

Application manual Programming ABB RPC S-series Integrated Power Source

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Application manual
Programming ABB RPC S-series Integrated Power Source

RobotWare 6.0

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Revision: -

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ABB AB
Robotics Products
Se-721 68 Västerås
Sweden

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Overview of this manual

About this manual

This manual contains information on how to:

- Create and operate jobs.
- Edit parameters.
- Read power source information and execute advanced functions.
- Backup and restore of XML files.

Usage

This manual is intended to be used for:

- Programming
- Maintenance

Who should read this manual?

This manual is intended for:

- Robot programmers
- Maintenance personnel

Prerequisites

The reader must be familiar with:

- Industrial robots and the relevant terminology.
- System parameters and how to configure them.

References

Reference	Document ID
<i>Application manual - Arc and Arc Sensor</i>	3HAC050988-001
<i>Introduction and Safety - Arc Welding Products</i>	3HAC050981-001
<i>Technical reference manual - System parameters</i>	3HAC050948-001
<i>Technical reference manual - RAPID Instructions, Functions and Data types</i>	3HAC050917-001

Revisions

Revision	Description
-	Released with RobotWare 6.0.

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1 Safety

1.1 Safety

Safety of personnel

A robot is heavy and extremely powerful regardless of its speed. A pause or long stop in movement can be followed by a fast hazardous movement. Even if a pattern of movement is predicted, a change in operation can be triggered by an external signal resulting in an unexpected movement.

Therefore, it is important that all safety regulations are followed when entering safeguarded space.

Safety regulations

Before beginning work with the robot, make sure you are familiar with the safety regulations described in the manual *Operating manual - General safety information*.

1 Safety

1.2 Safety for arc welding

1.2 Safety for arc welding

Safety instructions for arc welding

Safety instructions can be found in the manual *Introduction and Safety - Arc Welding Products* for all steps that involve risk of personal injury or material damage. In addition, they are included in the instructions for each step.

General warnings, where the intention is to avoid problems, are only included in the instructions.



WARNING

All personnel working with the welding robot system must have a full understanding of the applicable safety instructions.

2 Integrated Power Source application

2.1 Overview

Supported power sources

Integrated Power Source is an administrative interface for power sources in the FlexPendant. The following power sources are compatible with the Integrated Power Source:

- RPC Synergic 300
- RPC Synergic 400
- RPC Synergic 500

Firmware requirements

Integrated Power Source can only work with the power source of required firmware:

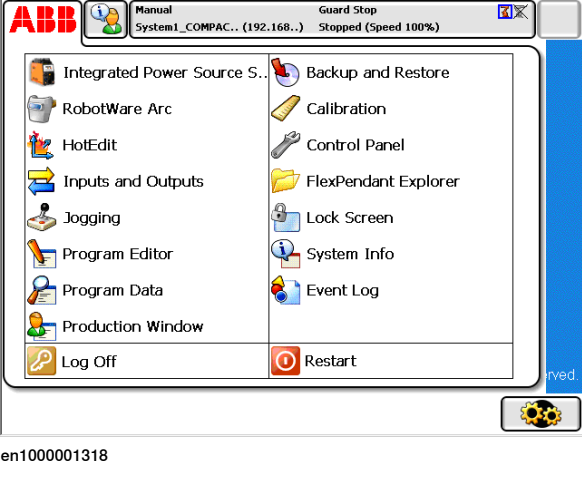
- Panel version : 5A8 or later
- Robot Interface version : 9A7 or later

2 Integrated Power Source application

2.2 Starting Integrated Power Source

2.2 Starting Integrated Power Source

Starting the Integrated Power Source program tool

	Action	Info
1	Tap the ABB menu.	
2	Tap Integrated Power Source S-Series.	 <p>The screenshot shows a software menu with the ABB logo at the top left. The menu items are arranged in two columns. The left column includes: Integrated Power Source S-Series, RobotWare Arc, HotEdit, Inputs and Outputs, Jogging, Program Editor, Program Data, Production Window, and Log Off. The right column includes: Backup and Restore, Calibration, Control Panel, FlexPendant Explorer, Lock Screen, System Info, Event Log, and Restart. At the top right of the menu, there is a status bar showing 'Guard Stop Stopped (Speed 100%)'. The bottom of the menu has a small gear icon and the text 'en1000001318'.</p>

Integrated Power Source start window

Once the program is loaded, the start window of Integrated Power Source is displayed (a desktop with icons). The power source functions can be accessed from this window.



2.3 Active arc welding system

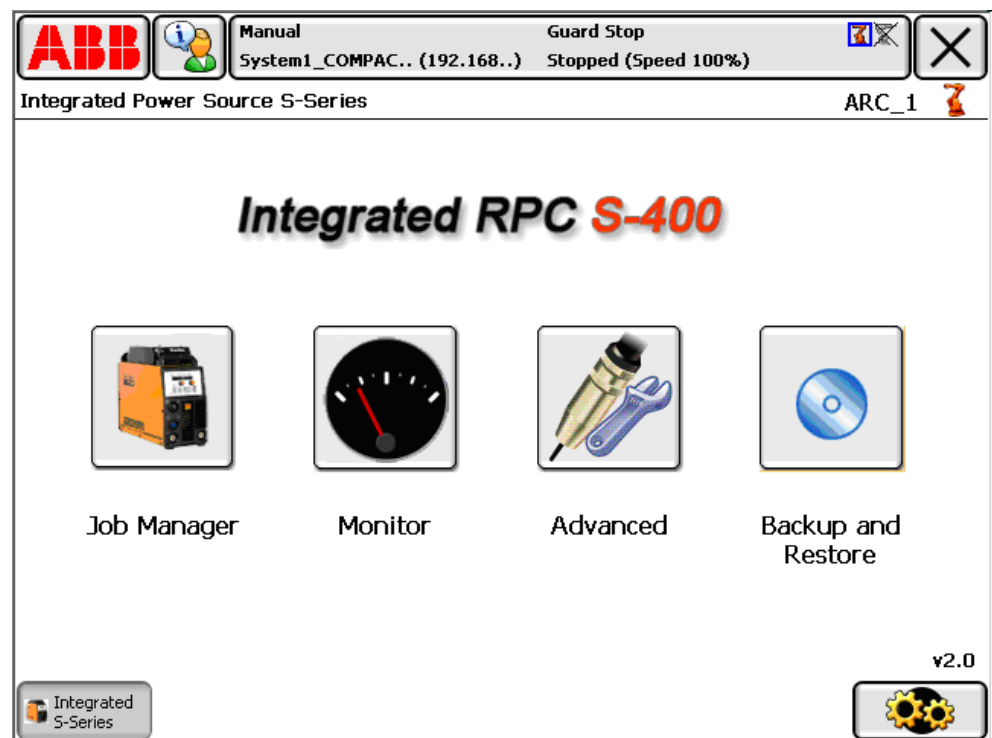
General

The selection of the AW system determines which equipment is active when manual operations (Gas On, Manual Wire feed, Editing jobs) are executed.

For information on how to change active arc welding system, see [Selecting arc welding system on page 23](#).

Active power source information

The name of the active arc welding system is indicated in the upper right-hand corner. The Integrated Power Source supports up to four robots and each robot can have one RPC S-Series power source.



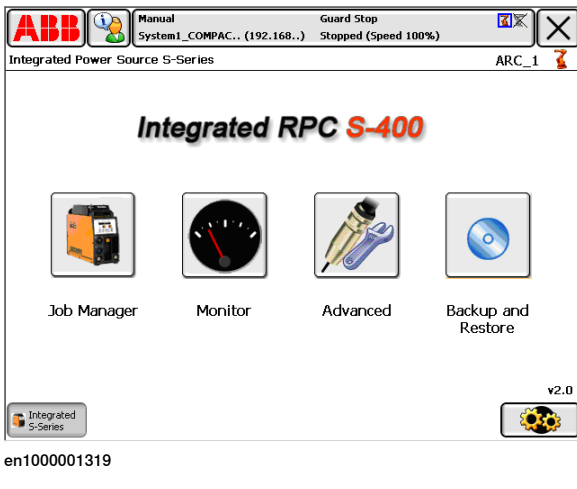
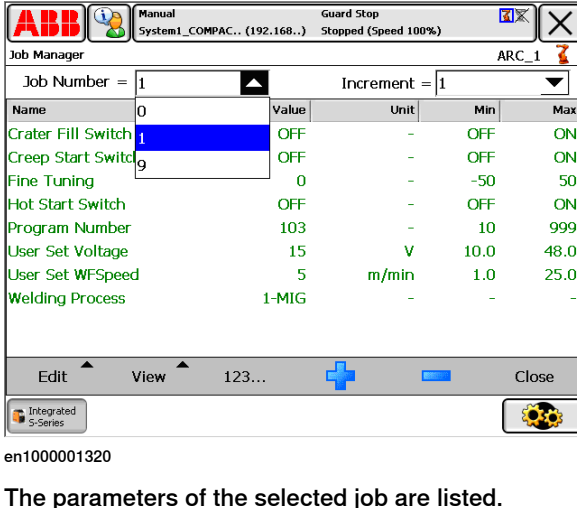
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3 Integrated Power Source application details

3.1 Job Manager

3.1.1 The Job Manager view

Opening the Job Manager view

	Action	Info/illustration
1	Tap the Job Manager button in the start window to open the Job Manager view.	
2	Select a job from the combo box. All used jobs stored in the power source are selectable in the combo box.	 <p>The parameters of the selected job are listed.</p>

Refreshing the job parameters



Note

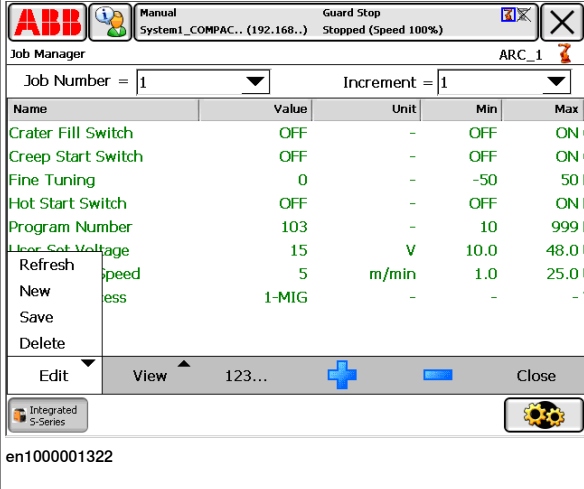
All modifications of the job are lost when refreshing. To preserve the modifications, save the job.

Continues on next page

3 Integrated Power Source application details

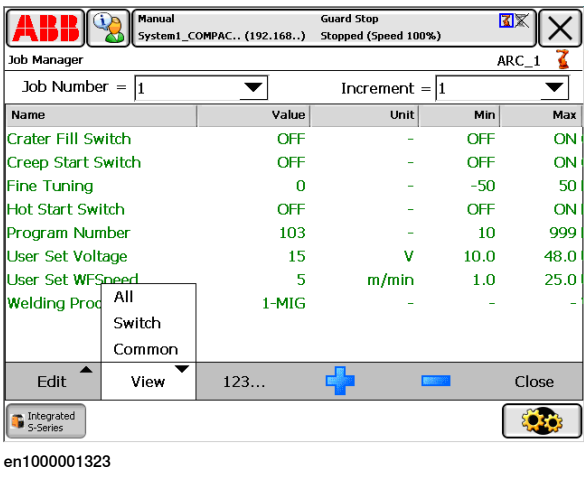
3.1.1 The Job Manager view

Continued

Action	Info/illustration																																													
1	<p>In the Job Manager view, tap the Operate menu and select Refresh.</p>  <p>The screenshot shows the Job Manager interface with the following parameters table:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> <th>Unit</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Crater Fill Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Creep Start Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Fine Tuning</td> <td>0</td> <td>-</td> <td>-50</td> <td>50</td> </tr> <tr> <td>Hot Start Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Program Number</td> <td>103</td> <td>-</td> <td>10</td> <td>999</td> </tr> <tr> <td>User Set Voltage</td> <td>15</td> <td>V</td> <td>10.0</td> <td>48.0</td> </tr> <tr> <td>Refresh Speed</td> <td>5</td> <td>m/min</td> <td>1.0</td> <td>25.0</td> </tr> <tr> <td>New Process</td> <td>1-MIG</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Name	Value	Unit	Min	Max	Crater Fill Switch	OFF	-	OFF	ON	Creep Start Switch	OFF	-	OFF	ON	Fine Tuning	0	-	-50	50	Hot Start Switch	OFF	-	OFF	ON	Program Number	103	-	10	999	User Set Voltage	15	V	10.0	48.0	Refresh Speed	5	m/min	1.0	25.0	New Process	1-MIG	-	-	-
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New Process	1-MIG	-	-	-																																										

Filter the job parameters

It is possible to filter the parameter list, showing only the common parameters or showing only the switch parameters.

Action	Info/illustration																																													
1	<p>In the Job Manager view, tap the View menu and select which parameters to view.</p>  <p>The screenshot shows the Job Manager interface with the 'View' menu open, displaying the following parameters table:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> <th>Unit</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Crater Fill Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Creep Start Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Fine Tuning</td> <td>0</td> <td>-</td> <td>-50</td> <td>50</td> </tr> <tr> <td>Hot Start Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Program Number</td> <td>103</td> <td>-</td> <td>10</td> <td>999</td> </tr> <tr> <td>User Set Voltage</td> <td>15</td> <td>V</td> <td>10.0</td> <td>48.0</td> </tr> <tr> <td>User Set WFSpeed</td> <td>5</td> <td>m/min</td> <td>1.0</td> <td>25.0</td> </tr> <tr> <td>Welding Prod</td> <td>1-MIG</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Name	Value	Unit	Min	Max	Crater Fill Switch	OFF	-	OFF	ON	Creep Start Switch	OFF	-	OFF	ON	Fine Tuning	0	-	-50	50	Hot Start Switch	OFF	-	OFF	ON	Program Number	103	-	10	999	User Set Voltage	15	V	10.0	48.0	User Set WFSpeed	5	m/min	1.0	25.0	Welding Prod	1-MIG	-	-	-
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3.1.2 Handling jobs

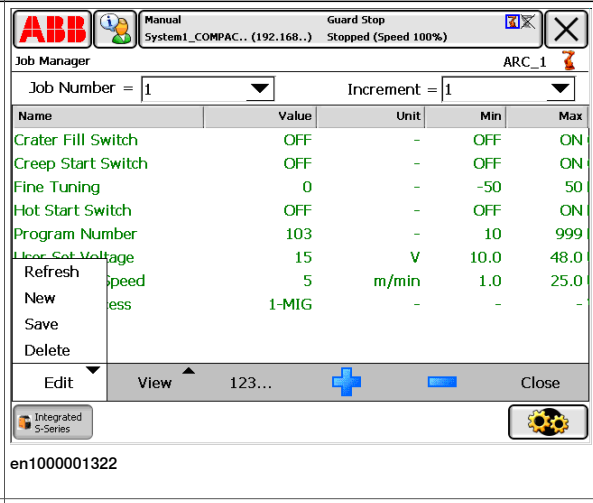
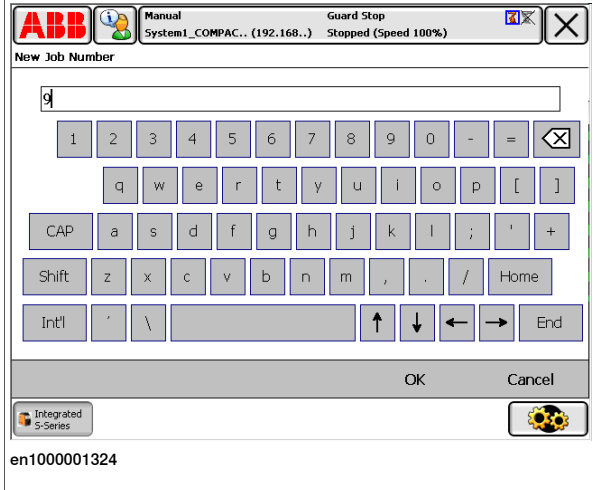
Creating a new job



Note

A new job number should be numeric from 0 to 89.

If the new job number is the same as one of the used job numbers, the job will be replaced with default parameters.

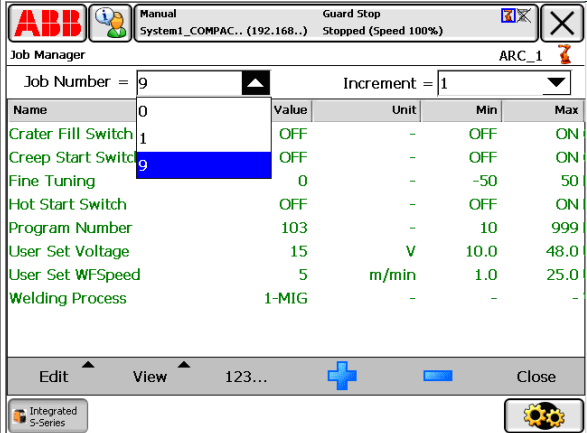
	Action	Info/illustration																																																		
1	In the Job Manager view, tap the Operate menu and select New.	 <p>The screenshot shows the 'Job Manager' window. At the top, it displays 'Job Number = 1' and 'Increment = 1'. Below this is a table with the following data:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> <th>Unit</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Crater Fill Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Creep Start Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Fine Tuning</td> <td>0</td> <td>-</td> <td>-50</td> <td>50</td> </tr> <tr> <td>Hot Start Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Program Number</td> <td>103</td> <td>-</td> <td>10</td> <td>999</td> </tr> <tr> <td>Wire Set Voltage</td> <td>15</td> <td>V</td> <td>10.0</td> <td>48.0</td> </tr> <tr> <td>Refresh speed</td> <td>5</td> <td>m/min</td> <td>1.0</td> <td>25.0</td> </tr> <tr> <td>Save</td> <td>1-MIG</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Delete</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>A menu is open over the table, with 'New' selected. Other menu items include 'Edit', 'View', '123...', a plus sign, a minus sign, and 'Close'. The bottom of the window shows 'en1000001322'.</p>	Name	Value	Unit	Min	Max	Crater Fill Switch	OFF	-	OFF	ON	Creep Start Switch	OFF	-	OFF	ON	Fine Tuning	0	-	-50	50	Hot Start Switch	OFF	-	OFF	ON	Program Number	103	-	10	999	Wire Set Voltage	15	V	10.0	48.0	Refresh speed	5	m/min	1.0	25.0	Save	1-MIG	-	-	-	Delete				
Name	Value	Unit	Min	Max																																																
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Save	1-MIG	-	-	-																																																
Delete																																																				
2	Enter the new job number and tap OK.	 <p>The screenshot shows the 'New Job Number' dialog box. It features a numeric keypad with digits 0-9, a decimal point, and an equals sign. Below the keypad are rows of letters: 'q w e r t y u i o p []', 'CAP a s d f g h j k l ; ' +', and 'Shift z x c v b n m , . / Home'. At the bottom, there are 'OK' and 'Cancel' buttons. The bottom of the window shows 'en1000001324'.</p>																																																		

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3 Integrated Power Source application details

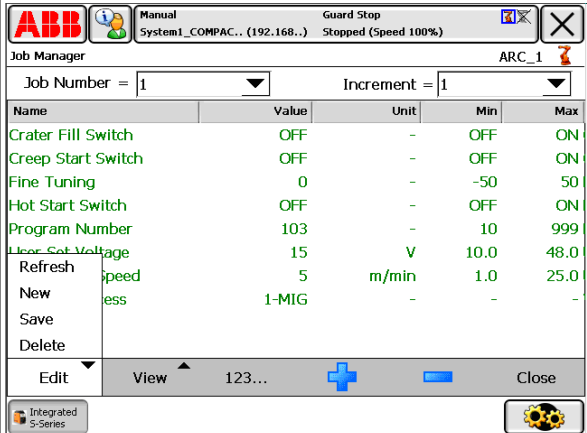
3.1.2 Handling jobs

Continued

Action	Info/illustration																																													
3	<p>To view the parameters for the new job, select the new job in the Job Number combo box.</p>  <p>The screenshot shows the Job Manager window with the following parameters:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> <th>Unit</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Crater Fill Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Creep Start Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Fine Tuning</td> <td>0</td> <td>-</td> <td>-50</td> <td>50</td> </tr> <tr> <td>Hot Start Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Program Number</td> <td>103</td> <td>-</td> <td>10</td> <td>999</td> </tr> <tr> <td>User Set Voltage</td> <td>15</td> <td>V</td> <td>10.0</td> <td>48.0</td> </tr> <tr> <td>User Set WFSpeed</td> <td>5</td> <td>m/min</td> <td>1.0</td> <td>25.0</td> </tr> <tr> <td>Welding Process</td> <td>1-MIG</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Name	Value	Unit	Min	Max	Crater Fill Switch	OFF	-	OFF	ON	Creep Start Switch	OFF	-	OFF	ON	Fine Tuning	0	-	-50	50	Hot Start Switch	OFF	-	OFF	ON	Program Number	103	-	10	999	User Set Voltage	15	V	10.0	48.0	User Set WFSpeed	5	m/min	1.0	25.0	Welding Process	1-MIG	-	-	-
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Welding Process	1-MIG	-	-	-																																										

Saving a job

When editing the parameters of a job, the job needs to be saved.

Action	Info/illustration																																													
1	<p>In the Job Manager view, tap Operate and select Save to save the job selected in the Job Number combo box.</p>  <p>The screenshot shows the Job Manager window with the following parameters:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> <th>Unit</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>Crater Fill Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Creep Start Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Fine Tuning</td> <td>0</td> <td>-</td> <td>-50</td> <td>50</td> </tr> <tr> <td>Hot Start Switch</td> <td>OFF</td> <td>-</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>Program Number</td> <td>103</td> <td>-</td> <td>10</td> <td>999</td> </tr> <tr> <td>User Set Voltage</td> <td>15</td> <td>V</td> <td>10.0</td> <td>48.0</td> </tr> <tr> <td>User Set WFSpeed</td> <td>5</td> <td>m/min</td> <td>1.0</td> <td>25.0</td> </tr> <tr> <td>Welding Process</td> <td>1-MIG</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Name	Value	Unit	Min	Max	Crater Fill Switch	OFF	-	OFF	ON	Creep Start Switch	OFF	-	OFF	ON	Fine Tuning	0	-	-50	50	Hot Start Switch	OFF	-	OFF	ON	Program Number	103	-	10	999	User Set Voltage	15	V	10.0	48.0	User Set WFSpeed	5	m/min	1.0	25.0	Welding Process	1-MIG	-	-	-
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Welding Process	1-MIG	-	-	-																																										

Deleting a job


Action	Info/illustration
1	In the Job Manager view, select the job number in the Job Number combo box.
2	Tap Operate and select Delete.

Continues on next page

3 Integrated Power Source application details

3.1.2 Handling jobs

Continued

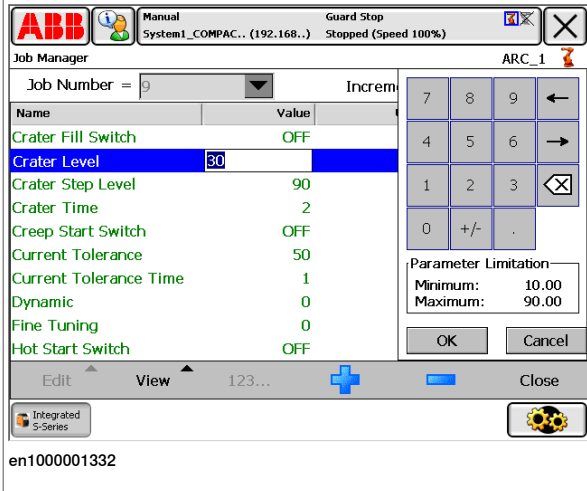
	Action	Info/illustration
3	In the dialog box, tap Yes to confirm the deleting of the job.	 <p>The screenshot shows the ABB Job Manager application interface. At the top, there is a status bar with the ABB logo, a manual icon, and text indicating 'Manual System1_COMPAC.. (192.168..) Guard Stop Stopped (Speed 100%)'. Below this is a 'Job Manager' window with a list of jobs. A dialog box is overlaid on the screen, asking 'Are you sure you want to delete the current job?' with 'Yes' and 'No' buttons. The job list includes 'Crater Fill', 'Creep Star', 'Fine Tuning', 'Hot Start S', 'Program N', 'User Set V', 'User Set V', and 'Welding P'. The 'Max' column shows values like 'ON', '50', '999', '48.0', '25.0', and '-'. At the bottom of the Job Manager window, there are buttons for 'Edit', 'View', '123...', and 'Close'. The bottom of the screenshot shows 'Integrated S-Series' and a gear icon, with the text 'en100001329' below it.</p>

3 Integrated Power Source application details

3.1.3 Editing job parameters

3.1.3 Editing job parameters

Editing parameter values

	Action	Info/illustration
1	In the Job Manager view, select the job from the Job Number combo box.	
2	Double-tap the parameter or select it and then tap the button 123...	
3	Enter the new value on the numeric keypad and tap OK .	 <p>The screenshot shows the ABB Job Manager interface. At the top, there's a status bar with 'Manual', 'System1_COMPAC.. (192.168..)', and 'Guard Stop Stopped (Speed 100%)'. Below that, the 'Job Manager' window is open, displaying a list of parameters. The 'Crater Level' parameter is selected and highlighted in blue, with its value set to 30. A numeric keypad is visible on the right side of the screen, and the 'OK' button is highlighted. The bottom of the screen shows the 'Edit' and 'View' buttons, along with the job number 'en1000001332'.</p>

Editing job number



Note

All the modifications of the job are lost when changing the job number. To preserve the modifications, save the job.

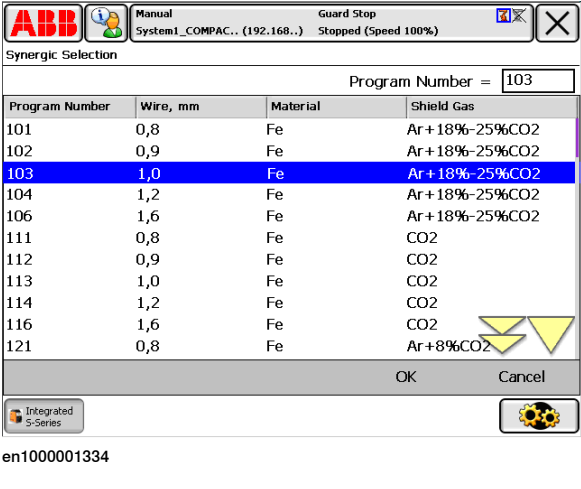
	Action	Info/illustration
1	In the Job Manager view, select the job from the Job Number combo box.	
2	Double-tap the parameter (or select it and then tap the button 123...).	

Continues on next page

3 Integrated Power Source application details

3.1.3 Editing job parameters

Continued

Action	Info/illustration
3	<p>Select program number from the list or enter the new job number in the field Program Number. Tap OK.</p> 

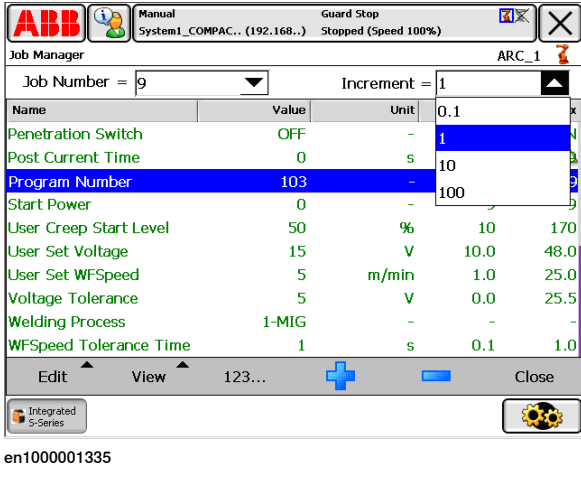
Incremental changes of parameter values

The parameter values can easily be increased or decreased in incremental steps.



Note

Switch parameters can only have value 0 or 1. The increment size for these parameters must therefore be 1.

Action	Info/illustration
1	<p>Tap the Increment drop down list and select size of the incremental steps.</p> 
2	<p>Tap the + (plus) button to increase the value of the selected job parameter. Tap the - (minus) button to decrease the value of the selected job parameter.</p>

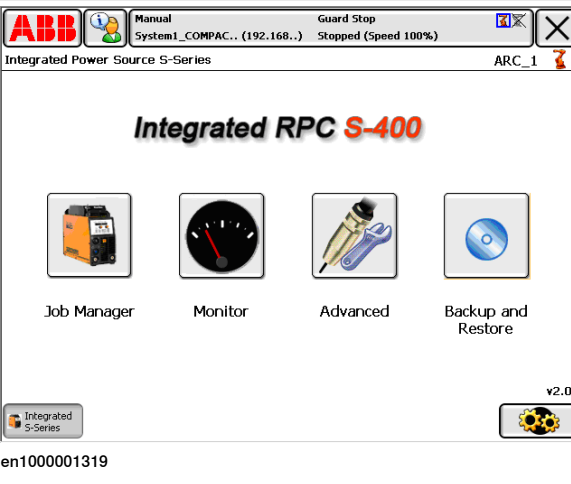
3 Integrated Power Source application details

3.2.1 The Monitor view

3.2 Monitor

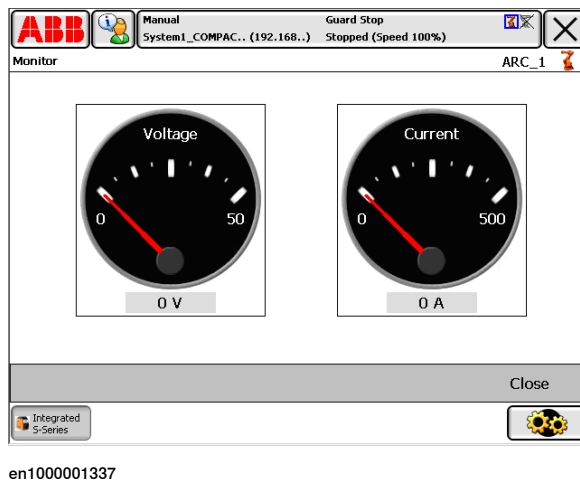
3.2.1 The Monitor view

Opening the Monitor view

	Action	Info/illustration
1	Tap the Monitor button in the start window to open the Monitor view.	

About the Monitor view

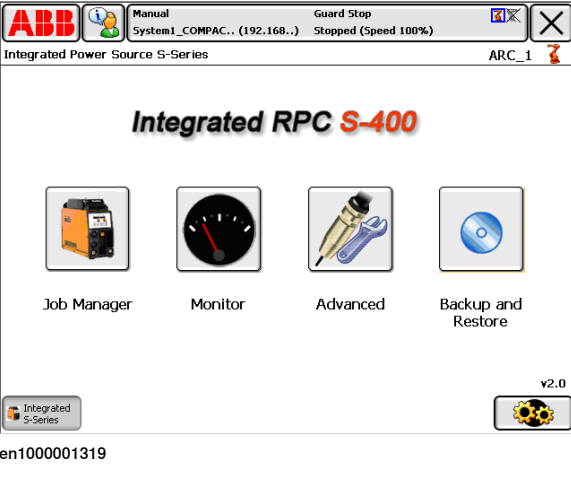
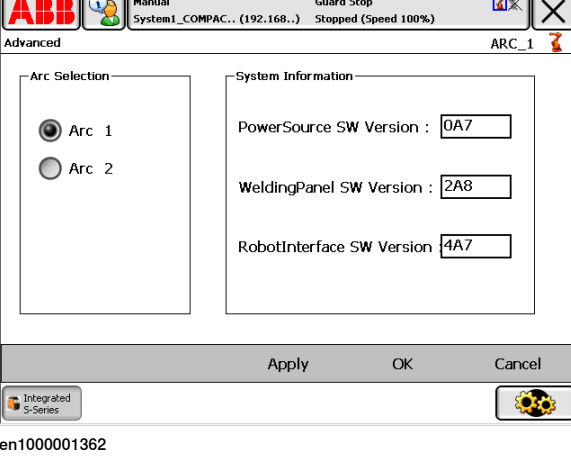
The **Monitor** view displays one voltage meter and one current meter. They show values that are measured and returned by the power source.



3.3 Advanced

3.3.1 The Advanced view

Selecting arc welding system

	Action	Info/illustration
1	Tap the Advanced button in the start window to open the Advanced view.	
2	Select arc welding system from the list of available systems under Arc Selection .	
3	Tap OK or Apply to apply the change of arc welding system.	

3 Integrated Power Source application details

3.4.1 The backup and restore function

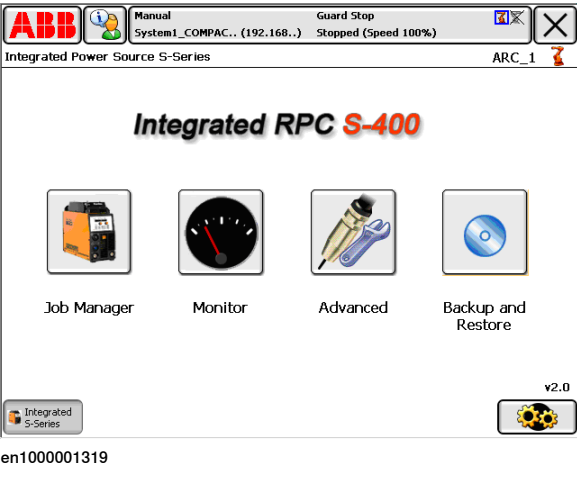
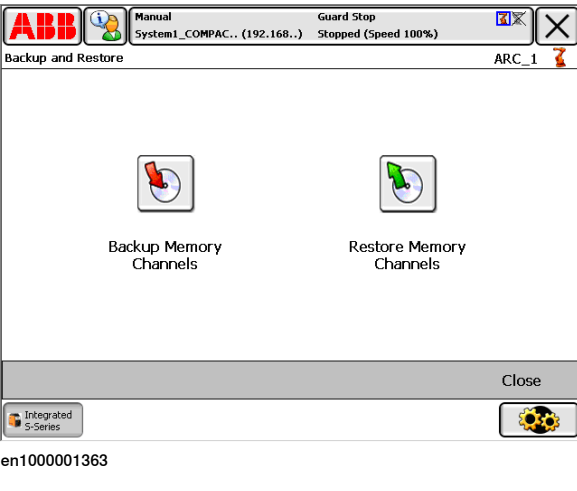
3.4 Backup and Restore

3.4.1 The backup and restore function

About backup and restore

The backup and restore function is used to back up the parameters of all the used jobs in a specified XML file and to restore all the jobs from a specified XML file.

Creating a backup of the current jobs

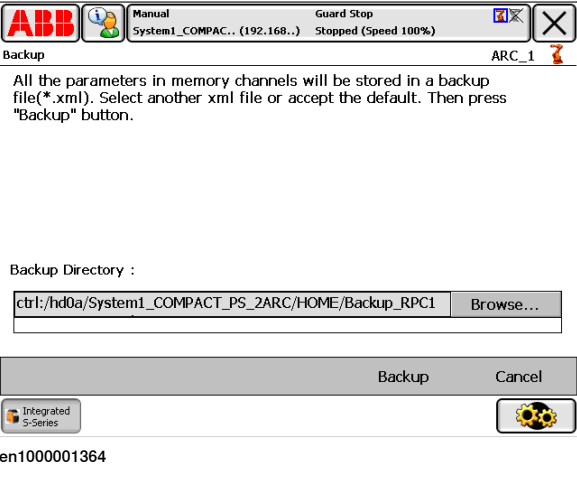
	Action	Info/illustration
1	Tap the Backup and Restore button in the start window to open the Backup and Restore view.	
2	Tap Backup Memory Channels .	

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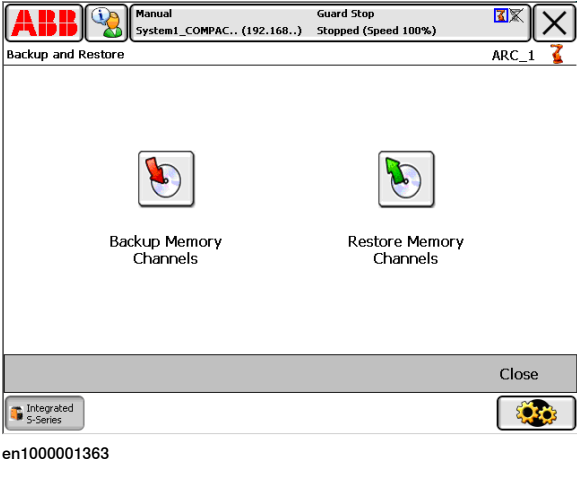
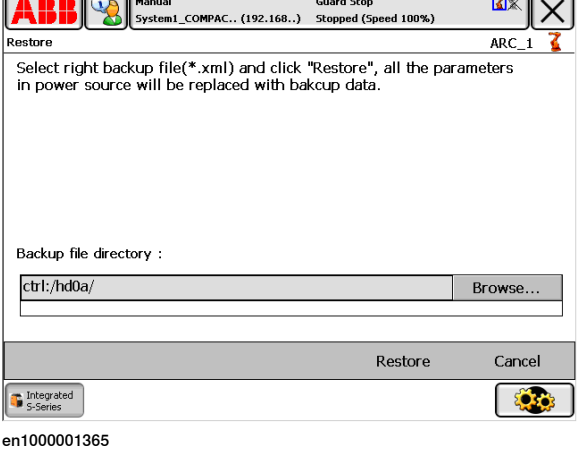
3 Integrated Power Source application details

3.4.1 The backup and restore function

Continued

	Action	Info/illustration
3	<p>A default file for saving the backup is suggested. To select another file, tap Browse. Tap Backup to start the backup process to the selected file.</p>	

Restoring a backup of jobs

	Action	Info/illustration
1	<p>In the Backup and Restore view, tap Restore Memory Channels.</p>	
2	<p>Tap Browse.</p>	

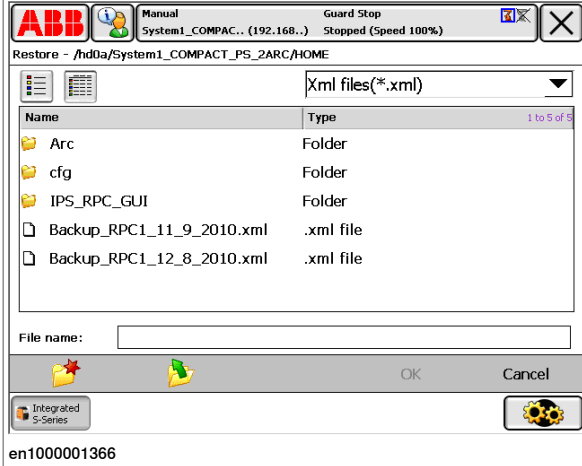
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3 Integrated Power Source application details

3.4.1 The backup and restore function

Continued

Action	Info/illustration
3	<p>Browse to the directory, select the file to be restored and tap OK.</p>
4	<p>Tap Restore to start the restoring process from the selected file.</p>



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Contact us

ABB AB

**Discrete Automation and Motion
Robotics**

S-721 68 VÄSTERÅS, Sweden

Telephone +46 (0) 21 344 400

ABB AS, Robotics

Discrete Automation and Motion

Nordlysvegen 7, N-4340 BRYNE, Norway

Box 265, N-4349 BRYNE, Norway

Telephone: +47 51489000

ABB Engineering (Shanghai) Ltd.

5 Lane 369, ChuangYe Road

KangQiao Town, PuDong District

SHANGHAI 201319, China

Telephone: +86 21 6105 6666

www.abb.com/robotics