EasySampler 1210

Sampling Made Easy



User Manual



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1 Introduction

EasySampler 1210 enables automated and unattended sampling of chemical reactions 24/7. The unique sampling probe facilitates sampling of a wide range of chemical reactions with precision, including heterogeneous reactions, reactions at elevated pressure and sub-ambient temperatures, as well as air and moisture sensitive chemistries. The representative samples gained with EasySampler 1210 provide accurate analytical data for improved reaction understanding while increasing chemists' productivity.

Using the EasySampler Connectivity kit you have the EasySampler 1210 functions available on the EasyMax, OptiMax, RX-10 and RC1mx. Additionally sampling information is added to the experiment and is exported with the experiment file.

Please also read the Operating Instructions for the full scope of functionalities of the device. The Operating Instructions can be found on the USB stick.

1.1 Scope of delivery

The following items are included in the EasySampler set (30083901):

	Description	Order No.
	EasySampler 1210 System	
	EasySampler 10 mL rack	30040993
	Vial (100 pieces), not assembled Vial (1000 pieces), not assembled	30244745 30111624
	Needle	30041011
No. of the second second	Sleeve Mounting And Removal Tool incl. Torx key	30213880
	Waste bottle 500 mL GL55 Screw cap for 500 mL waste bottle, GL55 Septum for GL55	30072069 30094594 30306192

	Bottle 250 mL with cap, GL45 Distributor cap, GL45, 2 x GL14 Screw Cap GL14, without aperture Screw cap GL14, with aperture Silicone rubber seal	51191591 51191972 51190318 51190317 51191170
	EasySampler Pump Rinsing Set 1x PTFE tubing 1x Luer locker adapter 1x Syringe (10 mL) User Manual	30466882
	USB stick RXE/CSS with documents	
There are additional parts	s that are needed for proper function of the system:	
	EasySampler Connectivity kit	30110344
EasySampler probes		
Contraction of the second seco	EasySampler Probe 210 set EasySampler Probe 330 Set EasySampler Probe 450 set	30246344 30306933 30306037

1.2 Check on arrival

Check the following conditions once the package has arrived:

- The package is in good condition.
- The contents show no signs of damage (e.g. broken covers, scratches, etc.)
- The contents are complete (see [Scope of delivery Page 3]).

If any one of these condition is not fulfilled, please contact your local support team.

2 Safety Information

This device has been tested for the intended purposes described in this document. However, this does not absolve you from the responsibility of performing your own tests of the product supplied by us regarding its suitability for the methods and purposes you intend to use it for. You should therefore observe the following safety measures.

We, Mettler-Toldedo GmbH, accept no liability whatsoever if you do not observe the following rules and safety notes for safe operation of the device.

2.1 Definition of signal warnings and symbols

Safety notes are marked with signal words and warning symbols. These show safety issues and warnings. Ignoring the safety notes may lead to personal injury, damage to the instrument, malfunctions and false results.

Signal words

WARNING	A hazardous situation with medium risk, possibly resulting in death or severe injury if not avoided.
CAUTION	A hazardous situation with low risk, resulting in minor or moderate injury if not avoided.
NOTICE	A hazardous situation with low risk, resulting in damage to the instrument, other material damage, malfunctions and erroneous results, or loss of data.
Note	(no symbol) for useful information about the product.

2.2 Intended use

EasySampler 1210 is intended to be operated in a laboratory and used by trained staff. It allows you to sample reactions that do not exceed a viscosity of 3 mPas.

Always operate and use your device in accordance with the instructions contained in this manual; use it only together with equipment specified in this documentation.

Any other type of use and operation beyond the limits of these technical specifications without the written consent from Mettler-Toledo GmbH is considered as not intended.

2.3 Product specific warnings and symbols



Risk of electric shock

- 1 Make sure to plug the power cable supplied into a power supply outlet that is grounded. A technical fault could otherwise result in serious injury or death.
- 2 Only use the METTLER TOLEDO power supply cable and AC power adapter designed for your instrument.



<u>A</u> CAUTION

Potentially explosive environment

The housing of EasySampler 1210 is not gas tight (explosion hazard due to spark formation, explosion caused by ingress of gases).

- 1 Never work in an environment subject to explosion hazards.
- 2 Avoid electrostatic charge formation.



🗥 CAUTION

Crush Hazard

An exposed needle can cause personal injuries.

- Do not remove the needle protection shield when EasySampler 1210 is ON.



NOTICE

Risk of blocking fluid paths with solids in sample pocket

- The fluid lines may become blocked if solids in the sample pocket are not dissolved.
- Make sure to select appropriate Quench and Dilution solvents to dissolve the solids within 10 seconds.



NOTICE

Risk of blocking pump with viscous solvents

Pump blocks at 6 bar pressure.

 Make sure that the viscosity of the solvents used for Quench, Dilution and Reaction is not higher than 3 mPas.



NOTICE

Sampling reaction at elevated pressure

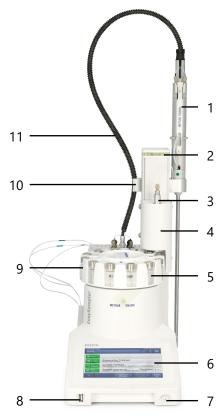
When using EasySampler 1210 to sample reactions at elevated pressure, do not exceed the operating conditions specified in the EasySampler 1210 technical data section.

For safe operation of the sampling probe, limit the maximum pressure in the reactor using an adequate rupture disc.

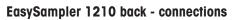
The Operating Instructions must be read and understood. Exceeding operating conditions can cause leak of reaction mixture and damage of EasySampler 1210 and/or the sampling probe.

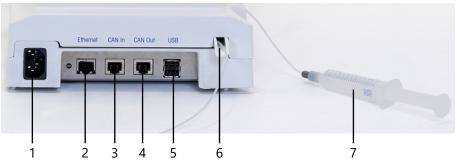
3 Overview

EasySampler 1210 front



1	Sampling probe	7	Power button
2	Status LED	8	USB port
3	Needle holder	9	Rack (for 12 x 10 mL vials)
4	Needle protection shield	10	Conduit holder
5	Vial (10 mL)	11	Conduit
6	Touchscreen		





1	Socket for power supply	4	CAN Out connection
2	Ethernet connection	5	USB ports (1-2)
3	CAN In connection	6	Drip pan outlet

4 Installation

4.1 Installation requirements

Site requirements

The instrument has been developed for indoor operation in a well-ventilated area. Avoid the following environmental influences:

- · Conditions outside of the ambient conditions specified in the technical data
- Powerful vibrations
- Direct sunlight
- Corrosive gas atmosphere
- Explosive atmosphere of gases, steam, fog, dust and flammable dust
- Powerful electric or magnetic fields

4.2 Transport the device

To transport the device from one laboratory workplace to another, please proceed as follows:

- 1 If EasySampler 1210 has been in use before, run a **Clean** process.
- 2 Carry EasySampler 1210 only with two hands gripping the front and back handles.





4.3 Install the vial rack

- 1 Assemble the vials by mounting the caps.
- 2 Insert the vials into the rack. Ensure they are properly inserted.

3 Align the blue arrow on the rack with the blue arrow on EasySampler 1210.





4 Rotate the rack lever clockwise to lock it in place.





1 Place the sampling probe into its holder and ensure it is securely positioned. For probes 450 and 330 use the vial adapter for fixation.

2 Secure the conduit to the conduit holder.

- 3 Connect the sampling probe lines (grey line to the grey port and black line to the black port; to avoid leaks, screw the fitting nuts in until you hear a "click").
- 4 Connect the probe power cable to the socket.



1 Carefully insert the needle into its holder.







2 Fix the needle in place with the knurled screw.

3 Connect the fitting nut to the needle and screw the fitting nut in until you hear a "click".

4 Mount the needle protection shield, taking care not to pinch the tubing.







4.6 Connect power to device



🗥 WARNING

Risk of electric shock

- 1 Make sure to plug the power cable supplied into a power supply outlet that is grounded. A technical fault could otherwise result in serious injury or death.
- 2 Only use the METTLER TOLEDO power supply cable and AC power adapter designed for your instrument.
- 1 Connect the power cable on the rear of the device (100 240 V, 50/60 Hz).
- 2 Insert the plug of the power cable into a grounded power outlet that is easily accessible.



4.7 Turn on device

- Press the power button on the front of the device.
- → EasySampler 1210 requires a **Clean** process.



5 Operation

5.1 Rinse the pump

To ensure good operation of the pump a manual rinsing before and after each experiment is recommended. Use the EasySampler Pump Rinsing Set (30466882) for the manual rinsing of the pump. Once installed the rinsing set can remain connected during normal operation.

For more instructions on rinsing the pump go to mt.com\EasySampler. Select the Support tab and watch the video: How to install and use the EasySampler Pump Rinsing Set.

- The pump rinsing set is installed.
- 1 Place the long waste tubing into a waste receptacle.
- 2 Choose a solvent capable of dissolving any potential solids.
- 3 Fill the syringe with the solvent.



- 4 Re-connect the syringe to the luer locker adapter.
- 5 Start a **Clean** process from the touchscreen.
- 6 While **Clean** process is running, push the solvent (30 mL) in the syringe through the upper rinse port.

- 7 If needed repeat the procedure with another solvent.
- 8 Execute a final rinsing with isopropanol while **Clean** is still running.



5.2 Clean

Note The sampling probe is not yet inserted in the reactor.

Perform a pump rinsing during a **Clean** process to avoid blockages of the EasySampler.

1 Select Clean.

- 2 Follow the instructions on the touchscreen and press **OK**.
 - ➡ EasySampler 1210 starts the Clean process.



Once the Clean process is finished, the Prepare button becomes active.



5.3 Prepare

Note The sampling probe is not yet inserted in the reactor.

sySampler 1210 10/2/2018 3:36 PM Select Prepare. Yo Prepare step 1/3 2 Enter the Quench solvent (if no Quench solvent is selected, Dilution solvent is used instead). \checkmark Quench solvent WATER 3 Enter the Dilution solvent. Dilution solvent ACETONITRILE Prepare 4 Enter the **Reaction solvent**. Reaction solvent ISOPROPANOL 5 Enter a **Dilution Factor** between 80 and 450. Dilution factor 80 6 Select Next. Cancel Next 7 Follow the instructions on the touchscreen. Prepare step 2/3 8 Select OK. Dilutio Reaction Quench ent Place lines into the correct feeding bottles
 Click 'OK' to continue EasySampler 1210 starts a Prepare process to fill all feeding lines with the relevant solvents. ➡ The touchscreen indicates the time to place the WATER ACETONIT ISOPROPA sampling probe into the reactor and the pocket will Min. 50 ml move out (8 mm). ОК 9 Loosen the collar (with the green dot) on the probe (i) Prepare step 3/3 headpiece and align the green dot with the pocket. 10 Tighten the collar. Place probe in reactor
 Ensure the probe pocket is not touching anything (e.g. stirrer) 11 Fit an appropriate adapter onto the sampling probe. 3. Align probe so that the green dot is facing 180° away from the agitator 12 Carefully insert the sampling probe into the EMPTY reactor. 4. Click 'OK' to continue 13 Adjust the height of the sampling probe in the reactor so that the probe tip remains clear of any other inserts, stirrer and reactor wall. 10/2/2018 3:40 PM asySampler 121 14 Tighten the adapter onto the sampling probe so that the Home height of the probe in the reactor is fixed. 15 Remove the sampling probe from the reactor. Next action in 0:00:19 Preparing... Abort Prepar 16 Select OK. ing probe for sampling EasySampler 1210 fills the lines and sample pocket Sample method > : 80 - Q: WATER - D: ACETONI... - R: ISOPROP with Reaction solvent. Sample sequence Unnamed > No sequence Exper and e 17 Prepare the reactor for the reaction by adding the 10/2/2018 3:40 PM asySampler 121 Ϋ́ο necessary solvents, starting materials and reagents. 18 Place the sampling probe into an appropriate port of the 🙆 Clean reactor lid and turn the sampling probe so that the Preparation finished Prepare sample pocket (indicated by the green dot) faces 180° y to take s away from the stirrer. Sample method > Take factor: 80 - Q: WATER - D: ACETONI... - R: ISOPROP. ➡ The position of the pocket will ensure accurate and Sample sequence Unnamed > 물 Start reproducible sampling of heterogeneous reactions. Exper-19 Ensure the probe tip is immersed in the reaction mixture. EasySampler 1210 is now ready to take samples.

5.4 Take 1 Sample

- 1 Select Take 1 Sample.
- 2 Confirm the sample method with **OK** or change by pressing **Cancel**.
- EasySampler 1210 starts sampling and the touchscreen displays the remaining time and the activity of the device.

EasySampler 1210 is ready to take further samples as soon as the sampling process is finished.

(i) Information	
Sample me Quench solveni Dilution solvent: A Reaction solvent: I Dilution fact 'OK' takes the	t: WATER CETONITRILE SOPROPANOL tor: 80
ок	Cancel

6 Maintenance

This section describes simple routine checks and maintenance procedures that are easily performed by the user to ensure optimal system performance. Regular checks and maintenance ensure the proper function of EasySampler 1210.

Maintenance tasks have to be performed in accordance with the instructions given in this chapter. After performing any maintenance tasks, it should be ensured that the device still meets all safety requirements.

Ask your local support team for the service contract option to ensure continuos running and reliable performance of the device.

6.1 Pause during the Operation of EasySampler 1210

If EasySampler 1210 has been switched off for 24 hours, a **Clean** process is recommended before starting a sampling process. This will ensure no bubbles are present in the solvent lines. A **Prepare** process is then required.

6.2 Checking for Leaks

Check that all fluid line connectors are tight and in good condition. "Click and fit" connectors are used on all EasySampler 1210 fittings. To ensure a seal is achieved, the fitting must be tightened until an audible click is heard.

6.3 Cleaning the EasySampler 1210



NOTICE

Damage to the device due to incompatible cleaning agents

Inappropriate cleaning agents could damage the housing of the device.

- 1 Use the described cleaning agent.
- 2 Should you use other cleaning agents, ensure that they are compatible with the housing material.

The housing of the instrument is not watertight (i.e. splash proof). We therefore recommend that you clean the housing with a cloth soaked in a mild solvent such as isopropanol or ethanol.

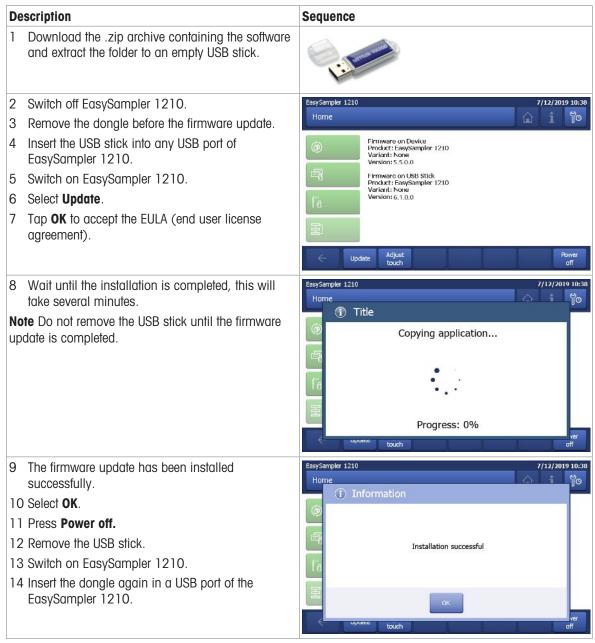
If you have questions about the compatibility of cleaning agents, contact your authorized METTLER TOLEDO dealer or service representative.

6.4 Touchscreen Firmware Update

An empty USB stick is required to perform the firmware update.

Download the current version of the touchscreen firmware from https://community.autochem.mt.com. Login and navigate to products -> Software -> Other Software and Firmware.

You can find a how to video on mt.com\EasySampler under the Support tab: Update EasySampler Firmware.



6.5 Disposal

In conformance with the European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.



Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment. If you have any questions, please contact the responsible authority or the distributor from which you purchased this device. Should this device be passed on to other parties, the content of this regulation must also be related.

7 Technical Data

Certifications regarding this product can be found at https://www.mt.com/us/en/home/search/compliance.html/ The product name of your device is the model number.

EasySampler 1210 System

Materials	Housing: Polypropylene PP 30% Talcum
	Tubing: PTFE
	Needle: Stainless steel
	Valve: Ceramic
	Pump: Ceramic, PTFE
	Protective foil touchscreen: polyester film
Power Connection	100240 V; 50/60 Hz
User Interface	METTLER TOLEDO Touchscreen
Weight	9 kg, 20 lbs
Vials	10 mL, borosilicate glass
Rack	12 x 10 mL vials

Ambient conditions

Humidity	Max. relative humidity 80 % for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 40 °C
Altitude	Up to 2000 m
Overvoltage category	II
Pollution degree	2
Ambient temperature	5 °C40 °C
Usage	For indoor use only

EasySampler Probe

	210	330	450	
Weight	0.8 kg, 1.76 lbs	0.84 kg, 1.85 lbs	0.88 kg, 1.94 lbs	
Length	213 mm / 8.38"	333 mm / 13.11"	453 mm / 17.83"	
Materials	Wetted parts: Alloy C-22, PTFE			
	Non-wetted parts: Anodized aluminum, stainless steel			
Pocket Size	20 µL ±10%			
Temperature Range –20 °C to 140 °C (for reactions at atmospheric pressure)		re)		
Pressure	1.013 bar to 10 bar, 14.7 psi to 145 psi with the following conditions:			
	Temperature range: 20 °C to 100 °C			
	Maximum reactor volur	ne: 2500 mL		
Recommended sleeve	• At ambient pressure: ev	ery 100 samples		
change	At elevated pressure: af samples per reaction)	vated pressure: after each experiment or 24 samples (maximum 24 les per reaction)		
Minimum Sampling Interval	2 min 52 sec			
pH 1 to 14				

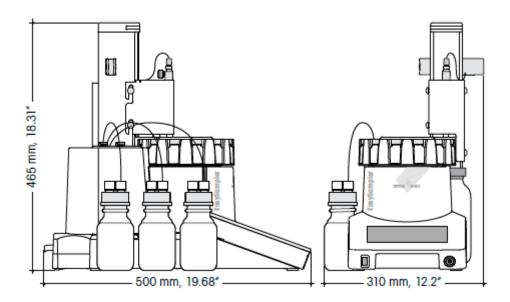
Supported Firmware and Software for Connectivity	Touchscreen to Touchscreen Control:
kit	EasySampler: Firmware Version 1.1.0.0 or higher
	EasyMax, OptiMax and RX-10: Firmware Version 5.4.0.0 or higher
	Compatibility with iControl Software:
	EasySampler: Firmware Version 5.5.0.0 or higher
	EasyMax, OptiMax and RX-10: Firmware Version 5.5.0.0 or higher
	iControl: Software Version 5.5 or higher

7.1 Solvent compatibility

The materials of construction are listed in the technical data (above). When selecting solvents, ensure they are compatible with all the wetted parts of EasySampler 1210 and also the sampling probe.

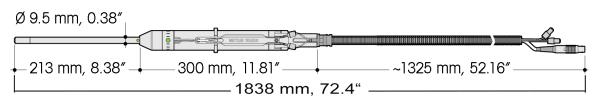
7.2 Dimensions

7.2.1 Device Dimensions

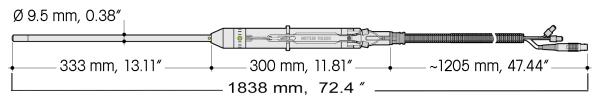


7.2.2 Probe Dimensions

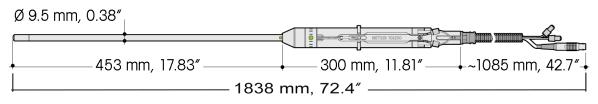
Probe 210



Probe 330



Probe 450



8 Certifications

8.1 Information_Notice_EasySampler_Pressure Directive_2014_68_EU.pdf

Information Notice

In reference to 2014/68/EU		
Pressure Assemblies:	EasySampler Prob	e 450 (part number: 30279540) e 330 (part number: 30306934) e 210 (part number: 30043400)
Manufacturer:	acturer: Mettler Toledo GmbH, Im Langacher, Greifensee (CH	
Product Specifications at e Maximum / Minimum specified Maximum / Minimum specified Maximum Reactor Volume app Nominal Size of EasySampler	d Pressure (PS) d Temperature (TS) blied:	10 bar / 1.013 bar 100 °C / 20 °C 2500 mL < 6
Safety Equipment:		None
Classification according di	rective 2014/68/EU	Annex II/Chapter 4 Paragraph 3
with reference to Article 13 and in manufacturing and testing has be to ensure safe use. Applied paran pressure, reactor volume of 100 r CE Labeling	e outside the scope of dire accordance with Annex II en conducted in accordan heters in product testing: 2 nL. directive 2014/68/EU the	ctive 2014/68/EU, Chapter 1, Article 1, 2(f) of this directive. Design specification, ce with the sound engineering practice in orde 0 to 110 °C temperature range, 17.5 bar listed pressure assemblies shall not bear the
Instructions for safe use are include		perating instructions
	Manufacturer	Signature
Date and Location		Ch. Junp
	METTLER TOLEDO	our que p
Date and Location May, 17 2016 Schwerzenbach	METTLER TOLEDO	Head Strategic Product Group CS

To protect your product's future:

METTLER TOLEDO Service assures the quality, measuring accuracy and preservation of value of this product for years to come.

Please request full details about our attractive terms of service.

www.mt.com

For more information

Mettler-Toledo GmbH Im Langacher 44 8606 Greifensee, Switzerland www.mt.com/contact

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