Quick Start Guide

RX-10™

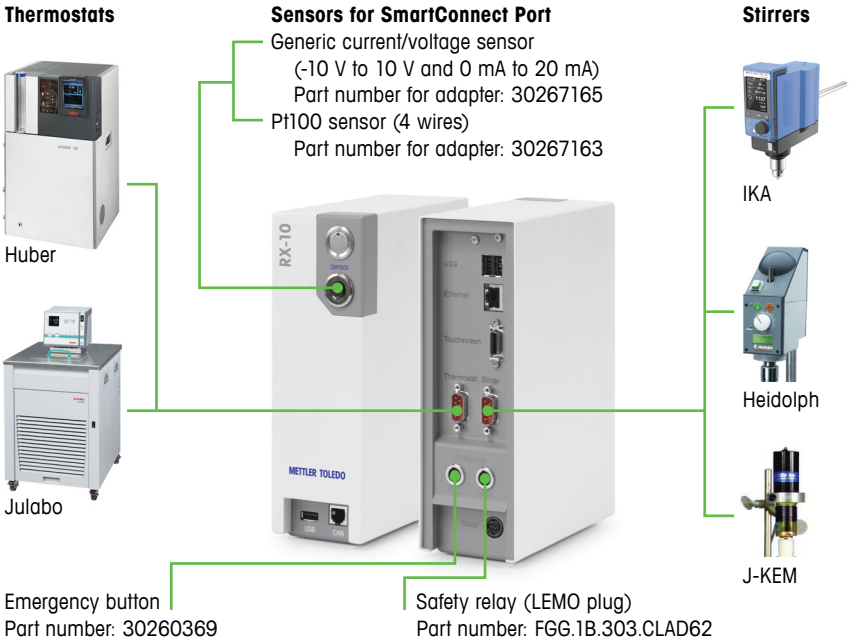
Installing and Getting Started

METTLER TOLEDO

Introduction

This is a step-by-step guide to install an RX-10 unit, connect it to the target equipment, and to operate the most common functions of the system.

The RX-10 is capable of controling and/or monitoring the following equipment:



Other Specifications

Supported reactor volume and temperature range	RX-10 is not limiting the range of any process parameters. The maximum possible performance solely depends on the connected third-party equipment such as thermostat or the reactor.
Supported sensors	Any analog sensor providing any of the following signals using the respective METTLER TOLEDO SmartConnect sensor cable: • Current (0 mA to 20 mA) } With 10 W / 24 V optional • Voltage (-10 V to 10 V) } power source • Pt100 with 4 wires
Supported line voltage	100 V to 240 V, 50 Hz / 60 Hz

Step 1 – RX-10 Installation

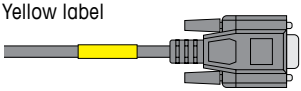
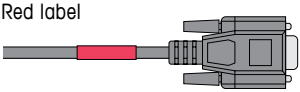
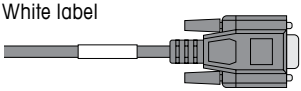
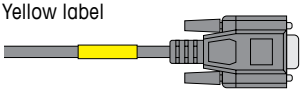
- Place the unit and touchscreen so that the touchscreen is easily accessible. Note that the RX-10 main unit and the touchscreen are resistant to most common solvents.
- You may want to mount the RX-10 to lab bars inside the fume hood using the provided holder.

- Connect the power cable and touchscreen to the RX-10.

- Press the power button to switch on the RX-10.

Step 2 – Connecting the Stirrer

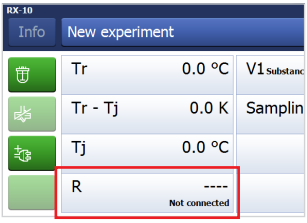
- Select the correct RS232 cable according to the table below.

Stirrer Model	RS232 Cable to Use
IKA 	Yellow label 
IKA 	Red label 
Heidolph 	White label 
J-KEM 	Yellow label 

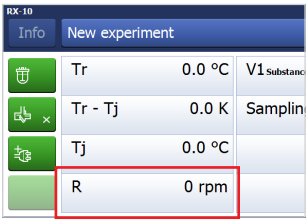
Step 3 – Operating the Stirrer

- The connection to the stirrer is plug-and-play, meaning that you can switch on and off your stirrer or RX-10 at any time. The stirrer will automatically appear on the touchscreen after switching it on and the current stirrer speed (R) will be displayed.

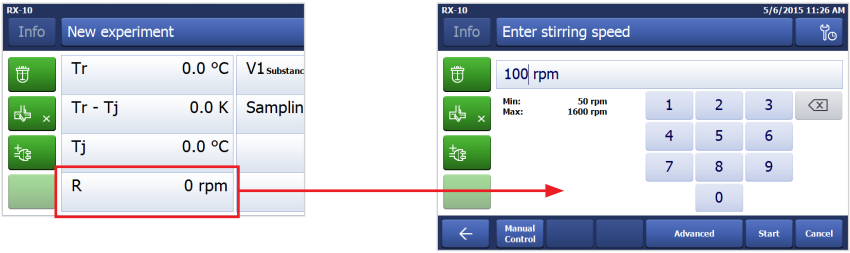
Disconnected or switched off stirrer



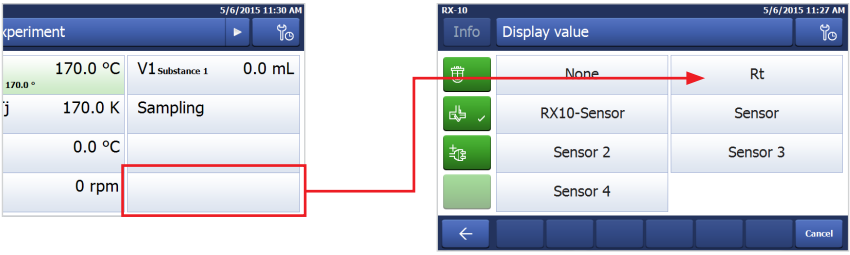
Connected stirrer



- To change the stirrer speed, press the **R** tab on the touchscreen and enter the target speed. Confirm your input with **Start**.

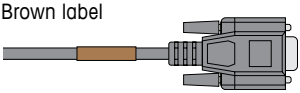
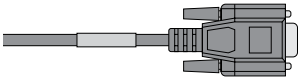
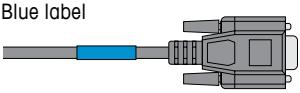


- To display the stirrer torque (Rt) on the homescreen, press an **empty** tab on the homescreen and select the trend you want to display in the empty field.



Step 4a – Connecting the Thermostat (Huber)

- The type of RS232 cable to use to connect a Huber thermostat depends on the type of the controller. Select the correct cable according to the following guide:

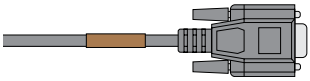
Huber Controller Unit	RS232 Cable to Use
Pilot One 	Brown label  or Grey label (Service Interface) 
CC-Pilot 	
Unistat Control/ Pilot Nuevo 	NOTE: The Service Interface is usually located at the back of the unit. Use it in case the standard RS232 port is already occupied. NEVER disconnect the Huber control unit from the thermostat!
Unistat Control 	
Polystat CC3 	Blue label 
CC 	

- By default, RS232 communication is enabled on Huber thermostats. There are no further configuration steps required. In case the thermostat was previously connected to another control software, make sure the communication parameters are set as follows:
  Interface type: RS232 / Baud rate: 9600 or 1200, Lai/Slave-Address: 1

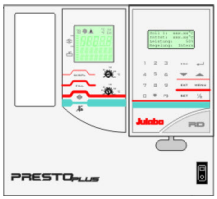
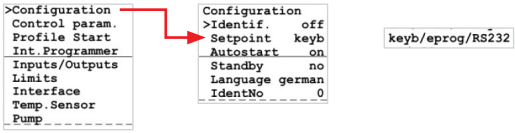
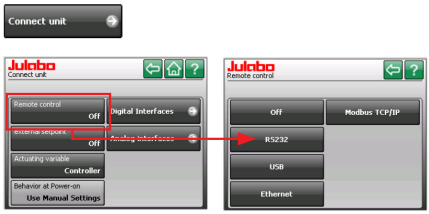
Consult the Huber manual for instructions on how to change communication parameters.

Step 4b – Connecting the Thermostat (Julabo)

- Use the cable with the brown label to connect any type of Julabo thermostat.



NOTE: By default, external setpoint control is not enabled on Julabo thermostats. Enabling it depends on the Julabo User Interface of your thermostat. Please refer to the corresponding Julabo manual. Below are two examples:

Thermostat	**Enabling external setpoint and RS232 control**
Presto Plus LH46 / LH85 	• Go to the Main Menu • Select **Configuration** • Select **Setpoint** and set **RS232** 
Presto Line 	• Go to the Main Menu • Select the "Connect unit" menu • Set **Remote control** to **RS232** 

NOTE: The thermostat cannot be operated locally anymore if remote control via RS232 is active!

- By default, the RS232 communication parameters are set as expected by the RX-10. In case the thermostat was connected to another control software before, make sure the communication parameters are set as follows:
  Interface type: RS232 / Baud rate: 4800, Parity: Even, Handshake: Hardware

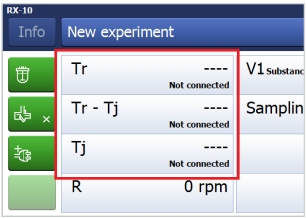
Consult the Julabo manual for instructions on how to change communication parameters.

Step 5 – Operating the Thermostat

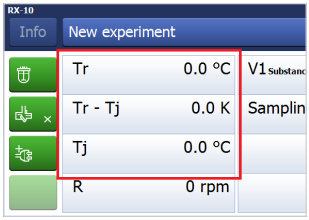
- The connection to the thermostat is plug-and-play meaning that you can switch on and off your thermostat or RX-10 at any time. The current jacket oil (Tj) and reactor (Tr) temperature will automatically appear on the touchscreen after switching the thermostat or RX-10 on.

NOTE: Tr only displays a value if a corresponding sensor is connected. Tj always shows a value if the thermostat is properly connected.

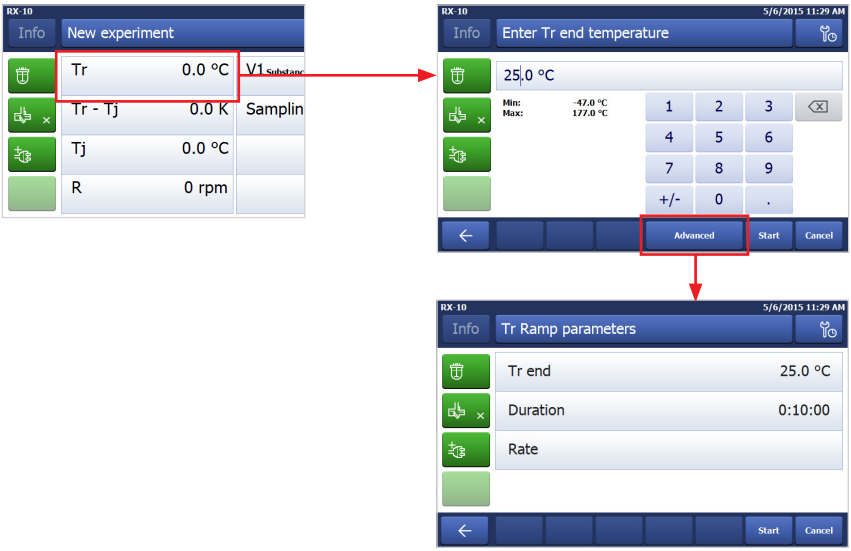
Disconnected or switched off thermostat



Connected thermostat



- To change the jacket fluid (Tj) or reactor (Tr) temperature, press the **Tr** or **Tj** tab on the touchscreen and enter the target set value. You may press **Advanced** to enter ramps with a certain duration or rate.

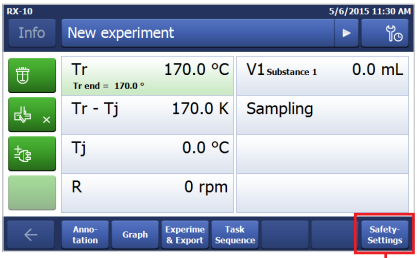


Step 6 – Configuring the Safety Settings of the RX-10

The RX-10 features a sophisticated safety concept to mitigate damage to the chemistry in the vessel, equipment or staff. In case of dangerous happenings such as a violated temperature limit due to an unexpected strong exothermic event, a broken stirrer or a pressed emergency button, the RX-10 automatically controls the thermostat to a safe temperature and stops the execution of all active ramps.

The safe temperature (Tsafe) as well as the allowed temperature range may be defined as follows:

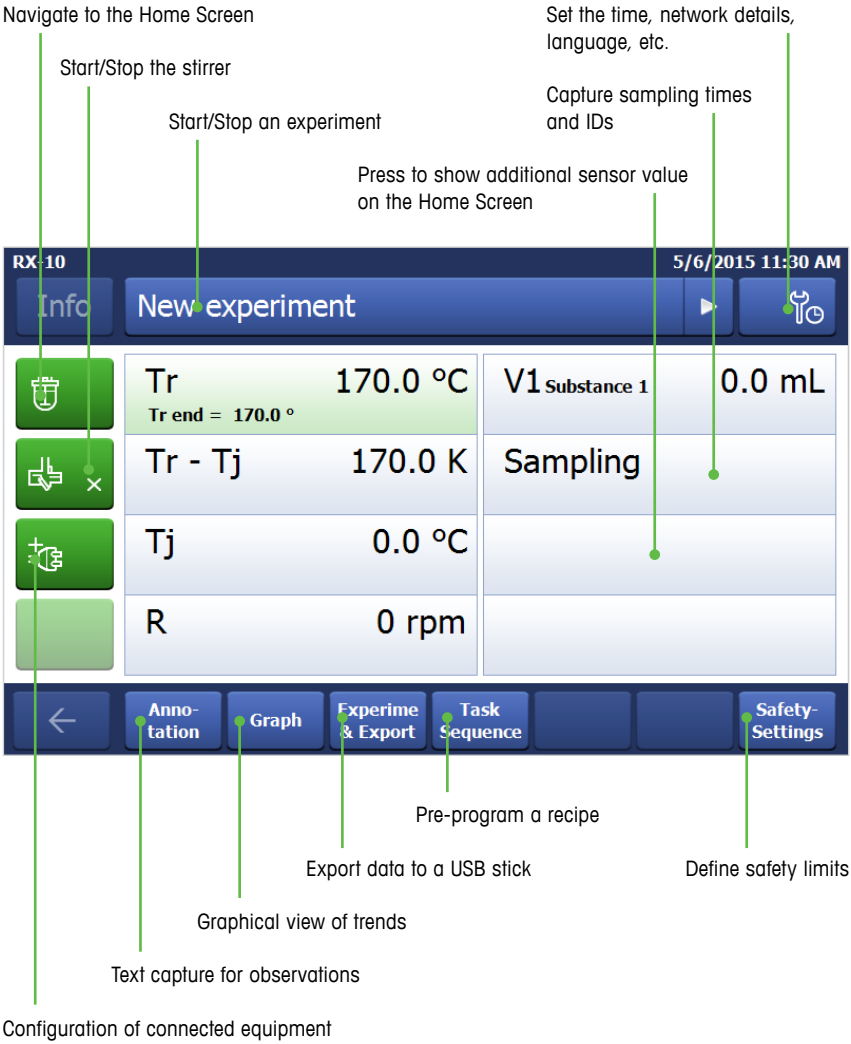
- Press **Safety Settings** at the bottom right corner of the home screen.



- Enter the desired safety limits and the safe temperature (Tsafe).

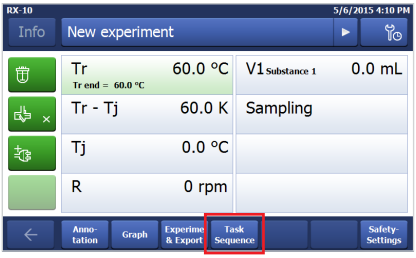
By default, the safety settings for the temperature are read from the thermostat. Rmax is set to the maximum speed supported by the connected stirrer.

Step 7 – Using the Basic Functions of the Touchscreen

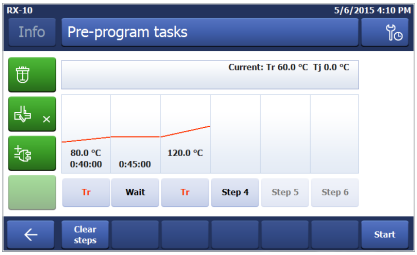


Step 8 – Pre-programming a Recipe

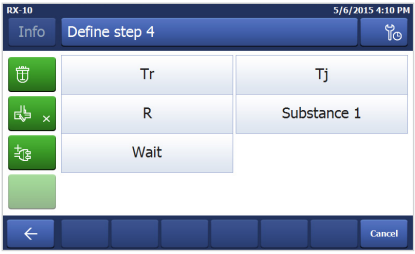
Simple recipes may be pre-programmed on the touchscreen as shown below. For more advanced recipes with an unlimited number of operations and additional control capabilities, please use the iControl™ software.



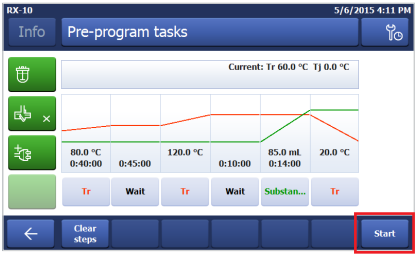
- Press **Task Sequence** on the Home Screen.



- Define up to 6 recipe steps by pressing the **Step #** button.



- Select the type of control you want to execute.



- When done with the definition of the desired steps, press **Start**. The steps will execute automatically.

Safety Measures

Risk of Electrical Shock

Grounding of the Power Supply Outlet

- Plug the supplied power cable into a grounded outlet! A technical fault could otherwise result in serious injury or death.

Caution

General Conditions

Exclude the following environmental influences:

- Powerful vibration
- Direct sunlight
- Ambiant humidity greater than 80%
- Temperature below 5 °C or above 40 °C
- Powerful electric or magnetic fields

Caution

Usage

- In case of damage, please contact METTLER TOLEDO.
- Never open the instrument! Have it serviced only by METTLER TOLEDO.
- Operate the RX-10 only with equipment approved and/or documented by METTLER TOLEDO.
- The Quick Start Guide must be read and understood. If the RX-10 is not used according to this Quick Start Guide, protection of the instrument may be impaired and METTLER TOLEDO assumes no liability.
- The electrical connectors are not resistant to corrosive gases. Take appropriate measures and/or place the RX-10 in a suitable place in the lab or outside of the fume hood.

Risk of Explosion

Potentially Explosive Environment

- Never work in an environment subject to explosion hazards! The housing of the RX-10 is not gas tight (explosion hazard due to spark formation, explosion caused by ingress of gases).
- Avoid electrostatic charge formation.

For more Information

www.labtex.co.uk/ manufacturers/mettler-toledo/

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