

Technical Support: Levitronix[®]
Technical Service Department
Technoparkstr. 1, CH-8005 Zurich, Switzerland

Phone for US: 888-569 07 18
Phone for outside US: +1 888-569 07 18
E-Mail: support@levitronix.com

1 Overview of System and Components

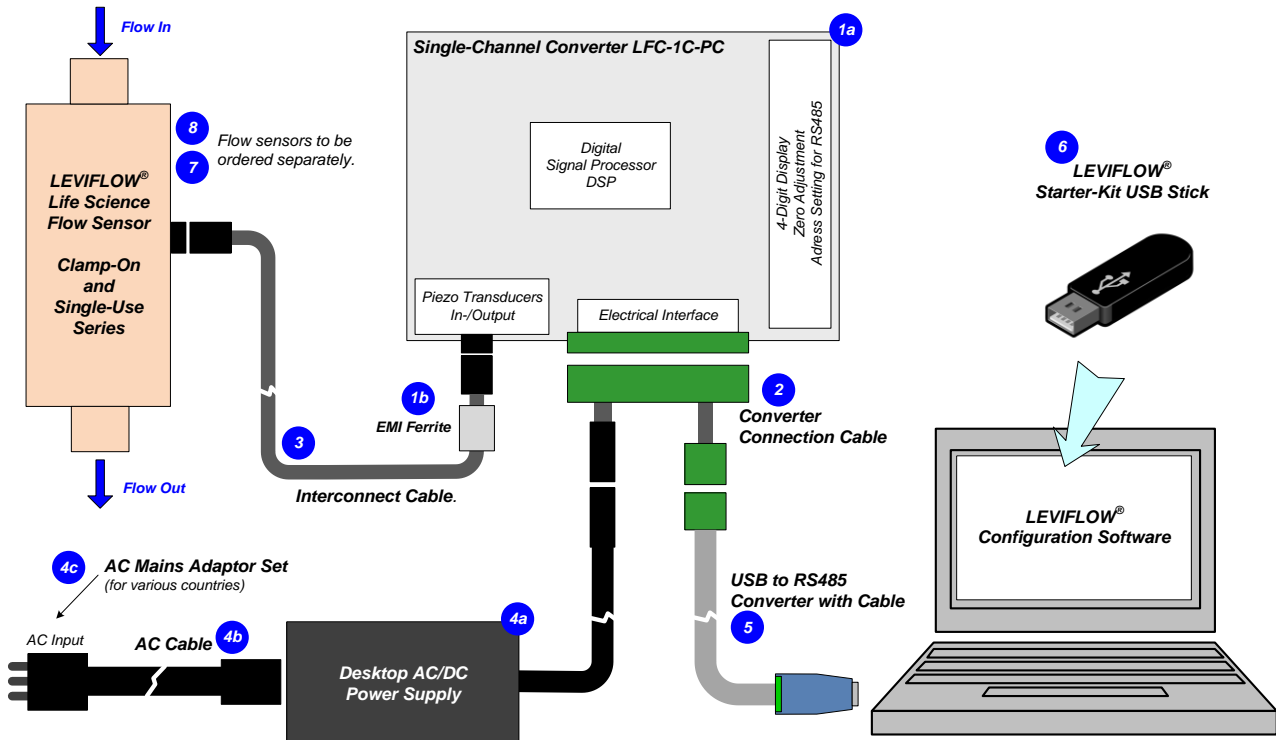


Figure 1: Components of LFC-1C-PC-SK Converter Starter-Kit
Note: Flow sensor to be ordered separately

Pos.	Component	Part Name	Part #	Characteristics	Value / Feature
1 (a+b)	Flow Converter	LFC-1C-PC	100-30374	Interfaces Note	Analog Output (4 – 20 mA), 2x Digital Output, 1x Digital Input, RS485 (MODBUS) EMI ferrite (1b) for flow sensor cable included in converter package.
2	Interconnect Cable	LFI-D.1	190-10379	Specifications Purpose	Cable length = 155 mm Allows to connect power supply and USB-RS485 adaptor.
3	Interconnect Cable	LFI-C.1-30	190-10308	Cable Length, Material Purpose	Cable length: 3 m, PVC Interconnect cable for connection between sensor and converter.
4a	Desktop AC/DC Power Supply	AC/DC Power Supply VEC50US24	900-15245	Voltage Output / Input Basic Dimensions Safety Approvals	24VDC, 50W / 90 – 264 VAC, 47-63 Hz 116 x 52 x 31 mm, cable length 1.2m IEC60950-1, EN60950-1, UL/cUL60950-1
4b	AC Mains Cables	AMC-1.1 (2m)	190-10331	Country	Switzerland
4c	AC Mains Adapter Set	STECO T13	900-10220	Switzerland to Countries	USA, Germany, Australia, UK, Italy
5	USB to RS485 Adaptor-TR Isolated	YN-485I-TR	100-30392	Structure/Design	USB connector (6a) with termination resistor and cable with connector pair (6b and 6c) for external wire connection. Magnetically isolated. Cable length is 2m.
6	LEVIFLOW [®] Starter-Kit USB Stick	USB Stick for LFC-1C-PC-SK	900-10217	Content	LEVIFLOW Configuration Software. User Manuals and Technical Brochures for Clamp-On and Single-Use sensor series.

Table 1: Components of LFC-1C-PC-Kit flow converter starter-kit
(Article # of starter-kit LFC-1C-PC-SK: 100-91072)

Pos.	Part Name	Article #	Fitting	Flow Range	Calibration	Note
7a	LFS-03SU-Z	100-30375	Triclamp 3/8"	0.8 lpm	Calibrated for 20°C water	See technical brochure and user manual, which are stored on the USB stick of the converter starter-kit, for more detailed specifications.
7b	LFS-06SU-Z	100-30377	Triclamp 3/8"	8 lpm		
7c	LFS-10SU-Z	100-30397	Triclamp 1/2"	20 lpm		
7d	LFS-20SU-Z	100-30379	Triclamp 1"	80 lpm		

Table 2: Standard single-use flow sensor compatible with converter starter-kit

Pos.	Part Name	Article #	Tube: ID x OD	Flow Range	Calibration	Note
8a	LFSC-08D-001	100-30396	1/4"=6.4 mm 3/8"= 9.5 mm	4 lpm	4 sets: Water @ 20 and 37°C Silicone and C-Flex [®] tubing ¹	Default activated calibration set is Silicone at 37°C water temp. Other parameter sets can be chosen with Levitronix [®] Configurations Software. See technical brochure and user manual, for more detailed specifications.
8b	LFSC-12D-007	100-90390	3/8"=9.5 mm 9/16"=14.7 mm	20 lpm		
8c	LFSC-22D-005	100-30391	3/4"=19.05 mm 1"=25.4 mm	80 lpm		

Table 3: Standard clamp-on sensors compatible with converter starter-kit
¹: C-Flex[®] is a registered trademark of Saint Gobain Performance Plastics, 2015. All rights reserved.

2 Description and Preparation

2.1 Description



The LEVIFLOW® LPC-1C-PC-Kit flow converter starter-kit contains components, which enables a fast setup to use the LFSC-D Clamp-On and LFS-SU single-use flow sensors. Before using the kit make yourself familiar with the following instructions.

2.2 Inspection Prior to Use

Assure that the kit components shown in *Figure 1* are contained in the converter kit. Note that the flow sensors have to be ordered separately (see *Table 2*, *Table 3*).

3 General Warnings and Cautions

The following warnings and cautions shall be considered. Read user manual stored on the USB stick included in the converter kit for more details to warnings and cautions.

CAUTION			
			
As a preparation it is recommended to read the user manual stored on the USB stick included with the converter kit.			
WARNING			
			
Hazardous voltage may be present.			
Use the power supply delivered with the kit. In case of the usage of an inadequate AC/DC power supply, mains voltages may be present (even if the converter is designed for 24VDC).			
The converter kit with all its components must be placed in a spill protected environment. Do not under any circumstances open the powered converter.			

4 Installation

4.1 Electrical Installation

Connect the converter kit components as illustrated in *Figure 1*. Check all connections for proper mounting before the system is AC powered.

4.2 Hydraulic Installation

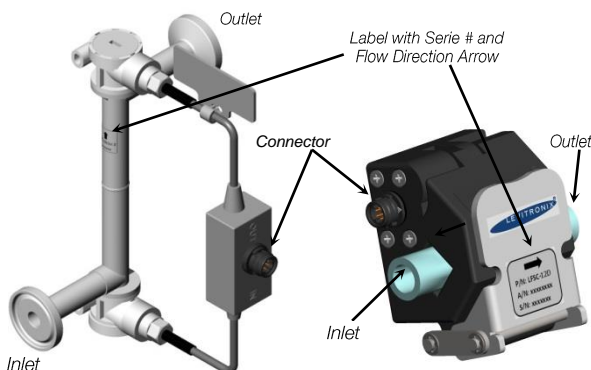


Figure 2: Single-use (left) and clamp-on flow (right) flow sensor

All flow sensors come delivered with an instruction for use, which, together with the user manual (see USB stick of the starter kit), contain detailed information for hydraulic installation.

Setup the hydraulic circuit in a way that air or gas bubbles can leave the measurement path easily. Furthermore assure that the flow direction follows the arrow shown on the flow sensors (see *Figure 2*).

5 Operation

The flow circuit should be completely filled with fluid. The converter contains special algorithms, which increase the robustness of the measurement against bubbles. However, assure that excessive bubbles are avoided in the circuit.

Most important before starting operation is to perform a *Rezero* of the sensor. Assure that the sensor is completely filled with fluid and is free of bubbles. Stable liquid properties should be assured by flushing the circuit with the final liquid until temperature and viscosity becomes stable. After this zero flow shall be realized. Then push the "ZERO ADJ" button on the converter for about 3 seconds. During adjustment "0ADJ" appears on the converter display. In the following cases a zeroing should be repeated.

- a. 30 minutes after power-on of a cool converter and sensor
- b. Change of fluid properties (temperature, viscosity, density)
- c. Change of chemistry
- d. Change of the hydraulic circuit

6 LEVIFLOW® Configuration Software

6.1 Background

The LEVIFLOW® Configuration Software enables extended functions like, monitoring and recording of flow and other system data, configuration of parameters, firmware update and trouble-shooting.

6.2 Installation

Connect the USB-RS485 adaptor to the converter and personal computer as illustrated in *Figure 1*. The operating system should be *Windows XP* or newer.

The USB stick delivered with the converter starter kit (see *Table 1*) contains a configuration software file "*LeviFlow Config-SW Vx.xx.msi*".

- a. Install the LEVIFLOW® configuration software by double clicking on the file "*LEVIFLOW Config Software Vx.xx.msi*".
- b. If during installation of the configuration software a message about missing *.Net Framework 2.0* should appear, than install *Microsoft .Net Framework 2.0*, which is available on the Microsoft web page.
- c. Start the configuration software by double clicking the newly installed "*LEVIFLOW Config Software*" on the desktop.

7 Supporting Literature

The USB stick, which is included in the converter starter-kit contains user manuals and technical brochures with more details about the single-use and clamp-on flowmeters.