User manual/ instructions
Schroff – LHX SNMP Gateway V.105

Overall/ general information

Schroff's LHX SNMP Gateway is an Ethernet RS232 gateway, which enables the detection of the VARISTAR controllers through SNMP commando (SNMPv3).

The gateway's connection to the VARISTAR controller is ensued over the RS232 serial port at a rate of 57600 bit/s.

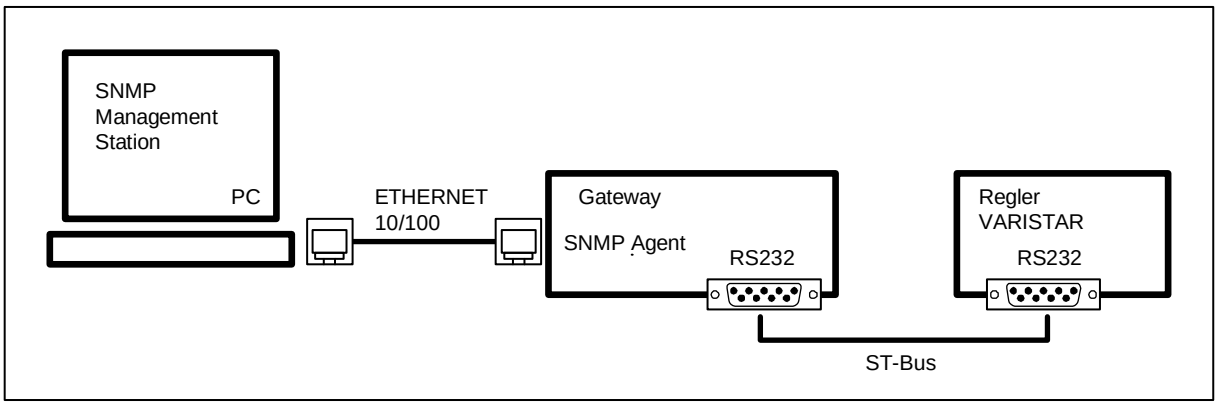
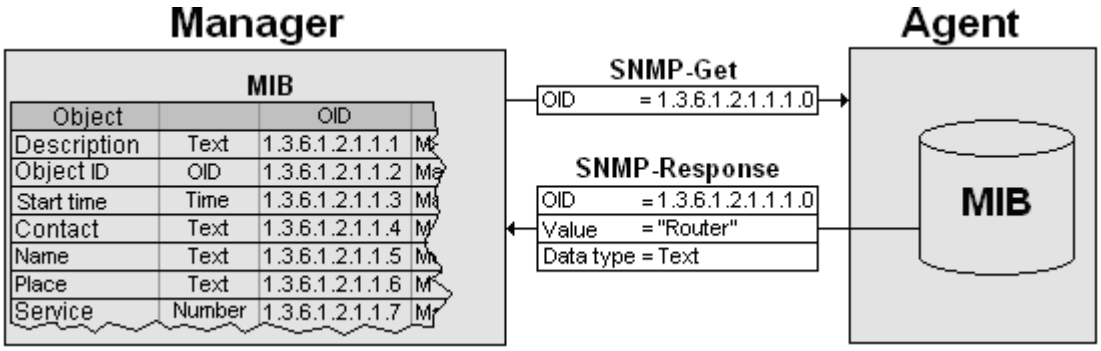


Exhibit 1: Architecture

The Gateway is a SNMP agent and provides defined SNMP manager variables in the LHX-Ethernet.MIB (**M**anagement **I**nformation **B**ase).



The SNMP manager (e.g. HP open view) initiates the communication and Schroff LHX SNMP gateway responds with the applicable VARISTAR controller values as SNMP protocol elements.

In case of alarm, the gateway sends an unprompted notification to the manager via the SNMP trap protocol element.

Varistar MIB Data elements

The following information regarding the access to the VARISTAR controllers is supported by the LHX-Ethernet MIB and can be requested via SNMP.

1) Measured values and pseudo-measured values, only reading (SNMP get)

STBUS -Parameter	Functions description	Values	Standard value	Resolu-tion
F1	Measured value sensor F1: air temperature 1	-50℃...+100,0 ℃	-	Tenth
F2	Measured value sensor F2: air temperature 2	-50℃...+100,0 ℃	-	Tenth
F3	Measured value sensor F3: air temperature 3	-50℃...+100,0 ℃	-	Tenth
F4	Measured value sensor F4: air temperature 4	-50℃...+100,0 ℃	-	Tenth
F5	Measured value sensor F5: Water inflow	-50℃...+100,0 ℃	-	Tenth
F6	Measured value sensor F6: Op-tion	-50℃...+100,0 ℃	-	Tenth
F8	Fan rotation speed 1	0...9999 u/min	-	
F9	Fan rotation speed 2	0...9999 u/min	-	
F10	Fan rotation speed 3	0...9999 u/min	-	
F11	Fan rotation speed 4	0...9999 u/min	-	
F12	Fan rotation speed 5	0...9999 u/min	-	
F13	Fan rotation speed 6	0...9999 u/min	-	
	Door contact			

2) Desired value, to read and write (SNMP get and set)

Par	Function description	Function description	Standard value	Resolu-tion
S1	Desired value water valve	See parameter P30, P31	+20℃	Tenth
S2	Desired value fans	See parameter P32, P33	+20℃	Tenth

The maximum desired value is determined by parameters. If this value is configured beyond the authorised area, (this area is designed by parameters; P30, P31, P32 and P33) the controller simply ignores the adjustment.

3) Alarm notifications (SNMP-TRAP)

The alarm notifications are used as 32-bit integer value. An analysis of the correspondent binary information occurs in the SNMP-Manager.

Par	Function description	Function description	Standard adjustment
D1	**Alarm flags** Bit0 =1: Sensor default F1 Bit1 =1: Sensor default F2 Bit2 =1: Sensor default F3 Bit3 =1: Sensor default F4 Bit4 Bit5 =1: Sensor default F5 Bit6 =1: Sensor default F6 Bit7 =1: Sensor default F7 Bit8 =1: Motor disturbance fan 1 Bit9 =1: Motor disturbance fan 2 Bit10=1: Motor disturbance fan 3 Bit11=1: Motor disturbance fan 4 Bit12=1: Motor disturbance fan 5 Bit13=1: Motor disturbance fan 6 Bit14=1: Power supply fault P1 Bit15=1: Power supply fault P2 Bit16 =1: Collective alarm .Bit17 =1: ST-Bus disturbance .Bit18 =1: VARISTAR controller default, EP Bit19 =1: Malfunction notification open door(s) Bit20 =1: Malfunction notification emergency cooling Bit21 =1: Malfunction notification bilge water .Bit22 =1: Malfunction notification maximum cooling mode Bit23 =1: Malfunction notification external water cooling Bit24 =1: Temperature threshold value air outflow Bit25 =1: Temperature threshold value air outflow Bit26=1: Temperature threshold value air outflow Bit27=1: Temperature threshold value air outflow option Bit28=1: Threshold value humidification **Options** Bit29 Bit30 Bit31 Bit32=1: Controller is switched off.	32-Bit 0x0000...0xFFFFFFFF	-

Configuration

The gateway should be activated by a network administrator. A Gateway mishandling can lead to a network default.

The gateway can only be configured over an efficient TCP/IP connection. The preset IP-Address is **192.168.0.102**. The gateway's configuration must match with the local PC-Network setup. In case of doubt, you should contact the network administrator.

The gateway can be easily configured over an integrated web server with help of a browser. In this case the gateway uses a secure http access; the normal http access is not possible.

1. Access over the Web interface

The access to the web interface is possible over the Url https://192.168.0.102. This Url is in the browser's address list.

According to the transmission and confirmation security certificates, the user name ***(webadmin)*** and user password ***(administrator)*** should be inserted.

After logging-in successfully, you will visualise a page with information regarding the current user, firm and hardware version as well as the web gate version number.

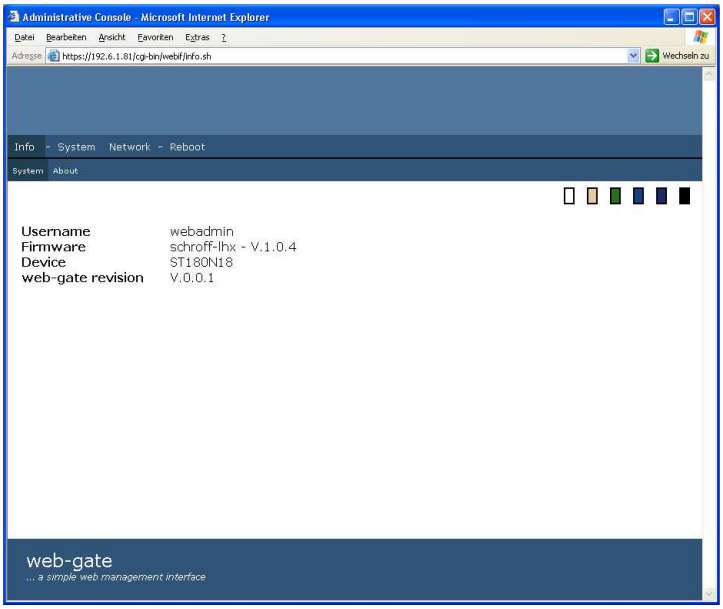


Exhibit 1: LHX-Ethernet: homepage

The ample gateway configuration is possible by selecting "**System**" under the Menu option.

You can easily setup the gateway's time with help of the "settings page".

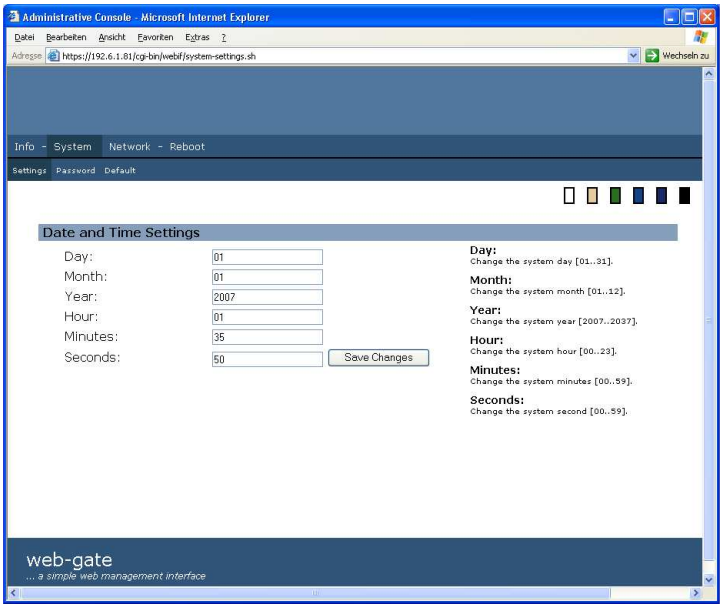


Exhibit 2: LHX-Ethernet: Date/Time configuration

The password page allows the configuration of the administrator's web gate.

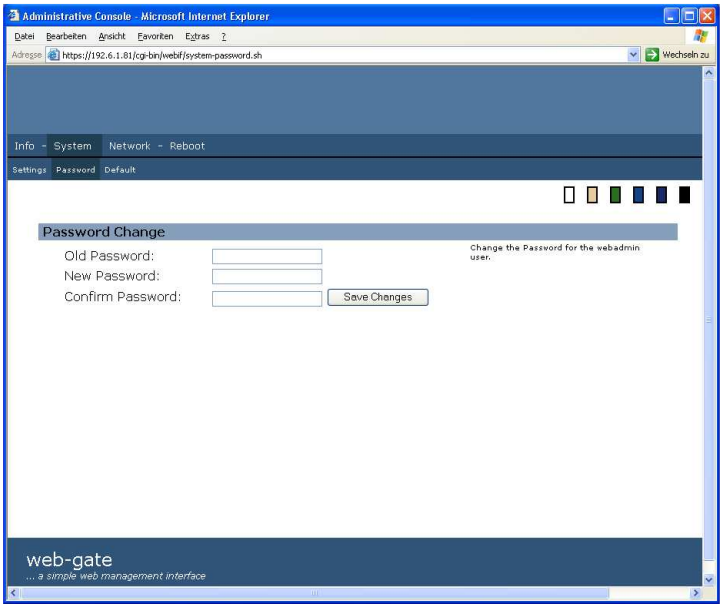


Exhibit3: LHX-Ethernet: User configuration

To reset the Gateway back to its basic features use the „Default" page. This also affects the network adjustments. The changes will only be active after restarting the Gateway.

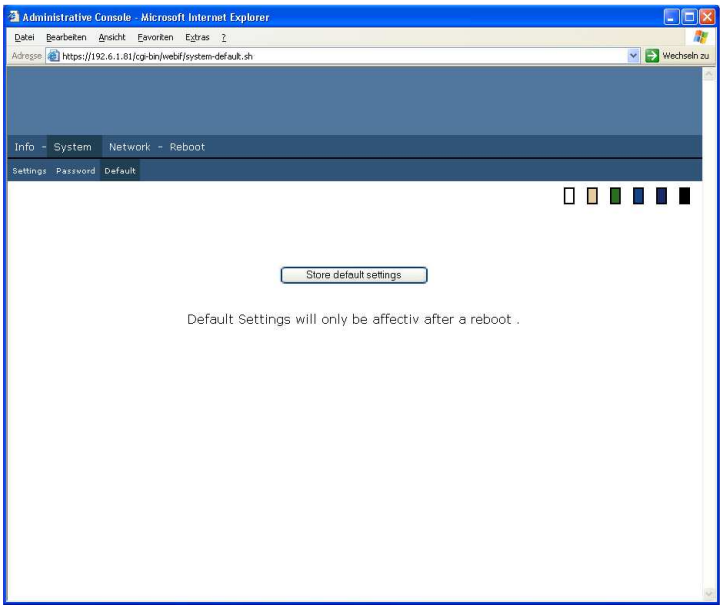


Exhibit 4: LHX-Ethernet: Restore factory settings

The menu option „Network“ allows the network’s and the SNMP settings’ configuration

These setups should be undertaken with great care. In case of inappropriate usage, resultant network defaults may damage the network operations!

The LAN page enables the configuration of the gateway’s name, the IP-network settings and the DNS-Server. A restore of factory settings will only be active after restarting the gateway.

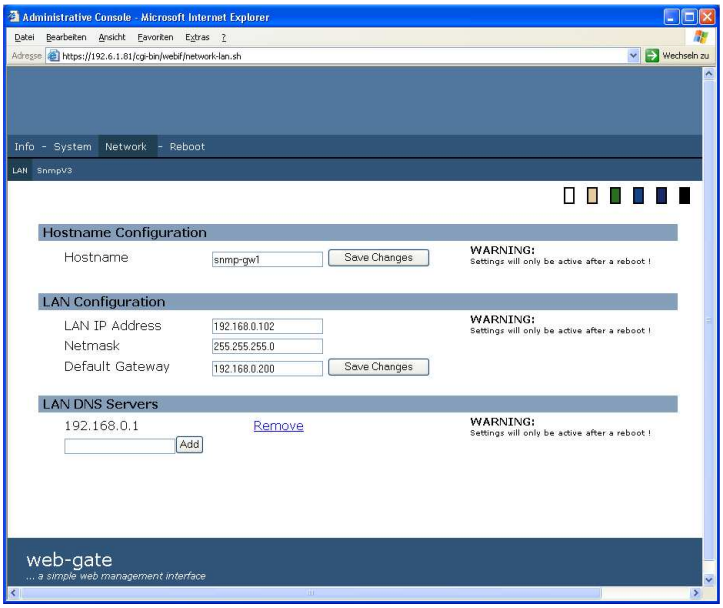


Exhibit 5: LHX-Ethernet: Network configuration

The SnmpV3 page enables the configuration of the SNMP – specific gateway features. Here you can also configure the SNMP user name, password, rw-community and the trap receiver computer.

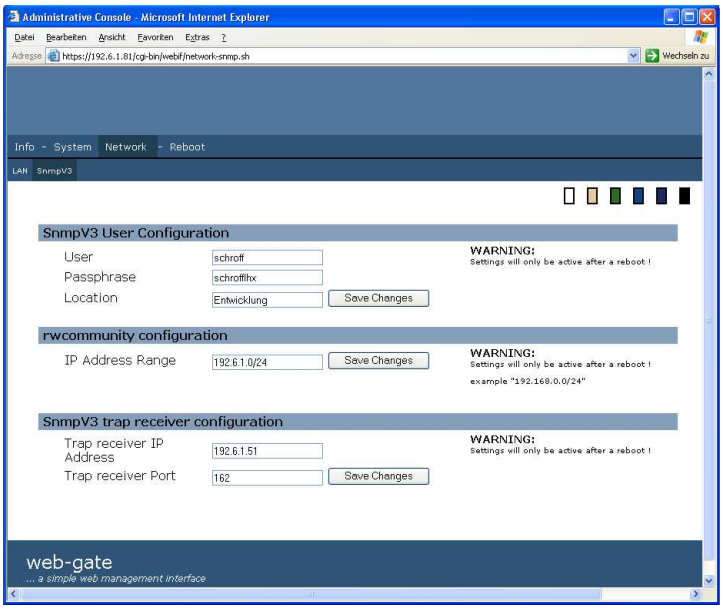
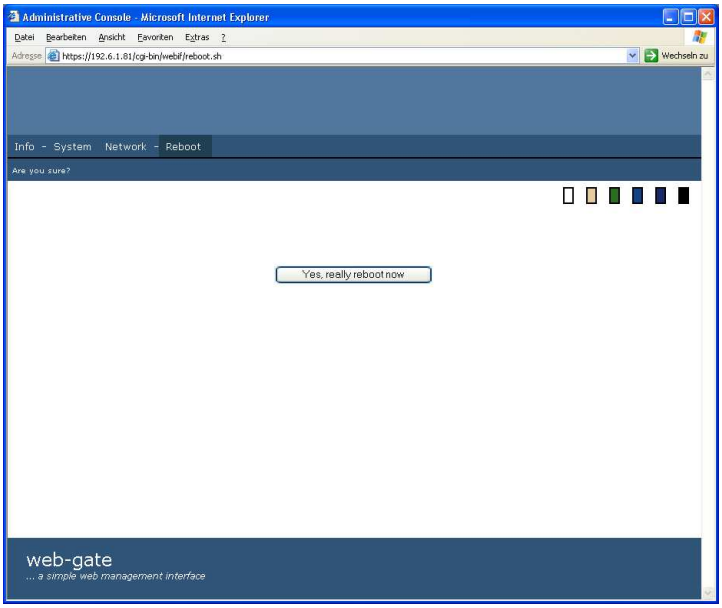


Exhibit 6: LHX-Ethernet: SnmpV3 configuration

The menu option "**Reboot**" allows a gateway restart over a remote access. The gateway stops immediately the data exchange and runs a reboot. After around 15 seconds it is possible to re-access the gateway over the web interface.



2. Access over a "Secure Shell" according to factory settings

As an alternative to the web interface web gate, the gateway can also be addressed over an encrypted secure shell ("**ssh**") – command line. Like this, the administrator has total access to the complete gateway. Settings' modifications conducted through this mode cannot be cancelled and should therefore be run with great care. As client-programme run within Windows, it enables running additional softwares such as PuTTY.

The user name is "**root**", and the password is "**schrofflhx**".

Restore factory settings

When restoring the gateway to its factory settings, this may lead to a short circuit in the Jumper. If this Jumper is bridged when switching on the gateway, then the previous configured settings are also transferred.

Front layer description

Indicator lamps

Ready	Steady light after a successful gateway boot up.
RS485 ST-Bus	Steady light when there is communication over the ST-Bust.
Data SNMP	Light on when replacing the SNMP-Datagram.
Data ETH	Light on when replacing the datagram over ETHERNET.
10/100 ETH	Light on when data transference rate in the ETHERNET is 100 MBit/s.

Technical data

Power supply:
230V~ 50/60Hz
Maximum power consumption 10VA

Network connection:
Plug system WIELAND, type ST18/3

X1: 3- sprig plug, screen 10,0mm, for cabling up to 2,5qmm, WIELAND type ST18/3
X2: 3-pole screw and insertion terminal, screen 3,50mm, for cabling up to 1,5qmm
X3: SUBD 9-pole, connector
X4: RJ45, 8-pole, CAT5

Environmental requirements:

Storage temperature	-20°C...+70°C
Operating temperature	0...55°C
Relative Humidity	maximum 75% r.H., no thawing

Weight:
Ca. 500g

Protection type:
IP42

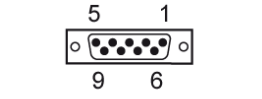
Protection class:
Protection class II, rated voltage 250V~

Norms/standards:
CE Low voltage directive 73/23/EEC
CE EMV-directive 89/336/EEC, slanted severity 3
EN 61010-1:2001 Safety requirements for electrical measuring devices, automatic controller, controllers and laboratory equipment.

Installation details:
Console enclosure
Enclosure dimensions: L 158mm x W 100mm x H 46mm
With a mounting bracket to screw on a wall

Interfaces:

ST-Bus an RS232
Pin 2: RxD
Pin 3: TxD
Pin 5: Gnd
Pin 7: RTS
Pin 8: CTS



ST-Bus an RS485
Shrouded 2-wire conductors, twisted pair, maximum cable length 1000m
Interface Driver: RS485
Mains should be structured in lines topology with bilateral terminal resistance with 120 Ohm.

ETHERNET
10/100 MHz

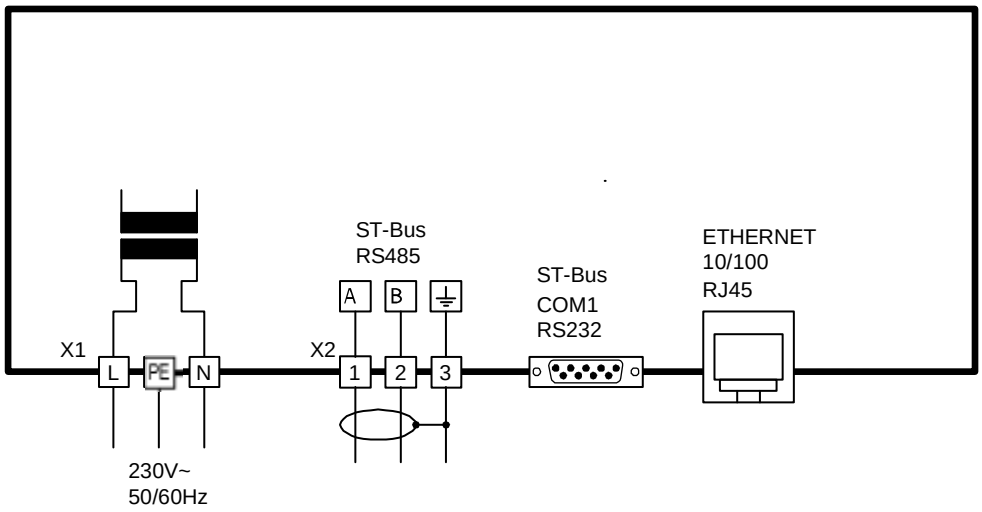


Exhibit 2: Allocation of the mains connections

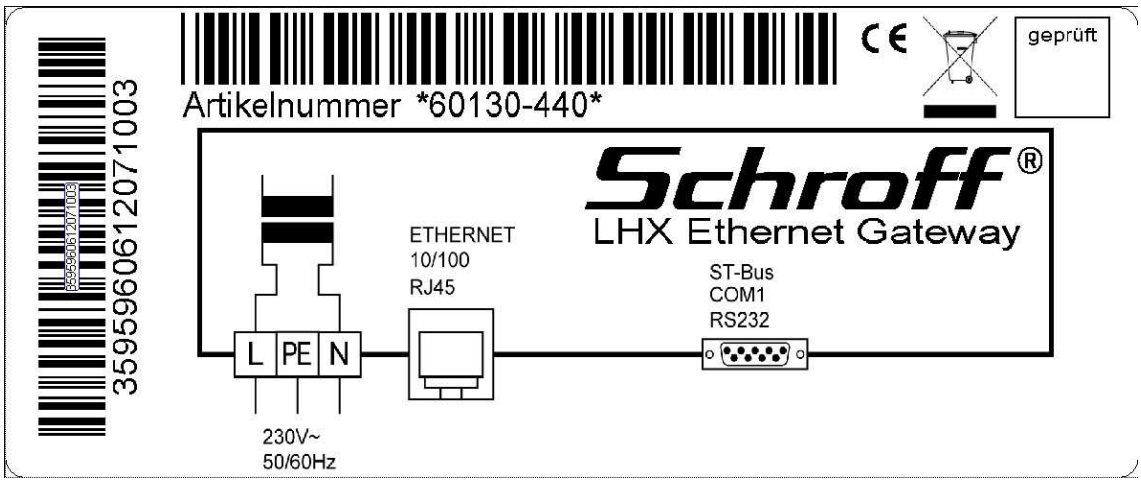
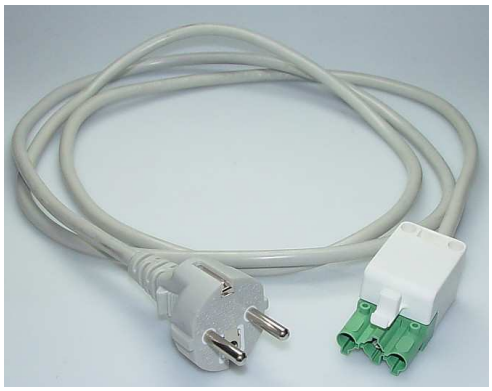


Exhibit 3: Adhesive label, layout setup

Accessories: Mains cable, length 2m, Schuko-plug and receptacle connector WIELAND type ST18/3



Revision status

Pos.	Date	Vers.	Revision/change type	revised
1	06.12.2006	1.00	First sample	
2		1.04		
3	20.05.2008	1.05	The configuration of snmpV3 in Menu „Network“ conceives/obtains in a distribution status administrator rights (only read rights so far)	