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Products need labeling

Label printers
for industrial applications

MACH 4S
Made in Germany

Key features

MACH 4S
Label printers for industrial applications

The **MACH 4S** provide all features of an industrial printer with a wide application range.

The print mechanics and the chassis are made of high-quality materials and perfectly match in terms of shape and function.

The large, colored touchdisplay with self-explanatory symbols offers best operability.

Labels and ribbons are easy to insert from the front.

The centered material guide eliminates any need of adjustments.

The hightech electronic board integrates all the needed interfaces as standard and is ready for any connection.

- reliable and fast printing
- accurate imprint
- compact, appealing design
- easy operation
- little footprint

Sample applications:

PCB labels
When only little space is available – smallest label size 5 x 5 mm

Type plates
Pin sharp fonts, graphics and barcodes up to 600 dpi

Cardboard box and pallet labels
up to a passage width of 120 mm

Types

Material guide
centered

Type B with tear-off edge
for printing on all materials that are wound
on rolls or reels or fanfold.

Label printer		MACH 4.3S		MACH 4S	
Printable resolution	dpi	203	300	300	600
Print speed	up to mm/s	250	250	300	150
Print width	up to mm	104	108.4	105.7	105.7

Type P with peel-off function
for printing on all materials that are wound
on rolls or reels or fanfold. In addition, the labels can be dispensed.

Label printer		MACH 4.3S		MACH 4S	
Printable resolution	dpi	203	300	300	600
Print speed	up to mm/s	250	250	300	150
Print width	up to mm	104	108.4	105.7	105.7
Label height	from mm	12			

Type C with cutter
for printing on all materials that are wound
on rolls or reels or fanfold. From 12 mm in height,
the labels and continuous materials can be cut.

Label printer		MACH 4.3S		MACH 4S	
Printable resolution	dpi	203	300	300	600
Print speed	up to mm/s	250	250	300	150
Print width	up to mm	104	108.4	105.7	105.7
Cutting length	from mm	12			
Gap height	up to mm	2.5			
Cuts/min, without material	up to	100			
Stop print job when		final cutter position has not been reached			

Accessories

External rewinder ER4/210
Label winding is either outside or inside. An adapter kit for exact
alignment of the external rewinder is included in the delivery.

External rewinder		ER4/210
Material width	up to mm	120
Roll diameter	up to mm	210
Tightening axle for core diameter	mm	76
Winding		outside or inside

Details

❶ Cover with a large panoramic window

It can be opened wide. The integrated damping mechanism provides smooth closing. Label stock is visible at any time.

❷ Roll holder

The label roll is put onto the holder and, at this, is automatically centered. Materials of different widths can be placed within the box.

❸ Ribbon holder

The ribbon is pushed onto the spring-mounted holder and is centered by means of a margin stop and the position indication. The insertion in the print mechanics is simple and comfortable.

❹ Print mechanics

It opens at the push of a button and offers easy access.

❺ Print heads

All print heads are freely interchangeable. They are automatically detected and calibrated by the CPU. Major data sucha s running performance, maximum operating temperature and heat energy are directly stored in the print head. The data can be read at the plant.

❻ Gap sensor

It is arranged for labels or punch marks and end of material as well as for print marks in a centered position. In case of multi-track labels, you can switch to a sensor that is shifted 10 mm to the left.

❼ Material guide

With the lateral retaining wheel the width is adjusted. At this, the labels are automatically centered.

❽ Reflective sensor

Labels and end of material as well as print marks are identified by the slideable sensor.

❾ Print roller DR4

It can be quickly and easily unlocked in few steps for cleaning or replacement. Coating: synthetic rubber

DR4-M25

DR4-M50

DR4-M80
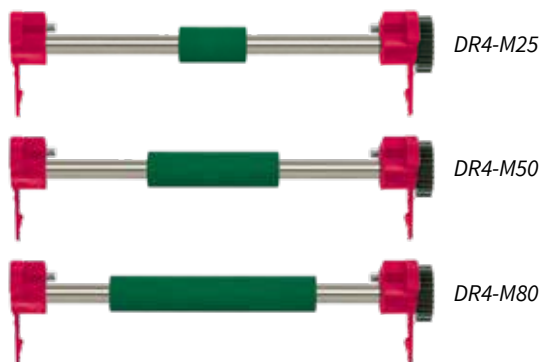
To achieve accurate imprint with slim materials and ribbons slim print rollers are needed. These prevent from print roller wear, print head contamination and errors during material feed.

❿ Peel-off function (with "P" type)

The carrier tape is lead down behind the operation panel. The label separates from the carrier tape at the peel-off edge.
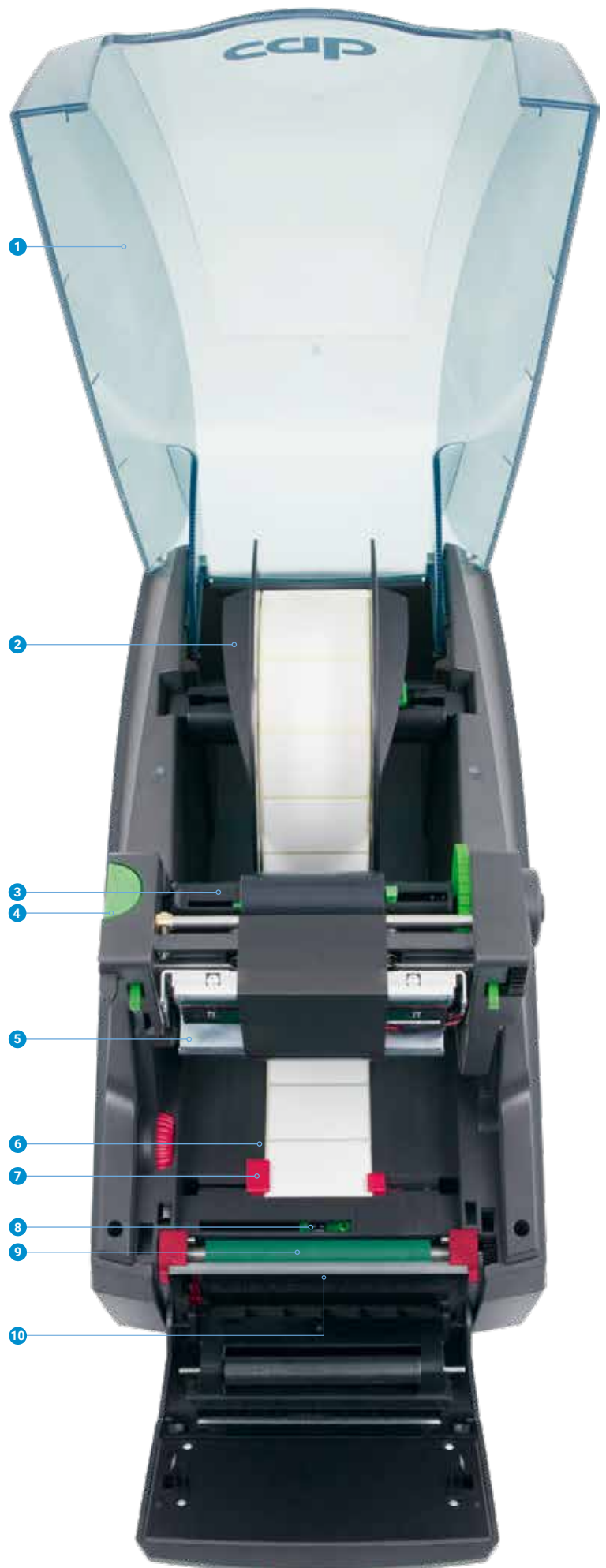
Operation panel

**Intuitive and easy operation with self-explanatory symbols
to configure the device setups**

❶ LED signal: Power ON

❷ Status bar: Data reception, Record data stream,
Ribbon pre-warning, SD memory card / USB memory stick plugged in,
Bluetooth, WLAN, Ethernet, USB Slave, Time

❸ Printer status: Ready, Pause, Number of printed labels per
print job, Label in peel-off position, Awaiting external start signal

❹ ✂ Buttons for

Cutter: direct cutting
Tear-off or peel-off mode: print the next label

❺ Operation

⚙ Jump to menu

🖨 Reprint last label

⏸ Interrupt and continue print job

⏹ Stop and delete all print jobs

⬇ Label feed

Setup options
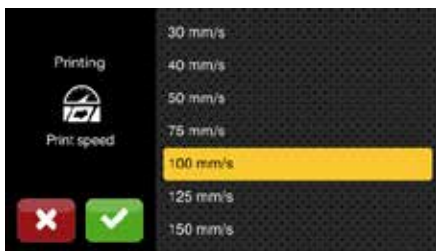

Printing parameters

Print position Y
Fast setup with a slider,
fine setup with ± keys

Print speed selection
via scroll function

Video tutorials
Scan QR code with a mobile device
and watch the explanatory video

Interfaces on the back of the device
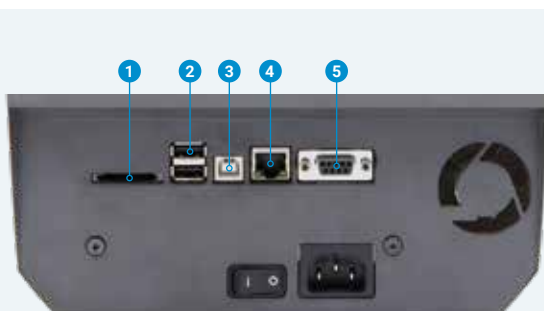
❶ for a **SD memory card**

❷ 2 x USB host to connect a Service Key, USB memory stick,
keyboard, barcode scanner, USB Bluetooth adapter, USB WLAN stick
WLAN hotspot or infrastructure mode: In hotspot mode it is possible
to directly connect a mobile device with the printer via WLAN.

❸ USB 2.0 Hi-speed device to connect a PC

❹ Ethernet 10/100 BASE-T

❺ RS232C 1,200 to 230,400 baud/8 bit

Technical data

● Typical ○ Possible ■ Standard

Label printer			MACH 4.3S		MACH 4S	
Print head	Application		rough surroundings and thermal direct printing		type plates with small fonts or graphics	
	Characteristic		durable		sharp-edge print image	
Material feed and print head position			centered			
Printing method	Thermal transfer		●	●	●	●
	Thermal direct		●	●	○	–
Printable resolution		dpi	203	300	300	600
Print speed		up to mm/s	250	250	300	150
Print width		up to mm	104	108.4	105.7	105.7
Material[1]						
Paper, cardboard, PET, PE, PP, PI, PVC, PU, acrylate, Tyvec		on	roll, reel, fanfold			
Pressed continuous shrink tubes		on	roll, reel			
Textile tapes		on	roll, reel			
Labels	Width	mm	5 - 116			
	Height without label backfeed	from mm	5			
	peel-off, single cut	from mm	12			
	Maximum height	mm	2,000			
	Thickness	mm	0.03 - 0.6			
Carrier material	Width	mm	9 - 120			
	Thickness	mm	0.03 - 0.13			
Continuous material	Width	mm	5 - 120			
	Thickness	mm	0.05 - 0.5			
	Weight (cardboard)	up to g/m²	180			
Shrink tubes	Width continuous	mm	5 - 85			
	Thickness	up to mm	1.1			
Roll, reel	Outside diameter	up to mm	205			
	Core diameter	mm	38.1 - 76			
	Winding		outside or inside			
Ribbon[2]						
Ink side			outside or inside			
Roll diameter		up to mm	72			
Core diameter		mm	25.4			
Variable length		up to m	360			
Width		mm	25 - 114			
Printer sizes and weight						
Width x Height x Depth		mm	240 x 317 x 435			
Height when cover is open		mm	596			
Weight		kg	6			
Label sensor with position indication						
Gap sensor	for		labels or punch marks and end of material, print marks in transparent materials			
	Position		centered or shifted 10 mm to the left			
Reflective sensor from below	for		labels and end of material, print marks in not transparent materials			
	Position		adjustable from centre position 56 mm to the left or 10 mm to the right			
Height of material gap		up to mm	2			
Electronics						
Processor 32 bit clock rate		MHz	800			
Main storage (RAM)		MB	256			
Data storage (IFFS)		MB	50			
Slot for SD memory card (SDHC, SDXC)		up to GB	512			
Battery for time and date, real-time clock			■			
Data storage when power is off (e.g. serial numbers)			■			
Interfaces						
RS232C 1,200 to 230,400 baud/8 bit			■			
USB 2.0 Hi-speed device to connect a PC			■			
Ethernet 10/100 BASE-T			LPD, IPv4, RawIP printing, DHCP, HTTP/HTTPS, FTP/FTPS, SMTP, SNMP, TIME, NTP, Zeroconf, SOAP web service, VNC			
2 x USB host on the back of the device for			Service Key, USB memory stick, keyboard, barcode scanner, USB Bluetooth adapter, USB WLAN stick			
Periphery connection for cutter or peel-off function			■			

[1] The material specifications are standard values. Applications with small labels, very thin, slim, thick and stiff materials as well as labels with a strong adhesive need to be tested.   [2] The ribbon should at least correspond with the width of the carrier material.

Technical data

■ Standard □ Option

Operating data

Power supply		100 - 240 VAC, 50/60 Hz, PFC
Power consumption		Standby < 10 W / typical 150 W / max. 300 W
Temperature / humidity	Operation	+5 - 40°C / 10 - 85 % not condensing
	Storage	0 - 60°C / 20 - 85 % not condensing
	Transport	–25 - 60°C / 20 - 85 % not condensing
Approvals		CE, FCC, CB, cULus, CCC

Operation panel

	Touchscreen LCD color display
Screen diagonal	4.3"
Resolution pixels W x H	480 x 272

Setup options

	Print	Region:
	Labels	Language
	Ribbon	Country
	Tear-off	Keyboard
	Peel-off	Time zone
	Cut	Time
	Interfaces	Display:
	Error	Brightness
		Power safe mode
		Orientation
		Interpreter

Status bar

	Data reception	Bluetooth
	Record data stream	WLAN
	Ribbon pre-warning	Ethernet
	SD memory card plugged in	USB Slave
	USB memory stick plugged in	Time

Monitoring

	Ribbon pre-warning	Print head tension
	End of ribbon	Print head temperature
	End of material	Print head open
	Periphery error	

Test routines

System diagnostics	when device is switched on, including print head detection	
Information display, test printout, analysis	Status printout	Test grid
	Fonts list	Label profile
	Type overview	List of events
	WLAN status	Monitor mode
Status reports	- Printout of system settings, for example print lengths and running times - System status request via software command - Display information of, for example, network error, missing link, barcode error, periphery error, etc.	

Fonts

Font types internally provided	5 bitmap fonts:	7 vector fonts:
	12 x 12 dots	AR Heiti Medium GB-Mono
	16 x 16 dots	CG Triumvirate Condensed Bold
	16 x 32 dots	Garuda
	OCR-A	HanWangHeiLight
	OCR-B	Monospace 821
		Swiss 721
		Swiss 721 Bold
to be stored	TrueType fonts	
Character sets	Windows-1250 to -1257 DOS 437, 737, 775, 850, 852, 857, 862, 864, 866, 869 EBCDIC 500 ISO 8859-1 to -10 and -13 to -16 WinOEM 720 UTF-8 MacRoman DEC MCS KOI8-R	
	Western European	Cyrillic
	Eastern European	Greek
	Chinese simplified	Latin
	Chinese traditional	Hebrew
	Thai	Arabic

Fonts

Bitmap fonts	Size in width and height 1 - 3 mm Zoom factor 2 to 10 Orientation 0°, 90°, 180°, 270°
Vector / TrueType fonts	Size in width and height 0.9 - 128 mm Variable zoom Orientation 360° in steps of 1°
Font styles	Bold, italic, underlined, outline, inverse - depending on the font type
Character spacing	Variable or Monospace for fixed character spacings

Graphics

Graphic elements	Lines, arrows, rectangles, circles, ellipses - filled and filled with fading
Graphic formats	PCX, IMG, BMP, TIF, MAC, GIF, PNG

Barcodes

Linear	Code 39, Code 93	Interleaved 2/5
	Code 39 Full ASCII	Ident and routing code
	Code 128 A, B, C	of Deutsche Post
	EAN 8, 13	Codabar
	EAN/UCC 128/GS1-128	JAN 8, 13
	EAN/UPC Appendix 2	MSI
	EAN/UPC Appendix 5	Plessey
	FIM	Postnet
	HIBC	RSS 14
		UPC A, E, E0
2D and stacked	DataMatrix Data Matrix Rectangle Extension QR code Micro QR code GS1 QR code GS1 DataMatrix PDF 417 Micro PDF 417 UPS MaxiCode GS1 DataBar Aztec Codablock F RSS 14 truncated, limited, stacked, stacked omni-directional	
	All codes are variable as regards height, modular width and ratio; orientations 0°, 90°, 180°, 270° optional check digit, plain text printout and start / stop code depending on the type of code	

Software

Label software	cablabel S3 Lite	■
	cablabel S3 Viewer	■
	cablabel S3 Pro	□
	cablabel S3 Print	□
Running also with	CODESOFT NiceLabel EASYLABEL BarTender	
Stand-alone operation		■
WHQL certified Windows printer drivers for	Windows Vista	Server 2008	■
	Windows 7	Server 2008 R2	
	Windows 8	Server 2012	
	Windows 8.1	Server 2012 R2	
	Windows 10	Server 2016	
Apple Mac OS X printer drivers	from version 10.6	■
Linux printer drivers	from CUPS 1.2	■
Programming	Printer language JScript	■
	abc Basic Compiler	■
Integration	SAP	■
	Database Connector	■
Administration	Printer control	■
	Configuration in Intranet and Internet	■
	Network Manager (in preparation)	■

cab uses Free and Open Source Software within its products.
For more information see **www.cab.de/opensource**

Label software cablabel S3

Designing, printing, administrating with cablabel S3

cablabel S3 opens up the full potential of cab devices.

First of all, the label must be designed. Only when it comes to printing
it has to be decided whether the label shall be processed on a label printer, a print and apply or marking laser system.

cablabel S3 is of a modular design which makes it adaptable to requirements step by step. To support functions like native JScript programming, elements such as the JScript Viewer are embedded as plug-ins. The designer user interface and the JScript code are synchronized in real time. Special functions like the Database Connector or barcode testers can be integrated.
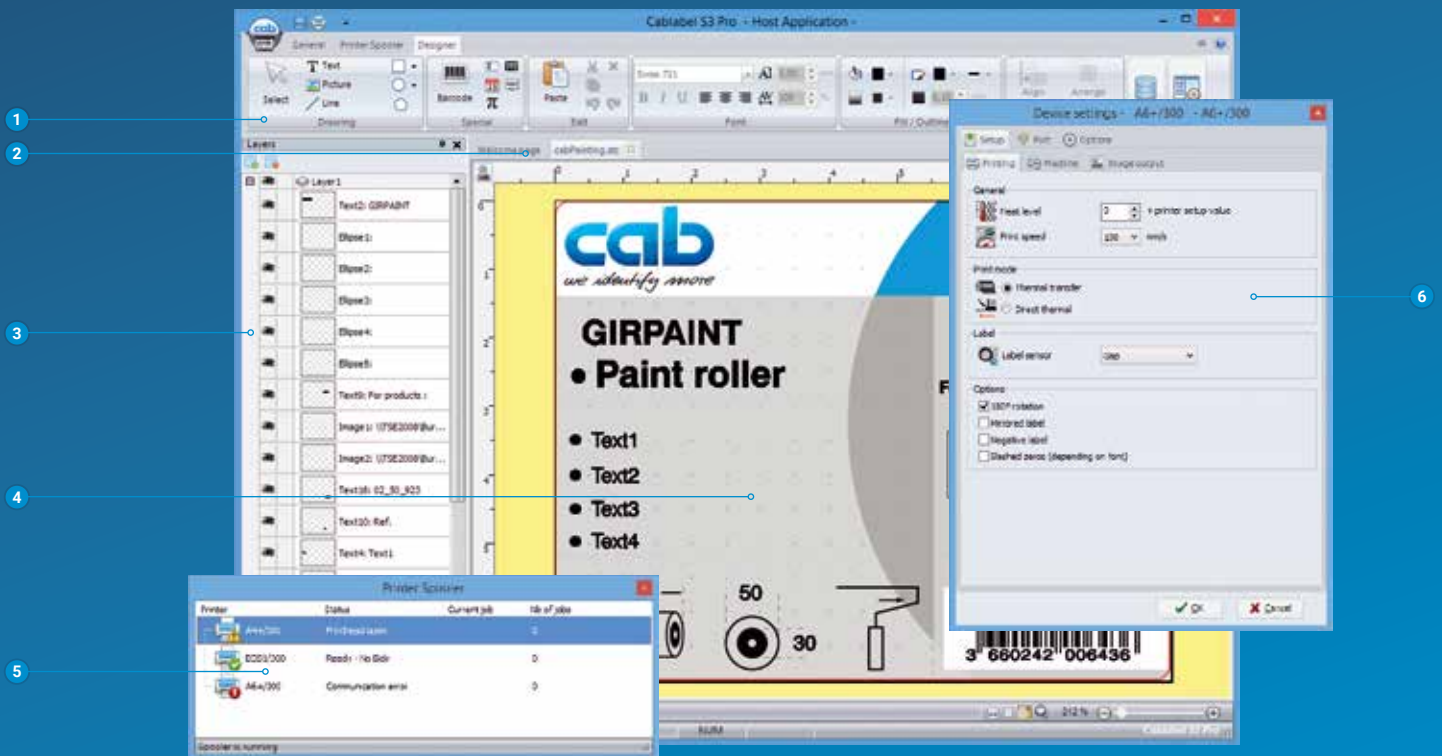
1 Toolbar
to create different label objects

2 Tabs
to quickly switch from one running
label design to another

3 Layers
to administrate different label objects

4 Designer
simplifies the design and displays the label WYSIWYG

5 Printer spooler
to monitor all print jobs and the state of the printer

6 Drivers
for setting and the communication with devices

Printing in stand-alone operation

This operating mode is the printer's ability to select and print labels even when it is not connected to a host system.

The label has to be designed with a software such as cablabel S3 or by direct programming with a text editor
on a PC. Label formats, texts, graphics as well as database contents are stored on a memory card,
a USB memory stick or in the internal IFFS memory.

Only variable data are sent to the printer via a keyboard, a barcode scanner,
scales or other host systems and/or recalled by the Database Connector
from the host and printed.

For further information see

Printer control and administration

Printer drivers

To control the printer with a software other than cablabel S3, cab provides drivers in 32 / 64 bit for operating systems starting from Windows Vista, Mac OS 10.6 and Linux with CUPS 1.2.

Windows[1] drivers
cab printer drivers are certified according to WHQL. They ensure optimum stability on the Windows operating system.

Mac OS X[2][3] drivers
cab provides CUPS-based printer drivers for Mac OS X applications.

Linux drivers[3]
Linux drivers are CUPS-based.

Drivers are offered on the DVD delivered with the printer and for free download at **www.cab.de/en/support**

Printer programming

JScript
To control the printer, cab has developed the embedded programming language JScript. See manual for free download at **www.cab.de/en/programming**

abc Basic Compiler
In addition to JScript and as an integral part of the firmware, it allows advanced printer programming before data are sent to printout. For example, external printer languages can be replaced without interfering in the current print job. Also data from other systems such as a scale, a barcode scanner or PLC can be integrated.

Printer integration

Printer Vendor Program
As a partner in SAP's[4] Printer Vendor Program, cab has developed a replace method to enable easy control of a cab printer via SAPScript from SAP R/3. Only variable data are sent to the printer by the host. Pictures and fonts that had priorly been stored in the local memory (IFFS, memory card, etc.) are merged.

Step 1	Step 2	Step 3
Create a label and a replace file with cablabel S3	Use the replace file and replace the variable data in SAPScript	Printout from SAP
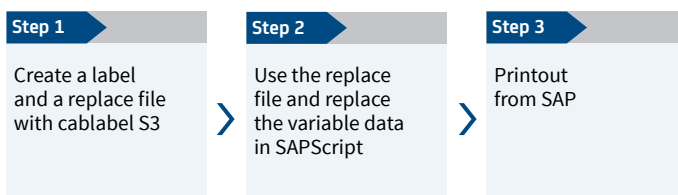
[1] Windows is a registered trademark of Microsoft Corporation
[2] MAC OS X is a registered trademark of Apple Computer, Inc.
[3] Only for device series SQUIX (except of SQUIX MT), MACH 4S, EOS, Hermes+ and PX
[4] SAP and all corresponding logos are trademarks or registered trademarks of SAP SE

Printer administration

Configuration in Intranet and Internet
The HTTP and FTP server integrated in the printer via standard programs like a web browser or FTP clients allows printer control and configuration, firmware updates and memory card administration. Via email or SNMP, the SNMP and SMTP client datagram sends status, warning and error messages to administrators and users. Time and date are synchronized by a time server.
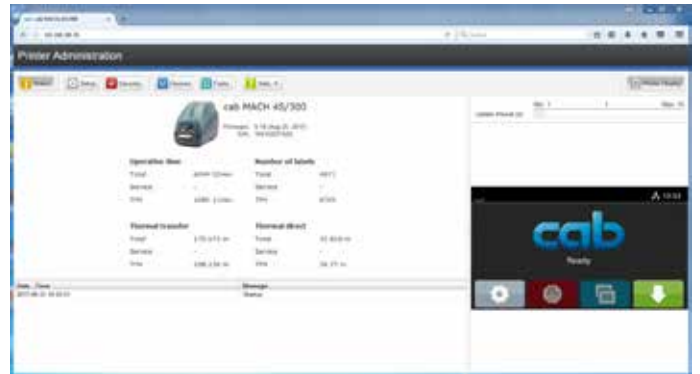
Network Manager in preparation
It is possible to simultaneously manage several printers within the network. Control, configuration, firmware updates, memory card administration, data synchronization and PIN administration are supported from one single location.
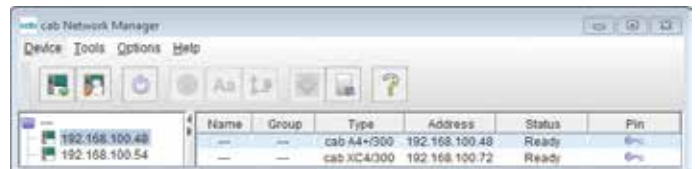
Database Connector
Printers connected to a network may directly access data from a central ODBC or OLEDB-ready database and print it on a label. While printing, data can be rewritten to the database.

Delivery program

Pos.		Part no.	Printers
1.1	Type B with tear-off edge	5984630 5984631 5984632 5984633	Label printer MACH 4.3S/200B Label printer MACH 4.3S/300B Label printer MACH 4S/300B Label printer MACH 4S/600B
1.2	Type P with peel-off function	5984634 5984635 5984636 5984637	Label printer MACH 4.3S/200P Label printer MACH 4.3S/300P Label printer MACH 4S/300P Label printer MACH 4S/600P
1.3	Type C with cutter	5984638 5984639 5984640 5984641	Label printer MACH 4.3S/200C Label printer MACH 4.3S/300C Label printer MACH 4S/300C Label printer MACH 4S/600C

Scope of delivery:
Label printer Power cable Type E+F, length 1.8 m Connecting cable USB, length 1.8 m Operator's manual DE/EN

DVD:
Operator's manual in 30 languages
Configuration manual DE/EN/FR
Service manual DE/EN
Spare parts list DE/EN
Programming manual EN
WHQL certified Windows printer drivers for

Windows Vista	Server 2008
Windows 7	Server 2008 R2
Windows 8	Server 2012
Windows 8.1	Server 2012 R2
Windows 10	Server 2016

Apple Mac OS X printer drivers DE/EN/FR
Linux printer drivers DE/EN/FR
Label software cablabel S3 Lite
cablabel S3 Viewer
Database Connector

Pos.		Part no.	Wear parts
2.1		5977382.001	Print head 4.3/200
		5977383.001	Print head 4.3/300
		5977444.001	Print head 4/300
		5977380.001	Print head 4/600
2.2		5984649.001	Print roller DR4

Pos.		Part no.	Extra equipment
2.3		5984223.001	Print roller DR4-M25
2.4		5984224.001	Print roller DR4-M50
2.5		5984228.001	Print roller DR4-M80

Pos.		Part no.	Extra equipment
2.6		5977370	SD memory card 8 GB
2.7		5977730	USB memory stick 8 GB
2.8		5978912.001	USB WLAN stick 2.4 GHz 802.11b/g/n
2.9		5977731	USB WLAN stick with rod antenna 2.4 GHz 802.11b/g/n + 5 GHz a/n/ac
2.10		5977732	USB Bluetooth adapter
2.11		5550818	Connecting cable RS232 C 9/9 pin, length 3 m
2.12		5984648.001	Roll holder
2.13		5984647.001	Ribbon holder
2.14		5540750	External rewinder ER4/210

Pos.		Part no.	Label software
11.7		5588000	cablabel S3 Lite
		5588001	cablabel S3 Pro 1 WS
		5588100	cablabel S3 Pro 5 WS
		5588101	cablabel S3 Pro 10 WS
		5588150	cablabel S3 Pro 1 additional licence
		5588151	cablabel S3 Pro 4 additional licences
		5588152	cablabel S3 Pro 9 additional licences
		5588002	cablabel S3 Print 1 WS
		5588105	cablabel S3 Print 5 WS
		5588106	cablabel S3 Print 10 WS
		5588155	cablabel S3 Print 1 additional licence
		5588156	cablabel S3 Print 4 additional licences
		5588157	cablabel S3 Print 9 additional licences
		in preparation	cablabel S3 Print Server
11.10		9009950	Programming manual EN, printed copy

Scopes of delivery, design and technical specifications correspond to the date of the printing. Subject to change. The data provided in the catalog do not represent any warranty or guarantee.

Information is also available on the Internet
www.cab.de/en/mach4s

cab product overview

Label printers MACH1, MACH2
in the lower price segment

Label printers MACH 4S
where little space is available

Label printers EOS2
Desktop device for label rolls
up to diameter 152 mm

Label printers EOS5
Desktop device for label rolls
up to diameter 203 mm

Label printers SQUIX 2
Industrial device for print widths
up to 57 mm

Label printers SQUIX 4
Industrial device for print widths
up to 108 mm

Label printers SQUIX 6
Industrial device for print widths
up to 168 mm

Label printers A8+
Industrial device for print widths
up to 216 mm

Label printers XD4T
for double-sided printing

Label printers XC
for two-color printing

Print and apply systems Hermes+
for automation

Print and apply systems Hermes C
for two-color printing and applying

Print modules PX
to be integrated in labeling machines

Labels
made from more than 400 materials

Ribbons
in wax, resin and resin/wax qualities

Label software cablabel S3
Design, print, control

Label dispensers HS, VS
for horizontal or vertical dispense

Labeling heads IXOR
to be integrated in labeling machines

Marking lasers FL+
with output powers 10 to 50 Watt

Laser marking systems XENO 1
for single workpieces and series