



Weld Process Controllers

Overview of functions



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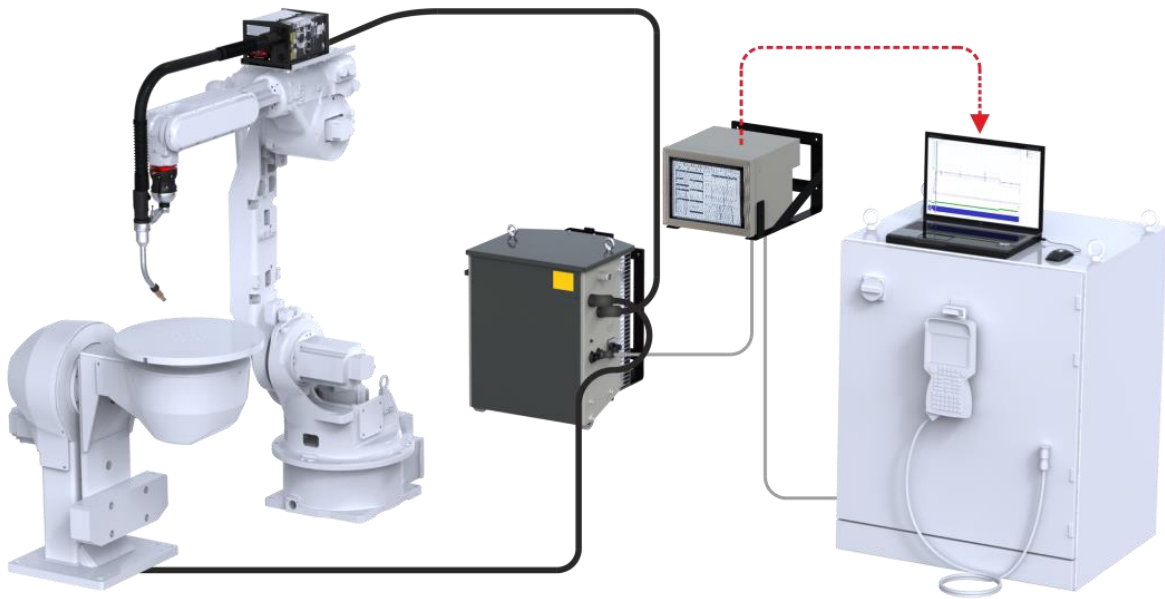
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Weld Process Controllers: Overview of functions



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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 Q9S (integrated into the power source)

The universal weld process controllers (Q1, Q9S, 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 Q9S 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 and Q8Tool 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 Q8Tool. 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, DP-Fast, Synchronweld, Networking
- 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 10" 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, 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

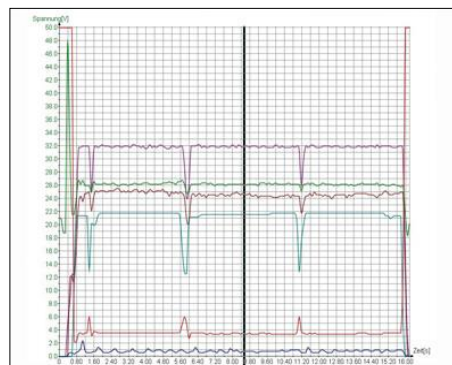
Overview Q84r replacement parts and accessories

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

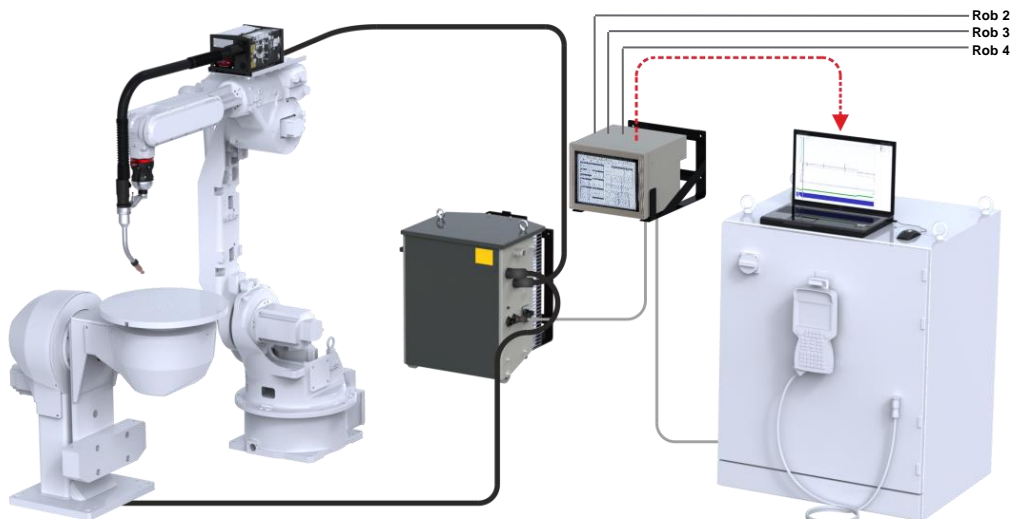
KF_1,0em_A0B>> KF-Puls Extern K037 1,0 1,0 ms AaK94002 0 60 0 1				Start IP2 AUS Ein Drahtschub1 4 0 16 0 Roboterschub 2 20 1 80 m/min		Einheit m/min m/min	
Verfahren KF-Puls Bediener Experte Betriebsart Extern		Startparameter Startpuls 5 0 ms Startstrom 400 A Draht einfaßd. 5 0 mm/min		Fenderbreite 0 0		v v v	
K037 1,0 Durchmesser 1 0 mm		Programmparameter KF Dynamik 6 DownStoße 10 5 %		PulsSpannung 31 0 31 0 PulsZeit 16 1 16 2 Rundtrieb 0 0 0 Formeins/Viert 0 0 GrundZeit 10 9 1 8 Formeins/Viert 0 0 0 6 6 HohlZeit 74 0 74 0 Freigabe Ein Ein ProgrammDauer 0 1 Ein		v v v v ms ms ms s	
AaK94002 Gasvorzeit 0 20 s Gasnachzeit 0 20 s GAS-Menge 12 0 mm		Endparameter Endpulsdauer 2 0 ms Rücklauf 2 0 mm Endrate (IP2) 0		Starthier Bei Lebo Abriss HALT Lebo Filter 0 50 0 50 Motor trennen Motor Limit 3 0 Motor Föder 2 00		s s s s s	
Diverses Modus EinzelOrt Motor 1/2 Motor 1 Anlage Master Freigabe nach Zündung nicht Testen Wasserpumpe AUS Zehrstrom 0 10 s Alarmzeit 2 00 s							



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 Q8Tool. 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, DP-Fast, Synchroweld, Networking
- 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 7" 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, 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

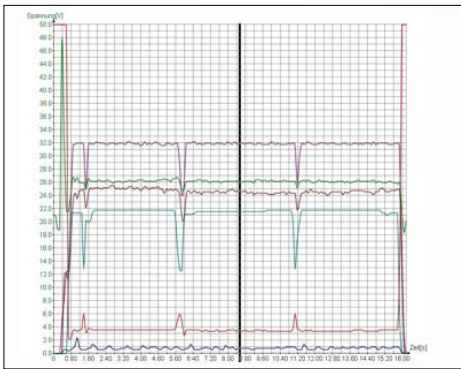
Overview Q84s replacement parts and accessories

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

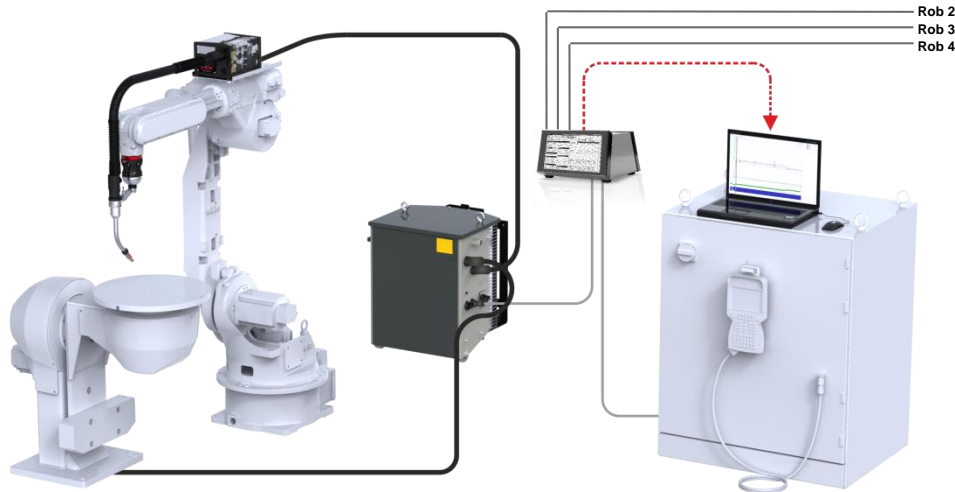
RF-1,0m_A00m	Start	SP	AUS		Einheit
RF-Puls	Extern				
0003 1.0 1.0 mm	Drahtvorschub1	4.0	18.0		mm/min
Arc=94002 0.00 1.0 l	Robotergerichte	2.20	1.80		mm/min
Verfahren	RF-Puls	StartParameter			
Endener	Externe	Startpunkt	5.0 ms		
Endener	Externe	Startstrom	-400 A		
Endener	Externe	Draht einfaden	5.0 min		
0003 1.0	ProgramParameter				
Durchmesser	1.0 mm	HF Dynamik	0		
Arc=94002	DownSlope	10.0 %			
Gasvorzeit	0.20 s				
Gasnachzeit	0.20 s				
Gas-Menge	12.0 mm				
Einfluss	Endpunkt	2.0 mm			
Modus	EinzelDraht	Rückbrand	2.0 mm		
Motor 1/2	Motor 1	Endkriter (P7)	0		
Arbeits	Modus				
Freigabe	nach Zündung				
Gas	nicht Testen				
Wasserpumpe	AUS				
Switchover	0.10 s				
Alarmzeit	2.00 s				
Starttiber	2.00				
Bei Lallo Abriss	HALT				
Ulls Fiber	0.50				
Motor testen	Ein				
Motor Limit	3.0				
Motor Fiber	2.00				



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, Dual Wire, microMIG, microMIG-cc, DP-Fast, Synchronweld, Networking
- Digital program selection: 992 programs
- Materials: Steel, CrNi, Al, CuSi
- Q8TOOL Software (Weld Data Administration / Network), VNC remote control
- 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, SPW-Bus, SD card slot
- Innovative graphical usability concept with 7" 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

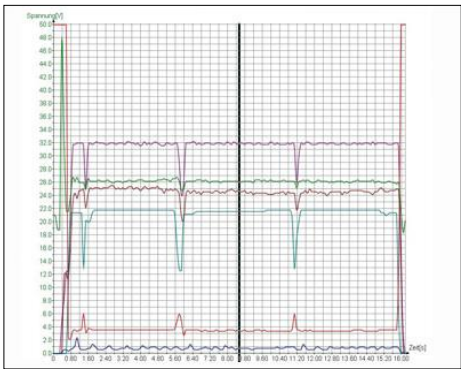
Overview Q80 replacement parts and accessories

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

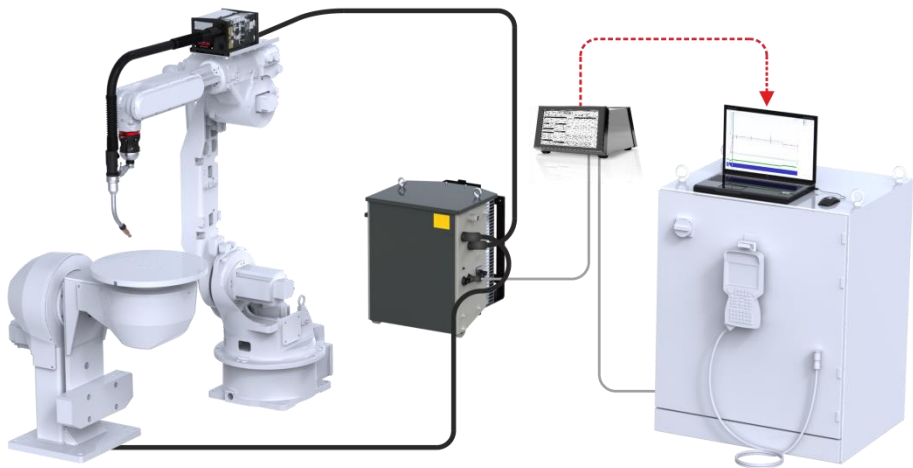
RF-1,0mm_A000	Start	SP	AUS		Einheit
RF-Puls	Extern				
0003 1,0 1,0 mm	Drahtvorschub1	4,0	18,0		mm/min
Arc=94002 0 00 0 01	Robotergerichte	2,20	1,80		mm/min
Verfahren	RF-Puls	StartParameter			
Endener	Externe	Startpunkt	5,0		ms
Bedienfeld	Extern	Startstrom	-400		A
		Draht einfaden	5,0		mm/min
0003 1,0		ProgramParameter			
Durchmesser	1,0 mm	HF Dynamik	0		
Arc=94002		DownSlope	10,0		%
Gasvorzeit	0,20 s				
Gasnachzeit	0,20 s				
Gas-Menge	12,0 mm				
Diverses		EndParameter			
Modus	EinzelDraht	EndpunktDauer	2,0		ms
Motor 1/2	Motor 1	Rückbrand	2,0		mm
Anlage	Motor	Endkriter (PZ)	0		
Freigabe	nach Zündung				
Gas	nicht Testen				
Wasserpumpe	AUS				
Switchover	0,10 s				
Alarmzeit	2,00 s				
		Starttiber	2,00		s
		Bei Lallo Abriss	HALT		
		Lallo Fiber	0,50		s
		Motor testen	Ein		
		Motor Limit	3,0		A
			2,00		s



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

Q9S Weld Process Controller



The Q9S is the alternative to the Q80 or 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 Q9S 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, Dual Wire, microMIG, microMIG-cc, DP-Fast, Synchroweld
- Digital program selection: 992 programs
- Materials: Steel, CrNi, Al, CuSi
- Q8TOOL Software (local Weld Data Administration)
- Integrated into the Frontsheet of the LSQ-Power Source
- Working Modes:
 - Job-Mode (Program-/Parameter selection)
 - Robot-Adjustment-Mode (Wire Feed and arc length controlled by the robot)
- General functions: Visualization of measurements (on LCD-Screen), alarm messages
- Monitoring functions: Weld current monitoring, auto compensation, arc and ignition monitoring, motor current, gas and water monitoring
- Ports: SPW-Bus (internal), USB, Fieldbus

Q9S Weld Process Controllers

Description	Part number
Power Source LSQ5 with Q9S Weld Process Controller Fieldbus Ethernet/IP	77-1185-711
Power Source LSQ5 with Q9S Weld Process Controller Fieldbus Profinet CU	77-1185-712
Power Source LSQ3 with Q9S Weld Process Controller Fieldbus Ethernet/IP	77-1184-711
Power Source LSQ3 with Q9S Weld Process Controller Fieldbus Profinet CU	77-1184-712

Overview Q9S replacement parts and accessories

Description	Part number
Cable USB-Slave for connection PC to Controller (option)	91-8-2-01

LSQ3 / LSQ5 Power Source for Q9S 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	Ja (optional)	Ja (integrated)	Ja (integrated)
Conformities	CE, CSA, UL, (CCC)	CE, (CCC)	CE

Q9S Weld Process Controller

Administration of parameters

K9-1,0m - A99m		Start	SP	AUS		Einheit
K9-Puls	Extern					
0003 1,0	1,0 mm	Drahtvorschub1	4,0	18,0		mm/min
A9-94002	0,00 ° 0,1	Robotergerichte	2,20	1,80		mm/min
Verfahren	HF-Puls	StartParameter				
Endener	Externe	Startpunkt				
Endener	Extern	Startstrom	-400	A		
Endener	Extern	Draht einfaden	5,0	mm/min		
0003 1,0		ProgramParameter				
Durchmesser	1,0 mm	HF Dynamik	0			
A9-94002		DownSlope	10,0	%		
Gasvorzeit	0,20 s					
Gasnachzeit	0,20 s					
Gas-Menge	12,0 mm					
Gas-Menge		EndParameter				
Modus	EinzelDraht	Endpunkt	2,0	mm		
Motor 1/2	Motor 1	Rückbrand	2,0	mm		
Motor	Motor	Endkriter (P7)	0			
Freigabe	nach Zündung					
Gas	nicht Testen					
Wasserpumpe	AUS					
Switchover	0,10 s	Starttiber	2,00	s		
Alarmzeit	2,00 s	Bei Lido Abriss	HALT	HALT		
		Lido Fiber	0,50	0,50		
		Motor testen	Ein	Ein		
		Motor Limit	3,0			
		Motor Filter	2,00			

With the Q8Tool software the Q9S can be programmed via the integrated USB interface with a PC. The welding parameters are clearly displayed.

Example configuration



Example configuration with a Q9S in a Power Clutch Weld Package at a Cobot application

Views of the Q9S Weld Process Controller



Front view of the Q9S weld process controller integrated to a LSQ5 Power Source



Back view of the LSQ5 Power Source with integrated Q9S weld process controller

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, U-Pulse, KF-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)

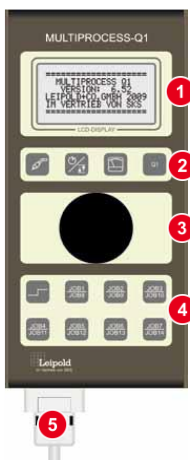
Q1 Weld Process Controller

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, Q9S, 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.

Q1Tool 1.0.0.0 - Q1 S/N 1001 v6.52

File Edit Display

Job1 Job2 Job3 Job4 Job5 Job6 Job7 Job8 Job9 Job10 Job11 Job12 Job13 Job14

MAGm FE 0, 8mm	User	Expert	Start	P2	END
MAGm	Gas	Ar<9%CO2	Wire feed 1	9.9	7.0 4.0 m/min
FE 2-s 0.8 mm	Material	FE 2-s	Voltage	28.4	24.6 19.8 V
Ar<9%CO2 JOB01	Diameter	1.2mm	Correction	0.0	0.0 0.0 V
Process	MIG/MAGm	Water pump	OFF		
T-ign.pulse	10.0 ms	Alarm time	5.00 s		
I-ignition	452 A	Gas pre flow	0.20 s		
T-End pulse	3.0 ms	Gas past flow	0.20 s		
End pulse current	350 A	Wire in speed	11.7 m/min		
		End crater (P7)	3		
		Burn back	2.0 mm		
		Welding current	240	202	154 A
		Char. (Auto)	2.92	3.48	4.56 V/100A
		Program duration	0.2		0.0 s
		Motor monitoring	OFF	ON	
		Motor limit			3.0 A
		Motor filter			2.00 s

Screenshot of the Q1Tool software

Q8Tool Software



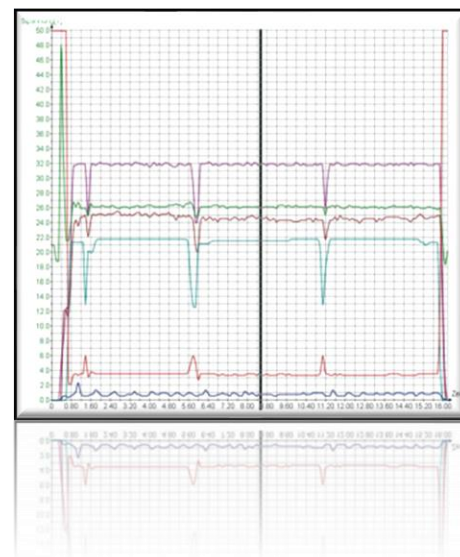
Connected working with the software Q8Tool

The Q8Tool comes with additional network functionality. Via 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**.

Working locally with Q8Tool software

The Q8Tool 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 Synchronweld 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 Q8Tool 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.

This is a screenshot of the Q8Tool software's parameter configuration screen. It features a complex layout with multiple sections for different welding parameters. On the left, there are sections for 'Verfahren' (Method) and 'Bedienelemente' (Control elements). The center contains 'StartParameter' (Start parameters) and 'EndParameter' (End parameters). The right side is dominated by a large table for 'ProgrammParameter' (Program parameters), which includes fields for various welding variables like current, voltage, and speed. At the bottom, there are additional sections for 'Diverses' (Miscellaneous) and 'Einstellungen' (Settings).

In addition to creating, storing, saving, and transmitting of programs, the Q8Tool software has extensive visualization capabilities. The Q8Tool software also supports 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.

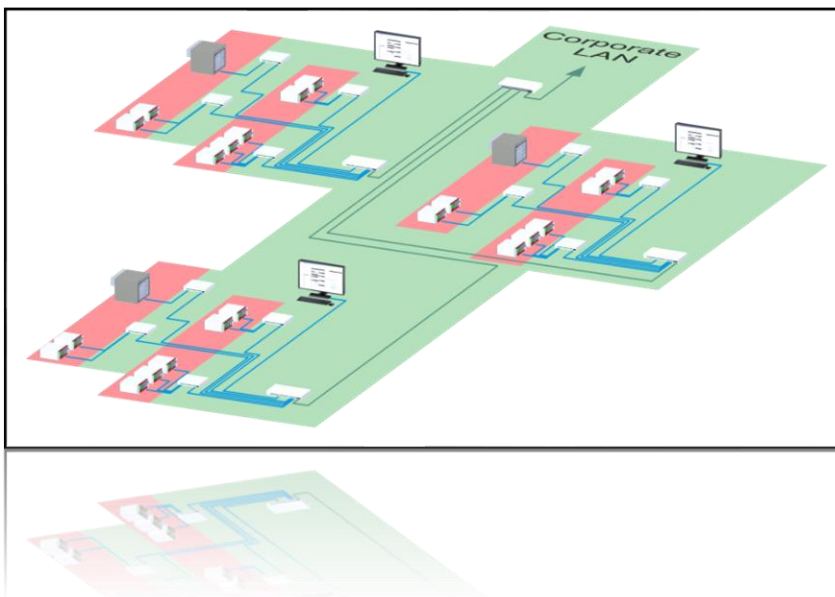
Live Documentation

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: Stop

End Time:

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	192.168.1.15	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	16.10.22

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

MQTT & OPC UA

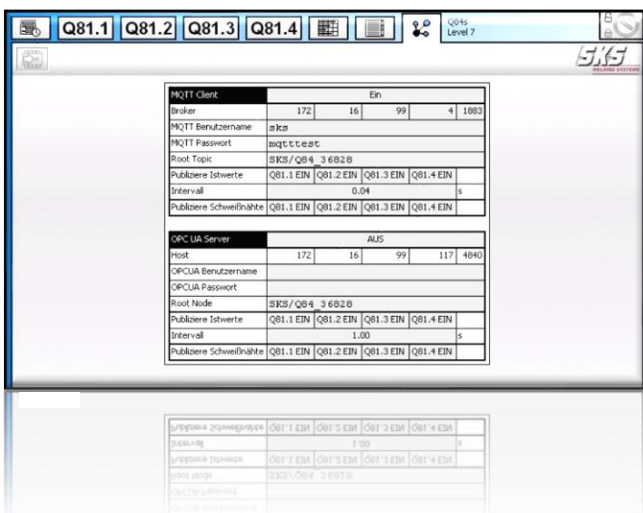


Perfect Integrate into your applications

The MQTT- (Message Queuing Telemetry Transport) and the OPC UA-protocol (Open Platform Communications Unified Architecture) are efficient and reliable solutions for the Internet of Things (IoT). By enabling devices and applications to reliably exchanging data even within unstable network structures – a basic requirement for realization of Industry 4.0. By integration of MQTT and OPC UA in our weld process controllers customers and developers are able to exploit the full potential of the Internet of Things. The integration is also available as an update for existing controllers.

Weld Process Controllers with MQTT & OPC UA Function

Description	Part number
Weld Process Controller Q80 with MQTT & OPC UA	77-7260-001
Weld Process Controller Q84R w. 1 weld card / MQTT & OPC UA	77-7310-001
Weld Process Controller Q84R w. 2 weld cards / MQTT & OPC UA	77-7320-001
Weld Process Controller Q84R w. 3 weld cards / MQTT & OPC UA	77-7330-001
Weld Process Controller Q84R w. 4 weld cards / MQTT & OPC UA	77-7340-001
Weld Process Controller Q84S w. 1 weld cards / MQTT & OPC UA	77-7410-001
Weld Process Controller Q84S w. 2 weld cards / MQTT & OPC UA	77-7420-001
Weld Process Controller Q84S w. 3 weld cards / MQTT & OPC UA	77-7430-001
Weld Process Controller Q84S w. 4 weld cards / MQTT & OPC UA	77-7440-001



MQTT/OPC UA configuration screen of the weld process controller



Update/Upgrade program for existing weld process controllers of Q80 & Q84r/s series available.

Weld Process Controllers: Overview of functions

Weld Process Controllers: Overview of functions

Connections / Interfaces	Q1	Q9S	Q80	Q84s*	Q84r*
USB (local)	✓	✓	-	-	-
Ethernet / UDP	-	-	✓	✓	✓
OPC UA / MQTT	-	-	✓	✓	✓
SPW bus connection (L700)	✓	Internal	✓	✓	✓
SD card slot	-	-	✓	✓	✓

Programs	Q1	Q9S	Q80	Q84s*	Q84r*
START	✓	✓	✓	✓	✓
Weld programs	14	744	744	744(x4)	744(x4)
Filling of end crater	✓	P7	P7	P7	P7
END	End pulse	✓	✓	✓	✓
Programs total	14	992	992	992(x4)	992(x4)

Processes	Q1	Q9S	Q80	Q84s*	Q84r*
MIG/MAG (GMAW)	✓	✓	✓	✓	✓
I-Pulse	✓	✓	✓	✓	✓
U-Pulse	✓	✓	✓	✓	✓
KF-Puls	✓	✓	✓	✓	✓
PlasmaTIG (TIG-DC + TIG-Pulse)	-	✓	✓	✓	✓
Dual Wire	-	✓	✓	✓	✓
microMIG / microMIG-cc	-	✓	✓	✓	✓
DP-Fast	-	✓	✓	✓	✓

General functions	Q1	Q9S	Q80	Q84s*	Q84r*
Display of measurement values	✓	✓	✓	✓	✓
Saving of measurement values	-	-	✓	✓	✓
Display of alarms	✓	✓	✓	✓	✓
Saving of alarms	-	-	✓	✓	✓
Synchroweld	-	✓	✓	✓	✓
Touch screen-HMI	-	-	✓	✓	✓
Expandable to up to four Q81 weld cards	-	-	-	✓	✓
Wall mounting	-	✓	✓	✓	✓

Monitoring functions	Q1	Q9S	Q80	Q84s*	Q84r*
Weld current monitoring (current window)	-	✓	✓	✓	✓
Auto compensation	-	✓	✓	✓	✓
Arc monitoring	-	✓	✓	✓	✓
Ignition monitoring	-	✓	✓	✓	✓
Motor current monitoring	✓	✓	✓	✓	✓
Gas monitoring	✓	✓	✓	✓	✓
Water monitoring	✓	✓	✓	✓	✓

PC functions	Q1	Q9S	Q80	Q84s*	Q84r*
Administration of weld parameters (local)	✓	✓	✓	✓	✓
Central administration and recording of weld data	-	-	✓	✓	✓
Remote administration via VNC	-	-	✓	✓	✓

- : Function not available ✓ : Function available

* : Denoted functionality is for a Q84r/s configuration with a single Q81 weld card.



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