

UNICOMM

UNIVERSAL COMMUNICATION INTERFACE MODULES
HART® MODEMS

5 YEARS WARRANTY



NIVELCO

SYSTEM COMPONENTS

MAIN FEATURES

- Transferring measurement data to PC
- Connecting field transmitter to the PC via USB, RS485 or Bluetooth®
- 24 V current loop power supply (SAT-504)
- Switchable HART® terminal resistor (SAT-504)
- DIN rail mountable version
- No need for power supply
- Galvanic isolation
- IP20 protection

GENERAL DESCRIPTION

The UNICOMM interface modules are able to establish communication line between HART®-capable field devices and process controller computer. The communication can be done via USB or RS485 line, and also via Bluetooth®. The UNICOMM HART® modems are applicable not only for NIVELCO transmitters, but for all HART®-capable transmitters which use standard HART® communication. The device is galvanically isolated from both (USB and HART®) sides, when it is used as a HART®-USB modem, connected into the USB input of a PC, the modem does not need external power supply. The UNICOMM SAK-305 modules can be connected into a suitable device with RS485 interface, used as a HART®-RS485 modem. The communication protocol is HART® on the RS485 line. In this case the device needs external power supply. The Ex versions can be connected to transmitters placed in hazardous areas.

HART® COMMUNICATIONS

The addressing system of the HART® communication can handle maximum 15 devices, so maximum 15 transmitters can be connected into one HART® loop. If there are multiple transmitters in one HART® loop, the devices need to have different HART® „Short address“. In one HART® loop there cannot be two units with the same „Short address“. Using HART® communication the creation of special measurement loops is very simple, allowing to monitor multiple physical parameters. Level, temperature, pressure, or even flow values of one measurement loop can be transmitted easily with the UNICOMM communication modules.

NIVISION – PROCESS VISUALIZATION SOFTWARE

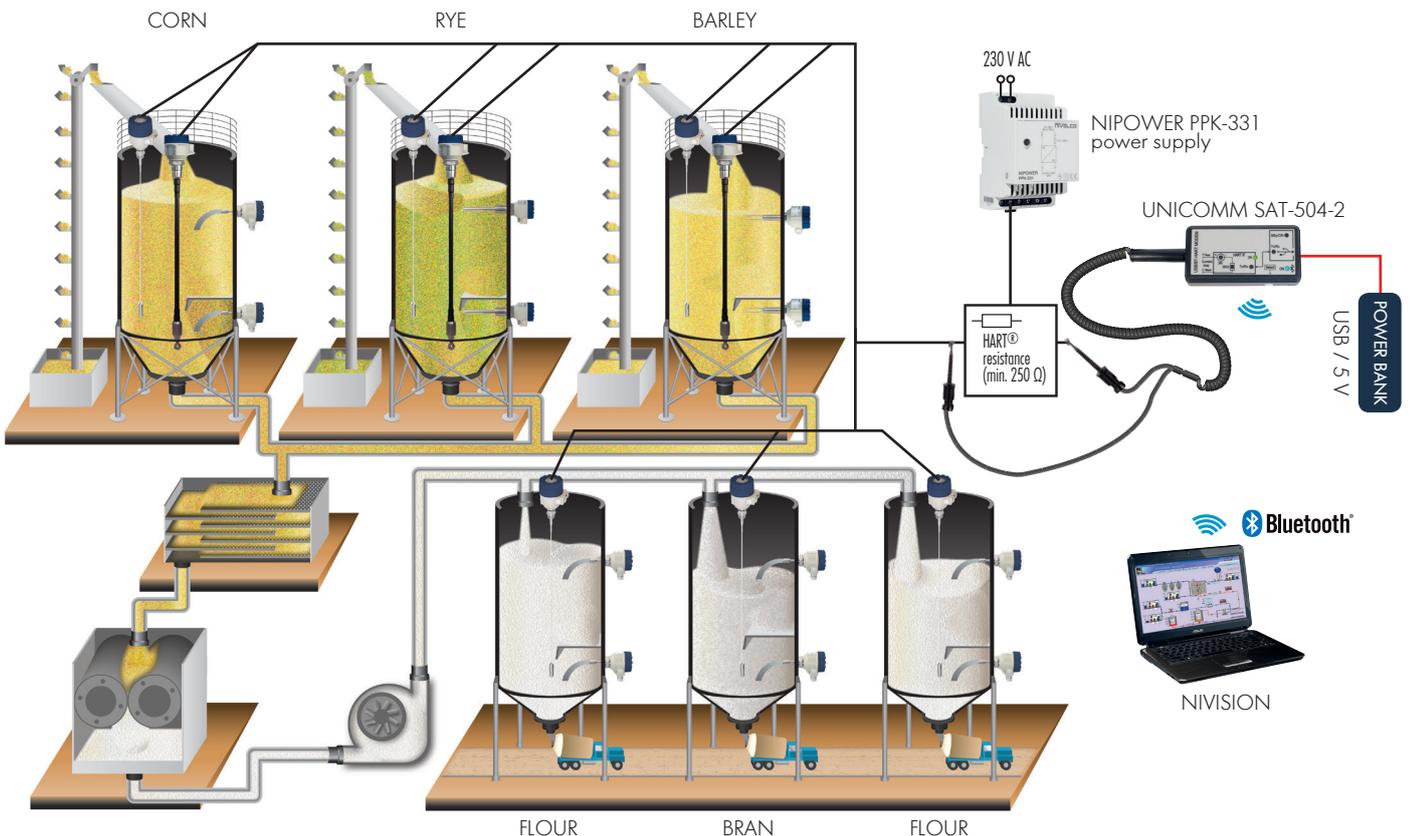
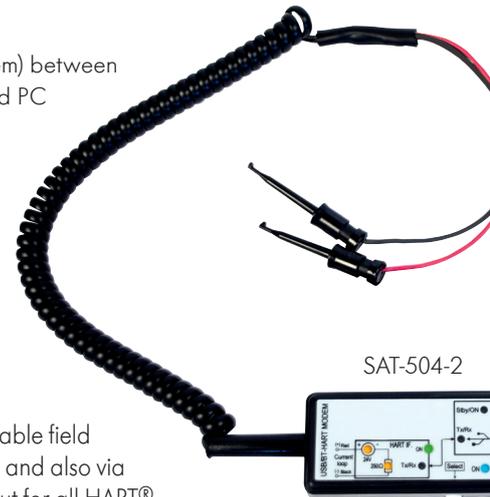
Using the UNICOMM modems the HART®-capable field transmitters can be connected to NIVELCO's NIVISION process visualization software to indicate parameters of a process control system graphically on a process controller PC. The process, the measured values or any further processed values can be visualized also in tabular form with NIVISION. The NIVISION performs data logging, trend monitoring, database handling and various other tasks in addition to a basic visualization. The software is sold as a custom-tailored product.

APPLICATIONS

- Communication interface (modem) between HART®-capable transmitters and PC
- Minimal system configuration: Windows 7, USB port

CERTIFICATIONS

- ATEX [Ex ia] (SAK-305)



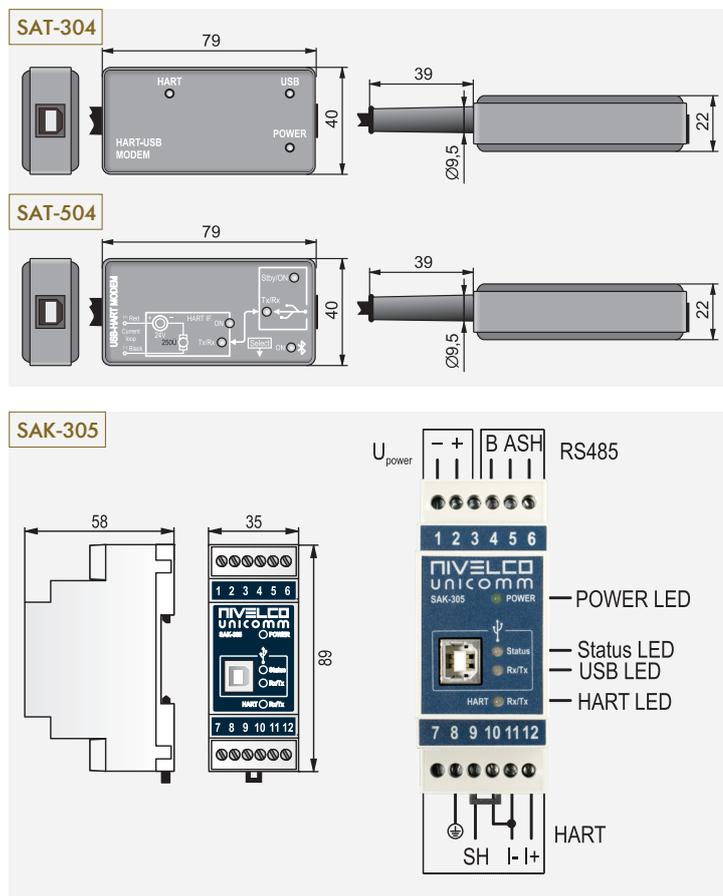
TECHNICAL DATA

Type	SAT-304	SAT-504	SAK-305
Input	HART®		
Output	USB	USB, Bluetooth®	USB / RS485 (HART® over RS485)
Power supply	Supplied from USB	Supplied from USB or from power bank	Supplied from USB / 24 V DC (10 – 30 V) nominal voltage
Current consumption	<100 mA	<150 mA	USB: current consumption <60 mA 24 V DC: power consumption <1.5 W
Current loop power supply	–	24 V, max. 20 mA, switchable	–
Ambient temperature	-25 °C ... +55 °C (-13 °F ... +131 °F)		-20 °C ... +70 °C (-4 °F ... +158 °F)
Housing material	Polystyrene		PPO
Electrical connection	PC	Connection: USB 1.1 "B" socket	USB 1.1 "B" socket / RS485 Terminal
		Cable: USB "A – B" 1.8 m (5.9 ft)	USB "A – B" 1.8 m (5.9 ft) / RS485 twisted shielded pair max. 1000 m (3280.8 ft)
Electrical connection	HART® line	Connection: Test clip	Screw terminal
		Cable: spiral 0.6 m (1.96 ft) (1.1 m [3.6 ft])	Twisted shielded pair with 0.5 – 2.5 mm ² (AWG20 – AWG14) wire cross section, Resistance max. 75 Ω, Capacitance max. 200 nF
Mechanical connection	–		EN 60715 rail mountable
Ingress protection	IP20		
Electrical protection	Class III	Class III 1 kV galvanic isolation	Class III
Ex marking	–		Ⓜ II (1) G [Ex ia Ga] IIC
Mass	0.1 kg (0.25 lb)		

SPECIAL DATA FOR Ex CERTIFIED MODELS

Type	UNICOMM SAK-305-6 Ex
Ex marking	Ⓜ II (1) G [Ex ia Ga] IIC
Intrinsically safe data	$U_i = 30 \text{ V}$, $I_i = 100 \text{ mA}$, $L_i = 200 \text{ uH}$, $C_i = 2 \text{ nF}$
U_m	253 V AC

DIMENSIONS



OPERATION

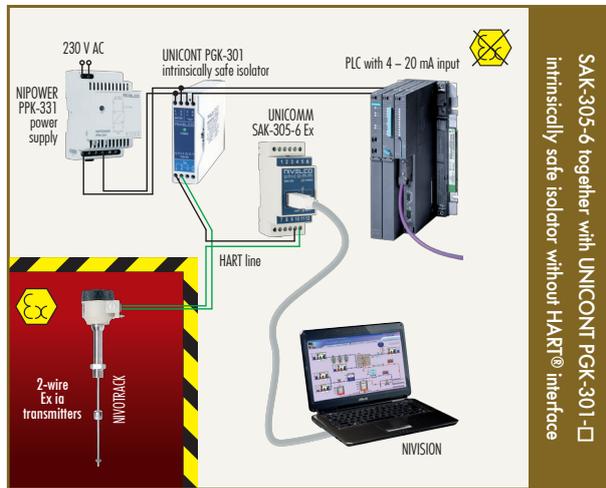
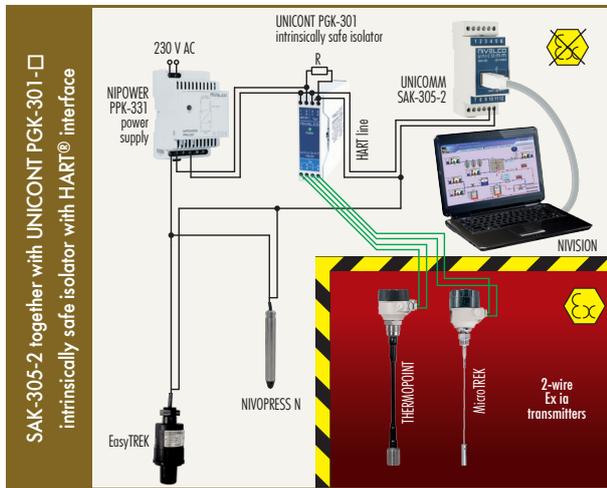
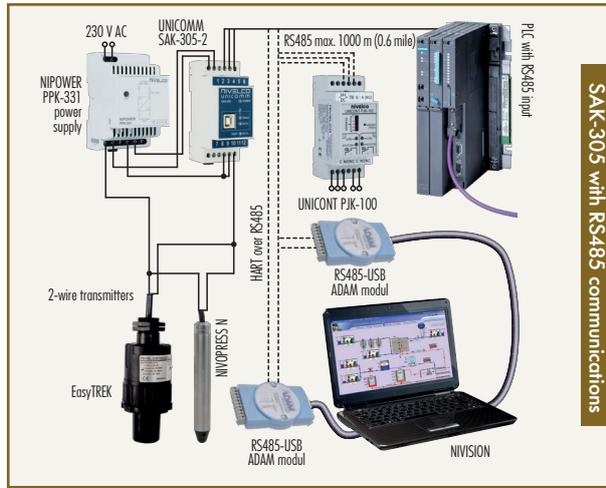
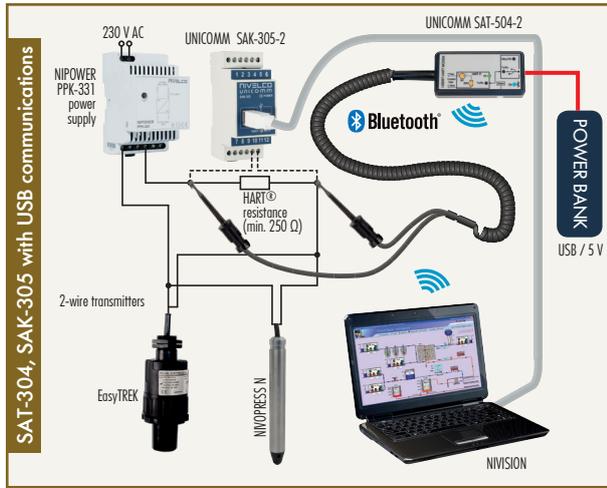
The UNICOMM SAT-304 HART® modem requires a 250 Ω terminal resistance to be connected into the HART® loop. The UNICOMM SAT-504 modem establishes communication between HART®-capable field devices and a process controller computer. Depending on the design the following versions can be ordered:

- 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 250 Ω 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.

The UNICOMM SAK-305 module is applicable as a HART®-USB modem, or as a HART®-RS485 modem. Without USB connection, it operates as a HART®-RS485 modem. If it is connected with the USB connector and got power supply from USB it switches automatically into HART®-USB modem mode. If USB cable is removed, it returns into HART-RS485 modem mode. The POWER LED indicates the existence of the external power supply. If external power supply is connected, POWER LED is green in both modem modes.

APPLICATION EXAMPLES



ORDER CODES (NOT ALL COMBINATIONS AVAILABLE)

UNICOMM HART® modems

UNICOMM SAT-304-0

- HART®-USB communication modem for transmitters with HART® output USB 1.1 "B" connector and test clip

UNICOMM SAT-504-□

Communications	Code
HART®-USB modem	0
HART®-USB modem + power supply for transmitter	1
HART®-USB modem + power supply for transmitter + Bluetooth®	2

- HART®-USB/Bluetooth® communication modem for transmitters with HART® output USB 1.1 "B" connector and test clip

UNICOMM SAK-305-□

Communications	Code
HART®-USB / RS485 modem	2
HART®-USB / RS485 modem / Ex ia	6

- DIN rail mountable HART®-USB communication modem for transmitters with HART® output
- Connection to PC: USB/RS485 interface

ACCESSORIES

- UNICONT PGK-301-□ Ex
- NIPOWER PPK-331

NIVELCO reserves the right to change technical data without notice! Specifications in metric & US units!

