

The **MultiCONT** unit is a universal interface between NIVELCO's HART®-capable intelligent level transmitters and other elements of the process control systems like the PCs, PLCs, displays and actuators. Besides its role as an interface, the **MultiCONT** can power the 2-wire transmitters while handling of complex control tasks. The **MultiCONT** supports communication with a maximum of 15 standard HART®-capable 2 and 4-wire NIVELCO transmitters or four Ex ia HART®-capable 2-wire NIVELCO transmitters. If a **MultiCONT** is used with NIVELCO's **MicroTREK** or **PiloTREK** microwave level transmitters, the maximum number of transmitters in a loop cannot exceed 6 for normal transmitters and 2 for Ex-certified transmitters. If the number of transmitters in a system exceeds the number of transmitters a **MultiCONT** can handle, other **MultiCONT** units can be added to the system via RS485. The transmitters can be programmed remotely, and their parameters and the measured data can also be downloaded using a **MultiCONT**. Outputs, such as the 4...20 mA, relays, and digital outputs can be controlled using measured and calculated values.

The internal current outputs (*up to 2*) of the **MultiCONT** can transmit and even modify the information supplied by the transmitters. The built-in relays (*up to 5*) can be freely programmed and assigned to the transmitters. The large LCD or OLED dot-matrix display handles a wide range of informative display functions. One notable feature is the "Echo-Map" visualization when communicating with NIVELCO's **EchoTREK** and **EasyTREK** ultrasonic transmitters.

**FEATURES**

- Provides a flexible solution to commissioning process control systems containing HART®-based intelligent (*level, temperature or pressure*) transmitters
- Galvanically isolated 4...20 mA outputs for transmitters
- Depending on the type of the transmitters, 1 to 15 (*standard*) or 1 to 4 (*Ex ia*) channels
- Highly informative large LCD or OLED display
- Ex ia variant
- Simple 6-button programming
- Trend logging in internal memory or SD memory card
- USB connector for downloading data from internal FLASH memory
- Universal interface module expansion via RS485
- "Echo-Map" for **EchoTREK** and **EasyTREK** ultrasonic transmitters



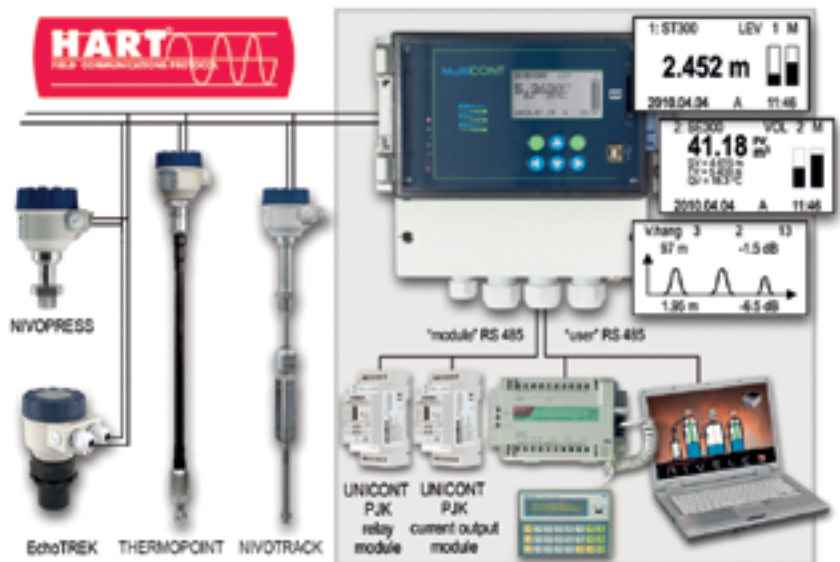
**APPLICATIONS**

- Remote programming, displaying of transmitters data
- Power supply for 2-wire transmitters
- Process controller for HART®-capable transmitters
- Displaying measured data in numerical and bargraph mode
- Data transmission via RS485 (*via HART® or Modbus protocol*)
- Simple data-logging function
- Trend or flow-measurement logging

**CERTIFICATES**

- ATEX ([Ex ia G])
- ATEX ([Ex ia D])
- IEC Ex ([Ex ia G])
- INMETRO ([Ex ia G])
- UKCA Ex ([Ex ia G])

**A TYPICAL NETWORK CONTROLLED BY A MultiCONT**



TECHNICAL DATA

MultiCONT P□□-2□□-□	
Power supply / power consumption / max. supply voltage	85...255 V AC 50...60 Hz / 12 VA / 255 V <sub>eff</sub> ; 11.4...28 V AC 50...60 Hz / 12 VA / 28 V <sub>eff</sub> ; 11.4...40 V DC / 11 W / 40 V DC
Power supply voltage for transmitters	30 V DC / 60 mA (Ex variant: 25 V DC / 22 mA)
Graphic display	128 × 64 dot-matrix (LCD / OLED) <sup>(1)</sup>
Relay	Max. 5, SPDT 250 V AC, AC1, 5 A
Analog output	Max. 2, galvanically isolated 4...20 mA, max. load: 500 Ω, with overvoltage protection
Number of powered transmitters	Max. 15× standard, or max. 4× Ex
RS485 interface	"user" Galvanically isolated, HART® and Modbus protocol "module" Galvanically isolated, HART® protocol
Logger unit	Capacity: flash = 65 000 entries; SD card = depending on card size (max. 32 GB)
Housing material	Polycarbonate (PC)
Mounting	Wall-mountable
Ambient temperature	-20...+50 °C
Ingress protection	IP65
Electrical protection	Class I / III
Weight	900 g

Ex information	
Ex marking	ATEX II (1) G [Ex ia Ga] IIB, IEC Ex <sup>(1)</sup> II (1) D [Ex ia Da] III C [Ex ia Ga] IIB
Intrinsic safety data	U <sub>o</sub> = 30 V; I <sub>o</sub> = 140 mA; P <sub>o</sub> = 1 W; L <sub>o</sub> = 4 mH; C <sub>o</sub> = 200 nF; U <sub>m</sub> = 253 V
Power supply voltage for transmitters	25 V DC / 22 mA
Ambient temperature	-20...+50 °C

<sup>(1)</sup> In the case of OLED, the lifetime of the display depends on the way the user applies the screen saver function and hence it is not covered by the warranty.

SPECIAL FEATURES

Trend logging (optional)

MultiCONT versions with an on-board logger can store the measured values and three additional parameters of the transmitters to the system into the internal flash memory or an SD memory card. There are two logging modes, time-controlled and event-controlled. Monitoring the average, minimum, and maximum value or highest flow values can be used only with NIVELCO transmitters in flow-metering mode. The content of the internal memory is retrievable through USB, within the capacity of 65 000 entries. The unit can handle SD cards up to 32 GB capacity.

NIVISION (optional) Process Visualization Software

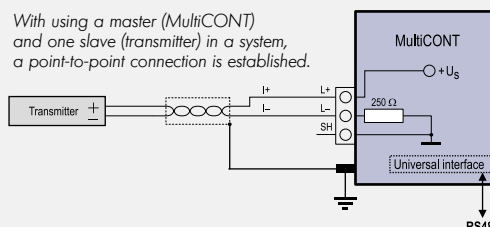
RS485-capable versions of the MultiCONT can communicate with NIVELCO's NIVISION process visualization software to graphically indicate parameters of process control systems on a PC. The process, the measured values, or any calculated values can be visualized in tables with NIVISION. NIVISION performs data logging, trend monitoring, database handling, and various other tasks in addition to basic visualization. The software is sold as a custom-tailored product.

OUTPUT TYPES

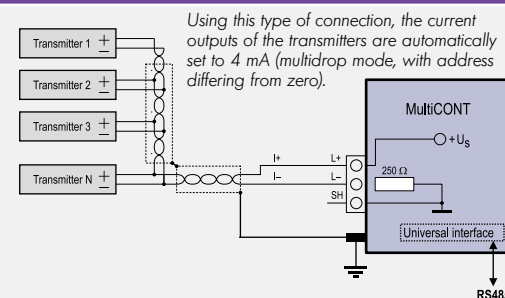
Outputs	Display only (without relay)	Number of relays				
		1	2	3	4	5
Only display (w. o. RS485 or current output)	■	■	■	■	■	■
RS485 Interface	■	■	■	■	■	■
1 × 4...20 mA output	■	■	■	■	■	■
2 × 4...20 mA output	■	■	■	■	■	■
RS485 + 1 × 4...20 mA analog output	■	■	■	■	■	■
RS485 + 2 × 4...20 mA analog outputs	■	■	■	■	■	■

COMMUNICATION BETWEEN MultiCONT & TRANSMITTERS

Point-To-Point connection



Multi-point connection (Multidrop). Multiple slaves connected in parallel



SYSTEM SET-UP

There is a Master-Slave relation between MultiCONT and the connected transmitters. Through the MultiCONT the transmitters can be programmed or their parameters checked and modified. Reading the process values of the transmitters is easy to do by the MultiCONT. In case of using MultiCONT with multiple transmitters, the units should be addressed with numbers (Short address) differing from zero. Using two transmitters with the same Short address is not possible. MultiCONT can handle a number of max. 15 transmitters with HART® communication. When using 2-wire transmitters, the current output of the transmitters will be limited to 4 mA, because of the capacity of the MultiCONT's power supply, which is rated at 60 mA with standard transmitters.

**MultiCONT P-200**

**5 years**

Wall-mountable universal multichannel process controller unit to remote program and read all NIVELCO transmitters featuring HART® communication, expandable with relay and current output modules

**Type**

P ■ ■ - 2 ■ ■ - ■

<b>E</b>	Standard, non expandable
<b>R</b>	Expandable (with universal interface module)

**Version / Display**

P ■ ■ - 2 ■ ■ - ■

<b>W</b>	IP65 Enclosure / LCD
<b>A</b>	IP20 Enclosure / logger / LCD
<b>C</b>	IP65 Enclosure, transparent cover / LCD
<b>D</b>	IP65 Enclosure, transparent cover, logger / LCD
<b>L</b>	IP65 Enclosure / OLED
<b>K</b>	IP65 Enclosure, transparent cover / OLED
<b>N</b>	IP65 Enclosure, transparent cover, logger / OLED

**Input**

P ■ ■ - 2 ■ ■ - ■

<b>1</b>	Single channel for one unit
<b>2</b>	2 channels for up to 2 units
<b>4</b>	4 channels for up to 4 units
<b>8</b>	8 channels for up to 8 units
<b>M</b>	15 channels for up to 15 units

**Output\*\***

P ■ ■ - 2 ■ ■ - ■

<b>0</b>	Display
<b>1</b>	Display and 1 relay
<b>2</b>	Display and 2 relays
<b>3</b>	Display and 3 relays
<b>4</b>	Display and 4 relays
<b>5</b>	Display and 1 relay and 1 current output
<b>6</b>	Display and 2 relays and 1 current output
<b>7</b>	Display and 3 relays and 1 current output
<b>8</b>	Display and 4 relays and 1 current output
<b>9</b>	Display and 4 relays and 2 current outputs
<b>A</b>	Display and RS485
<b>B</b>	Display, RS485 and 1 current output
<b>C</b>	Display, RS485, 1 current output and 2 relays
<b>D</b>	Display and 5 relays
<b>E</b>	Display, RS485 and 5 relays
<b>R</b>	Display, RS485, 1 current output and 1 relay
<b>W</b>	Display, RS485, 2 current outputs and 2 relays
<b>Y</b>	Display, RS485, 2 current output and 4 relays

\*\* Other output configurations on request

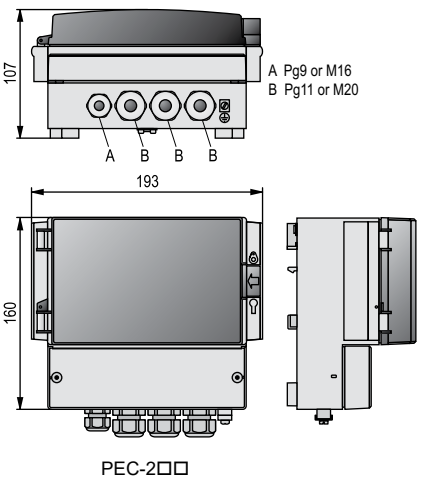
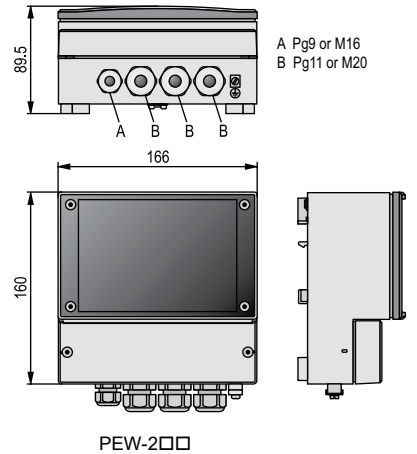
**Power supply / Certificates**

P ■ ■ - 2 ■ ■ - ■

<b>1</b>	85...255 V AC
<b>2</b>	11.4...28 V AC and 11.4...40 V DC
<b>5</b>	85...255 V AC / [Ex ia G/D] (max. 4 channels)
<b>6</b>	11.4...28 V AC and 11.4...40 V DC / [Ex ia G/D] (max.4 channels)

Check relevant page for the prices of UNICONT PJK

Need of IEC Ex is to be requested in the text part of the order



The UNICONT PJK series is a universal interface module that can be controlled via RS485 and (depending on the type) provides relay(s) and/or 4...20 mA current output(s). The DIP switch on the front panel of the module is for setting the address. The Universal Interface Modules can be widely-used as a part of the following applications:

- Expanding MultiCONT multichannel process controller with relays or current outputs
- Peripheral unit of PLC process control systems
- Peripheral unit of PC automated process control systems

The UNICONT PJK-100 universal interface modules provide an essential solution if the number of relays or current outputs of the MultiCONT is not enough in a system. The device can also be used as a peripheral unit for PLC or PC-controlled process control systems communicating via Modbus RTU protocol. The number of relays in the UNICONT PJK-100 extension modules and the MultiCONT together must not exceed 64, and the number of analog outputs (4...20 mA) must not exceed 16. There is a special module with both relay and current output in the variety of the UNICONT PJK-100 series. The maximum number of these modules is 32. The programming of the UNICONT PJK modules can be done via HART® or Modbus protocol with the help of the central unit of the communication network, which can be a process control computer or a MultiCONT device. The switches in the front panel of the module are only for setting the address.



PJK-102

**FEATURES**

- RS485 interface
- Modbus or HART® communication protocol
- Output:
  - 2 current
  - 2 relay
  - Current and relay (for mixed systems)
- DIN-rail-mountable

**APPLICATIONS**

- Universal Interface Module
  - Expansion module for MultiCONT
  - For PLC process control systems
  - For automated process control systems operating on RS485

**TECHNICAL DATA**

PJK-1□□-4	
Supply voltage	24 V DC ±10%
Power consumption	10 mA + N <sub>relay</sub> × 11 mA + N <sub>current generator</sub> × 25 mA) ±10%
Ambient temperature	-20...+50 °C
Electrical connection	Max. 2.5 mm <sup>2</sup> twisted, or max. 4 mm <sup>2</sup> solid wire
Electrical protection	Class III
Mechanical connection	EN 60715-35 rail
Ingress protection	IP20
Weight	110 g

		Type	PJK-102-4	PJK-111-4	PJK-110-4	PJK-120-4
<b>Output units</b>			2 relays	1 relay + 1 current output	1 current output	2 current outputs
<b>Relay</b>	Relay		SPDT		-	
	Rating		250 V AC, 8 A, AC1		-	
	Insulation voltage		2500 V 50 Hz		-	
	Electrical / mechanical lifespan		10 <sup>5</sup> / 2 × 10 <sup>6</sup> switchings		-	
	Impulse width in pulse mode		0.1...25.5 s		-	
	Electrical protection		Class II		-	
<b>Current generator</b>	Linear range		-		3.601...21.999 mA	
	Error indication		-		≤ 3.6 mA / ≥ 22 mA	
	Resolution		-		14 bit	
	Accuracy		-		40 µA	
	Temperature dependence		-		Max. 15 µA / 10 °C	

SYSTEM COMPONENTS

UNICONT PKK-312 series area 4...20 mA current-controlled limit switches featuring galvanic isolation, also available as intrinsically safe units. The input 4...20 mA signals can be transferred from passive or active outputs of 2 or 4-wire transmitters. The value of the input signal will be compared in the unit of the set (*taught*) value, and the state of the galvanically isolated relay changes with the comparison mode programming.

The double throw output relay can be programmed for the following functions:

- Limit switch (*high or low fail-safe*)
- ON-OFF control with selectable switching difference
- Monitoring of discontinuity or short-circuit of the cable
- Window comparison operation mode with energized or de-energized relay state

The UNICONT PKK-312-8Ex is a special version designed to operate with NIVELCO's Ex rated, DC-powered 2-wire NIVOSWITCH vibrating fork level switches as an intrinsically safe power supply and amplifier unit. Without any programming, the galvanically isolated limit switch can produce relay-switching signals based on monitoring the vibrating fork's output current changes between the freely vibrating and the immersed states.



PKK-312

**FEATURES**

- 4...20 mA input
- Relay output
- Rail-mountable
- Intrinsic safety Associated Apparatus

**APPLICATIONS**

- Galvanically isolated limit switch
- Power supply for transmitters
- Cable state monitoring

**TECHNICAL DATA**

PKK-312-□		
Nominal input current range	1...22 mA	
Accuracy of switching level / Threshold level	±0.1 mA	
Discontinuity threshold / Lower value fault current	3.7 mA	
Short circuit threshold / Upper value fault current	22 mA	
Input impedance	10 Ω	
Input overload capability	Max. 100 mA (permanent)	
Switching delay	0.1 s; 1 s; 2 s; 5 s selectable	
Relay	Output	1× SPDT
	Rating	250 V AC, 8 A, AC1
	Insulation strength	4000 V 50 Hz
	Electrical / Mechanical life time	10 <sup>5</sup> / 2 × 10 <sup>6</sup> switching
Electrical connection	Max. 2.5 mm <sup>2</sup> twisted, or max 4 mm <sup>2</sup> solid wire	
Mechanical connection	EN 60715-35 rail	
Ingress protection	IP20	
Weight	~210 g	

**CERTIFICATES**

- ATEX ([Ex ia G/D])
- UKCA Ex ([Ex ia G/D])

	Standard version				Ex version			
	PKK-312-1	PKK-312-2	PKK-312-3	PKK-312-4	PKK-312-5Ex	PKK-312-6Ex	PKK-312-7Ex	PKK-312-8Ex
Power supply (U)	230 V AC ±10% 50...60 Hz	110 V AC ±10% 50...60 Hz	24 V AC ±10% 50...60 Hz	24 V AC ±10%, 50...60 Hz, 24 V DC ±15%	230 V AC ±10% 50...60 Hz	110 V AC ±10% 50...60 Hz	24 V AC ±10%, 50...60 Hz, 24 V DC ±15%	
Power consumption	< 2.7 VA			< 2.5 W	< 2.5 VA		< 2.5 VA / < 2.5 W	
Switching levels	2 values in the range of 1...22 mA				2 values in the range of 1...22 mA			10.5 mA; 12.5 mA
Ex marking	-				⊕ II (1) G [Ex ia Ga] IIB ⊕ II (1) D [Ex ia Da] IIIC		⊕ II (1) G [Ex ia Ga] IIC ⊕ II (1) D [Ex ia Da] IIIC	
Intrinsic safety data	-				U <sub>0</sub> = 28.4 V; I <sub>0</sub> = 140 mA; P <sub>0</sub> = 1 W; L <sub>0</sub> = 6 mH; C <sub>0</sub> = 50 nF		U <sub>0</sub> = 28.4 V; I <sub>0</sub> = 80 mA; P <sub>0</sub> = 0.6 W L <sub>0</sub> = 4 mH; C <sub>0</sub> = 50 nF	
Output load capability	U <sub>0</sub> = 30 V; I <sub>MAX</sub> = 70 mA; U <sub>OUT min</sub> = 16 V			U <sub>0</sub> = 24 V; I <sub>MAX</sub> = 80 mA; U <sub>OUT min</sub> = 23 V	I <sub>T</sub> = 22 mA; U <sub>OUT</sub> ≈ 12 V		I <sub>T</sub> = 22 mA; U <sub>OUT</sub> ≈ 15 V	-
Electrical protection	Class II			Class III	Class II		Class III	
Ambient temperature	-25...+55 °C							

**UNICONT PJK-100**

**5 years**

DIN-rail-mountable universal interface module that can be controlled via RS485 line and provides relay(s) and/or 4...20 mA current output(s)

**Type**

P J K - 1 0 2 - 4	With 2x SPDT relay output
P J K - 1 1 0 - 4	With 1x 4...20 mA current output
P J K - 1 1 1 - 4	With 1x 4...20 mA current output and 1x SPDT relay output
P J K - 1 2 0 - 4	With 2x 4...20 mA current output

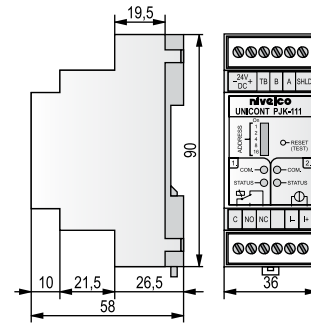
**UNICONT PKK-300**

**5 years**

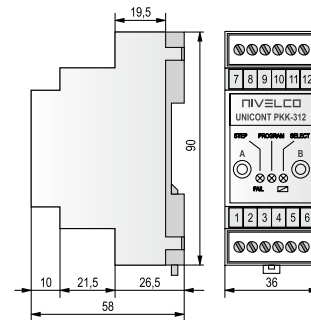
DIN-rail-mountable programmable current controlled remote switching unit featuring 1...22 mA input current and powering capability for transmitters

**Type**

P K K - 3 1 2 - 1	230 V AC
P K K - 3 1 2 - 2	110 V AC
P K K - 3 1 2 - 3	24 V AC
P K K - 3 1 2 - 4	24 V AC/DC
P K K - 3 1 2 - 5	230 V AC / [Ex ia G/D]
P K K - 3 1 2 - 6	110 V AC / [Ex ia G/D]
P K K - 3 1 2 - 7	24 V AC/DC / [Ex ia G/D]
P K K - 3 1 2 - 8	24 V DC / [Ex ia G/D] (for Ex ia G vibrating forks)



PJK-111



PKK-312

**NIV24**

PKK-312-1

PKK-312-8 Ex