
- Automated Maintenance Tools: MC5 includes preventive maintenance scheduling for minimized downtime.
- Integrated Safety Features: both platforms feature CE-compliant design with built-in alarms, flame arrestors, and safety interlocks.

Typical MultiCoat5 Integrated System Components



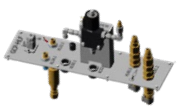
Typical MultiCoat5 Multi-Process System Comfiguration

1.2 Dimensions

MultiCoat5 PCC

UniCoat3 PCC

1.3 MultiCoat5 and UniCoat3 System Configurations — Overview

Spray Process	Plasma		HVOF		Combustion	
	Single Cathode	Tri-Cathode	GF	LF	Powder	Wire
Component						
MultiCoat5 and UniCoat3 PCC						
Gas Management Center	 MMC Plasma		 MMC GF	 MMC LF	 MMC CXS	
Spray Gun	SinplexPro F4MB-XL 3MB 9MB F210 [a]	TriplexPro-210	DJ Gun Series [b]	WokaJet-440 WokaStar-640	6P-II	EGD-K 6KA
Powder Feeder	SinglePro, TWIN-160, 9MPE-CL 20		SinglePro, TWIN-160, 9MPE-DJ-CL20		SinglePro, TWIN-160, 9MPE-CL	
JAMBox	 JAM-1C	 JAM-3C	 GCP	 GCP	 Powder Combustion	Wire Combustion
Power Supply	 PTPro-120[c]					

[a] or other Oerlikon Metco internal spray gun
[b] See datasheet DSE-0026
[c] Low profile versions also available. See datasheet DSE-0106

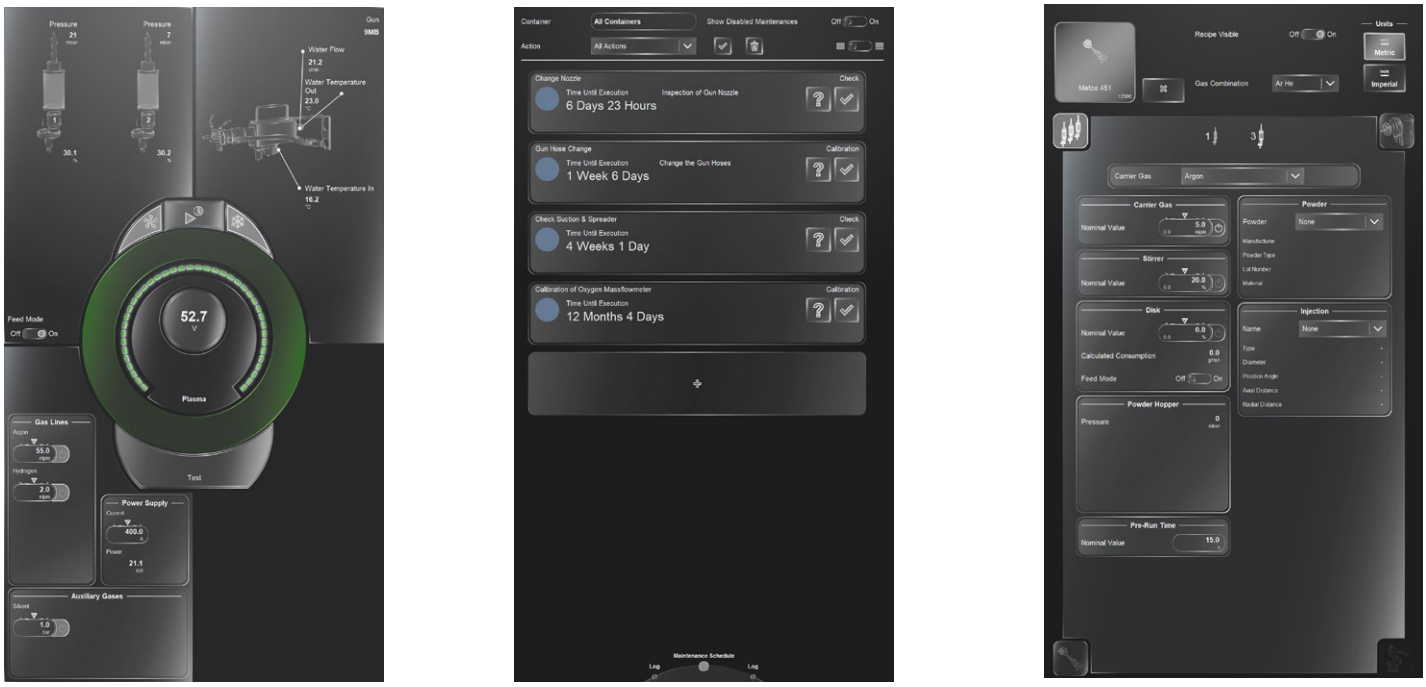
2 Features and Benefits

The MultiCoat5 and UniCoat3 Controller Systems are equipped with the Clarity2 Touch Screen graphical user interface, allowing the user to operate and monitor the system with easy to use, high resolution graphics.

- **Multi process capability:** runs up to five spray processes sequentially
  - Plasma single and triple cathode guns
  - HVOF-GF
  - HVOF-LF
  - Combustion Wire
  - Combustion Powder

in any combination, using the MC5 Process Control Center. Key functions from legacy systems have been integrated into the Media Management Center (MMC) and enhanced with Gun Connection Points (GCPs) for optimized space and reliability.

- **Advanced User Management:** Individual user accounts with customizable access rights for sensitive industries such as automotive, medical, and aerospace.
- **Reporting:** Comprehensive statistical data generation for coating processes over defined periods, supporting quality control.
- **Trending:** Continuous monitoring and analysis of process parameters for optimal performance.
- **Spray Sentry:** Integrated monitoring of spray plume intensity, position, geometry, and particle velocity and temperature.
- **Maintenance Tool:** Plan and schedule maintenance tasks efficiently, ensuring minimal downtime.
- **SumIt:** Provides detailed cost calculations for process-specific consumables, helping optimize operational expenses.
- **Automated Hopper Pressure Leak Test:** Proactively addresses one of the most common failure points in thermal spray processes, reducing poor quality.
- **IIoT Connectivity:** Embedded Metco IIoT features enable real-time monitoring, data analytics, and smart factory integration using OPC-UA protocol.
- **Dual Touchscreen Monitors:** Provides intuitive and reliable operation, even in harsh environments where glove use is required.
- **Safety:** Designed with CE-conformant, industry-proven hardware and enhanced safety features like flame arrestors integrated into the GCPs.
- **Built-in Alarms:** Multilevel alarm system with warnings, critical alerts, and automatic shutdown functionality.
- **Smaller Footprint:** use of one controller for multiple processes means less hardware, less space and thus financial savings.
- **TouchScreen Entry:** reduces learning curve and minimizes time for set-up and recall of spray recipies in production.
- **Modular Design:** Easily expandable to accommodate additional processes by adding Media Management Centers.
- **Clarity 2 Recipe Manager:** Offers efficient parameter entry, intuitive process control, and advanced data retrieval capabilities.
- **Touch-Screen Graphics:** Simplifies and enhances operating procedures with user-friendly, high-resolution interfaces.
- **Quality Control:** Comprehensive output of spray run data to meet stringent quality assurance requirements.



Clarity2 User Interface - Left: Mainscreen; Center: Maintenance Tool; Right: Recipe Manager

3 Hardware

Feeder Connectivity
UC3 and MC5 support flexible integration with various feeder configurations depending on the spray process:

- **APS:** Up to eight feeders can be connected and controlled. Feeders can operate individually, sequentially, or simultaneously. All connected feeders can be of disk type, fluidized bed type, or any combination thereof.
- **HVOF GF:** Only one feeder may be connected. Continuous system communication with the feeder is required, including supervision of hopper pressure.
- **HVOF LF:** One or two feeders may be connected for either single or simultaneous feeding.
- **CPS:** Exactly one feeder must be connected and integrated with the system.

Handling Interfaces:
A simple discrete handling interface is included as standard, providing reliable connections for basic handling needs.
An advanced digital interface using ProfiNet protocol is also available, enabling seamless communication and integration with modern handling systems.

Analog and Digital Input Extensions:
Up to 16 digital inputs and up to 4 analog inputs are available for enhanced customer interface and system customization.

Wide Range of Plasma JAM Boxes:
1C: For single-cathode plasma guns.
3C: For tri-cathode plasma guns.
1C-1C: An integrated dual JAM Box designed for permanent connection of two single-cathode guns.
1C-3C: Allows simultaneous connection of one single-cathode and one tri-cathode gun.
These configurations reduce downtime and efforts for requalification during gun changes, significantly improving system flexibility and operational efficiency.

4 Technical Data

4.1 Dimensions

Description	UniCoat3	MultiCoat5
Touch sensitive monitor	Single 21.5”	Double 21.5”
Multi Process Ready		●
Available Processes	APS, HVOF LF, HVOF GF, CPS	APS, HVOF LF, HVOF GF, CPS
Metco IIoT Connectivity	optional	●
Reporting	●	●
Trending	●	●
Basic Account Management	●	
Advanced Account Management		●
Maintenance Tool		●
Consumable Counter SumIt		●
Spray Plume Montitoring[a]		●
Handling Interface Discrete	●	●
Handling Interface ProfiNet	optional	●
Analog Input Extension		●
Power Supply Compatibility	PTPro120 series	
Jambox Compatibility	1C, 3C, 1C-3C, 1C-1C	
Feeder Compatibility	Twin 160, SinglePro series, 9MPE series[b]	

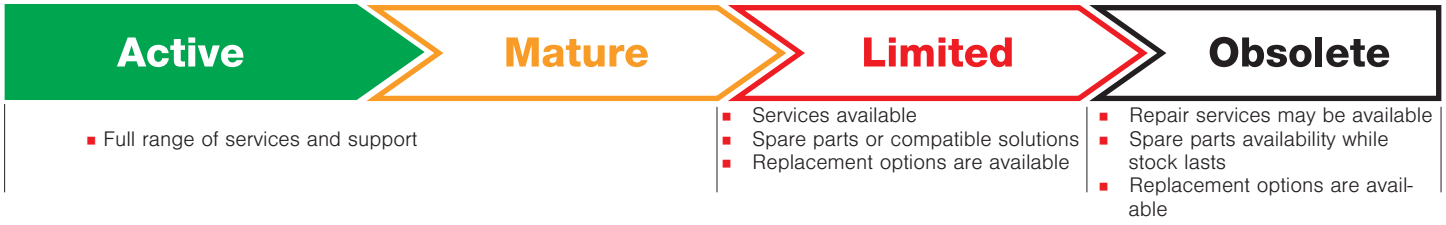
[a] Accuraspray 4.0 hardware not included, to be purchased separately
[b] Dedicated interface box required

4.2 Specifications

Control Panel			
Monitor	Size (diagonal)	21.5 in	
	Type	Dual TFT Touch Screen	
Physical button		Start, Stop, Quick Stop, Reset	
Process Control Center			
Weight		148 kg	326 lb
External Power Supply	Voltage	110/230 VAC	
	Frequency	50/60 Hz	

5 Life-Cycle Status and Support Options

Our four-phase life cycle model keeps you informed about available services and support options throughout the life span of your equipment



5.1 MultiCoat5 and UniCoat3

- Current Life Cycle Status: Active
- Inception Date: December 2023

During the Active phase, you have our full sup-port and range of services. Using our life-cycle services will keep your equipment in the best operating condition

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5.2. Keeping You Informed

We will notify you early and transparently about your options as your equipment enters into the next life-cycle phase, providing your equipment is registered with Oerlikon Metco

5.2.1. Life-Cycle Notification

Provides early information about the upcoming life-cycle phase change and how your equipment can be best supported.

5.2.2.Life-Cycle Status Statement

Provides information about the current life-cycle status and all available options and services to maintain your equipment in best condition.

5.3. The Oerlikon Metco Difference

Benefit from our selection of comprehensive services designed to ensure:

- Consistent spray quality, with little to no parame-ter shift
- Compliance with your ISO quality requirements
- Maximized equipment uptime
- Extended overall equipment lifetime
- Fast availability of spare parts

5.4. Your Best Value for Peak Performance

Choose from our broad portfolio of services to keep your equipment in top condition now and in the future

- Spare parts
- Preventive maintenance
- Repair Service
- Customer training

Take advantage of an Oerlikon Metco Service Agreement tailored to your specific needs!

For more information on your service and support options, please contact your Oerlikon Metco Account Manager.

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