WINCOR NIXDORF

TH230

Thermal Printer

User Manual

We would like to know
your opinion on this publication.

Please send us a copy of this page
if you have any constructive criticism on:

- the contents
- the layout
- the product

We would like to thank you in advance
for your comments.
With kind regards,

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Your opinion:

TH230

Thermal Printer

User Manual

Edition August 2006

Contents

Manufacturer´s Certification

The device complies with the requirements of the EEC directive 89/336/EEC with regard to ‘Electromagnetic compatibility’. Therefore, you will find the CE mark on the device or packaging.

Tested Safety

The TH230 has been provided with the symbol for “Tested Safety”.

In addition, the TH230 has received the UL symbol and cUL symbol.

FCC-Class A Declaration

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful inter-ference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Modifications not authorized by the manufacturer may void users authority to operate this device. This class A digital apparatus complies with Canadian ICES-003.

Cet appareil numerique de la classe A est conforme à la norme NMB-003 du Canada.

Warranty

Wincor Nixdorf generally guarantees a limited warranty engagement for 12 months beginning with the date of delivery. This warranty egagement covers all those damages which occur despite a normal use of the product.
Damages because of
- improper or insufficient maintenance,
- improper use of the product or unauthorized modifications of the product,
- inadequate location or surroundings
will not be covered by the warranty.

All parts of the product which are subject to wear and tear are not included in the warranty engagement.

General Safety Information

Before installing and using the printer, please read the following items carefully.

Safety instructions

Do not touch the cutter and tear bar of the printer.

The print head is a thermal element and it is at high temperature during printing or just after operation, therefore please do not touch it and its peripherals for safety reasons.

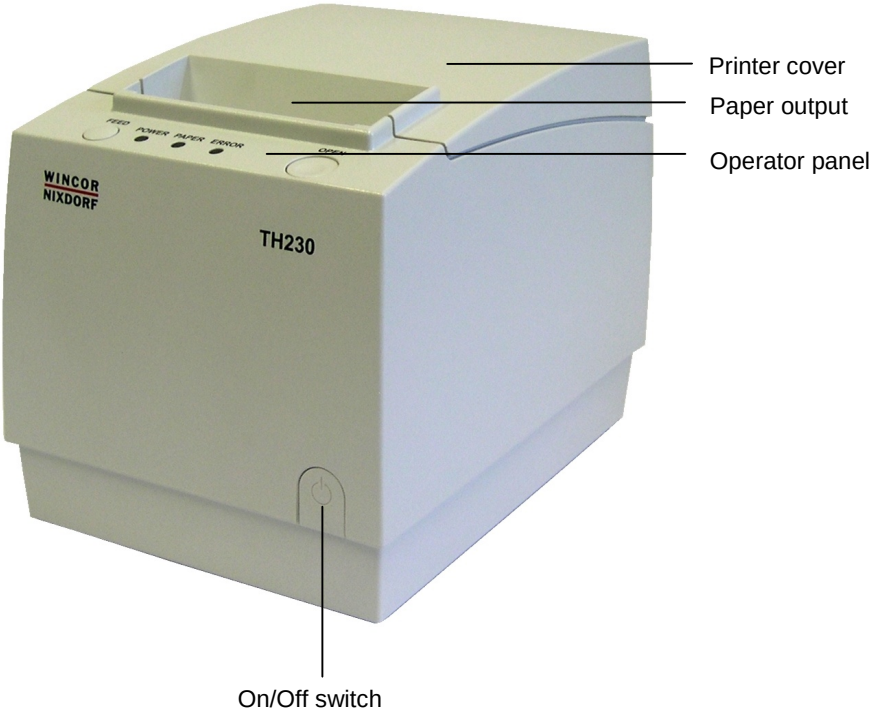
The thermal head is an ESD-sensitive device. To prevent damage, do not touch either its printing part or connecting parts.

Caution:

- Install the printer on a flat and stable place.
- Reserve adequate space around the printer so that convenient operation and maintenance can be performed.
- Keep the printer away from water source.
- Do not use or store the printer in a place exposed to heat of fire, moisture, serious pollution and direct sunlight.
- Do not place the printer on a place exposed to vibration or impact.
- No dew condensation is allowed to the printer. In case of such condensation, do not turn on the power until it has completely gone away.
- Connect the DC adapter to an appropriate grounding outlet. Avoid sharing a single electrical with large power motors and other devices that may cause the fluctuation in voltage.

- Disconnect the DC adapter when the printer is not used for a long time.
- Don’t spill water or other materials on the printer. If this happens, turn off the power immediately.
- Do not allow the printer to start printing when there is no recording paper installed, otherwise the print head and platen roller will be damaged.
- To ensure quality print and normal lifetime, use recommended or good quality paper.
- Shut down the printer when connecting or disconnecting interfaces connectors to avoid damage to the control board.
- Set the print darkness to a lower grade as long as the print quality is acceptable. This will help to keep the print head durable.
- The printer should only be disassembled or repaired by a technician, who is certified by Wincor Nixdorf.
- Operate the printer only with power supplies and cables approved by Wincor Nixdorf
- Keep this manual safe and at hand for ready reference.

Overview


Printer cover
Paper output
Operator panel
FEED
POWER
PAPER
ERROR
OPEN
WINCOR
NIXDORF
TH230
On/Off switch

Operator Panel

FEED

If you push this button once and release it, the printer feeds paper for one line (1/6 inch).
If you push this button and hold it down, the printer feeds the paper as long as the button is not released.
The button can be locked by the application software and then will be without function.

POWER

All LED off: power is not stable
Green POWER LED on: power is stable
Green POWER LED blinking: printing speed may be low (*) if necessary contact your technical support

(*) The printer will run with the lowest power value (48W) if a non current power supply unit from Wincor Nixdorf or an external power supply unit without automatic current identification is used.
With a suitable power supply unit type the maximal power value can be defined with the configuration menu from 48 Watt up to 90 Watt.

PAPER

Yellow PAPER LED off: Paper is properly inserted.
Yellow PAPER LED on: Paper roll near end.
Yellow PAPER and red ERROR on: Paper end is reached.

ERROR

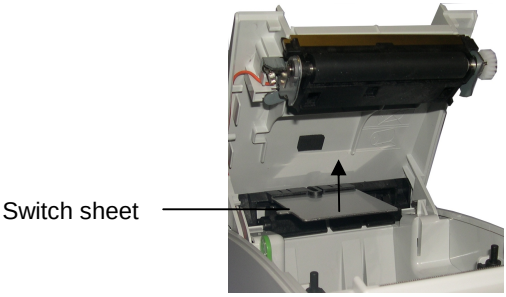
Red ERROR LED off: normal condition
Red ERROR LED on: not ready for operating. Printer cover is not closed or in combination with Yellow PAPER LED on, paper end is reached
Red ERROR LED blinking: an error occurs. Switch the printer off and on again. In case of no success contact your technical support.

LED overview

	POWER green	PAPER yellow	ERROR red	Meaning
	off	**off**	**off**	No power
Operation	**on**			Power on
	blinking			If necessary call for technical support
		off		Paper properly inserted
Paper		**on**		Paper near end
		on	**on**	Paper end
Error			**blinking**	If necessary call for technical support
			on	Cover not closed

OPEN

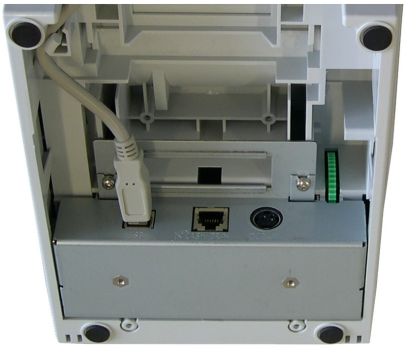
Press this button to unlock and open the cover. Thereby the switch sheet flaps into an upright cover position



! If an error occurs do not open the cover with force

Open the printer cover only if the cutter is in its home position. Otherwise the cutter or the cover may be damaged.

Putting the cutter to the home position: Lift the printer and turn the green handwheel at the bottom of the printer towards the printer front side as far as it will go.



On/off switch

Pressing this button will switch the printer on or off.
To switch off the printer press the button for at least one second.

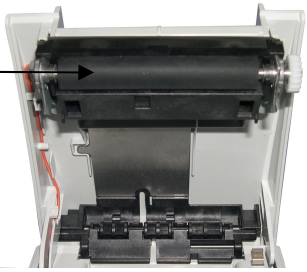
The button can be locked by the application software and then will be without function.

Maintenance of the TH230

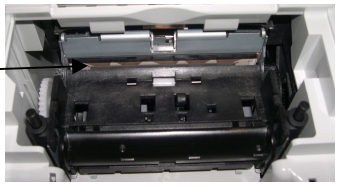
Print head/Rubber Roller Cleaning

Clean the print head and the rubber roller at least every three months. In case of an intensive use of the printer clean both items more often to guarantee a stable print quality.

Rubber roller



Print head

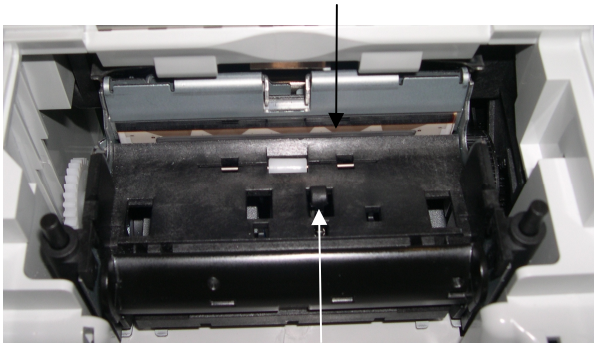


Open the printer cover and remove the paper-roll; the rubber roller and the print head mechanism are then visible.

! Let the print head cool down before cleaning it.

Clean print head and rubber roller with a soft lint-free cloth moistened with pure Isopropyl alcohol (e.g. ISOPADS which can be ordered at Wincor Nixdorf, spare part number 6197 000 2228).

Visually inspect the print head. If you can still see dirt, the cleaning procedure must be repeated. You can identify the relevant and important thermal element zone by the thin line crossed by wires.



Paper end sensor

Pay attention not to damage the paper end sensor when cleaning the print head.

! Do not touch the rubber roll with your fingers.

While cleaning turn the rubber roller by hand with the lateral gear wheel Make sure that the entire roller will be cleaned.

! Cleaning the print head not properly, may cause an early failure.

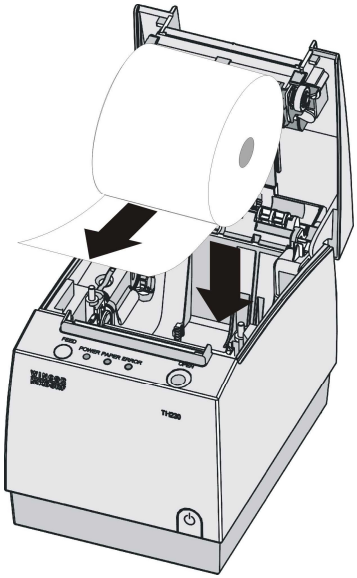
! Wait until the isopropyl alcohol is evaporated.

Insert the (new) paper-roll and close the cover. Print out a test ticket (see application handbook) and verify the printing quality (density, alignment and consistency).

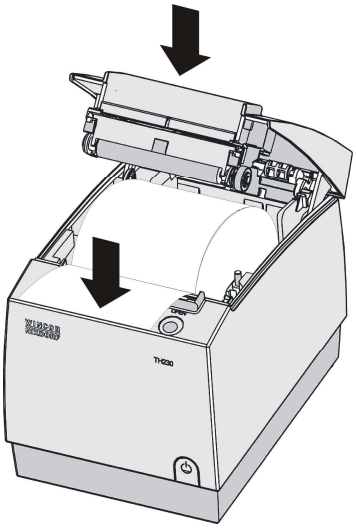
Paper Roll Exchange

For a paper roll exchange follow the steps below:

- Open the printer cover
- Remove the (nearly) empty paper roll and any residual paper.
- If necessary clean the print head and the rubber roller.
- Unwind the outer layer (winding) of the paper roll.
- Insert the paper roll. Lay the unwinded paper over the front edge of the printer.



- Hold down the paper and close the printer cover. Press on the middle of the cover until it audibly and distinctly locks into place.

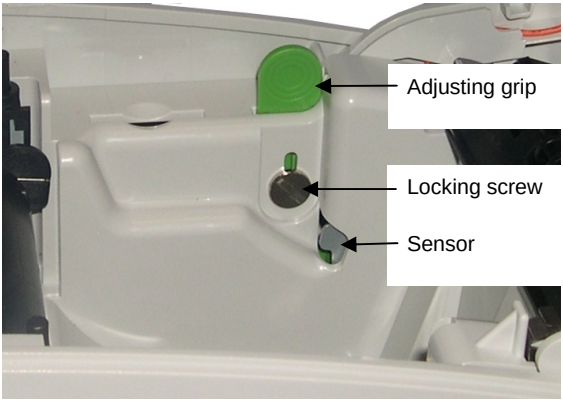


- Tear off residual paper at the tear-off edge.

Paper near end Sensor Adjustment

The paper end premonition is a control function. It allows to adjust a predefined amount of remaining paper on the roll.
The paper end premonition depends on the core diameter and the paper thickness of the paper roll in use.
You can adjust the remaining amount of paper yourself follow the steps below:

- Open the printer cover.
- Remove the paper roll.
- Loosen the locking screw at the inner wall of the printer for instance with the aid of a coin (do not remove the screw).

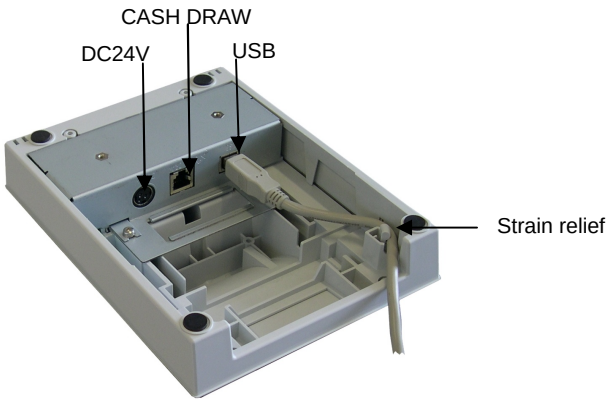


Move the adjusting grip to determine the remaining paper amount.
A lower distance mark (adjustment grip downwards) will cause a lower amount of remaining paper and vice versa:
The scale reaches from 0.5mm to 12.5mm.

After determining the distance mark:
- Tighten the locking screw
- Insert the paper roll
- Close the printer cover and lock it

Connecting the TH230

The connectors are located at the bottom side of the printer.
The picture shows the USB/CASH DRAW/DC24V variant.

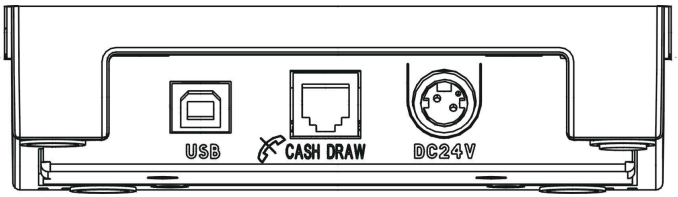


Connect the hosiden plug of the low voltage cable to the low voltage socket of the printer (DC24V). Make sure that the plug is connected tightly. Check this by slightly pulling at the low voltage cable.

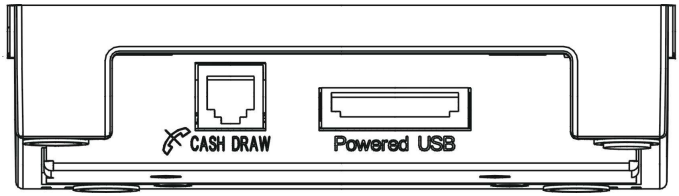
Connect the plug from the USB data cable to the USB socket at the printer and guide the cable through the strain relief.
Connect the cable from the cash drawer to the CASH DRAW socket of the printer. Inserting the plug will automatically lock it.

Connector variants

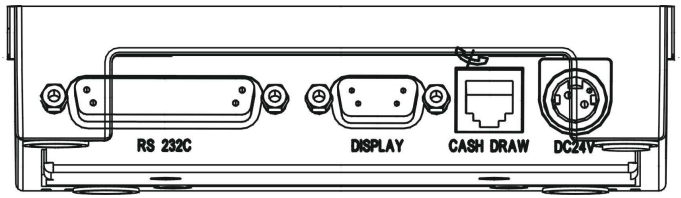
USB/CASH DRAW/DC24V



CASH DRAW/Powered USB



RS232/DISPLAY/CASH DRAW DC24V



Self test printout

1) Turn off the printer. Press the On/Off button for at least one second.

2) Push the FEED button while turning on the printer.

A service menu will be printed.

3) Press the FEED button two times shortly to select the self test. Press same button for more than one second to start the printout.

TH230
Self Test

Hardware Information:
Manufacturer : WINCOR-NIXDORF
Serial Number : 64AX600045
PCB Version : C
Production Date : 11-AUG-2006
Interface ID : 40
Interface Board : USB (Full-Speed)
RS232
Cash Drawer

RS232 Settings:
Parameter : 19200 - 8N1
Handshake : DTR/DSR
Receive Buffer : large (4 kB)
Receive Error : ignore

USB Settings:
Leg. Printer Supp.: disabled

Software Modules:
Firmware : 01.02
Booter : 00.06
Loader : 01.00
Status : Verified
Power Up Test : 01.00
Checksum : OK
Character Font : StdCodePages
Font Version : 01.02

Printer Settings:
Black Mark Sensor : disabled
Endurance Test : disabled
Automatic LF : enabled
Power Button : enabled
Power-ON Notice : disabled
Paper-NE Notice : enabled
Receipt Shooting : disabled
Shoot Flush Time : 2.00 sec
Max. Power : Auto 90 W
Max. Speed : 220 mm/sec
Endurance Tickets : 500
Paper Width : 80 mm
Print Density : 100 %
Paper Type : single color
Code-128 ChkDigit : enabled
ITF Leading Zero : enabled
Brc String Term : enabled

Sensor Information:
Sensor Plug Detection
Black Mark Sensor : available

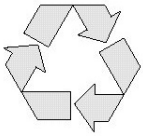
Measured Values:
Supply Voltage : 25.0 V
Printhead Temp : 25.5 °C

Pixel Test:

*** completed ***

4) Press the FEED button one time shortly and one time for more than one second to end the selftest.

Recycling the TH230



Environmental protection does not begin when it is time to dispose of the TH230; it begins with the manufacturer. This product was designed according to our internal norm “Environmental conscious product design and development”.

The TH230 thermal printer is manufactured without the use of CFCs und CCHS and is produced mainly from reusable components and materials. The processed plastics can, for most of the parts, be recycled. Even the precious metals can be recovered, thus saving energy und costly raw materials.
Please do not stick labels onto plastic case parts. This would help us to re-use components and material.

Today, there are still some parts that cannot be used again. Wincor Nixdorf guarantees the environmentally safe disposal of these parts in a Recycling Center, which is certified pursuant to ISO 9001.
So do not simply throw your printer on the scrap heap when it has served its time, but take advantage of the environmentally smart, up-to-date recycling methods!
Please contact your competent branch or the Recycling Center Paderborn (for european countries) for information on how to return and re-use devices and disposable materials under the following email-address:
info@wincor-nixdorf.com

Technical Data

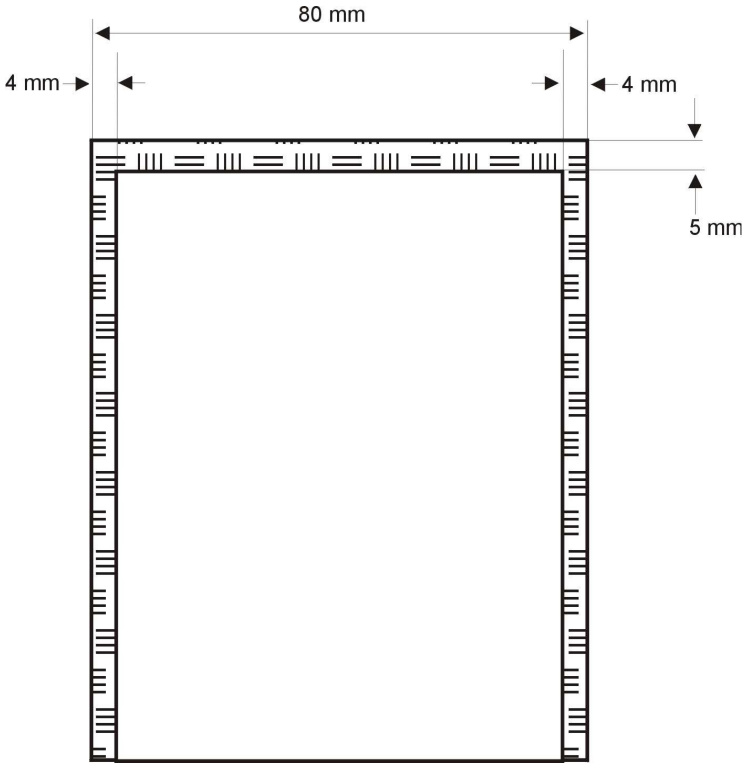
Technology	High-speed thermal print
Resolution	8 dots/mm (203 dpi), 640 dots/line
Printing speed	one colour: 220 mm/s, two colour: 110 mm/s
Interface options	USB 2.0 full speed, PoweredUSB, RS232c
Cutter	Material: tempered steel Speed full cut: < 300ms
Paper transport	Forward; to use paper to full capacity after cutting: up to 12mm backwards (approx. 3.5 lines at 7.52 lpi)
Control functions	Print head temperature control with adjustment of print speed Paper near end control and paper end control Paper cutter error message Printer cover open/closed Self test with printout
Option	Paper width 57,5mm, print width =51mm = 408 dot
Housing colour	light grey or black
Power supply	24 V DC Automatic and manual capacity control: 48 – 90 Watt
Dimensions	148 x 145 x 195mm (H x W x D)
Weight	approx. 2kg (w/o paper roll)
Features	Simple Paper roll exchange: Optional two colour print with special paper (100mm/sec) Paper near end message: adjustable by user
Statistical data:	· Total number of dots · Total line feeds · Total number of cuts · Max. head temperature Paper jam counter · Cutter error counter · Thermistor error counter

	· High voltage/low voltage error counter · Number of firmware updates · Power on time in hours · Power on counter
Environmental conditions	5° - +45° Celsius;
Humidity	5 % - 95% (not condensed)
Noise	<= 55dB(A) operation
Reliability	55 Mio lines 1,5 Mio cuts with 55g/m²
	150km at 12,5% print density
Graphic feature	TH230 is fully graphic-compliant

Paper Specification

Paper width	80mm
Paper weight	55g/m² ± 5 g/m²
Paper thickness	0.055mm – 0.1mm
Paper roll outer diameter	90mm max.
Paper length	~100m
Core size	Core diameter: 10mm +2mm
	wall thickness of the core: max. 2mm ± o.3mm
Print width	72mm = 576 dot

Print area



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