WELDING SYSTEMS

Made for Robots.

Weld Process Controllers

Overview of functions

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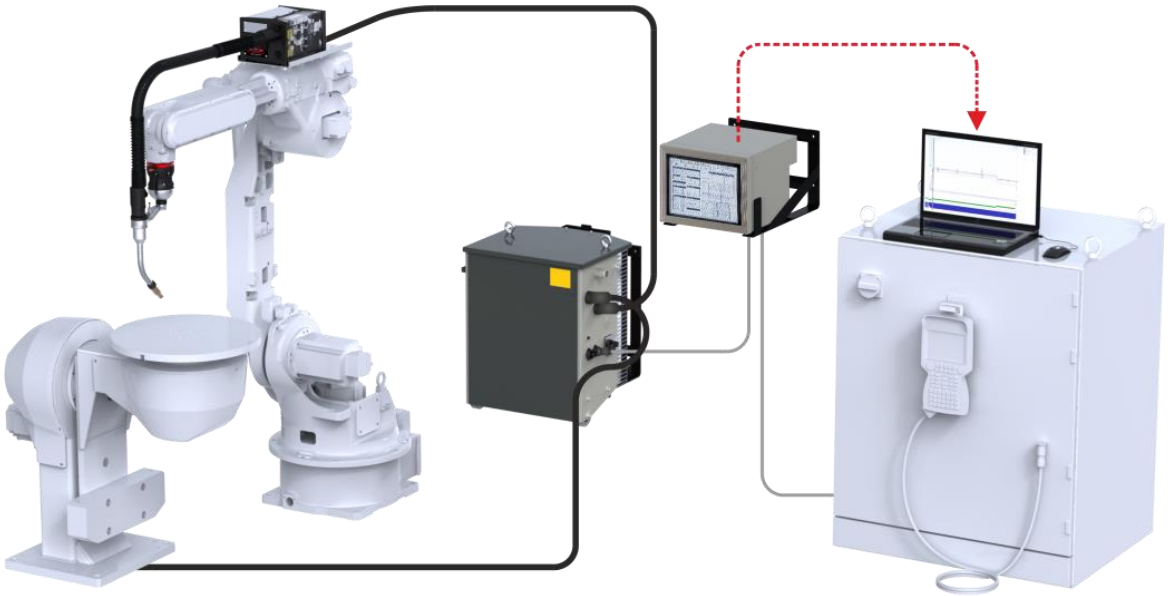
Content

Weld Process Controllers – system design



The weld process control concept ranges from weld process controllers with touchscreen and weld data visualization up to the cost-effective entry-level solution Q4 (integrated into the power source)

The universal weld process controllers (Q1, Q4, Q6pw, Q80, Q84r, Q84s) calculate the optimal parameters for each welding process. Only basic data such as material, wire type, wire feed speed and type of gas must be entered. These determine the proper welding voltage for short - or spray - arc or the parameters for the pulse process. Furthermore, a digital control unit calculates the ideal current source characteristics for each welding process. The controllers have an auto compensation to stabilize the arc. Here, the voltage is adjusted in case of distance changes to the component to keep the penetration stability.

In addition to the cost-optimized variant Q4 for installation in the power source, SKS welding process controls are flexible in placing within the welding cell: for optimal operation and high flexibility.

With the Q1Tool, Q8Tool or Q8Tool4 software, our controls are well prepared for future applications. The software supplied with the controls is free of charge.

The Software solution provides the basis for a precise and comprehensive process control. Included in the scope of delivery of our welding process controls is a professional software package. The Q8Tool software is designed for administration, i.e. all service and data recording functions are available to users with an easy-to-use software.

Q84r Weld Process Controller

Absolute modularity: With the Q84r weld controller you can operate up to 4 weld machines from a central point. With a maximum of four pluggable Q81 weld cards, plugged into its internal slots, the Q84r can be configured for best profitable efficiency. The graphical design of the large touchscreen is following the proven software design of the Q8Tool4. Thus it provides a really intuitive interface. With VNC, the weld controller can be remote controlled from other computers, and provides full access on the welding equipment. The offered modularity particularly brings advantages in pricing an ease of use; especially in welding cells with several welding machines. The Q81 weld cards have the same functionality as a Q80 weld controller.

Technical specifications

- Processes/features: GMAW(MIG/MAG), I-Pulse, U-Pulse, KF-Pulse, PlasmaTIG, Dual Wire, microMIG, microMIG-cc, Synchroweld, RWDE, NWDE
- Digital parameter selection: 992 programs (per weld process card), max. 4 weld process cards
- Materials: Steel, CrNi, Al, CuSi
- Q8TOOL Software (Weld Data Administration/Network), VNC remote control
- Innovative graphical usability concept with touch screen
- General functions: Visualization and saving of measurements, alarm messages
- Monitoring functions: Weld current monitoring, auto compensation, arc and ignition monitoring, motor current, gas and water monitoring
- Ports: RJ45 Ethernet (NWDE), SPW-Bus, SD card slot
- Wall mounting

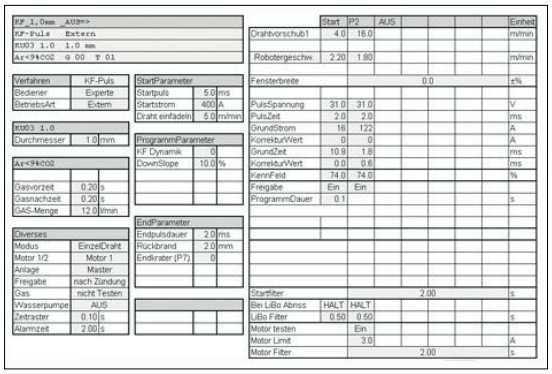
Available versions of Q84r Weld Process Controller	
Description	**Part number**
Q84r Weld Process Controller with one (1) weld card	77-7310-00
Q84r Weld Process Controller with two (2) weld cards	77-7320-00
Q84r Weld Process Controller with three (3) weld cards	77-7330-00
Q84r Weld Process Controller with four (4) weld cards	77-7340-00

Mounting parts for Q84r Weld Process Controller	
Description	**Part number**
Bracket for Q84r for mounting onto power source LSQ5	77-7240-01
Bracket for Q84r for wall mounting	77-7240-02
Bracket for Q84r for mounting into the robot cabinet	77-7240-05

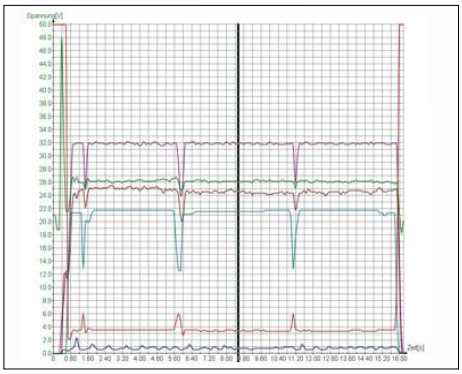
Overview Q84r replacement parts and accessories	
Description	**Part number**
Connection cable Q84r/s 5m with open end for ext. power supply (option)	77-3305-00
USB adapter for SD/microSD Card (option)	91-8-1
Touch pen for Q80/Q84r/Q84s (replacement part)	77-7240-03
SD Card for Q80/Q84r/Q84s (replacement part)	91-8-6
Plug for external power supply Q84r/Q84s (replacement part)	77-7240-96

Q84r Weld Process Controller

Administration of parameters

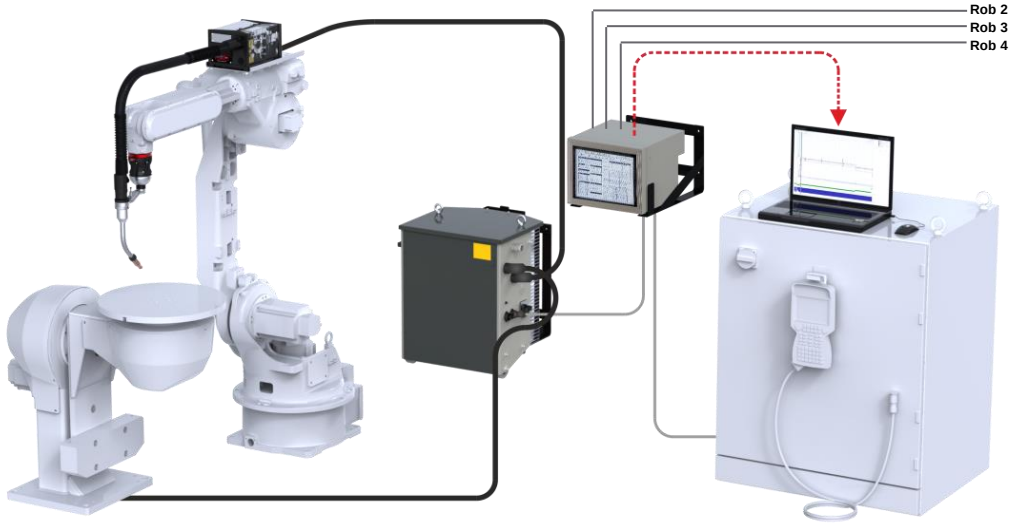


With the Q8Tool software the Q84r can be programmed over the integrated network interface with a PC. The welding parameters are clearly displayed. In addition, the software supports Q8Tool network functionalities in the Q84r.



The measured values can easily be displayed within the software Q8Tool.

Example configuration



Example configuration with a Q84r in a Power Clutch Weld Package

Views of the Q84r Weld Process Controller

Front view of the Q84r Weld Process Controller

Back view of the Q84r Weld Process Controller

Q84s Weld Process Controller

Modular control concept: the Q84s weld process controller offers the possibility to control of up to four welding machines from a central point. It has four card slots that are built into the system. With process controller cards (Q81 weld card) it can be equipped for controlling up to four weld systems. The user interface is a large full-color graphical touch screen with an intuitive interface, which is modeled after the industrial proven software Q8Tool4. The surface can easily be operated from other computers via a VNC client and offers full access to the weld equipment. Especially in welding cells, with several welding machines, this modularity benefits in price and ease of use. The Q81 weld process cards are full-value weld process controllers. The Q84s has a compact design.

Technical specifications

- Processes/features: GMAW(MIG/MAG), I-Pulse, U-Pulse, KF-Pulse, PlasmaTIG, Dual Wire, microMIG, microMIG-cc, Synchroweld, RWDE, NWDE
- Digital parameter selection: 992 programs (x4), max. 4 weld process cards
- Materials: Steel, CrNi, Al, CuSi
- Q8TOOL Software (Weld Data Administration / Network), VNC remote control
- Innovative graphical usability concept with touch screen
- General functions: Visualization and saving of measurements, alarm messages
- Monitoring functions: Weld current monitoring, auto compensation, arc and ignition monitoring, motor current, gas and water monitoring
- Ports: RJ45 Ethernet (NWDE), SPW-Bus, SD card slot
- Touch Screen
- Wall mounting
- Screen rotatable 180° by software for flexible mounting

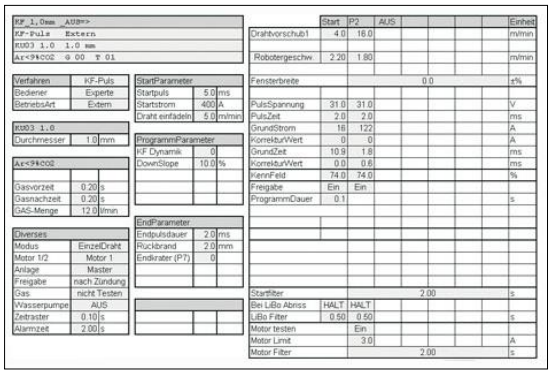
Q84s Weld Process Controllers	
Description	**Part number**
Q84s Weld Process Controller with one (1) weld card	77-7410-00
Q84s Weld Process Controller with two (2) weld cards	77-7420-00
Q84s Weld Process Controller with three (3) weld cards	77-7430-00
Q84s Weld Process Controller with four (4) weld cards	77-7440-00

Mounting parts for Q84r Weld Process Controller	
Description	**Part number**
Bracket for Q80/Q84s for mounting onto power source LSQ5	77-7240-06

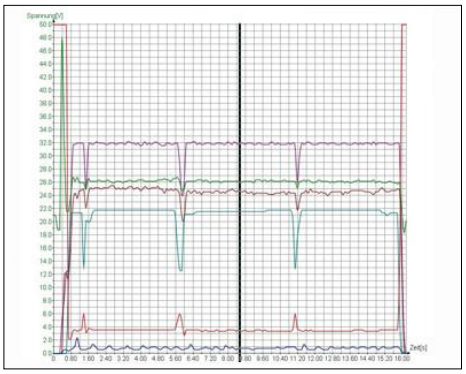
Overview Q84s replacement parts and accessories	
Bezeichnung	**Artikelnummer**
Connection cable Q84r/s 5m with open end for ext. power supply (option)	77-3305-00
USB adapter for SD/microSD Card (option)	91-8-1
Touch pen for Q80/Q84r/Q84s (replacement part)	77-7240-03
SD Card for Q80/Q84r/Q84s (replacement part)	91-8-6
Plug for external power supply Q84r/Q84s (replacement part)	77-7240-96

Q84s Weld Process Controller

Administration of parameters

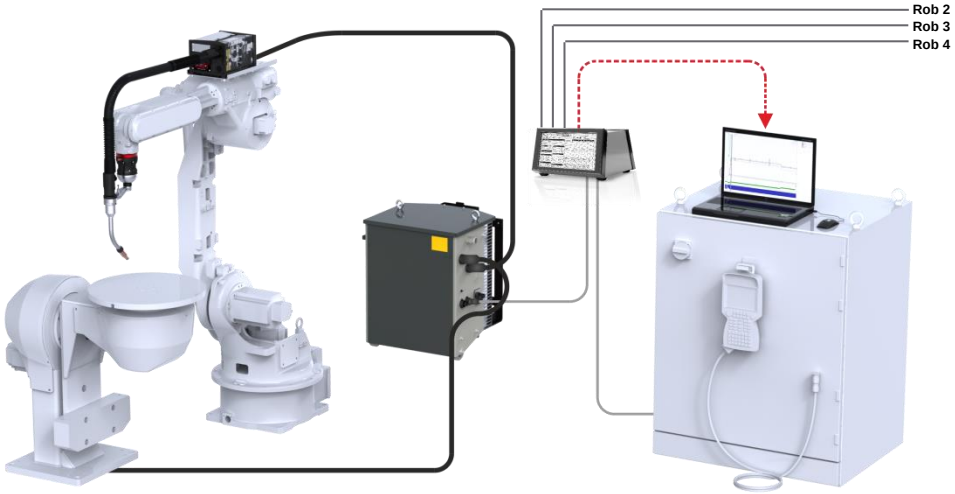


With the Q8Tool software the Q84s can be programmed over the integrated network interface with a PC. The welding parameters are clearly displayed. In addition, the software supports Q8Tool network functionalities in the Q84s.



The measured values can easily be displayed easily with the software Q8Tool.

Example configuration



Example configuration with a Q84s in a Power Clutch Weld Package

Views of the Q84s Weld Process Controller

Front view of the Q84s Weld Process Controller

Back view of the Q84s Weld Process Controller

Q80 Weld Process Controller

The Q80 is the alternative to the Q84r/s.
It has the same functionality/features as a single weld card of the Q84r/s - optimized for a single weld machine.
With the universal Q80 all parameters and values needed for the weld task can be optimally calculated.

Technical specifications

- Processes/Features: GMAW(MIG/MAG), I-Pulse, U-Pulse, KF-Pulse, PlasmaTIG, microMIG, microMIG-cc, Synchroweld, RWDE, NWDE
- Digital program selection: 992 programs
- Materials: Steel, CrNi, Al, CuSi
- Q8TOOL Software (Weld Data Administration/Network)
- General functions: Visualization and saving of measurements, alarm messages
- Monitoring functions: Weld current monitoring, auto compensation, arc and ignition, monitoring, motor current, gas and water monitoring
- Ports: RJ45 Ethernet (NWDE), SPW-Bus, SD card slot
- Innovative graphical usability concept with touch screen
- Wall mounting
- Screen rotatable 180° by software for flexible mounting

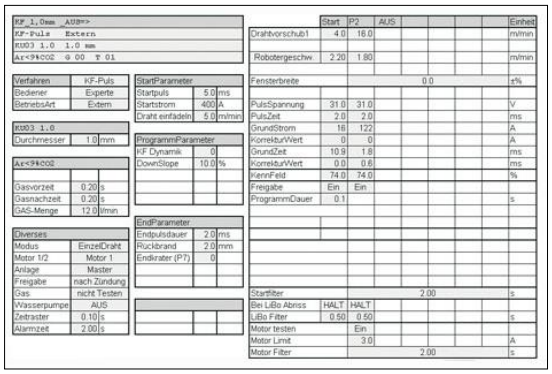
Q80 Weld Process Controllers	
Description	**Part number**
Q80 Weld Process Controller	77-7260-00

Mounting parts for Q84r Weld Process Controller	
Description	**Part number**
Bracket for Q80/Q84s for mounting onto power source LSQ5	77-7240-06

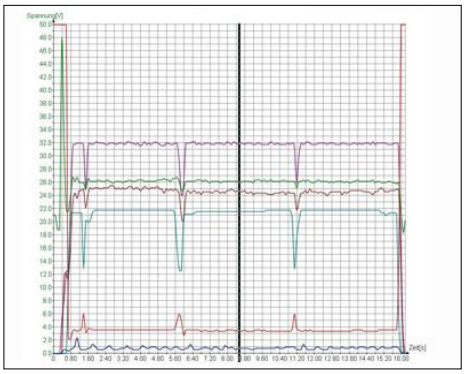
Overview Q80 replacement parts and accessories	
Description	**Part number**
USB adapter for SD/microSD Card (option)	91-8-1
Touch pen for Q80/Q84r/Q84s (replacement part)	77-7240-03
SD Card for Q80/Q84r/Q84s (replacement part)	91-8-6

Q80 Weld Process Controller

Administration of parameters

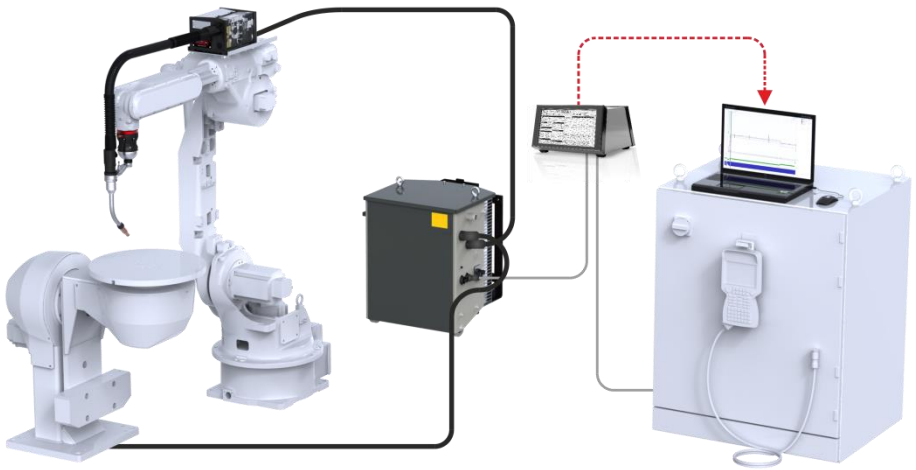


With the Q8Tool software the Q80 can be programmed over the integrated network interface with a PC. The welding parameters are clearly displayed. In addition, the software supports Q8Tool network functionalities in the Q80.



The measured values can easily be displayed within the software Q8Tool.

Example configuration



Example configuration with a Q80 in a Power Clutch Weld Package

Views of the Q80 Weld Process Controller

Front view of the Q80 weld process controller

Back view of the Q80 weld process controller

Q6pw Weld Process Controller

The perfect solution for local administration – the weld process controllers Q6pw and Q4 provide all basic functions of the Q80. The controllers can be administrated with the Q8TOOL4 software over the USB port. As a compact solution for cost optimized usage the Q4 controller is integrated into the power source LSQ3 or LSQ5.

Technical specifications

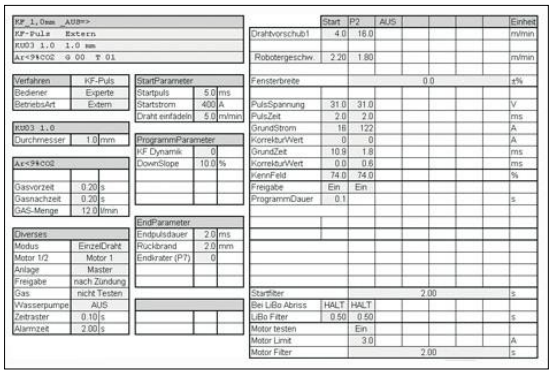
- Processes/Features: GAMW(MIG/MAG), I-Pulse, U-Pulse, KF-Pulse, Synchroweld, RWDE
- Digital program selection: 992 programs
- Materials: Steel, CrNi, Al, CuSi
- Q8TOOL4 Software (Local Weld Data Administration)
- General functions: Visualization and saving of measurements, alarm messages
- Monitoring functions: Weld current monitoring, auto compensation, arc and ignition monitoring, motor current, gas and water monitoring
- Ports: USB, RS232 (local), SPW-Bus

Q6pw Weld Process Controller	
Description	**Part number**
Q6pw Weld Process Controller (Wall mounting)	77-7230-00

Overview Q6pw replacement parts and accessories	
Description	**Part number**
Cable USB Slave for connection PC to Weld Process Controller (option)	91-8-2-01
Key for key switch (replacement part)	541072200

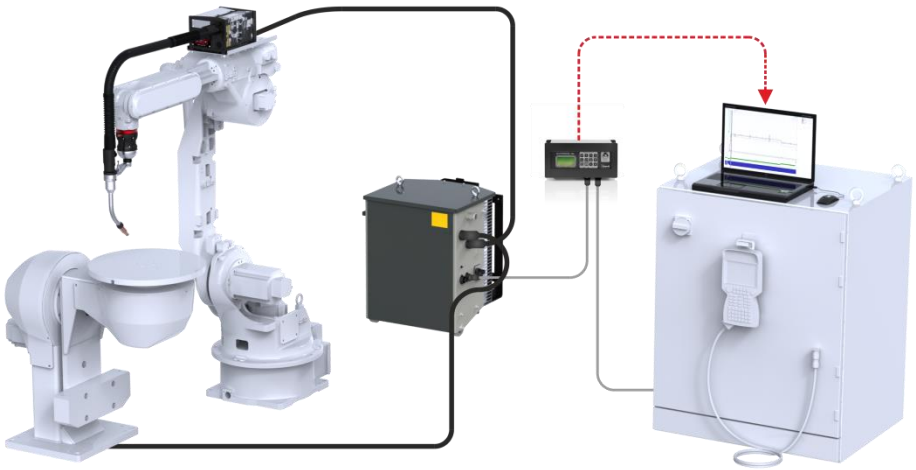
Q6pw Weld Process Controller

Administration of parameters



With the Q8Tool software the Q6pw can be programmed over USB port with a standard PC. The measured values can easily be displayed with the software Q8Tool.

Example configuration



Example configuration with a Q6pw in a Power Clutch Weld Package

Views of the Q6pw Weld Process Controller

Front view of the Q6pw weld process controller

Bottom view of the Q6pw weld process controller

Q4 Weld Process Controller

According to customer needs, a cost optimized solution was created.
The integration of the Q4 Weld Process Controller into the Power Source provides a cost-advantage.

Technical specifications

- Processes/Features: GMAW(MIG/MAG), I-Pulse, U-Pulse, KF-Pulse, Synchroweld, RWDE
- Digital program selection: 186 programs
- Materials: Steel, CrNi, Al, CuSi
- Q8TOOL4 Software (Local Weld Data Administration)
- The Q4 Weld Process Controller is integrated into the front cover of the power source
- General functions: Display of measurements (LCD), alarm messages
- Monitoring functions: Weld current monitoring, auto compensation, arc and ignition monitoring, motor current, gas and water monitoring
- Connection: USB

Q4 Weld Process Controller	
Description	**Part number**
DCT Power Source LSQ5 with integrated Q4 Weld Process Controller	77-1185-20
DCT Power Source LSQ5-CCC with integrated Q4 Weld Process Controller	77-1185-60
DCT Power Source LSQ3 with integrated Q4 Weld Process Controller	77-1184-20
DCT Power Source LSQ3-CCC with integrated Q4 Weld Process Controller	77-1185-40
DCT Power Source LSQ3A with integrated Q4 Weld Process Controller	77-1184-30

Overview Q4 replacement parts and accessories	
Bezeichnung	**Artikelnummer**
Cable USB Slave for connection PC to Weld Process Controller (option)	91-8-2-01
Key for key switch (replacement part)	541072200

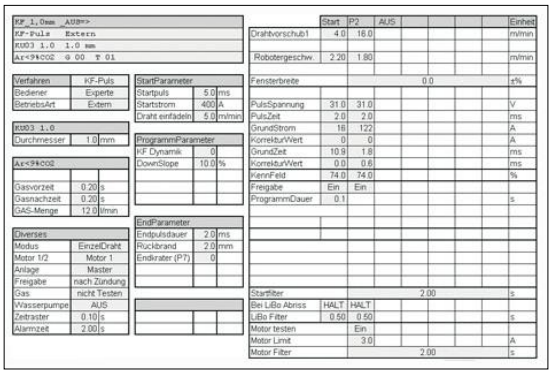
LSQ3 / LSQ5 Power Source for Q4 Weld Process Controller

The LSQ series ensures the optimum arc energy. It uniquely adjusts to different weld processes.
Unlike conventional power sources with inverter technology, the LSQ5 with Direct Control Technology controls its switching transistors without any fixed clock frequency according to the needs of the weld process.

Overview LSQ5 and LSQ3 Power Sources			
Power Source	**LSQ5(-CCC)**	**LSQ3(-CCC)**	**LSQ3A**
Power 60% duty cycle	420 A (400 A)	340 A	340 A
Processes	MSG	MSG	MSG
Weight	49 kg	37 kg	37 kg
Power supply	3x400/480 V (switchable)	3x400 V	3x480 V
Wall mounting	Yes (optional)	Yes (integrated)	Yes (integrated)
Conformities	CE, CSA, UL, (CCC)	CE, (CCC)	CE

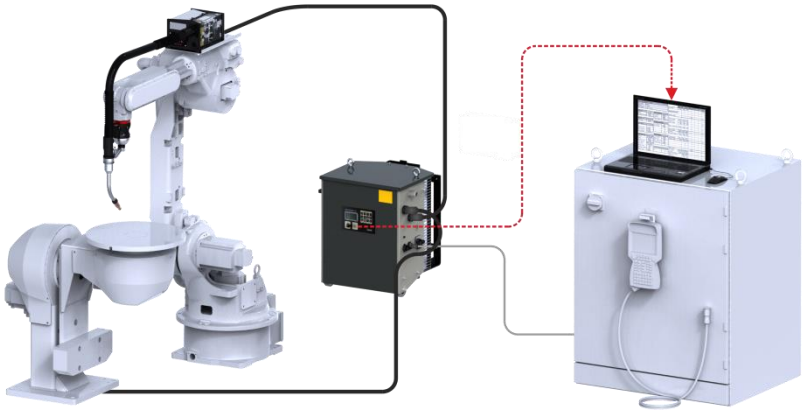
Q4 Weld Process Controller

Administration of parameters



With the Q8Tool software the Q4 can be programmed over USB port with a standard PC. The measured values can easily be displayed easily with the software Q8Tool.

Example configuration



Example configuration with a Q4 in a Power Clutch Weld Package

Views of the Q4 Weld Process Controller

Q4 Weld Process Controller integrated into the front cover of the LSQ5 Power Source

Q4 Weld Process Controller integrated into the front cover of the LSQ3 Power Source

Q1 Weld Process Controller for manual welding

Modern GMAW(MIG/MAG) robotic arc welding technology meets the highest quality requirements, which hand welding technology must face. The constant desire for complete automation, are facing technical feasibility and cost of complex component geometries. In many applications it is therefore technically and economically feasible, in the sense of the pareto principle (80-20 rule) to weld the remaining percentages manually. However, here the same high quality is required, such as in robotic arc welding.

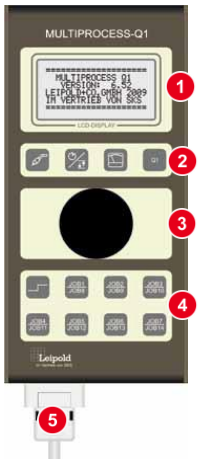
Technical specifications

- Processes/Features: GMAW(MIG/MAG), I-Pulse
- Manual job selection: 14 Jobs
- Materials: Steel, CrNi, Al, CuSi
- Q1Tool Software (local Weld Data Administration)
- General functions: Display of measurements (LCD), alarms
- Monitoring functions: Motor current monitoring
- Connections: D-Sub 9 pol. (SKS specific)

Q1 Weld Process Controller	
Description	**Part number**
Q1 Weld Process Controller	77-7250-00

Overview Q1 replacement parts and accessories	
Description	**Part number**
Q1 USB cable (option)	77-7250-10

Operation of the Q1 Weld Process Controller



1. **Display**
   Multiline display for good readability
2. **Control buttons**
   Control buttons for direct function access
3. **Rotary switch**
   Rotary switch for comfortable menu and parameter selection
4. **Job buttons**
   Job buttons for direct selection of individual welding programs
5. **SPW/USB port**
   SPW/USB port for connection with the welding system (Power Source) or with a PC. With a USB adapter cable, the Q1 can easily be configured

Display of Q1

1. Navigation line
2. Cursor
3. Status line

Q1 Weld Process Controller for manual welding

Semi Automatic Machine (SAM)

The Semi Automatic Machine Weld Package consists of a trolley with Power Feeder PF5, the LSQ power source as well as a holder for the control Q1. The Q1Tool software is included. The trolley is prepared for wire feeding directly from the drum, but can also be equipped with a wire spool holder. So this is highly configurable.

The free Q1Tool software allows easy administration of the hand control from a standard PC or notebook (reading, writing and saving the welding parameters, up to documentation capabilities). The hand control can be configured independently of the welding machine with pre-definable parameters. With the simple duplication of the welding parameters, hand welding stations can be configured fast and easy.

Example Configuration

For making available the robot welding quality for hand welding applications, SKS has developed a Weld Package (Semi Automatic Machine) for hand welding. This was realized with the proven components of the robot application.

Q1 Weld Process Controllers for hand welding	
Description	**Part number**
Semi Automatic Machine with Q1 / LSQ5(-CCC) / Power Pin-Connector	On request
Semi Automatic Machine with Q1 / LSQ5(-CCC) / Euro-Connector	On request
Semi Automatic Machine with Q1 / LSQ3(-CCC) / Power Pin-Connector (Optional with LSQ3A)	On request
Semi Automatic Machine with Q1 / LSQ3(-CCC) / Euro-Connector (Optional with LSQ3A)	On request

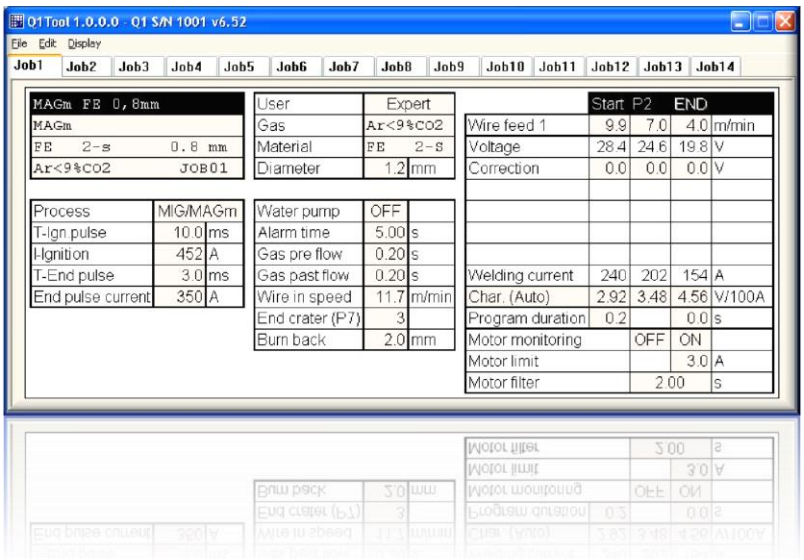
Views of Q1 Weld Process Controller for Hand Welding

Q1 Weld Process Controller connected to a SAM Weld Package

Q1Tool Software

SKS software solutions lay the cornerstone for precise and comprehensive process control. Our Weld Process Controllers (including Q1, Q4, Q80, Q84r and Q84s) come with a professional software package.

The associated free software tool allows the read Q1 and Q1 playing of the controls. With the USB adapter cable that is connected directly to the computer, the power supply via USB. All parameters are clearly displayed in an intuitive form. Both, individual jobs as well as the complete content of the weld process controller can be saved on a computer and restored on a weld process controller.



Screenshot of the Q1Tool software

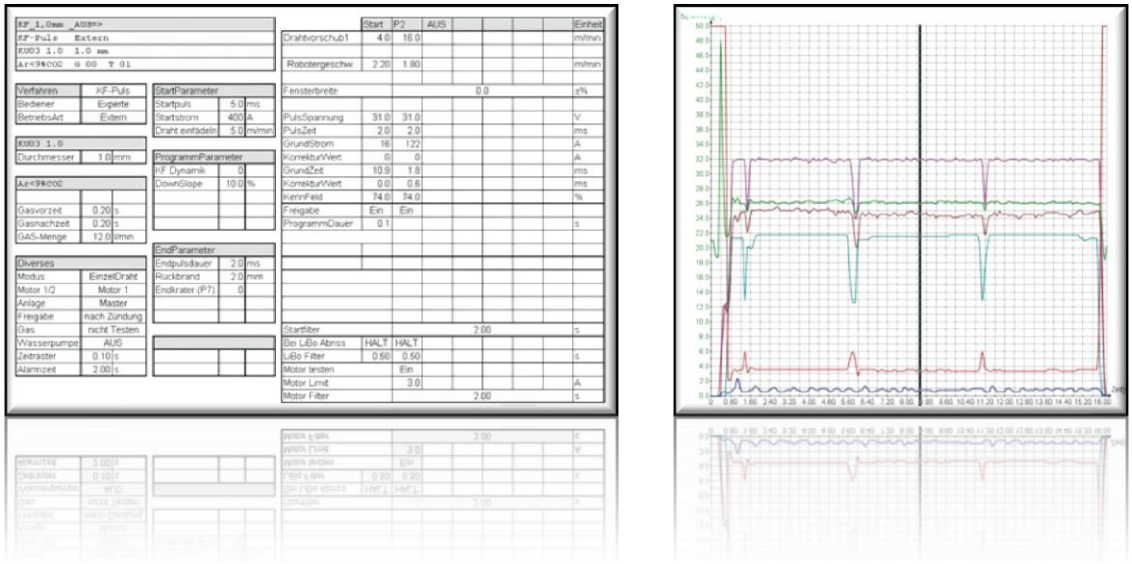
Q8Tool4 Software

Advanced functionality offers our Q8Tool software. In conjunction with the software Q8Tool, our Weld Process Controllers (Q80 and Q84r/s) can be directly integrated into existing corporate networks via their Ethernet interfaces.
The result: A complete documentation of the welding data up to traceability.

Working locally with Q8Tool4 software

The Q8Tool4 software allows the implementation of a precise, comprehensive process control. With this software, welding parameters can be additionally saved and administered on a PC for documentation purposes. Besides basic functions as the reading, modifying and documenting of welding parameters, new welding parameters can be created and transmitted to the SKS Weld Process Controller. Welding parameters such as current, voltage, wire feeding speed can be easily managed using the software. The integrated recording of measured values visualizes the aforementioned welding parameters (graphically/numerically). Additionally, the functions of the auto compensation feature and the Synchroweld process (heat input per unit length, TCP speed) are shown on the display. Both, individual jobs as well as the complete content can be stored on the computer and restored on the controller.

Content that has been stored is portable, and the set-up of new systems or the upgrading of existing systems to integrate new technologies is made much easier. Up and above this, the Q8Tool4 software allows the reading and exporting of measured values and alarm messages. The graphical and numerical recording of measured values allows for quick identification and optimization of parameters for new work pieces. Thus, users are getting a powerful tool to analyze and document their welding processes.



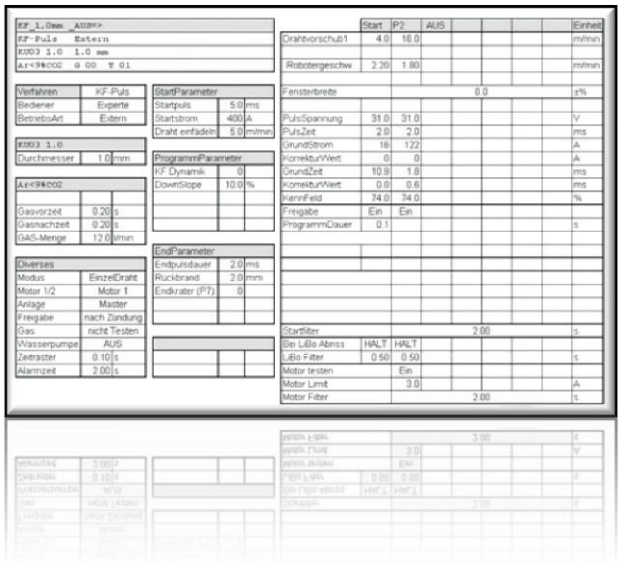
In addition to creating, storing, saving, and transmitting of programs, the Q8Tool as well as Q8Tool4 software has extensive visualization capabilities. The Q8Tool software supports as a further development of Q8Tool4 comprehensive network functionalities.

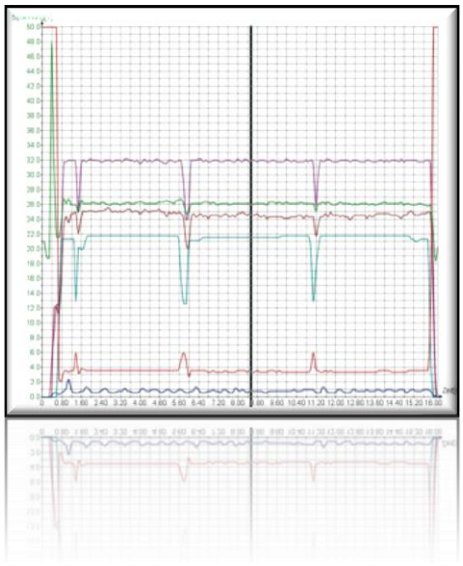
Q8Tool Software

Advanced functionality offers our Q8Tool software. In conjunction with the software Q8Tool, our Weld Process Controllers (Q80 and Q84r/s) can be directly integrated into existing corporate networks via their Ethernet interfaces.
The result: A complete documentation of the welding data up to traceability.

Connected working with the software Q8Tool

In addition to local features of Q8Tool4 software, the Q8Tool comes with additional network functionality. Ethernet interfaces, the welding process controllers can be directly integrated into existing corporate networks. The result: A complete documentation of the welding data to object-oriented welding data documentation: **TRACEABILITY.**





In addition to creating, storing, saving, and transmitting of programs, the Q8Tool as well as Q8Tool4 software has extensive visualization capabilities. The Q8Tool software supports as a further development of Q8Tool4 comprehensive network functionalities.

Networking of Weld Process Controllers

Advanced functionality offers our Q8Tool software. In conjunction with the software Q8Tool, our weld process controllers (Q80 and Q84r/s) can be directly integrated into existing corporate networks via their Ethernet interfaces.
The result: A complete documentation of the welding data with traceability function.

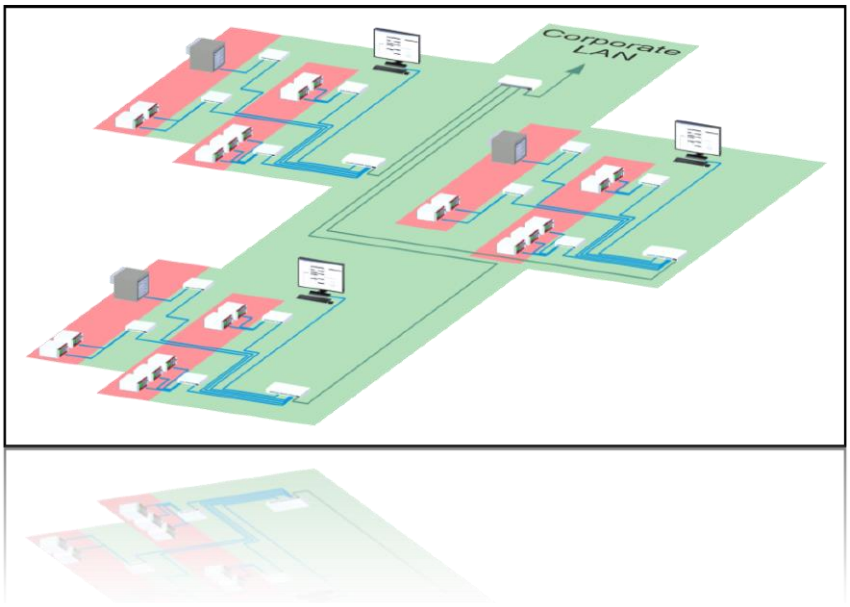
Standard Documentation

During the production process, all relevant data of the weld process controllers can be recorded with the Q8Tool software on a standard windows PC.

Live Documentation

For further processing of the weld data, a DCOM software interface can be added. This provides access and many possibilities of analyzing recorded data as well as live data.

With the SKS Welding data documentation, many possibilities open up for further processing and the use of data.
All RELEVANT data can be documented and evaluated
→ **TRACEABILITY.**



Networking of welding machines with the Q8Tool software in a corporate network.

Weld Data Documentation (DCOM)

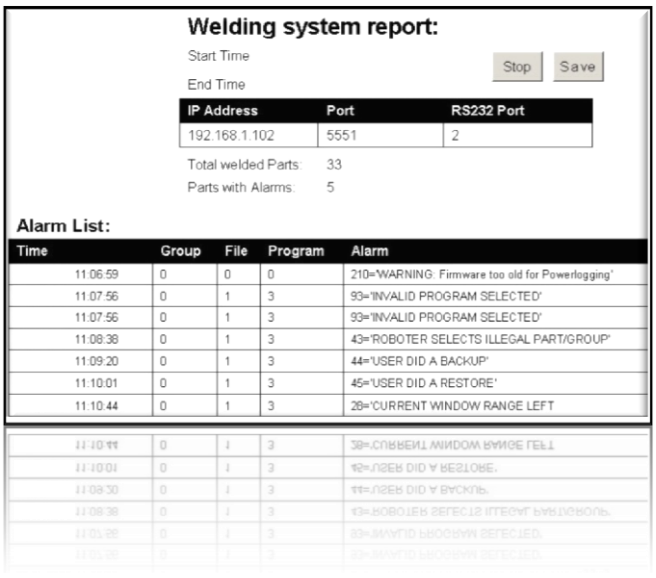
Perfect Integrate into your applications

The Distributed Component Object Model is an interface defined by Microsoft to allow the communication of the COM technology via a network. With this upgradable interface for Q8Tool software, an access to the data stream of the Q8Tool service from external applications is provided (e.g. MS Office, Visual Basic, etc.). The data can be further processed and visualized online with standard programs.

Interface to DCOM – Advantages

- Software interface provides full access to the data stream.
- Easy processing of the data with standard software for customer specific and supplementary reports.
- Online evaluation for better reaction times
- Relevant data can be selected from the entire data stream: transparency for relevant process data.

Dongle for DCOM Interface	
Description	**Part number**
KEY4COM Version „Time“ – 90 day license	77-7201-00
KEY4COM Version „Life“ – permanent license	77-7201-01


Welding system report:

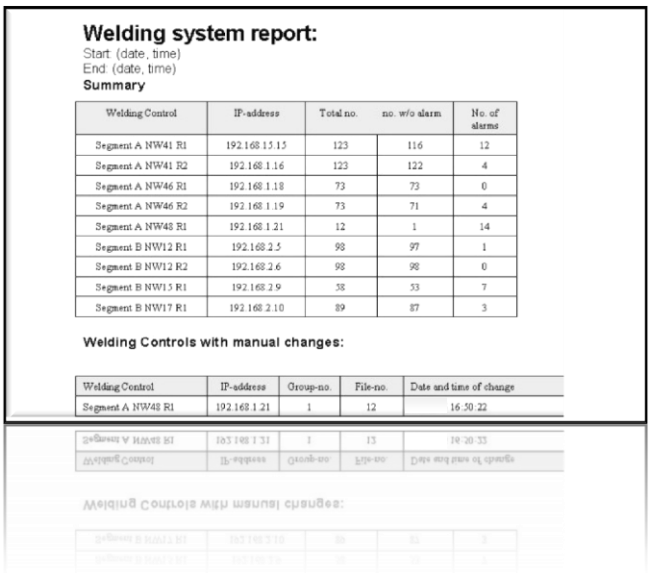
Start Time
End Time
Stop Save

IP Address	Port	RS232 Port
192.168.1.102	5551	2

Total welded Parts: 33
Parts with Alarms: 5

Alarm List:

Time	Group	File	Program	Alarm
11:06:59	0	0	0	210='WARNING: Firmware too old for Powerlogging'
11:07:56	0	1	3	93='INVALID PROGRAM SELECTED'
11:07:56	0	1	3	93='INVALID PROGRAM SELECTED'
11:08:38	0	1	3	43='ROBOTER SELECTS ILLEGAL PART/GROUP'
11:09:20	0	1	3	44='USER DID A BACKUP'
11:10:01	0	1	3	45='USER DID A RESTORE'
11:10:44	0	1	3	28='CURRENT WINDOW RANGE LEFT


Welding system report:

Start: (date, time)
End: (date, time)
Summary

Welding Control	IP-address	Total no.	no. w/o alarm	No. of alarms
Segment A NW41 R1	192.168.15.15	123	116	12
Segment A NW41 R2	192.168.1.16	123	122	4
Segment A NW46 R1	192.168.1.18	73	73	0
Segment A NW46 R2	192.168.1.19	73	71	4
Segment A NW48 R1	192.168.1.21	12	1	14
Segment B NW12 R1	192.168.2.5	98	97	1
Segment B NW12 R2	192.168.2.6	98	98	0
Segment B NW15 R1	192.168.2.9	58	53	7
Segment B NW17 R1	192.168.2.10	89	87	3

Welding Controls with manual changes:

Welding Control	IP-address	Group-no.	File-no.	Date and time of change
Segment A NW48 R1	192.168.1.21	1	12	16.50.22

Networking of welding machines with the Q8Tool software and processing of the data using the DCOM interface in a corporate network.

Weld Process Controllers: Overview of functions

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Connectors / Interfaces	**Q1**	**Q4**	**Q6pw**	**Q80**	**Q84s***	**Q84r***
RS232 (local)	-	-	✓	-	-	-
USB (local)	✓	✓	✓	-	-	-
Ethernet / UDP (for NWDE)	-	-	-	✓	✓	✓
SPW bus connection (L700)	✓	internally	✓	✓	✓	✓
SD card slot	-	-	-	✓	✓	✓
Programs	**Q1**	**Q4**	**Q6pw**	**Q80**	**Q84s***	**Q84r***
START	✓	✓	✓	✓	✓	✓
Weld programs	14	93	93	744	744(x4)	744(x4)
Filling of end crater	✓	FILL	FILL	P7	P7	P7
END	End pulse	✓	✓	✓	✓	✓
Programs total	14	186	186	992	992(x4)	992(x4)
Processes	**Q1**	**Q4**	**Q6pw**	**Q80**	**Q84s***	**Q84r***
MIG/MAG (GMAW)	✓	✓	✓	✓	✓	✓
I-Pulse	✓	✓	✓	✓	✓	✓
U-Pulse	-	✓	✓	✓	✓	✓
KF-Puls	-	✓	✓	✓	✓	✓
TIG-DC	-	✓	✓	✓	✓	✓
PlasmaTIG	-	-	-	✓	✓	✓
TIG-Pulse	-	-	-	✓	✓	✓
Dual Wire	-	-	-	✓	✓	✓
microMIG / microMIG-cc	-	-	-	✓	✓	✓
General functions	**Q1**	**Q4**	**Q6pw**	**Q80**	**Q84s***	**Q84r***
Display of measurement values	✓	✓	✓	✓	✓	✓
Saving of measurement values	-	-	-	✓	✓	✓
Display of alarms	✓	✓	✓	✓	✓	✓
Saving of alarms	-	-	-	✓	✓	✓
RWDE supported (Robot- Welder Data Exchange): serial communication to robot provides Synchroweld functionality	-	✓	✓	✓	✓	✓
Touch screen with graphical visualization	-	-	-	✓	✓	✓
Internally expandable with a maximum of four Q81 weld cards	-	-	-	-	✓	✓
Wall mounting	-	(✓)	✓	✓	✓	✓
Monitoring funcitons	**Q1**	**Q4**	**Q6pw**	**Q80**	**Q84s***	**Q84r***
Weld current monitoring (current window)	-	✓	✓	✓	✓	✓
Auto compensation	-	✓	✓	✓	✓	✓
Arc monitoring	-	✓	✓	✓	✓	✓
Ignition monitoring	-	✓	✓	✓	✓	✓
Motor current monitoring	✓	✓	✓	✓	✓	✓
Gas monitoring	✓	✓	✓	✓	✓	✓
Water monitoring	✓	✓	✓	✓	✓	✓
PC functions	**Q1**	**Q4**	**Q6pw**	**Q80**	**Q84s***	**Q84r***
Administration of weld parameters (local)	✓	✓	✓	✓	✓	✓
NWDE (Network Welder Data Exchange): Networking for central administration Recording of weld data	-	-	-	✓	✓	✓
Remote administration via VNC	-	-	-	-	✓	✓

- : Function not available ✓ : Function available (w) : only Q8pw
* : Denoted functionality is for a Q84r/s configuration with a single Q81 weld card.

Notes

Notes

www.sks-welding.com

SKS Welding Systems GmbH | Marie-Curie-Str. 14 | 67661 Kaiserslautern/Germany | Phone +49 6301/7986-0 | Fax +49 6301/7986-119