



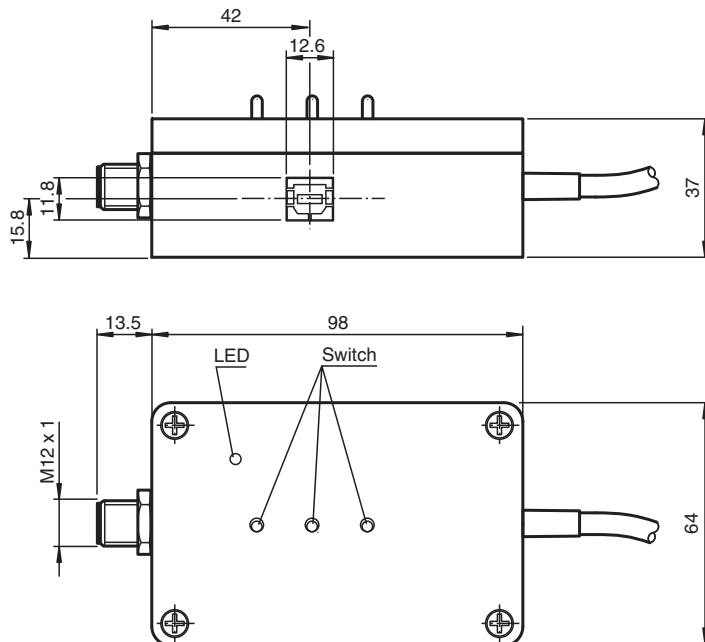
## Programming adapter UC-PROG1-USB

- USB 2.0 interface
- Simple insertion in the sensor connection lead

Programming adapter



### Dimensions



### Technical Data

#### Electrical specifications

Operating voltage	$U_B$	10 ... 30 V DC, via sensor supply
No-load supply current	$I_0$	Sensor Interface < 10 mA USB interface ≤ 50 mA

General information galvanically isolated

#### Interface

Interface type	USB 2.0
Protocol	Serial Communication
Transfer rate	max. 9.6 kBit/s

#### Approvals and certificates

CCC approval CCC approval / marking not required for products rated ≤36 V

#### Ambient conditions

**Technical Data**

Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
<b>Mechanical specifications</b>	
Degree of protection	IP20
Connection	USB: Square type B socket 5-pin, M12 x 1 connector Female cordset, M12, 5-pin, PVC cable
Material	
Housing	Polycarbonate
Mass	260 g
Cable length	2 m

**Additional Information**

**Description**

The programming device allows the connected sensor to be programmed easily via the USB interface of a PC. A variety of sensor parameters can be programmed in this way, enabling the sensor to be optimally configured for the task in question.

The sensor is parameterized using the PACTware™ parameterization software. PACTware™ and the sensor-specific device type manager are available to download from the sensor product page at <http://www.pepperl-fuchs.com>.

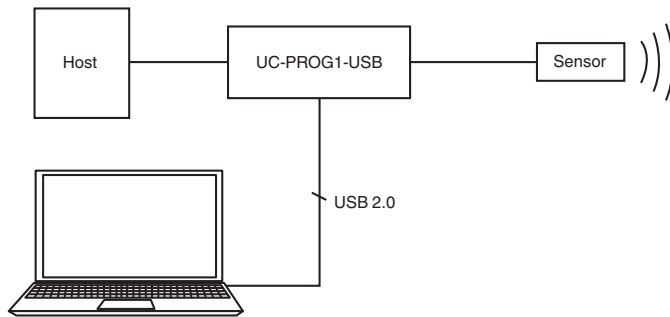
Alternatively, you can use a terminal program to configure parameters at command level. To do this, you will need to use the programming device as a virtual COM interface. See the "Changing the Communication Mode" section. You can download the description of the sensor commands from the sensor product page at <http://www.pepperl-fuchs.com>.

The programming device is powered by the 5 V supplied by the USB interface. The connected sensor is powered by the control unit or a power supply connected on the control side (see Figure 1). The supply voltages between the programming device and the sensor are galvanically isolated from one another.

The power LED on the programming device serves as an indicator for the sensor voltage.

**Connecting the Programming Device**

1. First, connect the sensor to a power supply or your control unit or integrate it in your process in accordance with the instructions on the sensor data sheet.
2. Check that the sensor is functioning correctly.
3. Switch off the power supply.
4. Now disconnect the sensor and loop the programming device into the circuit as shown in the diagram below.
5. Connect the UC-PROG1-USB programming device to your computer via the USB interface. To do this, use a standard USB interface cable with a USB-A to USB-B connector.



**Programming the Sensor**

1. Move the "connect to" switch into the "comm" position.  
**Note:** When the switch is in this position, the sensor signals on lines 4 and 5 are not looped through to the control unit.
2. The position that the "output load" and "output logic" switches need to be in depends on the output function of the sensor. Set the switches as shown in the following table or in accordance with the description of the connected sensor.

Output type	Output: Load	Output: Logic
E4	Pull: up	Inv
E5	Pull: down	Inv
E6	Pull: down	Inv
E7	Pull: up	Inv
I	Pull: down	Noninv
U	Pull: down	Noninv

3. Switch on the supply voltage. The sensor starts in standby mode.
4. Send the first communication call to the sensor within 25 seconds. If the communication call is sent too late, then it is no longer possible to establish communication. In this case, switch the supply voltage to the sensor off again. Repeat the procedure to establish communication from step 3 onward.
5. Program the sensor.
6. Move the "connect to" switch into the "process" position. The sensor signals on lines 4 and 5 are now looped through to the control unit. All sensor functions can now be tested.

**Removing the Programming Device**

1. Switch off the supply voltage.
2. Remove the programming device from the sensor circuit.
3. Reconnect the sensor in its original position.
4. The programmed parameters will now be stored in the sensor in the nonvolatile memory until you overwrite them by reprogramming the sensor.

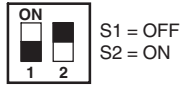
**Changing the Communication Mode**

To change the communication mode, you must move a DIP switch inside the programming device. Using this switch, you can change between HID (Human Interface Device) mode and VirtualComInterface mode.

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To change the communication mode, proceed as follows:

1. Disconnect all connections between the programming device and the power supply, the control unit, the sensor, and the PC.
2. Loosen the four screws on the housing.
3. Carefully remove the cover on the device.
4. Set the programming switches as follows:
  - Operating as a virtual serial interface:



- Operating in HID mode (parameterization with PACTware™):



5. Carefully replace the cover on the housing.
6. Screw the cover back on the housing.