IS-Q Series - Inverter Power Supply (formerly known as ISQ Series)

The IS-Q Series - Inverter Power Supply is designed to be used in combination with mechanical, pneumatical or motorised weld heads. It offers process control monitoring with MG3 and with the OP-AWS3-A Active Welding System. The OP-AWS3-A integrates the process control of all mechanical and electrical parameters, static and dynamic process monitoring, quality analysis with advanced SPC feature and datalogging.

Key features IS-Q Series - Inverter Power Supply

- Compact design for optimal system integration
- Integrated process monitoring allows for quality control
- Short cycle times thanks to high output current
- Up to 20 kHz feedback for fast reaction to fluctuations in the weld process
- Optimum feedback thanks to current, voltage and power mode controls
- Additional force control via proportional valve

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Specifications IS-Q Series - Inverter Power Supply (formerly known as ISQ Series) 1/2

.	IS-Q3000A	IS-Q6000A	IS-Q250A
Performance range	0,75 kA – 1,5 kA - 3 kA	6 kA	10 kA
Weld current types	Controlled DC inverter current	Controlled DC inverter current	AC or DC inverter
Features	Inverter with integrated power on button, Performance and Control Electronics, Voltage control cable und removable Display MFT1 (optional: AWS3-Display) and additional: compact version w/integrated transformer, voltage sensor cable	Inverter with integrated power on button, Performance and Control Electronics, Voltage control cable und removable Display MFT1 (optional: AWS3-Display) and additional: Compact version w/integrated transformer, voltage sensor cable	Inverter with integrated power on button, Performance and Control Electronics, Voltage control cable und removable Display MFT1 (optional: AWS3-Display) and additional: Separate DC- or AC-transformer
Options	19“ plug-in unit without main unit	19“ plug-in unit ithout main unit	19“ plug-in unit without main unit
Control / control mode	Current, voltage or power feedback control, independently adjustable independently for each pulse, APC (Active Part Conditioner) function and current, voltage, performance and energy limits	Current, voltage or power feedback control, independently adjustable independently for each pulse, APC (Active Part Conditioner) function and current, voltage, performance and energy limits	Current, voltage or power feedback control, independently adjustable independently for each pulse, APC (Active Part Conditioner) function and current, voltage, performance and energy limits
Programmable weld schedules / external weld schedule selection	99 at single axis; 49 per head at dual axis	99 at single axis; 49 per head at dual axis	99 at single axis; 49 per head at dual axis
# of weld pulses	1st and/or 2nd pulse, 2nd pulse can be repeated max 10 times (decrease adjustable down to 1% of 2nd pulse)	1st and/or 2nd pulse, 2nd pulse can be repeated max 10 times (decrease adjustable down to 1% of 2nd pulse)	1st and/or 2nd pulse, 2nd pulse can be repeated max 10 times (decrease adjustable down to 1% of 2nd pulse)
Weld pulse control	Up slope, weld-time, down-slope, break time, impuls cycle	Up slope, weld-time, down-slope, break time, impuls cycle	Up slope, weld-time, down-slope, break time, impuls cycle
Current measurement	Integrated toroidal coil (Rogowski coil)	Integrated toroidal coil (Rogowski coil)	external toroidal coil
Voltage measurement	Potential free, external connection (X10 axis/head 1; X11 axis/head 2)	Potential free, external connection (X10 axis/head 1; X11 axis/head 2)	Potential free, external connection (X10 axis/head 1; X11 axis/head 2)
Limit values	Display with limit exceeding upper and lower limit, time limit, welding energy limit with sensitive components (weld to limit)	Display with limit exceeding upper and lower limit, time limit, welding energy limit with sensitive components (weld to limit)	Display with limit exceeding upper and lower limit, time limit, welding energy limit with sensitive components (weld to limit)
Out of limit error message	Text indication with limit and device errors; monitoring limits for U, I or P; + and – tolerance windows individually adjustable	Text indication with limit and device errors; monitoring limits for U, I or P; + and – tolerance windows individually adjustable	Text indication with limit and device errors; monitoring limits for U, I or P; + and – tolerance windows individually adjustable
Parts check	Test pulse for part detection (pre-weld-check)	Test pulse for part detection (pre-weld-check)	Test pulse for part detection (pre-weld-check)
Operation	One button toggle wheel, monochrome display, Optional: coloured OP-AWS3-A Display, Profibus or Ethernet IP	One button toggle wheel, monochrome display, Optional: coloured OP-AWS3-A Display, Profibus or Ethernet IP	One button toggle wheel, monochrome display, Optional: coloured OP-AWS3-A Display, Profibus or Ethernet IP
EU Certification	CE Compliant	CE Compliant	CE Compliant

Continuous sound pressure level	The equivalent continuous sound pressure level rated A is below 70 dB. Sound pressure levels may vary depending on the welding material and the environmental conditions. If necessary consult an acoustic specialist.	The equivalent continuous sound pressure level rated A is below 70 dB. Sound pressure levels may vary depending on the welding material and the environmental conditions. If necessary consult an acoustic specialist.	The equivalent continuous sound pressure level rated A is below 70 dB. Sound pressure levels may vary depending on the welding material and the environmental conditions. If necessary consult an acoustic specialist.
Electrical data			
Supply voltage	3x 400 VAC, ± 10%, PE; 3x 230 V (optional), ISQ20-MFC 19 ± 10%, PE : non-heating, 3 pole connector	3x 400 VAC, ± 10%, PE; 3x 230 V (optional), ± 10%, PE ISQ20-MFC 19": non-heating, 3 pole connector	3x 400 VAC, ± 10%, PE
Mains frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Fusing	with 400 V: 3x 16 A, delayed; with 230 V (optional): 3x 32A, delayed	with 400 V: 3x 16 A, delayed; with 230 V (optional): 3x 32A, delayed	3 x 32A, delayed
Connecting cable	with 400 V: 4 x 2.5 mm², with 230 V (optional): 4 x 4 mm²	with 400 V: 4 x 2.5 mm², with 230 V (optional): 4 x 4 mm²	4 x 6 mm²
Protection class	IP30 ISQ20-MFC 19": depending on housing	IP30 ISQ20-MFC 19": depending on housing	IP30 ISQ20-MFC 19": depending on housing
Welding transformer	internal for 3 kA	internal for 6 kA	External DC: IT-60X AC: TRM3 14-9 V MT40X-530
Power data	IS-Q3000A	IS-Q6000A	IS-Q250A
Connected load	11 kVA	11 kVA	22 kVA
Switching frequency	max. 20 kHz	max. 14 kHz	1 – 10 kHz (AC) 1 – 5 kHz (DC) depending on primary current
Output frequency	40 kHz	26 kHz	1 – 10 kHz (AC) 2 – 10 kHz (DC)
Fundamental frequency AC	---	---	AC: 50 – 250 Hz
Rated power	12 kVA	24 kVA	40 kVA (DC)
Max weld current	3 kA with 5% d.r.	6 kA with 5% d.r.	10 kA with 8% d.r. DC only
Max. weld period	320 ms/pulse	320 ms/pulse	640 ms/pulse
Min. weld period	0.7 ms	0.7 ms	DC: 0,7 ms AC: 0,5 x impuls frequency
Rated output current	2 kA 11% d.r.	3 kA 20% d.r.	depending on transformer
Min. terminal voltage	4 V with 3 kA	4 V with 6 kA	DC: 4 V with 10 kA AC: dep on transformer
Max. open-circuit voltage	10 V	10 V	DC: 10 V AC: dep on transformer
Interface			
Secondary connections	CU-rails, 2 x M8 internal thread	CU-rails, 2 x M8 internal thread	Depending on transformer
Analog input	Pressure sensor for proportional valve	Pressure sensor for proportional valve	Pressure sensor for proportional valve
Analog output	Proportional valve control	Proportional valve control	Proportional valve control
Digital interfaces	via D-Sub-9 socket; welding data output in ASCII-compatible printing format	via D-Sub-9 socket; welding data output in ASCII-compatible printing format	via D-Sub-9 socket; welding data output in ASCII-compatible printing format
Binary interface input	Start, quick stop, pressure switch, proximity switches, pressure sensor	Start, quick stop, pressure switch, proximity switches, pressure sensor	Start, quick stop, pressure switch, proximity switches, pressure sensor
Binary interface output	a.o. stepping contact, counter, set point deviation, closing stroke, welding pressure, air valves	a.o. stepping contact, counter, set point deviation, closing stroke, welding pressure, air valves	a.o. stepping contact, counter, set point deviation, closing stroke, welding pressure, air valves
Operation			

Cooling	Forced air ventilation, temperature controlled	Forced air ventilation, temperature controlled	Transformer water cooled
Moisture	40 - 70 %, not condensating	40 - 70 %, not condensating	40 - 70 %, not condensating
Ambient Temperature	0 - 40°C	0 - 40°C	0 - 40°C
.	IS-Q3000A	IS-Q6000A	IS-Q250A
Weight inverter	approx 33 kg	approx 43 kg	approx 20 kg (without transforner)
Dimensions inverter (BxHxW)	216 x 420 x 480 mm 216 x 420 x 550 mm (including projection) ISQ20-MFC-19": 482 x 174 x 315 mm	216 x 420 x 480 mm 216 x 420 x 550 mm (including projection) ISQ20-MFC-19": 482 x 174 x 315 mm	216 x 420 x 480 mm 216 x 420 x 550 mm (including projection) ISQ20-MFC-19": 482 x 174 x 315 mm
Weight transformer	---	---	IT-60X: approx 16 kg TRM3: approx 45 kg MT-40X-530: approx 63 kg
Dimensions transformer (BxHxW) in mm	---	---	TRM3: 360 x 150 x 185 IT-60X: 284 x 110 x 170 MT-40X-530: 732 x 92 x235

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Specifications IS-Q Series - Inverter Power Supply (formerly known as ISQ Series) 2/2

.	IS-Q500A
Performance range	20 kA
Weld current types	
Features	Inverter with integrated power on button, Performance and Control Electronics, Voltage control cable und removable Display MFT1 (optional: AWS3-Display) and additional: Separate DC- or AC-transformer, external main fuse and net filter
Options	19“ plug-in unit without main unit
Control / control mode	Current, voltage or power feedback control, independently adjustable independently for each pulse, APC (Active Part Conditioner) function and current, voltage, performance and energy limits
Programmable weld schedules / external weld schedule selection	99 at single axis; 49 per head at dual axis
# of weld pulses	1st and/or 2nd pulse, 2nd pulse can be repeated max 10 times (decrease adjustable down to 1% of 2nd pulse)
Weld pulse control	Up slope, weld-time, down-slope, break time, impuls cycle
Current measurement	external toroidal coil
Voltage measurement	Potential free, external connection (X10 axis/head 1; X11 axis/head 2)
Limit values	Display with limit exceeding upper and lower limit, time limit, welding energy limit with sensitive components (weld to limit)
Out of limit error message	Text indication with limit and device errors; monitoring limits for U, I or P; + and – tolerance windows individually adjustable
Parts check	Test pulse for part detection (pre-weld-check)
Operation	One button toggle wheel, monochrome display, Optional: coloured OP-AWS3-A Display, Profibus or Ethernet IP
EU Certification	CE Compliant
Continuous sound pressure level	The equivalent continuous sound pressure level rated A is below 70 dB. Sound pressure levels may vary depending on the welding material and the environmental conditions. If necessary consult an acoustic specialist.
Electrical data	
Supply voltage	3x 400 VAC, ± 10%, PE
Mains frequency	50 - 60 Hz
Fusing	3 x 125A, delayed (external)
Connecting cable	4 x 50 mm² shielded
Protection class	IP30 ISQ20-MFC 19“: depending on housing
Welding transformer	External: DC: IT-113 AC: upon request
Power data	IS-Q500A
Connected load	85 kVA
Switching frequency	1 – 10 kHz (AC) 1 – 5 kHz (DC) depending on primary current
Output frequency	1 – 10 kHz (AC) 2 – 10 kHz (DC)
Fundamental frequency AC	AC: 50 – 250 Hz
Rated power	25 kVA (AC), DC with IT 113: 75 kVA; dep on transformer
Max weld current	20 kA with 15% d.r. DC only

Max. weld period	320 ms/pulse
Min. weld period	DC: 0,7 ms AC: 0,5 x impuls frequency
Rated output current	depending on transformer
Min. terminal voltage	DC with IT 113: 3 V at 25 kA; AC: dep on transformer
Max. open-circuit voltage	DC: 11 V AC: dep on transformer
Interface	
Secondary connections	Depending on transformer
Analog input	Pressure sensor for proportional valve
Analog output	Proportional valve control
Digital interfaces	via D-Sub-9 socket; welding data output in ASCII-compatible printing format
Binary interface input	Start, quick stop, pressure switch, proximity switches, pressure sensor
Binary interface output	a.o. stepping contact, counter, set point deviation, closing stroke, welding pressure, air valves
Operation	
Cooling	Inverter and transformer water cooled
Moisture	40 - 70 %, not condensating
Ambient Temperature	0 - 40°C
.	IS-Q500A
Weight inverter	approx 31 kg (without transforner etc)
Dimensions inverter (BxHxW)	216 x 420 x 480 mm 216 x 420 x 550 mm (including projection) ISQ20-MFC-19": 482 x 174 x 315 mm
Weight transformer	IT-113: approx 25,5 kg
Dimensions transformer (BxHxW) in mm	IT-113: 420 x 125 x 230

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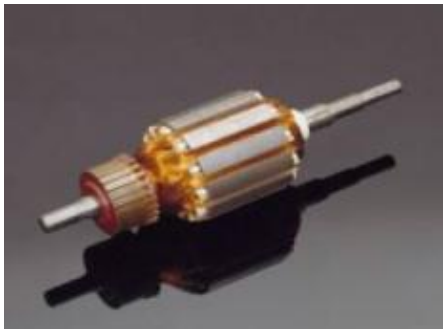
Product applications IS-Q Series - Inverter Power Supply (formerly known as ISQ Series)

Stranded wire to Coil



Motor Fusing

Stranded wire to terminal

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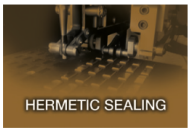
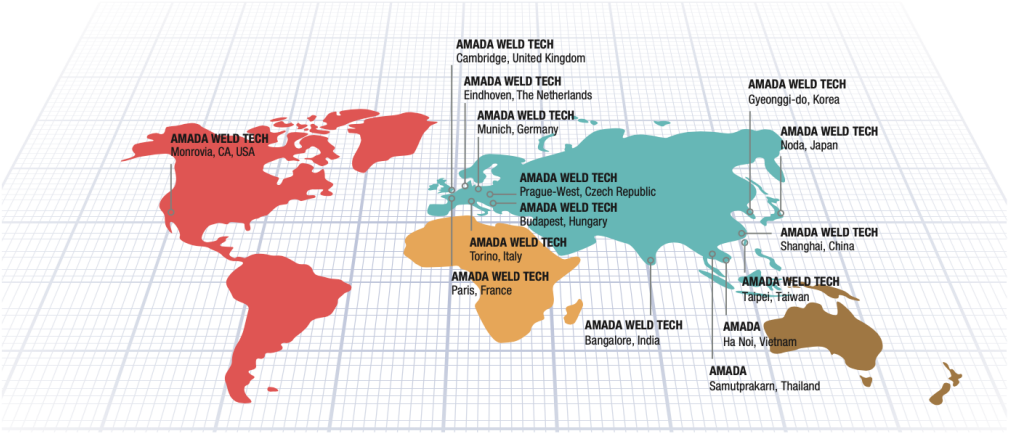
OUR TECHNOLOGIES



OUR SALES OFFICES



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