

Products need labeling

Tube labeling systems



AXON
Made in Germany

Reliable tube and vial labeling using AXON

Tubes



Vials



Samples identified in real time

Unique labeling enables samples be assigned quick and reliably in labs.

In practice, self-adhesive labels are applied individually to tubes or vials. 1D or 2D encoding enables samples be processed fully automated in transport and filing.

AXON has been designed for direct thermal and thermal transfer label printing. 300 dpi or 600 dpi print resolutions favor sharp-edge and high-contrast print images. The smallest codes and fonts can be verified reliably.

A labeling cycle takes less than two seconds.

Tubes and vials with or without a closure cap can be inserted by hand or automated by a handling system.

Symbols on the control panel support AXON be operated intuitively. Replacing a label roll or a ribbon is no big deal. In cases of cleaning or wear, print rollers and transport rollers are easy to remove using a tool attached.

RS232, USB, Ethernet, WLAN and Bluetooth ensure data be transferred. AXON integrates to Laboratory Information Management Systems (LIMS).

If no PC is plugged, variable data can be entered on a control panel, with the help of a keyboard or a scanner.

110 VAC to 240 VAC input voltage at 50 / 60 Hz, 24 VDC to 60 VDC are options



AXON 1		AXON 2
Modules of a SQUIX 2P label printer and modules of the tube applicator are united in one chassis.	Printer	Standard SQUIX 4MP label printer providing an AXON 2 applicator
no more than 56 mm	Label widths	no more than 110 mm
vertical	Tube / Vial orientation	horizontal
Once tubes or vials have been inserted to the retainer, they can be filled and sealed.	Particularity	Identified tubes and vials can be ejected automatically, for example to a tray.
7 - 26 mm a maximum of 38 mm may be possible upon request	Tube / Vial diameters	7 - 22 mm
20 - 130 mm	Tube / Vial lengths	25 - 120 mm
Warning on a label roll ending Codes be verified	Options	-

AXON 1 tube labeling systems



AXON 1.2
processing labels 5 mm to 56 mm wide

- 1 Ribbon retainer**
Materials are easy to remove with the help of a three-part tightening axle.
- 2 Antistatic brush**
Electrostatic charge dissipates after printing, in particular if plastic materials are in use.
- 3 Transport roller**
Labels are applied to tubes or vials.
Height setting according to the length of a tube or vial
- 4 Control panel**
Intuitive operation using self-explanatory symbols
Rotation in steps of 90° by software command
- 5 Internal liner rewind unit**
Materials are easy to remove with the help of a three-part tightening axle.
- 6 Print roller**
Synthetic rubber favors highly accurate print images.
- 7 Peel-off plate, extended**
It promotes labels be applied reliably to tubes or vials.
- 8 Pinch roller**
Tubes or vials are pressed against the transport roller as labels are applied.
- 9 Solid cast aluminum chassis**
Base of all components
- 10 Base plate**
Height setting enables labels be located accurately to target positions on tubes or vials.



processing labels 5 mm to 25.4 mm wide

Small tubes or vials can be inserted more easily.

AXON 2 tube applicator



1 Peel-off plate

Adapted specifically to tubes and vials

2 TRV 14 transport roller (Ø 14 mm)

Labels are applied to tubes or vials of diameters 10 mm to 22 mm. By moving the roller along the shaft to specified positions, closure caps or protruding threads remain located beside the roller.

Operations require labels no more than 56 mm wide and a Type 56 peel-off plate. In cases of smaller diameters or wider labels, adapted transport rollers are provided as options.

3 Pinch rollers

Aligned according to the length of a tube or vial
Tubes or vials are pressed against the transport roller as labels are applied.

4 Swivel arms providing a stop

Axial setting according to the length of a tube or vial and the label position

5 Material replacement

Pivoting the applicator simplifies labels or ribbons be replaced.

6 Tray

Tubes or vials ejected automatically after printing are collected.







Control panel

Intuitive operation

Settings are easy to configure using self-explanatory symbols.

- 1 **LED:** Power ON
- 2 **Status bar:** Receive data, record datastream, warning on a ribbon ending, SD memory card / USB stick plugged, Bluetooth, WLAN, Ethernet, USB slave, Time
- 3 **Printer status:** Ready, pause, number of labels printed on a print job, label in peel-off position, awaiting external start signal
- 4 **USB slot** to plug a service key or a memory stick, to store data in the internal IFFS printer memory

5 Operation

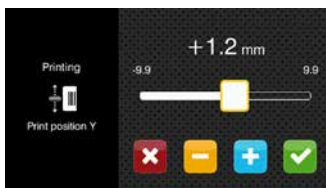
-  Print and apply labels step by step
-  Jump to menu
-  Reprint the last label
-  Interrupt and continue a print job
-  Stop and delete all print jobs
-  Label feed



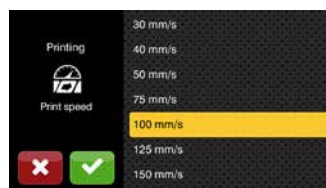
Setup options



Print parameters



Print positions Y



Print speeds

Landscape or portrait display depending on the orientation of assembly

AXON 1 tube labeling system



- 1
- 4

Rotation in steps of 90° by software command

SQUIX label printer representing AXON 2



Interfaces

- 1 Slot to plug a **SD memory card**
- 2 **2 USB hosts** to plug a service key, a USB stick, a keyboard, a barcode scanner, an USB Bluetooth adapter, an USB WLAN stick or an external control panel
- 3 **USB 2.0 Hi-speed** to plug a PC
- 4 **Ethernet 10/100 Mbit/s**
- 5 **RS232-C** 1,200 to 230,400 Baud / 8 Bit

Options

- 6 **Digital I/O interface**
SUB-D socket connector, 25 pins
compliant with IEC/EN 61131-2, Type 1+3
Inputs and outputs are galvanically isolated and protect from reverse polarity. Outputs are short-circuit proof.

PNP inputs

Start printing / applying a label
Print initial label
Reprint
Delete print job
Label removed
Stop printing / applying a label
Label feed
Pause
Reset

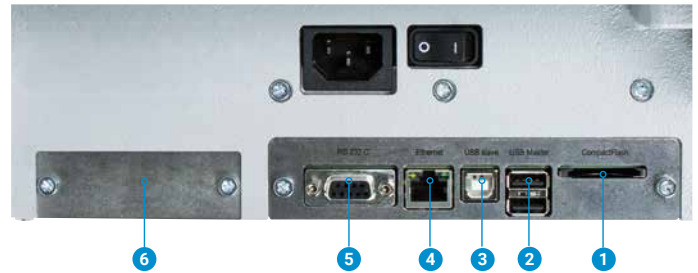
PNP, NPN outputs

Device ready
Print data available
Initial position / upper end limit
Paper feed ON
Label in peel-off position
Labeling position / lower end limit
Warning on a ribbon ending
Warning on a label roll ending*
Ribbon / Label roll ending
Collective error

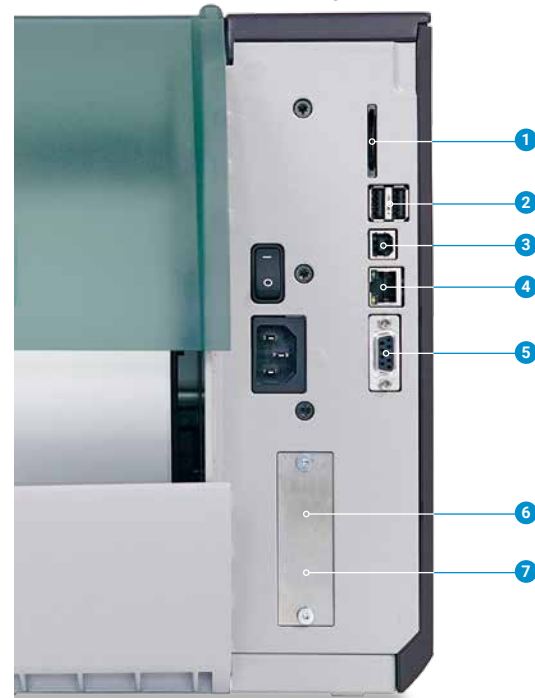
*AXON 1 only



AXON 1 tube labeling system



SQUIX label printer representing AXON 2



Technical data

● typical ○ possible ■ standard □ option

Tube labeling system			Type	AXON 1.1		AXON 1.2		Label printers providing AXON 2		
								SQUIX 4.3MP	SQUIX 4MP	SQUIX 4MP
Print head										
Print method	Thermal transfer		●	●	●	●	●	●	●	●
	Direct thermal		●	–	●	–	●	○	–	–
Print resolution	dpi		300	600	300	600	300		600	
Print speed	mm/s		100	100	100	100	150		150	
Print width	mm max.		25.4	25.4	56.9	54.1	108.4	105.7	105.7	
Material										
Tubes / Vials	Orientation at the time of a label be applied		vertical				horizontal			
Diameter	mm		7 - 26				10 - 22	If options are provided: 7 - 12		
	mm upon request max.		38				–			
	Length, closure cap included		mm		20 – 50	32 - 130	25 - 120			
	Conicity (change in diameter)		% max.		0.8		0.8			
Labels ¹⁾	Material		Paper, plastics such as PET, PP				Paper, plastics such as PET, PP			
	Width		mm		5 - 25.4	5 - 56	5 - 56	If options are provided: 5 - 110		
	Height		mm at least		12		12			
	Thickness		mm at least		0.05		0.05			
	Roll diameter		mm max.		205		205			
	Core diameter		mm		76		38 - 76			
	Winding		outside				outside			
	Liner	Width		mm		16 - 30	24 - 60	9 - 60	If options are provided: 9 - 114	
Thickness ²⁾		mm at least		0.05		0.05				
Ribbon	Coating		outside or inside				outside or inside			
	Roll diameter		mm max.		80		80			
	Core diameter		mm		25		25			
	Length		m max.		600		600			
	Width		mm		25 - 38.1	25 - 60	25 - 114			
Printer dimensions and weights										
Width x Height x Depth			mm		270 x 195 x 560		252 x 288 x 520			
Weight			kg approx.		12		12			
Label sensors / Position indicators										
Transmissive sensor			to detect		labels or punch marks and materials ending, print marks on transparent materials					
Reflective sensor			bottom or top reflex		to detect		labels and materials ending, print marks on non-transparent materials			
Sensor distance	to the contact edge		left-aligned	mm	8	5 - 12	–			
	center to the contact edge		centered	mm	–	–	0 - 55			
Interfaces										
RS232-C 1,200 to 230,400 Baud / 8 Bit			■							
USB 2.0 Hi-speed to plug a PC			■							
Ethernet 10/100 Mbit/s			LPD, RawIP printing, SOAP web service, OPC UA, WebDAV DHCP, HTTP / HTTPS, FTP / FTPS, TIME, NTP, Zeroconf, SNMP, SMTP, VNC							
1 USB host on the control panel			to plug a		service key, USB stick					
2 USB hosts on the back of the device			to plug a		keyboard, barcode scanner, USB Bluetooth adapter, USB WLAN stick					
Digital 24 VDC I/O interface			□							
Operational data										
Voltage	100 - 240 VAC, 50 / 60 Hz, PFC		■							
	24 - 60 VDC		□							
Power input			<10 W in standby / 100 W are typical							
Temperature / Humidity	In operation		+5 - 40°C / 10 - 85 %, not condensing							
	On stock		0 - 60°C / 20 - 85 %, not condensing							
	In transport		–25 - 60°C / 20 - 85 %, not condensing							
Approvals			CE (In-vitro), FCC Class A, ICES-3, cULus, CB				CE (In-vitro), FCC Class A, ICES-3, cULus, CB			
			further approvals on request				CCC, EAC, BIS, BSMI, KC-Mark, CoC Mexico			
Control panel										
LCD color touchscreen	Screen diagonal		"		4.3					
	Resolution - Width x Height px		272 x 480							

¹⁾ Limitations may apply when using small labels, thin materials or strong adhesive. Critical applications need testing.

²⁾ Peeling labels off a liner requires liner materials not thicker than the labels.

Technical data

■ standard □ option

Setup options		
	Print Labels Ribbon Label peel-off Apply labels Interfaces Error	Region: - Language - Country - Keyboard - Time zone Time Display: - Brightness - Low-power mode - Orientation Interpreter
Status bar		
	Receive data Record datastream Warning on a ribbon ending SD memory card plugged USB stick plugged	Bluetooth WLAN Ethernet USB slave Time
Technical control		
	Ribbon winding Warning on a ribbon ending Ribbon ending Label roll ending Tube / Vial diameter Tube / Vial available Warning on a label roll ending Cover closed*	Print head voltage Print head temperature Print head open Pinch roller open Peripheral error Code verifier*
	*AXON 1 only	
Test routines		
System check	when turning on the device print heads are also detected	
Info display, test printout, analysis	Status printout Fonts list List of devices WLAN status	Test grid Label profile List of events Monitor mode
Status notifications	- Printout of device figures, such as print durations or hours of operation - Device status request by software command - Indication of errors related to a network, barcode or periphery, missing links, etc.	
Fonts		
Internal	5 bitmap fonts: 12 x 12 dots 16 x 16 dots 16 x 32 dots OCR-A OCR-B	7 vector fonts: AR Heiti Medium GB-Mono CG Triumvirate Condensed Bold Garuda HanWangHeiLight Monospace 821 Swiss 721 Swiss 721 Bold
To store	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 Eastern European Chinese, traditional Chinese, simplified Thai	Cyrillic Greek Latin Hebrew Arabian
Bitmap	Widths and heights 1 - 3 mm Zoom factors 2 - 10 0°, 90°, 180°, 270° orientations	
Vector / TrueType	Widths and heights 0.9 - 128 mm Continuous zoom 360° orientation in steps of 1°	
Font styles	Bold, italic, underlined, outline, inverse - depending on the font type	
Character pitch	Variable or monospace	

Graphics			
Elements	Lines, arrows, rectangles, circles, ellipses - filled and gradient		
Formats	PCX, IMG, BMP, TIF, MAC, GIF, PNG		
Codes			
1D barcodes (linear)	Code 39, Code 93 Code 39 Full ASCII Code 128 A, B, C EAN 8, 13 Interleaved 2/5		
2D and stacked codes	DataMatrix DataMatrix Rectangle Extension QR code Micro QR code UPS MaxiCode Codablock F Request for further codes.		
	Codes be verified by a CC200 verifier requires approval depending on code types, sizes and contents.		
	Check digits, plain text printout and start/stop encoding are options depending on the code type.		
Software			
Label software	cablabel S3 Lite cablabel S3 Viewer cablabel S3 Pro cablabel S3 Print		■ ■ □ □
Running also with	CODESOFT NiceLabel BarTender AXON 2 only		
Stand-alone operation			■
Windows printer drivers* WHQL-certified for	Windows Vista Windows 7 Windows 8 Windows 8.1 Windows 10	Server 2008 Server 2008 R2 Server 2012 Server 2012 R2 Server 2016 Server 2019	■
Mac OS X printer drivers	at least Mac OS 10.6		■
Linux printer drivers	at least CUPS 1.2		■
Programming	JScript printer language abc Basic Compiler ZPL II (Datastream be tested in advance)		■ ■ □
Integration	SAP Database Connector		■ ■
Administration	Printer control Configuration on the Intranet / Internet		■ ■

*available for AXON 1 end of 2021

Free and Open Source software are part of cab products.
For information see www.cab.de/opensource

cablabel S3 software

Design, print, administrate

cablabel S3 opens up the full potential of cab devices. If designing a label, the modular software adapts to requirements. Plugins are provided, such as the JScript Viewer to support native JScript programming. The user interface and the JScript code synchronize in real time. Features such as the Database Connector can be included, so can barcode verifiers.



Stand-alone printing

Printers in this mode of operation are able to select labels and print them when no host is connected.

Labels are designed on a PC, using software such as cablabel S3 or a text editor. Label formats, contents, graphics and data off a database are stored on a memory card, a USB stick or in the internal IFFS printer memory.

Only variable data are sent to a printer from a host system such as a keyboard, a barcode scanner or a scale and/or requested from a host by the Database Connector and printed.



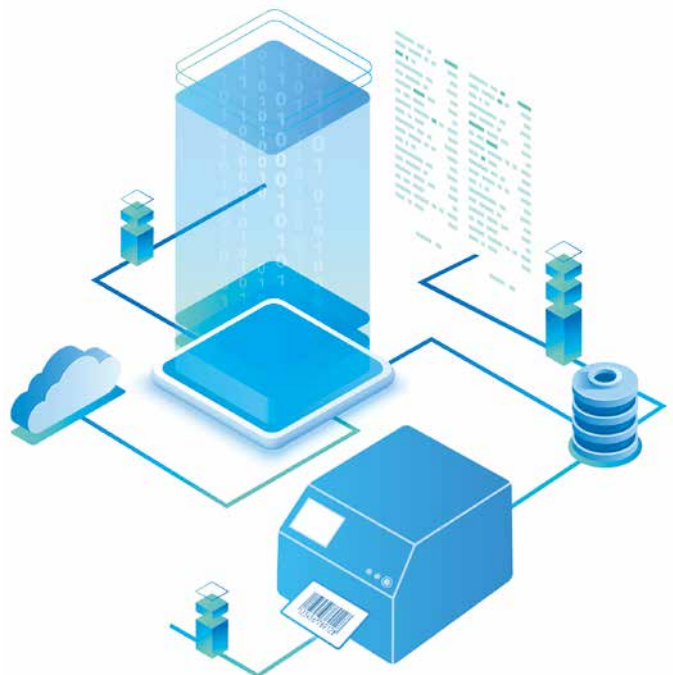
OPC UA

The latest cab printers are ready to interact with machines and components of different manufacturers in industrial plants.

An OPC UA server and an OPC UA client are part of the firmware.

The OPC UA server enables a printer be configured and controlled and dynamic print data be edited using a selected programming interface.

The OPC UA client enables data on other OPC UA-ready machines be read and included on a label design. No additional software is required.



Printer control

Drivers

cab provides 32 / 64 bit drivers to control with software other than cablabel S3. Running them requires at least operating systems Windows Vista, Mac OS 10.6, Linux CUPS 1.2.



Windows¹⁾ drivers

WHQL-certified to guarantee maximum reliability with Windows operating systems



Mac OS X²⁾ drivers

Based on CUPS
Running with all programs in Mac OS X



Linux³⁾ drivers

Based on CUPS

Programming



JScript

Embedded programming language developed by cab
Free manual download on www.cab.de/en/programming



abc Basic Compiler

Integral part of the firmware
It adds to JScript in terms of programming a printer before data are edited for processing. External printer languages can be replaced without intervening in print jobs in process, data be transferred also from scales, barcode scanners or a PLC, and further.

Integration



Printer Vendor program

cab is a member

A replace method enables cab printers be controlled from SAP⁴⁾R/3 using SAPScript. Only variable data are sent by a host system to the printer. Data such as pictures and fonts, which had been transferred to a local memory (IFFS, memory card, etc.) before, are collected.

Step 1

Labels and replace files designed on cablabel S3

Step 2

Variable data replaced in SAPScript using replace files

Step 3

Printout from SAP

Printer administration



Configuration on the Intranet / Internet

By integrating a HTTP and FTP server, printers can be controlled, firmware be updated and memory cards be managed using a standard web browser or a FTP client. Administrators and operators are notified of states, warnings and errors via email or datagrams, on the basis of a SNMP / SMTP client. Time and date synchronize on the basis of a time server.



Database Connector

Printers plugged to a network can access data directly from a central ODBC / OLEDB database to print on a label. During printing, data can be resent to the database.



¹⁾ Windows is a registered trademark of Microsoft Corporation

²⁾ MAC OS X is a registered trademark of Apple Inc.

³⁾ SQUIX, MACH 4S, EOS, HERMES Q, PX Q, AXON 1/2 are supported

⁴⁾ SAP and all its corresponding logos are trademarks or registered trademarks of SAP SEE