

## NT 10

The NT 10 is powered by the 4-20mA current loop. The 4-digit display shows the level on a 7 segment display.

### Operation

The NT 10 is configured using 3 buttons.



- Programme button P: The programme button P accesses the programme mode and executes the various functions in programme mode.
- Arrow DOWN button (minus button): The arrow DOWN button is used for adjustment of the parameters.
- Arrow UP button (plus button): The arrow UP button is used for adjustment of the parameters.

### Mounting

The user and display elements are on the front. The NT 10 is fixed in place with a plastic seal. The terminal block for electrical wiring is on the back.

The NT 10 is intended for mounting on the control panel. Before fitting, the panel cut-out must be prepared according to the dimensions and tolerances shown in the technical data.

Before inserting the instrument, the plastic seal must be removed carefully using a suitable screwdriver. Insert the instrument into the panel and then replace the plastic seal. Hold the NT 10 in place and press the seal gently with the screwdriver so that it is flush against the panel. To remove the NT 10 follow the above steps in the reverse order.

### Electrical connection

Electrical connection is on the rear of the NT 10. The NT 10 is powered via the current loop and therefore does not require its own power supply.

#### Wiring plan

clamp	Clamp label
1	I <sub>B</sub>
2	I <sub>OUT</sub>
3	I <sub>IN</sub>
4	I <sub>B</sub>

## NT 10

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### Technical data

<b>Dimensions</b>	NT 10-1	
	Housing	48mm x 24mm x 42mm incl. mounting
	Cut-out dimensions	45.0 <sup>+0.6</sup> mm x 22.2 <sup>+0.3</sup> mm
	NT 10-2	
	Housing	72mm x 36mm x 43mm incl. mounting
	Cut-out dimensions	68.0 <sup>+0.7</sup> mm x 22.0 <sup>+0.6</sup> mm
	Mounting	snap in sealing
	Housing material	PC/ABS blend. black colour, UL94V-0
	Protection class	Front IP54, connections IP00
	Elect. connection	Terminal board on the rear up to 1.5mm <sup>2</sup>
<b>Input</b>	Measurement range	4-20 mA
	Input resistance	Ri at 20 mA < 280 Ohm
<b>Accuracy</b>	Resolution	-999 to +9999 Digits
	Measurement error	+/- 0.2% of measurement area, +/- 1 digit
	Temp. coeff.	120 ppm/K
<b>Display</b>	Display	7 Segment LED, 10mm (Housing 48mm x 24mm) or 14mm (Housing 72mm x 36mm), red
	Overflow / Underflow	4 decimal places = display 9999 digits cross beam above / cross beam below
	Display time	0.5 ... 10 s adjustable
<b>Memory</b>	parameter saving	EEPROM
	Data preservation	> 100 years
<b>Operating conditions</b>	Operating temperature	0 to +60°C
	Storage temperature	-20°C to +80°C
<b>EMC</b>	EN61326-1 (1997) A1, A2	
<b>Electrical safety</b>	EN61010-1 (1998) A1, A2	

### Trouble shooting

1. The display is not working.
  - Check the current loop.
  - If it is OK, then the fault can only be repaired by the supplier ( faulty meter)
  
2. "HELP" is shown on the display
  - The NT 10 has a fault in the configuration memory. It must be reset to the factory settings and then newly configured.
  - Reset:
    1. Turn off the current loop power supply.
    2. Press P button and hold down.
    3. Switch on the current loop (minimum of 10mA) and press P button for approximately 2 s.

## NT 20

The NT 20 is used for the evaluation of the normal signals 0..10 V, 0..20 mA or 4..20 mA of the level sensors.  
 The 4 digit display shows the level on a 7 segment display

### Operation

The NT 20 is configured using 3 buttons.



- Programme button P: The programme button P accesses the programme mode and executes the various functions in programme mode.
- Arrow DOWN button (minus button): The arrow DOWN button is used for adjustment of the parameters.
- Arrow UP button (plus button): The arrow UP button is used for adjustment of the parameters. functions in programme mode.

### Mounting

The user and display elements are on the front. The NT 20 is fixed in place with clamp screws. The terminal block for electrical wiring is on the back.

The NT 20 is intended for mounting on the control panel. Before fitting, the panel cut-out must be prepared according to the dimensions and tolerances shown in the technical data.

Before inserting the instrument, the mounting screws must be unclamped. Insert the instrument into the panel and then replace the screws. Hold the NT 20 in place and screw in by hand so that it is flush against the panel. To remove the NT 20 follow the above steps in the reverse order.

### Electrical connection

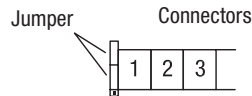
Electrical connection is on the rear of the NT 20. A separate supply voltage is required and it not possible to be powered via a current loop.

#### Wiring plan

Clamp	Function	Clamp	Function
1	Input signal 10V	11	Relay S1 NO
2	Input signal 0/4-20mA	12	Relay S1 NC
3	Input signal 0V	13	Relay S1 COM
4-7	Not in use	14	Supply voltage -
8	Relay S2 NO	15	Supply voltage +
9	Relay S2 NC		

## NT 20

Variation 2: Programming is locked.  
 The programming mode is blocked.



### Technical data

<b>Dimensions</b>	Housing Cut-out dimensions Mounting Housing material Protection class Elect. connection	96mm x 24mm x 134mm incl. screw elements 92.0 <sup>+0.8</sup> mm x 22.0 <sup>+0.6</sup> mm snap in screw element PC/ABS blend, black colour, UL94V-0 Front IP40; connections IP00 Screw clamps on the back up to 2.5mm <sup>2</sup>
<b>Input</b>	Measurement range Input resistance	0-10 V, 0-20 mA, 4-20 mA Ri at 10 V =100kOhm, 20 mA =100 Ohm
<b>Output</b>	Relays S1 and S2 Change over contact Switching cycle	240 VAC / 0,25 A and 24 VDC / 1 A; resistive load 2 x 10 <sup>5</sup> at max. contact load; 10 x 10 <sup>6</sup> mechanical
<b>Accuracy</b>	Resolution Measurement error Temp. coeff.	-999 bis +9999 digits +/-0.2% of measurement area, +/- 1 digit 100 ppm/K
<b>Supply voltage</b>	Voltage  Power drain	NT 20-1: 230 VAC +/- 10% 50-60 Hz NT 20-2: 24 VDC +/- 10% max. 5 VA
<b>Display</b>	Display Overflow / Underflow Display time	7 Segment LED, 10mm high, red; 4 decimal places = display 9999 digit cross beam above / Cross beam below 0.1 ... 10 s adjustable
<b>Memory</b>	Parameter saving Data preservation	EEPROM > 30 years
<b>Operating conditions</b>	Operating temperature Storage temperature	0 to +60°C -20°C to +80°C
<b>EMC</b>	EN61326-1 (1997) A1, A2	
<b>Electrical safety</b>	EN61010-1 (1998) A1, A2	

### Trouble shooting

1. The display is not working.
  - Check the power.
  - If it is ok, then the fault can only be repaired by the supplier ( faulty meter)
  
2. "HELP" is shown on the display
  - The NT 20 has a fault in the configuration memory. It must be reset to the factory settings and then newly configured.
  - Reset:
    1. Turn off the power supply.
    2. Press P button and hold down.
    3. Switch on the power and press P button for approximately 2 s.

## NT 30

The NT 30 is used for the fill level display of counter impulse input signals such as the electromechanical SLS Lot. The 4-digit display shows the level on a 7 segment display

### Operation

The NT 30 is configured using 3 buttons.



Programme button P:

The programme button P accesses the programme mode and executes the various functions in programme mode.

Arrow DOWN button (Minus button):

The arrow DOWN button is used for adjustment of the parameters.

Arrow UP button (plus button):

The arrow UP button is used for adjustment of the parameters functions in programme mode.

### Mounting

The user and display elements are on the front. The NT 30 is fixed in place with clamp screws. The terminal block for electrical wiring is on the back.

The NT 30 is intended for mounting on the control panel. Before fitting, the panel cut-out must be prepared according to the dimensions and tolerances shown in the technical data.

Before inserting the instrument, the mounting screws must be unclamped. Insert the instrument into the panel and then replace the screws. Hold the NT 30 in place and screw in by hand so that it is flush against the panel.

To remove the NT 30 follow the above steps in the reverse order.

### Electrical connection

Electrical connection is on the rear of the NT 30. A separate supply voltage is required and it not possible to be powered via a current loop.

#### Wiring plan

Clamp	Function	Clamp	Function
1	Counter impulse (SLS 3000)	7	Switching point S2
2	Reset impulse (SLS 3000)	8	Switching point S2
3-4	Not in use	9	GND
5	Switching point S1	10	supply voltage -
6	Switching point S1	11	supply voltage +

## NT 30

### Technical data

<b>Dimensions</b>	Housing	72mm x 36mm x 103mm incl. screw elements
	Cut-out dimensions	68.0 <sup>+0.7</sup> mm x 33.0 <sup>+0.6</sup> mm
	Mounting	Snap in screw element
	Housing material	PC/ABS blend, black colour, UL94V-0
	Protection class	Front IP54; connections IP00
	Elect connections	Screw clamps on the back up to 2.5mm <sup>2</sup>
<b>Input</b>	Impulse rate	10.000 Impulse / s max 30 Impulses / s be active damping
	Input resistance	approx 5 kOhm
	Input voltage	+5...24V
	High- / Low level	>=3V / <2V
<b>Output</b>	Switching point	30 VAC / 0.4 A - 30 VDC / 0.4 A
	Photo Mosfet	Input / output strength 100 VAC
<b>Power</b>	Voltage	230 VAC +/- 10% 50-60 Hz 24 VDC +/- 10%
	Power drain	max. 5 VA
<b>Display</b>	Display	7 segment LED, 14mm high, red 4 digits = display 9999 digits
<b>Memory</b>	Parameter saving	EEPROM
	Data preservation	> 30 years
<b>Operating conditions</b>	Operating temperature	0 bis +60°C
	Storage temperature	-20°C bis +80°C
<b>EMC</b>	EN61326-1 (1997) A1, A2	
<b>Electrical safety</b>	EN61010-1 (1998) A1, A2	

### Trouble shooting

1. The display is not working.
  - Check the power.
  - If it is ok, then the fault can only be repaired by the supplier ( faulty meter)
2. "HELP" is shown on the display
  - The NT 30 has a fault in the configuration memory. It must be reset to the factory settings and then newly configured.
  - Reset:
    1. Turn off the power supply.
    2. Press P button and hold down.
    3. Switch on the power and press P button for approximately 2 s.
3. Overflow- / Underflow characteristics.
  - When there is an overflow of the counter (when counting up), then all digits are shown with a flashing 9  
This error can only be reset by resetting the counter.
  - When there is an underflow of the counter (when counting down), then all digits are shown with a flashing 0  
It is not possible to display negative values.

## NT 40

The NT 40 is a coil meter that is used to show the fill level in percentage. The input signal is 4-20 mA.



### Mounting

The user and display elements are on the front. The NT 40 is supplied with mounting elements in place with a plastic seal. The terminal block for electrical wiring is on the back.

The NT 40 is intended for mounting on the control panel. Before fitting, the panel cut-out must be prepared according to the dimensions and tolerances shown in the technical data.

### Electrical connection

Electrical connection is on the rear of the NT40. The NT40 does not require its own power supply.

#### Wiring plan

Clamp	Function
1	signal input +
2	signal input -

### Technische Daten

<b>Dimensions</b>	NT 40-1	
	Housing	72mm x 72mm x 38.5mm incl screw elements
	Cut-out dimensions	68.0 <sup>+0.3</sup> mm x 68.0 <sup>+0.3</sup> mm
	NT 40-2	
	Housing	96mm x 96mm x 60mm incl screw elements
	Cut-out dimensions	92.0 <sup>+0.3</sup> mm x 92.0 <sup>+0.3</sup> mm
	Mounting	Snap in clamp elements
	Housing material	PC/ABS bend, UL94V-1
	Protection class	Front IP52; connection IP00
	Elect connection	Terminal board on the rear
<b>Input</b>	Measurement range	4 - 20mA
	Internal resistance	10 Ohm
<b>Operating conditions</b>	Operating temperature	-25°C to +40°C
	<b>Accuracy</b>	Class 1.5
		1.5% of end value
<b>Display</b>	Scale	0 - 100 (corresponds to 4-20 mA), needle deflection 90°