

# A7 MIG Welder

THE NEW STANDARD IN ROBOTIC MIG WELDING



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### THE NEW STANDARD IN ROBOTIC MIG WELDING

A7 MIG Welder is the state-of-the-art solution for robotic arc welding, ideal for integration with any robot brand. It is a complete, perfectly balanced process package that includes a welding gun, wire feeder, power source, and cooling unit. The equipment is designed to meet the highest Kemppi standards, which guarantee reliable welding performance with no compromises.

The Kemppi Wise software provides added value for customers by significantly improving welding speed, boosting production efficiency, and enabling the same equipment to be used for a variety of welding tasks.

The system's modern, browser-based user interface allows easy access to the power source from a standard computer with a regular browser. This enables unprecedented savings in setup time and provides quality control benefits throughout the equipment's life cycle.

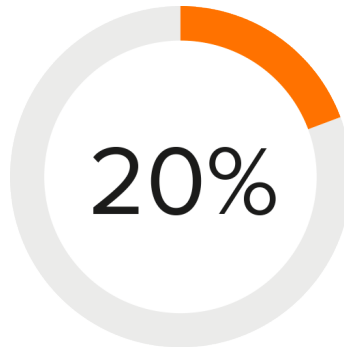


## KEY BENEFITS



### UNIVERSAL

Can be integrated with any robot brand



### HIGHER WELDING SPEED

With the Kempfi WiseFusion process



### EASY ACCESS TO POWER SOURCE

With a computer and any web browser

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## BENEFITS

- Quick and easy integration with any robot brand with modern fieldbus hardware modules.
- Access to the power source from an external computer via ethernet with a regular web browser. No extra programs needed. Enables radical savings in setup time, as well as quick and easy parameter configuration, system management, and monitoring throughout the equipment's life cycle.
- Increased productivity and a short payback period thanks to the Wise software and a wide range of available functions. Wise processes are fine-tuned and pre-set to optimize productivity with welding speeds typically used in automated welding. The same equipment can be used for a wide variety of welding tasks and applications.
- A comprehensive, completely balanced package from one supplier results in significant savings in time and effort when integrating the arc-welding package with the robot application.
- Suitable for any industry using robotic welding for thin and thick mild steel, stainless steel, and aluminum components.
- Enhanced arc ignition functionality (Touch Sense Ignition) delivers minimum spatter and stabilizes the arc immediately after ignition.
- The robust wire feeding casing with integrated wire feeder controller electronics enables faster and more accurate control with better resistance to external interference.
- An integrated gas-flow sensor in the wire feeder enables the shielding gas flow to be monitored closer to the arc by default – no need for additional sensors.
- Search voltage level for the system can be set up freely from web browser interface



## PRODUCT OPTIONS



### A7 Power Source 350

A7 MIG Welder 350 is a welding power source designed for demanding professional use in robotic welding systems. It is suitable for synergic pulsed MIG/MAG, synergic 1-MIG and basic MIG/MAG welding, as well as the modified WiseRoot+™ and WiseThin+™ processes. The robot interface unit on top of the power source handles the communication with a robot and contains all necessary connections to integrate with a welding cell.



### A7 Power Source 450

A7 MIG Welder 350 and 450 are welding power sources designed for demanding professional use in robotic welding systems. They are suitable for synergic pulsed MIG/MAG, synergic 1-MIG and basic MIG/MAG welding, as well as the modified WiseRoot+™ and WiseThin+™ processes. The robot interface unit on top of the power source handles the communication with a robot and contains all necessary connections to integrate with a welding cell.



### A7 Wire Feeder 25

The A7 Wire Feeder 25 is a durable and powerful two motor for 4-wheel feeding system designed to work seamlessly with A7 MIG Welder power sources. A separate attachment bracket is required for mounting the wire feeder on robot.



### A7 Wire Feeder 25 -PP

The A7 Wire Feeder 25 is a durable and powerful two motor for 4-wheel feeding system designed to work seamlessly with A7 MIG Welder power sources. A separate attachment bracket is required for mounting the wire feeder on robot.



### WiseFusion

A welding function that ensures consistent weld quality in all positions by automatically regulating arc length. Creates and maintains an optimal short-circuit characteristic in pulsed MIG/MAG and spray-arc welding.



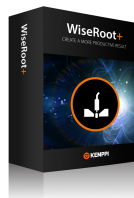
### WisePenetration

A welding function for ensured penetration in synergic MIG/MAG welding. Delivers constant power to the weld pool regardless of changes in welding gun orientation or distance between the welding gun and work piece.



### WiseThin+

Optimized short arc process suitable for welding sheet metals and thicker plates in position welding, even in case of wider gaps and gap variations. Produces a spatterless arc with precise digital control.



### WiseRoot+

Optimized short arc process for productive root pass welding. Excellent weld quality through control of arc voltage and timing of filler metal droplet transfer. Gives higher speed than MMA, TIG or MIG/MAG short arc welding.



## ACCESSORIES

Kemppi A7 MIG Gun 500-w

### A7 MIG Gun 500-w

Water-cooled robotic welding gun package offering exceptional precision. Choose a suitable type from hollow wrist or non-hollow wrist versions to match your needs. This gun can be used with all common robot brands and can be equipped with shock sensor modules.

Kemppi A7 MIG Gun 500-g

### A7 MIG Gun 500-g

Gas-cooled robotic welding gun package offering exceptional precision. Choose a suitable type from hollow wrist or non-hollow wrist versions to match your needs. This gun can be used with all common robot brands and can be equipped with shock sensor modules.

Kemppi A7 Cooler

### A7 Cooler

Cool X cooling unit for liquid-cooled setups is the ultimate choice providing 1 kW of cooling power with 3 liters of cooling liquid. Equipped with a pressure gauge instead of a flow meter.

Kemppi Stand for power source

### Stand for power source

For easy transport and keeping floor free under welder.

Kemppi Wire Feed Roll Kit

### Wire Feed Roll Kit

Kemppi Robot interface module

### Robot interface module

Fieldbus communication between power source and robot controller is enabled with modules. The protocol can be chosen based on customer preference.

Kemppi Interconnection cables for A7

### Interconnection cables for A7

The interconnection cable set contains several cables and hoses. It 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 set is available in a zipper bag or a corrugated sleeve, and it is attached to the robot arm with brackets.

Kemppi Interconnection cable brackets

### Interconnection cable brackets

Kemppi Earth return cable 70

### Earth return cable 70



### Kemppi Wire conduit for wire spools

#### 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.

### Kemppi Wire conduit for wire drums

#### 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).

### Kemppi Snap connector for wire conduit (male)

#### Snap connector for wire conduit (male)

Male connector for wire conduit, two pieces needed per conduit.

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

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

Female connector for the wire drum or spool holder.

### Kemppi Wire spool holder

#### Wire spool holder

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

### Kemppi Protective cover for wire spool

#### Protective cover for wire spool

Plastic cover for wire spool holder.

### Kemppi Floor stand for wire spool holder

#### Floor stand for wire spool holder

Floor stand for wire spool holder.

### Kemppi Wire feeder mounting brackets for A7

#### Wire feeder mounting brackets for A7

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. Screws for robot's 3rd axis are not included.

### Kemppi Welding gun cleaning station

#### 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.



## Kemppi Mounting kit A7 dual feeder

### Mounting kit A7 dual feeder

For non-hollow wrist robot models and applications where welding gun exchange unit is used this set enables use of two wire feeders and one power source combination. Switching between two wire feeders can be done from robot controller. The kit includes a wire feeder switching card, a flat band cable, and a harness with connectors for the wire feeder and for the mother board of the robot interface unit.



# TECHNICAL SPECIFICATIONS

## POWER SOURCES

### A7 Power Source 350

Product code	6201350
Connection voltage 1~ 50/60 Hz	N/A
Connection voltage 3~ 50/60 Hz	400 V, -15 %...+20 %
Fuse (delayed)	25 A
Minimum generator power	35 kVA
Welding range	20 A / 12 V - 350 A / 46 V
Output 60% ED	350 A
Output 100% ED	330 A
Mains connection cable	4G6 (5 m)
Supply current (maximum)	23 A
Supply current (effective)	21 A
Idle power	25 W
Power factor at max. current	0.85
No-load voltage (peak)	U <sub>0</sub> = 80 V - 98 V
Open circuit voltage (average)	85 V -103 V
Efficiency (100 % duty cycle)	87 %
Minimum short circuit power S <sub>sc</sub> of supply network	5.5 MVA
Max apparent power	22 kVA
Power supply for cooling unit	24 V DC / 50 VA
Power supply for auxiliary unit	50 V DC / 100 W
Operating temperature range	-20 ... +40 °C
External dimensions LxWxH	610 × 240 × 520 mm
Weight (no accessories)	40.2 kg
Degree of protection	IP23S
Weight (with connection cable)	42.6 kg
EMC class	A
Storage temperature range	-40 ... +60 °C
Temperature class	155 (F)





## A7 Power Source 450

Product code	6201450
Connection voltage 1~ 50/60 Hz	N/A
Connection voltage 3~ 50/60 Hz	400 V, -15 %...+20 %
Fuse (delayed)	35 A
Minimum generator power	35 kVA
Welding range	20 A / 12 V - 450 A / 46 V
Output 60% ED	450 A
Output 100% ED	350 A
Mains connection cable	4G6 (5 m)
Supply current (maximum)	32 A
Supply current (effective)	25 A
Idle power	25 W
Power factor at max. current	0.88
No-load voltage (peak)	U <sub>0</sub> = 80 V - 98 V
Open circuit voltage (average)	85 V -103 V
Efficiency (100 % duty cycle)	87 %
Minimum short circuit power S <sub>sc</sub> of supply network	5.5 MVA
Max apparent power	22 kVA
Power supply for cooling unit	24 V DC / 50 VA
Power supply for auxiliary unit	50 V DC / 100 W
Operating temperature range	-20 ... +40 °C
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EMC class	A
Storage temperature range	-40 ... +60 °C
Temperature class	155 (F)



## WIRE FEEDERS

### A7 Wire Feeder 25

Product code	6203510
Wire feed mechanism	4-roll, two motors
Wire feed speed adjustment	0.5 – 25 m/min
Gun connection	Euro
Filler wire sizes (Fe solid)	0.8 – 1.6 mm
Filler wire sizes (Fe cored)	1.0 – 1.6 mm
Filler wire sizes (Ss)	0.8 – 1.6 mm
Filler wire sizes (Al)	1.0 – 2.4 mm
Filler wire sizes (CuSi)	0.8 – 1.2 mm
Operating voltage (safety voltage)	50 V DC
Operating temperature range	-20 ... +40 °C
External dimensions LxWxH	380 × 250 × 170 mm
Weight (no accessories)	7.8 kg
Degree of protection	IP21S
EMC class	A
Storage temperature range	-40 ... +60 °C

### A7 Wire Feeder 25 -PP

Product code	6203502
Wire feed mechanism	4-roll, two motors
Wire feed speed adjustment	0.5 – 25 m/min
Gun connection	PP
Filler wire sizes (Fe solid)	0.8 – 1.6 mm
Filler wire sizes (Fe cored)	1.0 – 1.6 mm
Filler wire sizes (Ss)	0.8 – 1.6 mm
Filler wire sizes (Al)	1.0 – 2.4 mm
Filler wire sizes (CuSi)	0.8 – 1.2 mm
Operating voltage (safety voltage)	50 V DC
Operating temperature range	-20 ... +40 °C
External dimensions LxWxH	380 × 250 × 170 mm
Weight (no accessories)	7.8 kg
Degree of protection	IP21S
EMC class	A
Storage temperature range	-40 ... +60 °C

## SOFTWARE

### WiseFusion

Product code	X5500001 (X5 FastMig) X8500000 (X8 MIG Welder)
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## WisePenetration

Product code	9991000 (FastMig M, FastMigX) A7500001 (A7 MIG Welder)
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## WiseThin+

Product code	X5500004 (X5 FastMig) X8500004 (X8 MIG Welder)
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## WiseRoot+

Product code	X5500003 (X5 FastMig) X8500003 (X8 MIG Welder)
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## ACCESSORIES

### A7 Cooler

Product code	6068220 Cooling liquid - 10 liter can - SP9810765
Operating voltage (safety voltage)	400 V -15 ...+20 %
Maximum pressure	0.4 Mpa
External dimensions LxWxH	570 x 230 x 280 mm
Weight (no accessories)	11 kg
Degree of protection	IP23S
Tank volume	~3 l
EMC class	A
Cooling power	1 kW
Storage temperature range	-40 ...+60 °C
Operating temperature	-20 ...+40 °C
Flow sensor type	[l/min]

### Stand for power source

Product code	6185295
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### Wire Feed Roll Kit

Product code	See technical specifications
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### Robot interface module

Product code	See technical specifications
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### Interconnection cables for A7

Product code	See technical specifications
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### Interconnection cable brackets

Product code	See technical specifications
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### Earth return cable 70

Product code	6184711 (5 m, 70 mm <sup>2</sup> ), 6184712 (10 m, 70 mm <sup>2</sup> ), 6184713 (15 m, 70 mm <sup>2</sup> )
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### Wire conduit for wire spools

Product code	See technical specifications
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### Wire conduit for wire drums

Product code	See technical specifications
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### Snap connector for wire conduit (male)

Product code	W005197 - two pieces needed per conduit
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### Snap connector for drum or spool holder (female)

Product code	W005189
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### Wire spool holder

Product code	W007628 (right), W007629 (left)
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### Protective cover for wire spool

Product code	SP007940
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### Floor stand for wire spool holder

Product code	W007356
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### Wire feeder mounting brackets for A7

Product code	See technical specifications
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## 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	Vpp < 10%
Continuous current	Max. 200 mA
Current consumption	approx. 4 mA (24 V)
Voltage drop	approx 1.2 V (200 mA)

## Mounting kit A7 dual feeder

Product code	SP013699
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[WWW.KEMPPI.COM](http://WWW.KEMPPI.COM)

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**Kemppi** is the design leader of the arc welding industry. We are committed to boosting the quality and productivity of welding by continuous development of the welding arc. Kemppi supplies advanced 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 17 countries and has a revenue of 140 MEUR.

