



KOLARC
.CLOUD

Industry 4.0



Dealing with a lot of welding data can be challenging. Therefore, planning, comprehensive recording, documentation, and **analysis of welding data** are crucial. **Kolarc.Cloud** aims to provide high-performance manufacturing processes for the factories of the future with its flawless welding technology.

Efficiency

Predefined welding parameters significantly reduce the risk of errors, providing high performance in production processes with efficient welding and longer arc durations.

Cost Optimization

It allows for the recording and analysis of consumption values such as energy, gas, and raw materials, enabling cost savings through reduced consumption expenses.

Quality

Kolarc.Cloud enables the management of components according to welding instructions, minimizing errors. In some cases, it leads the way in identifying and addressing errors. Documentation of welding parameters and welders contributes to sustainable welding seam quality.

Maintenance

Based on consumption analysis, it plans the maintenance process of the welding machine, making it easier to track and support. Thus, it ensures the welding machines and their joining work at high efficiency.

LoRaWAN

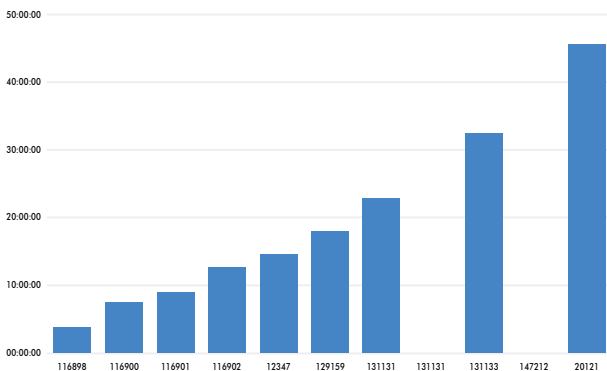
LoRaWAN (Long Range Wide Area Network) is a protocol for wireless communication designed to provide long-range, low-power communication between devices, particularly in the context of the Internet of Things (IoT).

LoRaWAN can communicate over distances up to 10-15 kilometers in rural areas and 1-3 kilometers in urban areas. It designed for low power consumption, enabling devices to operate on battery power for years.

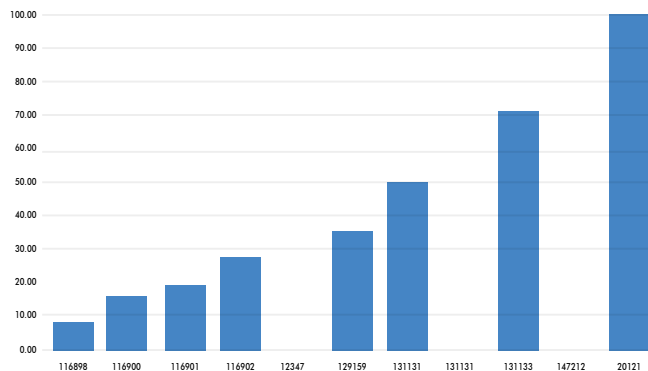
With LoRaWAN, there will be no longer to connection problems with the WiFi.



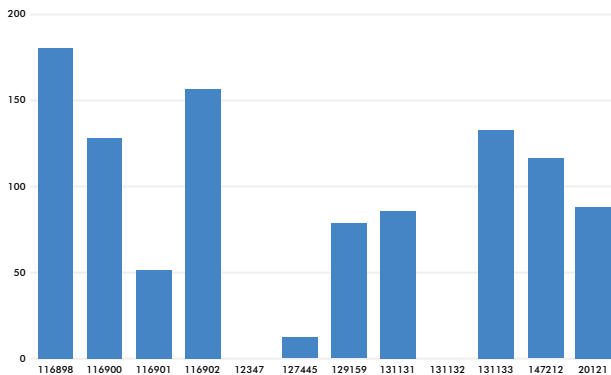
Total Duration



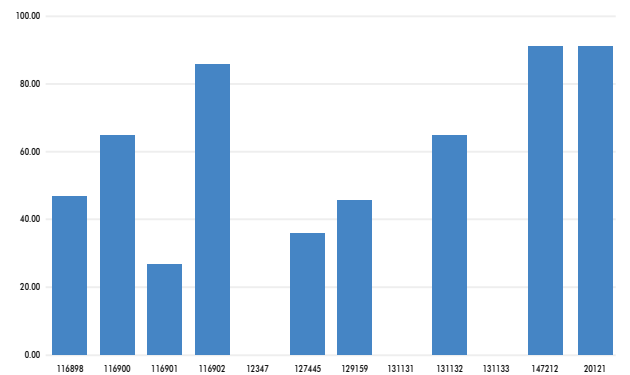
Productivity



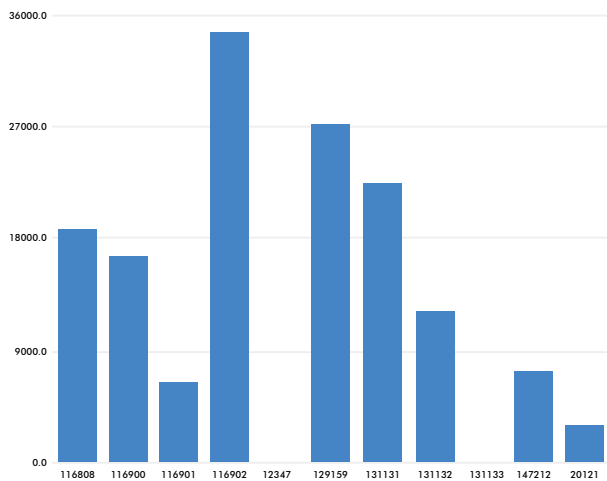
Total Energy Consumption



Total Wire Consumption



Total Gas Consumption



- Personalized dashboard panel for individuals.
- Graphical user interface.
- Ability to create a dashboard with customizable tools.

Location	Model	Description	Serial Number	Connect Status	Last Connected
Deutschland	MX500 W Pulse	Messe Esse-3	147212	●	08/09/2023 17:43:54
Kolarc	MX500	Messe Esse	116898	●	28/09/2023 11:15:21
Kolarc	MX500	Kolarc Production 1	000117	●	11/09/2023 18:50:40
Kolarc Mechanic Hall	MX500	Solarkol-6	116901	●	28/09/2023 11:15:21
Kolarc Mechanic Hall	MX500	Kolarc Production 6	2012	●	28/04/2023 12:10:05
Kolarc	MX500	Kolarc Production	12346	●	28/09/2023 11:15:21
Solarkol Production hall	MX500	Solarkol-1	116900	●	27/09/2023 15:21:08
Ankara	MX500	Messe Esse-4	10112	●	28/09/2023 11:15:21
Ankara-3	MX500	Kolarc Production 3	127448	●	22/08/2023 15:40:31
Solarkol Production hall	MX500	Solarkol 3	123479	●	28/09/2023 11:15:21
İstanbul-2	MX500	Solarkol 4	000021	●	01/06/2023 09:28:23
İstanbul-1	MX500	Exhibition Demo 13	201778	●	28/09/2023 11:15:21
Solarkol Production hall	MX500	Solarkol 4	000018	●	28/09/2023 11:15:21
R&D	MX500	R&D 1	000020	●	02/08/2023 13:41:26
Solarkol Production hall	MX500	Solarkol 5	20121	●	28/09/2023 11:15:21
Kolarc Mechanic Hall	MX500	Kolarc Production 5	20128	●	28/09/2023 11:15:21
İstanbul-3	MX500	Exhibition Demo 14	201777	●	07/06/2023 16:32:48

Ability to list with:

- Last connection status to the system,
- Organizational structure of the machines,
- Serial number,
- Description,
- Location,
- Model,
- All machines related to the organization.

Online 2

Offline 29

 **116901**
MX500 **20121**
MX500 **20121**
MX500 **000021**
MX500 **000117**
MX500 **123479**
MX500 **12346**
MX500 **201778**
MX500 **201217**
MX500 **201777**
MX500 **131132**
MX500 **127445**
MX500 **000017**
MX500 **12345**
MX500 **116899**
MX500 **116902**
MX500 **129006**
MX500 **116898**
MX500 **20122**
MX500 **127452**
MX500

- Real-time view of machines based on their online and offline status.

147212 ▾

[Info](#)[Component History](#)**Messe Esse - 3**






Deutschland

Serial Number	147212
Model	MX500 W Pulse
IP address	192.168.251.99
Last welded	25/09/2023
Arc on time	212
Arc off time	310




**Components**

Last update	08/09/2023 17:23PM
Valid since	08/09/2023 17:43PM

**MIG Power**

 Control board	
 Control board software	1.1.60
 Power board	
 Relay board	
 Filter board	

**Vario**

 User interface board	
 User interface board software	1.1.33
 Motor board	

















- Above you can see the machine information detailed display.
- This screen shows that information about the registered machine and machine component version information.
- Besides, machine is updated each time the machine is turned off and on.

147212

Info

[Component History](#)

2022

 MIG Power			08 Sep 2023 17:23
 Control board software	1.1.60		
 Vario			08 Sep 2023 17:23
 User interface board software	1.1.33		
 MIG Power			07 Sep 2023 15:43
 Control board	-		
 Power board	-		
 Relay board	-		
 Filter board	-		
 Kolarc.Cloud			07 Sep 2023 15:43
 Kolarc.Cloud	1.1.3		
 Kolarc.Cloud software	1.1.9		

- This list shows added, removed, and updated machine parts.






















	Time stamp	Duration	Location	Serial Number	Description	Limit violations	Error
	28/09/2023 11:50:10 AM	0.7	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:50:08 AM	0.8	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:50:04 AM	1.6	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:50:01 AM	1.6	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:58 AM	1.9	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:55 AM	1.0	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:52 AM	1.5	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:48 AM	1.6	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:45 AM	2.4	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:41 AM	2.8	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:37 AM	1.6	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:34 AM	1.3	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:08 AM	2.1	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:05 AM	2.0	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:03 AM	1.5	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:49:00 AM	1.3	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0
	28/09/2023 11:48:57 AM	1.6	Kolarc Mechanic Hall	20121	Kolarc Production 5	0	0


Tracking every weld in real-time with:


- Date and time of the weld,
- Welding duration,
- Machine information that executed the weld,
- Monitoring of weld limit exceedances and errors.


Welding Data

 Ok Status	 Machine 1 Machine	 05/04/2023 11:55:41 AM Start time
 0078652142 Welder	 99 Seam number	 00123456 Part item number
 00001 Part serial number	 10 Job number	 Synergic Welding mode
 0 Pulse/dynamic correction	 0.130 m 0.008 kg Wire consumption	 0.23 l Arc gas consumption
 0.001 kWh Energy consumption	 1.3 s Duration	 n/a Seam length
 2.82 kJ Instantaneous energy	 n/a Energy	 n/a Heat Input


 Welding Quality Indicator


 Welder Information

 Material Serial Number


 Pulse/dynamic correction

 Energy Consumption

 Instantaneous Energy


 Welding Machine


 Weld Seam Number

 Job Number

 Wire Consumption

 Weld Duration


 Arc Energy


 Welding Start Time

 Material Number

 Welding Mode

 Gas Consumption

 Weld Seam Length

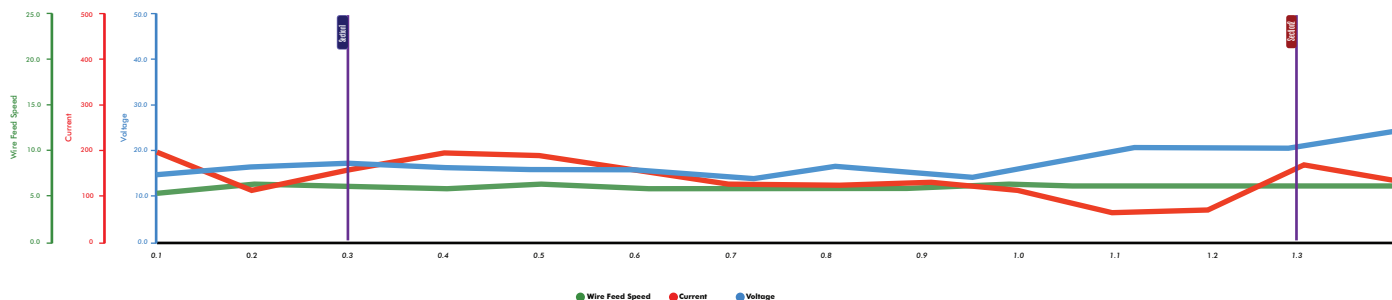
 Heat Input

⚙ Set values

 0.5	6.0 m/min W _{fs}	-2.0 / +2.0	 0.5	140 A I	-40 / +40	 0.5	18.0 V U	-2.0 / +2.0
--	-------------------------------------	-------------	---	-------------------	-----------	---	--------------------	-------------

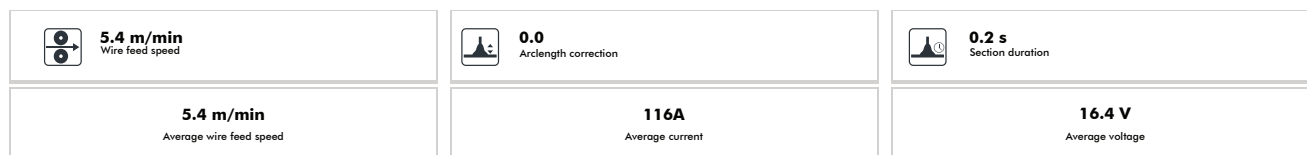
- The set wire speed, current, and voltage values on the machine.
- The duration used and the maximum/minimum limit values when calculating welding quality (Editable in the Admin / Machines / Rule settings / Limit monitoring section).

Actual values



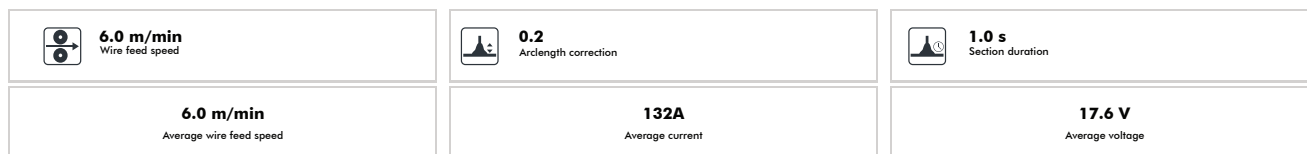
- Data graph generated with real-time wire speed, current, and voltage values at 100 ms intervals during welding.

Section 1



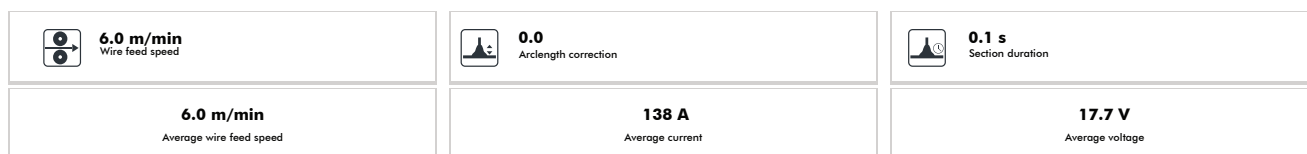
- Start values for Section 1.

Section 2




- Section 2 displays the values for the Arc established.

Section 3



- Section 3 displays the values for the crater fill.

 Dashboard Machines Arc Welds Statistics Maintenance Admin

Value to be displayed

Date range

Grouped by

Duration (h)

Last 7 days

x

Day

+ Add another grouping

Apply

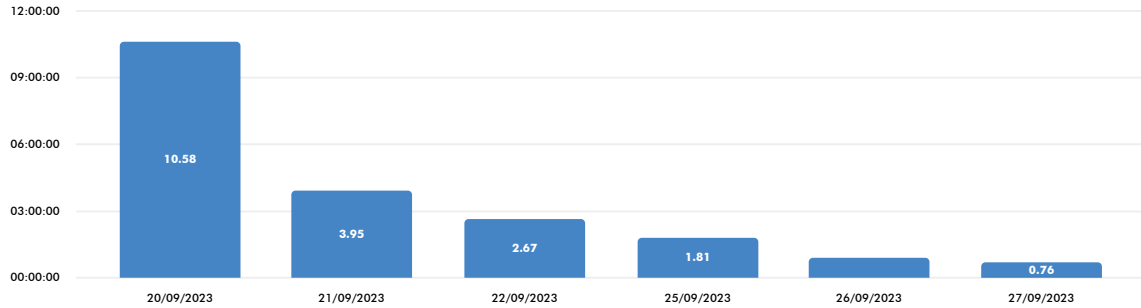
Chart type

Bar chart (stacked)

Bar chart (grouped)

Line chart

Matrix chart (pie chart)



- The ability to visualize cost optimization, efficiency, and quality values with various groupings on a graph.

Cost Optimization

- Energy consumption (kWh)
- Wire consumption (kg)
- Gas consumption (l)
- Average labor cost (h)
- Average electricity cost (kWh)
- Wire cost (kg)
- Gas cost (l)

Efficiency

- Duration (h)
- Total number of welds

Quality

- Total number of welds
- Number of faulty welds

Dashboard

Machines

Arc Welds

Statistics

Maintenance

Admin

Machine alerts Maintenance

Date range

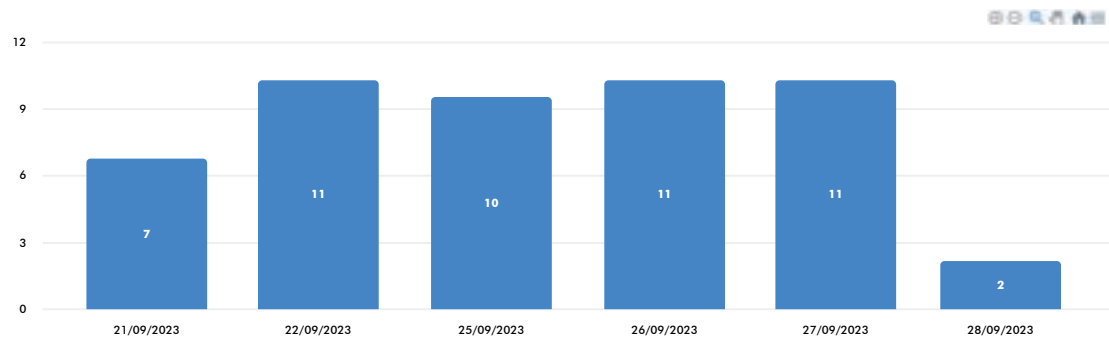
Last 7 days

Grouped by

Day

+ Add another grouping

Apply



- Machine alerts show that error information.

Machine alerts Maintenance

Serial Number	Duration Ratio	Planning Date	State
10112	<div style="width: 100%;"></div>	05/01/2025	Normal
000021	<div style="width: 100%;"></div>	04/01/2025	Normal
000020	<div style="width: 100%;"></div>	26/09/2024	Normal
127445	<div style="width: 100%;"></div>	11/10/2024	Normal
129006	<div style="width: 100%;"></div>	23/12/2024	Normal
123479	<div style="width: 10%; background-color: green;"></div>	28/08/2024	Normal
000117	<div style="width: 100%;"></div>	11/10/2024	Normal
2012	<div style="width: 5%; background-color: green;"></div>	28/08/2024	Normal
10113	<div style="width: 100%;"></div>	28/08/2024	Normal

Maintenance

- Based on the machine's usage duration
- Lists the scheduled maintenance date and the maintenance status of the machine

Dashboard

Machines

Arc Welds

Statistics

Maintenance

Admin

Administration

Users

Machines

Settings

Users Management

+ Create User

	Username / Email	Authorities	Created By	Modified By	Status
A	admin@kolarc.com admin@kolarc.com	ROLE_ADMIN ROLE_USER			ACTIVATED
A	admin1@kolarc.com admin1@kolarc.com	ROLE_USER ROLE_ORGADMIN			ACTIVATED
E	eugenepavlov@kolarc.com eugenepavlov@kolarc.com	ROLE_USER			ACTIVATED
O	oylums oylums	ROLE_ADMIN			ACTIVATED
I	ilkerolucak ilkerolucak@kolarc.com	ROLE_ADMIN			ACTIVATED
E	exhibition@kolarc.com exhibition@kolarc.com	ROLE_ORGADMIN ROLE_USER			ACTIVATED
D	demo_1 demo@kolarc.com	ROLE_USER			ACTIVATED

<< <

Username *

First Name

Last Name

Password *

Email *

Language

Authorities *

 "ROLE_ORGADMIN"
 "ROLE_USER"

Cancel

Create User

- The organization admin can assign admin or user roles to individuals within their organization.



Rule Operations

ID: 147212

- 1 | SG2 (G3Si1) / ...
- 2 | Empty Memory
- 3 | Empty Memory
- 4 | Empty Memory
- 5 | Empty Memory
- 6 | Empty Memory
- 7 | Empty Memory
- 8 | Empty Memory
- 9 | Empty Memory
- 10 | Empty Memory
- 11 | Empty Memory
- 12 | Empty Memory
- 13 | Empty Memory
- 14 | Empty Memory
- 15 | Empty Memory
- 16 | Empty Memory
- 17 | Empty Memory
- 18 | Empty Memory
- 19 | Empty Memory
- 20 | Empty Memory
- 21 | Empty Memory
- 22 | Empty Memory

Common

Machine Job number *

12 SG2 (G3Si1) / SG3 (G4Si1), Ar+18%CO2, DC+, Synergic

Name *

SG2 (G3Si1) / SG3 (G4Si1), Ar+18%CO2, DC+, Synergic

Material

ST

Gas

Ar+18

Wire

SG2

Wire diameter (mm)

1.20m

Item number

1

Seam length (mm)

(1.0.∞)

Mode

Select... v

Process parameter v

Function settings v

Limit monitoring v

Program correction limit (%) v

Cancel

Copy

Paste

Save Memory Lock

Save Rule

- This page is virtual memory management for the machine. You can edit and send all 99 of the machine's memories to the machine (Please note that the machine must be in listening mode when sending rule data to the machine).
- To assign to the machine, select the job number in the chosen memory and give it a name.
- The system automatically fills in the material, gas, and wire diameter parameters based on the selected job number.
- You can assign an item number to the weld, associating it with a specific part.
- You can match this memory with the part's length using the seam length, and later, for the quality assessment of the welded part you can access all the values displayed in the welding detail screen.
- You can determine the welding mode using 'Mode'.

		Common		▼
		Process parameter		▼
		Function settings		^
<input checked="" type="checkbox"/> 1	SG2 (G3Si1) / ...	Gas pre flow (s)	0.5	0.5
<input type="checkbox"/> 2	Empty Memory	Start ignition mode	2	0.5
<input type="checkbox"/> 3	Empty Memory	Start time (s)	0.2	0.5
<input type="checkbox"/> 4	Empty Memory	Start amper (%)	70	0.5
<input type="checkbox"/> 5	Empty Memory	Start arc correction	0	0.5
<input type="checkbox"/> 6	Empty Memory	Start slope	0.3	0.5
<input type="checkbox"/> 7	Empty Memory	Duo peak time (s)	0.2	0.5
<input type="checkbox"/> 8	Empty Memory	Duo base time (s)	0.4	0.5
<input type="checkbox"/> 9	Empty Memory	Duo base amper (%)	70	0.5
<input type="checkbox"/> 10	Empty Memory	Duo base arc length corr (V)	1	0.5
<input type="checkbox"/> 11	Empty Memory	End down slope (s)	0.1	0.5
<input type="checkbox"/> 12	Empty Memory	End Time (s)	0	0.5
<input type="checkbox"/> 13	Empty Memory	End Amper (%)	100	0.5
<input type="checkbox"/> 14	Empty Memory	End arc correction (V)	0	0.5
<input type="checkbox"/> 15	Empty Memory			
<input type="checkbox"/> 16	Empty Memory			
<input type="checkbox"/> 17	Empty Memory			
<input type="checkbox"/> 18	Empty Memory			
<input type="checkbox"/> 19	Empty Memory			
<input type="checkbox"/> 20	Empty Memory			
<input type="checkbox"/> 21	Empty Memory			
<input type="checkbox"/> 22	Empty Memory			

Cancel

Copy

Paste

Save Memory Lock

Save Rule

- You can edit all the function parameters found in the machine's F menu and save them to the memory.
- Furthermore, the information from the previous record in memory is displayed to the user, allowing you to improve your WPS quality.
- Copy-Paste allows you to copy from one memory to another, and you can send it to the machine using Save Rule option.
- By selecting the checkboxes next to the filled memory slots and using 'Save Memory Lock' option, you can lock the machine with those memories that have been previously filled and sent to the machine.



Rule Operations

ID; 147212

- 1 | SG2 (G3Si1) / ...
- 2 | Empty Memory
- 3 | Empty Memory
- 4 | Empty Memory
- 5 | Empty Memory
- 6 | Empty Memory
- 7 | Empty Memory
- 8 | Empty Memory
- 9 | Empty Memory
- 10 | Empty Memory
- 11 | Empty Memory
- 12 | Empty Memory
- 13 | Empty Memory
- 14 | Empty Memory
- 15 | Empty Memory
- 16 | Empty Memory
- 17 | Empty Memory
- 18 | Empty Memory
- 19 | Empty Memory
- 20 | Empty Memory
- 21 | Empty Memory
- 22 | Empty Memory

Common v			
Process parameter v			
Function settings v			
Limit monitoring ^			
Wire speed command value (m/min)	6	<input type="text" value="6"/>	(1.0 , 25.0)
Upper wire speed limit	2	<input type="text" value="2"/>	(1.0 , 5.0)
Lower wire speed limit	2	<input type="text" value="2"/>	(1.0 , 5.0)
Mx time wire speed deviation (s)	0.5	<input type="text" value="0.5"/>	(0.5 , ∞)
Current command value (A)			(1 , 100)
Upper current limit	40	<input type="text" value="40"/>	(1 , 100)
Lower current limit	40	<input type="text" value="40"/>	(1 , 100)
Voltage command value (V)			(1.0 , 40.0)
Upper voltage limit	2	<input type="text" value="2"/>	(1.0 , 10.0)
Lower voltage limit	2	<input type="text" value="2"/>	(1.0 , 10.0)
Maks time voltage deviation(s)	0.5	<input type="text" value="0.5"/>	(0.5 , ∞)
Limit react	Ignore	<input type="text" value="Ignore"/>	
Program correction limit (%) v			

Cancel

Copy

Paste

Save Memory Lock

Save Rule

- You can adjust the wire speed, current, and voltage limit values set on the machine.
- You can change the default values of the parameters that determine the welding quality on the welding detail screen and set your own welding quality limits based on your own parameters.
- When there is a limit exceedance, you can choose to ignore the system's response or receive a warning.



Rule Operations

ID: 147212

- 1 | SG2 (G3Si1) / ...
- 2 | Empty Memory
- 3 | Empty Memory
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- 7 | Empty Memory
- 8 | Empty Memory
- 9 | Empty Memory
- 10 | Empty Memory
- 11 | Empty Memory
- 12 | Empty Memory
- 13 | Empty Memory
- 14 | Empty Memory
- 15 | Empty Memory
- 16 | Empty Memory
- 17 | Empty Memory
- 18 | Empty Memory
- 19 | Empty Memory
- 20 | Empty Memory
- 21 | Empty Memory
- 22 | Empty Memory

Common	▼
Process parameter	▼
Function settings	▼
Limit monitoring	▼
Program correction limit (%)	^

Upper wire speed correction (m/min)	10	<input type="text" value="10"/>	(1.0 , 25.0)
Lower wire speed correction (m/min)	5	<input type="text" value="5"/>	(1.0 , 25.0)
Upper current corection (A)			(25 , 500)
Lower current corection (A)			(25 , 500)
Upper arc length correction limit (V)	2.6	<input type="text" value="2.6"/>	(0 , 9.9)
Lower arc length correction limit (V)	-3.1	<input type="text" value="-3.1"/>	(-9.9, 0)

Cancel

Copy

Paste


Save Memory Lock

Save Ruie

- You can influence the welding quality and manage welder by editing the maximum and minimum values for the wire speed, current, and voltage set on the machine to restrict the machine within a defined maximum and minimum range according to the set values.

 Dashboard Machines Arc Welds Statistics Maintenance Admin

Administration

 Users Machines Settings

Name

Kolarc

Sector

Production

Notification Email *

Currency *

\$

Labor Cost (h) *

0

Electricity (kWh) *

0

Wire Cost (kg)

Gas Cos (l)

Adjust Wire Prices

Adjust Gas Prices

Update Organization

- You can view information about your organization and edit your notification email.
- Besides, in the statistics section, the organization admin determines the average prices for welding, gas, electricity, and wire based on the selected currency, which helps with cost analysis and contributes to improving your efficiency metrics.

KOLARC

BUILDING THE FUTURE

AGINT
UPGRADING YOUR PRODUCTION

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