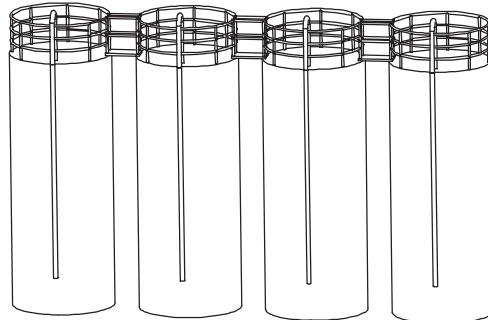


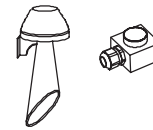
## Overview NT 4500 / NT 4600

### Standardized Level monitoring system up to 30 silos

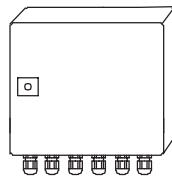
Silo plant with continuous level measurement technology and full detectors



Alarm "Silo full"



Modbus converter

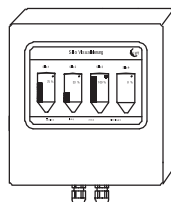


4-20 mA,  
full detector signal

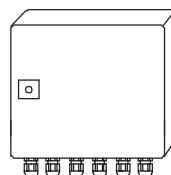
Modbus RTU

alternative\*

NT 4600  
Visualisation  
with  
touch panel



NT 4500  
Webserver



Ethernet



Remote data enquiry

Visualisation with PC via standard internet browser

\* Mixed use of NT 4500 and NT 4600 is not possible

## Overview NT 4500 / NT 4600

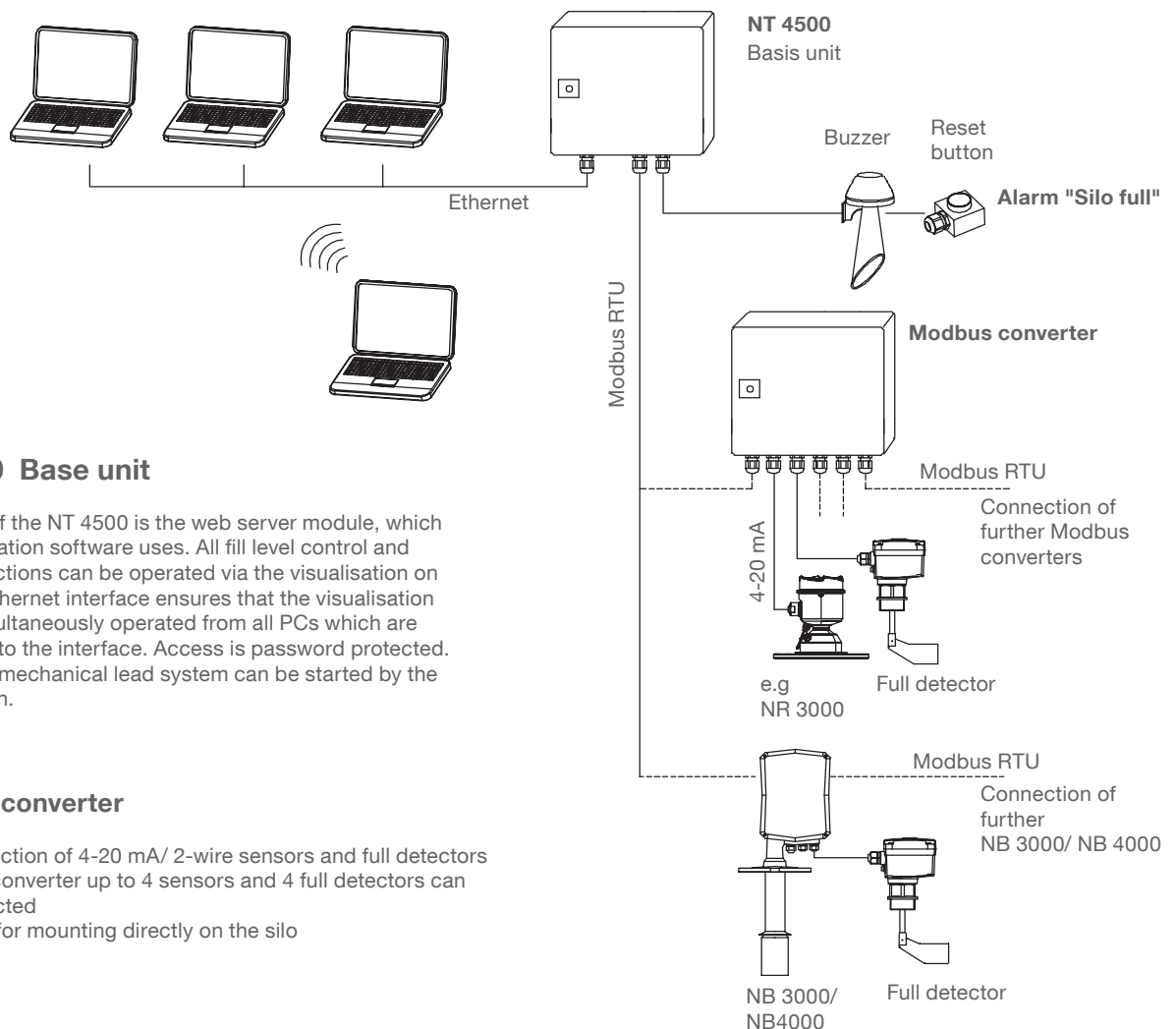
### Technical data

Dimensions	NT 4500/ NT 4600, Modbus converter: 300 x 300 x 155 mm (W x H x D)	
Mounting	NT 4500/ NT 4600, Modbus converter: wall mounting	
Material	NT 4500/ NT 4600, Modbus converter: steel plate	
Ingress protection	NT 4500/ NT 4600, Modbus converter: IP65	
Ambient temperature	NT 4500:	0 .. +55°C
	NT 4600:	0 .. +50°C
	Modbusumsetzer:	-25 .. +70°C
Power supply	NT 4500/ NT 4600, Modbus converter: 115 V or 230 V 50/ 60 Hz (integrated power converter 24 V DC)	
	NR 3000:	supplied by Modbus converter
	NB 3000/ NB 4000:	15 V or 230 V AC, connection is made on site
	Full detector: converter.	connection either on NB 3000/ NB 4000 resp. Modbus converter.  In this case the supply voltage must be equal to NB 3000/ NB 4000 resp. Modbus converter. Alternative it is possible to connect on site.
Power consumption	NT 4500/ NT 4600, Modbus converter: 20 VA	
	Connected level sensors:	see documentation of the respective sensors
Signal output full detector	Floating contact is required	

## NT 4500

### Level monitoring and visualisation via web server

- Standardised system up to 50 silos
- Visualisation and operation via standard internet browser software
- Software language: German or English
- Password protected
- Worldwide remote enquiry of the level
- Data in percentage, height, volume or weight
- Trend display, data storage, export via .csv
- Evaluation of the analogue 4-20 mA signals of any sensors, as well as Modbus RTU of the UWT-systems
- Different input signals within the same system is possible
- Implementation of full detectors
- Fill control via full alarm signal (buzzer)



### NT 4500 Base unit

The heart of the NT 4500 is the web server module, which the visualisation software uses. All fill level control and display functions can be operated via the visualisation on a PC. An Ethernet interface ensures that the visualisation can be simultaneously operated from all PCs which are connected to the interface. Access is password protected. The electromechanical lead system can be started by the visualisation.

### Modbus converter

- For connection of 4-20 mA/ 2-wire sensors and full detectors
- On each converter up to 4 sensors and 4 full detectors can be connected
- Provided for mounting directly on the silo

### Integration of full detector incl. alarm "silo full"

- Buzzer with reset button (supplied loose, for outdoor mounting)
- One unit for all connected silos
- Alarm happens, if one of the silos gets full
- Reset of the alarm
- Provided for mounting directly on the silo

## NT 4600

### Level monitoring and visualisation via touch panel

- Standardised system up to 15 silos
- Visualisation and operation via 7" touch panel (coloured, 800 x 480 pixel)
- Software language: German or English
- Password protected
- Data in percentage, height, volume or weight
- Trend display, data storage
- Evaluation of the analogue 4-20 mA signals of any sensors, as well as Modbus RTU of the UWT-systems
- Different input signals within the same system is possible
- Implementation of full detectors
- Fill control via full alarm signal (Buzzer)

### NT 4600 Base unit

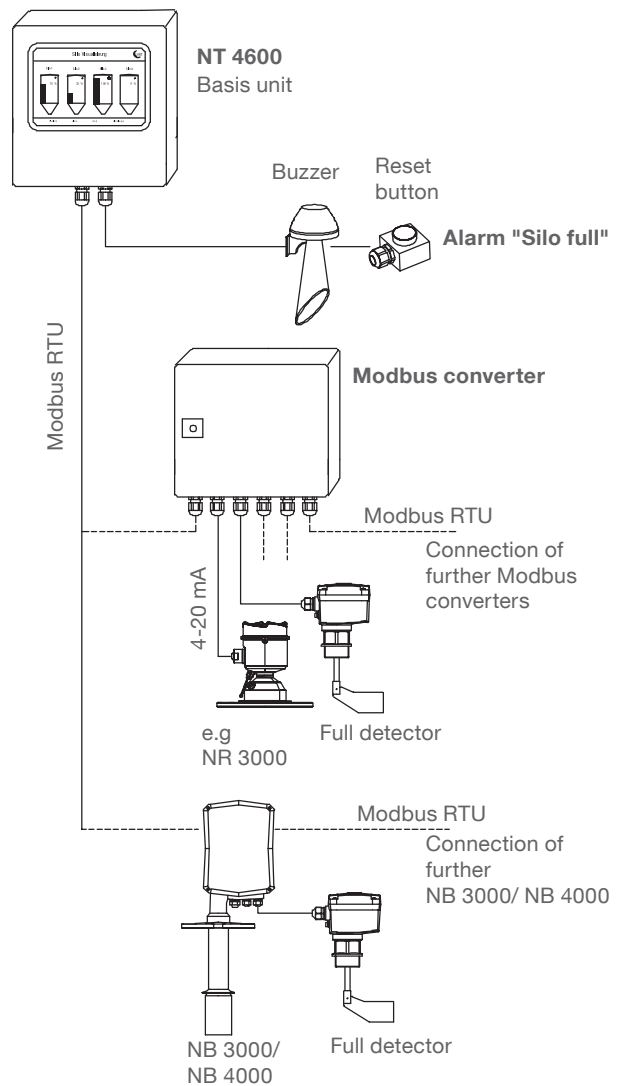
The heart of the NT 4600 is a touch panel, which runs the visualisation software. All fill level control and display functions can be operated via the touch panel. Access is password protected. The electromechanical lead system can be started by the visualisation software.

### Modbus converter

- For connection of 4-20 mA/ 2-wire sensors and full detectors
- On each converter up to 4 sensors and 4 full detectors can be connected
- Provided for mounting directly on the silo

### Integration of full detector incl. alarm "silo full"

- Buzzer with reset button (supplied loose, for outdoor mounting)
- One unit for all connected silos
- Alarm happens, if one of the silos gets full
- Reset of the alarm
- Provided for mounting directly on the silo



## NT 4600



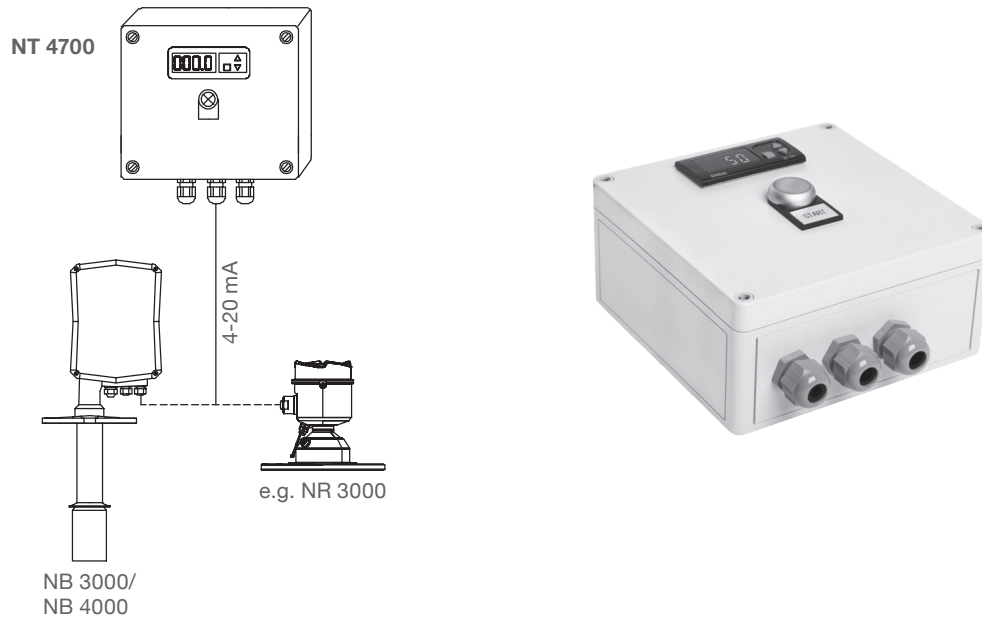
Delivery touch panel for panel mounting as follows:  
 Dimensions 200 x 146 x 34 mm  
 Panel cutout 192 x 138 mm,  
 Required supply 24V DC  $\pm 20\%$ , 350 mA  
 Sub D plug (female) 9 pole for Modbus connection

In combination with pos.3 A a Modbus I/O module for connecting of the buzzer/ reset button will be delivered as follows:  
 Dimensions 98 x 52 x 27 mm, for mounting on top hat rail  
 Supply 10 .. 30 V DC, 0,5 W  
 Terminals for Modbus connection

## NT 4700

### Level display for one silo

- Evaluation of the analogue 4-20 mA signal of any sensor
- LED-Display in percentage, height, volume or weight (implements NT 4900)
- Version for Nivobob NB 3000/ NB 4000 implements start button and indicator lamp when sensor weight is in the upper position
- Simple operation



### Technical data

Dimensions	182 x 180 x 90 mm (W x H x D)	
Mounting	Wall mounting	
Material	Polycarbonat	
Ingress protection	IP65	
Ambient temperature	0 .. +50°C	
Power supply	NT 4700-1/ NT 4700-2: NT 4700-5/ NT 4700-6: NT 4700-3/ NT 4700-4:	230 V 50/ 60 Hz 115 V 50/ 60 Hz 24 V DC
	NB 3000/ NB 4000:	230 V 50/ 60 Hz or 115 V 50/ 60 Hz or 24 V DC, connection is made on site
	2-wire 4-20 mA :	supplied by NT 4700-2 (integrated power converter 24 V DC) or NT 4700-4 or NT 4700-6
Power consumption	NT 4700: Connected level sensor:	10 VA see documentation of the respective sensor

## NT 4900

### Digital display

- Level display in percentage, height, volume or weight, freely programmable
- LED display, 4 digits, 7 segment, red
- Operation via front buttons
- 4-20 mA input



### Technical data

Dimensions	77 x 35 x 71 mm (W x H x D)		
Panel cut out	71 x 29 mm		
Material	Polycarbonat		
Ingress protection	IP65		
Ambient temperature	0 .. +50°C		
Power supply	NT 4900-1:	24 V DC/ AC	(9 - 30 V DC, 7 - 24V 50/ 60 Hz)
	NT 4900-2:	230 V 50/ 60 Hz	(+10% -20%) (Terminal 1 = L/+, Terminal 2 = N/-)
Power consumption	7 VA		
Signal input	4-20 mA aktiv (Terminal 9 = +, Terminal 10 = GND)		

### Programming example:

4mA relates to a display of 0,0 tons, 20 mA to 60,0 tons

Following parameters are changed from the presets (procedure see external programming manual):

i.Type = 4-20 mA

d.Pnt set on first digit from right side (decimal dot setting)

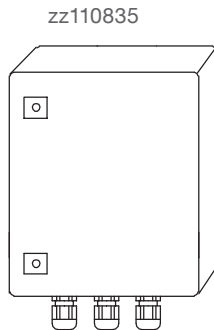
L.SCL -> 0 (lower scale value 0 tons at 4 mA)

H.SCL -> 60.0 (upper scale value 60,0 tons at 20 mA)

## NT 4000

### Terminal box

Intermediate terminals for the wires leading to the silo (mounting e.g. on the silo frame).  
 Applicable for cables of level (Modbus or 4-20 mA), limit switch, buzzer, reset button



#### Technical data

Dimensions	200 x 300 x 120 mm (W x H x D), for wall mounting
Material	steel plate
Ingress protection	IP65
Ambient temperature	-25 .. +60°C
Terminal blocks	15 pieces grey, 5 pieces blue, 5 pieces green/ yellow; each terminal implements 3 cable inlets 2.5 mm <sup>2</sup> , mounted on top hat rail
Cable glands	6 pieces M20 x 1.5    2 pieces M25 x 1.5

### Cable recommendations for Modbus network

#### Shielded cable

Functionality up to 50 m

Manufacturer: Lapp, Type UNITRONIC LiYCY 2x 0.34, Art.no: 0034502

#### Twisted pair cable

Functionality up to 1,000 m

Manufacturer: Lapp, Type UNITRONIC BUS CAN 1x 2x 0.34, Art.no: 2170263

#### UV-protection hose with threaded hose coupling M20 x 1.5

UV protection for Modbus cable

Manufacturer: Flexa, Type Rohrflex PA6, Art.no: 0233.202.012 and Type RQG1-M, Art.no: 5020.055.018

#### ATEX-protection hose with threaded hose coupling M20 x 1.5

For installation of Modbus cable in ATEX Zone 21

Manufacturer: PMA, Type ESX, Art.no: ESXT-12B.50 and Type END, Art.no: BEND-M202GT