Specifications

Device Types, Application

AP 4.4

- Monotone printing of label stock for thermal and thermotransfer processes
- Printing on different materials, e.g. cardboard or self-adhesive labels
- Processing roll and fan-folded material
- Resolution: *optionally* 203 or 300 dpi
- Print speed up to 200 mm/sec (8”/s)
- Print width up to 105 mm
- Interfaces: RS-232, USBCentronics, and connection for foot switch

AP 5.4

The AP 5.4 is available in 3 versions, which *additionally* offers the following equipment features:

- *Basic*

  Like the AP 4.4, but additionally equipped with the following: Keyboard connection, slot for CF card, Ethernet port

  The following options can be integrated:

  – Reflex sensor
  – I/O board

- *Peripheral*

  Like the AP 5.4 basic, but with capability to add the following extra option:

  – External cutter
  – External rewinder
  – Internal rewinder

- *Peripheral with internal winder*

  Like the AP 5.4 peripheral with additional built-in internal rewinder. In connection with an optional dispensing edge, this printer can also be used as a dispenser.

Options

The optional features – with the exception of the foot switch – can only be integrated into the AP 5.4.

Internal Options

…should be factory-fitted or installed by a service engineer:

- *Reflex Sensor Kit*: Light barrier fitting that apart from the transmission sensor, also contains a reflex sensor.
- *Label sensor for short labels*. Recommended for label length < 30 mm.
- *Internal rewinder kit*: To retrofit the internal rewinder; contains the rewinder as well as the driver board and material guide
- *I/O board*: RS- 422/485 interface, signal interface
- *Contact brush* for narrow label web (< 30 mm); recommended for AP 5.4 with „Rewinder 2000“.

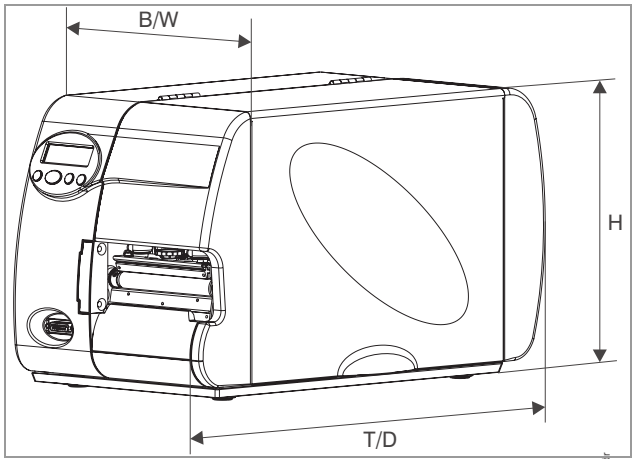
External Options

…do not require any special alterations to the printer, however, the printer must be prepared for the use of peripheral devices:

- *Cutter*
- *Rewinder* for material rolls with 38 mm (1.5”), 75 mm (3”) or 100 mm (4”) cores („Rewinder 2000“)
- *Keyboard* for offline operation
- *Foot switch* for foot-operated label dispensing (printer must additionally be equipped with an I/O board)
- *Dispensing edge* (only for dispensing versions)

Technical Specifications

Dimensions



[1] Dimensions of the AP 4.4 and AP 5.4.

H x W x D: 272 x 260 x 462 mm

Weight

Printer	Weight
AP 4.4	14 kg
AP 5.4 basic / peripheral	14 kg
AP 5.4 dispenser / internal rewinder	16 kg

[Tab. 1] Printer weight

Performance Data

Print Technology

Thermodirect and thermotransfer printing

Printer Head Type

- “Flat Head” type (ceramic thin film flat head)
- 8.0 dot/mm (203 dpi): Kyocera KPA 104
- 11.8 dot/mm (300 dpi): Kyocera KPA 106

Printhead Characteristics

Printer	Resolution dot/mm	Resolution dpi	Printspeed mm/s	Printspeed inch/s	Max. print-width / mm
AP 4.4	8.0	203	50-200	2-8	104
	11.8	300	50-150	2-6	105
AP 5.4	8.0	203	50-200	2-8	104
	11.8	300	50-150	2-6	105

[Tab. 2] Important printhead data.

Punch sensor

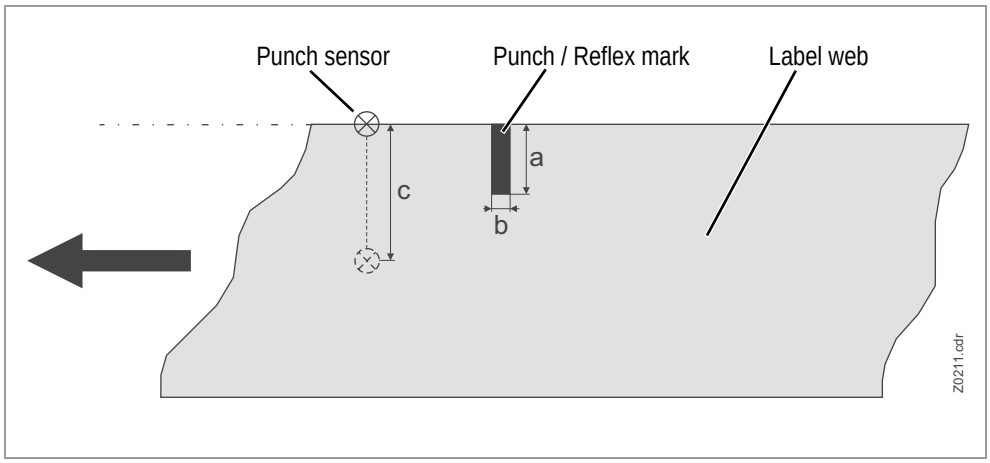
Transmission sensor, adjustable from the left side about half of the material width (0-60 mm) [2].

Sensor type	Setting range (Size c)	Punch length (Size b)	Punch width (Size a)
Transmission sensor (Standard)	0–60 mm	0,8–14 mm	min. 4 mm
Reflex-sensor (optional)	6–66 mm	4 mm (recommended)	12 mm (recommended)

[Tab. 3] Required punch measures.

Reflex sensor

- The *reflex sensor* for AP 5.4 is optionally available (for reflex marks on the material underside)
- Adjustable from the left side about half of the material width (6-66 mm)
- The dark/light change at the reflex sensor is taken as the *label beginning* (= end of the reflex mark)



[2] Measures and setting range of the punch / reflex mark.

Max. print length

The maximum print length depends on the following:

- Printer type
- Printer resolution
- Firmware version
- Parameter settings (e.g. SYSTEM PARAMETERS > Free store size)

Zero line

Offset of the material zero line to the print zero line: 1 mm

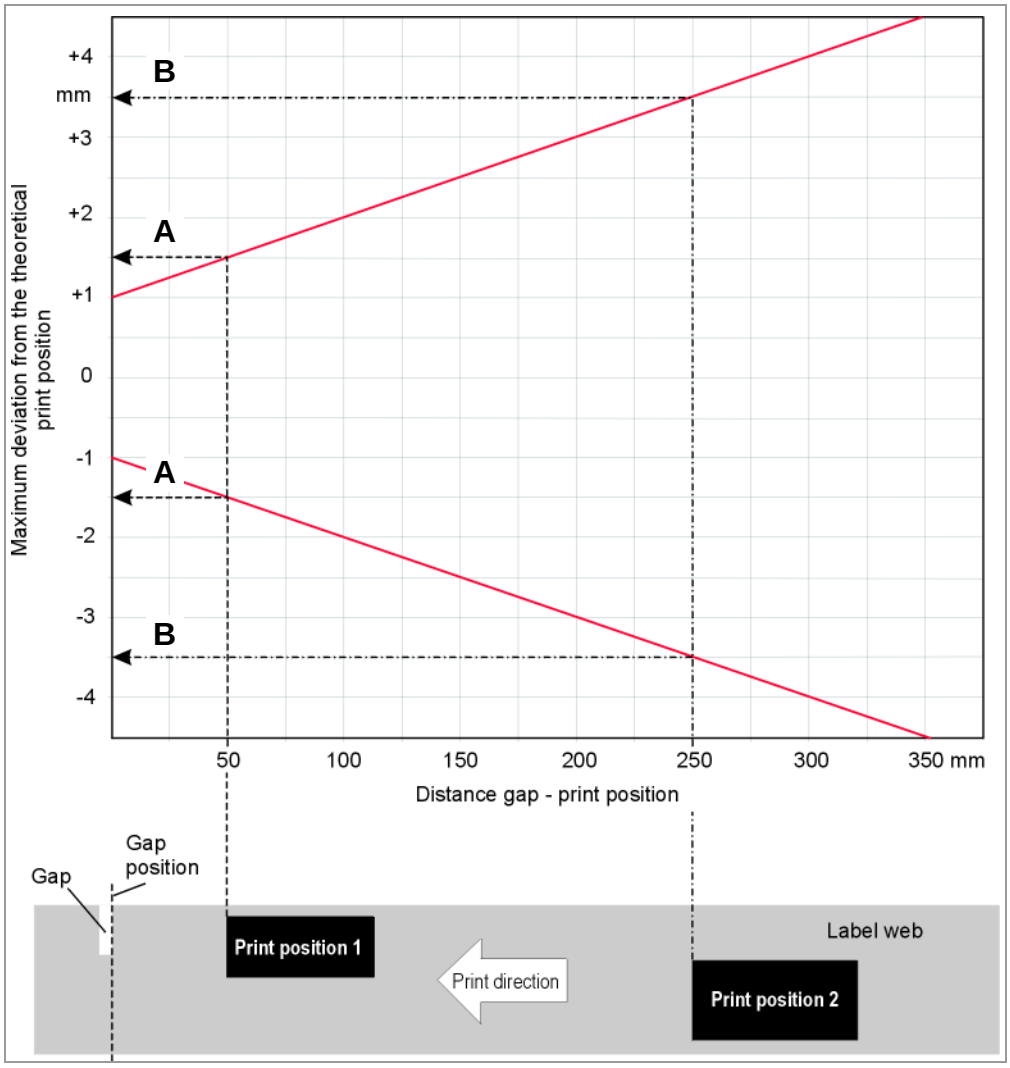
Fonts

- 17 Fixsize fonts , including OCR-A and OCR-B
- 3 scalable fonts (Speedo fonts)
- Truetype fonts are supported
- Optionally can Truetype, Speedo and Fixsize fonts be stored on a CF-card

Modifying Fonts

- Up to factor 8 scaling in x/y direction
- Rotation by 0, 90, 180 and 270 degrees

Impression accuracy



[3] The impression accuracy depends on the print position on the label: the longer the distance to the gap is, the lower is the impression accuracy. The maximum impression accuracy is at the gap position with +/- 1 mm.

Reading examples:

A: Print positioin 1 is located 50 mm behind the gap position. The maximum possible deflection from the theoretical print position is +/- 1.5 mm.

B: Print positioin 1 is located 250 mm behind the gap position. The maximum possible deflection from the theoretical print position is +/- 3.5 mm.

➠ Those values are empirical for typical applications with common label stock / foil combinations. Since the deflection of the print position strongly depends on the applied label stock / foil combination, it can turn out higher if unfavorable combinations are used.

Image formats BMP, PCX, JPEG, TIFF, GIF, Easy Plug logos

Bar codes

Codabar	Code 128 A, B, C
Code 128	Code 128 UPS
Code 128 pharmacy	ITF
Code 2/5 matrix	MSI
Code 2/5 interleaved	EAN 13 add-on 2
Code 2/5 5-line	EAN 13 add-on 5
Code 2/5 interleaved ratio 1:3	EAN 128
Code 2/5 matrix ratio 1:2,5	Postcode (guide and identity code)
Code 2/5 matrix ratio 1:3	UPC A
Code 39	UPC E
Code 39 extended	Code 93
Code 39 ratio 2,5:1	
Code 39 ratio 3:1	

All bar codes scalable in 30 different width and in the height.

2-dimensional bar codes

Data Matrix Code (code according to ECC200)
Maxi Code
PDF 417
Codablock F
Code 49

GS1 Databar & CC bar codes

Reduced Space Symbology (GS1 Databar) und Composite Component (CC) bar codes:

GS1 Databar-14	UPC-A + CC-A/CC-B
GS1 Databar-14 truncated	UPC-E + CC-A/CC-B
GS1 Databar-14 stacked	EAN 13 + CC-A/CC-B
GS1 Databar-14 stacked omnidirectional	EAN 8 + CC-A/CC-B
GS1 Databar limited	UCC/EAN 128 + CC-A/CC-B
GS1 Databar expanded	UCC/EAN 128 + CC-C

Label Stock

Material Types

Thermodirect material, thermotransfer material, synthetic ribbons: PE, PP, PVC, PA in rolls or fan-folded.

Material Thickness

Self-adhesive labels: 60 - 160 g/m^2

Cardboard labels: max. 240 g/m^2

Material Width

Printer type / Application	Material width
AP 4.4, AP 5.4 basic, AP 5.4 peripheral	15 -120 mm
AP 5.4 with internal rewinder	15 -120 mm
AP 5.4 dispenser	30 -110 mm
AP 5.4 dispenser, if a footswitch is used instead of the label sensor to trigger the printer	15 -110 mm

[Tab. 4] Admissible material width of the different printer types.

Label Length

- *Normal printing:* 5 mm up to max. print length
- *Dispensing*: 30-200 mm
- *Dispensing with optional punch sensor for short labels*: 5-200 mm

Gap size

Gap size between the labels on the backing material:

- min.: 1.0 mm
- max.: Label length -15 mm

Label Roll

- *Winding Direction*: Labels facing inward or outward, internal rewinder: labels facing outwards
- *Roll diameter*:

Roll / Conditions	Roll Ø
Label roll for normal printing operation	max. 210 mm
Label roll for dispensing operation (with 100 mm core-Ø)	max. 190 mm
Take-up roll for winding/dispenser operation	max. 125 mm

[Tab. 5]Diameter of material and winding roll

- *Core diameter*: 38.1 mm (1.5“), 76.2 mm (3“) oder 101.6 mm(4“); cores with 76.2 (3“) or 101.6 mm (4“) can be applied with the core adapter supplied with the printer.
- Material width: 12 to 120 mm, for dispenser version: 15 to 110 mm

Thermotransfer Ribbon

Ribbon Roll

- *Winding Direction*: Colour-side preferably rolled inwards (colour side facing outwards can be used)
- *Roll measurements*:

External Ø	max. 80 mm
Core Ø	25 mm (1”)
Width	25 -114 mm
Length	max. 500 m

Connections, device data

Protection class: I

Mains Voltage: 100-240 V (AC)

Mains Frequency: 50-60 Hz

Power Consumption

- Max. 250 W
- In standby mode depending on the equipment 30-40 W

Current Consumption: max. 3.2 A

Interfaces

Interface	AP 4.4	AP 5.4	Details
Centronics	X	X	Bi-directional; conforms with IEEE 1284; nibble mode; connector at the printer: type C
RS-232	X	X	Baud: 1200-115200, 8- bit; suitable connection cord: 1:1 D-Sub 9 extension lead (connector-jack)
RS-422/485		O	Baud: 1200-115200, 8- bit
Ethernet		X	10/100 Base T with TCP/IP, LPD, RawIP printing, DHCP, HTTPD, FTPD, SNMP
USB slave V1.1	X	X	Transmission rate 12 Mbps. If the printer is connected to a host running under Windows, the hosts OS will search for a matching printer driver.
Keyboard Connector		X	PS/2
Connector for Additional Devices		X	

[Tab. 6] X=present; O=optionally available

You can find detailed information on the interfaces in the Service Handbook, under the “Service Electronics” heading in the section on “CPU Boards”, “Plug Connectors”.

Electronic Configuration

Characteristic	AP 5.4	AP 4.4	AP 4.4 RoHS [a]
Processor	32-bit IDT with 32-bit data bus		
SDRAM	16 MB	8 MB	16 MB
ROM	4 MB Flash	2 MB Flash	4 MB Flash
Plug-in Cards	A slot for Compact Flash cards of type T1 with up to 64 MB	--	--
Real-time Clock	Present; printout of date and time possible	--	--
Control Panel	4 buttons; LCD graphics display with 122x32 pixels; typically used to display two text lines with 16 characters each.		

[Tab. 7] Electronic Configuration

a) RoHS conform printer - is built approx. from 08/2006 on.

Specifications only for AP 5.4 dispenser / AP 5.4 Internal rewinder

- Speed, while the rewinding-Ø is calculated: 75 mm/s (3“/s)
- Speed, while the material is fed back: 75 mm/s (3“/s)
- Distance dispensing edge - print zero line: 25 mm
- Distance punch sensor - print zero line: 71 mm
- Max. admissible outer diameter of the rewound backing paper roll: 120 mm

Environmental Conditions

Operating Temperature	4 to 38°C
Storage Temp.	-4 to 60°C
Relative Humidity	30-85% (non-condensing)
Protection category	IP 21
Noise	70dB(A)

Test Marks

CE	The devices fulfil the requirements of the following EC directives: • EMC Directive • Low Voltage Directive For details refer to EC Declaration of conformity
GS	GS test mark: German ‘Safety Tested’ mark
TÜV	TÜV test mark: German test mark; tested according to IEC/EN 60950
FCC	FCC Part 15B : 2002 (Class B)
CAN/CSA	Class 3862 10 - Information Technology Equipment - Certified to Canadian Standards C22.2 No 60 950-00 - 3rd Edition
ANSI/UL	Class 3862 90 - Information Technology Equipment - Certified to US Standards 60950-2000 - 3rd Edition