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Device Types, Use

64-0x Basic

The x in the printer name stands for 4, 5, 6 or 8. The higher this number is, the wider label material can be used with this printer.

- Monotone printing of labelling materials for thermal and thermotransfer processes
- Printing on different materials, e.g. cardboard or self-adhesive labels
- Processing roll and fan-folded material
- Print width:
  -- 64-04 up to 106.6 mm
  -- 64-05 up to 127.9 mm
  -- 64-06 up to 159.9 mm
  -- 64-08 up to 213.2 mm
- Resolution: 300 dpi
- Interfaces: RS 232, RS 422/485 (optional), USB, Centronics, Ethernet (optional)

➠ The 64-0x Basic may *not* be used with peripheral devices!

64-0x Peripheral

- Basic equipment as 64-0x Basic
- The 64-0x Peripheral is additionally equipped with a motor driver and a connector for peripheral devices. Thus it offers the possibility of driving a cutter or a rewinder.

64-0x Dispenser M

- Basic equipment as 64-0x Peripheral
- Additional features: Dispensing edge and internal backing paper rewinder
- Dispensing of self-adhesive labels after printing; the backing paper is wound up inside of the printer.
- „M“ stands for manual application of the labels, what means that the label is taken off the dispensing edge and is applied to the product by hand. For this reason, the dispensing edge provides a light barrier which triggers the dispensing of the next label, if the current one is taken off.

➠ Alternatively, the dispensing can be triggered by a foot switch. The switch must be connected to the *optional* single-start connector.

64-0x Dispenser A

- Basic equipment as 64-0x Peripheral
- Additional features: Dispensing edge and internal backing paper rewinder
- Dispensing of self-adhesive labels after printing; the backing paper is wound up inside of the printer.
- “A” stands for automatic label application, what means, that the label is applied by an applicator. The dispensing edge is longer than the type “M” edge and has no light barrier.

TT4

- Label printer based on 64-04
- Monotone printing of labelling materials for thermal and thermotransfer processes
- Print width up to 98.0 mm
- Automatic label material feed from 4 material sources: One roll material unwinder and three compartments for leporello material. The compartments are placed in a magazin below the printer.

Options

Internal Options ...should be factory-fitted or installed by a service engineer:

- *Reflex sensor*: Light barrier fork that apart from the transmission sensor, also contains a reflex sensor.
- *Fullsize sensor*: Punch sensor which can be shifted across the full material width.

  ➠ The fullsize sensor can *not* be used under one of the following conditions:
  -- The printer is a 64-0x Dispenser (type A or M).
  -- The printer is operated with the online verifier (see below) option.
- *USI* (Universal Signal Interface): can e.g. be used to control an applicator or a scanner.
- *Options board* with an additional serial interface (COM 2) and a PS/2 keyboard connector.
- *Antistatic kit*: reduces electrostatic charge, which can especially arise of the processing of plastic labels. Electrostatic discharge can damage or destroy electronic circuits of the printer.
- *Realtime clock*
- *RS 422/485 interface*, instead of RS 232
- *Single-Start option*: Connector for a foot switch or another external signal, which is supposed to start or stop the printer.

External Options

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

- *Cutter*: Optional high-performance, low-noise cutter with double-cut function from 1 to 5 mm
- *Rewinder*: is mounted to the printer and rewinds the printed label materials with the printed side facing inwards or outwards
- *Online Verifier*: The online verifier (OLV) checks printed bar code immediately after printing it. If the bar code has not been printed or has not been printed in a readable way, the OLV stopps the printer.
- *Keyboard* for standalone operation
- *Foot switch* for triggering the label dispenser (printer must be equipped with single-start option)

Technical Specifications

Dimensions

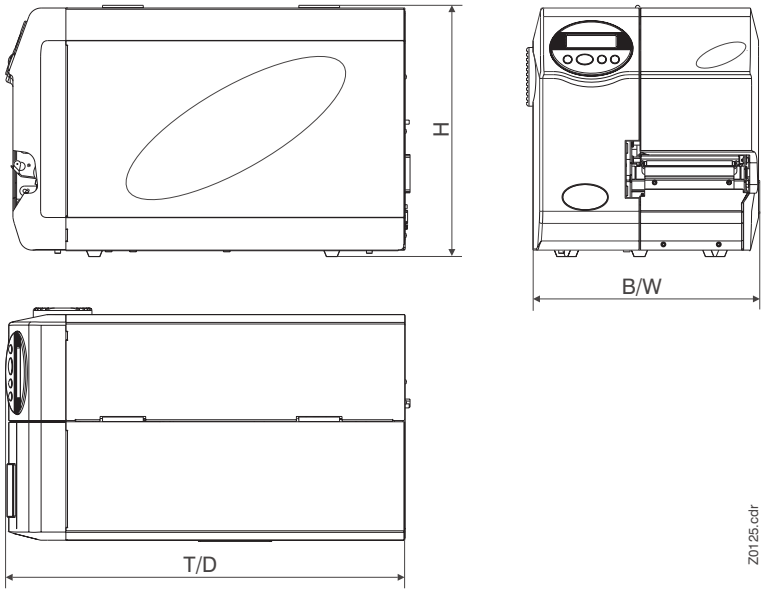

Fig. 1 Dimensions of the 64-xx series standard printers. Refer to the following table for the values.

Printer	W(idth) / mm	H(eight) / mm	D(epth) / mm	Weight in kg
64-04/05	320	305	490	20.0
64-04/05 with cutter	320	305	540	21.5
64-06	350	305	490	21.5
64-06 with cutter	350	305	540	23.0
64-08	450	305	490	26.0
64-08 with cutter	450	305	540	27.5
TT4	280	600	490	35.0
TT4 with cutter	280	600	540	36.5

Tab. 1 Dimensions and weights of the 64-0x series printers. All width measures refer to the housing without the approx. 5 mm wide motor cover.

➠ The dispenser versions of the printers have equal dimensions as the standard types, respectively.

❍ Dimensioned drawings of the 64-0x with and without dispenser, cutter or rewinder are contained in DXF format (Autocad) on the Documentation-CD in folder *Massblaetter*\.

Performance data

Print technology Thermal direct printing, thermal transfer printing

Printhead "Corner Edge Type" print head, high-definition, fast, with integrated temperature control

Resolution 12 dots/mm (300 dpi)

Print speed

64-04/05..... 50 to 406 mm/s (4 to 16 ”/s)
64-06..... 50 to 359 mm/s (4 to 14 ”/s)
64-08..... 50 to 229 mm/s (4 to 9 ”/s)

TT4..... 50 to 300 mm/s (4 to 12 ”/s)

Unit interval 25,4 mm/s (1 “/s), respectively

Print speed 64-0x Dispenser

Printer	Ribbon autoecon.	SYSTEM PARAMETERS >Transport mode =		
		„Dispenser motor“	„Dual motors“	„Printer motor“
64-04/05 Dispenser	Off	12 "/s	12 "/s	16 "/s
	On	8 "/s	12 "/s	16 "/s
64-06 Dispenser	Off	12 "/s	12 "/s	14 "/s
	On	8 "/s	12 "/s	14 "/s
64-08 Dispenser	Off	10 "/s	10 "/s	9 "/s
	On	8 "/s	10 "/s	9 "/s

Tab. 2 The maximum print speed of the dispenser printers depends on the setting of the parameter "SYSTEM PARMETERS > Transport mode". The values are recommendations, up to which proper functioning of the printer is guaranteed.

Print width (actual)

64-04..... 106.6 mm
64-05..... 127.9 mm
64-06..... 159.9 mm
64-08..... 213.2 mm

TT4..... 98.0 mm

Output mode 1:1 and 100 % printable, either with or without cut.

Non-printable area:
1 mm from the front label edge (1st edge in feed direction) and
1 mm from the left band border (right border in feed direction).

Gap detection

Self-initialising light transmission sensor, optional reflex sensor (at the bottom side of the material).

Correction of gap displacement in feed direction is possible by modifying the gap offset (parameter PRINT PARAMETERS > Punch offset),

The trigger point of the reflex mark (that is the actual *label beginning*) is at the dark-to-bright change of the reflex mark.

	Light transmission sensor	Reflex sensor
Setting range	2-17 mm	13-26 mm
Punch length (in feed direction)	0.8-14 mm	4 mm (recommended)
Punch width (across the web)	min. 4 mm	12 mm (recommended)

Tab. 3 Punch dimensions and setting ranges.

Emulation

Easy Plug, Line Printer, Hex Dump

Character sets

17 fonts including OCR-A and OCR-B,
3 scalable fonts,
Truetype fonts supported

Character modification

Scaling in X/Y direction up to factor 16,
Rotation 0, 90, 180, 270 degrees

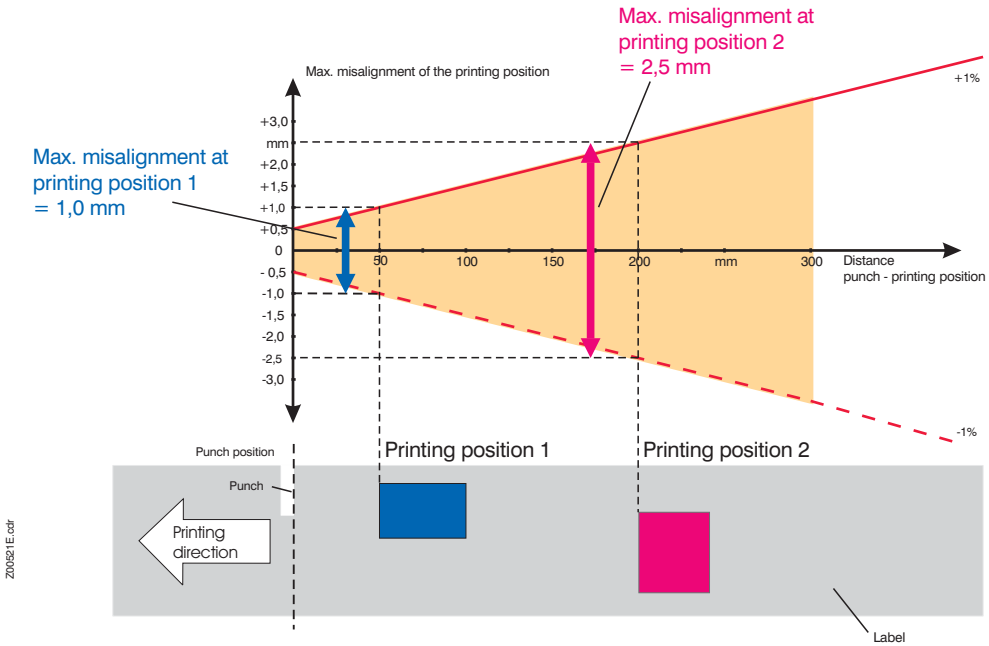

Fig. 2 Impression accuracy depends on the printing position.

Bar codes
EAN 8 and EAN 13 with Add-On 2 and 5, UPC-A, UPC-E, Code 39, Code 39 Ratio 3:1 and Ratio 2,5:1, Code ITF, Codabar, Code 128, Code 2/5, Code 2/5 1, Code 2/5 5, Code 2/5 Interleaved Ratio 1:3, Code 2/5 Matrix Ratio 1:2,5; Code 2/5 Matrix Ratio 1:3; Code MSI, Code EAN 128; Postcode (Guide and Identity Code), UPS Code 128
All bar codes scalable in 30 widths and the height

2dim. bar codes
Data Matrix Code (coded according to ECC200), Maxi Code, PDF 417, Codablock F

Label material

Material type
64-0x:
Self-adhesive, card and synthetic materials, suitable for printing in thermal direct process and thermal transfer process. Use of roll material or leporello possible.

TT4:
Card material, suitable for printing in thermal direct process and thermal transfer process. Use of roll material and three different Leporello materials without material change.

Material weight
64-04/05/06:..... max. 240 g/m^2
64-08:..... max. 160 g/m^2
TT4:..... max. 240 g/m^2

Material width
64-04/05..... 25.4 to 154 mm
64-04/05 Dispenser..... 25.4 to 140 mm
64-06..... 30.2 to 185 mm
64-06 Dispenser..... 30.2 to 172 mm
64-08..... 100 to 254 mm
64-08 Dispenser..... 100 to 241 mm

TT4..... 25.4 to 99 mm

Label length
64-0x..... 5 to “max. print length”
64-0x Dispenser..... 10 to “max. print length”

The max. print length depends on the memory availability of the printer.

Label roll
64-xx:
Max. outer-Ø:..... 210 mm
Inner-Ø:..... 38/76/102 mm (1,5/3/4”)

TT4:
In addition to the roll, 3 Leporello compartments in the magazine.

Roll weight
64-04/05..... max. 4250 g
64-06..... max. 7200 g
64-08..... max. 5000 g

TT4..... max. 4250 g

Ribbon

Ribbon roll

Max. outer-Ø :..... 90 mm
Inner core-Ø :..... 25.4 mm (1")

Printer	Ribbon width
64-04/05	30-132 mm
64-04/05 Dispenser	30-140 mm
64-06	30-164 mm
64-06 Dispenser	30-172 mm
64-08	40-217 mm
64-08 Dispenser	40-241 mm
TT4	30-97 mm

Tab. 4 Admissible ribbon width of the different printer types..

Connections, device data

Printer	Mains voltage	Mains frequency	Power consumption	Max. input current
64-04/05/06	115-240 V	50-60 Hz	250 W	3.2 A
64-08	100-240 V	50-60 Hz	450 W	3.2 A

Tab. 5 Connection data for 64-xx printers.

Ambient conditions

Operating temp. +5 to +35 °C

Storage temperature -20 to +70 °C

Humidity 45 to 75 %, non-condensing

Noise < 70 dB(A)

Protection Class IP 51

Interfaces

- Serial Interface
  -- RS 232
  -- RS 422/485 (instead of RS 232; selection via parameter menu; max. Baud rate 115200)
  -- Bidirectional mode possible
- Parallel Interface
  -- Centronics
  -- Bidirectional mode possible
- Optional: Ethernet interface 10/100 Base T
- Optional: Universal Signal Interface (USI)
- Optional: Second serial interface
- Optional: PS/2 keyboard connector

Electronics

Processor	64 Bit IDT MIPS
RAM	16 MB (extendable to max. 80 MB)
ROM	2 MB
Plugin cards	1 slot for CompactFlash T1 up to max. 64 MB
Realtime clock	optional
Signal interface	(USI board) optional

Operation features

Operation panel	4-key control panel with 32-figure, illuminated LCD display
Settings	Definition of parameters using menu or Easy Plug commands

Status messages / Test functions

Test printouts	Printouts for parameter settings, adding logo and font, line and bar code library
Test functions	Print tests with cut, test routines for memory and sensors, interface test
Error reports	Display of error reports on the display, continuation of print jobs without label loss
Warnings	Ribbon low
Dot check	Checks the printhead on defective dots – automatically or manually

Test certificates

TÜV GS TÜV GS test certificate: Tested safety (according to EN 60950:97)

CE The devices conform to CE-requirements and are marked with the CE label. The manufacturer declares that the device conforms with the relevant European guidelines.

EMC The EMC test was made according to the following norms:

EN 55022:2000 Class A
EN 55024:98+A1:01
EN 61000-3-2:2000
EN 61000-3-3:95+A1:01
EN 61000-6-2:01

➠ The norm EN 55022 prescribes the following warning note to be included in the operation manual for devices of class A:

Warning! This is class A equipment. This equipment may cause radio disturbances if it is used in a living area; in those cases can be demanded of the manufacturer to carry out appropriate measures.

Appendix

Automatic ribbon economy

In regular print mode, ribbon is fed simultaneously with the label material. The automatic ribbon economy (= „ribbon saving“) stops the feeding of the ribbon if there are label areas of a certain size without imprinting. As a result, ribbon is saved (see Fig. 3).

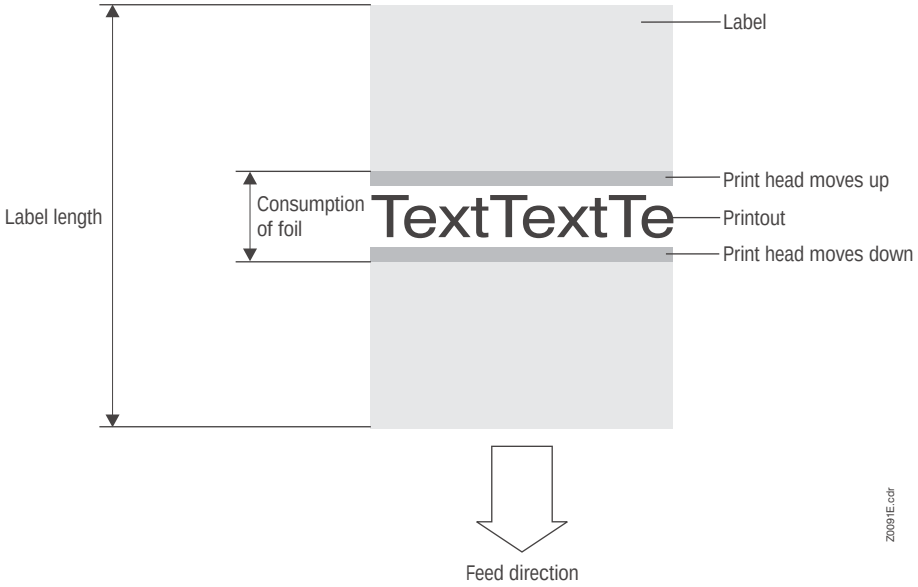

Fig. 3 Ribbon (Foil) consumption when printing labels with a small imprinting area and activated automatic ribbon economy. Ribbon consumption is slightly higher than the length of the imprinted area.

The effect of ribbon saving depends on the print speed. The reason for this is the up and down movement of the printhead as well as the acceleration and slowing-down of the ribbon. Generally said: With a high print speed, less ribbon is saved as with a low print speed (see Tab. 6).

Cutting or dispensing applications can additionally deteriorate the effect of ribbon saving.

Activating ribbon saving

Activate the automatic ribbon economy by selecting parameter „SYSTEM PARAMETERS/ Ribbon autoecon.“.

Set the minimum distance between two print areas from which on ribbon saving should be activated with parameter „SYSTEM PARAMETERS/ Ribbon economy limit“.

❍ For detailed information refer to topic section „Info-printouts and Parameters“.

Only „Real 1:1“

The ribbon saving can only applied in Real 1:1 mode. All printjobs must therefore be defined using the #IMR Easy Plug command.

❍ For detailed information refer to the Easy Plug Manual, topic section „Description of Commands“.

- Set the label length exactly; differences between real and defined label lengthe may disturb the automatic ribbon economy function!
- The print speed must equal the feed speed when using ribbon saving. Otherwise, the ribbon saving function may not work properly.

Print speed in mm/s (Inch/s)	Minimum length of unprinted area in mm	Consumed ribbon per saving action in mm
51 (2)	3.7	1.2
76 (3)	4.6	1.9
102 (4)	5.9	3.1
127 (5)	7.4	4.4
152 (6)	8.9	5.9
178 (7)	11.1	7.6
203 (8)	14.1	9.5
229 (9)	17.6	11.3
254 (10)	21.3	13.6
279 (11)	25.3	15.9
205 (12)	30.0	18.5
330 (13)	34.5	21.2
356 (14)	39.9	24.2
381 (15)	45.6	27.3
406 (16)	51.3	30.5

Tab. 6 The amount (length) of consumed ribbon per saving action (lifting and lowering of the printhead) increases with the print speed.

Important distances to the print line

Distance print line to	mm
Punch sensor (light transmission)	16.0
Punch sensor (reflex)	16.0
Punch sensor (Full-Size)	67.8
Dispensing edge (long)	39.8
Dispensing edge (short)	24.2

Tab. 7 Important measures regarding the print line.

TT4 Specifications

Dimensions, Leporello compartments TT4

Compartment	Stack height		Stack length
	Standard	Maximum	
Top	80 mm	120 mm	280 mm
Middle	75 mm	100 mm	380 mm
Bottom	70 mm	100 mm	450 mm
Without comp.		245 mm	450 mm

Tab. 8 Adjustment range of the compartments and the maximum stack length for each compartment of the TT4 magazine.

Scanner TT4

Scanner for barcodes pre-printed on reverse side
Scanning speed: 500 scans/s
Resolution: 0.15 mm
Readable barcodes: 22 different types

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