

Siemens ADVIA 2120i

Overview

This section provides information about use of the ADVIA 2120i instrument connected to LAS (Laboratory Automation System) by means of the Siemens ADVIA 2120i Interface Module. The Interface Module is designed with a “Pick and Place” robotic sample moving device to allow sample tubes movement to and from ADVIA 2120i instrument.

Observe the following instruction to ensure proper processing of the samples in terms of security when using the Analyzer ADVIA 2120i:

Table 6.1: Allowable Sample Tube Types

Nominal Measures (with closure) [mm]	Capped	Centrifuged	Source	Notes
13x75	Yes	No	Routed to the Interface Module	Sarstedt sample tubes not allowed.
Refer to specific Analyzer Operations Manual			Manual Load	Refer to specific Analyzer Operations Manual



NOTE: It is possible processing of sample tubes manually loaded on the ADVIA 2120i Analyzer and sample tubes routed to the ADVIA 2120i Interface Module by the Automation System at the same time. Refer to specific Analyzer operations manual for further information.



NOTE: It is possible processing of racks manually loaded on the ADVIA 2120i, after setting Interface Module off-line.

NOTE: It is possible to open both queue covers in front of Analyzer entry/exit, for rack manual loading/unloading.



WARNING: Do not open the Interface Module covers during sample processing if the Interface Module is On-line.

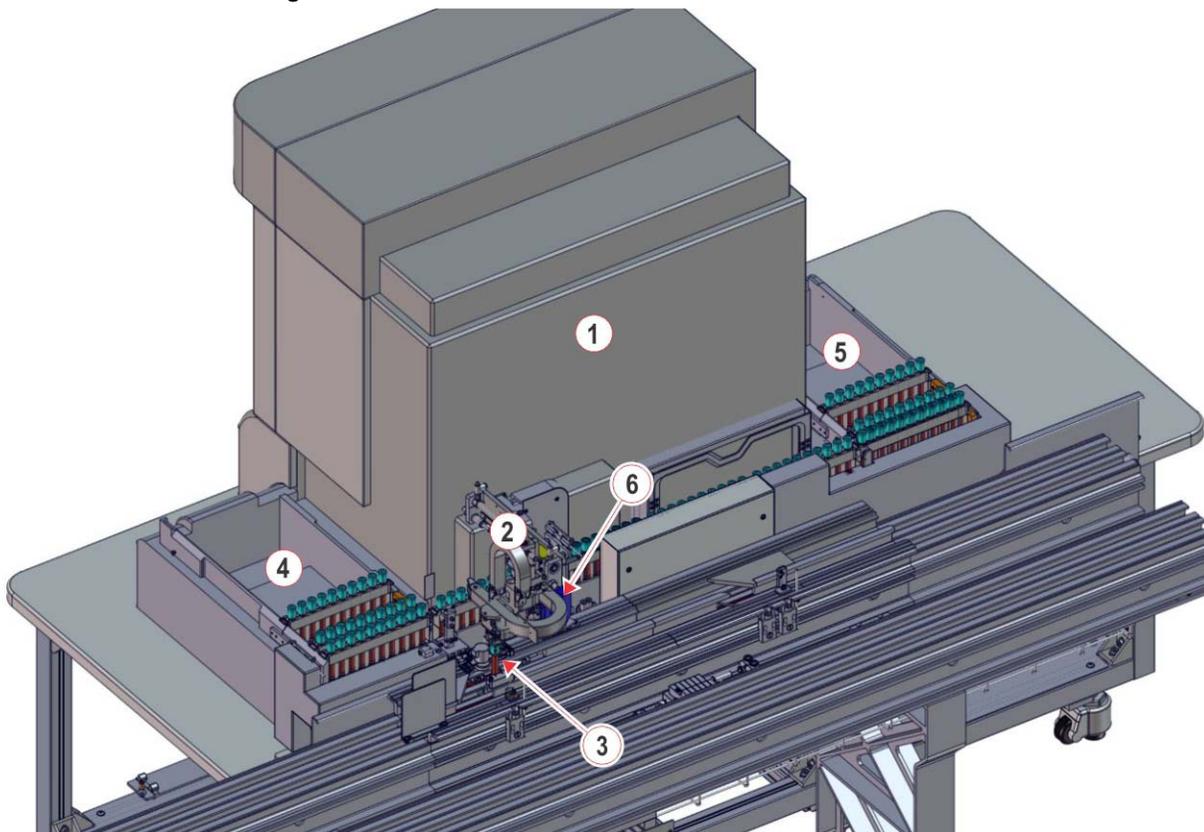
WARNING: Make sure to remove manually loaded racks, before setting the Interface Module On-line again.



CAUTION: Class 2 laser radiation when open. Do not stare into beam.

For more information about labels meaning refer to specific section about Safety Labels.

Figure 6.1: ADVIA 2120i Interface Module

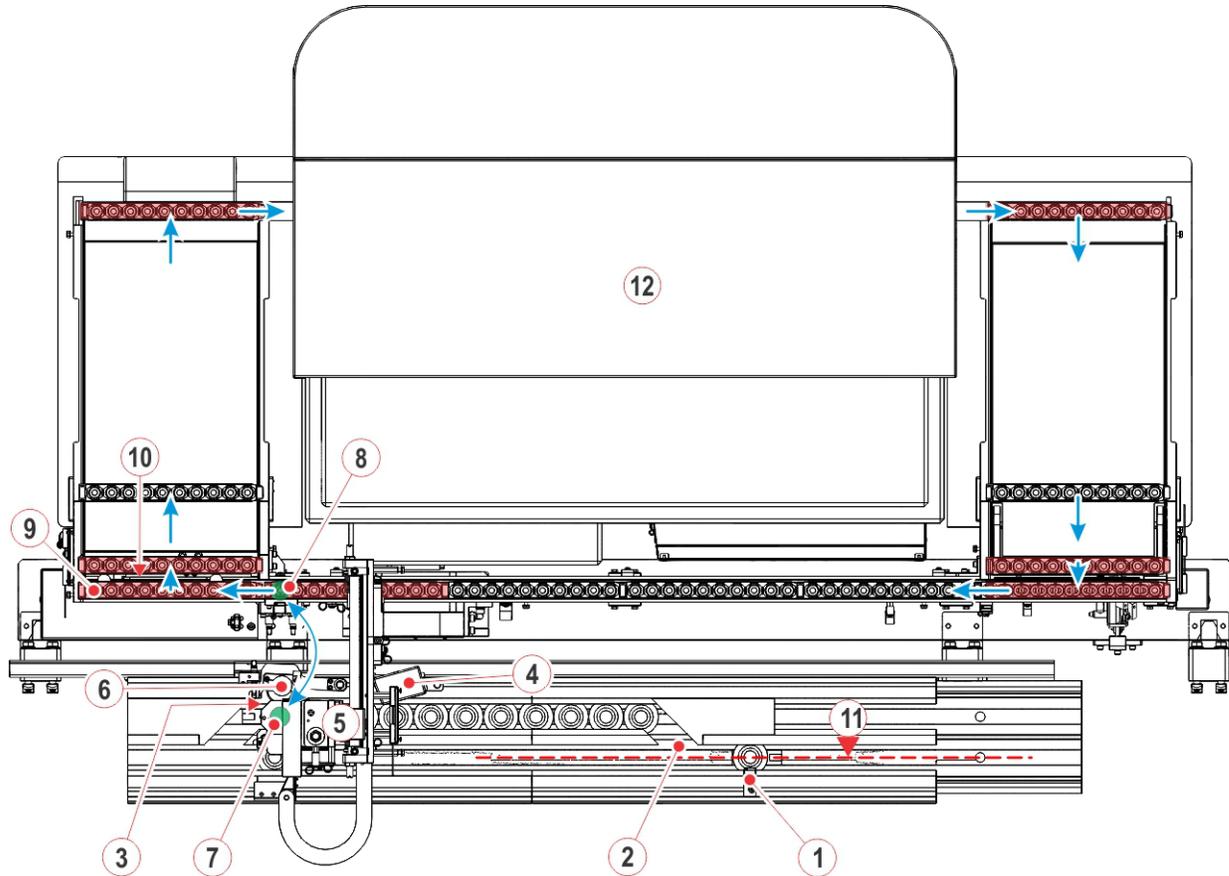


- | | |
|---------------------------------|----------------------|
| 1- Siemens ADVIA 2120i Analyzer | 2- Robot |
| 3- Tube Load/Unload Position | 4- Rack Push IN Area |
| 5- Rack Push OUT Area | 6- Barcode Reader |

Interface Module Components

ADVIA 2120i Interface Module provides a robotic device that accesses directly on track and unloads the sample tube from the carrier to the ADVIA 2120i rack and vice versa. The sample tubes are read and oriented on carrier before unloading into the rack to allow analyzer barcode reading. A fixed number of four ADVIA 2120i racks inside Interface Module guarantees analyzer throughput.

Figure 6.2: ADVIA 2120i Interface Module - Top view



- | | |
|--|----------------------------------|
| 1- Tube Presence Sensor at Divert Gate | 2- Divert Gate |
| 3- Barcode Reader Gate | 4- Barcode Reader |
| 5- Robot | 6- Stepper |
| 7- Track Position | 8- Load/Unload Position |
| 9- Belt end | 10- Shutter |
| 11- Main Lane | 12- Siemens ADVIA 2120i Analyzer |

Status and Diagnostics

Before routing samples to the ADVIA 2120i, ensure Analyzer is connected to the Automation as described in the following procedure:

1. Press “Overview” navigation button
2. Select the “ADVIA 2120 LAS” button
3. A pop-up with the following options list displays:
 - [Status \(6-5\)](#)
 - [Settings \(6-6\)](#)
 - [Settings - Barcode Reader \(6-7\)](#)
 - [Gates \(6-8\)](#)
 - [Diagnostics - Robot \(6-9\)](#)
 - [Diagnostics - Barcode Reader \(6-11\)](#)
 - [Diagnostics - Rack Management \(6-12\)](#)
 - [Diagnostics - Tube Recovery \(6-13\)](#)
 - [Diagnostics - Hardware Signals \(6-14\)](#)
 - [Firmware Versions \(6-15\)](#)
 - [Sensors \(6-15\)](#)
4. To access to each ADVIA 2120i screen select “ADVIA 2120 LAS” from “Overview” screen and choose the related option.



NOTE: To allow displaying all the items in each screen, select the “Refresh” button.

NOTE: Before selecting any Diagnostics command, make sure the Module is in “Off-line” status.

Each allowable option that can be selected is described here below.

Status

Select “Status”. The “Status” screen will display a list box containing information about the ADVIA 2120i Interface Module as described below.

Table 6.2: Status list box

Item	Description
Node ID	Address of board accommodating Interface Module software.
Room for Empty Carriers	Number of empty carriers currently allowed to enter the Interface Module.
Room for Routine Samples	Number of routine sample tubes currently allowed to enter the Interface Module.
Room for STAT Samples	Number of priority sample tubes currently allowed to enter the Interface Module.

Table 6.3: Status function buttons

Screen	Function button	Access level	Description
Status - Advia 2120 LAS	Clear Tubes	Operator	Press this button when all sample tubes have been manually removed from all racks inside ADVIA 2120i Interface Module.



NOTE: Common Function buttons are also available in this screen.

Settings

Select “Settings”. The “Settings” screen will display a list box containing information about the ADVIA 2120i Interface Module as described below.

Table 6.4: Settings list box

Item	Description
Actual Gripper Encoder	Actual position of the robot gripper.
Error Code	Error code related to the Interface Module.
Gripper - Max Tube Diameter (1/10 mm)	Displays the maximum tube diameter that can be processed by the Module.
Gripper - Min Tube Diameter (1/10 mm)	Displays the minimum tube diameter that can be processed by the Module.

Table 6.5: Settings function buttons

Screen	Function button	Access level	Description
Settings - ADVIA 2120 LAS	Setup	FSE	Allows to set the Maximum/Minimum Tube Diameter that can be processed by the Interface Module.



NOTE: Common Function buttons are also available in this screen.

Settings - Barcode Reader

Select “Settings - Barcode Reader”. The “Settings - Barcode Reader” screen will display a list box containing information about the ADVIA 2120i Interface Module as described below.

Refer to [Table 6.4 Settings list box \(6-6\)](#) for more information.

Table 6.6: Settings - Barcode Reader function buttons

Screen	Function button	Access level	Description
Settings - Barcode Reader - ADVIA 2120 LAS	BCR Config	FSE	Allows the configuration of the Barcode Reader device.



NOTE: Common Function buttons are also available in this screen.

Gates

Select “Gates”. The “Gates” screen will display a list box containing information about the ADVIA 2120i Interface Module as described below.

Table 6.7: Gates list box

Item	Description
Error Code	Error code related to the Interface Module.
Divert Gate	Displays carrier RF-ID and sample tube ID at the Divert Gate, if any.
Barcode Reader Gate	Displays carrier RF-ID and sample tube ID at the Barcode Reader Gate, if any.

Table 6.8: Gates function buttons

Screen	Function button	Access level	Description
Gates - ADVIA 2120 LAS	Pass	Supervisor	Allows the pass of a single carrier at the selected Gate. A pop-up displays the list of Gates.
	Divert	Supervisor	Allows the deviation of a single carrier at the Divert Gate.
	Close	Supervisor	Allows to close the Stop Gate preventing carriers routing on main lane.
	Open	Supervisor	Allows to open the Stop Gate restoring carriers routing on main lane.
	Rotate	Supervisor	Allows the rotation of a carrier at the Barcode Reader Gate.
	Orient Tube	Supervisor	Allows the orientation of a sample tube at the Barcode Reader Gate.
	Piston	Supervisor	Allows to lock or unlock the carrier at the Barcode Reader Gate.
	Read SID	Supervisor	Allows to read the sample ID of tube at Barcode Reader Gate.



NOTE: Common Function buttons are also available in this screen.

Diagnostics - Robot

Select “Diagnostics - Robot”. The “Diagnostics - Robot” screen will display a list box containing information about the ADVIA 2120i Interface Module as described below.

Table 6.9: Diagnostics - Robot list box

Item	Description
Analyzer Error	Error related to Analyzer.
Analyzer In Error	Error related to input towards Analyzer.
Analyzer Out Error	Error related to output from Analyzer.
Barcode Reader Error	Error related to Barcode Reader device.
Error Code	Error code related to the Interface Module.
Init Error	Error code related to initialization problems.
Module Error	Error code related to the Interface Module.
Notification Error	Error related to process Notification.
Pick/Place Error	Error related to pick/place operations.
Rack in Process Error	Error code related to the rack in process.
Rack Push Out Error	Error code related to the Interface Module Rack Push OUT Area.
Safety Shield Error	Error related to Safety Shield.
Tag Reader Error	Error related to Tag Reader.

Table 6.10: Diagnostics - Robot function buttons

Screen	Function button	Access level	Description
Diagnostics - Robot - ADVIA 2120 LAS	Approach	Supervisor	Allows to move the Robot over the selected position. A pop-up displays the list of movements.
	Arm	FSE	Allows to move Up or Down the robot arm.
	Tube Gripper	Supervisor	Allows to Close, Open or Initialize the Robot gripper.
	Pick & Place	Supervisor	Allows the Pick-and-Place operations.
	Home	Supervisor	Allows to move the Robot into the Home position, with or without robot gripper initialization.
	Reset Error	FSE	Allows to reset all state variables.
	Hard Reset	FSE	Allows to reset all the variables related to the firmware internal process.



NOTE: Common Function buttons are also available in this screen.

Diagnostics - Barcode Reader

Select “Diagnostics- Barcode Reader”. The “Diagnostics - Barcode Reader” screen will display a list box containing information about the ADVIA 2120i Interface Module as described below.

Refer to [Table 6.9 Diagnostics - Robot list box \(6-9\)](#) for more information.

Table 6.11: Diagnostics - Barcode Reader function buttons

Screen	Function button	Access level	Description
Diagnostics - Barcode Reader - ADVIA 2120 LAS	Orient Tube	Supervisor	Allows to orient the tube at the Barcode Reader Gate.
	Rotate	Supervisor	Allows to rotate the carrier at the Barcode Reader Gate.
	Read SID	Supervisor	Allows to read the sample ID of the tube at the Barcode Reader Gate.
	Stepper Home	Supervisor	Allows to rotate the Stepper into the Home position.
	Piston	Supervisor	Allows to lock or unlock the carrier at the Barcode Reader Gate.
	Init BCR	Supervisor	Allows to initialize the Barcode Reader device.
	Reset Error	FSE	Allows to reset the error condition.
	Hard Reset	FSE	Allows to reset all the variables related to the firmware internal process.



NOTE: Common Function buttons are also available in this screen.

Diagnostics - Rack Management

Select “Diagnostics - Rack Management”. The “Diagnostics - Rack Management” screen will display a list box containing information about the ADVIA 2120i Interface Module as described below.

Refer to [Table 6.9 Diagnostics - Robot list box \(6-9\)](#) for more information.

Table 6.12: Diagnostics - Rack Management function buttons

Screen	Function button	Access level	Description
Diagnostics - Rack Management - ADVIA 2120 LAS	Push IN	Supervisor	Allows to move the Rack Piston or the Shutter in the Rack Push IN Area.
	Push OUT	Supervisor	Allows to move the Rack Piston in the Rack Push OUT Area.
	Move Rack	Supervisor	Allows to move the rack position.
	Belt	FSE	Allows to turn On/Off the belt motor.
	Initialize	Supervisor	Allows the initialization operations.
	Reset Error	FSE	Allows to reset the error condition.
	Hard Reset	FSE	Allows to reset all the variables related to the firmware internal process.



NOTE: Common Function buttons are also available in this screen.

Diagnostics - Tube Recovery

Select “Diagnostics - Tube Recovery”. The “Diagnostics - Tube Recovery” screen will display a list box containing information about the ADVIA 2120i Interface Module as described below.

Refer to [Table 6.9 Diagnostics - Robot list box \(6-9\)](#) for more information.

Table 6.13: Diagnostics - Tube Recovery function buttons

Screen	Function button	Access level	Description
Diagnostics - Tube Recovery - ADVIA 2120 LAS	Home	Supervisor	Allows to move the Robot into the Home position.
	Tube Recovery	Supervisor	Allows to move the sample tube in Robot gripper into source position or into destination position.
	Reset Error	FSE	Allows to reset the error condition.
	Hard Reset	FSE	Allows to reset all the variables related to the firmware internal process.



NOTE: Common Function buttons are also available in this screen.

Diagnostics - Hardware Signals

Select “Diagnostics - Hardware Signals”. The “Diagnostics - Hardware Signals” screen will display a list box containing information about the ADVIA 2120i Interface Module as described below.

Refer to [Table 6.9 Diagnostics - Robot list box \(6-9\)](#) for more information.

Table 6.14: Diagnostics - Hardware Signals function buttons

Screen	Function button	Access level	Description
Diagnostics - Hardware Signals - ADVIA 2120 LAS	Urap Command	FSE	Allows to manage Urap commands.



NOTE: Common Function buttons are also available in this screen.

Firmware Versions

Select “Firmware Versions”. The “Firmware Versions” screen will display a list box containing information about the ADVIA 2120i Interface Module as described below.

Screen list box displays values related to the Interface Module Firmware Version currently running on the System. The information is for FSE use only.

Table 6.15: Firmware Versions list box

Item	Description
Error Code	Error code related to the Interface Module.



NOTE: Common Function buttons are also available in this screen.

Sensors

Select “Sensors”. The “Sensors” screen will display a list box containing information about the ADVIA 2120i Interface Module as described below.

Screen list box displays values related to the ADVIA 2120i sensors. The information is for FSE use only.

For convenience, the “Sensors” screen displays some functions buttons already described in the previous screens.

Table 6.16: Sensors list box

Item	Description
Error Code	Error code related to the Interface Module.



NOTE: Common Function buttons are also available in this screen.