Thank you for choosing a NIVELCO instrument.
We are sure that you will be satisfied throughout its use!

1. APPLICATION

The **UNICOMM SAT-504** modem establishes communication between HART®-capable field devices and a process controller computer. The UNICOMM HART® modems are applicable for all HART®-capable transmitters that use standard HART® communication.

Depending on the design the following versions can be ordered:

– HART®/USB modem, normal type;
– HART®/USB modem with power supply for transmitter and switchable HART® terminal resistor;
– HART®/USB modem with power supply for transmitter, switchable HART® terminal resistor and Bluetooth® interface.

The modem ensures galvanic isolation for the transmitter from the process controller system and it is powered by a USB interface or a USB power bank.

2. TECHNICAL DATA

2.1 GENERAL DATA

| Power Supply	USB interface or USB power bank
HART current loop power supply	24 V DC ±5% max. 22 mA
HART terminal resistor	250 Ω switchable
Bluetooth version	2.1
Bluetooth name, Pairing code	SAT504-BT, 1234
Current consumption from USB	<150 mA
Power consumption from USB	<1 W
Ambient temperature	-25 °C … +55 °C (+77 °F … +131 °F)
Housing material	Polystyrene
Connection to PC	USB 1.1 "B" socket
Cable to PC	USB "A-B" 1.8 m (5.9 feet)
Connection to HART line	KLEPS2 spiral 1.1 m (3.4 feet)
Ingress protection	IP20
Electrical protection	Class III 1 kV galvanic isolation
Mass	0.1 kg

2.1 ACCESSORIES

– User's Manual
– Warranty Card
– Declaration of Conformity
– USB "A-B" cable 1.8 m (5.9 feet)

2.2 ORDER CODE

UNICOMM SAT-504- ☐

HART® normal type	0
HART® + transmitter power supply	1
HART® + transmitter power supply + Bluetooth®	2

2.4 DIMENSIONS (IN MM)
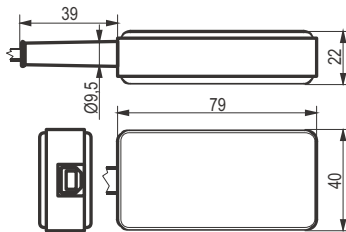
3. COMMUNICATION OPTIONS

The modem meets the HART® communication standards and applicable for all HART®-capable transmitters that use standard HART® communication. To enable communication through the USB 1.1. or USB 2.0. port of the PC a driver program (FT 232 RL) is needed. This driver can be downloaded from the CD-ROM containing the **EView2** program package provided to all **NIVELCO** transmitters purchased with HART® option. The program can also be downloaded from the http://ftdichip.com website.

4. WIRING, OPERATION

The modem should be connected to a HART® field device by 2 pieces of KLEPS2 measuring clamps. The **SAT-504** does not have surge protection, thus use of an adequate lightning protection that does not affect standard HART® signal transmission is advised.

UNICOMM SAT-504-2

POWER BANK
USB / 5 V

## 4.1 HART®/USB INTERFACE FUNCTION (FOR ALL TYPES: SAT-504-0, 1, 2)

The clips should be positioned in accordance with polarity. When the USB cable and the clips are connectected to the PC, the modem turns on, and switches to the basic state marked with an asterisk (*). The following states are displayed during operation:
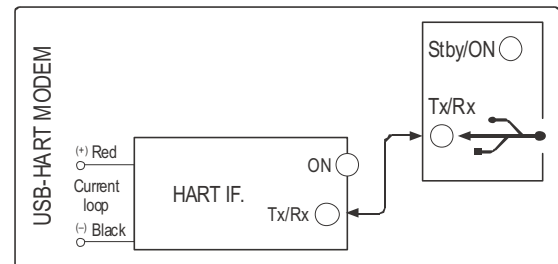
Interface	LED		
	Name		**State**
USB	Stby/ON	not lit	turned off (inactive mode)
		yellow	turned on (standby mode)
		* green	turned on (active mode)
	TX/RX	red	PC send
		green	PC receive
		* not lit	no data transfer
HART®	ON	not lit	turned off (inactive mode)
		* green	turned on (active mode)
	TX/RX	red	transmission to HART®
		green	reception from HART®
		* not lit	no data transfer

4.2 24V CURRENT LOOP POWER SUPPLY, ADDITIONAL FUNCTION

(ONLY AT SAT-504-1, 2 TYPE)
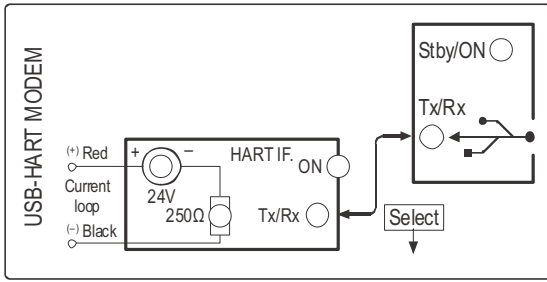
After turning on, the modem starts working in basic mode (marked with an asterisk (*)). Then, in addition to the states described in 4.1, the following modes can be set by pressing the "Select" button for a short time (<1 sec).

Number of short (<1 sec) button press	LED		
	Name	State	
1st	250 Ω	yellow	HART® resistor ON
	24 V	not lit	Power supply OFF
2nd	250 Ω	yellow	HART resistor ON
	24 V	yellow	Power supply ON
3rd	250 Ω	* not lit	HART® resistor OFF
	24 V	* not lit	Power supply OFF
4th	Same as in 1st row above		

Turning on/off the modem by pressing the "Select" button for a long time (>5 sec).

Number of long (>5 sec) button press	LED		
	Name	State	
1st	Every LED	not lit	Modem OFF
2nd	LEDs according type	Basic state according type	Modem ON
3rd	Same as in 1st row above		

4.3 BLUETOOTH® CONNECTION, ADDITIONAL FUNCTION

(ONLY AT SAT-504-2 TYPE)
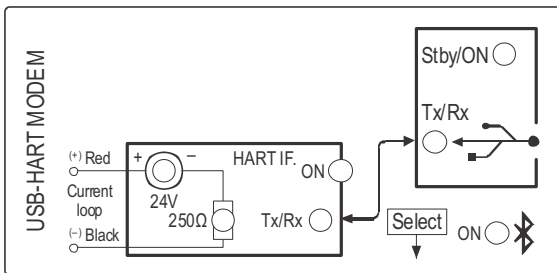
4.3.1 POWER SUPPLY FROM USB POWER BANK

The clips should be positioned in accordance with polarity. Connecting the USB cable to an external 5V power bank, results entering to the basic state marked with *. The following indications can be displayed during operation.

Interface	LED		
	Name	State	
Bluetooth®	✳ ON	* flashing blue	Waiting to Bluetooth® connect
		blue	Bluetooth® connection established

4.3.2 POWER SUPPLY FROM MOBILE DEVICE USB OTG PORT

The following modes can be set by a medium (2 – 5 sec) press of the "Select" button.

Number of medium (2 – 5 sec) button press	LED		
	Name	State	
1st	✳ ON	* not lit	turned off (inactive mode)
	USB Stby/ON	* green	turned on (active mode)
2nd	✳ ON	flashing blue	Waiting for Bluetooth® connect
	USB Stby/ON	not lit	turned off (inactive mode)
3rd	Same as in 1st row above		

5. MAINTENANCE AND REPAIR

The unit does not require regular maintenance. All repairs will be carried out on the manufacturer's premises.

6. STORAGE CONDITIONS

Ambient temperature: -25 °C … +55 °C (+77 °F … +131 °F)
Relative humidity: maximum 98%.

7. WARRANTY

NIVELCO provides warranty of 3 (three) years in compliance with details described in the Warranty Card.