

Operating manual

Vencube beta

(English version)



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Table of contents

1		
	1.1 Notes on the operating manual	
	1.2 Symbols used	5
	1.3 Copyright protection	6
	1.4 Guarantee	6
	1.5 Applied standards	6
_		_
2	Security	
	2.1 Intended use	
	2.2 Basic dangers	
	2.3 Dangers due to electrical energy	
	2.4 Dangers due to mechanics	
	2.5 Hazards from materials and other substances	
	2.6 Responsibility of the operator	
	2.7 Personnel requirements	
	2.8 Maintenance and repair work	
	2.9 Warning and information signs	
	2.10Environmental protection	9
2	Structure and function	10
3		
	3.1 Scope of delivery3.2 Structure	
	3.3 Function	
	3.3 Function	. 12
4	Transport and storage	13
-	4.1 Safety instructions for transport and storage	
	4.2 Transporting the device	
	4.3 Storage of the device	
5	Assembly and commissioning	14
	5.1 Safety instructions for installation and commissioning	.14
	5.2 Assembly	.14
	5.2.1 Required free spaces	.14
	5.2.2 Temperature limits	.15
	5.2.3 Installing the Vencube	.15
	5.3 Commissioning	.20
	5.4 Plug variants	.21
_		
6	- P	
	6.1 Safety instructions for operation	
	6.2 Vencube controls	
	6.3 Change	
	6.3.1 Change filling	
	6.3.2 Change withdrawal	
	6.3.3 Service mode	.24

Table of contents

7	Maintenance and inspection	26
	7.1 Safety instructions for maintenance	26
	7.2 Carrying out the inspection	26
	7.3 Maintenance and inspection plan	26
8	Malfunctions	27
	8.1 Safety instructions for troubleshooting	27
	8.2 Causes of faults and troubleshooting	27
9	Dismantling and disposal	29
	9.1 Safety instructions for disassembly	29
	9.2 Dismantling	29
	9.3 Disposal	
1	0 Technical data	30
	10.1Technical data of the Vencube beta	30
	10.2Dimensions	30
	10.3Spare parts	31
1	1 Appendix	32
	11.1Declaration of knowledge of the authorised personnel	32

1 General information

1.1 Notes on the operating manual

These operating instructions enable you to use your Vencube beta safely and efficiently. The manual is part of the scope of delivery and must be kept accessible to the operating personnel at all times. It must be handed over to the new owner in the event of resale.

Due to technical developments, the illustrations and descriptions in these operating instructions may differ slightly from the device actually supplied.

We accept no liability for damage caused by failure to observe these operating instructions.

1.2 Symbols used

Info:

You will receive useful additional information.

All safety instructions in these operating instructions are labelled with corresponding symbols. The signal words at the beginning of the safety instructions indicate the extent of the hazard.



Danger!

This combination of symbol and signal word indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



Warning!

This combination of symbol and signal word indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Caution!

This combination of symbol and signal word indicates a potentially dangerous situation that can lead to minor injuries if not avoided.



Attention!

This combination of symbol and signal word stands for important information that helps to prevent damage to property or the environment.



Hint

► Important instructions for correct use of the hardware and software and for avoiding errors when running the programme.

1.3 Copyright protection

These operating instructions and all documents supplied with this device remain the copyright of S+M GmbH.

Their use is permitted and desired within the scope of use of the device.

Without the express authorisation of S+M GmbH, these documents may neither be reproduced nor made available to third parties, in particular to competitor companies.

1.4 Guarantee

The supplier assumes the warranty in accordance with the terms and conditions of sale and delivery. The warranty claim expires if

- · damage caused by improper operation,
- · repairs or conversions are carried out by persons not authorised to do so,
- · the seal is damaged or the device is opened by force,
- · non-original accessories and spare parts are used,
- defective components are not repaired immediately in order to minimise the extent of the damage and not impair the safety of the appliance (obligation to repair).

1.5 Applied standards

The following European and national standards were applied to the development and design of this appliance:

- VDE 0860 Audio, video and similar electronic devices Safety requirements
- · Machinery Directive 2006/42/EG
- · Supplementary guideline 91/368/EWG
- · second supplementary guideline 93/44/EWG

The following standards, BG regulations (BGV), rules (BGR) and information (BGI) and other rules were used for the risk assessment of the appliance:

- DIN EN ISO 12100 (Typ-A-Norm)
- DIN EN 614-1 (Typ-B-Norm)
- DIN EN 953 (Typ-B-Norm)
- DIN EN 50178 (Typ-B-Norm)
- DIN EN 60204-1 (Typ-B-Norm)
- DIN 4844-1
- DIN 4844-2
- · DGUV Vorschrift 1 und 3
- ASR 1.3
- BetrSichV
- TRBS 2111
- TRBS 2131

2 Security

2.1 Intended use

The Vencube beta control unit is intended exclusively for transmitting fiscal and technical data from vending and catering machines.

It is intended for continuous use in vending machines.

Any other or additional use is considered improper use.

Never operate the appliance with components and voltages other than those specified in these instructions. Do not convert, retrofit or modify the design or individual parts of the equipment with the aim of changing the area of application, performance or usability.

If an explosive atmosphere is to be expected, the Vencube must not be used.

Intended use also includes observing these operating instructions.

2.2 Basic dangers

Dangers can always arise when handling electrically powered appliances.

Observe the statutory regulations for safety and health protection as well as the other generally recognised safety and occupational health regulations and the accident prevention regulations.

Do not make any changes to the device, not even to the software.

The manufacturer is not liable for damage caused by improper conversions. Only use original components from the manufacturer



Warning!

Risk of injury due to unsuitable installation location!

► Install the device in such a way that it can be safely installed, operated and removed when used as intended.

2.3 Dangers due to electrical energy

Work on electrical devices or their control systems may only be carried out by qualified electricians.

Observe the specified values for voltage and amperage during installation (see technical data).

Disconnect the mains plug before starting work.

Check the mains plug and the mains cable regularly and have them replaced by qualified electricians if they are damaged.

2.4 Dangers due to mechanics

The appliance is built in accordance with the state of the art and the applicable directives and standards. However, improper or unintended use may result in residual risks.



Warning!

Danger due to crushing!

 Be careful not to crush your fingers when closing the vending machine door.

2.5 Hazards from materials and other substances



Warning!

Hazards due to contact with or inhalation of hazardous liquids, gases, mists, vapours and dusts!

- ► Wear the prescribed personal protective equipment when cleaning the appliance, e.g:
 - protective work clothing,
 - protective gloves.

2.6 Responsibility of the operator

The operator (operator and its employees) is responsible for

- the safe installation of the device,
- Installation of protective devices that detect short circuits and power failures and permanently disconnect all connection phases,
- · Accessible storage of the operating instructions,
- · Compliance with environmental protection regulations,
- Qualification of the operating, maintenance and repair personnel (knowledge of the operating instructions, instruction in working with the appliance, etc.),
- · Carrying out a risk assessment,
- · Sufficient local lighting.

The manufacturer recommends that the operator obtain written confirmation of the instruction of the personnel.

The responsibilities for the various tasks on the appliance must be clearly defined and adhered to so that no unclear competences arise in terms of safety.

2.7 Personnel requirements

The device may only be installed, operated and maintained by authorised, trained and instructed specialists. These persons must not be impaired in their ability to react (e.g. by drugs, alcohol, medication, etc.).

Only authorised persons may work with the appliance who are able to:

- · carry out the activities safely and independently or
- carry out the work under the supervision of an authorised person after prior instruction.

2.8 Maintenance and repair work

Maintenance and repair work may only be carried out by trained and authorised specialist personnel. These are persons who have been authorised on the basis of training, instruction or experience to carry out the required activities and who are able to recognise and avoid potential hazards. They must be able to demonstrate knowledge of the relevant safety standards, regulations and accident prevention regulations and have read the operating instructions.

To ensure the operational safety of the appliance, the recommended intervals should be observed for maintenance work.

2.9 Warning and information signs

Representation	Meaning / Position	Explanation
VENCUBE	Seal sticker / Underside of the Vencub	To ensure that the device is undamaged and has not been opened

This seal must be checked regularly for damage! If the seal is damaged, contact S+M GmbH immediately!

A damaged seal leads to the immediate loss of the guarantee as well as the warranty claim for proper functioning of the entire Vensolutions system with regard to the device in question by S+M GmbH.

2.10 Environmental protection

For all maintenance and repair work, please observe the applicable environmental protection regulations such as the Hazardous Substances Ordinance, the Water Resources Act, the Waste Act or the Waste Proof Ordinance.

3 Structure and funktion

3.1 Scope of delivery

The standard scope of delivery of the Vencube beta consists of:

- · Vencube beta
- · Mounting click holder incl. adhesive pad
- · Cleaning wipe
- Operating instructions

The remaining scope of delivery varies depending on the order and configuration:

- · Various master and slave cables (e.g. MDB) and other connection cables
- · Door switch
- · Various mounting brackets
- Self-tapping drill screws (hardened pan-head and countersunk head screws)

3.2 Structure

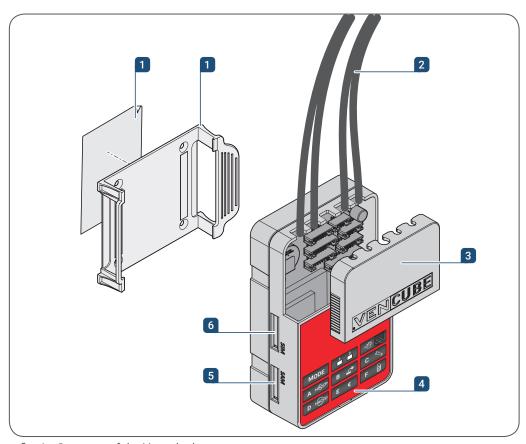


fig. 1: Structure of the Vencube beta

Caption to fig. 1

- 1. Mounting click holder including adhesive strips for fastening
- 2. Vencube connection cable
- 3. Protective cover
- 4. Control elements
- 5. SAM card slot
- 6. SIM card slot

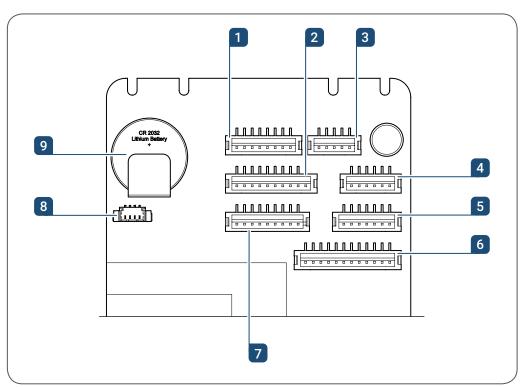


fig. 2: Slots on the circuit board / pin assignment

Caption to fig. 2

- 1. ST 06: Serial port 2
- 2. ST 09: SPI
- 3. ST 10: Internal use
- 4. ST 05: Serial port 1
- 5. ST 02: Credit system interface
- 6. ST 01: Vending machine interface
- 7. ST 03: Digital I/O
- 8. Connector plug for additional battery
- 9. Lithium battery (button cell CR2032)

3.3 Function

Vencube beta is a transfer system for vending and catering machines that works in almost any type of machine, regardless of the manufacturer.

It enables transparency in all cash movements, standardises cash management and monitors the technical status of the machine regardless of type and can also be used as a converter.

Any faults in the vending machine are transmitted to the operator in real time, with the exact technical problem being identified.

The Vencube beta stores technical and transaction data records for at least one quarter and ensures secure and traceable documentation in terms of fiscal data readout.

Vencube beta manages cost centre cards and can also adopt and manage vending machine sales prices.

Vencube beta can be used to lock the keypad of a money changer or temporarily unlock it for configuration.

When the vending machine door is opened (with optional built-in door switch), the vending machine contents, cash register contents and turnover are sent automatically.

Vencube beta has four potential-free inputs (for sensors) and two potential-free outputs.

Operation is possible with and without a radio signal (cable connection).

4 Transport and storage

4.1 Safety instructions for transport and storage



Attention!

► Protect the device from moisture!

4.2 Transporting the device

The appliance is transported in a cardboard box.

4.3 Storage of the device

• Store the device in a dry place and only under the following ambient conditions:

Temperature: -20 to +80 °C

Relative humidity: min. 10 %. / max. 90 %.

5 Assembly and commissioning

5.1 Safety instructions for installation and commissioning

The Vencube beta may only be installed and commissioned by authorised, trained and instructed personnel who have the relevant knowledge.

The general safety regulations for telecommunications equipment (VDE800) and the safety instructions of the vending machine manufacturer for the respective vending machine type must be observed and complied with!



Danger!

Danger to life due to electric shock!

Touching live connections can lead to personal injury.

Switch off the power supply.
 Secure the power supply against being switched on again.



Attention!

Possible material damage due to improper installation!

Switch off the power supply.



Attention!

Possible material damage due to improper installation!

Mains voltage connected to the wrong plug terminals on the appliance can destroy the electronics.

Do not connect mains voltage to the terminals for low voltage.



Attention!

Possible damage to property due to electrostatic charge!!

► The devices can be destroyed by electrostatic charge if they come into direct contact with the circuit boards.
Discharge yourself before touching the device.

5.2 Assembly



Warning!

Risk of injury due to unsuitable installation location!

 Install the device in such a way that it can be safely installed, operated and maintained when used as intended.

5.2.1 Required free spaces



Warning!

Risk of injury due to insufficient clearance!

► Allow a clearance of approx. 3 cm at the sides and approx. 5 cm at the top of the Vencube to ensure secure installation.

<u>^!\</u>

Attention!

► Lay the cables so that they are not kinked, crushed or abraded.



Hint

The cables must not be kinked during installation or assembly. The device must be easily accessible. The Vencube seal must be recognisable.

5.2.2 Temperature limits

The device may only be operated at an ambient temperature between -20 °C and 70 °C.

5.2.3 Installing the Vencube

The device is installed by the customer.

Proceed as follows during installation:

- · Open the vending machine.
- · Switch off the power to the vending machine.
- De-energise the vending machineDetermine the optimum installation position:
 Place the Vencube as close as possible to the vending machine control and payment systems. Ensure that the operating elements are easily accessible. Note the cable length.
- Clean the surface of the installation position with the enclosed cleaning wipe.
- Glue in the mounting click holder.

fig. 3: Fit the mounting click holder in a suitable position in the vending machine

Attach the Vencube to the mounting click holder.

Hint:

If gluing is not possible, the mounting click holder must be screwed diagonally with at least 2 screws* at the intended points in the vending machine. The screw heads must sit completely flush and must not protrude.

* Hardened countersunk head drilling screw, Ø 3,5 according to DIN 7504

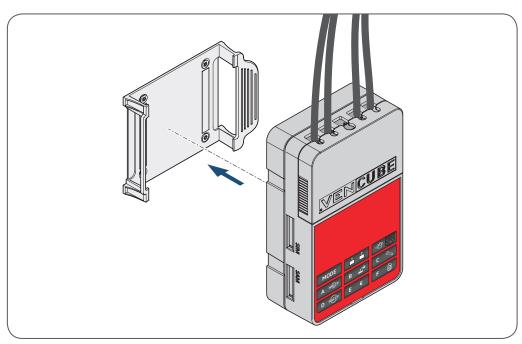


fig. 4: Clip in the Vencube

Hint: The machine must be de-energised!

- If necessary, remove the existing cover of the vending machine control unit.
- Disconnect all existing payment systems (1, 2) from the vending machine control unit.

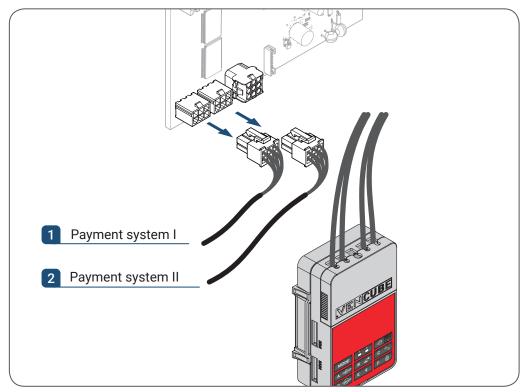


fig. 5: Unplug all payment systems from the vending machine control unit

Connect the cables from the Vencube:
 Connect the (MDB) master connection (3) from the Vencube to the automatic control unit.

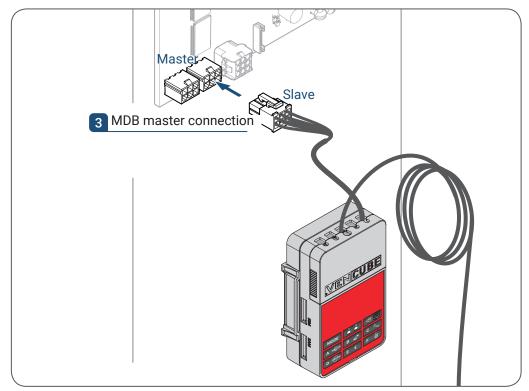


fig. 6: Plug the MDB Master connection into the automatic control unit

- If necessary, refit the existing cover of the automatic control unit.
- Connect the (MDB) slave connection (4) to all existing payment systems (5). If necessary, use a Y-cable.

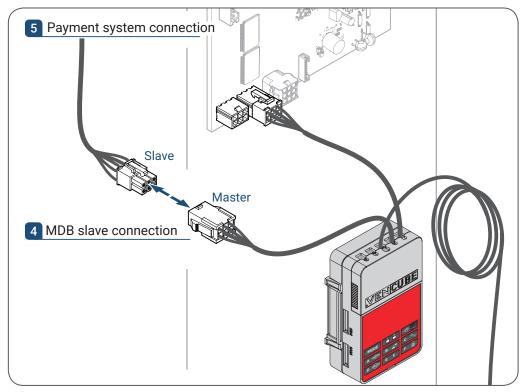


fig. 7: Connection to payment systems

Optional use of a door switch

• Select a suitable location for the door switch and install it. If necessary, install a stop bracket in the vending machine.



Attention!

- ▶ Never connect the Vencube to the door switch of the vending machine.
- · Lay the connection cable to the door switch.

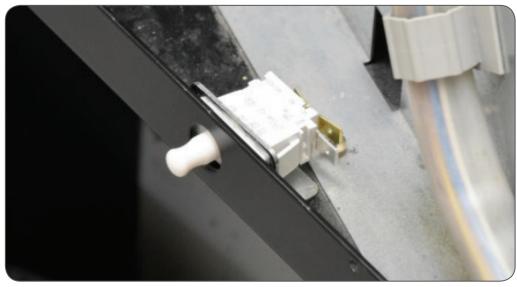


fig. 8: Mounting and connecting the door switch

5.2.3.1 Overview of door switches with accessories

	Door switch	Item no.
1.	Counter plate door switch angled long	33-3000-00
	Counter plate door switch angled	33-2000-00
	Door switch bracket 90°	33-5000-00
	Bracket for door switch double angle	33-4000-00
	Counter plate door switch angled short	33-6000-00
	Straight door switch bracket	33-1000100

Glue the antenna (6) behind a plastic cover if possible.

• Lay the antenna cable.

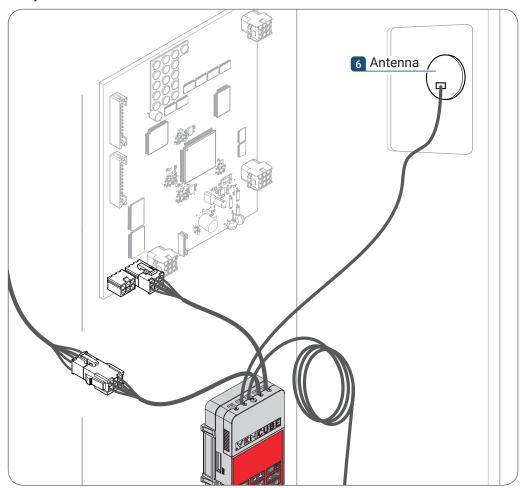


fig. 9: Antenna cable connection

· Lay all cables properly with cable ties.

Assembly and commissioning

5.3 Commissioning

- · Switch on the vending machine.
- · Wait until both LEDs light up green.
- · Close the door.
- Test the vending machine by carrying out a test sale with change return.
- Open the door again.
- Enter the data for Vensoft (serial number, machine number).
- Carry out a cash withdrawal by pressing the 'E' button on the Vencube until a beep sounds.
- · Empty the till.
- · Shut the door.

Commissioning is complete.

5.4 Plug variants

The following overview shows all the plug variants that can be used.

Plug type		Description
BDV plug connection		Standard plug of the federal association (BDV - Federal Association of the German Vending Machine Industry). Developed by the association as a 'standard', power and communication transmissions are carried out in a single combined plug according to specification (BDV001).
MDB plug connection peripheral socket		Multi Drop Bus / Internal Communications Protocol This protocol allows several devices on the same bus, such as banknote vali- dators, coin validators and coin payout units, to communicate with the host computer.
EXE plug connection		Executive (EXE)
data socket		Developed by Mars Electronics International in the 1980s. The specification defines the communication between the components.
power socket		



▶ If the supplied plug variant does not match the plug connection of the vending machine, replace the cables on the Vencube beta by removing the protective cover. The Vencube beta must then be reconfigured via VENTOOL. Then restart the vending machine.

6 Operation

6.1 Safety Instructions for operating

Observe the vending machine manufacturer's safety instructions for the respective vending machine type!

6.2 Vencube controls

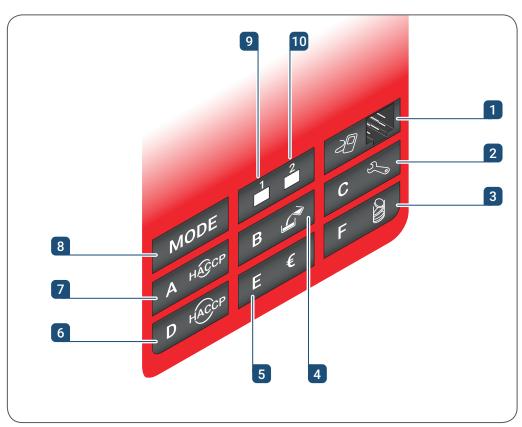


fig. 10: Control elements

Caption

- 1. Ventool interface
- 2. Service button
- 3. Tube filling mode
- 4. Goods replenished
- 5. Cash withdrawal
- 6. HACCP major cleaning
- 7. HACCP small cleaning
- 8. Mode button
- 9. Operating status LED1: Automatic control and credit system
- 10. Operating status LED2: Mobile network

Button	Description of the function	Action in VENSOFT
MODE	Modebutton	Button for additional or protected special functions
A HACCP	HACCP small cleaning	Time stamp HACCP small is set
D HACCP	HACCP major cleaning	Time stamp HACCP major is set
В	Goods replenished	Vending machine fill level is set to full
E €	Cash withdrawal	Vending machine is billed
c &	Service performed	Service timestamp is set
F	Tube filling mode	Enables change to be filled and removed
1 2	Operating status LEDs	see chapter 'Faults'
20 []	VENTOOL interface	Connection to VENTOOL

6.3 Change

6.3.1 Change filling

- · Open the vending machine door.
- Press the filling button 'F' on the Vencube (acknowledgement tone, LED running light starts).

The vending machine display indicates how many coins should be inserted (not supported by all vending machines).

Insert the change until the desired number of coins in the tubes is reached.

<u>Hint:</u> Once money has been accepted, it may no longer be removed from the machine, even if it has not fallen into the tube but into the cash box. Only money that falls into the coin return may be inserted again.

Press the filling button 'F' again (acknowledgement tone, LED in operating mode).

The vending machine display returns to normal mode.

· Close the vending machine door.

6.3.2 Change withdrawal

- · Open the vending machine door.
- Press the filling button 'F' on the Vencube (acknowledgement tone, LED running light starts).
- · Use the keypad on the changer to pay out the change.
- Press the filling button 'F' again (acknowledgement tone, LED in operating mode).
- · Close the vending machine door.

6.3.3 Service mode

No money may be withdrawn or added in service mode!

- · Open the vending machine door.
- Press the 'Mode' button and 'C' button in succession (start service mode).

LED indicates service mode (LED1 red / green, LED 2 modem status)

The following options are available:

6.3.3.1 Test sale

· Take money from the till for test sales.

The payment systems are authorised. You can sell as normal with change. All sales are entered as test sales in Vensoft.

- If possible, put the products back into the vending machine (not possible with coffee).
- Put any surplus money back into the cash box.

6.3.3.2 Correct tube levels

- Remove all the change using the coin acceptor keypad.
- · Check that all tube counters are set to '0'.
- · Insert change.

Money from the cash box may also be used.

- Delete existing credit by switching off and on.
- Put any surplus money back into the cash box.

6.3.3.3 Replace coin changer

- Remove all the change from the old coin changer (via the coin tester keypad or tipping out the coin changer).
- · Switch off the vending machine.
- · Remove the old coin changer.
- · Install the new coin changer.
- · Switch on the vending machine.
- Put change in the coin changer (take any missing money from the till or put excess money in the till).

6.3.3.4 Replace note acceptor

- · Switch off the vending machine.
- Remove the old note acceptor.
- · Insert banknotes from the note cassette into the cash box of the machine.
- · Install the new note acceptor.
- · Switch on the vending machine.

6.3.3.5 Replace card reader (not a credit card reader)

- · Switch off the vending machine.
- · Remove the old card reader.
- · Install the new card reader.
- · Switch on the vending machine.

Hint: Always exit so

Always exit service mode at the end of all activities!

- Press the 'Mode' button and 'C' button in succession (exit service mode).
- · Close the vending machine door.

7 Maintenance and inspection

7.1 Safety instructions for maintenance

Do not attempt to open the appliance. A damaged seal will immediately invalidate the warranty. In the event of tampering attempts, the manufacturer can no longer guarantee the proper functioning of the entire Vensolutions system for the device in question.

7.2 Carrying out the inspection

In order to detect problems and damage as early as possible and thus ensure smooth operation, the Vencube must be inspected at regular intervals by the operator's specialist personnel (operator/technician/filler) in accordance with the following maintenance and inspection schedule.

7.3 Maintenance and inspection plan

Interval	Maintenance work	Personnel
for every	Check that the Vencube seal is intact	Specialist staff of operator
application	Check the cables for kinks, crushing and abrasion	Specialist staff of operator
Half-yearly	Carry out a trial sale	Specialist staff of operator
	Clean the appliance with a damp cloth and diluted cleaning agent	Specialist staff of operator
according to legal regulations/ periods	Check the device for correct function	Specialist staff of operator

8 Malfunctions

8.1 Safety instructions for troubleshooting

Troubleshooting work on the appliance may only be carried out by the manufacturer's specialised personnel.

Faults must be reported as soon as they are recognised. The appliance must be labelled accordingly. Defects must be repaired immediately in order to minimise the extent of damage and not impair the safety of the appliance. Failure to do so will invalidate the warranty.

8.2 Causes of faults and troubleshooting

The manufacturer has set up a service hotline for its customers to discuss and rectify faults and problems. Qualified specialists are available during normal business hours at the following telephone number:

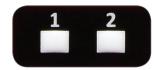
Service hotline of S+M GmbH

+49 (0) 2431 9654-543

Faults and malfunctions of the device are indicated by two LEDs on the Vencube. The table below provides an overview of the operating states and the most frequently occurring faults and how to rectify them:



Display LED 1	Meaning / Cause	Elimination
lights up reen	Automatic control and credit system OK	
1x flashing red	Vencube blocked by automatic control unit or no automatic control unit available	Switch on the key switch of the vending machine (if available)
		Check that the vending machine is ready for operation
		Check/convert vending machine protocol on the Vencube and vending machines
		Activate MDB card reader in the vending machine (not necessary for all vending machines)
		Check cabling between vending machine and Vencube
flashes alterna- tely red/green	Vencube in service mode	Deactivate with "Mode" and "C"



Display LED 1	Meaning / Cause	Elimination	
2x flashing red	No credit system in place	Check cabling between Vencube and credit system	
		Check the setting of the credit system log in the Vencube	
		If a coin changer is connected, check whether it supports Alter- native Payout (MDB Level 3)	
3x flashing red	Credit systems blocked by Vencube	Check whether at least one coin/ note has been released	
		Check the setting of the credit system protocol in the Vencube (must not be set to over-the- counter or deactivated)	
lights up red	No vending machine cont- roller (VMC) and no credit	Check setting in Vencube for credit system/machine protocol	
	system available	Wiring vending machine -> Ven- cube -> Check credit system	
	After 3 min. LED 1 = 1x red flashing, the credit systems are also switched off and LED 1 lights up red continuously	see "1x flashing red"	
LED off	No power supply	Check installation and cable connections	
	Keyboard defective	Maintenance (contact S+M)	
Display LED 2	Meaning / Cause	Elimination	
lights up green	Mobile network OK		
1x flashing green	No error, please wait!	until the LED lights up green (OK) until the LED lights up red (Error)	
2x flashing green	No error, please wait!	until the LED lights up green (OK) until the LED lights up red (Error)	
lights up red (after door ope- ning)	No network found	Restart Vencube and check whether there is network reception when the door is open:	
		-> Yes: Change antenna position in or on the vending machine	
		-> No: Convert to suitable anten- na, check network	
lights up red	Vencube does not have a SIM card	Insert SIM-card	
LED off	Modem deactivated	Activate modem	
Display LED 1/ LED 2	Meaning / Cause	Elimination	
Chaser red/green	Vencube in tube filling mode	Deactivate with button "F"	



Hint

► If the fault cannot be rectified, send the Vencube to the S+M GmbH for repair.

9 Dismantling and disposal

9.1 Safety instructions for disassembly

The vending machine manufacturer's safety instructions for the respective vending machine type must be observed and complied with!



Danger!

Danger to life due to electric shock!

Touching live connections can lead to personal injury.

Switch off the power supply.
 Secure the power supply against being switched on again.



Attention

Possible material damage due to improper uninstallation!

Switch off the power supply.

9.2 Dismantling

Once the appliance has reached the end of its service life, it must be dismantled and disposed of in an environmentally friendly manner.

- · De-energise the appliance before dismantling.
- · Dismantle the device.

9.3 Disposal

S+M GmbH offers you a free take-back or disposal service. If you do not wish to make use of this, please recycle the dismantled components:

- · Scrap the circuit board
- · plastic elements for recycling.

10 Technical Data

10.1 Technical data of the Vencube beta

Technical Data	Unit	Vencube beta
Electrical connection	V / Hz	45 / 50
permissible operating temperature	°C	-20 °C bis +70 °C
maximum noise emission	dB(A)	70
Dimensions		
High	mm	140
Width	mm	85
Depth	mm	43
Weight (with bracket, without cable) approx	g	235
Protection class	_	IP 44

10.2 Dimensions

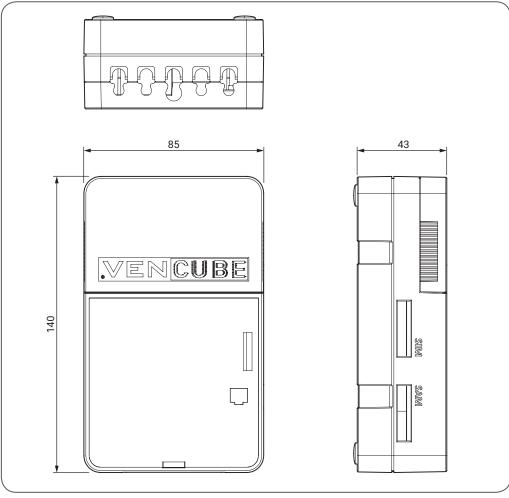


fig. 11: Dimensions of the Vencube beta in mm

10.3 Spare parts

The Vencube beta can be overhauled by the manufacturer/supplier.

Do not attempt to open the appliance. A damaged seal will immediately invalidate the warranty.

All spare parts can be ordered from the manufacturer/supplier.

When ordering spare parts, please provide a description of the spare part and the serial number of the Vencube.

The serial number can be found on the rating plate of the appliance.



Attention!

Possible material damage due to improper repair!

Never repair the appliance yourself.
 For repair work, please contact the manufacturer's/supplier's specialised personnel

11 Appendix

11.1 Declaration of knowledge of the authorised personnel

I hereby certify that I have read the operating instructions

"Vencube beta" of the S+M GmbH

and understood the content.

Place, Date	Name

Appendix



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