

ARC145P



Equipment Spec

Introducing the ARC145P

Our lightest, most flexible arc spraying system yet!

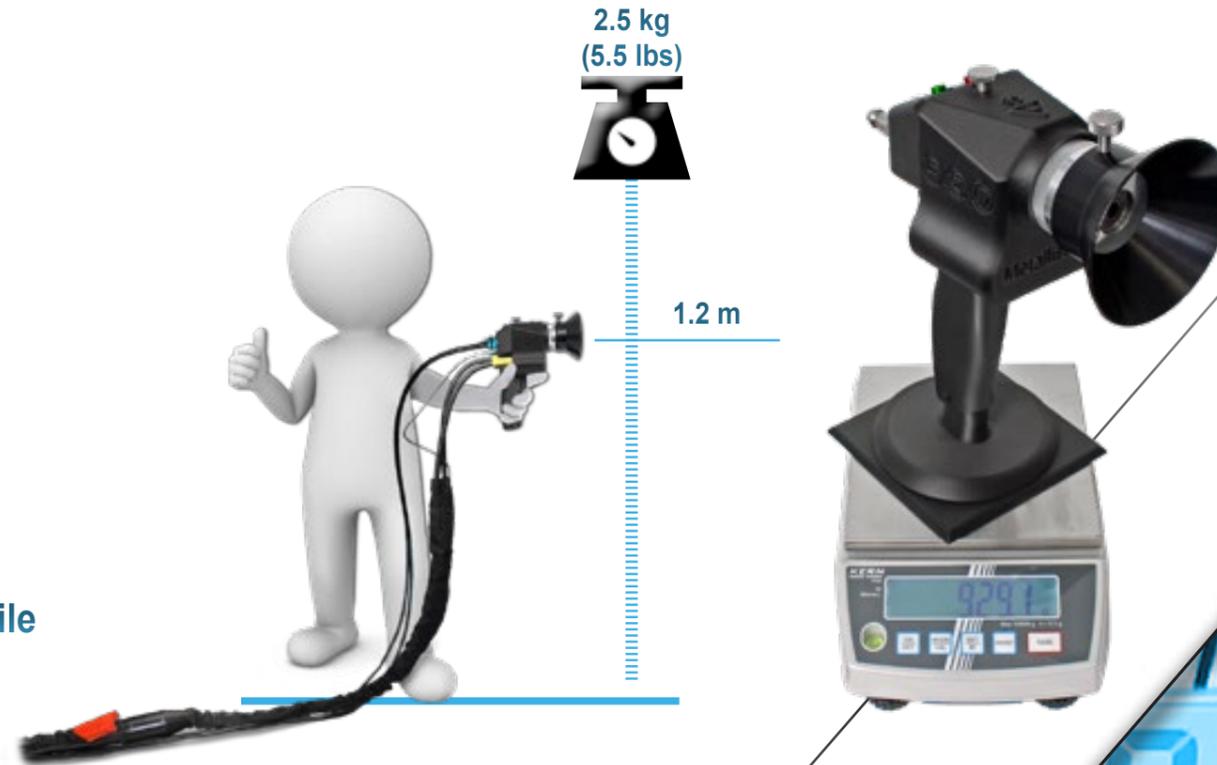
The **LIGHTEST PISTOL** on the market*

Our desire for continuous improvement, alongside customer feedback has led to the development of our latest range of ARC145 push systems. Our new ARC145P pistol includes many parts that are industrial 3D printed from a lightweight, carbon fibre reinforced plastic. This makes the pistol lightweight for the operator but incredibly strong and durable. We have retained our proven Arc geometry but have created a pistol that is virtually maintenance free. Our energiser and drive unit now feature ro-

bust, industrial connections as standard. Current adjustment is via a new, dustproof push button which also incorporates fault status feedback. The drive unit has an additional top set of driven rollers for a robust wire feed. Our latest trolley is compact and designed to keep the supplies connections out of the spray area and free from dust. All this combined with our high quality supplies packages and high performance rates makes our range of push systems the easiest to use on the market.



- Powerful & versatile
- Sturdy & robust
- Outstanding performance



A complete arc spraying system combining our NEW ARC145P push pistol & NEW (19) Model 250/350 Amp Energiser.

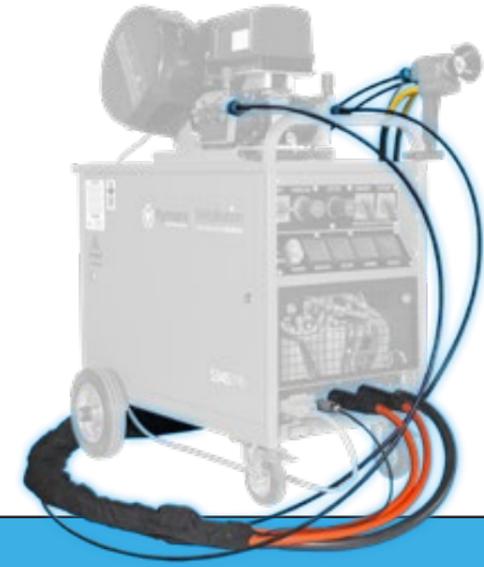
PUSH PISTOL

ONLY 0.93 KG (2 LBS)

*at time of publishing



System Overview



NEW 145P PUSH PISTOL

- Industrial 3D printed parts.
- Carbon fibre reinforced.
- Light & robust.
- Ergonomic design.
- Small pistol.
- Contact tips.

'19' SERIES ENERGISER

- Fan on demand saves power and reduces noise.
- Robust push button current control.
- Industrial plugs / sockets.
- Rear handle.

'19' SERIES DRIVE UNIT

- Compact design.
- Quick release MIG reel carriers which are easy to disassemble to feed in small access manholes.
- Lighter weight.

SUPPLIES PACKS:

- Lengths to suit.
- Industrial connections.
- Robust manifold & cover.
- Lightweight cooled conductors.

NEW FOR 2019

LIGHT & STRONG

POWERFUL

VERSATILE



Pistol

The pistol has been designed to give consistent throughputs with high coating quality at 350A. Metallisation technology has taken the conventional arc spray pistol to new dimensions, making it smaller, lighter, more ergonomic and stronger than ever, giving superior coating ability.

REDUCES OPERATOR FATIGUE

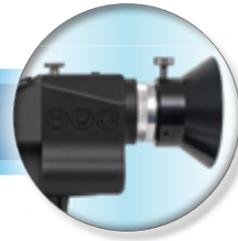
OPTIONS

Part No.	Description
ARC145P-CT16	Arcspray145 Push Pistol for 1.6mm wires
ARC145P-CT20	Arcspray145 Push Pistol for 2.0mm wires
ARC145P-CT23	Arcspray145 Push Pistol for 2.3mm wires
ARC145P-CT25	Arcspray145 Push Pistol for 2.5mm wires

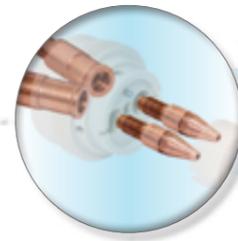
Push button design for simple operation



Carbon fibre toughness for the harshest environments.



Contact tube & tip arrangement



Proven ARC Geometry



Ergonomic grip for true comfort



INDUSTRIAL 3D CARBON FIBRE PRINTED

STRENGTH, DURABILITY & COMFORT COMBINED

Carbon Fibre Toughness

Virtually Maintenance Free

Super Light Design



'19 Series' Energiser

The energiser has been specifically designed for those users who are likely to spray a varying range of materials. Ideally suited for the Anti-corrosion industry and General Engineering Workshop.



Energy saving
AUTO-STANDBY mode

OPTIONS

Part No.	Description
S245(19)-PLC	S245(19) ARC145 Energizer with closed loop current control (250A) (415Vac)
S245FV(19)-PLC	S245FV(19) ARC145 Energizer with closed loop current control (250A) (200-220Vac)
S245D(19)-PLC	S245D(19) ARC145 Energizer with closed loop current control (250A) (200-220-380-460Vac)
S345(19)-PLC	S345(19) ARC145 Energizer with closed loop current control (350A) (415Vac)
S345FV(19)-PLC	S345FV(19) ARC145 Energizer with closed loop current control (350A) (200-220Vac)
S345D(19)-PLC	S345D(19) ARC145 Energizer with closed loop current control (350A) (200-220-380-460Vac)
PLC-E/STOP-K(19)	Remote operation E-Stop kit for (19) PLC energisers

Dust proof current control & closed loop indicator



LED & ethernet fault alarm feedback



Sturdy control connections



New case design & rear handle



IP65 Gorilla Glass LED gauges



Claw and whip-check air connection on rear.



100% DUTY CYCLE

INDUSTRIAL CONNECTIONS



Sturdy
Harthing
Connections



Push
Button
Current Set



Fan
On
Demand



'19 Series' MIG / SPOOL Wire Dispense



The drive unit is now more compact than ever, but that doesn't mean it's any less durable. The addition of a top set of driven rollers provides an even more reliable, positive wire feed. Quick release MIG covers make it easy to disassemble & fit through small manholes. Alternatively there is the option to dispense from layer spools which also features the quick release feature.



OPTIONS

Part No.	Description
DR145(19)-**M	ARC145(19) Drive unit for MIG Dispensing (**mm)
DR145(19)-**S	ARC145(19) Drive unit for SPOOL Dispensing (**mm)

** Sizes available: 1.6mm, 2.0mm, 2.3mm, 2.5mm

Quick release MIG covers



Additional top set of driven rollers



Heavy duty (0.55kW) electric inverter drive



Profiled drive rollers for 1.6, 2.0, 2.3 or 2.5mm



Easily convertible to Push / Pull



WIRE SPECIFIC ROLLERS

GROOVED & SMOOTH SETS

REVERSIBLE FOR LONG LIFE

NEW COMPACT DESIGN



Adjustable Wire Tension



Profiled Drive Rollers



Maintenance Free Gearbox

'19 Series' Drum Dispense



Through the Metallisation wire dispensing cone, wire is neatly guided to a dispense point, then over the pulley to give a free passage of wire from the drum to pistol. As before the drive unit is now more compact than ever, and there is still the addition of a top set of driven rollers providing even more reliability.



OPTIONS

Part No.	Description
DR145(19)**D	ARC145(19) Drive unit for Drum Dispensing (**mm)
** Sizes available: 1.6mm, 2.0mm, 2.3mm, 2.5mm	
21252-51A	Wire Dispensing Cone with Adjustable Reeling Pulley Assembly (51CM)
21252-56A	Wire Dispensing Cone with Adjustable Reeling Pulley Assembly (56CM)
21252-59A	Wire Dispensing Cone with Adjustable Reeling Pulley Assembly (59CM)
6274/5	Clamp Blocks (Pair) 1/2"
7144	1/2" Dia Ptfе Tubing

Plastic drum cone with viewing window



Variable position clamp pad assembly



150 / 250 KG FOR ZINC

200 KG FOR ZINC / ALUMINIUM

60 KG FOR ALUMINIUM

Smooth Pulley Action

Large Viewing Window

HEAVY DUTY
Built To Last

Trolley Option



The (19) series trolley allows movement of the drive unit and wire dispense around the site independently of the energiser. It has a new compact design and the facility to 'hide' the supplies connections within the trolley in order to prevent dust ingress.



OPTIONS

Part No.	Description
DR1XX(19)-ET	Extension Trolley for (19) Series Drive Units

Channelling for supplies preventing dust & damage



Braked front castors



Heavy duty rear wheels



NEW COMPACT TROLLEY

REMOVEABLE COVER



Trolley with the top cover removed.

Demonstrating where the supplies connections sit.



Trolley with the top cover in place.

Demonstrating how supplies connections are protected from damage and dust ingress.



Trolley with the drive in position.

A compact and secure set up ready for the harshest environments.



Dust Limiting Cover



Braked Front Castors



Rugged Rear Wheels



Supplies Package

The system supplies connect from the energiser or trolley to the pistol. They include the power, air & control cables & wire conduits in the suitable size for the system. Refer to system configuration pages to select supplies lengths.

OPTIONS

Part No.	Description
SUP145P(19)-5M	Arcspray 145P, 5m supplies package for electric drive, S245/345
SUP145P(19)-10M	Arcspray 145P, 10m supplies package for electric drive, S245/345
SUP145P(19)-15M	Arcspray 145P, 15m supplies package for electric drive, S245/345
SUP145P(19)-20M	Arcspray 145P, 20m supplies package for electric drive, S245/345
SUP145P(19)-10EX	Arcspray 145P, 10M Extension Supplies Package for Electric Drive, S245/345
SUP145P(19)-20EX	Arcspray 145P, 20M Extension Supplies Package for Electric Drive, S245/345

Robust 5m conduits



Twist & lock power cables and quick release air hose



Industrial connections as standard



CONDUCTOR CROSS SECTION



Lightweight air-cooled conductors reduces operator fatigue



ROBUST & STURDY COVERS

FOR S245 / S345(19) ENERGISERS

5-20 METRE & EXTENDED OPTIONS



Sturdy Industrial Connections



Torpedo Shaped Manifold



Twist & Lock Connectors

Optional Accessories

A number of accessories are available to further enhance the arc spraying process:

- ✦ The Arc beam system kit.
- ✦ Remote operation and pendants
- ✦ (19) Series data kits.

They are easily integrable and designed specifically for the Metallisation arc spraying systems.



Arcbeam system kit



Remote operation & pendants



(19) series data kits connectivity & industry 4.0 feedback

OPTIONS

Part No.	Description
ARCBEAM SYSTEM KIT	
ARCBEAM(145)1.6	Arcbeam System Kit for ARC145 using 1.6mm or 2.0mm wires
ARCBEAM(145)2.3	Arcbeam System Kit for ARC145 using 2.3mm or 2.5mm wires
21601/*	3/8" QR Air Hose (* x 6 / 11 / 16 / 21 m)
REMOTE OPERATION & PENDANTS	
PLC-REMOTE-H	Remote operation plug & cable for PLC energisers with Harting Connectors
PLC-REMOTE-K(19)	Remote operation plug & cable for (19) PLC energisers + E-Stop kit
PLC-PENDANT-H	Remote Operation Pendant for PLC Energizers with Harting Connection
PLC-PENDANT-K(19)	Remote operation pendant for (19) PLC energisers + E-Stop kit
(19) SERIES ENERGISER DATA KITS	
DATA(19)-K	Data Kit for (19) Series Energizers

ARC BEAM KIT

The Arc beam system kit reduces the arcspray footprint by forming a cone of compressed air outside the spray stream. This provides several benefits such as finer coatings and improved deposit efficiency when spraying onto small components.

The kit includes the non-opaque parts visible in the exploded illustration to the left.

REMOTE KITS & PENDANTS

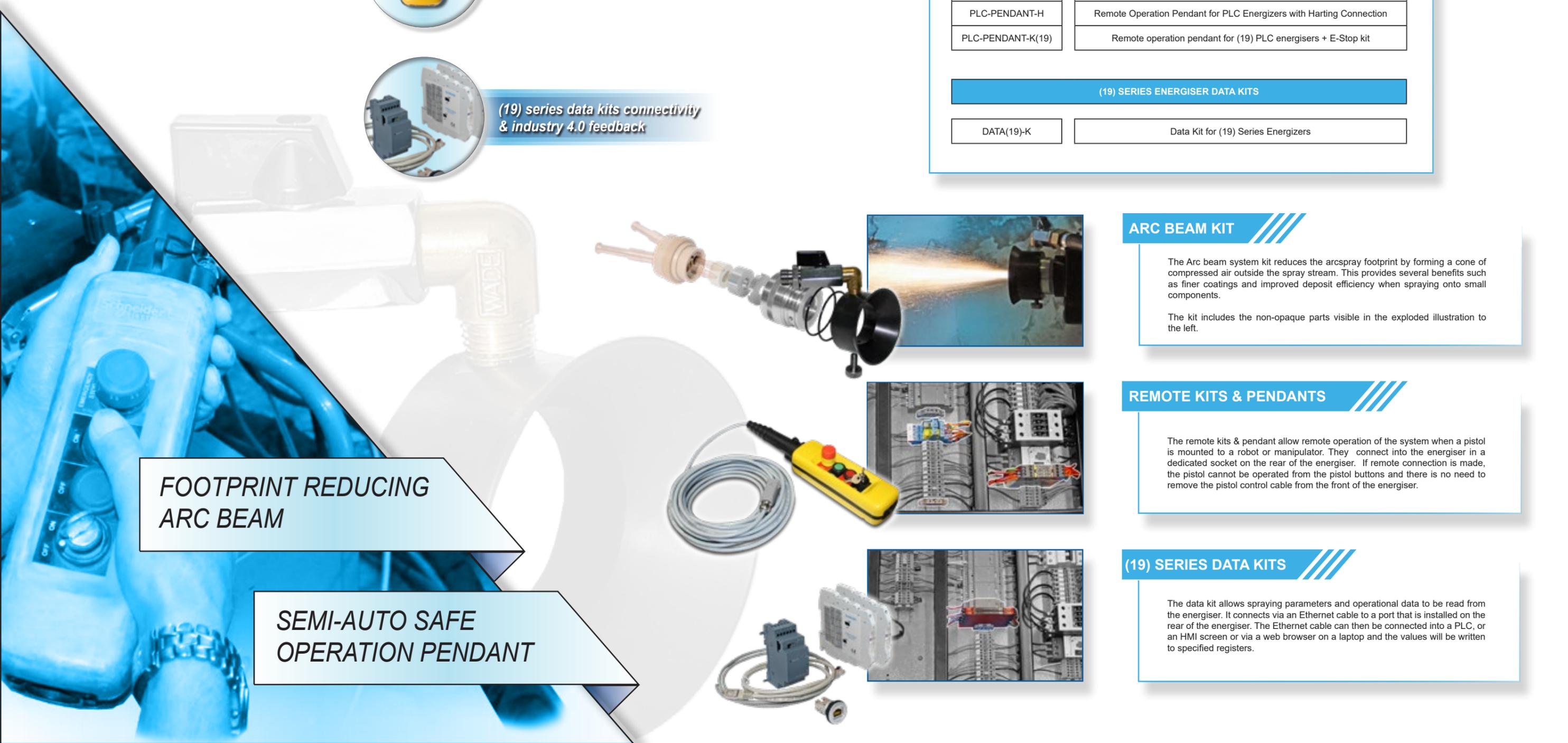
The remote kits & pendant allow remote operation of the system when a pistol is mounted to a robot or manipulator. They connect into the energiser in a dedicated socket on the rear of the energiser. If remote connection is made, the pistol cannot be operated from the pistol buttons and there is no need to remove the pistol control cable from the front of the energiser.

(19) SERIES DATA KITS

The data kit allows spraying parameters and operational data to be read from the energiser. It connects via an Ethernet cable to a port that is installed on the rear of the energiser. The Ethernet cable can then be connected into a PLC, or an HMI screen or via a web browser on a laptop and the values will be written to specified registers.

**FOOTPRINT REDUCING
ARC BEAM**

**SEMI-AUTO SAFE
OPERATION PENDANT**



Packaged Systems



Our most commonly supplied systems are offered as a package with a single part number. Part numbers are made up of the pistol followed by the desired energiser, wire size, supplies length and wire dispense method. Examples are provided below:



Complete Drum &

MIG Systems



Useful Information

TIME TO SPRAY

Material	AREA (m ² @ 100µm)	Time
Metallisation Wire 02E Zinc	1 10 100	2 mins 20 mins 3 hrs 20 mins
Metallisation Wire 01E/17E/25E/28E Aluminium & Alloys	1 10 100	2.5 mins 25 mins 4 hrs 10 mins
Metallisation Wire 21E Zinc/Aluminium 85/15	1 10 100	2 mins 20 mins 3 hrs 20 mins

The table on the left shows the approximate time it would take to spray a given area with 100 µm coating thickness.

For thicker or thinner coatings, the spraying time varies in proportion to the thickness. For example, it takes approximately 2 minutes to spray a 1 m² area of zinc at 100 µm. It would take 4 minutes to spray the same area at 200 µm.

The given times are approximate 'gun-on' spray times and do not make any allowance for stoppages, wire changes, part manipulation etc.

Note: The information given above is intended for guidance purpose only. Material usage and time taken will depend on a number of factors, these including the quality of the prepared substrate and the shape and size of the job.

EXAMPLES

Part No.	Description
ARC145P/S345(19)-1605M	ARC145P/S345(19) Push system, 1.6mm, 5m supplies, MIG dispense
ARC145P/S345(19)-1605D	ARC145P/S345(19) Push system, 1.6mm, 5m supplies, Drum dispense



MIG System Inclusions

INCLUDING

- ✦ 1 x Pistol (wire size as indicated).
- ✦ 1 x Supplies package (length as indicated).
- ✦ 1 x S245(19) or S345(19)-PLC Energiser.
- ✦ 1 x DR145(19)-MIG dispenser and drive unit.
- ✦ 1 x Toolkit.



Drum System Inclusions

INCLUDING

- ✦ 1 x Pistol (wire size as indicated).
- ✦ 1 x Supplies package (length as indicated).
- ✦ 1 x S245(19) or S345(19)-PLC Energiser.
- ✦ 1 x DR145(19)-DRUM dispenser and drive unit.
- ✦ 2 x 21252-51A Wire Dispensing Cone with Adjustable Reeling Pulley Assembly (51CM)
- ✦ 1 x Toolkit.
- ✦ 4m PTFE conduit & 2 x clamp blocks (pair).



Metallisation
thermal spray solution

Typical System Configurations

Metallisation has the right configuration for all requirements. Below are some typical set ups. Variations of these configurations may be possible. Please contact Metallisation to discuss your specific application requirements.

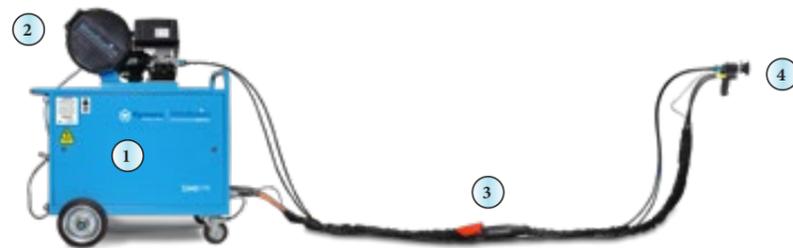


THE PERFECT SOLUTION FOR EVERY APPLICATION

TYPICAL EXTENDED TROLLEY CONFIGURATIONS

Extended Supplies	Pistol Supplies	Total Max
10m	5m	15m
20m		25m
10+20m		35m
20 + 20m		45m

STANDARD CONFIGURATIONS



Most commonly used for anti-corrosion and engineering. MIG reels are easier to move around and most materials are available on MIG reels.

PUSH SYSTEM WITH WIRE IN MIG REELS

- (19) Model Energiser.
- Drive Unit & MIG Reels (can be mounted on Energiser, wall, floor or trolley).
- 5m supplies from wire drive to pistol.
- ARC145P Push Pistol.

EXTENDED CONFIGURATIONS



MIG:

Most commonly used in hard to reach areas such as boilers/vessels where access for the energiser is limited. Also used to spray longer objects where easy movement around the workpiece is needed.

DRUM:

For very long access applications where there is a benefit to remotely site the energiser away from the spraying area and maintain the benefit of having wire in drums.

PUSH SYSTEM WITH DRIVE ON FLOOR

- (19) Model Energiser.
- Supplies: 10, 15 or 20m (from energiser to pistol).
- Drive Unit (on floor / shelf) & MIG Reels (or Drum) with quick release connections.
- Conduits from wire drive to pistol: Standard 5 m.
- ARC145P Push Pistol.



Most commonly used for in-house or on-site anti-corrosion applications where drums can easily be handled.

PUSH SYSTEM WITH WIRE IN DRUMS

- (19) Model Energiser.
- Drive Unit (can be mounted on Energiser, wall, floor or trolley).
- 5m supplies from wire drive to pistol.
- ARC145P Push Pistol.
- Wire in drums.



MIG and DRUM configurations most commonly used as above but with this configuration the ability to extend the supplies is increased further.



The extension supplies from the energiser to trolley are securely joined and protected.

PUSH SYSTEM WITH DRIVE ON TROLLEY

- (19) Model Energiser.
- Extension Supplies can be 10 or 20 m complete supplies or a combination of: 10+20 (making 30 m) or 20+20 (making 40m) - joined with sleeve.
- Drive Unit (on extension trolley) & MIG Reels (or Drum) with quick release connections.
- Conduits from wire drive to pistol: Standard 5m.
- Standard supplies
- ARC145P Push Pistol.

Detailed Specifications



PISTOL

Detailed Specifications

- Industrial 3D printing technology.
- Closed arc for improved spray conditions and efficiency.
- Air concentrator for fine coatings and contact tip cooling.
- Push button design for easy operation and maintenance.
- Standard 1.6, 2.0, 2.3 and 2.5mm wire size.
- Contact tips accessible and easily changed without dis-assembling the spray head.
- Lightweight air-cooled conductor cables are fitted; which reduces the operator supported weight and further improves the overall balance of the pistol.
- Long contact tube and tip arrangement – improved coating quality and reliability due to optimised heat dissipation.
- Spray voltage measured at the pistol for improved reliability and diagnostics with long supplies packs.
- Retrofittable to (16) range energisers (NB: requires new conduits and drive modification).

Key Information

Width	90 mm (3.5 ")
Length	190 mm (7.5 ")
Height	225 mm (8.9 ")
Weight	0.93 kg (2 lbs)
Weight – at a held height of 1.2 m	2.5 kg (5.5 lbs)
Maximum Current	350 Amps

Typical Performance Figures

MATERIAL	WIRE DIAMETER	THROUGHPUT (KG / HR @ 250 A)	THROUGHPUT (KG / HR @ 350 A)	COVERAGE m ² / kg / 100 μm
Metallisation Wire 02E Zinc	2.0 mm 2.3 mm	26.0	36.4	1.07
Metallisation Wire 01E Aluminium	2.0 mm 2.3 mm	6.3	8.8	3.11
Metallisation Wire 21E Zinc/Aluminium 85/15	2.0 mm 2.3 mm	17	23.8	1.28
Metallisation Wire 05E Copper	1.6 mm	12.5	15(@300 A)	0.91
Metallisation Wire 30E,35E,45E, 55E,57E,60E, 65E,80E,84E Steels	1.6 mm	11.3	13.6(@300 A)	1.02
Metallisation Wire 75E Nickel Aluminium	1.6 mm	13.6	16.4(@300 A)	1.09
Metallisation Wire 10E Aluminium Bronze	1.6 mm	11.3	13.6(@300 A)	1.37
Metallisation Wire 15E Phosphor Bronze	1.6 mm	15.8	19(@300 A)	0.91
Metallisation Wire 70E/71E Monel	1.6 mm	14.3	17.2(@300 A)	1.02
Metallisation Cored Wire 103T FeCrB	1.6 mm	12	14.4(@300 A)	1.18

Throughput is assumed to be independent of wire diameter.
All data provided is an approximation and is offered as guidance only as performance can vary depending on application and parameters.

Detailed Specifications

S245/S345(19)-PLC ENERGISER

Detailed Specifications

- 250 / 350 Amp Continuous operation (100% duty cycle).
- Large 'Site Capable' wheels and rigid handle offers portability on site and in workshop.
- Dust proof push button control - for current setting.
- Fan on demand (energy saving and noise reduction when not spraying).
- PLC control for improved reliability and ease of maintenance / fault finding.
- Sealed electrical control circuit - reduces dust ingress for added reliability.
- Specifically designed to suit only ARC spraying.
- LED and Ethernet fault alarm feedback.
- LED mode indicator for closed / open loop mode.
- Closed Loop Current Control – easily switchable / reliable spray rate / over-current protection.
- Robust industrial connections as standard for all control cables.
- Claw and whip-check air connection.
- Air regulators with 'lock-off' potential.
- Digital air pressure switches with display for easy setting and diagnostics
- Thermal switch on rectifiers.
- Heat sink increased for better thermal dissipation.
- Easy access energiser panels & external fuse bank for reduced Mean Time to Repair (MTTR). Shake-proof terminals minimise risk of loose control connections.
- Switched output voltage control.
- 220V/380V/415V input supply options available (hard wired).
- Remote operation E-stop kit allows energiser to be started/ stopped remotely via a pendant or interfaced into an automation E-stop circuit. It comes with a plug that can be wired as required.



Key Information

	S245(19)	S345(19)
Dimensions (W x L x H)	670 mm x 1220 mm / 910 mm 26.4 " x 48 " x 36 "	
Weight	243.8 kg (537.5 lbs)	253.8 kg (559.5 lbs)
Input Power Requirements	380/415/460V 50-60Hz 3 Phase	
Optional Input Power	200/220V 3 phase 50/60hz	
Fusing Required	21A @ 415 Vac 23A @ 380 Vac 40A @ 220 Vac 44A @ 200 Vac	26A @ 460 Vac 29A @ 415 Vac 31A @ 380 Vac 55A @ 220 Vac 60A @ 200 Vac
Max Power Consumption	15 KVA (46Vdc/250A output)	21 KVA (46Vdc/350A output)
Typical Power Consumption	8.5 KVA (Zinc 26 Vdc/250 A output) 12 KVA (Aluminium 35 Vdc/250A output)	12 KVA (Zinc 26 Vdc/350 A output) 16 KVA (Aluminium 35 Vdc/350 A output)
Duty	0-250 AMPS @ 100% Duty Cycle	0-350 AMPS @ 100% Duty Cycle
Output Voltage	0-49 Vdc (nominal) Switched High/Low & 1 - 5	
Air Requirements	1.5 m ³ /min @ 5 bar (53 cfm @ 72.5 psi)	



DIGITAL DISPLAYS

- Easy to read with scale and numerical display.
- Higher accuracy than traditional gauges.
- Warning alert status (ammeter turns red if overcurrent).
- Wide viewing angle with high contrast for ease of viewing inside or out.
- IP65 rated and Gorilla glass screens.

Detailed Specifications



ARC BEAM SYSTEM KIT

Detailed Specifications

- Reduces Arcspray footprint by forming a cone of compressed air outside the spray stream.
- Finer coatings resulting in lower porosity.
- Improved Deposit efficiency when spraying onto small components (less overspray).
- Increased hardness due to higher oxide content.
- Air hoses with quick release connections to connect the accessories to the auxiliary air supply on the energiser.

Technical Information

Maximum Current	350 Amps
Compressed Air	0.7m ³ / min @ 3.5 Bar



REMOTE OPERATION

Detailed Specifications

- The 'REMOTE' items consist of a 10m cable and pre-wired plug to connect to the energiser. The other end is free to allow connection to customer automation/robot etc.
- The 'PENDANT' items consist of a remote operation pendant to start/stop the system and also have an E-stop button for safe operation.
- Allows remote operation of the system for when pistol is mounted to a robot or manipulator.
- Connects into energiser in a dedicated socket on the rear of the energiser. If remote connection is made, the pistol cannot be operated from the pistol buttons and there is no need to remove the pistol control cable from the front of the energiser.

Note:

Pendant comes with 10m control cable to connect to energiser (can be longer on request).



DATA KIT

Detailed Specifications

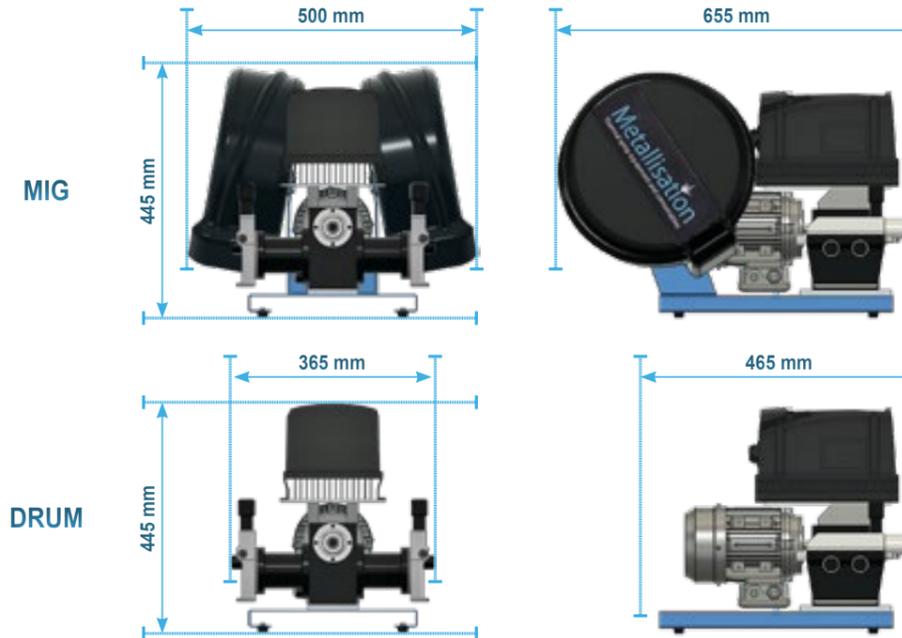
- The data kit allows information to be read from the energiser. It connects via an Ethernet cable to a port that is installed on the rear of the energiser.
- The Ethernet cable can be connected directly into a Siemens PLC, into an HMI screen (either programmable or not) that has an Ethernet port (for example, Proface or Simatic screen), or to a web browser on a laptop.
- Once connected, the values from the energiser will be written to specified registers.
- Industry 4.0 feedback.

Data available:

Spray OK indication (on when the spray current is above 15A).
Spray Current: output value = actual spray current.
Spray Voltage: output value = actual spray voltage.
Nozzle Air Pressure: output value = nozzle air pressure in bar.
Auxiliary Air Pressure: output value = auxiliary air pressure in bar.
Fault indications (over temperature, low air pressure, over current).

Detailed Specifications

DRIVE UNIT DIMENSIONS



MIG Configuration

Width	500 mm (19.7 ")
Height	445 mm (17.5 ")
Length	655 mm (25.8 ")
Weight	28.2 kg (62 lbs)

Drum Configuration

Width	365 mm (14.4 ")
Height	410 mm (16.1 ")
Length	465 mm (18.3 ")
Weight	24.2 kg (53 lbs)



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