858 Professional Sample Processor

Manual

8.858.8002EN

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Although all the information given in this documentation has been checked with great care, errors cannot be entirely excluded. Should you notice any mistakes please send us your comments using the address given above.

Documentation in additional languages can be found on *http://products.metrohm.com* under **Literature/Technical documentation**.

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1 Introduction

1.1 Field of application

The 858 Professional Sample Processor is an instrument with many applications that was conceived for preparing samples for ion chromatography. Inline filtration, dialysis, preparing dilutions, sample preconcentration, inline calibration, partial loopfill, etc. are techniques that can be used with the 858 Professional Sample Processor without any problem. The entire array of sample preparation techniques can be automated in time-saving manner.

Thanks to its proven USB interface, the 858 Professional Sample Processor can be flexibly linked into the Metrohm instrument systems. The control of the instrument is always accomplished thereby by means of a high-performance PC software, e.g. MagIC Net from Metrohm.

The equipment with a Swing Head with a robotic arm makes it possible to approach any given point on a sample rack. As a result, the number (maximum 999 rack positions) and sequencing of the samples on the sample rack is almost completely unlimited. Customer-specific special racks for individual requirements can be fabricated upon request.

1.2 Instrument description

The 858 Professional Sample Processor has the following characteristics:

- Turntable with interchangeable sample rack. The prefabricated sample racks can hold various numbers of different vessel types and sizes. Any number of reserved special positions can be defined on the rack.
- Tower with load-bearing lift. The lift contains a precision drive with robotic arm as a receptacle for a needle holder or other working heads.
- Three MSB connectors (Metrohm Serial Bus), each for controlling one 800 Dosino, one 801 Magnetic Stirrer, one Remote Box, etc.
- Two USB connectors, through which e. g. printers, keyboards, barcode readers or additional devices such as Dosing Interfaces, etc., can directly be connected
- Two connectors for a peristaltic or a membrane pump
- Stirrer connector on the tower, for rod stirrer or magnetic stirrer

Depending on the model:

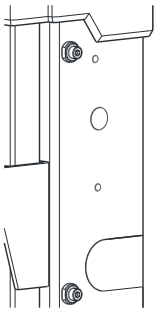
- Two-channel peristaltic pump
- Returnable injection valve

1.3 Model versions

The 858 Professional Sample Processor is available in various models with a number of different accessories.

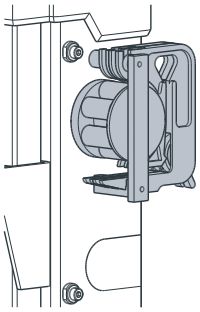
Table 1 Model versions of the 858 Professional Sample Processor

Model 2.858.0010



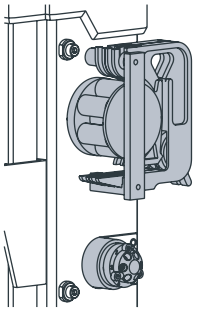
- Tower with 786 Swing Head and robotic arm
- 2 pump connectors
- 1 stirrer connector
- 3 connectors for dosing devices and/or stirrers
- 2 USB connectors
- Controller connection for connection to PC

Model 2.858.0020 with peristaltic pump



- Tower with 786 Swing Head and robotic arm
- Peristaltic pump
- 2 pump connectors
- 1 stirrer connector
- 3 connectors for dosing devices and/or stirrers
- 2 USB connectors
- Controller connection for connection to PC

Model 2.858.0030 with peristaltic pump and injection valve



- Tower with 786 Swing Head and robotic arm
- Injection valve
- Peristaltic pump
- 2 pump connectors
- 1 stirrer connector
- 3 MSB connectors for dosing devices and/or stirrers
- 2 USB connectors
- Controller connection for connection to PC

1.4 Intended use

The 858 Professional Sample Processor is designed for usage as an automation system in analytical laboratories. It is **not** suitable for usage in biochemical, biological or medical environments in its basic equipment version.

This instrument is suitable for processing chemicals and flammable samples. The usage of the 858 Professional Sample Processor therefore requires that the user has basic knowledge and experience in the handling of toxic and caustic substances. Knowledge with respect to the application of the fire prevention measures prescribed for laboratories is also mandatory.

1.5 About the documentation

Caution

Please read through this documentation carefully before putting the instrument into operation. The documentation contains information and warnings which the user must follow in order to ensure safe operation of the instrument.

1.5.1 Symbols and conventions

The following symbols and styles are used in this documentation:

*(5-**12**)*	**Cross-reference to figure legend** The first number refers to the figure number, the second to the instrument part in the figure.
1	**Instruction step** Carry out these steps in the sequence shown.
	**Warning** This symbol draws attention to a possible life hazard or risk of injury.
	**Warning** This symbol draws attention to a possible hazard due to electrical current.

	**Warning** This symbol draws attention to a possible hazard due to heat or hot instrument parts.
	**Warning** This symbol draws attention to a possible biological hazard.
	**Caution** This symbol draws attention to a possible damage of instruments or instrument parts.
	**Note** This symbol marks additional information and tips.

1.6 Safety instructions

1.6.1 General notes on safety

Warning

This instrument may only be operated in accordance with the specifications in this documentation.

This instrument has left the factory in a flawless state in terms of technical safety. To maintain this state and ensure non-hazardous operation of the instrument, the following instructions must be observed carefully.

1.6.2 Electrical safety

The electrical safety when working with the instrument is ensured as part of the international standard IEC 61010.

Warning

Only personnel qualified by Metrohm are authorized to carry out service work on electronic components.

Warning

Never open the housing of the instrument. The instrument could be damaged by this. There is also a risk of serious injury if live components are touched.

There are no parts inside the housing which can be serviced or replaced by the user.

Mains voltage

Warning

An incorrect mains voltage can damage the instrument.

Only operate this instrument with a mains voltage specified for it (see rear panel of the instrument).

Protection against electrostatic charges

Warning

Electronic components are sensitive to electrostatic charges and can be destroyed by discharges.

Always pull the mains cable out of the mains connection socket before connecting or disconnecting electrical appliances on the rear panel of the instrument.

1.6.3 Personnel safety

Warning

Wear protective goggles and working clothes suitable for laboratory work while operating the 858 Professional Sample Processor. It is also advisable to wear gloves when caustic liquids are used or in situations where glass vessels could break.

Warning

Always install the safety shield supplied with the equipment before using the instrument for the first time. Pre-installed safety shields are not allowed to be removed.

The 858 Professional Sample Processor may not be operated without a safety shield!

Warning

Personnel are not permitted to reach into the working area of the instrument while operations are running!

A **considerable risk of injury** exists for the user.

Warning

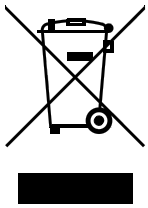
In the event of a possible blockage of a drive, the mains plug must be pulled out of the socket immediately. Do not attempt to free jammed sample vessels or other parts while the device is switched on. Blockages can only be cleared when the instrument is in a voltage-free status; this action generally involves a **considerable risk of injury**.

Warning

The 858 Professional Sample Processor is **not** suitable for utilization in biochemical, biological or medical environments in its basic equipment version.

Appropriate protective measures must be implemented in the event that potentially infectious samples or reagents are being processed.

1.7 Recycling and disposal



This product is covered by European Directive 2002/96/EC, WEEE – Waste from Electrical and Electronic Equipment.

The correct disposal of your old equipment will help to prevent negative effects on the environment and public health.

More details about the disposal of your old equipment can be obtained from your local authorities, from waste disposal companies or from your local dealer.

2 Overview of the instrument

2.1 Front

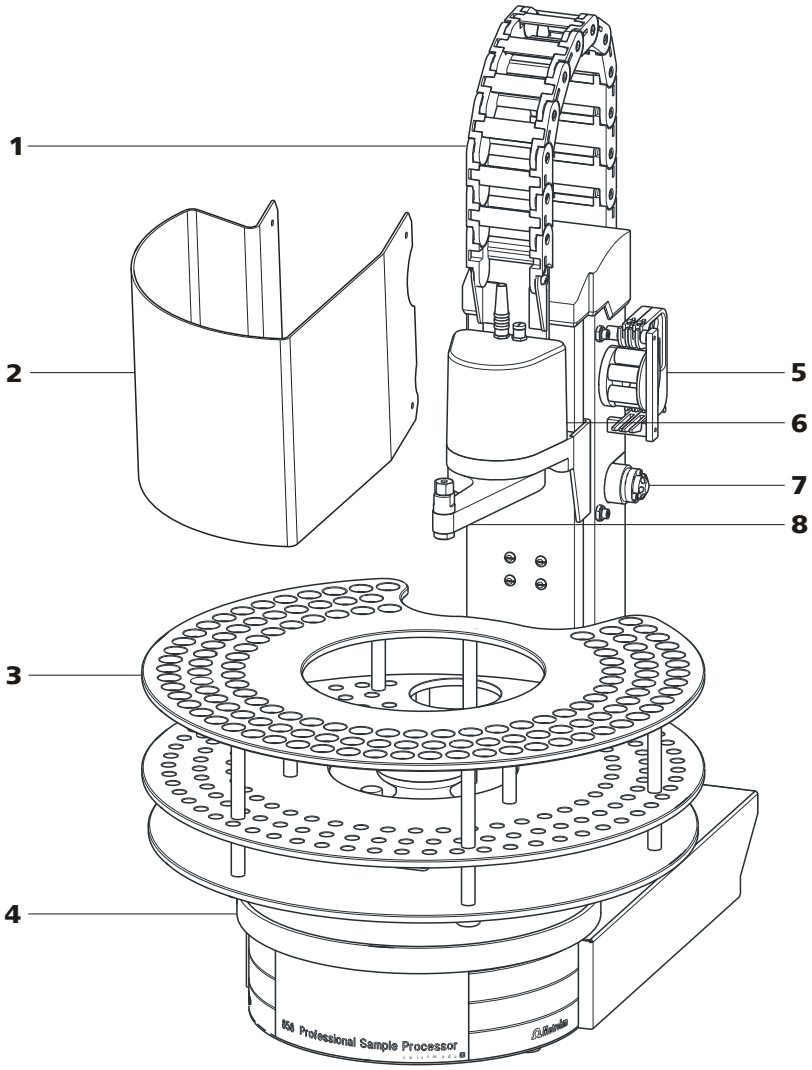


Figure 1 Front 858 Professional Sample Processor

1	**Guide chain**	**2**	**Safety shield**
3	**Sample rack**	**4**	**Assembly rail**
5	**Peristaltic pump** Depending on the model version	**6**	**Swing Head**
7	**Injection valve** Depending on the model version	**8**	**Robotic arm with needle adapter (6.1462.030)**

2.2 Rear

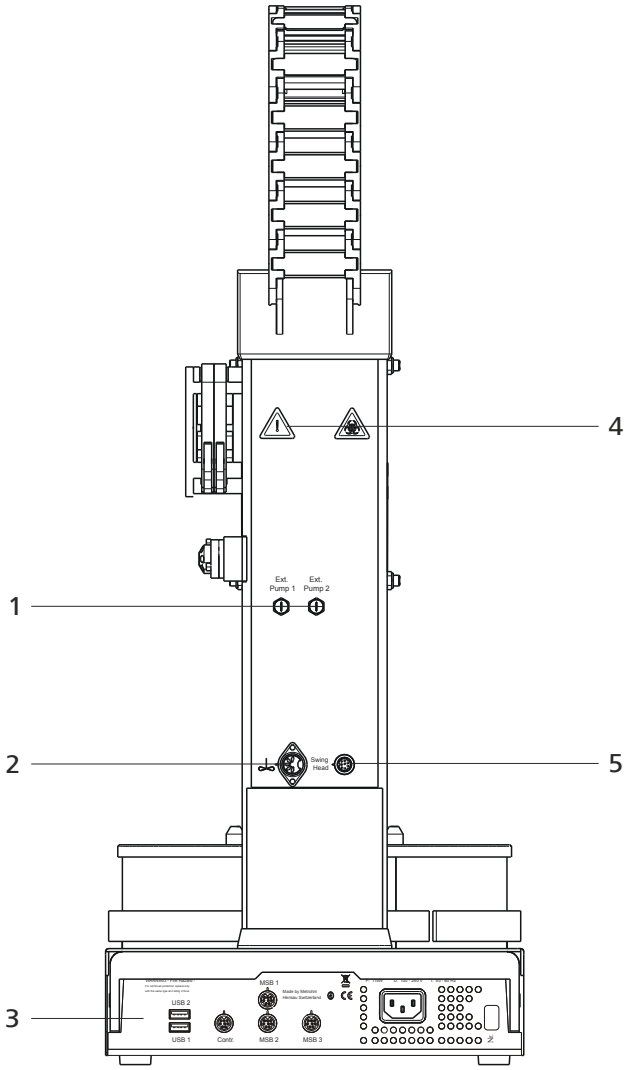


Figure 2 Rear 858 Professional Sample Processor

1 **Pump connectors** M8 connector for external pumps	**2** **Stirrer connector** For rod stirrer and 741 Magnetic Stirrer
3 **Connector strip** Details *(see Chapter 2.3, page 10)*	**4** **Warning symbols** *(see Chapter 1.6.3, page 5)*
5 **786 Swing Head connector**	

2.3 Connector strip

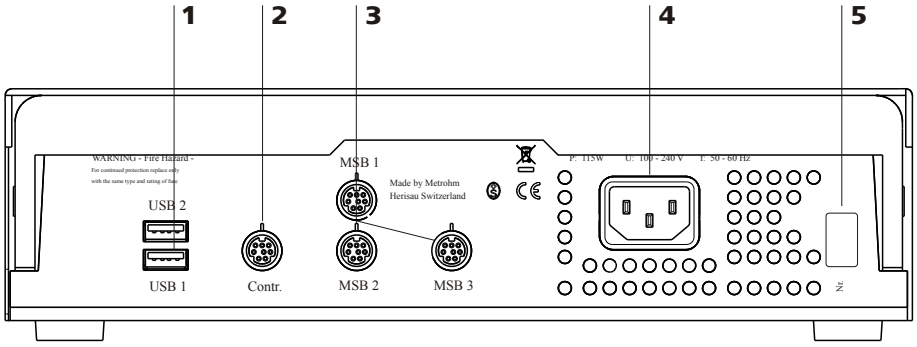


Figure 3 Connector strip 858 Professional Sample Processor

1 **USB connectors**	**2** **Controller connector** For the connection to the PC
3 **MSB connectors** For dosing devices, stirrers, etc.	**4** **Mains connection**
5 **Type plate**	

2.4 Sample racks

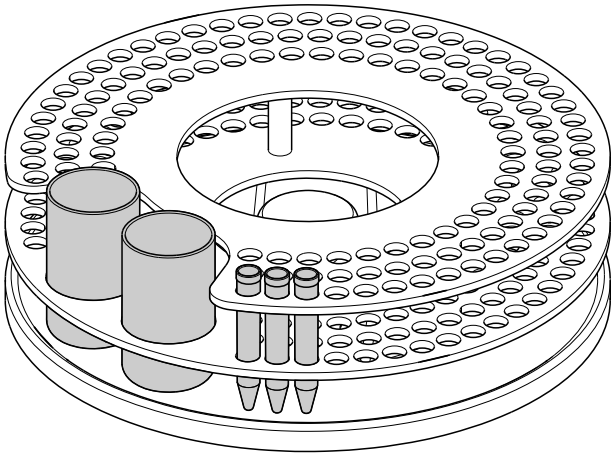


Figure 4 Sample rack with sample vessels

A sample rack is a turntable that acts as a receptacle for sample vessels. Various types of sample racks are available for different numbers and types of sample vessels. The 858 Professional Sample Processor requires sample racks with up to a maximum of **42 cm in diameter** or smaller.

Attaching a rack

Attach the sample racks in such a way that the guide pins of the turntable engage through the guide openings in the base of the rack.

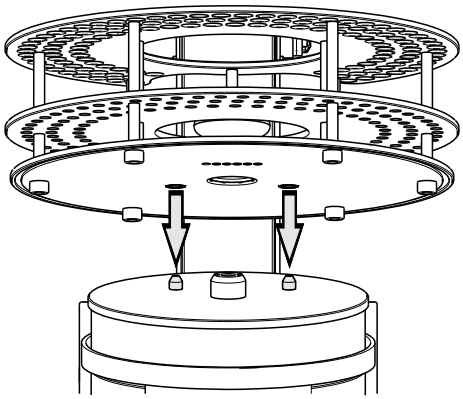


Figure 5 Attaching a sample rack

Certain sample racks have a handle with a fixing screw. With this, the rack can be fixed on the turntable by rotating in clockwise direction.

Note

After the sample rack has been attached, the rack must be initialized with the **Rack initialization** function in the control software ("Manual Operation"), so that the magnet code of the rack can be recognized. Automatic recognition of the rack type is only possible when the rack is rotated into the starting position.

Recommended sample racks for the 858 Professional Sample Processor:

Qty.	Order no.	Description	
	6.2041.440	**Sample rack 148 x 11 mL** Sample rack for 148 samples at 11 mL with 3 rinsing beakers Outer diameter (mm): 420 Hole diameter (mm): 17 / 68	
	6.2041.760	**Sample rack for IC Sample Processor, 54 x 11 mL + 1 x 300 mL** Sample rack with small diameter for 54 x 11 mL sample vessels in two rows and additionally 1 x 300 ml bottle Outer diameter (mm): 270 Hole diameter (mm): 17 / 68	

Other user-defined racks can be supplied upon request and the required rack data can be defined in the control software. Any arrangement of rack positions is possible. The magnet code for user-defined racks is **110000**.

Magnet codes

Every single sample rack can be unambiguously identified by means of a magnet code. Magnetic pins in a holder attached on the underside of the rack can be combined to make a binary, six-digit code. The Sample Processor can thus recognize automatically which rack is in place.

When replacing a rack, this should first be returned to starting position using the **Rack initialization** function (see "Manual Operation" in the control software). This will enable an unambiguous recognition of the rack and thus the correct positioning of the beaker. A positioning table is assigned to each rack type in which for each rack position the rotation angle and the distance to the middle of the rack is defined.

The standard racks supplied by Metrohm are already provided with a predefined magnet code for each type.

Format of the magnet code (example):

000001	only one magnet is inserted, Bit 0
000101	two magnets are inserted, Bit 0 and 2

2.5 The Swing Head

The 786 Swing Head is an auxiliary drive for the Metrohm Sample Processor series, e.g. the 858 Professional Sample Processor. It is a high-precision motor drive that makes it possible to move to any point position on a sample rack. Even positions outside of the sample rack are reachable when a suitable robotic arm is used.

Left-swinging or right-swinging models are available as different types of robotic arms. "Left-swinging" means swinging from the initial position (pointing towards the middle of the rack) outwards to the left.

The following diagram illustrates the most important configuration data that needs to be set in the control software to ensure correct usage of a robotic arm (left-swinging, here).

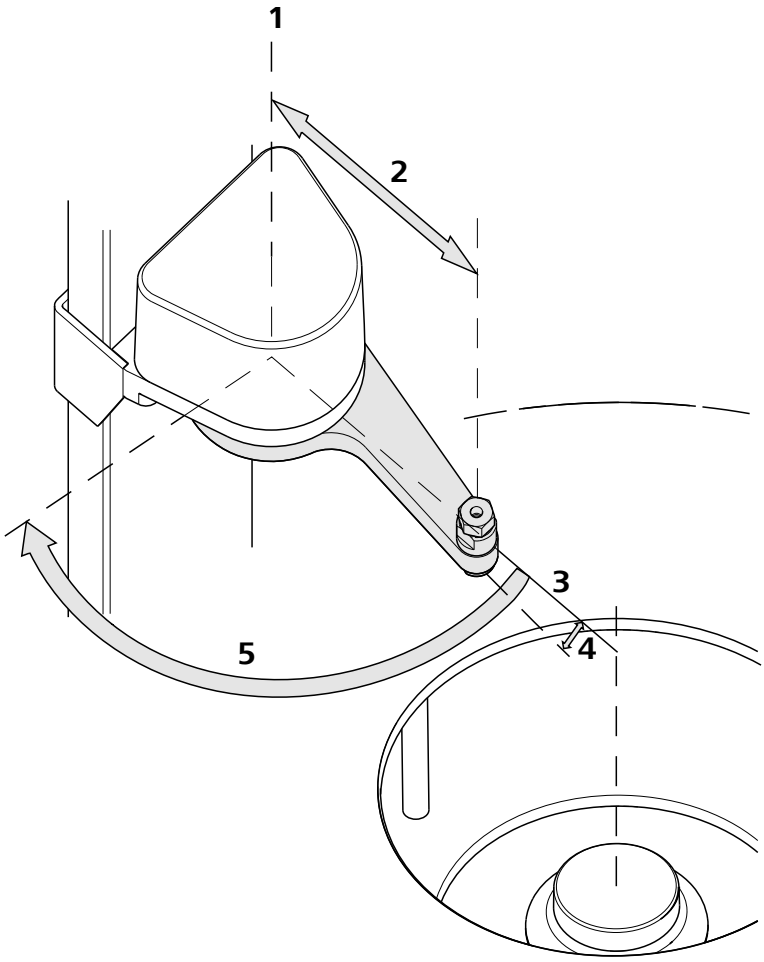


Figure 6 Swing Head - Configuration data

1 **Swing axis** This runs through the middle of the Swing Head drive.	**2** **Swing radius** This is determined by the length of the robotic arm. The radius runs from the axis of rotation to the midpoint of the tip of the robotic arm.
3 **Source axis** This runs from the swing axis to the midpoint of the sample rack and marks the initial position of the robotic arm.	**4** **Swing offset** This determines the 0° position of the robotic arm.
5 **Max. swing angle** This stands for the swing range that the robotic arm can reach. The range runs from the source axis to the maximum possible robotic arm position.	

The configuration data of a robotic arm can be read on its underside or can be found on an accompanying sheet. Before mounting a robotic arm, the configuration data must be set in the control software.

If a Swing Head drive is mounted with a **6.2058.020 adapter** in order to use racks smaller than intended, then the **axial distance** must be modified in the configuration of the control software. The corresponding data can be found on the accompanying sheet of the 6.2058.020. The axial distance refers to the distance of the swing axis (see figure) and of the axis of rotation (middle point) of the sample rack.

2.6 Peristaltic pump

The peristaltic pump (for the model versions 2.858.0020 and 2.858.0030) can be used as a 1-channel or 2-channel pump. One or two 6.2755.000 tubing cartridges can be mounted.

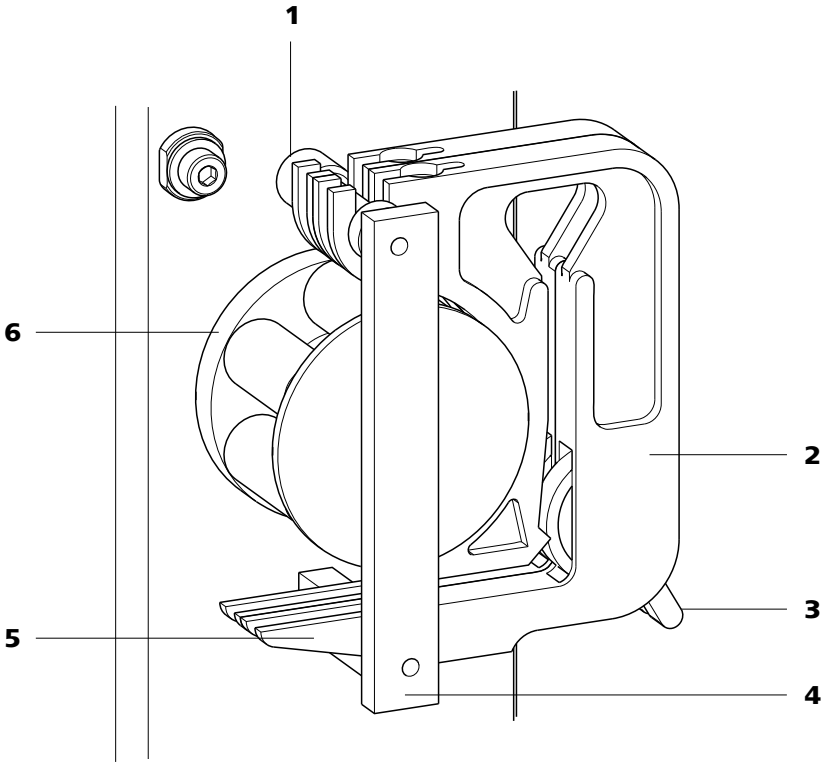


Figure 7 Peristaltic pump

1	**Mounting bolt** For engaging the tubing cartridge	**2**	**Tubing cartridge 6.2755.000** For 6.1826.0X0 pump tubings
3	**Contact pressure lever** For regulating the contact pressure	**4**	**Retaining bracket**
5	**Snap-action lever** For loosening the tubing cartridge	**6**	**Pump drive** Roller head with contact pressure rollers

2.7 Injection valve

The injection valve (for the model version 2.858.0030) can be used with its connectors 1 to 6 (see figure) for complex sample preparation steps.

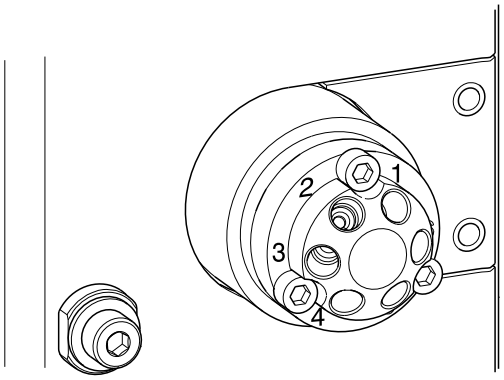


Figure 8 Injection valve

The connections of the connectors in the switching positions **FILL** and **INJECT** can be found in the schematics shown below.

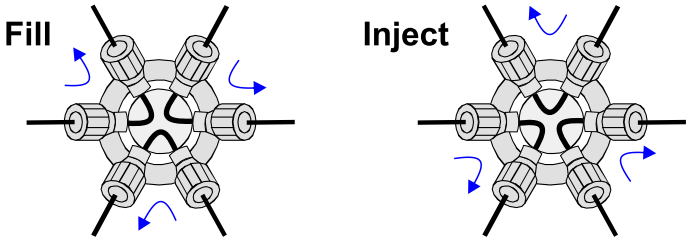


Figure 9 Fill / Inject

The injection valve must be covered with the red protective cap to protect it against dust contamination when not in use.

3 Installation

3.1 Setting up the instrument

3.1.1 Packaging

The instrument is supplied in highly protective special packaging together with the separately packed accessories. Keep this packaging, as only this ensures safe transportation of the instrument.

3.1.2 Checks

Immediately after receipt, check whether the shipment has arrived complete and without damage by comparing it with the delivery note.

3.1.3 Location

The instrument has been developed for operation indoors and may not be used in explosive environments.

Place the instrument in a location of the laboratory which is suitable for operation, free of vibrations, protected from corrosive atmosphere, and contamination by chemicals.

The instrument should be protected against excessive temperature fluctuations and direct sunlight.

3.2 Connecting the Swing Head

Take care to ensure that the Swing Head is connected before the instrument is set to work. Check the connection cable.

The connection socket (Mini DIN) for the Swing Head drive is located on the rear of the tower next to the stirrer connector.

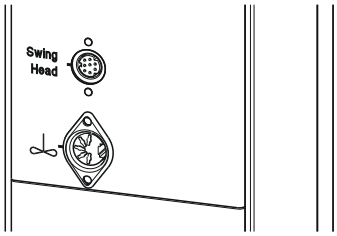


Figure 10 Connecting the Swing Head

If the Swing Head is not connected, connect it as follows:

1 Plug in the cable

Guide the Swing Head connection cable through the guide chain of the tower *(see Chapter 3.7, page 23)* and plug the Mini DIN plug into the 'Swing Head' socket.

3.3 Connecting the mains cable

Warning

This instrument may only be used with the mains voltage specified (see rear of the instrument).

Protect the connection sockets against moisture.

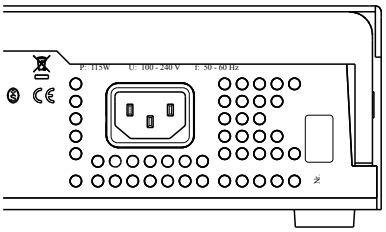


Figure 11 Connecting the mains cable

3.4 Mounting the retaining plate

When removing samples from sealed vessels with the needle, the 6.2064.000 retaining plate is used for stripping vials while the lift is moving upward.

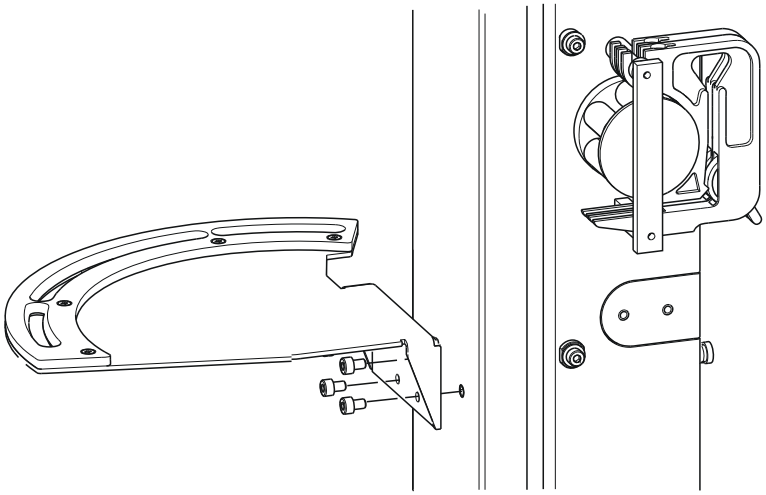


Figure 12 Mounting the retaining plate

1 Mount the retaining plate

Fix the plate to the front of the tower with the four hexagon screws provided. The hexagon key required is part of the accessories.

3.5 Mounting a filtration cell holder or Dosino holder

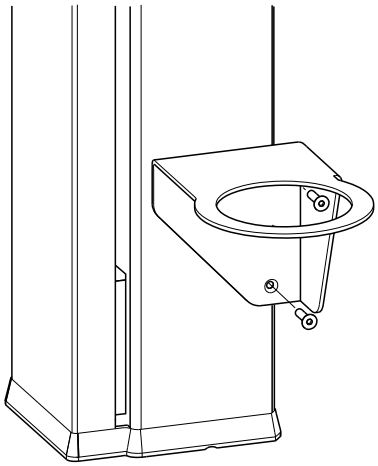


Figure 13 Mounting filtration cell holder or Dosino holder

The filtration cell holder (6.2057.030) or the Dosino holder (6.2057.040) can be mounted on the side wall of the tower, see above.

First remove the second and third screws from the bottom on the side wall. Then fix the filtration cell holder or Dosino holder in place with the two screws supplied.

Mounting the Dosino

If a Dosino is required, then it can be installed in the 6.2057.040 Dosino holder.

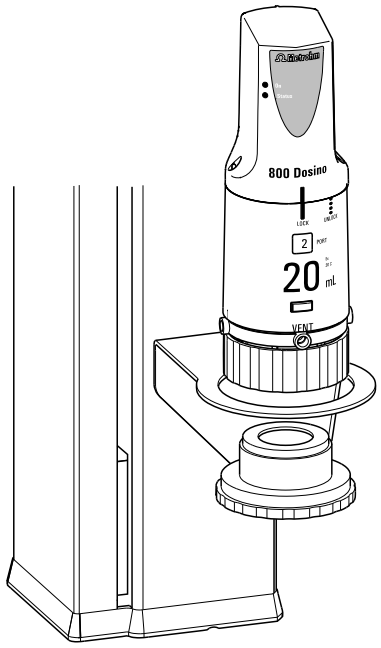


Figure 14 Mounting the Dosino

Mount the Dosino as follows:

1 Fix the Dosino

- Guide the thread adapter GL 45 (6.1618.020) from below into the Dosino holder.
- Attach the dosing unit on the Dosino holder and screw the thread adapter tight.
- Connect the tubings.

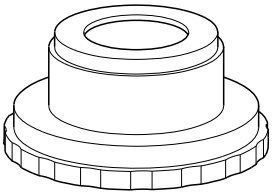


Figure 15 6.1618.020 Thread adapter

3.6 Mounting the stand plate

An external dilution or measuring cell can be mounted to the 858 Professional Sample Processor with the aid of a 6.2001.070 stand plate.

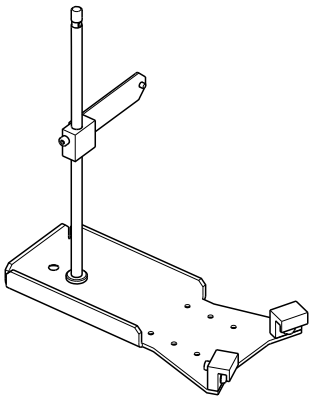


Figure 16 6.2001.070 stand plate

Mount the stand plate as follows:

1 Mount the support rod

- Plug together the cutting ring and the hexagon screw with the base plate (see below) and place on a flat support surface.
- Place the support rod on the screw and screw tightly.
- Tighten the hexagon screw with a hexagon key of the proper size.

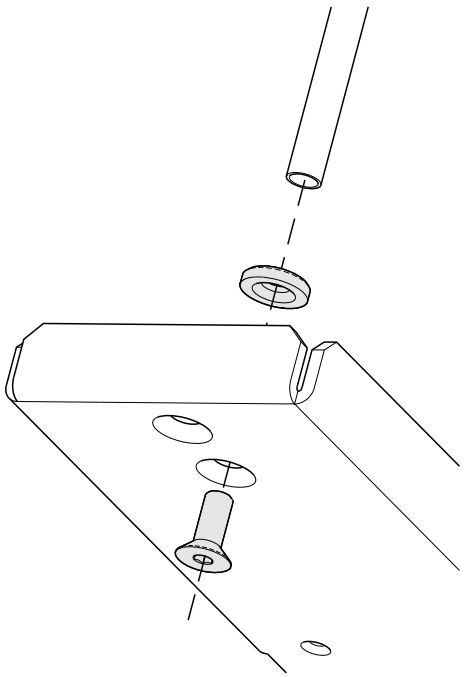


Figure 17 Mounting the support rod

2 Fasten the stand plate

- Hook the fixing clamps on the stirrer rail.
- Tighten the hexagon screws of the fixing clamps.

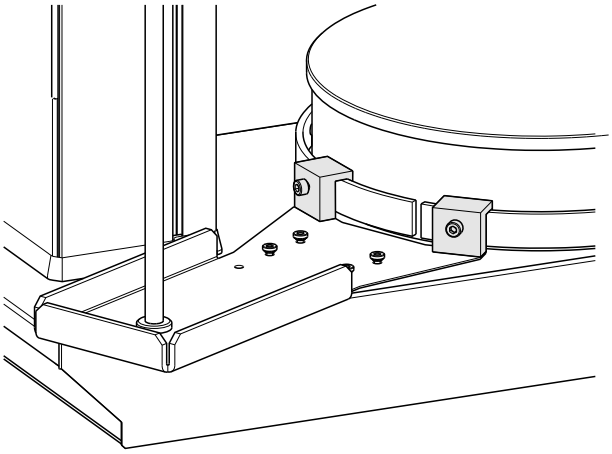


Figure 18 Mounting the stand plate

3 Mount the stirrer and dilution vessel

- Hang the magnetic stirrer (801 Stirrer) on the support rod and align it.
- Fix the orientation of the stirrer using the red knurled screw on the rear.
- Fasten the 6.2013.010 clamping ring, see the following figure.
- Fasten dilution vessel lid to the support rod.

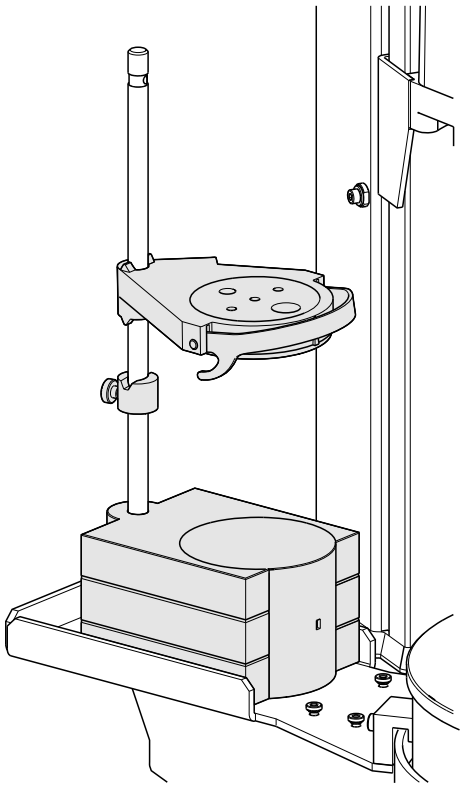


Figure 19 Mounting the stirrer and the dilution vessel

4 Mount the cross strut

- Assemble the cross strut according to the drawing shown below.
- Fasten the cross strut provisionally to the support rod.

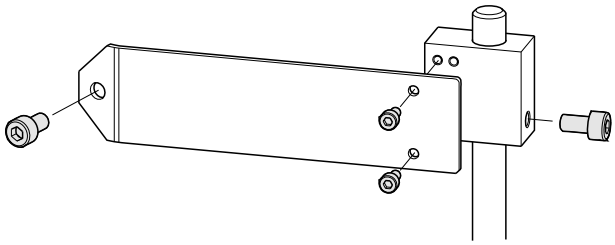


Figure 20 Mounting the cross strut

5 Fix the support rod

- Screw the cross strut to the rear of the tower with the hexagon screw provided as shown below.
- Tighten all hexagon screws.

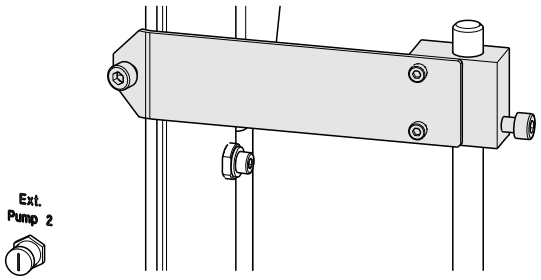


Figure 21 Fixing the support rod

The accessories for the dilution vessel and the necessary tubings and capillaries can then be attached. You will find information about the corresponding accessories set in the documentation.

3.7 Guide chain for cables and tubing

Tubing, capillaries and cables can be placed in the guide chain.

You can open the individual chain links with a screwdriver as follows.

1 Open the guide chain

- Insert a screwdriver into the groove located on the side of a chain link.
- Loosen the clip with a forceful leverage movement.
- Pull the clip out of the chain by hand.
- Repeat the above actions for each chain link.

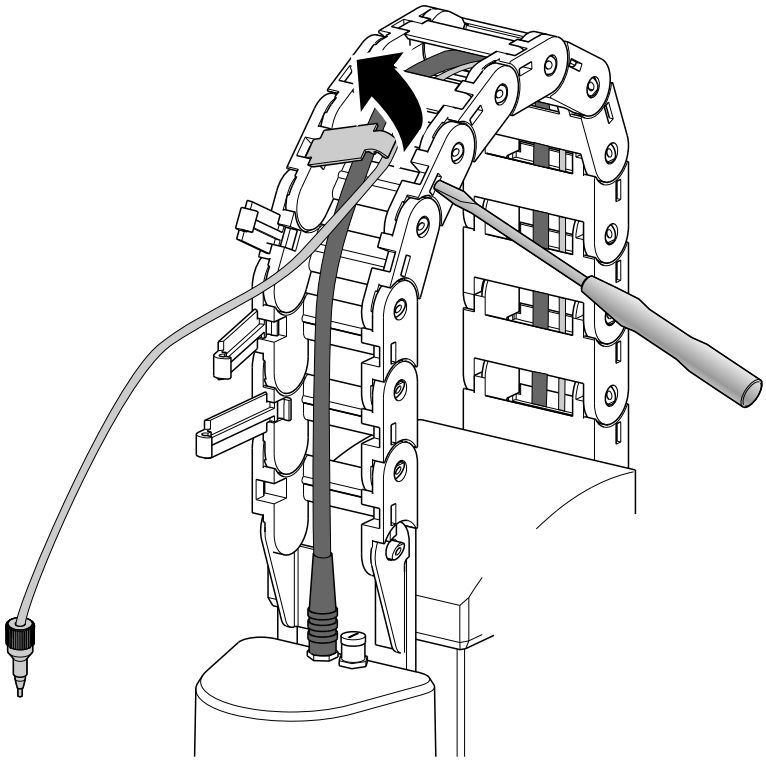


Figure 22 Guide chain - Opening chain links

2 Insert into the guide chain

- Place the required tubing, capillaries or cables into the guide chain.

3 Close the guide chain

- Close the clip for each chain link again by hand and apply forceful pressure to snap them into place.

The clip of one chain link can be removed entirely if required by releasing it on both sides.

3.8 Mounting the sample tube

Needles made of zirconium oxide or PEEK can be used for removing samples.

Warning

When a sample tube 6.1835.050 or a blunt PEEK needle is used, **no stopper** is permitted to be used on the sample vessels. These stoppers cannot be penetrated by such needles. The needle could become damaged if this is attempted! **Perforated stoppers** can be used with double-bevel needles.

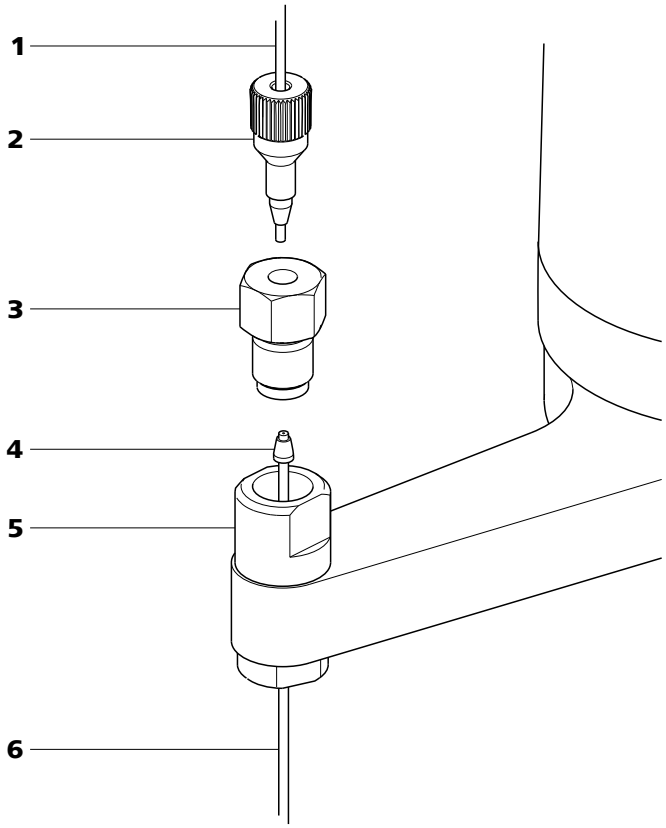


Figure 23 Mounting the needle

1 **PTFE capillary** 6.1803.070 or 6.1831.050 / 6.1831.060 / 6.1831.080	**2** **PEEK pressure screw** 6.2744.010

3 **Nut** 4.766.4320 (or 6.2833.020 + 6.2744.080)	**4** **Ring wedge**
5 **Needle holder**	**6** **Sample tube** 6.2846.000 (zirconium oxide) or 6.1835.020 / 6.1835.040 / 6.1835.050 (made of PEEK)

This is how you mount needle and capillary:

1 Remove the PEEK pressure screw

Loosen and remove the nut *(23-**3**)* screwed onto the needle holder.

2 Insert the needle

- Insert the needle from above part way into the opening of the needle holder *(23-**5**)*.
- Pull the PEEK ring wedge *(23-**4**)* down over the needle from above. The narrow side of the seal must face upwards.

3 Fasten the needle

- Screw the nut *(23-**3**)* into the needle holder. Slight pressure will be required from below to push the needle upward while doing this.
- Use your hand to screw the nut in the needle holder tight (do not use any tools!).

4 Connect the capillary

- Pull the 6.2744.010 PEEK pressure screw *(23-**2**)* over the end of the capillary.
- Manually screw tight the PEEK pressure screw with the capillary in the nut of the needle holder. The capillary must be pressed tight while doing so.

3.9 Mounting the safety shield

For safety reasons, it is imperative that you mount the accompanying safety shield (splash protection 6.2751.110). A serious risk of injury exists if anyone reaches into the working area of the instrument.

Caution

The 858 Professional Sample Processor may not be operated without a safety shield.

Use the accompanying hexagon screws and the hexagon key to mount the safety shield according to the following figure.

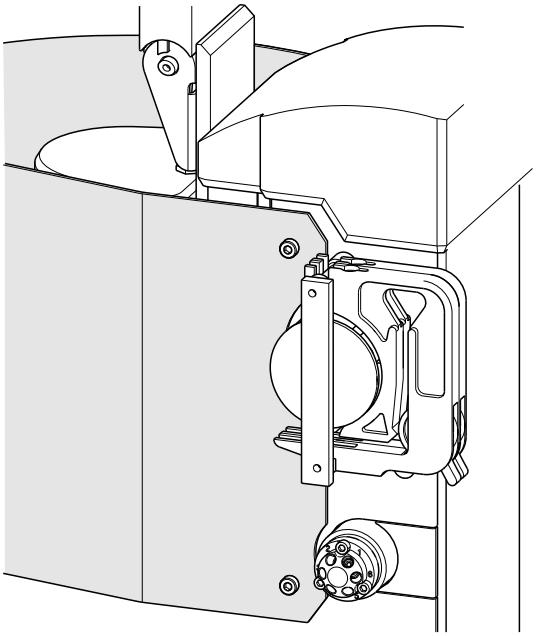


Figure 24 Mounting the safety shield

If a different robotic arm is used, then a different, suitable safety shield can be ordered from Metrohm.

3.10 Connecting the tower stirrer

A DIN socket for connecting a rod stirrer (**802 Stirrer**) or a magnetic stirrer (**741 Stirrer**) is located on the rear of the tower.

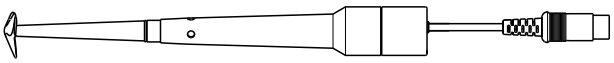


Figure 25 Rod stirrer 802 Stirrer

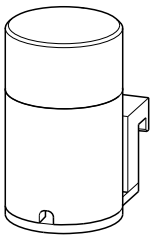


Figure 26 Magnetic stirrer 741 Stirrer

Take care to observe correct orientation of the contact pins when plugging in the stirrer connection cable. The rib on the outside of the plug must match the reference mark (on the left) on the socket.

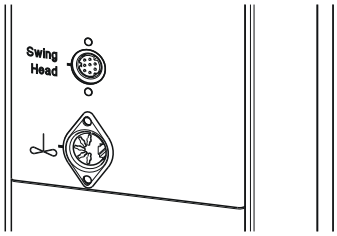


Figure 27 Connecting the tower stirrer

Note

If an MSB stirrer is connected to the **MSB1** socket, then the stirrer connector at tower 1 cannot be used, because both sockets are controlled internally via MSB1.

3.11 Connecting pumps

The 858 Professional Sample Processor is equipped with two connectors for external pumps which, for example, can be used for rinsing or applying suction to vessels. The appropriate pump models are:

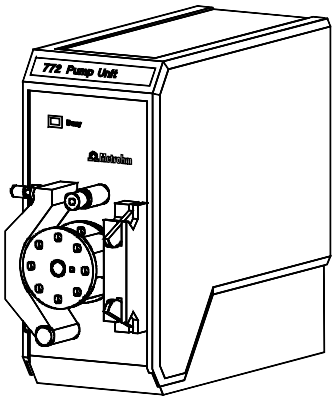


Figure 28 772 Pump Unit

The peristaltic pump **772 Pump Unit** is suitable for organic solvents and aqueous solutions containing precipitates.

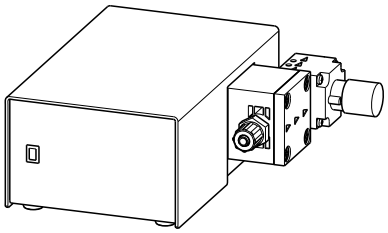


Figure 29 823 Membrane Pump Unit

The **823 Membrane Pump Unit** is suitable for aqueous media without precipitates.

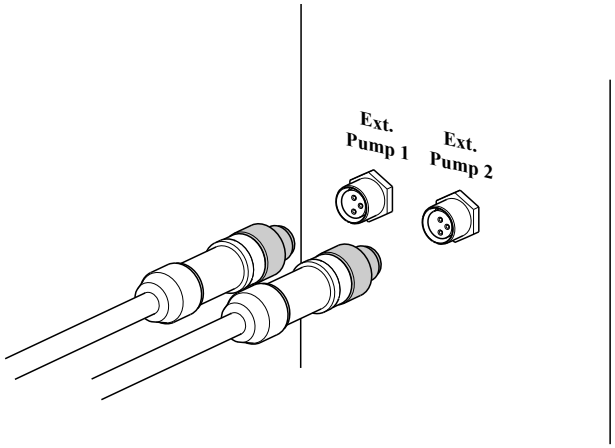


Figure 30 Connecting pumps

The two pump connectors are located on the rear side of the tower. Connect a pump as follows:

1 Connecting the connection cable

- Plug the M8 plug of the pump connection cable into one of the "Ext. Pump" connector sockets. Correct orientation of the 3 contact pins must be observed.
- Tighten the knurled screw at the front end of the plug by hand in clockwise direction. This will secure the plug.

The pump connectors (3-pole M8 plugs) supply 16 Volt feed voltage and may not be loaded with more than a maximum of 600 mA.

3.12 Installing the peristaltic pump

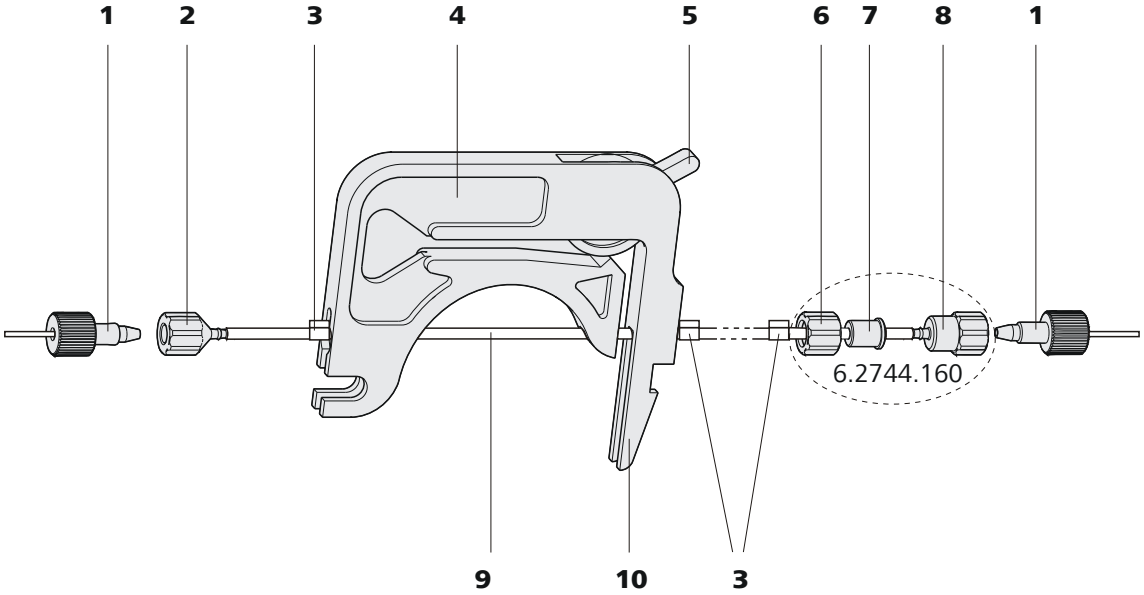


Figure 31 Installing the pump tubing

1	**PEEK pressure screws, short (6.2744.070)**	**2**	**Tubing olive (6.2744.030)**
3	**Stopper** The colors of the stopper indicate the inner diameter of the pump tubing.	**4**	**Tubing cartridge (6.2755.000)**
5	**Contact pressure lever**	**6**	**Union nut**
7	**Adapter**	**8**	**Tubing olive**
9	**Pump tubing**	**10**	**Snap-action lever**

Mount the pump tubing as follows:

1 Remove the tubing cartridge

Release the tubing cartridge from the cartridge holder by pressing the snap-action lever and unhooking from the mounting bolts *(see Figure 7, page 14)*.

2 Insert the pump tubing

- Press the contact pressure lever all the way down.
- Place the pump tubing in the tubing cartridge. The stoppers *(31-**3**)* must snap into the corresponding holder of the tubing cartridge.

3 Connect the aspiration side

Place a 6.2744.030 tubing olive *(31-**2**)* on the aspiration side of the pump tubing.

4 Connect the pressure side

- Slide the union nut *(31-**6**)* of the 6.2744.160 pump tubing connection (without filter) onto the pump tubing.
- Select a suitable adapter *(31-**7**)* (depends on the outer diameter of the pump tubing) and slide it onto the pump tubing.
- Place the tubing olive *(31-**8**)* onto the pump tubing.
- Screw the union nut *(31-**6**)* tight on the tubing olive *(31-**8**)*.

5 Insert the tubing cartridge

- Hang the tubing cartridge in the mounting bolt and press it underneath in the cartridge holder until the snap-action lever snaps in.

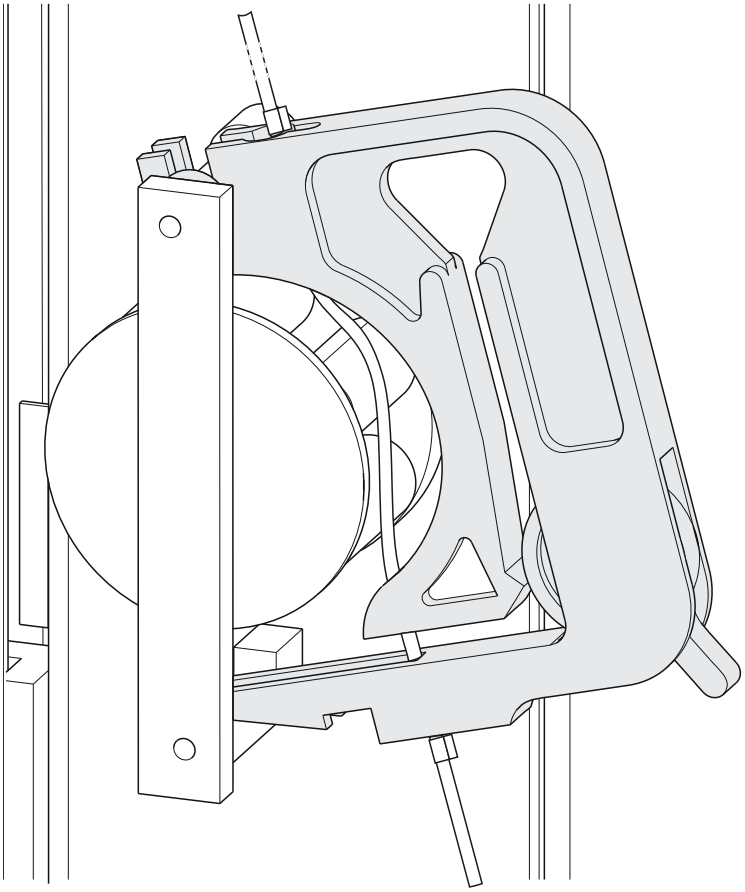


Figure 32 Inserting the tubing cartridge

6 Connect the capillaries

- Screw the respective capillaries tightly to the two tubing olives with PEEK pressure screws *(31-**1**)*.

Setting the flow rate

The contact pressure of the tubing cartridge must be adjusted in order to regulate the flow rate. Proceed as follows:

1 Set the contact pressure

- Press the contact pressure lever *(31-**5**)* all the way forward.
- Switch on the drive of the peristaltic pump.
- Then release the contact pressure lever gradually until the liquid is suctioned for the first time.
- Now release the contact pressure lever by two latch positions.

The contact pressure is now set optimally.

The flow rate depends not only on the correct contact pressure but also on the inner diameter of the pump tubing and the rotational speed of the drive.

Note

Pump tubings are consumables. The lifetime of the pump tubings depends on the contact pressure, among other factors.

3.13 Connecting a computer

The 858 Professional Sample Processor requires a USB connection to a computer in order to be able to be controlled by a PC software. Using a 6.2151.000 controller cable, the instrument can be connected directly, either to a USB socket on a computer, to a connected USB hub or to a different Metrohm control device.

You need administrator rights for the installation of the driver and software on your PC.

Cable connection and driver installation

A driver installation is required in order to ensure that the 858 Professional Sample Processor is recognized by the PC software. To accomplish this, you must comply with the procedures specified. The following steps are necessary:

1 Install the software

- Insert the PC software installation CD and carry out the installation program directions.
- Exit the program if you have started it after the installation.

2 Establish the cable connections

- Connect all peripheral devices to the instrument *(see Chapter 3.14, page 35)*.
- Connect the 858 Professional Sample Processor to the mains supply if you have not already done this.
- Connect the instrument to a USB connector (Type A) of your computer (see manual of your computer). The 6.2151.000 cable is used for this purpose.

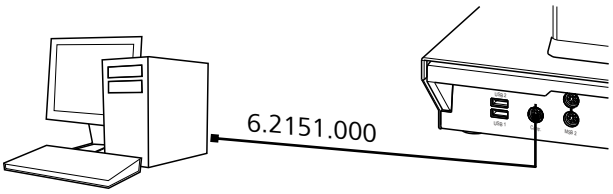


Figure 33 Connecting the computer

The instrument is recognized. The driver installation is carried out differently, depending on the version of the Windows operating system used.

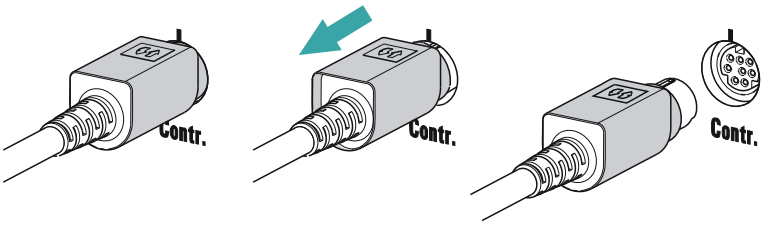
- Either the required driver is installed automatically, or an installation wizard is started.

3 Follow the instructions of the installation wizard.

If problems should occur during installation, contact your company's IT supporter.

Note

The plug on the instrument end of the 6.2151.000 controller cable is protected against accidental disconnection by means of a pull-out protection feature. If you wish to pull out the plug, you will first need to pull back the outer plug sleeve marked with arrows.



Registering and configuring the instrument in the PC software

The instrument must be registered in the configuration of your PC software. Once that has been done, you can then configure it according to your requirements. Proceed as follows:

1 Set up the instrument

- Start the PC software.
  The instrument is automatically recognized. The configuration dialog for the instrument is displayed.
- Make configuration settings for the instrument and its connectors.

More detailed information concerning the configuration of the instrument can be found in the documentation for the respective PC software.

3.14 Connecting MSB devices

In order to connect MSB devices, e.g.stirrers or dosing devices, Metrohm instruments are equipped with up a maximum of four connectors at what is referred to as the *Metrohm Serial Bus* (MSB). Various kinds of peripheral devices can be connected in sequence (in series, as a "daisy chain") at a single MSB connector (8-pin Mini DIN socket) and controlled simultaneously by the respective control instrument. In addition to the connection cable, stirrers and the remote box are each equipped with their own MSB socket for this purpose.

The following illustration provides an overview of the devices that can be connected to an MSB socket, along with a number of different cabling variations.

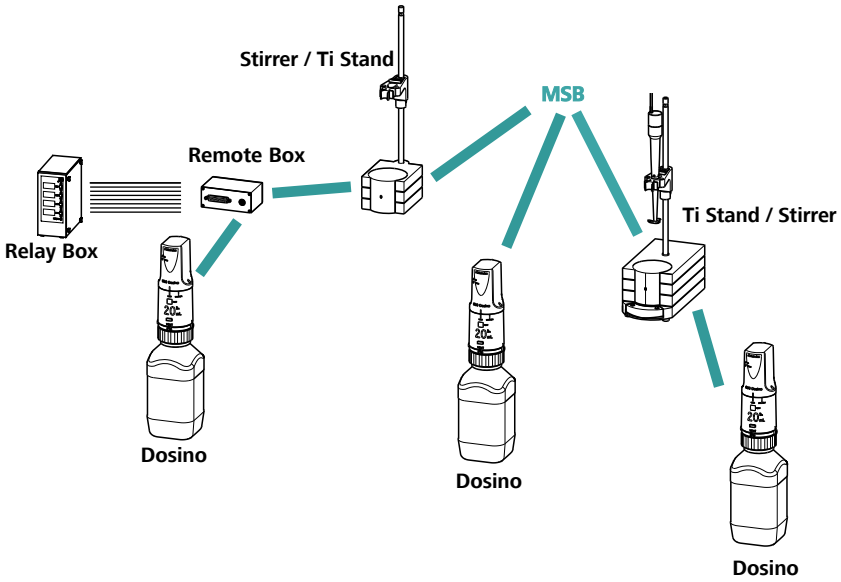


Figure 34 MSB connections

The question of which peripheral devices are supported depends on the control instrument.

Note

When connecting MSB devices together, the following must be observed:

- Only one device of the same type can be used at a single MSB connector at one time.
- Type 700 Dosino and 685 Dosimat dosing devices cannot be connected together with other MSB instruments on a shared connector. These dosing devices must be connected separately.
- Only one device of the same type can be used at a single MSB connector at one time.
- MagIC Net software supports only dosing devices of the 800 Dosino type.

Caution

Exit the control software before you plug MSB instruments in. The control instrument recognizes when it is switched on which instrument is connected at which MSB connector. The operating unit or the control software enters the connected MSB devices into the system configuration (Device manager).

MSB connections can be extended with the 6.2151.010 cable. The length of the connection must not exceed a maximum of 15 m.

3.14.1 Connecting dosing devices

Three dosing devices can be connected to the instrument.

MagIC Net software supports only the 800 Dosino as a dosing device.

The types of dosing devices that are supported are:

- 800 Dosino
- 700 Dosino
- 805 Dosimat
- 685 Dosimat

Warning

If a Dosino is connected to the 858 Professional Sample Processor then the connection cable must be equipped with a T.2400.102 ferrite core. The ferrite core reduces any interference voltages that may occur and thus ensures compliance with strict EMC standards pursuant to applicable technical norms, see Chapter "Technical Data".

Proceed as follows:

1 Mounting ferrite core

Fasten a T.2400.102 ferrite core to the Dosino connection cable near to the plug.

2 Connect a dosing device

- Exit the control software.
- Connect the connection cable to one of the sockets marked with **MSB** on the rear of the control instrument.
- Start the control software.

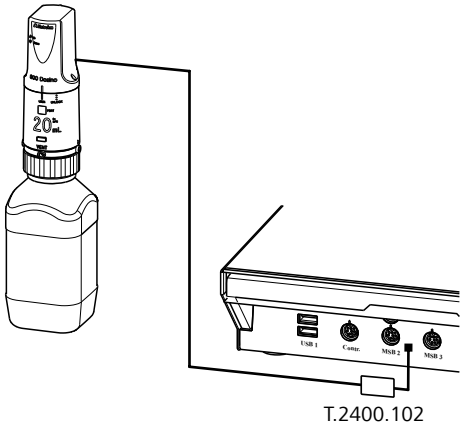


Figure 35 Connecting a dosing device

3.14.2 Connecting a stirrer or titration stand

You can use a magnetic stirrer 801 Stirrer or 803 Ti Stand (stirring "from below") or the 804 Ti Stand with a rod stirrer 802 Stirrer (stirring "from above").

Connect a stirrer or a titration stand as follows:

1 Connect a stirrer or titration stand

- Exit the control software.

- Connect the connection cable of the magnetic stirrer or of the titration stand to one of the sockets marked with **MSB** on the rear of the control instrument.
- If desired, connect the rod stirrer to the stirrer socket (with stirrer symbol) of the titration stand.
- Start the control software.

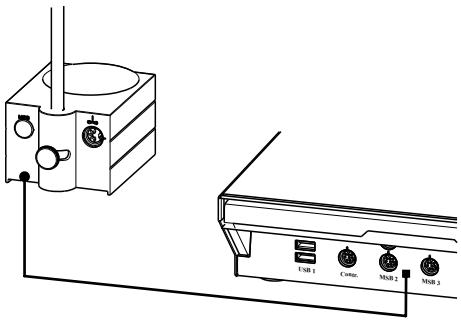


Figure 36 Connecting MSB stirrer

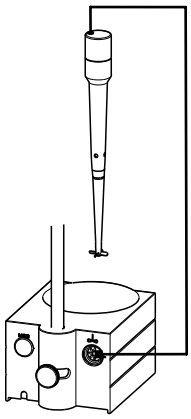


Figure 37 Rod stirrer and titration stand

3.14.3 Connecting a remote box

Instruments that are controlled via remote lines and/or which send control signals via remote lines can be connected using the 6.2148.010 remote box. In addition to Metrohm, other instrument manufacturers also use similar connectors that make it possible to connect different instruments together. These interfaces are also frequently given the designations "TTL Logic", "I/O Control" or "Relay Control" and generally have a signal level of 5 volts.

Control signals are understood to be electrical line statuses or brief (**>** 200 ms) electrical pulses which display the operational state of an instrument or which trigger or report an event. Sequences on a variety of instruments can thus be coordinated in a single complex automation system. No exchange of data is possible, however.

Proceed as follows:

1 Connect a remote box

- Exit the control software.
- Connect the remote box connection cable to one of the sockets marked with **MSB** on the rear of the control instrument.
- Start the control software.

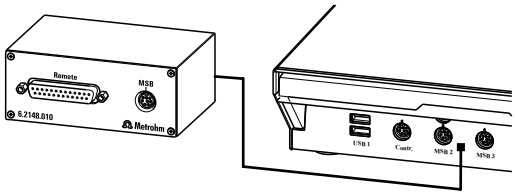


Figure 38 Connecting a remote box

You can, for example, connect an 849 Level Control Box (fill level monitor in a waste canister) or a 731 Relay Box (switch box for 230/110 volt alternating current sockets and low-voltage direct current outlets). The remote box also has an MSB socket at which a further MSB instrument, e.g. a dosing device or a stirrer, can be connected.

You will find precise information concerning the pin assignment of the interface on the remote box in the appendix *(see Chapter 6.1, page 46)*.

3.15 Connecting USB devices

Two USB connectors (Type A sockets) are available for connecting devices with USB interfaces. The 858 Professional Sample Processor functions then as a USB hub (distributor). If you wish to connect more than two USB devices, you can also use an additional commercially available USB hub.

Note

When a USB device is connected, the control instrument recognizes which device is connected. The control software automatically enters a connected USB device into the system configuration (Device manager).

3.15.1 Connecting a barcode reader

A barcode reader is used as an input aid for entering text and numbers. You can connect a barcode reader to a USB interface.

Connect a barcode reader as follows:

1 Connecting the cable

- Plug the USB plug (Type A) of the barcode reader into one of the USB sockets on the rear side of the instrument.

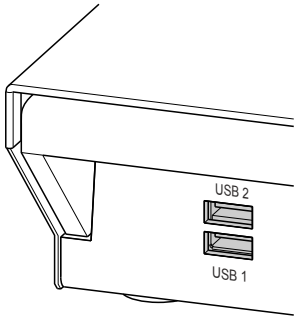


Figure 39 USB connectors

2 Configuring the barcode reader in the control software

- Configure the barcode reader in the configuration part of the control software as described in the online Software Help.

Settings of the barcode reader

The barcode reader requires certain basic settings. You will find directions in the Instructions for Use as to how you can program the barcode reader. Switch the barcode reader to programming mode and make the following settings:

1

- Select the keyboard layout for the desired country (USA, Germany, France, Spain, Switzerland (German)). This setting must match the setting in the control software.
- Make sure that the Ctrl characters (ASCII 00 to 31) are allowed to be sent.
- Adjust the settings so that the ASCII character 02 (STX or Ctrl B) is sent as the first character as "Preamble" or "Prefix Code".
- Adjust the settings so that the ASCII character 04 (EOT or Ctrl D) is sent as the last character as "Postamble" or "Record Suffix" or "Postfix Code".
- Exit programming mode.

4 Handling and maintenance

4.1 General

It is not only highly sensitive measuring instruments but also sample processors that require proper care. Excess contamination of the instrument may result in functional disruptions and a reduction in the service life of the sturdy mechanics and electronics of the instrument.

Severe contamination can also have an influence on the measured results. Regular cleaning of exposed parts can prevent this to a large extent.

Spilled chemicals and solvents must be removed immediately. In particular, the connector strip (especially the mains plug) should be protected from contamination.

4.2 Injection valve

If the injection valve is blocked, then the channels of the valves can be rinsed with water in the opposite direction. If this is not successful, then the injection valve must be cleaned by a Metrohm service technician.

4.3 Filter

The 6.2821.130 filters *(40-**2**)* should be changed every 3 months, more frequently at higher backpressure.

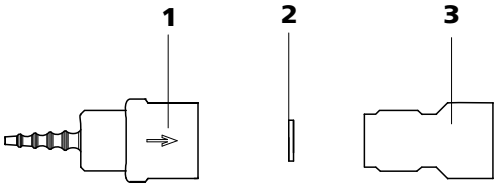


Figure 40 Pump tubing connection – Changing the filter

1 **Tubing olive**	**2** **Filter (6.2821.130)** Packaging contains 10 items.
3 **Filter screw**	

Changing the filter

1 **Unscrew the filter screw**

- Unscrew the filter screw out of the tubing olive.

2 Insert the filter

- Place the filter in the tubing olive and **press flat**.

3 Mount the filter screw

- Screw the filter screw back into the tubing olive.

4.4 Peristaltic pump

The flow rate of the peristaltic pump depends on the drive speed, the contact pressure and, above all, the inner diameter of the pump tubing. Depending on the application, different pump tubings are used.

Caution

The lifetime of the pump tubings also depends on the contact pressure. Therefore lift the tubing cartridges by loosening the snap-action lever if the peristaltic pump is to be switched off for a longer period. This ensures that the contact pressure, once it has been set, will be maintained.

Caution

The 6.1826.xxx pump tubings consist of PVC or PP and therefore must not be used for rinsing with solutions containing acetone. In this case, use other pump tubings or use another pump for rinsing.

4.5 Pump tubing

The pump tubing used in the peristaltic pump is a consumable whose service life is restricted.

The LFL pump tubing with 3 stoppers is stretched in the tubing cartridge in such a way that it comes to rest between two stoppers. This results in two possible positions for the tubing cartridge. If the pump tubing should exhibit clear signs of wear, then this can be stretched a second time, in the respective alternate position.

Therefore replace the pump tubing periodically, or when used permanently approx. every 4 weeks .

Selecting the pump tubing

The pump tubing differs in material, diameter and hence also pumping capacity. Depending on the application, different pump tubings are used.

The following table provides information on the properties and use of the pump tubing:

Table 2 Pump tubing

Order number	Name	Material	Inner diameter	Use
6.1826.020	Pump tubing (blue/ blue), 2-stopper	PVC (Tygon ST)	1.65 mm	Pump tubing for online IC instruments and automation in voltammetry
6.1826.310	Pump tubing LFL (orange/green), 3-stopper	PVC (Tygon)	0.38 mm	Pump tubing for bromate determination using the triiodide method.
6.1826.320	Pump tubing LFL (orange/yellow), 3-stopper	PVC (Tygon)	0.48 mm	For suppressor solutions, acceptor solutions for inline dialysis and for inline ultrafiltration.
6.1826.330	Pump tubing LFL (orange/white), 3-stopper	PVC (Tygon)	0.64 mm	No special applications.
6.1826.340	Pump tubing LFL (black/black), 3-stopper	PVC (Tygon)	0.76 mm	For the sample solution in inline dialysis.
6.1826.360	Pump tubing LFL (white/white), 3-stopper	PVC (Tygon)	1.02 mm	For sample transfer.
6.1826.380	Pump tubing LFL (gray/gray), 3-stopper	PVC (Tygon)	1.25 mm	For inline sample dilution.
6.1826.390	Pump tubing LFL (yellow/yellow), 3-stopper	PVC (Tygon)	1.37 mm	For the sample solution in inline ultrafiltration.

4.6 Quality Management and validation with Metrohm

Quality Management

Metrohm offers you comprehensive support in implementing quality management measures for instruments and software. Further information on this can be found in the brochure **«Quality Management with Metrohm»** available from your local Metrohm agent.

Validation

Please contact your local Metrohm agent for support in validating instruments and software. Here you can also obtain validation documentation to provide help for carrying out the **Installation Qualification** (IQ) and the **Operational Qualification** (OQ). IQ and OQ are also offered as a service by the Metrohm agents. In addition, various application bulletins are also available on the subject, which also contain **Standard Operating Procedures** (SOP) for testing analytical measuring instruments for reproducibility and correctness.

Maintenance

Electronic and mechanical functional groups in Metrohm instruments can and should be checked as part of regular maintenance by specialist personnel from Metrohm. Please ask your local Metrohm agent regarding the precise terms and conditions involved in concluding a corresponding maintenance agreement.

Note

You can find information on the subjects of quality management, validation and maintenance as well as an overview of the documents currently available at *www.metrohm.com/com/* under **Support**.

5 Troubleshooting

5.1 Problems and their solutions

Problem	Cause	Remedy
Marked rise in pressure	*Injection valve – valve blocked.*	Rinse the valve with water in the opposite direction or have it cleaned (by Metrohm service technician).
The Swing Head either misses the rack positions totally or is inaccurate	*Sample Processor – The Swing Head is not correctly configured.*	Enter the correct values for **Swing radius**, **Swing offset** etc. in the control software under "Configuration".
	Sample Processor – The axial distance is not correctly configured.	Enter the correct value for **Axial distance** in the control software under "Configuration".
	Sample Processor – The wrong rack table is being used.	Initialize the rack using the function **Initialize rack** in the "Manual Control" of the control software.
Peristaltic pump – insufficient or no delivery rate	*Peristaltic pump – contact pressure too weak.*	Correctly set the contact pressure .
	Peristaltic pump – filter blocked.	Replace the filter .
	Peristaltic pump – pump tubing defective.	Replace the pump tubing .
Precision problems - significant scattering of the measured values	*Injection valve – sample loop.*	Check the installation of the sample loop.
	Injection valve – defective.	Contact the Metrohm Service.

6 Appendix

6.1 Remote interface

The 6.2148.010 remote box allows devices to be controlled which cannot be connected directly to the MSB interface of the Sample Processor.

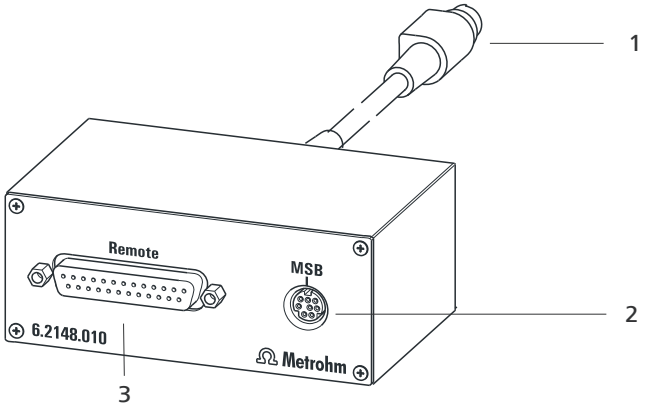


Figure 41 Connectors of the remote box

1 **Cable** For connecting the Sample Processor.	**2** **MSB connector** Metrohm Serial Bus. For connecting external dosing devices or stirrers.
3 **Remote connector** For connecting devices with a remote interface.	

6.1.1 Pin assignment of the remote interface

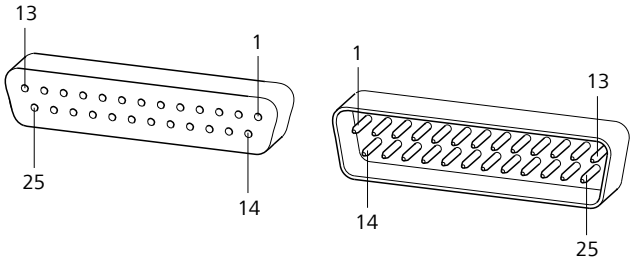
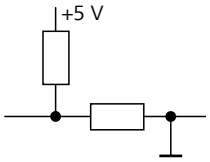


Figure 42 Pin assignment of the remote socket and plug

The above presentation of the pin assignment of a Metrohm remote interface applies not only for the remote box, but also for all Metrohm devices with 25-pin D-Sub remote connection.

Inputs



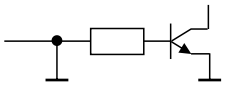
approx. 50 kΩ Pull-up

t_p t_p >20 ms

active = low, inactive = high

The input lines can be scanned with the **SCAN** command.

Outputs



Open Collector

t_p t_p >200 ms

active = low, inactive = high

I_C = 20 mA, V_{CEO} = 40 V

+5 V: maximum load = 20 mA

The output lines can be set with the **CONTROL** command.

Table 3 Inputs and outputs of the remote interface

Assigment	Pin No.	Assigment	Pin No.
Input 0	21	Output 0	5
Input 1	9	Output 1	18
Input 2	22	Output 2	4
Input 3	10	Output 3	17
Input 4	23	Output 4	3
Input 5	11	Output 5	16
Input 6	24	Output 6	1
Input 7	12	Output 7	2
0 volts / GND	14	Output 8	6
+5 volts	15	Output 9	7
0 volts / GND	25	Output 10	8
		Output 11	13
		Output 12	19
		Output 13	20

7 Technical data

7.1 Lift and turntable

Stroke path	235 mm
Maximum lift load	Approx. 30 N
Lift rate	Adjustable, 5…25 mm/s
Shift rate	Adjustable, 3...20 angle degrees/sec

7.2 786 Swing Head

Maximum load	Approx. 15 N
Swing rate	10...55 angle degrees/sec
Beaker sensor connector	M8 socket

7.3 Two-channel peristaltic pump

Pump rate	6…90 rpm, adjustable in 15 steps each in both directions of rotation
Typical flow rate	0.3 mL/min at 18 rpm; with standard pump tubing 6.1826.320 The effective flow rate is dependent on contact pressure and type of tubing.
Maximum pressure	4 bar (0.4 MPa)
Conveyable fluids	Clear fluids without solids
Tubing materials	PVC (Tygon® ST), PVC (Tygon® LFL), PP

7.4 Injection valve

Positions	Fill…Inject

7.5 Interfaces and connectors

Controller connection	USB Upstream Port (9-pin Mini DIN socket) for connecting a computer to the control system of the device.
MSB connectors MSB1…MSB3	Three 9-pin Mini DIN sockets for connecting dosing devices, stirrers, etc.
USB connectors 1/2	Two USB Downstream Ports (Type A sockets), each 500 mA, for connecting Metrohm instruments or USB peripheral devices of other manufacturers.
Stirrer connector	DIN socket
Stirring rate	Rod Stirrer 722/802: 180…3000 rpm Magnetic Stirrer 741: 180…2600 rpm Adjustable in 15 steps each in both directions of rotation
Pump connectors	Two M8 sockets for 772 Pump Unit or 823 Membrane Pump Unit U= 16 ± 1 V, I= ≤ 0.8 A
Swing Head connector	9-pin Mini DIN socket

7.6 Mains connection

Voltage	100…240 V (±10%)
Frequency	50…60 Hz
Power consumption	115 W
Fuse	2.0 ATH

7.7 Safety specifications

Design and testing According to EN/IEC/UL 61010-1, EN/IEC 61010-2-081, CSA-C22.2 No. 61010-1, Protection Class I

Safety instructions This document contains safety instructions which have to be followed by the user in order to ensure safe operation of the instrument.

7.8 Electromagnetic compatibility (EMC)

Emission

Standards fulfilled
- EN/IEC 61326
- EN 55022 / CISPR 22
- EN/IEC 61000-3-2

Immunity

Standards fulfilled
- EN/IEC 61326
- EN/IEC 61000-4-2
- EN/IEC 61000-4-3
- EN/IEC 61000-4-4
- EN/IEC 61000-4-5
- EN/IEC 61000-4-6
- EN/IEC 61000-4-8
- EN/IEC 61000-4-11
- EN/IEC 61000-4-14
- NAMUR

7.9 Ambient temperature

Nominal working range
5…45 °C
Relative humidity <80% (below 30 °C)
Relative humidity <50% (below 45 °C)

Storage
–20…60 °C
Relative humidity <95% (below 40 °C)
Relative humidity <85% (below 50 °C)
Relative humidity <50% (below 60 °C)

Transport
–40…60°C
Relative humidity <95% (below 40 °C)
Relative humidity <85% (below 50 °C)
Relative humidity <50% (below 60 °C)

7.10 Reference conditions

Ambient temperature	25°C (±3°C)
Relative humidity	≤60%

7.11 Dimensions

Width	0.28 m
Height	0.73 m
Depth	0.50 m
Weight (without accessories)	1.858.0010: 15.50 kg 1.858.0020: 15.55 kg 1.858.0030: 15.85 kg
Material	
Housing	Metal housing, surface-treated

8 Conformity and warranty

8.1 Declaration of Conformity

This is to certify the conformity to the standard specifications for electrical appliances and accessories, as well as to the standard specifications for security and to system validation issued by the manufacturing company.

Name of commodity

858 Professional Sample Processor

Sample changer with advanced Liquid Handling abilities for the automation of sample preparation in analytical laboratories.

This instrument has been built and has undergone final type testing according to the standards:

Electromagnetic compatibility

Emission:	EN/IEC 61326-1, EN 55022 / CISPR 22, EN/IEC 61000-3-2
Immunity:	EN/IEC 61326-1, EN/IEC 61000-4-2, EN/IEC 61000-4-3, EN/IEC 61000-4-4, EN/IEC 61000-4-5, EN/IEC 61000-4-6, EN/IEC 61000-4-8, EN/IEC 61000-4-11, EN/IEC 61000-4-14, NAMUR

Safety specifications

EN/IEC/UL 61010-1, CSA-C22.2 No. 61010-1, , EN/IEC 61010-2-081, protection class I

It has also been certified by ElectroSuisse, a member of the International Certification Body (CB/IEC).

The system software, stored in Read Only Memories (ROMs) has been validated in connection with standard operating procedures in respect to functionality and performance. The technical specifications are documented in the instruction manual.

CE

This instrument meets the requirements of the CE mark as contained in the EU directives 73/23/EEC (LVD), 89/336/EEC (EMC) and their amendment 93/68/EEC. It fulfils the following specifications:

EN 61326-1	Electrical equipment for measurement, control and laboratory use – EMC requirements
EN 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use

EN 61010-2-081	Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes

Manufacturer Metrohm Ltd., CH-9101 Herisau/Switzerland

Metrohm Ltd. is holder of the SQS-certificate ISO 9001:2000 Quality management system for development, production and sales of instruments and accessories for ion analysis.

Herisau, January 27, 2006

D. Strohm
Vice President, Head of R&D

Ch. Buchmann
Vice President, Head of Production
Responsible for Quality Assurance

8.2 Quality Management Principles

Metrohm Ltd. holds the ISO 9001:2000 Certificate, registration number 10872-02, issued by SQS (Swiss Association for Quality and Management Systems). Internal and external audits are carried out periodically to assure that the standards defined by Metrohm's QM Manual are maintained.

The steps involved in the design, manufacture and servicing of instruments are fully documented and the resulting reports are archived for ten years. The development of software for PCs and instruments is also duly documented and the documents and source codes are archived. Both remain the possession of Metrohm. A non-disclosure agreement may be asked to be provided by those requiring access to them.

The implementation of the ISO 9001:2000 quality management system is described in Metrohm's QM Manual, which comprises detailed instructions on the following fields of activity:

Instrument development

The organization of the instrument design, its planning and the intermediate controls are fully documented and traceable. Laboratory testing accompanies all phases of instrument development.

Software development

Software development occurs in terms of the software life cycle. Tests are performed to detect programming errors and to assess the program's functionality in a laboratory environment.

Components

All components used in the Metrohm instruments have to satisfy the quality standards that are defined and implemented for our products. Suppliers of components are audited by Metrohm as the need arises.

Manufacture

The measures put into practice in the production of our instruments guarantee a constant quality standard. Production planning and manufacturing procedures, maintenance of production means and testing of components, intermediate and finished products are prescribed.

Customer support and service

Customer support involves all phases of instrument acquisition and use by the customer, i.e. consulting to define the adequate equipment for the analytical problem at hand, delivery of the equipment, user manuals, training, after-sales service and processing of customer complaints. The Metrohm service organization is equipped to support customers in implementing standards such as GLP, GMP, ISO 900X, in performing Operational Qualification and Performance Verification of the system components or in carrying out the System Validation for the quantitative determination of a substance in a given matrix.

8.3 Warranty (guarantee)

Metrohm guarantees that the deliveries and services it provides are free from material, design or manufacturing errors. The warranty period is 36 months from the day of delivery; for day and night operation it is 18 months. The warranty remains valid on condition that the service is provided by an authorized Metrohm service organization.

Glass breakage is excluded from the warranty for electrodes and other glassware. The warranty for the accuracy corresponds to the technical specifications given in this manual. For components from third parties that make up a considerable part of our instrument, the manufacturer's warranty provisions apply. Warranty claims cannot be pursued if the Customer has not complied with the obligations to make payment on time.

During the warranty period Metrohm undertakes, at its own choice, to either repair at its own premises, free of charge, any instruments that can be shown to be faulty or to replace them. Transport costs are to the Customer's account.

Faults arising from circumstances that are not the responsibility of Metrohm, such as improper storage or improper use, etc. are expressly excluded from the warranty.

9 Accessories

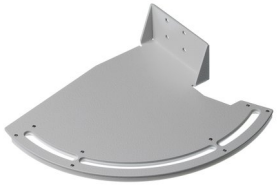
Note

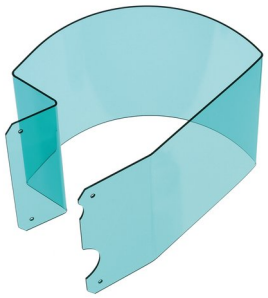
Subject to change without notice.

9.1 Scope of delivery

9.1.1 858 Professional Sample Processor 2.858.0010

Qty.	Order no.	Description
1	1.858.0010	858 Professional Sample Processor
3	6.1608.080	**Bottle / 300 mL** Rinsing vessel for IC Sample Processors Material: PE Height (mm): 128 Outer diameter (mm): 68 Volume (mL): 300
2	6.1831.060	**PEEK capillary 0.5 mm i.d., 1 m** For inline dialysis and for Sample Changers. For IC Dialysis Unit, IC Sample Processor, Compact IC Autosampler, IC Filtration Sample Processor, IC Dialysis Sample Processor, IC Liquid Handling Dialysis Unit Material: PEEK Outer diameter (inches): 1/16 Inner diameter (mm): 0.5 Length (m): 1

Qty.	Order no.	Description	
1	6.2064.000	**Beaker retainer for Advanced IC Sample Processor** Retaining plate for 838 Advanced Sample Processors. For holding 2.5 or 11 mL vials.	
1	6.2151.000	**Cable USB A – mini-DIN 8-pin** Controller cable Length (m): 1.8	
1	6.2621.300	**Tool set for Advanced IC Sample Processors** Tool set consisting of open-end wrenches and hexagon keys.	
1	6.2744.010	**Pressure screw 5x** With UNF 10/32 connection. For the connection of PEEK capillaries Material: PEEK Length (mm): 26	

Qty.	Order no.	Description
1	6.2751.110	**Splash protection** Splash protection for Advanced IC/VA Sample Processors 
1	6.2846.000	**Sample needle (zirconium oxide)** Sample needle for Sample Processors and Autosamplers in ion chromatography and voltammetry Material: Ceramic Outer diameter (inches): 1/8 Inner diameter (mm): 0.75 Length (mm): 151 
4	T.240.0102	**Ferrite cores** Anti-interference adapters
2	Y.107.0150	**Adhesive capillary strap** For fixing capillaries
1	6.2122.xxx	**Mains cable with line socket, type IEC 60320 C13** Power plug to customer specifications: Switzerland: 6.2122.020 (type SEV 12) Germany: 6.2122.040 (type CEE(7), VII) USA: 6.2122.070 (type NEMA/ASA)
1	8.858.8002EN	**858 Professional Sample Processor Manual**

9.1.2 858 Professional Sample Processor 2.858.0020

Qty.	Order no.	Description
1	1.858.0020	**858 Professional Sample Processor – Pump**
3	6.1608.080	**Bottle / 300 mL** Rinsing vessel for IC Sample Processors Material: PE Height (mm): 128 Outer diameter (mm): 68 Volume (mL): 300
1	6.1803.030	**PTFE capillary 0.5 mm i.d. / 3 m** Capillary for inline dialysis, for Dialysis Unit, IC Dialysis Sample Processor, IC Liquid Handling Dialysis Unit Material: PTFE Outer diameter (inches): 1/16 Inner diameter (mm): 0.5 Length (m): 3
2	6.1826.360	**Pump tubing LFL (white/white), 3 stoppers** For Sample Processors

Qty.	Order no.	Description	
1	6.1831.060	**PEEK capillary 0.5 mm i.d., 1 m** For inline dialysis and for Sample Changers. For IC Dialysis Unit, IC Sample Processor, Compact IC Autosampler, IC Filtration Sample Processor, IC Dialysis Sample Processor, IC Liquid Handling Dialysis Unit Material: PEEK Outer diameter (inches): 1/16 Inner diameter (mm): 0.5 Length (m): 1	
1	6.1831.160	**PEEK capillary 0.5 mm i.d. / 70 mm** Material: PEEK Outer diameter (inches): 1/16 Inner diameter (mm): 0.75 Length (mm): 700	
1	6.2064.000	**Beaker retainer for Advanced IC Sample Processor** Retaining plate for 838 Advanced Sample Processors. For holding 2.5 or 11 mL vials.	
1	6.2151.000	**Cable USB A – mini-DIN 8-pin** Controller cable Length (m): 1.8	

Qty.	Order no.	Description
1	6.2621.300	**Tool set for Advanced IC Sample Processors** Tool set consisting of open-end wrenches and hexagon keys.

Qty.	Order no.	Description
1	6.2739.000	**Wrench** For tightening connectors Length (mm): 68

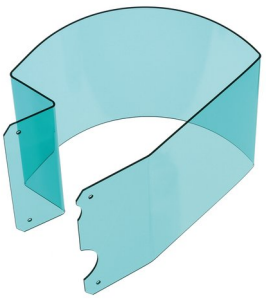
Qty.	Order no.	Description
1	6.2744.010	**Pressure screw 5x** With UNF 10/32 connection. For the connection of PEEK capillaries Material: PEEK Length (mm): 26

Qty.	Order no.	Description
1	6.2744.034	**Coupling nozzle - UNF 10/32, 2 pieces** Connection pressure screw and pump tubing. 2 pieces. For IC instruments with peristaltic pumps

Qty.	Order no.	Description
1	6.2744.070	**Pressure screw short** Short version. With UNF 10/32 connection. 5 pieces. For the connection of PEEK capillaries Material: PEEK Length (mm): 21

Qty.	Order no.	Description
2	6.2744.160	**Nozzle/UNF 10/32 coupling with security device** Security device for connecting pump tubing to a nozzle. Material: PEEK

Qty.	Order no.	Description
1	6.2751.110	**Splash protection** Splash protection for Advanced IC/VA Sample Processors



Qty.	Order no.	Description
1	6.2846.000	**Sample needle (zirconium oxide)** Sample needle for Sample Processors and Autosamplers in ion chromatography and voltammetry Material: Ceramic Outer diameter (inches): 1/8 Inner diameter (mm): 0.75 Length (mm): 151

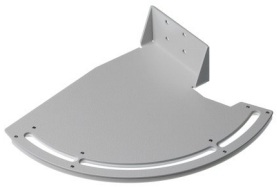
Qty.	Order no.	Description
4	T.240.0102	**Ferrite cores** Anti-interference adapters

Qty.	Order no.	Description
2	Y.107.0150	**Adhesive capillary strap** For fixing capillaries
1	6.2122.xxx	**Mains cable with line socket, type IEC 60320 C13** Power plug to customer specifications: Switzerland: 6.2122.020 (type SEV 12) Germany: 6.2122.040 (type CEE(7), VII) USA: 6.2122.070 (type NEMA/ASA)
1	8.858.8002EN	**858 Professional Sample Processor Manual**

9.1.3 858 Professional Sample Processor 2.858.0030

Qty.	Order no.	Description
1	1.858.0030	**858 Professional Sample Processor – Pump – Injector**
3	6.1608.080	**Bottle / 300 mL** Rinsing vessel for IC Sample Processors Material: PE Height (mm): 128 Outer diameter (mm): 68 Volume (mL): 300
1	6.1803.030	**PTFE capillary 0.5 mm i.d. / 3 m** Capillary for inline dialysis, for Dialysis Unit, IC Dialysis Sample Processor, IC Liquid Handling Dialysis Unit Material: PTFE Outer diameter (inches): 1/16 Inner diameter (mm): 0.5 Length (m): 3

Qty.	Order no.	Description	
1	6.1825.210	**PEEK sample loop 20 µL** For injection valve, with 2 PEEK pressure screws Material: PEEK (metal-free) Outer diameter (inches): 1/16 Volume (mL): 0.02	
2	6.1826.360	**Pump tubing LFL (white/white), 3 stoppers** For Sample Processors	
1	6.1831.010	**PEEK capillary 0.25 mm i.d. / 3 m** For all IC components. Material: PEEK Outer diameter (inches): 1/16 Inner diameter (mm): 0.25 Length (m): 3	

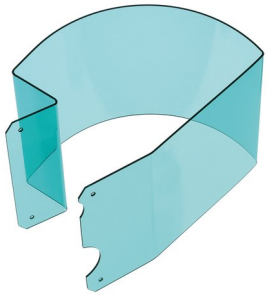
Qty.	Order no.	Description	
1	6.1831.060	**PEEK capillary 0.5 mm i.d., 1 m** For inline dialysis and for Sample Changers. For IC Dialysis Unit, IC Sample Processor, Compact IC Autosampler, IC Filtration Sample Processor, IC Dialysis Sample Processor, IC Liquid Handling Dialysis Unit Material: PEEK Outer diameter (inches): 1/16 Inner diameter (mm): 0.5 Length (m): 1	
1	6.1831.160	**PEEK capillary 0.5 mm i.d. / 70 mm** Material: PEEK Outer diameter (inches): 1/16 Inner diameter (mm): 0.75 Length (mm): 700	
1	6.2064.000	**Beaker retainer for Advanced IC Sample Processor** Retaining plate for 838 Advanced Sample Processors. For holding 2.5 or 11 mL vials.	
1	6.2151.000	**Cable USB A – mini-DIN 8-pin** Controller cable Length (m): 1.8	

Qty.	Order no.	Description
1	6.2621.300	**Tool set for Advanced IC Sample Processors** Tool set consisting of open-end wrenches and hexagon keys.

Qty.	Order no.	Description
1	6.2739.000	**Wrench** For tightening connectors Length (mm): 68

Qty.	Order no.	Description
1	6.2744.010	**Pressure screw 5x** With UNF 10/32 connection. For the connection of PEEK capillaries Material: PEEK Length (mm): 26

Qty.	Order no.	Description
1	6.2744.034	**Coupling nozzle - UNF 10/32, 2 pieces** Connection pressure screw and pump tubing. 2 pieces. For IC instruments with peristaltic pumps

Qty.	Order no.	Description	
1	6.2744.070	**Pressure screw short** Short version. With UNF 10/32 connection. 5 pieces. For the connection of PEEK capillaries Material: PEEK Length (mm): 21	
1	6.2744.110	**PEEK coupling pump tubing - inline filter** Connection piece between pump tubing and inline filter Material: PEEK	
2	6.2744.160	**Nozzle/UNF 10/32 coupling with security device** Security device for connecting pump tubing to a nozzle. Material: PEEK	
1	6.2751.110	**Splash protection** Splash protection for Advanced IC/VA Sample Processors	

Qty.	Order no.	Description
1	6.2846.000	**Sample needle (zirconium oxide)** Sample needle for Sample Processors and Autosamplers in ion chromatography and voltammetry Material: Ceramic Outer diameter (inches): 1/8 Inner diameter (mm): 0.75 Length (mm): 151
4	T.240.0102	**Ferrite cores** Anti-interference adapters
2	Y.107.0150	**Adhesive capillary strap** For fixing capillaries
1	6.2122.xxx	**Mains cable with line socket, type IEC 60320 C13** Power plug to customer specifications: Switzerland: 6.2122.020 (type SEV 12) Germany: 6.2122.040 (type CEE(7), VII) USA: 6.2122.070 (type NEMA/ASA)
1	8.858.8002EN	**858 Professional Sample Processor Manual**

9.2 Optional accessories 2.858.0010

Order no.	Description

6.1835.020 PEEK sample aspiration tubing

Used with IC Sample Processors, for filtration and dialysis applications

Material:	PEEK
Outer diameter (inches):	1/8

6.1835.030 PEEK sample aspiration tubing

For 813 Compact Autosampler

Material:	PEEK
Outer diameter (inches):	1/8
Inner diameter (mm):	0.75
Length (mm):	167

6.1835.040 PEEK sample aspiration tube

For sample changers used for transferring smaller sample volumes, e.g. for the determination of suppressors

Material:	PEEK
Outer diameter (inches):	1/8
Inner diameter (mm):	0.75
Length (mm):	154

Order no.	Description

6.1835.050 PEEK sample aspiration tube

For sample changers used for transferring larger sample volumes, e.g. for the determination of brighteners

Material:	PEEK
Outer diameter (inches):	1/8
Inner diameter (mm):	1.58
Length (mm):	154

6.2041.310 Sample rack 12 x 250 mL

Sample rack for 12 x 250 mL, one row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	65

6.2041.320 Sample rack 16 x 150 mL

Sample rack for 16 x 150 mL samples, one-row

Material:	PVC
Outer diameter (mm):	416
Hole diameter (mm):	56

6.2041.340 Sample rack 24 x 75 mL

Sample rack for 24 x 75 mL samples, one-row.

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	35

6.2041.350 Sample rack 48 x 75 mL

Sample rack for 48 x 75 mL samples, two-row

Material:	ABS
Outer diameter (mm):	420
Hole diameter (mm):	35

Order no.	Description

6.2041.360 Sample rack for 12 x 150 mL

Sample rack for 12 x 150 mL samples, one-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	55

6.2041.370 Sample rack 14 x 200 mL

Sample rack for 14 x 200 mL samples, one-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	55

6.2041.400 Sample rack 126 x 11 mL

Sample rack for 126 x 11 mL samples, multi-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	16 / 65

6.2041.410 Sample rack 141 x 11 mL

Sample rack for 141 x 11 mL samples, multi-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	16 / 70

6.2041.430 Sample rack 127 x 11 mL

Sample rack for 127 x 11 mL samples with 2 rinsing beakers

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	17 / 68

Order no.	Description

6.2041.440 Sample rack 148 x 11 mL + 3 x 300 mL

Sample rack for 148 x 11 mL samples with 3 rinsing beakers

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	17 / 68

6.2041.450 Sample rack 56 x 11 mL + 56 x 50 mL

Sample rack 56 x 11 mL + 56 x 50 mL

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	29 / 17

6.2041.750 Sample rack 36 x 11 mL

Sample rack for 36 x 11 mL sample tubes, one-row

Material:	PVC
Outer diameter (mm):	270
Hole diameter (mm):	17

6.2041.760 Sample rack for 838 IC Sample Processor, 54 x 11 mL + 1 x 300 mL

Small diameter sample rack for 54 x 11 mL sample tubes in two rows and 1 additional 300-mL bottle

Material:	PVC
Hole diameter (mm):	17 / 68

6.2148.010 Remote Box MSB

Additional remote interface for the connection of devices that can be controlled via remote lines. With permanently attached cable.

Order no.	Description
6.2629.000	**Screw nut to needle holder IC**

On Sample Processors

6.2714.010	**Dialysis membrane (cellulose acetate)**

Nominal pore size : 0.2 µm. Set of 50 pieces. For inline dialysis

Material:	Cellulose acetate
Outer diameter (mm):	47

6.2714.020	**Filtration membrane 1**

Nominal pore size : 0.2 µm. Set of 50 pieces. For inline filtration

Material:	Regenerated cellulose
Outer diameter (mm):	47

6.2714.030	**Dialysis membrane (polyamide)**

For inline dialysis and filtration

Material:	Plastic
Material remark:	Polyamide
Outer diameter (mm):	47

6.2743.040	**Sample tubes 2.5 mL**

2.5 mL. 2000 pieces. For IC Sample Processors

Material:	PP
Volume (mL):	2.5

Order no.	Description

6.2743.047 Sample tubes 2.5 mL

2.5 mL. 200 pieces. For IC Sample Processors

Material:	PP
Volume (mL):	2.5

6.2743.050 Sample tubes 11 mL

2000 pieces. For IC Sample Processors and VA Autosampler

Material:	PP
Outer diameter (mm):	16
Length (mm):	108
Volume (mL):	11

6.2743.057 Sample tubes 11 mL

200 pieces. For IC Sample Processors and VA Autosampler

Material:	PP
Outer diameter (mm):	16
Length (mm):	108
Volume (mL):	11

6.2743.070 Stopper with perforation

2000 pieces. For IC Sample Processors

Material:	PP

Order no.	Description

6.2743.077 **Stopper with perforation**

200 pieces. For IC Sample Processors

Material: PP

6.2841.100 **Rinsing Station for IC Sample Processor**

Rinsing station for optimally cleaning the sample needle.

6.5330.000 **IC Equipment for dialysis**

Accessories kit for <A class="" title="" href="http://misp.metrohm.com/methods/" target=_blank>Inline Dialysis</A>. To be used with the 858 Professional Sample Processor and an additional 2-channel peristaltic pump.

6.5330.010 **IC Equipment for ultrafiltration**

Accessories kit for <A class="" title="" href="http://misp.metrohm.com/methods/" target=_blank>Inline Ultrafiltration</A>. To be used with the 858 Professional Sample Processor.

6.5330.020 **IC Equipment for dilution**

Accessories kit for <A class="" title="" href="http://misp.metrohm.com/methods/" target=_blank>Inline Dilution</A>. To be used with the 858 Professional Sample Processor, the 800 Dosino and the 801 Stirrer.

6.5333.000 **IQ/OQ Kit for IC**

The IQ/OQ Kit for IC contains all parts and standard solutions required for IQ/OQ in IC.

6.6059.221 **MagIC Net™ 2.2 Compact CD: 1 Licence**

Professional PC program for controlling one intelligent Compact IC instrument and one autosampler or one 771 Compact Interface. The software permits control, data acquisition, evaluation and monitoring as well as report generation for ion chromatographic analyses. Graphic user interface for routine operations, extensive database programs, method development, configuration and manual system control, highly flexible user administration, efficient database operations,

Order no.	Description
	extensive data export functions, individually configurable report generator, control and monitoring of all system components and the chromatographic results. MagIC Net™ Compact complies with FDA regulation 21 CFR Part 11 as well as GLP. Dialogue languages: German, English, French, Spanish, Chinese, Korean, Japanese and more. 1 licence.
6.6059.222	**MagIC Net™ 2.2 Professional CD: 1 Licence** Professional PC program for controlling intelligent Professional IC systems, Compact IC instruments and their peripherals such as different autosamplers, 800 Dosinos dosing systems, 771 Compact Interface, etc. The software permits control, data acquisition, evaluation and monitoring as well as report generation for ion chromatographic analyses. Graphic user interface for routine operations, extensive database programs, method development, configuration and manual system control, highly flexible user administration, efficient database operations, extensive data export functions, individually configurable report generator, control and monitoring of all system components and the chromatographic results. MagIC Net™ Professional complies with FDA regulation 21 CFR Part 11 as well as GLP. Dialogue languages: German, English, French, Spanish, Chinese, Korean, Japanese and more. 1 licence.
6.6059.223	**MagIC Net™ 2.2 Multi CD: 3 Licences** Professional PC program for controlling intelligent Professional IC systems, Compact IC instruments and their peripherals such as different autosamplers, 800 Dosino, 771 Compact Interface, etc. The software permits control, data acquisition, evaluation and monitoring as well as report generation for ion chromatographic analyses. Graphic user interface for routine operations, extensive database programs, method development, configuration and manual system control; highly flexible user administration, efficient database operations, extensive data export functions, individually configurable report generator, control and monitoring of all system components and the chromatographic results. MagIC Net™ Multi complies with FDA regulation 21 CFR Part 11 as well as GLP. Dialogue languages: German, English, French, Spanish, Chinese, Korean, Japanese and more. Client-Server version with 3 licences.
6.9988.583	**Validation Documentation for 858 (English / German) – CD**
8.858.3001EN	**Declaration of conformity: 858 Professional Sample Processor (English)**

9.3 Optional accessories 2.858.0020

Order no.	Description
6.1826.310	**Pump tubing LFL (orange/green), 3 stoppers** Pump tubing for bromate determination using the triiodide method.
6.1826.320	**Pump tubing LFL (orange/yellow), 3 stoppers** For suppressor solutions, acceptor solution in Inline Dialysis and for Inline Ultrafiltration
6.1826.330	**Pump tubing LFL (orange/white), 3 stoppers** For all IC instruments with peristaltic pump.

Order no.	Description
6.1826.340	**Pump tubing LFL (black/black), 3 stoppers**

For the sample solution in inline dialysis

6.1826.380	**Pump tubing LFL (gray/gray), 3 stoppers**

For Inline Dilution

6.1826.390	**Pump tubing LFL (yellow/yellow), 3 stoppers**

For the sample solution in Inline Ultrafiltration.

6.1835.020	**PEEK sample aspiration tubing**

Used with IC Sample Processors, for filtration and dialysis applications

Material:	PEEK
Outer diameter (inches):	1/8

Order no.	Description

6.1835.030 PEEK sample aspiration tubing

For 813 Compact Autosampler

Material:	PEEK
Outer diameter (inches):	1/8
Inner diameter (mm):	0.75
Length (mm):	167

6.1835.040 PEEK sample aspiration tube

For sample changers used for transferring smaller sample volumes, e.g. for the determination of suppressors

Material:	PEEK
Outer diameter (inches):	1/8
Inner diameter (mm):	0.75
Length (mm):	154

6.1835.050 PEEK sample aspiration tube

For sample changers used for transferring larger sample volumes, e.g. for the determination of brighteners

Material:	PEEK
Outer diameter (inches):	1/8
Inner diameter (mm):	1.58
Length (mm):	154

Order no.	Description

6.2041.310 Sample rack 12 x 250 mL

Sample rack for 12 x 250 mL, one row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	65

6.2041.320 Sample rack 16 x 150 mL

Sample rack for 16 x 150 mL samples, one-row

Material:	PVC
Outer diameter (mm):	416
Hole diameter (mm):	56

6.2041.340 Sample rack 24 x 75 mL

Sample rack for 24 x 75 mL samples, one-row.

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	35

6.2041.350 Sample rack 48 x 75 mL

Sample rack for 48 x 75 mL samples, two-row

Material:	ABS
Outer diameter (mm):	420
Hole diameter (mm):	35

6.2041.360 Sample rack for 12 x 150 mL

Sample rack for 12 x 150 mL samples, one-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	55

6.2041.370 Sample rack 14 x 200 mL

Sample rack for 14 x 200 mL samples, one-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	55

Order no.	Description

6.2041.380 Sample rack 14 x 235 mL

Sample rack for 14 x 235 mL samples, one-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	58

6.2041.400 Sample rack 126 x 11 mL

Sample rack for 126 x 11 mL samples, multi-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	16 / 65

6.2041.410 Sample rack 141 x 11 mL

Sample rack for 141 x 11 mL samples, multi-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	16 / 70

6.2041.430 Sample rack 127 x 11 mL

Sample rack for 127 x 11 mL samples with 2 rinsing beakers

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	17 / 68

6.2041.440 Sample rack 148 x 11 mL + 3 x 300 mL

Sample rack for 148 x 11 mL samples with 3 rinsing beakers

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	17 / 68

Order no.	Description

6.2041.450 **Sample rack 56 x 11 mL + 56 x 50 mL**

Sample rack 56 x 11 mL + 56 x 50 mL

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	29 / 17

6.2041.750 **Sample rack 36 x 11 mL**

Sample rack for 36 x 11 mL sample tubes, one-row

Material:	PVC
Outer diameter (mm):	270
Hole diameter (mm):	17

6.2041.760 **Sample rack for 838 IC Sample Processor, 54 x 11 mL + 1 x 300 mL**

Small diameter sample rack for 54 x 11 mL sample tubes in two rows and 1 additional 300-mL bottle

Material:	PVC
Hole diameter (mm):	17 / 68

6.2148.010 **Remote Box MSB**

Additional remote interface for the connection of devices that can be controlled via remote lines. With permanently attached cable.

6.2629.000 **Screw nut to needle holder IC**

On Sample Processors

Order no.	Description
6.2714.010	**Dialysis membrane (cellulose acetate)**

Nominal pore size : 0.2 µm. Set of 50 pieces. For inline dialysis

Material:	Cellulose acetate
Outer diameter (mm):	47

6.2714.020 **Filtration membrane 1**

Nominal pore size : 0.2 µm. Set of 50 pieces. For inline filtration

Material:	Regenerated cellulose
Outer diameter (mm):	47

6.2714.030 **Dialysis membrane (polyamide)**

For inline dialysis and filtration

Material:	Plastic
Material remark:	Polyamide
Outer diameter (mm):	47

6.2743.040 **Sample tubes 2.5 mL**

2.5 mL. 2000 pieces. For IC Sample Processors

Material:	PP
Volume (mL):	2.5

6.2743.047 **Sample tubes 2.5 mL**

2.5 mL. 200 pieces. For IC Sample Processors

Material:	PP
Volume (mL):	2.5

Order no.	Description
6.2743.050	**Sample tubes 11 mL**

2000 pieces. For IC Sample Processors and VA Autosampler

Material:	PP
Outer diameter (mm):	16
Length (mm):	108
Volume (mL):	11

6.2743.057 **Sample tubes 11 mL**

200 pieces. For IC Sample Processors and VA Autosampler

Material:	PP
Outer diameter (mm):	16
Length (mm):	108
Volume (mL):	11

6.2743.070 **Stopper with perforation**

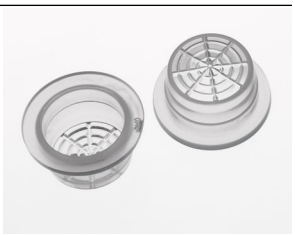
2000 pieces. For IC Sample Processors

Material:	PP

6.2743.077 **Stopper with perforation**

200 pieces. For IC Sample Processors

Material:	PP



Order no.	Description
6.2841.100	**Rinsing Station for IC Sample Processor** Rinsing station for optimally cleaning the sample needle.
6.5330.000	**IC Equipment for dialysis** Accessories kit for <A class="" title="" href="http://misp.metrohm.com/methods/" target=_blank>Inline Dialysis</A>. To be used with the 858 Professional Sample Processor and an additional 2-channel peristaltic pump.
6.5330.010	**IC Equipment for ultrafiltration** Accessories kit for <A class="" title="" href="http://misp.metrohm.com/methods/" target=_blank>Inline Ultrafiltration</A>. To be used with the 858 Professional Sample Processor.
6.5330.020	**IC Equipment for dilution** Accessories kit for <A class="" title="" href="http://misp.metrohm.com/methods/" target=_blank>Inline Dilution</A>. To be used with the 858 Professional Sample Processor, the 800 Dosino and the 801 Stirrer.
6.5333.000	**IQ/OQ Kit for IC** The IQ/OQ Kit for IC contains all parts and standard solutions required for IQ/OQ in IC.
6.6059.221	**MagIC Net™ 2.2 Compact CD: 1 Licence** Professional PC program for controlling one intelligent Compact IC instrument and one autosampler or one 771 Compact Interface. The software permits control, data acquisition, evaluation and monitoring as well as report generation for ion chromatographic analyses. Graphic user interface for routine operations, extensive database programs, method development, configuration and manual system control, highly flexible user administration, efficient database operations, extensive data export functions, individually configurable report generator, control and monitoring of all system components and the chromatographic results. MagIC Net™ Compact complies with FDA regulation 21 CFR Part 11 as well as GLP. Dialogue languages: German, English, French, Spanish, Chinese, Korean, Japanese and more. 1 licence.

Order no.	Description
6.6059.222	**MagIC Net™ 2.2 Professional CD: 1 Licence** Professional PC program for controlling intelligent Professional IC systems, Compact IC instruments and their peripherals such as different autosamplers, 800 Dosinos dosing systems, 771 Compact Interface, etc. The software permits control, data acquisition, evaluation and monitoring as well as report generation for ion chromatographic analyses. Graphic user interface for routine operations, extensive database programs, method development, configuration and manual system control, highly flexible user administration, efficient database operations, extensive data export functions, individually configurable report generator, control and monitoring of all system components and the chromatographic results. MagIC Net™ Professional complies with FDA regulation 21 CFR Part 11 as well as GLP. Dialogue languages: German, English, French, Spanish, Chinese, Korean, Japanese and more. 1 licence.
6.6059.223	**MagIC Net™ 2.2 Multi CD: 3 Licences** Professional PC program for controlling intelligent Professional IC systems, Compact IC instruments and their peripherals such as different autosamplers, 800 Dosino, 771 Compact Interface, etc. The software permits control, data acquisition, evaluation and monitoring as well as report generation for ion chromatographic analyses. Graphic user interface for routine operations, extensive database programs, method development, configuration and manual system control; highly flexible user administration, efficient database operations, extensive data export functions, individually configurable report generator, control and monitoring of all system components and the chromatographic results. MagIC Net™ Multi complies with FDA regulation 21 CFR Part 11 as well as GLP. Dialogue languages: German, English, French, Spanish, Chinese, Korean, Japanese and more. Client-Server version with 3 licences.
6.9988.583	**Validation Documentation for 858 (English / German) – CD**
8.858.3001EN	**Declaration of conformity: 858 Professional Sample Processor (English)**

9.4 Optional accessories 2.858.0030

Order no.	Description
6.1826.310	**Pump tubing LFL (orange/green), 3 stoppers** Pump tubing for bromate determination using the triiodide method.
6.1826.320	**Pump tubing LFL (orange/yellow), 3 stoppers** For suppressor solutions, acceptor solution in Inline Dialysis and for Inline Ultrafiltration
6.1826.330	**Pump tubing LFL (orange/white), 3 stoppers** For all IC instruments with peristaltic pump.

Order no.	Description
6.1826.340	**Pump tubing LFL (black/black), 3 stoppers**

For the sample solution in inline dialysis

Order no.	Description
6.1826.380	**Pump tubing LFL (gray/gray), 3 stoppers**

For Inline Dilution

Order no.	Description
6.1826.390	**Pump tubing LFL (yellow/yellow), 3 stoppers**

For the sample solution in Inline Ultrafiltration.

Order no.	Description
6.1835.020	**PEEK sample aspiration tubing**

Used with IC Sample Processors, for filtration and dialysis applications

Material:	PEEK
Outer diameter (inches):	1/8

Order no.	Description

6.1835.030 PEEK sample aspiration tubing

For 813 Compact Autosampler

Material:	PEEK
Outer diameter (inches):	1/8
Inner diameter (mm):	0.75
Length (mm):	167

6.1835.040 PEEK sample aspiration tube

For sample changers used for transferring smaller sample volumes, e.g. for the determination of suppressors

Material:	PEEK
Outer diameter (inches):	1/8
Inner diameter (mm):	0.75
Length (mm):	154

6.1835.050 PEEK sample aspiration tube

For sample changers used for transferring larger sample volumes, e.g. for the determination of brighteners

Material:	PEEK
Outer diameter (inches):	1/8
Inner diameter (mm):	1.58
Length (mm):	154

Order no.	Description

6.2041.310 Sample rack 12 x 250 mL

Sample rack for 12 x 250 mL, one row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	65

6.2041.320 Sample rack 16 x 150 mL

Sample rack for 16 x 150 mL samples, one-row

Material:	PVC
Outer diameter (mm):	416
Hole diameter (mm):	56

6.2041.340 Sample rack 24 x 75 mL

Sample rack for 24 x 75 mL samples, one-row.

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	35

6.2041.350 Sample rack 48 x 75 mL

Sample rack for 48 x 75 mL samples, two-row

Material:	ABS
Outer diameter (mm):	420
Hole diameter (mm):	35

6.2041.360 Sample rack for 12 x 150 mL

Sample rack for 12 x 150 mL samples, one-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	55

6.2041.370 Sample rack 14 x 200 mL

Sample rack for 14 x 200 mL samples, one-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	55

Order no.	Description

6.2041.380 Sample rack 14 x 235 mL

Sample rack for 14 x 235 mL samples, one-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	58

6.2041.400 Sample rack 126 x 11 mL

Sample rack for 126 x 11 mL samples, multi-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	16 / 65

6.2041.410 Sample rack 141 x 11 mL

Sample rack for 141 x 11 mL samples, multi-row

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	16 / 70

6.2041.430 Sample rack 127 x 11 mL

Sample rack for 127 x 11 mL samples with 2 rinsing beakers

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	17 / 68

6.2041.440 Sample rack 148 x 11 mL + 3 x 300 mL

Sample rack for 148 x 11 mL samples with 3 rinsing beakers

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	17 / 68

Order no.	Description

6.2041.450 **Sample rack 56 x 11 mL + 56 x 50 mL**

Sample rack 56 x 11 mL + 56 x 50 mL

Material:	PVC
Outer diameter (mm):	420
Hole diameter (mm):	29 / 17

6.2041.750 **Sample rack 36 x 11 mL**

Sample rack for 36 x 11 mL sample tubes, one-row

Material:	PVC
Outer diameter (mm):	270
Hole diameter (mm):	17

6.2041.760 **Sample rack for 838 IC Sample Processor, 54 x 11 mL + 1 x 300 mL**

Small diameter sample rack for 54 x 11 mL sample tubes in two rows and 1 additional 300-mL bottle

Material:	PVC
Hole diameter (mm):	17 / 68

6.2148.010 **Remote Box MSB**

Additional remote interface for the connection of devices that can be controlled via remote lines. With permanently attached cable.

6.2629.000 **Screw nut to needle holder IC**

On Sample Processors

Order no.	Description
6.2714.010	**Dialysis membrane (cellulose acetate)**

Nominal pore size : 0.2 µm. Set of 50 pieces. For inline dialysis

Material:	Cellulose acetate
Outer diameter (mm):	47

6.2714.020 **Filtration membrane 1**

Nominal pore size : 0.2 µm. Set of 50 pieces. For inline filtration

Material:	Regenerated cellulose
Outer diameter (mm):	47

6.2714.030 **Dialysis membrane (polyamide)**

For inline dialysis and filtration

Material:	Plastic
Material remark:	Polyamide
Outer diameter (mm):	47

6.2743.040 **Sample tubes 2.5 mL**

2.5 mL. 2000 pieces. For IC Sample Processors

Material:	PP
Volume (mL):	2.5

6.2743.047 **Sample tubes 2.5 mL**

2.5 mL. 200 pieces. For IC Sample Processors

Material:	PP
Volume (mL):	2.5

Order no.	Description
6.2743.057	**Sample tubes 11 mL**

200 pieces. For IC Sample Processors and VA Autosampler

Material:	PP
Outer diameter (mm):	16
Length (mm):	108
Volume (mL):	11

6.2743.070 **Stopper with perforation**

2000 pieces. For IC Sample Processors

Material:	PP

6.2743.077 **Stopper with perforation**

200 pieces. For IC Sample Processors

Material:	PP

6.2841.100 **Rinsing Station for IC Sample Processor**

Rinsing station for optimally cleaning the sample needle.

6.5330.000 **IC Equipment for dialysis**

Accessories kit for <A class="" title="" href="http://misp.metrohm.com/methods/" target=_blank>Inline Dialysis</A>. To be used with the 858 Professional Sample Processor and an additional 2-channel peristaltic pump.

Order no.	Description
6.5330.010	**IC Equipment for ultrafiltration** Accessories kit for <A class="" title="" href="http://misp.metrohm.com/methods/" target=_blank>Inline Ultrafiltration</A>. To be used with the 858 Professional Sample Processor.
6.5330.020	**IC Equipment for dilution** Accessories kit for <A class="" title="" href="http://misp.metrohm.com/methods/" target=_blank>Inline Dilution</A>. To be used with the 858 Professional Sample Processor, the 800 Dosino and the 801 Stirrer.
6.5333.000	**IQ/OQ Kit for IC** The IQ/OQ Kit for IC contains all parts and standard solutions required for IQ/OQ in IC.
6.6059.221	**MagIC Net™ 2.2 Compact CD: 1 Licence** Professional PC program for controlling one intelligent Compact IC instrument and one autosampler or one 771 Compact Interface. The software permits control, data acquisition, evaluation and monitoring as well as report generation for ion chromatographic analyses. Graphic user interface for routine operations, extensive database programs, method development, configuration and manual system control, highly flexible user administration, efficient database operations, extensive data export functions, individually configurable report generator, control and monitoring of all system components and the chromatographic results. MagIC Net™ Compact complies with FDA regulation 21 CFR Part 11 as well as GLP. Dialogue languages: German, English, French, Spanish, Chinese, Korean, Japanese and more. 1 licence.
6.6059.222	**MagIC Net™ 2.2 Professional CD: 1 Licence** Professional PC program for controlling intelligent Professional IC systems, Compact IC instruments and their peripherals such as different autosamplers, 800 Dosinos dosing systems, 771 Compact Interface, etc. The software permits control, data acquisition, evaluation and monitoring as well as report generation for ion chromatographic analyses. Graphic user interface for routine operations, extensive database programs, method development, configuration and manual system control, highly flexible user administration, efficient database operations, extensive data export functions, individually configurable report generator, control and monitoring of all system components and the chromatographic results. MagIC Net™ Professional complies with FDA regulation 21 CFR Part 11 as well as GLP. Dialogue languages: German, English, French, Spanish, Chinese, Korean, Japanese and more. 1 licence.
6.6059.223	**MagIC Net™ 2.2 Multi CD: 3 Licences** Professional PC program for controlling intelligent Professional IC systems, Compact IC instruments and their peripherals such as different autosamplers, 800

Order no.	Description
	Dosino, 771 Compact Interface, etc. The software permits control, data acquisition, evaluation and monitoring as well as report generation for ion chromatographic analyses. Graphic user interface for routine operations, extensive database programs, method development, configuration and manual system control; highly flexible user administration, efficient database operations, extensive data export functions, individually configurable report generator, control and monitoring of all system components and the chromatographic results. MagIC Net™ Multi complies with FDA regulation 21 CFR Part 11 as well as GLP. Dialogue languages: German, English, French, Spanish, Chinese, Korean, Japanese and more. Client-Server version with 3 licences.
6.9988.583	**Validation Documentation for 858 (English / German) – CD**
8.858.3001EN	**Declaration of conformity: 858 Professional Sample Processor (English)**

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