

WELDCUBE PREMIUM **RELEASE 2.3**

RELEASE DESCRIPTION

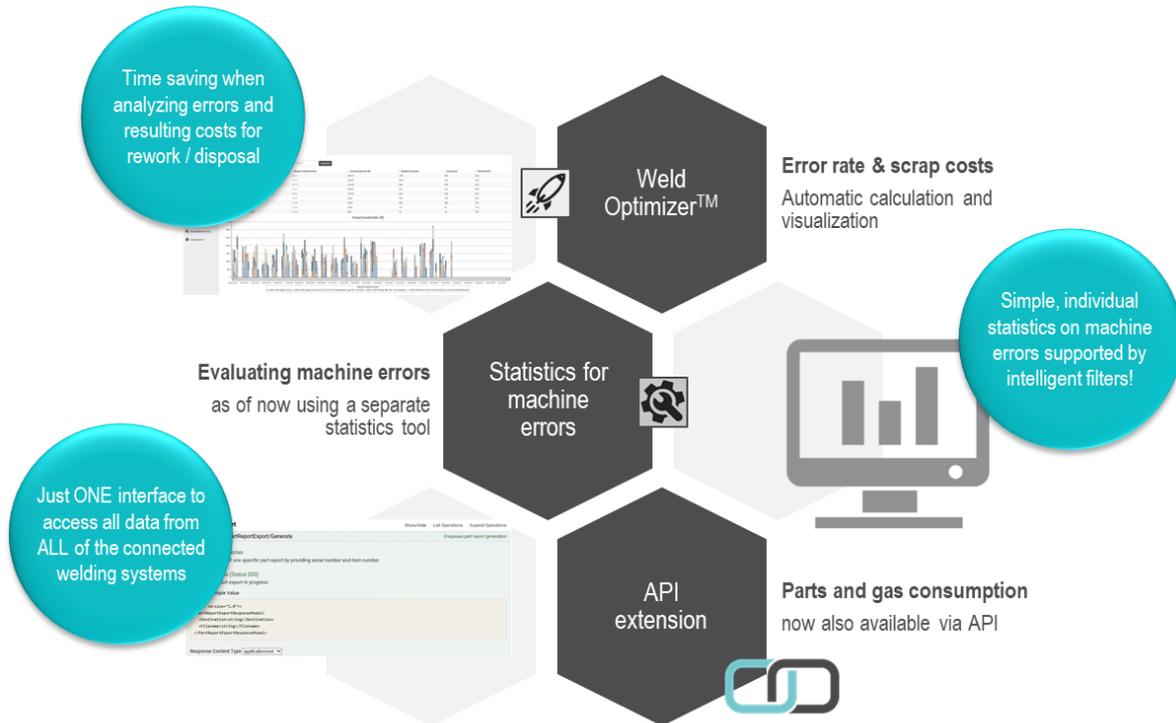
TABLE OF CONTENTS

1	Overview: new functions	3
2	General	4
2.1	TPS machine backup & restore extensions.....	4
2.1.1	Deleting machine backup	4
2.1.2	Restore backup to another TPS	4
2.1.3	Automated backup	5
2.2	Logbook entry on R/L alignment.....	6
2.3	Error solution proposals in TPS machine live view.....	7
2.4	System information in UI.....	7
2.5	Redesign of error page and windows update warning	8
3	Statistics & analysis	9
3.1	Adaption of standard date range	9
4	Part management & reporting	10
4.1	Time stamp within part report	10
4.2	Saving the last machine in part monitoring.....	10
5	New function: WeldOptimizer™	11
6	New function: error statistics	12
6.1	Filter possibilities.....	13
6.2	Error solution proposals for TPS.....	13
6.3	Difference to known statistics function.....	13
6.4	Dashboard	14
6.5	E-mail report	14
6.6	PDF export.....	14
7	Data interface / API	15
7.1	API extension: part status.....	15
7.2	API extension: gas consumption	15
7.3	WeldCube Premium REST-API – advantages for our customers	15

1 OVERVIEW: NEW FUNCTIONS

Release 2.3 provides several new functions, extensions and improvements for WeldCube Premium. **TPS/i firmware Version 1.8.6 or higher** is required for using release 2.3 together with TPS/i. We recommend updating to **TPS/i firmware 2.0.0 or higher**, as this version allows using the complete functional range (incl. gas consumption) and fixes troubles with data communication between TPS/i and WeldCube Premium.

The following charts shows the 3 most important new possibilities with this release:



The following list provides an overview of all new functions with release 2.3:

- / General
 - / Extensions for TPS machine backup & restore
 - / Logbook entry on R/L alignment
 - / Error solution proposals in TPS machine live view
 - / System information in UI
 - / Redesign of error page and windows update warning
- / Statistics & analysis
 - / Adaption of standard date range
- / Part management & reporting
 - / Time stamp within part report
 - / Saving the last machine in part monitoring
- / New function: WeldOptimizer™
- / New function: error statistics
- / Data interface / API
 - / API extension: gas consumption and parts

2 GENERAL

2.1 TPS machine backup & restore extensions

Release 2.3 extends the new possibility of creating a full backup of all data at UST and RCU of a TPS and restore the same manually using WeldCube Premium, provided by release 2.2:

- / Deleting machine backup
- / Restore backup to another TPS
- / Automated backup

2.1.1 Deleting machine backup

Deleting created backups is now possible.

The screenshot shows the 'Backup' section of the software interface. A table lists backup entries with columns for Date, Description, and Source. A context menu is open over the first entry, with the 'Delete' option highlighted in red. Below the table, a 'Confirmation' dialog box asks, 'Are you sure you want to delete this backup?' with 'Cancel' and 'Ok' buttons.

Date	Description	Source
3/29/2019 10:12:52 AM		RCU

Confirmation

Are you sure you want to delete this backup?

Cancel Ok

2.1.2 Restore backup to another TPS

It is now possible to restore a machine backup to another TPS device.

The screenshot shows the 'Backup' section of the software interface. A table lists backup entries with columns for Date, Description, and Source. A context menu is open over the first entry, with the 'Restore on other machines' option highlighted in red.

Date	Description	Source
3/29/2019 10:12:52 AM		RCU

Restore on other machines

In order to do so, WeldCube Premium provides a dialog with a list of available TPS devices the backup can be restored to after starting the restore process. One or several device/s can be chosen there:

Select machines for restore ✕

<input type="checkbox"/>	Name	Serial number	Model	Location	Status
<input type="checkbox"/>	PSS_086	16440338	TPS5000	Fronius/Werk1/F&E/RSC AREA	✔
<input checked="" type="checkbox"/>	Hermine	16440341	TPS5000	/Fronius/Fronius International (Austria)/Plant Thalheim/DSS	✔
<input type="checkbox"/>	Sieglinde	16440352	TPS5000	/Fronius/Werk1/F&E/RSC AREA	✖

The given list also shows the status of the machines:

- / **Green:** online
- / **Red:** offline

The “restore” button is only available if...

- / ...at least one machine is chosen and
- / ...none of the chosen machines is offline.

2.1.3 Automated backup

Release 2.3 also provides the possibility for automated backup. In order to use it, the customer can define individually per device at which point of time a backup shall be created:

BACKUP

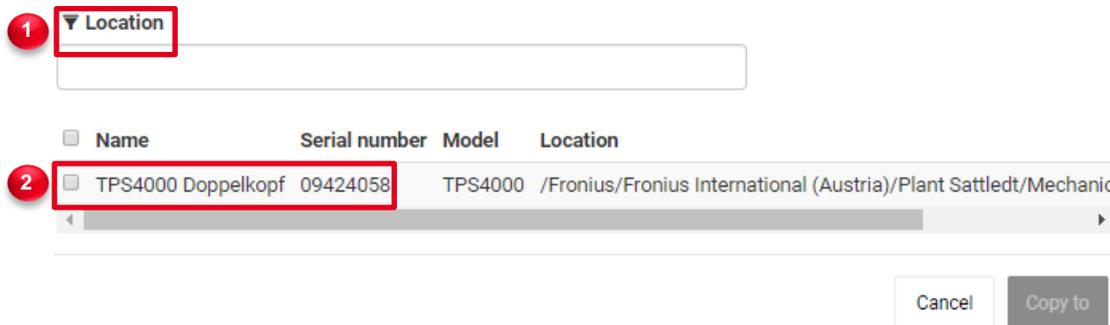
No data available.

It is possible to create an individual backup time schedule per TPS (day/s and time):

Schedule

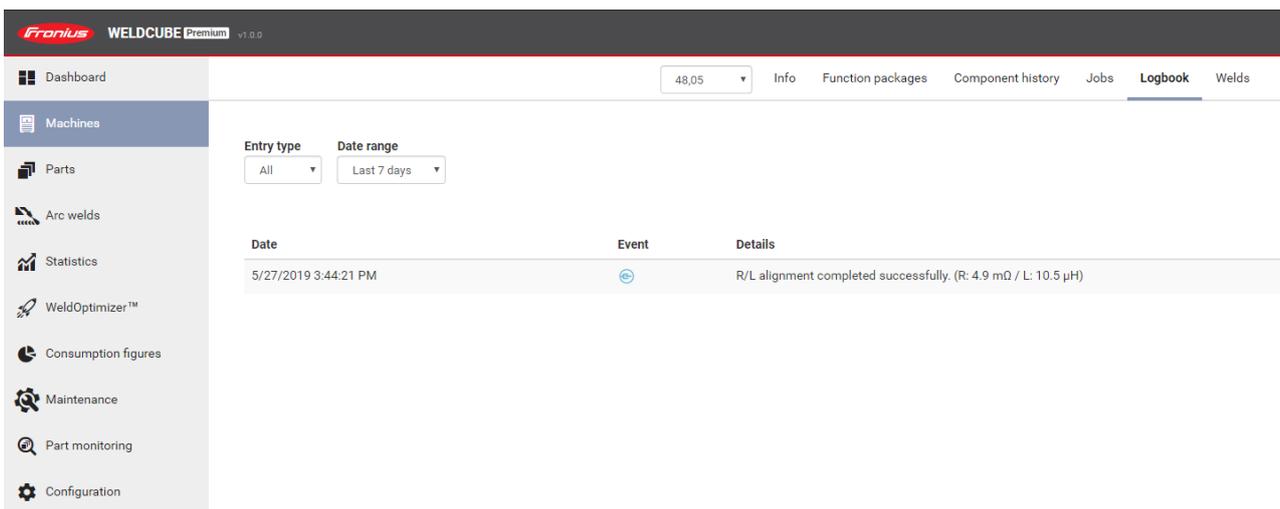
Weekday	Enabled	Time
Monday	<input type="checkbox"/>	01 : 00
Tuesday	<input type="checkbox"/>	00 : 00
Wednesday	<input type="checkbox"/>	01 : 00
Thursday	<input type="checkbox"/>	00 : 00
Friday	<input type="checkbox"/>	00 : 00
Saturday	<input type="checkbox"/>	23 : 00
Sunday	<input type="checkbox"/>	00 : 00

If a defined schedule shall apply for several TPS, it is possible to easily transfer this one by using the function “Copy to other machines”. For this purpose, a dialog is displayed allowing to limit the available machine selection via a filter (1) and to choose the devices the time schedule shall be transferred to (2). Using the button  wird der Vorgang abgeschlossen:

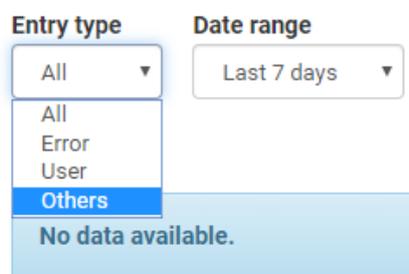


2.2 Logbook entry on R/L alignment

If the user chooses the category “all” within the machine logbook, a **successful** R/L alignment is shown as follows:



Additionally, there is a new category “other” available as of now. Currently, only the R/L alignment is assigned to this category:



2.3 Error solution proposals in TPS machine live view

As there are now solution proposals available for TPS as well, due to the new error statistics functionality (see 6.2), the TPS machine live view was extended as well. There are now solutions available for occurred errors for TPS as well (as already known for TPS/i).

Status	Machine		Issues
	Hermine	Solution: Insert a new wirespool and feed the wire electrode into the hosepack; acknowledge Err 056 by pressing the Store button. Multiple causes: see manual to find more solutions	56.0 "Wire end" error: No wire available
	Jian Yan		2350 Over temperature.

2.4 System information in UI

As of now, the WeldCube Premium application provides detailed system information within the menu "configuration" → "about". The information for the on premises variant (without Fronius server hardware) will also include details on the operating system.

The screenshot shows the 'About' page in the WeldCube Premium application. The left sidebar contains navigation options: Dashboard, Machines, Parts, Arc welds, Statistics, WeldOptimizer™, Consumption figures, Maintenance, Part monitoring, and Configuration (highlighted). The top navigation bar includes: Machines, Parts, Materials, WeldCube, User, System, and About (highlighted with a red box).

ABOUT THIS WELDCUBE

Software information	
Application version	2.3.113
OS version	0.0.9
OS platform	base
Serial number	N/A
Item number	N/A
Description	N/A

System information	
Host name	WC-DORIS
Main memory	23.97 GB
Virtual memory	27.47 GB

Disk drive information	
Local drive C:	
Name	WeldCube (C:)
Size	20.00 GB
Free space	8.12 GB (40 %)
Local drive D:	
Name	(D:)
Size	19.19 GB
Free space	8.54 GB (44 %)
Local drive E:	
Name	Main (E:)
Size	218.94 GB
Free space	131.44 GB (60 %)

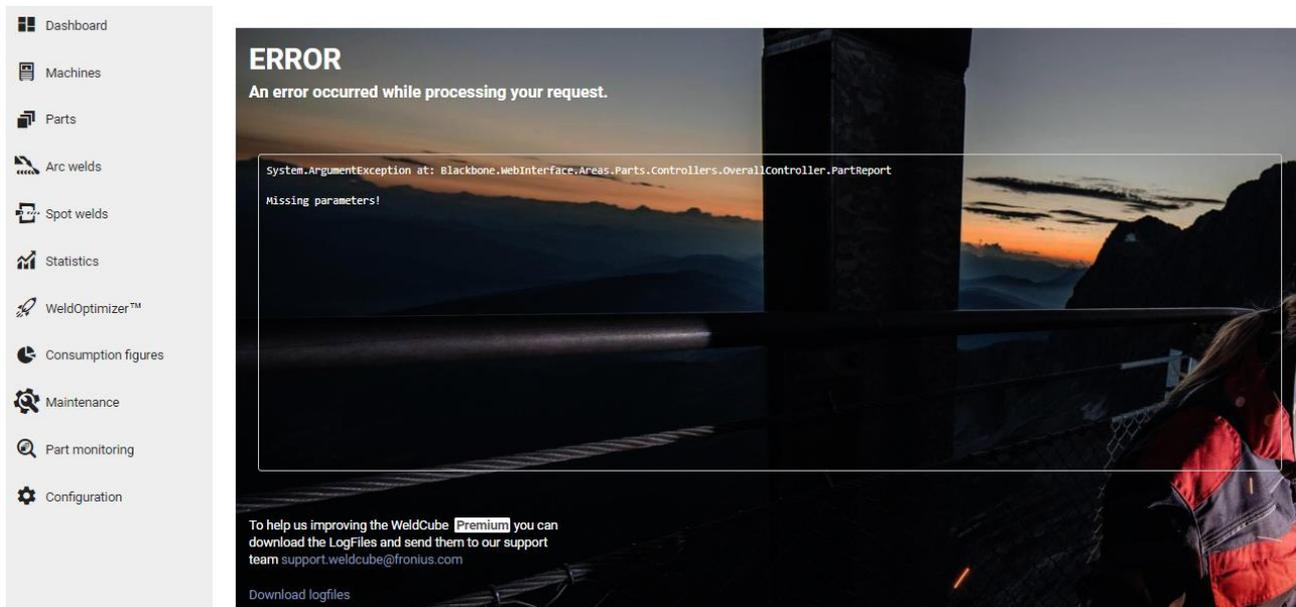
Processor information	
Name	Intel(R) Xeon(R) CPU E31270 @ 3.40GHz
Number of cores	4
Number of logical processors	8
Maximum clock speed	3.40 GHz

Network adapter information	
Name	Intel(R) 82579LM Gigabit Network Connection
MAC address	00:25:90:A9:6F:FB
DHCP	Enabled
IP address	10.5.128.8
Subnet mask	255.255.255.0
Default gateway	10.5.128.254
Automatic DNS	Disabled
DNS address	10.1.1.60
Alternate DNS address	10.1.1.2

2.5 Redesign of error page and windows update warning

Redesign of error page

In order to provide the user with information in case of errors of the WeldCube Premium application and in order to forward this information to Fronius in case of support, the error page received a redesign.



The following information is available:

- / Incidental error
- / File in which the error occurred
- / Link to WeldCube support

Windows update warning

If relevant, the user will get the information in future that with a restart of WeldCube Premium Windows updates will be installed resulting in unavailability of WeldCube Premium for a while.

Windows Updates will be installed!

- i** On the next restart of this WeldCube Windows Updates will be installed. This can take up some time and the WeldCube will not be reachable. TPS machines will not document weldings and jobchanges during that time!

3 STATISTICS & ANALYSIS

3.1 Adaption of standard date range

The standard setting for date range of statistics was changed from 30 to 7 days in order to optimize the initial loading time:



This applies to the following WeldCube Premium statistics features:

- / Statistics
- / Consumption figures
- / Maintenance

4 PART MANAGEMENT & REPORTING

4.1 Time stamp within part report

The part report within the application...

PART REPORT FOR ITEM NUMBER 130815 - CHASSIS FRAME SERIAL NUMBER 02116489

Part OK | 46 Total welds | **4/1/2019 9:23:18 AM** Start time | 289.1 s Welding time | 8min 34s Process time

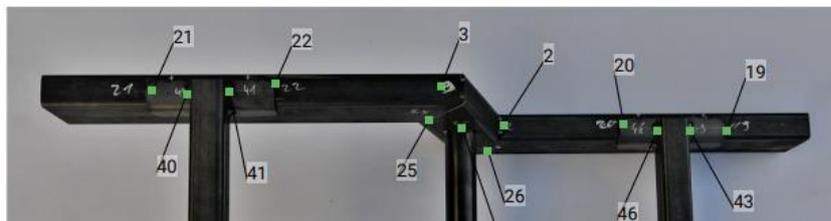
Images

...and the pdf report...

Part report summary

Part is OK

Part serial number	02116489
Part item number	130815
Part name	Chassis Frame
Start time	4/1/2019 9:23:18 AM
Configured processing steps	46
Number of welds	46
Number of OK welds	46
Number of welds with error	0
Number of missing welds	0
Number of multiple welds	0
Number of unconfigured welds	0
Arc time	289.1 s
Spot welding weld time	0 s
Process time	8 min 34 s
Number of limit violations	0



...visualize the time stamp of the first welding at the part as “starting time” as of now.

4.2 Saving the last machine in part monitoring

The system saves the chosen machine in part monitoring per user. Thus, with every menu call-up the last chosen machine is automatically displayed – even after logging in / out of the user.

5 NEW FUNCTION: WELDOPTIMIZER™

WeldOptimizer™



WeldOptimizer™

- Listing faulty parts with error ranking
- Automatic diagram visualisation
- Individual definition of error costs
- Time saving for detailed analysis (statistics-link)

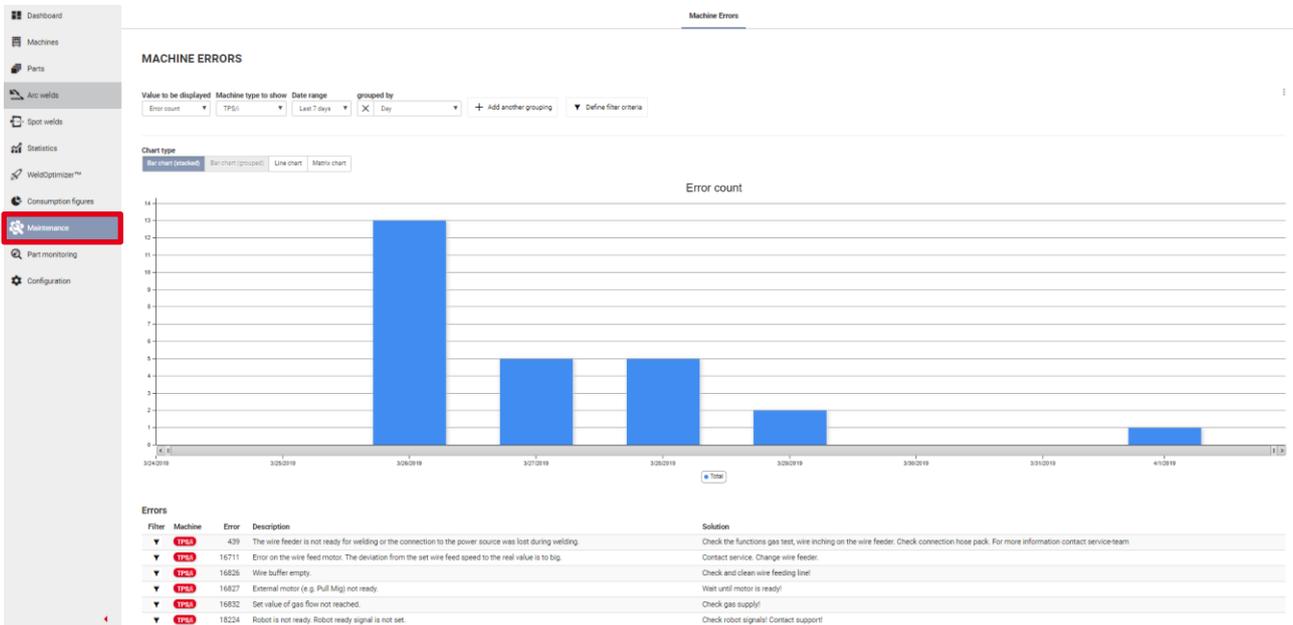
Time saving for error analysis

Release 2.3 comes with the new menu option WeldOptimizer™ for all WeldCube Premium customers as standard:



6 NEW FUNCTION: ERROR STATISTICS

Release 2.3 provides a new statistics function called “Maintenance” for evaluating machine errors. Basis is logbook data of all welding devices connected to WeldCube Premium.



As with statistics, the user can compile different views and evaluations based on the filter options by himself – for example

- / Number of errors (error count)
- / Error duration

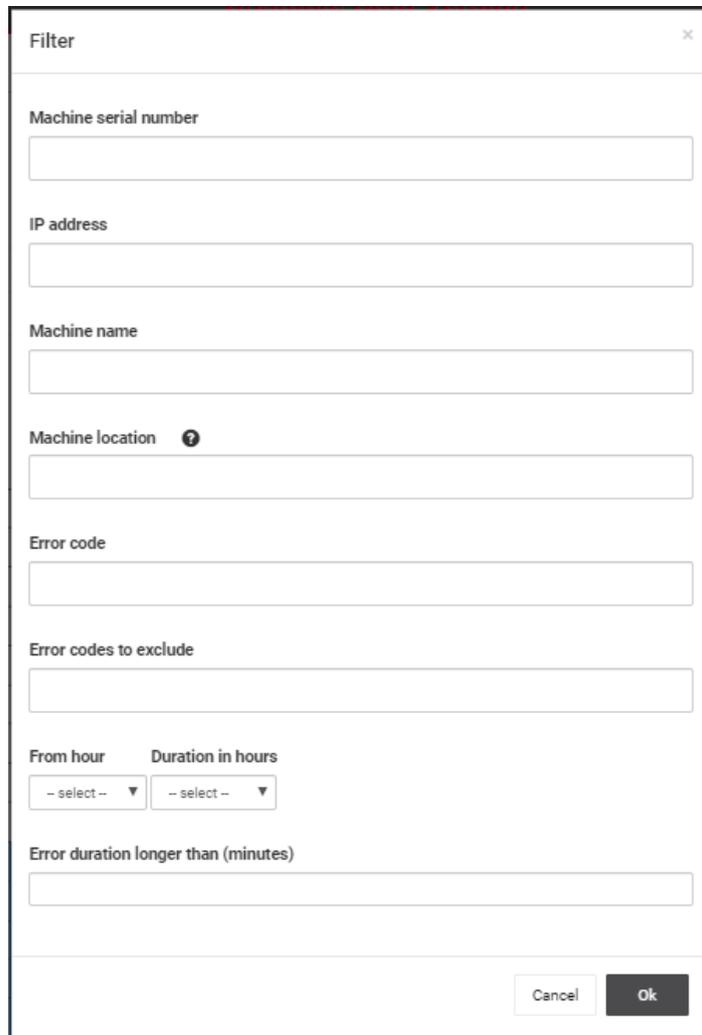
Below the graph, all errors matching the filter criteria will be listed including a description and solution proposal:

Filter	Machine	Error	Description	Solution
▼	TPS6	439	The wire feeder is not ready for welding or the connection to the power source was lost during welding.	Check the functions gas test, wire inching on the wire feeder. Check connection hose pack. For more information contact service-team
▼	TPS6	16711	Error on the wire feed motor. The deviation from the set wire feed speed to the real value is to big.	Contact service. Change wire feeder.
▼	TPS6	16826	Wire buffer empty.	Check and clean wire feeding line!
▼	TPS6	16827	External motor (e.g. Pull Mig) not ready.	Wait until motor is ready!
▼	TPS6	16832	Set value of gas flow not reached.	Check gas supply!
▼	TPS6	18224	Robot is not ready. Robot ready signal is not set.	Check robot signals! Contact support!

Additionally it is possible to ignore an error for the statistics by clicking the available filter symbol (▼) within this.

6.1 Filter possibilities

The well-known filter wizard was extended for error statistics. It is – for example – possible to search for defined errors or errors with a defined minimum duration or exclude chosen error codes:



The image shows a 'Filter' dialog box with the following fields and controls:

- Machine serial number**: Text input field.
- IP address**: Text input field.
- Machine name**: Text input field.
- Machine location**: Text input field with a help icon (question mark).
- Error code**: Text input field.
- Error codes to exclude**: Text input field.
- From hour**: Dropdown menu with "-- select --" as the current selection.
- Duration in hours**: Dropdown menu with "-- select --" as the current selection.
- Error duration longer than (minutes)**: Text input field.
- Buttons**: 'Cancel' and 'Ok' buttons at the bottom right.

6.2 Error solution proposals for TPS

In order to be able to offer the functionality as complete as possible for TPS within the error list displayed, solution proposals for TPS based on the operating instructions of TPS 5000 have been implemented. As no clear assignment of shortname to error number was possible by this, there is not a solution for all errors (no assignment possible) or there might be solutions available that are not associated with an error.

6.3 Difference to known statistics function

The main difference to known statistics functions is, that all values will be calculated live based on logbook data and will not be aggregated within the database.

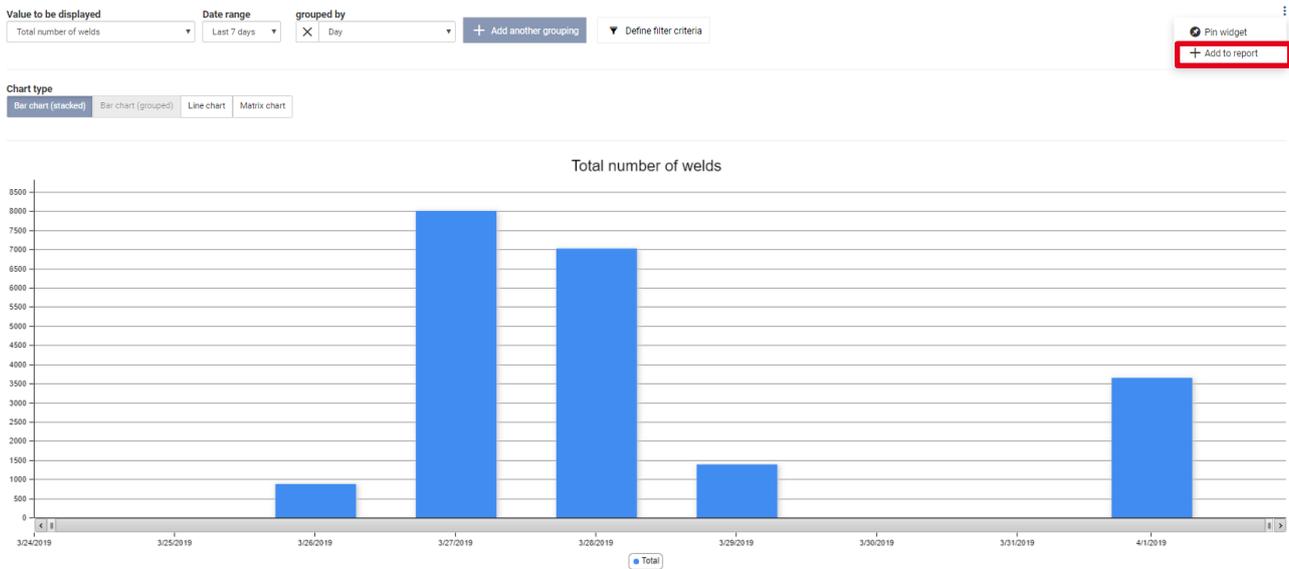
6.4 Dashboard

All error statistics can be pinned to the dashboard as normal.

Exception: analysis with unlimited date range (to high computing load for reload).

6.5 E-mail report

Provision of machine error statistics via automatic e-mail report is possible as well. As already known from other statistics, the user can add any currently configured view to a report:



It is also possible to create reports consisting of mixed contents from statistics and maintenance area.

Details on e-mail reporting are available within the release description for release 2.1.

6.6 PDF export

Error statistics (current view) can be exported directly as a PDF as well:



7 DATA INTERFACE / API



7.1 API extension: part status

Based on item and serial number of a part, the part report is available via WeldCube Premium API as of now.

```
[Route("api/v1/Parts/{partItemNumber}/{partSerialNumber}")]
```

The associated welds are linked and can also be called up if required.

7.2 API extension: gas consumption

The information on welds and sections contains the gas consumption as of now.

To do so, "WeldData" (welds) now contains SingleStats providing the gas consumption value (Arc gas consumption). Within the Sections, the SingleValueStats was extended and now contains ArcGasConsumption.

7.3 WeldCube Premium REST-API – advantages for our customers

1 interface for all Fronius systems connected to WeldCube Premium

Available data of all welding devices connected to WeldCube Premium will be prepared and provided for other systems in the same way.



Historical and prepared data

All data available on the required topic will be combined to and provided as data packages. WeldCube Premium takes care of...

- / ...handling of several welding system
- / ...combination and evaluation of collected data
- / ...providing complete packages on relevant topics

Get results quicker and easier

No additional costs (covered by software subscription).