



KEMPPI K5 WELDING EQUIPMENT

# KempArc SYN

AUTOMATED QUALITY AND PRODUCTIVITY



## KempArc SYN

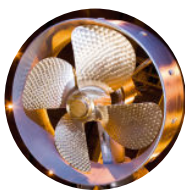


### SYNERGIC MIG/MAG WELDING AUTOMATION SYSTEM

If you are looking for a productive and reliable robotic welding solution, we have just the thing for you. The compact and powerful **KempArc SYN 500** is designed for synergic MIG/MAG welding automation. Its excellent arc characteristics will deliver high quality welds. All common fieldbus protocols can be used for the robot interface. KempArc SYN 500 is especially well suited for cost-effective retrofit cases and heavy duty applications, delivering 430 A at 100% duty cycle. It is available both in analogue and digital models for integration with different robotic control systems.

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### KEY APPLICATIONS



COMPONENT  
MANUFACTURING



MECHANICAL  
ENGINEERING



BUILDING STEEL  
FRAMES



## KEY BENEFITS

430 A

WITH 100 % DUTY CYCLE

For maximized deposit rates

90

MEMORY CHANNELS

For faster setup between  
different applications

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## BENEFITS

- Robot interface integrated in the power source
- Easy programming with the synergic welding programs and 90 memory channels
- Fast fieldbus-based communication guarantees integration with all common robot brands
- Available in digital and analogue models for varied integration possibilities
- Compact and lightweight wire feed mechanism



## BENEFITS

### ROBOTIC WELDING MADE EASY

The synergic curves available from the control panel provide assistance to the programmer in selecting the right parameters. The user can select the thickness of the plate to be welded on the control panel, after which KempArc SYN 500 automatically proposes the suitable welding parameters.

### PRODUCTIVE QUALITY WELDING

KempArc SYN 500's fieldbus-based communication allows fast communication between the robot control system and welding equipment. This increases the productivity of automated welding, where the number of welds can reach thousands per day. Combine this with excellent arc characteristics, and you can be sure to reach high quality welds with minimum downtime.



## WHAT'S IN THE SYSTEM - EQUIPMENT



### KempArc SYN 500 Power source

Synergic MIG/MAG welding automation system, especially well-suited for cost-effective retrofit cases and heavy duty applications. KempArc SYN 500 is available in digital and analogue (AN) models for integration with different robotic control systems.



### Stand for power source

For easy transport and keeping floor free under welder.



### DT400 Wire feeder

Wire feeder for automated welding with a reliable 4-roll wire feed mechanism and full metal feed rolls. DT400 can be mounted on the back of the robot arm or integrated with any mechanized welding system.



### Feed roll kits for DT400 wire feeder



### KempCool 10

Cooling unit suitable for use with Kemppi KempArc welding equipment. KempCool 10 performs 1 kW of cooling power with a three liter tank that can be filled with 20%-40% ethanol/water mixture, or any other suitable antifreeze agent.



### Robot interface cards

Fieldbus communication between power source and robot controller is enabled with modules. The protocol can be chosen based on customer preference. Modules are placed inside the KempArc robot interface chassis.



### Interconnection cables for KempArc

The interconnection cable set contains several cables and hoses. The cable set is used for delivering the welding power, shielding gas, cooling liquid, and control signals from the welding power source to the wire feeder. Interconnection cable sets are available in zipper bags or in corrugated sleeves.



### Interconnection cable brackets



### Earth return cable 70

Earth return cable, available 70 mm<sup>2</sup> thick and 5, 10, and 15 m long.



### Wire conduit for wire spools

High quality wire conduit delivers the filler wire smoothly from wire spool to wire feeder. Male connectors on both ends fit to Kemppi feeder and Kemppi wire spool support. Order codes does not include female snap connector for wire spool holder or wire drum. It must be ordered separately. In case of stainless steel or aluminium, a separate chili liner is also required.



### Snap connector for drum or spool holder (female)

Female connector for the wire drum or spool holder.



### Wire spool holder

Suitable for standard 15 kg wire coil. NOTE: Female connector for wire conduit not included. Must be ordered separately.



### Protective cover for wire spool

Plastic cover for wire spool holder.



### Floor stand for wire spool holder

Floor stand for wire spool holder.



### Wire feeder mounting brackets

Brackets for mounting the wire feeder on the robot's 3rd axis. The design is robot model specific. Order code includes metal plates. Insulation rings and Screws are not included if order code begins with W.

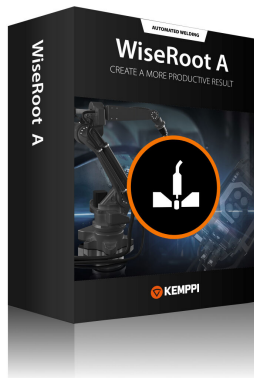


### Welding gun cleaning station

Regular mechanical cleaning of the internal surfaces of the gas nozzle provides steady and good shielding gas flow for welding. Helps to avoid spatter to form electrical connection bridges between contact tip and the gas nozzle.



## WHAT'S IN THE SYSTEM - SOFTWARE



### WiseRoot-A

Kemppi Wise welding process for automated welding.



### WiseThin-A

Kemppi Wise welding process for automated welding.





## ALTERNATIVE - EQUIPMENT AND SOFTWARE



### DT400L Wire feeder

Wire feeder for automated welding with a reliable 4-roll wire feed mechanism and full metal feed rolls. DT400 can be mounted on the back of the robot arm or integrated with any mechanized welding system.



### DT410 Wire feeder

Wire feeder for automated welding with a reliable 4-roll wire feed mechanism and full metal feed rolls. DT410 can be mounted on the back of the robot arm or integrated with any mechanized welding system.



### KempArc Pulse

Pulsed MIG/MAG welding automation system compatible with Kemppi Wise welding functions and processes for increased productivity and quality. Available in digital and analogue models for integration with different robotic control systems.



### Wire conduit for wire drums

Alternative solution for wire conduit when distance between wire feeder and wire drum is greater than 5 meters. NOTE: When ordering W005195 with the desired length, you also need snap connectors: two male (W005197) and one female (W005189).



### Snap connector for wire conduit (male)

Male connector for wire conduit. Note! Two pieces needed per conduit



## KempArc SYN 500 Power source

Product code	KempArc SYN 500 (digital) - 6201500 KempArc SYN 500 (analogue) - 6201500AN
Connection voltage 3~ 50/60 Hz	400 V -15...+20%
Fuse (delayed)	35 A
Minimum generator power	27kVA (60%) 20kVA (100%)
Welding range	10 ... 42 V
Open circuit voltage	50 V
Rated power 60% ED	26,1 kVA
Rated power 100% ED	20,3 kVA
Primary current 50% ED I <sub>1</sub> max	40,0 A
Primary current 100% ED I <sub>1</sub>	31,0 A
Connection cable size	6 mm <sup>2</sup>
Idle power (no load power)	25 W
Efficiency	87%
Power factor	0,9
Voltage supply for auxiliary devices	50 V
Auxiliary device supply fuse (X14, X15)	6, 3 A delayed
Voltage supply for the cooling device	1-ph 400 VAC/250 VA
Max. welding voltage	46 V
Max. output current	430 A (100 %) 500 A (60 %)
Operating temperature range	-20 ... +40 °C
External dimensions LxWxH	590 × 230 × 500 mm
Weight (no accessories)	37 kg
Degree of protection	IP23C
EMC class	A
Storage temperature range	-40 ... +60 °C

## DT400 Wire feeder

## DT410 Wire feeder

Product code	6203400 / 6203400L	6203410
Wire feed speed	0...25 m/min	0...25 m/min
Rated power	100 W	100 W
Filler wires	0.8...1.6 mm	0.8...1.6 mm
Operating voltage	50 VDC	50 VDC
Operating temperature range	-20...+40°C	-20...+40°C
Degree of protection	n IP23S	n IP23S
External dimensions	269 x 175 x 169 mm	269 x 175 x 169 mm
EMC class	A	A
Weight	4.5 kg	4.5 kg
Loadability	40°C 100%ED 500 A	40°C 100%ED 500 A
Welding gun connector	Euro	PowerPin



## KempCool 10

Product code	6208100
	Cooling liquid - 10 liter can - SP9810765
Connection voltage 3~ 50/60 Hz	400 V -15...+20%
Rated power	250 W (100 %)
Rated power 100% ED	250 W
Cooling liquid	20 - 40% Monopropylenglycol - water
Max. pressure at output	0,4 MPa
Operating temperature range	-20 ... +40 °C
External dimensions LxWxH	570 × 230 × 280 mm
Weight (no accessories)	11 kg
Degree of protection	IP23S
EMC class	A
Cooler tank volume	3 l
Cooling power	1 kW
Storage temperature range	-40 ... +60 °C

## Welding gun cleaning station

Product code	SP600674
	Equipped with wire cutter, gas nozzle inside reamer and anti-spatter spray unit; order code includes reamer setup for both gas and water cooled nozzles.
Operating voltage	10 to 30 V DC
Weight	22 kg
Nominal pressure	6 bar 88 psi
Nominal flow	Approx. 500 l/min
Operating pressure	6 – 8 bar / 88 - 116 psi
Nominal rotational speed	800 rpm
Max. Wire size	1.6mm (by 6 bar 7 88 psi air pressure)
Ambient temperature	+5° to +50°C
Protection	IP 21
5/2 way valves	
Rated voltage	24 V DC
Power consumption	4.5 W (EACU)
Permitted residual ripple	V <sub>pp</sub> < 10%
Continuous current	Max. 200 mA
Current consumption	approx. 4 mA (24 V)
Voltage drop	approx 1.2 V (200 mA)

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**Kemppi** is the design leader in the arc welding industry. We are committed to boosting the quality and productivity of welding by continuous development of the welding arc and by working for a greener and more equal world. Kemppi supplies sustainable products, digital solutions, and services for professionals from industrial welding companies to single contractors. The usability and reliability of our products is our guiding principle. We operate with a highly skilled partner network covering over 70 countries to make its expertise locally available. Headquartered in Lahti, Finland, Kemppi employs close to 800 professionals in 16 countries and has a revenue of 195 MEUR in 2022.

