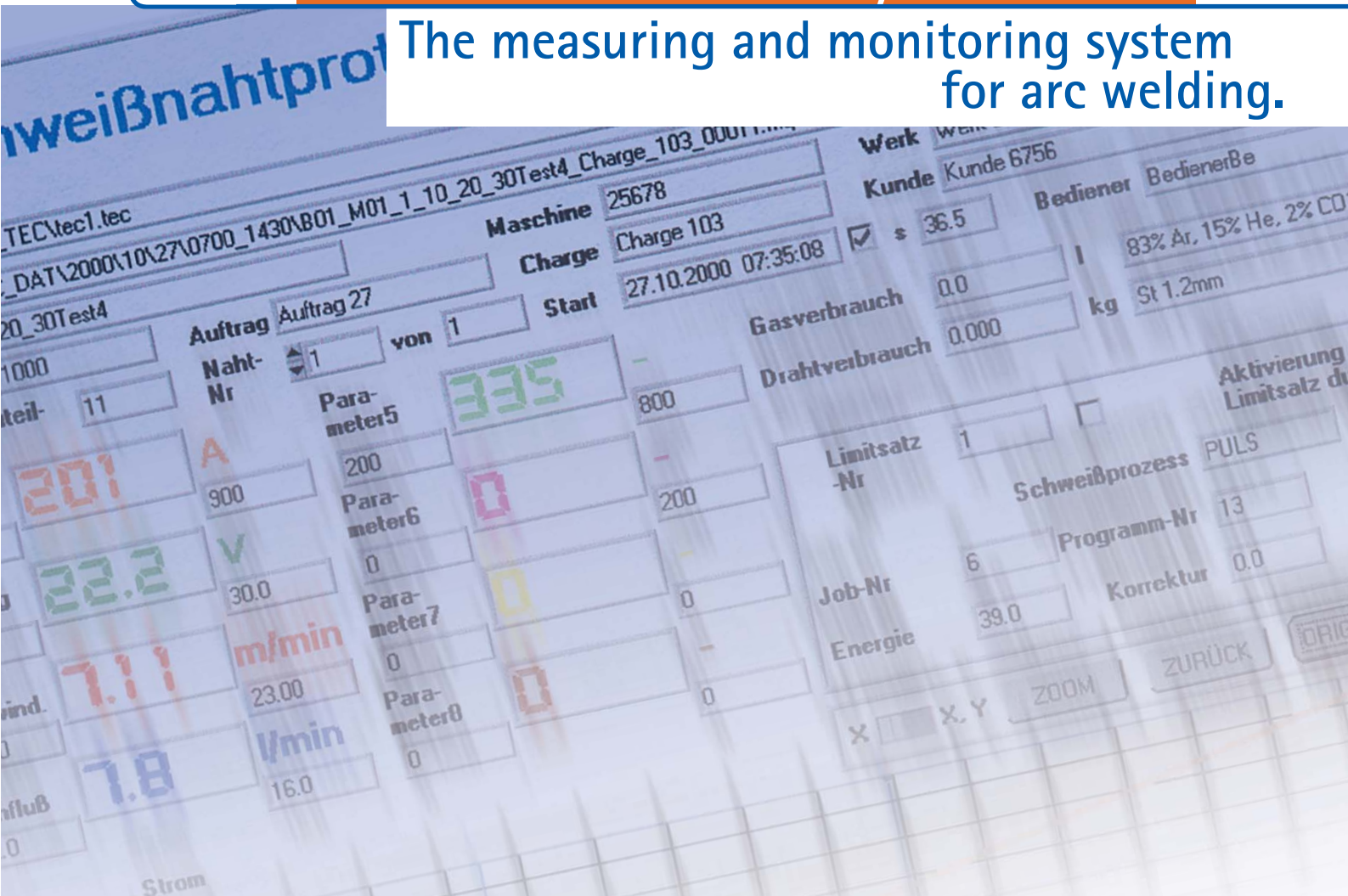




## MQC – Merkle Quality Control.

The measuring and monitoring system for arc welding.



- Reliable recording.
- Precise monitoring.
- Accurate cost analysis.



# MQC – Merkle Quality Control.

The measuring and monitoring system for arc welding.

## Setting new standards.

With its MQC system Merkle sets new standards for parameter controllers in arc welding. The measuring and monitoring system features eight different parameters, which can be measured, monitored for compliance with limit values, and automatically recorded. The system operates using independent sensors, which are either integrated compactly into the welding unit or housed in a separate box. The software runs on a standard PC under Windows, and can be employed either in stand-alone units or in a fully-networked configuration.

One impressive advantage is the ability to acquire data while at the same time configuring and creating limit sets and opening previously-saved welding reports.

## The facts at a glance:

- Monitoring of up to 8 parameters.
- Recording of up to 255 welds per workpiece.
- Individual, independent sensors for current, voltage, wire and gas.
- Control and coordination 10 times per second.
- Simultaneous data acquisition, archiving and report generation.
- Retrofit possible on any welding unit, regardless of make.

## Can be retrofitted on equipment of any make.

Want to upgrade your existing welding equipment? No problem with the external MQC box, which can be retrofitted on any existing welding unit – manual, automated, or robotic – regardless of the manufacturer. The external MQC sensor box for wire speed and gas flow is simply screwed in place between the central connection and the welding torch.

## Stand-alone solution or optimum networking.

Whether for monitoring just a single welding unit or an unlimited number – the MQC system can be used in both cases. To enable network operation the units are linked via a CAN bus. Monitoring is carried out by means of a master control station. The CAN bus is connected through a converter to the RS 232 serial interface of a standard PC.



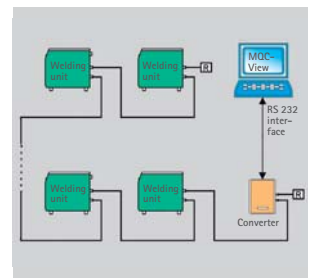
External MQC box, MQC sensor box and acknowledgement button



MQC retrofit kit for existing welding units



Single workstation with MQC monitoring



MQC network

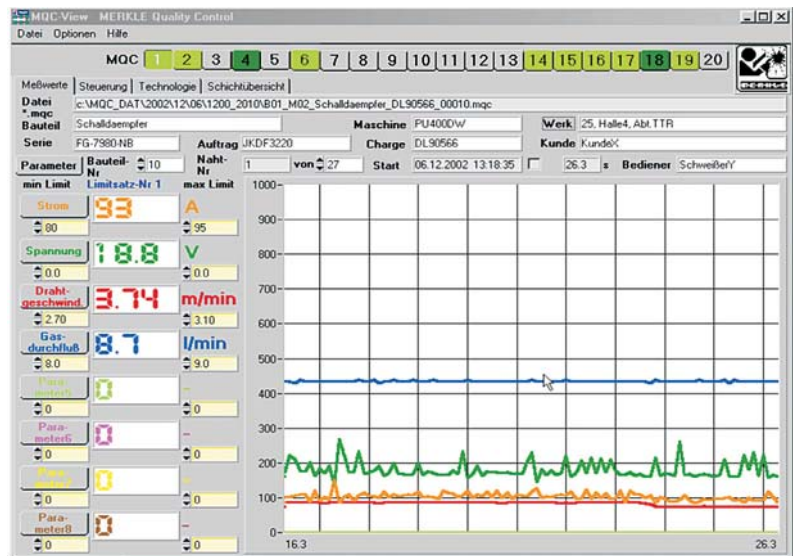
# Recording with Merkle MQC:

## Indispensable for successful quality management.

Recording of all relevant data is a prerequisite for long-term successful quality management. Merkle MQC breaks the data down into "Parameters", "Technology" and "Shift overview", giving you the information you need in a clear, perfectly-organized form.

### "Parameters" tab:

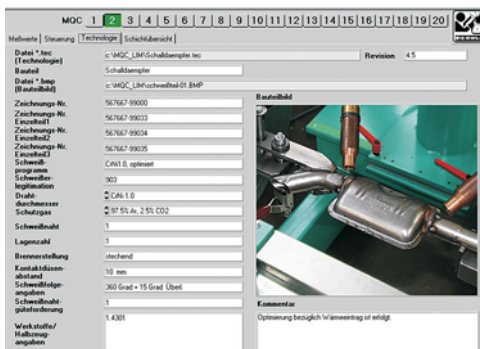
Measured values (parameters) at any given moment are indicated in display boxes; an additional diagram shows trends recorded over the last 10 seconds. The colors for each of the eight parameters can be freely selected.



General information about the workpiece can be defined in the upper part of the tab. The saving of parameters and thus the use of storage space on the hard disk is scalable: anywhere from "nothing" via "only starting time", "current and voltage" to "all".

### "Technology" tab:

This tab can be used to enter information about the welding technology and save it in a separate file. The file is automatically stored together with the parameters. These data can be retrieved together with the parameters – even years later!



All information about the materials, workpiece, and associated recordings are registered here. The shielding gas used, the filler material, and all relevant data regarding the welding process and welding technology are shown. A photograph or drawing of the workpiece can be displayed.

### "Shift overview" tab:

Data for all welds made during a shift are listed here. Consumption figures for wire and gas are summarized and displayed. Fault messages are logged on this tab and saved in a separate file.

Serie	Auftrag	Charge	Bauteil	Bauteil-Nr.	Start	t	kg	l	Fehler	
PS-7990-WB	32DF3220	589566	Schallämpfer	00003	06.12.2002	13:04:20	17.2	0.01	3.0	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00004	06.12.2002	13:07:40	17.1	0.01	3.2	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00005	06.12.2002	13:08:14	17.2	0.01	3.1	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00006	06.12.2002	13:09:37	17.1	0.01	3.0	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00007	06.12.2002	13:11:18	17.0	0.01	3.1	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00008	06.12.2002	13:14:06	17.1	0.01	3.2	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00009	06.12.2002	13:16:22	17.2	0.01	3.0	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00010	06.12.2002	13:18:35	17.2	0.01	3.0	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00011	06.12.2002	13:20:26	17.2	0.01	3.1	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00012	06.12.2002	13:21:50	17.0	0.01	3.0	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00013	06.12.2002	13:22:50	17.1	0.01	3.1	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00014	06.12.2002	13:23:22	17.2	0.01	3.2	0
PS-7990-WB	32DF3220	589566	Schallämpfer	00015	06.12.2002	13:25:24	17.2	0.01	3.1	0

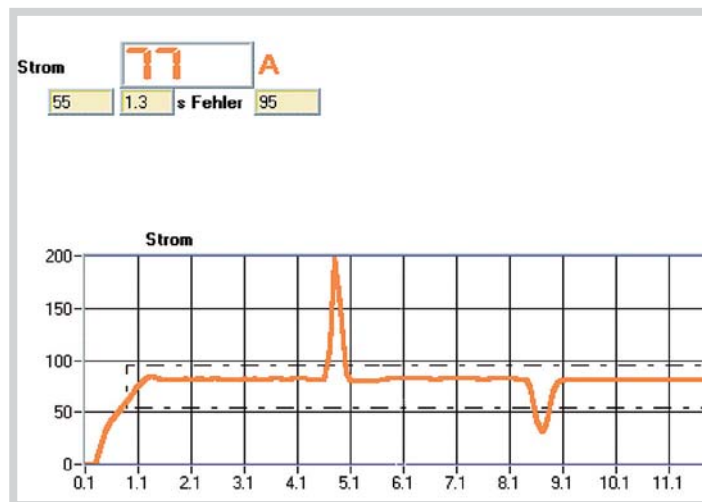
A welding report for any weld made during the shift can be called up showing all data in detail. Archived shift overviews can be loaded and old welding reports can be opened, even while data are being recorded during welding.



## Monitoring with Merkle MQC:

Early detection of faults ensures quality.

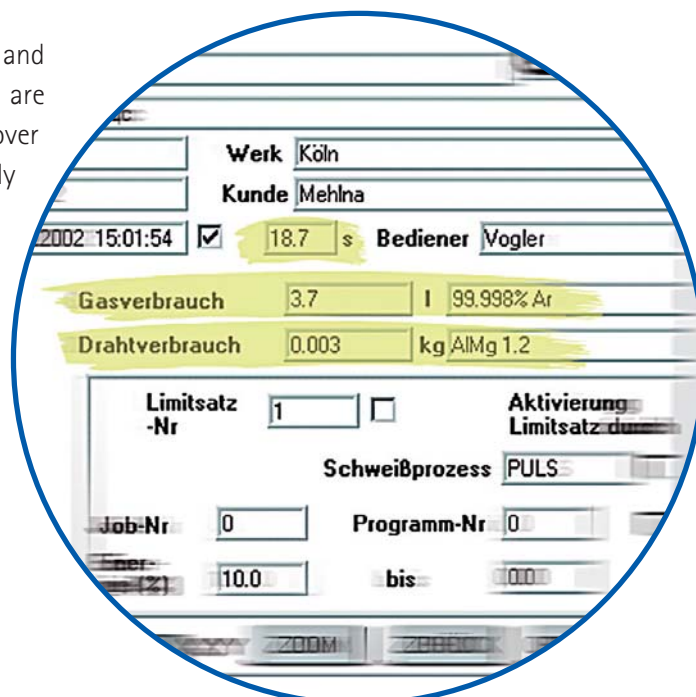
Limit values can be defined for each recorded parameter. If the measured value exceeds or drops below the corresponding limit, either a warning will be issued, the welding process will be stopped, or data recording will be triggered, depending on the option selected. Various limit value sets can be activated for different weld seams.



## Cost analysis with Merkle MQC:

A professional basis for precise cost calculations.

Values for welding times, machine utilization, wire and gas consumption are determined automatically and are immediately available. You also have better control over your machine utilization, and can systematically optimize your consumption figures and cycle times. Merkle MQC not only helps you to ensure the quality of your product – its precise basis for calculation gives you a competitive advantage on the market.

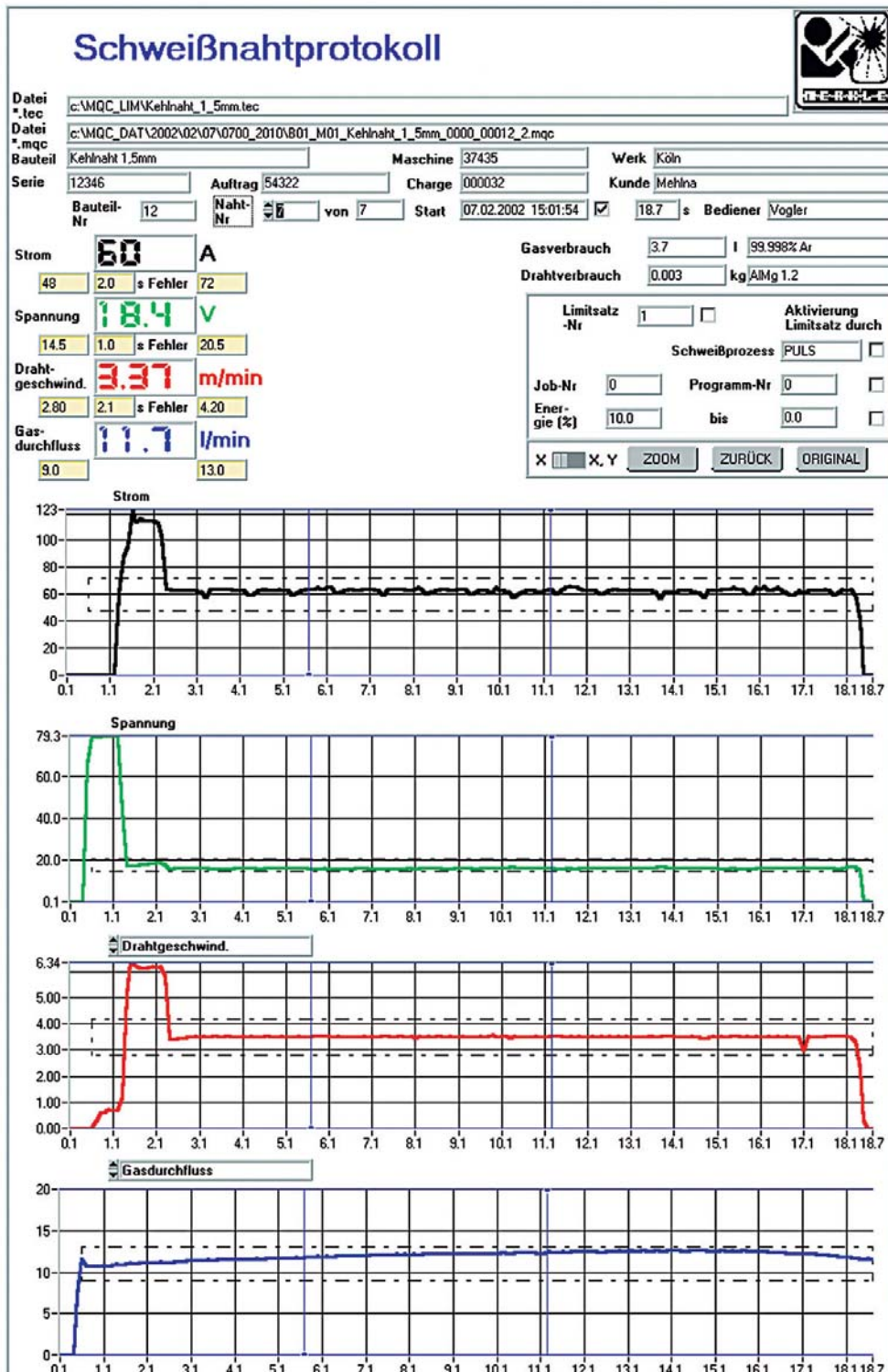


# The MQC welding report:

Giving you precise data on all quality criteria.

The MQC welding report gives you precise data on all quality criteria defined for each individual step. This gives you the ability to eliminate weak points systematically, ensure

and document product quality and optimize your company's profits.



Shaping a successful future.



### The MERKLE product range

	MIG/MAG Welding Units		MMA/ Stick Electrode Welding Units
	Synergic Pulse Welding Units		Plasma Welding and Cutting Units
	MIG/MAG Welding Torches		Wire Feeder Systems
	Push-Pull Welding Torches		Welding Turntables
	TIG (WIG) Welding Units		Automation Equipment

Shape your own successful future.

With Merkle. Your specialist for welding units, welding equipment, torches and intelligent quality assurance systems. With our own subsidiaries and factory representatives in Germany, Europe and many other countries.

Welcome to Merkle.



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