œrlikon metco

Product Data Sheet
UniCoatPro LF Liquid-Fuel HVOF Controller Platform

UniCoatPro™ LF is the latest generation HVOF liquid-fuel controller platform from Oerlikon Metco. Combining simple operation with the latest technology and safety features in a compact cabinet, the universal UniCoatPro LF is an outstanding choice for spray shops of all sizes.

1   General Description

With the UniCoatPro LF, we have taken our extensive knowledge in the design of thermal spray controllers to provide our customers with advanced features in a compact design. UniCoatPro LF employs the latest technology for safe and economical operation in a competitively priced system.

The operator controls the entire spray process via a touch screen, where ease of use is the most important consideration. Hot buttons provide quick access to screens used frequently. Entry of nominal values is simple and intuitive.

The built-in Remote Maintenance Tool allows Oerlikon Metco to remotely analyze and troubleshoot the customer's controller via a secure Internet connection, thus reducing costly service calls and downtime.

The latest safety standards have been incorporated into the UniCoatPro LF spray controller. A multi-level monitoring and alarm system notifies the operator of out-of-range conditions and safely shuts down the system in critical situations.

Among the other standard UniCoatPro LF features are a multilingual user interface and the ability to store spray parameters.

UniCoatPro LF Liquid-Fuel HVOF Controller

1.1 Main Components

1. Controller cabinet
2. Operator panel
3. Main power switch
4. Electronics
5. Water from / to spray gun, oxygen and air outlets
6. Mass-flow meter and proportional valve
7. Water from / to chiller, oxygen and air inlets
8. Kerosene inlet / outlet

Front View · Rear View
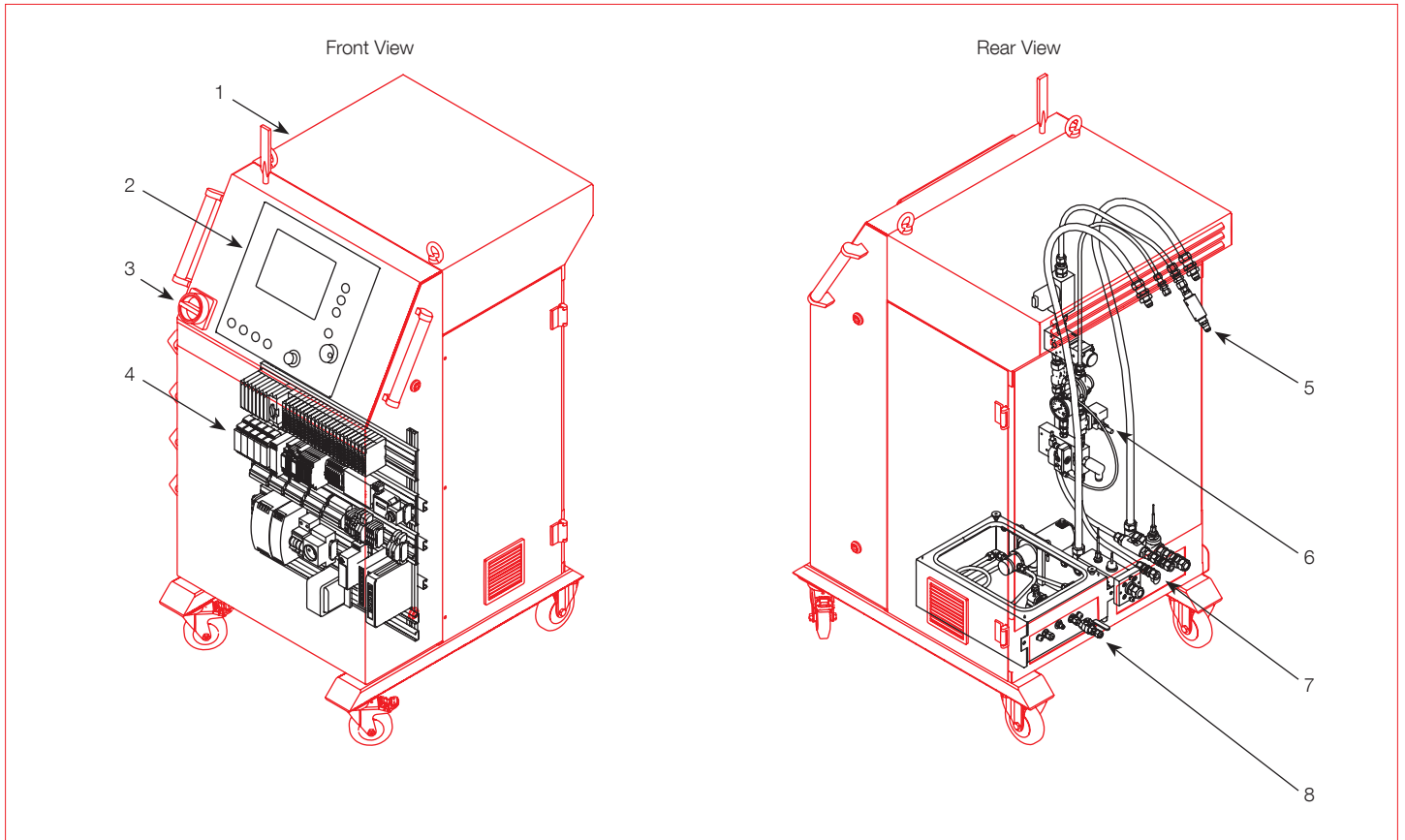
1.2 Operator Interface

The operator interface consists of a 10.4 in. touchscreen display with intuitive visualization software. Hot buttons quickly bring the operator to the most frequently needed screens. Entering of parameter values is quick and easy using the touchscreen and a scroll wheel. Selection of the spray gun to be used sets the operating limits for the gun, thereby enhancing safe operation.

A multi-level alarm system notifies the operator visually and audibly to out-of-bound and critical issues.

Parameter data can be read and set in metric or U.S. customary units. Standard, selectable languages for the user interface are:

- English
- German
- French
- Italian
- Swedish
- Polish
- Portuguese
- Czech
- Hungarian
- Chinese
- Japanese
- Korean

Other languages can be supplied as a factory-installed option.
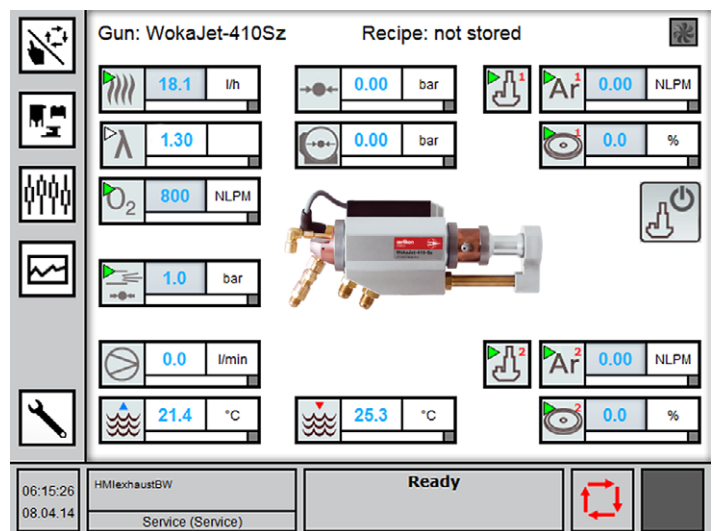
UniCoatPro LF – Touch Screen Operation

1.3 Trending and Reporting

The trending and reporting package is an outstanding feature of UniCoatPro LF.

Trending records all parameters that can be set and monitored from the operator panel in daily intervals, for up to one week. The data can be recalled on-screen and can display as many as five spray parameters at a time, which are user selectable. The operator can also set the run time and the excursion limits for the screen (any values that go beyond the set limits are clipped). Each parameter is assigned a different graph color. The UniCoatPro LF then tracks the values in real time.

Reporting is set up prior to a spray run by the operator. When configuring a report, the operator can enter header information to identify the report. Reports show both the actual spray data and deviations beyond allowable values.

Trending and reporting data can be saved for later recall and output to a flash drive.

Use the trending and reporting package for:
- Spray parameter development
- Process control
- Spray run quality control
- Customized reporting for coating of critical components
- Spray gun and system maintenance scheduling
- General system troubleshooting
- Operator training and qualification

1.4 Remote Maintenance System

The Remote Maintenance System is a standard feature of UniCoatPro LF. It uses a secure Ethernet-based connection (mobile 3G is optional) to connect the UniCoatPro LF controller directly to Oerlikon Metco's service department. It can be used to:
- Troubleshoot and diagnose the system issues
- Demonstrate training and support for general system operation

The Advantages:
- Faster response on system issues reduces downtime
- Reduces costly service calls and technical interventions
- Improves productivity with direct demonstration access to Oerlikon Metco experts
- Safe and secure, as the encrypted connection must be initiated by the customer
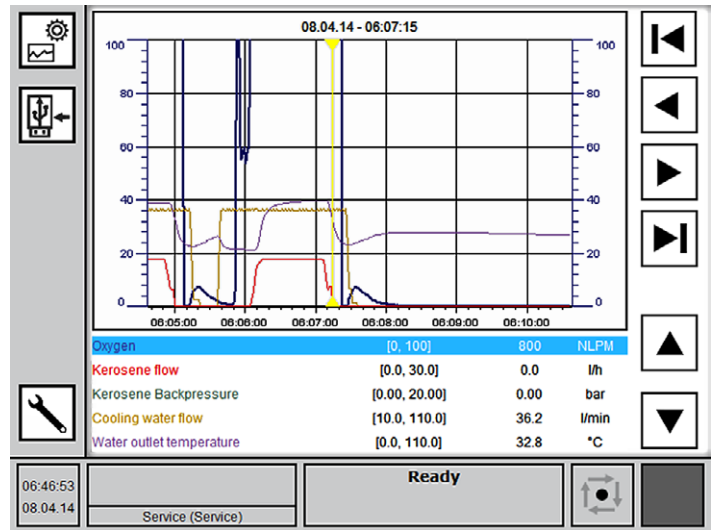
Trending Data Shown On Screen

Entering Header Information for a Report
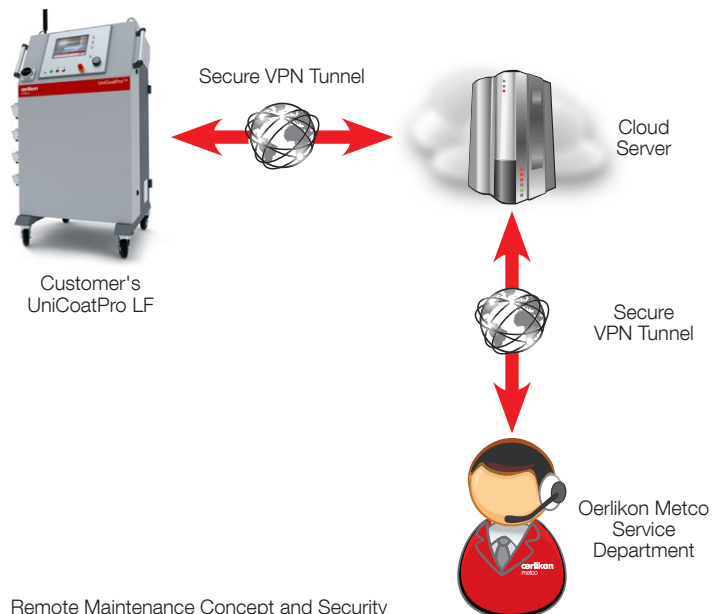
Remote Maintenance Concept and Security

1.5 Full-Featured Handling Interface

This feature functions with an external controller (such as a robot) to

- Start / stop the process, powder, auxiliary gases, reporting
- Get status handling system and spray system
- Call stored spray recipes
- Remotely control the chiller and exhaust

2 Outstanding Standard Features

Productivity and Ergonomics

- Easy to use, touchscreen graphical user interface with visualization software
- Small footprint cabinet includes gas flow control and all input and output connections
- Stores up to 100 recipes
- Metric or U.S. customary unit display
- Selectable display language
- Multi-range input voltages for worldwide usage
- Built-in remote maintenance software allows for off-site troubleshooting, training and software updates

Process Control

- Fast start-up cycle
- Closed-loop monitoring and control of oxygen and kerosene
- Real-time monitoring with very fast response on user interface
- Monitoring of water flow and temperature
- Monitoring of gun combustion chamber pressure and kerosene back pressure

- Automatic high-voltage, spark ignition
- Full powder feeder integration with the Twin-140, Twin-150 or Single-240 Powder Feeder
- Interfaces for exhaust unit, chiller, spray booth, powder feeder and gun/part manipulation system
- Full-featured handling interface by an external controller
- Built-in compressed air control for gun air jets

Safety

- Multi-level alarm system with safe shutdown in critical situations
- Built-in E-stop system
- Electronics safely separated from process media
- CE conformity

Quality Control

- Sophisticated built-in trending and reporting software with output features
- Help button for quick access to the user manual or creation of an exportable file of all configuration, log and alarm data for troubleshooting

3 Recommended System Configurations

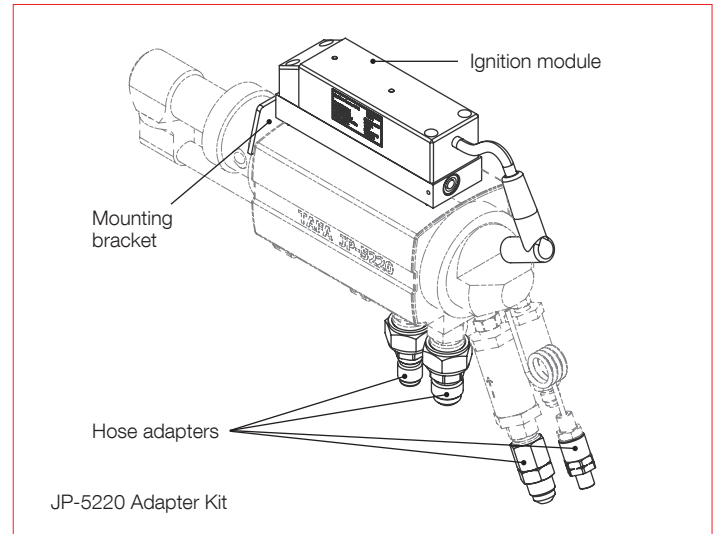| Controller	Spray Gun (Choice of)		Powder Feeder (Choice of; up to 4 powder feed lines)	Chiller
UniCoatPro LF	■ WokaStar™-610-Sz ■ WokaJet™-410-Sz ■ Praxair JP-5220 [c]	excellent performance standard performance standard performance	**Volumetric:** [a] ■ Twin-140 ■ Twin-150 **Gravimetric:** ■ Single-240 [a] ■ 5MPE-HP [b] ■ 9MPE-DJ [b]	■ 90 kW cooling capacity

[a] Full integration with UniCoatPro LF including recipe integration
[b] Start/stop functionality only, all other functions are set at feeder; each feeder equipped with 1 hopper; up to four feeders may be run in parallel for which interface cables are required
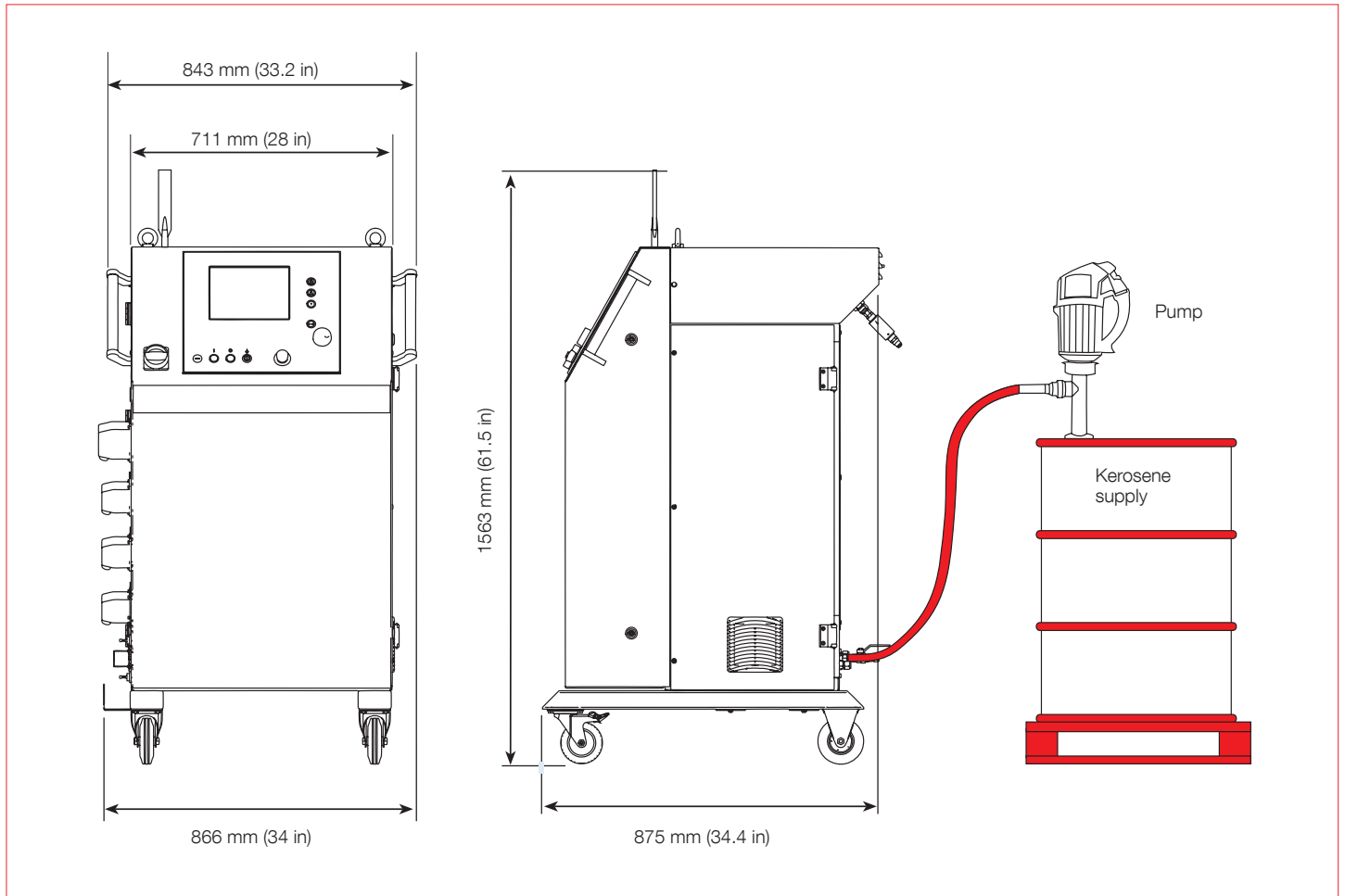[c] Requires conversion kit

4   Options and Accessories

- **Supply Hoses:** For all process media
- **Gun/Hose Package:** With customer-specified length
- **Signal Lamp:** Visual indicator of the system's operational state via 3 lamps (green, orange, red) that can be viewed at a distance
- **3G Remote Maintenance System:** Wireless 3G connectivity via mobile network (mobile network connection supplied by customer)
- **Kerosene Barrel Pump:** Required for stable kerosene supply; electric and pneumatic versions available
- **Ventilation Kit:** Field or factory installed kit for ambient temperature operation in excess of 40 °C (104 °F)
- **JP-5220 Adapter Kit:** Includes hose adapters, ignition module and ignition module mounting bracket to adapt a Praxair JP-5220 gun to the UniCoatPro LF (Item 1093922)

Ignition module

Mounting bracket

Hose adapters

JP-5220 Adapter Kit

5   Technical data

5.1   Dimensions

843 mm (33.2 in)

711 mm (28 in)

1563 mm (61.5 in)

866 mm (34 in)

875 mm (34.4 in)

Pump

Kerosene supply

5.2 Specifications

Power supply		
Voltage	100 to 120 VAC	
	200 to 240 VAC	
Frequency	50 / 60 Hz	
Current - Maximum	16 A	
Cabinet		
Protection		
Electrical	IP54	
Process Gases	IP43	
Weight		
Total	185 kg	408 lb
Process Media		
Oxygen		
Flow	22 to 1100 NLPM	50.2 to 2511.3 SCFH
Pressure	min. 20 bar	min. 290 psi
Purity	Class 3, 99.9 %	
Connector	Swagelok, 1/2 in	
Kerosene		
Flow	0.6 to 30.0 l/h	0.2 to 7.9 gal/h
Pressure	0 to 1 bar	0 to 14.5 psi
Connector	Swagelok, 3/8 in	
Cooling Water		
Flow	min. 39 l/min	min. 10.3 gal/min
Quality		
Conductivity	< 40 µS, potable water	
Hardness $CaCO_3$	< 50 ppm	
Inlet Temperature	11 to 24 °C	51.8 to 75.2 °F
Inlet Pressure	14 to 20 bar	203 to 290 psi
Connector	Swagelok, 3/4 in	
Cooling	90 kW, depending on gun and process parameters	
Exhaust		
Air Flow	> 15000 m^3/h	> 8830 ft^3/min
Environment		
Temperature	10 to 40 °C	50 to 104 °F
Humidity	< 75 %, non-condensing	
Air Jets		
Supply Pressure	7 to 8 bar	101.5 to 116.0 psi
Pressure	1 to 6 bar	14.5 to 87.0 psi
Air Quality	Dry and oil-free	
Compatibility		
Spray Gun	WokaJet-410-Sz, WokaStar-610-Sz; Praxair JP-5220	
Powder Feeder	Twin-140; Twin-150, Single-240	Full UniCoatPro LF Integration
	5MPE-HP; 9MPE-DJ; 9MPE-DJ-CL20	Start/Stop only, no recipe management

Information is subject to change without prior notice.

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