



BV1000GTV

***ALL-IN-ONE UNATTENDED PAYMENT
SYSTEM***



User Manual
Revision R01-07
P/N: MAEU025

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3 SAFETY INFORMATIONS AND INSTRUCTIONS

BV1000GTV is conform to the standard EN 62368-1+AC+A11 Electrical Safety of Data Processing Equipment including Electrical Office Equipment.

3.1 GENERAL SAFETY INFORMATION

BV1000GTV has been designed and manufactured to meet international safety standard but, like any electrical apparatus, due care must still be taken.

- Read and understand the instructions before using the equipment
- Not remove any screws to enter into area for non-operators
- Not allow liquid to spill into the internal cabinet side
- Not allow anything to rest on the power cord or telecomm cords and ensure a properly routing of all the cable to prevent damage or accidental contact
- Not continue to operate with the equipment if you are in doubt about its normal working or if the equipment has been damaged.

3.2 BASIC RULES

- 1) The responsibility of the safety for the sockets in the power circuits is of the customer
- 2) Verify that the power supply cable and the sockets are in good conditions
- 3) Don't work in dangerous conditions when alone
- 4) If possible, connect and disconnect the signal cable at power off to avoid risk of shock caused by possible contact of two equipment at different electrical potential.
- 5) The client must install a lightning protection if the zone is subject to thunderstorm or overvoltage.

3.3 SAFETY COMPLIANCE

In order to fulfill the safety standard EN 62368-1, BV1000GTV must be powered by a PS2 Limited Power Source.

4 DECLARATION OF CONFORMITY

MADIC ITALIA declares that the payment system BV1000GTV, whose characteristics are described in this manual, is conform to all relevant essential requirements on radio equipment and telecommunications terminal equipment **RED Directive 2014/53/EU**, **EMC Directive 2014/30/EU** and **ROHS directive 2011/65/EU** amended **2015/863/EU**.



The following standards and essential test suites published in the “Official Journal” of the European communities, have been used to demonstrate the conformity of the product:

EN ETSI 301 489-3 Electro Magnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz; Harmonized Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

EN ETSI 301 489-1 Electro Magnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonized Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU

ETSI EN 300 330-1 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Part 1: Technical characteristics and test methods

EN ETSI 300 330-2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive

CEI EN 62311 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)

EN 62368-1+AC+A11 – Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements

EN 50581:2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

Compliance with these requirements shall be evidenced by the affixing of the CE on the product. The company responsible for placing the product on the market:

MADIC ITALIA S.p.A.
Via Volta 39 21010 Cardano Al Campo (VA) Italy

4.1 WARNINGS

This appliance is marked according to the European directive **2012/19/EU** on waste electrical and electronic equipment (**WEEE Directive**).



The symbol of crossed out wheeled bin on the product indicates that this WEEE must not be treated as unsorted municipal waste and must be collected separately.

To assure the correct disposal and recycle of this product contact your supplier.

The abandonment or inappropriate disposal of waste can cause harm to environment and harm to the human health.

By ensuring the correct disposal of this product you will help prevent negative consequences for the environment and human health, also you will contribute to the preservation of the natural resources. The device contains lithium manganese dioxide coin cells. The battery must be disposed at the appropriate collection point.

BV1000GTV is compliance with the **Directive 2011/65/EU** of the European Parliament of the Council of 8 June 2011 on the restriction of certain hazardous substances in electrical and electronic equipment (also known as **RoHS Recast** or **RoHS2** and its amendment **2015/863/EU**).

Specifically, BV1000GTV do not contain the substances listed in the table below in concentration greater than listed maximum value.

RESTRICTED SUBSTANCE	Maximum LIMIT (by weight in homogenous material)
Lead	0.1% (1000 ppm)
Mercury	0.1% (1000 ppm)
Cadmium ¹	0.01% (100 ppm)
Hexavalent Chromium	0.1% (1000 ppm)
Polybrominated Biphenyls (PBB)	0.1% (1000 ppm)
Polybrominated diphenyl ethers (PBDE)	0.1% (1000 ppm)
Bis(2-Ethylhexyl) phthalate (DEHP)	0.1% (1000 ppm)
Benzyl butyl phthalate (BBP)	0.1% (1000 ppm)
Dibutyl phthalate (DBP)	0.1% (1000 ppm)
Diisobutyl phthalate (DIBP)	0.1% (1000 ppm)

BV1000GTV complies with the intent of the US Dodd-Frank Act for conflict materials Tin, Tungsten, Tantalum, and Gold. Components containing these conflict materials was identified and the supplier has verified the origin from conflict free smelters.

The BV1000GTV complies with the EU Regulation (EC) No 1907/2006 "Registration, Evaluation, Authorization and Restriction of Chemicals" REACH for Substances of Very High Concern (SVHC's). SVHC's are not present in the BV1000GTV.

4.2 BV1000GTV ENVIRONMENT CONFORMITY

Climatic and Vibration tests:

CEI EN 60068-2-1 - Environmental Testing Part 2-1: Tests: - Test A: Cold

CEI EN 60068-2-2 - Environmental Testing Part 2-2: Tests: - Test B: Dry heat

CEI EN 60068-2-14 - Environmental Testing Part 2-14: Tests: - Test N: Change of temperature

CEI EN 60068-2-30 - Environmental Testing Part 2-30: Tests: - Test Db: Damp heat, cyclic (12h + 12h cycle)

CEI EN 60068-2-78 - Environmental Testing Part 2-78: Tests: - Test Cab: Damp heat, steady state

CEI EN 60068-2-6 - Environmental Testing Part 2-6: Tests: - Test Fc: Vibration (sinusoidal)

Salt Mist test:

CEI EN 60068-2-11 - Environmental Testing Part 2-11: Tests: - Test Ka: Salt mist

External Mechanical Impact test (IK09) and Drop test:

CEI EN 62262 - Degrees of protection by enclosures for equipment against external mechanical impact (IK09)

CEI EN 60068-2-31 – Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens

EN 60068-2-75 – Environmental Testing Part 2-31: Tests: Test Eh: Hammer test

Verification of Internal Protection Code (IP54):

EN 60529+A1+A2 - Degrees of protection provided by enclosures (IP54)

4.3 USA RADIO APPROVAL FEDERAL COMMUNICATIONS COMMISSION (FCC)

PRODUCT NAME: **BV1000GTV**

FCC ID: **2AKMT-GTV222A**

FCC Rules: Code of Federal Regulations (CFR) no.47 Part 15 - Radio Frequency Devices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: this equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measure:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that of the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications made to the equipment not expressly approved by MADIC ITALIA S.P.A. may void the FCC authorization to operate this equipment.

4.4 CANADA RADIO APPROVAL (IC)

IC: 22928-GTV222A

Innovation, Science and Economic Development Canada ICES-003 Compliance Label:

CAN ICES-3 (B)/NMB-3(B)

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic

Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Changes or modifications made to the equipment not expressly approved by MADIC ITALIA S.P.A. may void the IC authorization to operate this equipment.

4.5 LASER SAFETY CONSIDERATION

BV1000GTV contains a laser emitter and corresponding drive circuitry. The laser output is designed to remain within Class 1 laser safety limits under all reasonably foreseeable conditions including single faults in compliance with IEC 60825-1:2014 (third edition).

The laser output will remain within Class 1 limits as long as the MADIC ITALIA recommended device settings (API settings) are used and the operating conditions specified are respected.

The laser output power must not be increased by any means and no optics should be used with the intention of focusing the laser beam.

The laser doesn't require any control, adjustment or maintenance.

Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



FIGURE 1 – LASER CLASS LABEL

Laser characteristics:

This device emits pulsed laser radiation with a period of 16.7 nanoseconds and 5 nanoseconds on time, resulting in a duty cycle of 30%. The wavelength is 945 nm.

Compliance statement for Laser Notice 56:

Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

Manufacturing site:

The indication Mxxx on the product label indicates the manufacturing site:

M001 = MADIC ITALIA s.p.a. Via Volta 39 Cardano al campo 21010 Italy

Manufacturing date:

The manufacturing date is located on product label in the following format:

MNFG: mm-yyyy

m=month y=year

5 WARRANTY CONDITIONS

MADIC ITALIA warrants its products for a period of twelve months from the date of delivery.

The warranty covers only defects in materials, defects in manufacturing and doesn't cover damages caused to the device by wrong or improper use, from accidental causes or from natural use.

In addition, the warranty is not applicable in the following cases:

1. The model or the serial number of the device has been altered, erased, removed or made unreadable.
2. The device has been repaired by unauthorized personnel.
3. The device has been damaged by external causes such as lightning, water, fire, connection to wrong power supply voltages or sudden overvoltage in the electric system caused by negligence in the use of the device (not observation of the instructions of use) or by reasons not attributable to manufacturing defects.
4. The device has been modified to be used in a country different from the countries for which has been designed or, where applicable, homologated; or has been damaged by those modifications.
5. The warranty doesn't cover wearing parts such as batteries, cables, connectors, external parts or plastic supports that don't show manufacturing defects.
6. The warranty doesn't include periodic checks, software updates, settings and maintenance operations.

The warranty doesn't provide a spare device to substitute the damaged device during the period of time necessary for the device reparation.

Shipping costs of the damaged devices is charged to the customer.

The damaged device\devices must be returned with the RMA (Return Authorization number) form filled and a note indicating the damage or the problem found on the device\devices.

Please contact MADIC Italia distribution to obtain a RMA form.

After the end of warranty period, for any repair or assistance operation, will be applied the current rates for the change of parts, for the labor cost and for the shipping cost.

6 SECURITY ADVICE

6.1 INTEGRITY CONTROL UPON RECEPTION

At the receipt of the equipment is strongly advised to check the product in order to verify that there is no evidence of tampering or unauthorized modifications.

The product is protected by security sensors, any attempt to open or modify the product will cause a violation event and thus the product will not work anymore.

For more Security, advices refer to the document BV1000GTV Security Policy.

6.2 PIN ENTRY PROTECTION

The following techniques can be employed to provide for effective protection of the PIN entry during the PIN entry process. These methods would typically be used in combination, though in some cases a method might be used singly.

- Positioning of terminal on the kiosk / vending machine in such way as to make visual observation of the PIN-entry process infeasible. Examples include:
 - Visual shields designed into the kiosk / vending machine. The shields may be solely for shielding purposes, or may be part of the general kiosk / vending machine design.
 - Position the device so that it is angled in such a way to make PIN spying difficult.
 - Pop-up (temporary) privacy shield attached to the device-mounting stand. Consumer (through education and prompting) would put the shield in place during PIN entry
- Installing device on an adjustable stand that allows consumers to swivel the terminal sideways and/or tilt it forwards/backwards to a position that makes visual observation of the PIN-entry process difficult.
- Positioning of security cameras such that the PIN-entry keypad is not visible.
- Instructing the cardholder regarding safe PIN-entry. This can be done with a combination of:
 - Signage on the device Prompts on the display, possibly with a "click-through" screen
 - Potentially, literature at the point of sale
 - A logo for safe PIN-entry process
- Protecting the PIN entry from being observed using the hands, as showed below, during the PIN insertion.

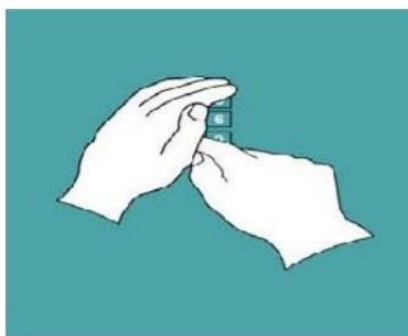


FIGURE 2 – Example of PIN entry protection

For more Security, advices refer to the document BV1000GTV Security Policy.

7 VIEW AND ORDER CODES



FIGURE 3 – Product Overview BV1000GTV

PRODUCT CODE	
ORDER CODE	DESCRIPTION
1ASA222 H01	FP BV1000GTV

ORDEABLE ACCESSORIES	
ORDER CODE	DESCRIPTION

8 OVERVIEW

BV1000GTV - is a compact, all-in-one payment system for unattended indoor and outdoor sites, able to satisfy sales of assets or services in kiosk and vending machines.

BV1000GTV is an EFTPOS for electronic payment of commercial transactions with credit or debit card Chip, Magstripe and Contactless. It also provides capabilities toward mobile phone payments.

The mechanical dimensions are compliance with EVA Vending NAMA requirements.

- BV1000GTV has three payment acceptance technologies:
 - Contactless for EMV cards, MIFARE cards or NFC mobile phones
 - Contact for EMV cards or Loyalty programs cards
 - Magstripe up to three tracks Magnetic cards
- BV1000GTV is available with the following connectivity:
 - Ethernet
 - Serial Port
 - USB
- BV1000GTV has 4,3" TFT color display, wide view.
- BV1000GTV has 2 SAM modules and the contact reader has the capability to process Asynchronous and Synchronous card.
- BV1000GTV has BLE to allow connectivity with the mobile phone.
- BV1000GTV can run video contents.

9 PACKAGING LIST

ITEM	CODE
BV1000GTV All-in-one unattended payment system	1ASA222H01

10 TECHNICAL SPECIFICATIONS

10.1 TECHNICAL SPECIFICATIONS BV1000GTV

Architecture:	ARM A5 Processor 32 bit
Memory:	4GB EMMC flash 1Gbit DDR2 ram
Display:	4,3" TFT color display
Keypad:	Full screen touch PCAP
Signaling	Magnetic buzzer
Magnetic Reader:	3 tracks
Contact Reader:	Asynchronous
Contactless Reader:	ISO14443A, ISO 14443B
SAM Reader:	2 SAM module connectors
Communication:	3 RS-232 serial ports, 1 USB 2.0 OTG, 1 USB Host, 1 Ethernet 10/100MB.
Power supply:	DC from 9V to 42V 1500mA
Battery Back- up:	Primary Lithium
Size:	Max 98x134x40 mm (WxHxD)
Cut out:	86,4x108,71 mm(WxH)
Weight:	354 grams
Operating temperature:	-20°C ÷ +70°C
Storage temperature:	-30°C ÷ +80°C
Environment sealing:	IP54
Shock resistance:	IK09
Security:	Trust Zone for Security
Conformity:	CE, cULus, FCC, ROHS2, RED, ISED IC, TQM, EMVL1 , EMVL2, EMV Cless L1, EMVco Paypass, Paywave, Dpass, Expresspay, PCI PTS 5.1, SRED, Open Protocol

10.2 BV1000GTV SPECIFICATIONS

S1 (Serial port 1): it's a RS232 serial port TX and RX plus two RS232 criteria, one in input and one in output, usable for flow control.

S2 S3 (Serial port 2 & 3): they are two RS232 serial port TX and RX. On the connector is available a +5V to power an external device with a current consumption max of 100ma.

I2C-GPIO: it's a connector where are located an I2C interface, two general purpose input and two general purpose output at logic level 3.3V. I2C is buffered for long cable extension.

SAM: The SAM connector host up two SAM modules.
The access to the SAM connector is done removing the SAM cover.

ETH: Ethernet interface is a 10/100MB.

USB-A & OTG: USB type A and USB OTG have two current limiters. The total current available for external devices connected to this connector is 500 mA.

SERVICE: A Service push bottom is read by the applications running on REE.
Pressing the push bottom could be executed also the wakeup of the processor if previously set in shutdown.

AUDIO: The device has a speaker for audio connected to a class D amplifier.

PROXIMITY DETECTION: The proximity sensor is used to detect the proximity of a target in front to the device. It's located at the entrance of the smart card.

MICROCHIP CARD READER: it accepts all cards compliant with EMV V4.0 Book 1, December 2000. It has 8 contacts and has the capability to detect the presence or withdraw of the card. It can manage asynchronous cards or synchronous memory cards with a power supply of 1.8V, 3V or 5V.

MAGSTRIPE READER: it has tracks data encryption capability. It supports up to 3 tracks card reading at the same time. Signal processing techniques are employed to recover F2F encoded data reliably from head signals with severe fluctuation of signal amplitude, widely varying bit interval, and jittery bit position.

DISPLAY: it's a TFT 4,3" provided with backlight.

TOUCH SCREEN: PCAP Touch.

BLE: Bluetooth Low Energy, the Bluetooth can be used for communication with mobile phones and must not be used for payment (FCC ID: XPYANNAB1). Bluetooth comply with essential requirements and other relevant provisions of Radio Equipment Directive (RED) 2014/53/EU.

10.3 BV1000GTV FRONT VIEW



FIGURE 4 –Front View BV1000GTV

10.4 BV1000GTV REAR VIEW



FIGURE 5 – Rear view of BV1000GTV

PWR: Power	
Molex Micro-Fit 3.0 double row P/N 43045-0418	
PIN1	+VIN (+9/ +42 Vdc)
PIN2	GND
PIN3	GND
PIN4	MAN (Input, active low)

S1: Serial Port	
Molex Micro-Fit 3.0 single row P/N 43650-0524	
PIN1	GND
PIN2	TX (output RS232)
PIN3	RX (input RS232)
PIN4	RTS (input RS232)
PIN5	CTS (output RS232)

S2: Serial Port	
Molex Micro-Fit 3.0 single row P/N 43650-0424	
PIN1	GND
PIN2	+5V 100mA
PIN3	TX (output RS232)
PIN4	RX (input RS232)

S3: Serial Port**Molex Micro-Fit 3.0 single row P/N 43650-0424**

PIN1	GND
PIN2	+5V 100mA
PIN3	TX (output RS232)
PIN4	RX (input RS232)

I2C-GPIO: Serial Port**Molex Micro-Fit 3.0 double row P/N 43045-1018**

PIN1	GND
PIN2	GPO1 (Output logic level 3,3V)
PIN3	GPI1 (Input logic level 3,3V)
PIN4	NC
PIN5	SCL I2C Clock Output
PIN6	+5V 100mA
PIN7	GPO2 (Output logic level 3,3V)
PIN8	GPI2 (Input logic level 3,3V)
PIN9	NC
PIN10	SDA I2C Data Bidirectional

ETH: LAN Ethernet 10/100MB**RJ45**

Green Led	Indicate the network link OFF = link off ON = link on
Yellow Led	Indicate the flow of data Blink = data flowing

USB TYPE A

PIN1	VBUS
PIN2	D-
PIN3	D+
PIN4	GND

microUSB OTG

PIN1	VBUS
PIN2	D-
PIN3	D+
PIN4	ID
PIN5	GND

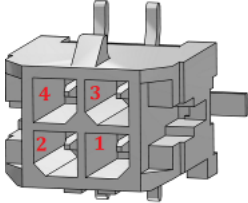
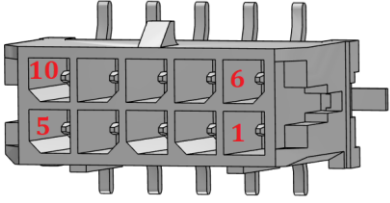
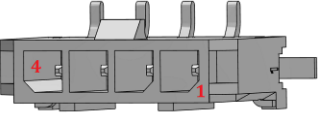
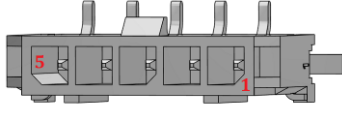
SERVICE PUSHBUTTON

Press to enter in service or wakeup the device

SAM: Dual SAM Connector (Inside the Module)

SAM1	Connector Top (Insertion on top)
SAM2	Connector Bottom (Insertion on bottom)

10.4.1 CONNECTORS PINOUT

Molex Micro-Fit 3.0 double row P/N 43045-0418 	Molex Micro-Fit 3.0 double row P/N 43045-1018 
Molex Micro-Fit 3.0 single row P/N 43650-0424 	Molex Micro-Fit 3.0 single row P/N 43650-0524 

11 CABLES

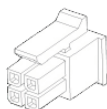
Following some examples of cables:

11.1 POWER CABLE

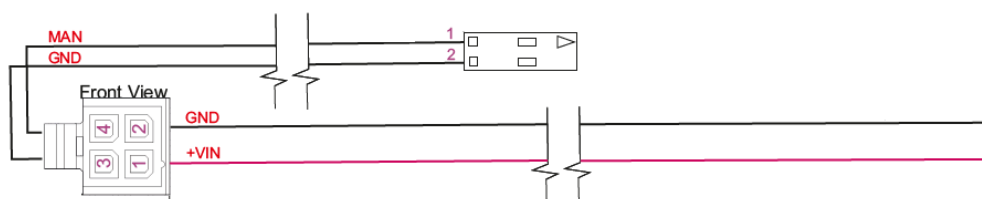
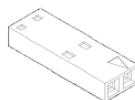
Cable for PWR connection.

Connector Molex Micro-Fit 3.0 4P double row	
PIN1	+VIN
PIN2	GND
PIN3	NC
PIN4	NC

4 pos. Micro-Fit 3.0 Plug Housing
43025-0400



2 pos. SL Crimp Housing, Single Row
50579002



11.2 S1 SERIAL CABLE

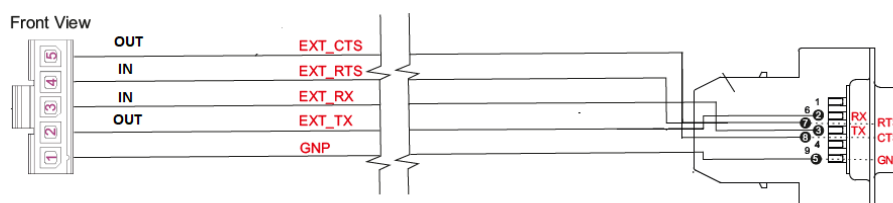
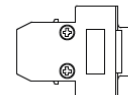
Cable for S1 connection with a DB9 interface.

Connector Molex Micro-Fit 3.0 4P Single row	Connector DB9 Female	
PIN1	GND	PIN5
PIN2	TX OUT	PIN2
PIN3	RX IN	PIN3
PIN4	RTS IN	PIN7
PIN5	CTS OUT	PIN8

5 pos. Micro-Fit 3.0 Crimp Housing
43645-0500



DB9 FEMALE (D-SUB + Housing)
4421 09PVF + 4422 09GD

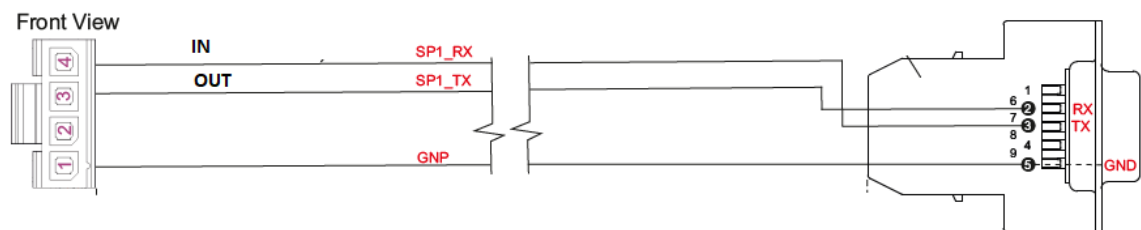
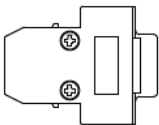


11.3 CABLE FOR S2-S3 CONNECTION WITH A DB9 INTERFACE

4 pos. Micro-Fit 3.0 Crimp Housing
43645-0400



DB9 FEMALE (D-SUB + Housing)
4421 09PVF + 4422 09GD



Connector Molex Micro-Fit 3.0 4P Single row	Connector DB9 Female	
PIN1	GND	PIN5
PIN2	LEFT OPEN	
PIN3	TX	PIN2
PIN4	RX	PIN3

12 MECHANICAL DIMENSIONS

12.1 MECHANICAL DIMENSIONS BV1000GTV

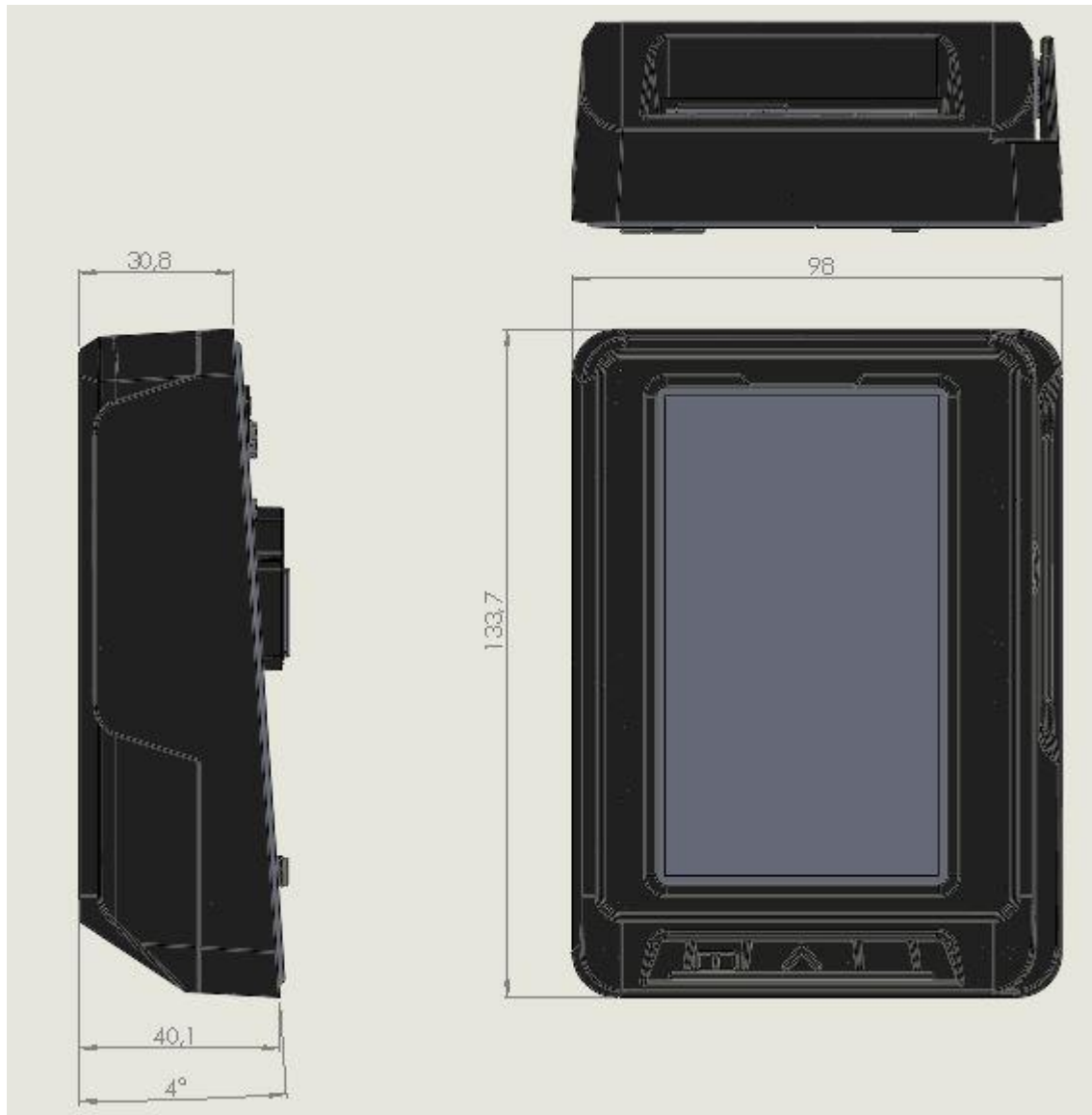


FIGURE 6 – Mechanical dimension of the BV1000GTV

12.2 PANEL DRILLING BV1000GTV

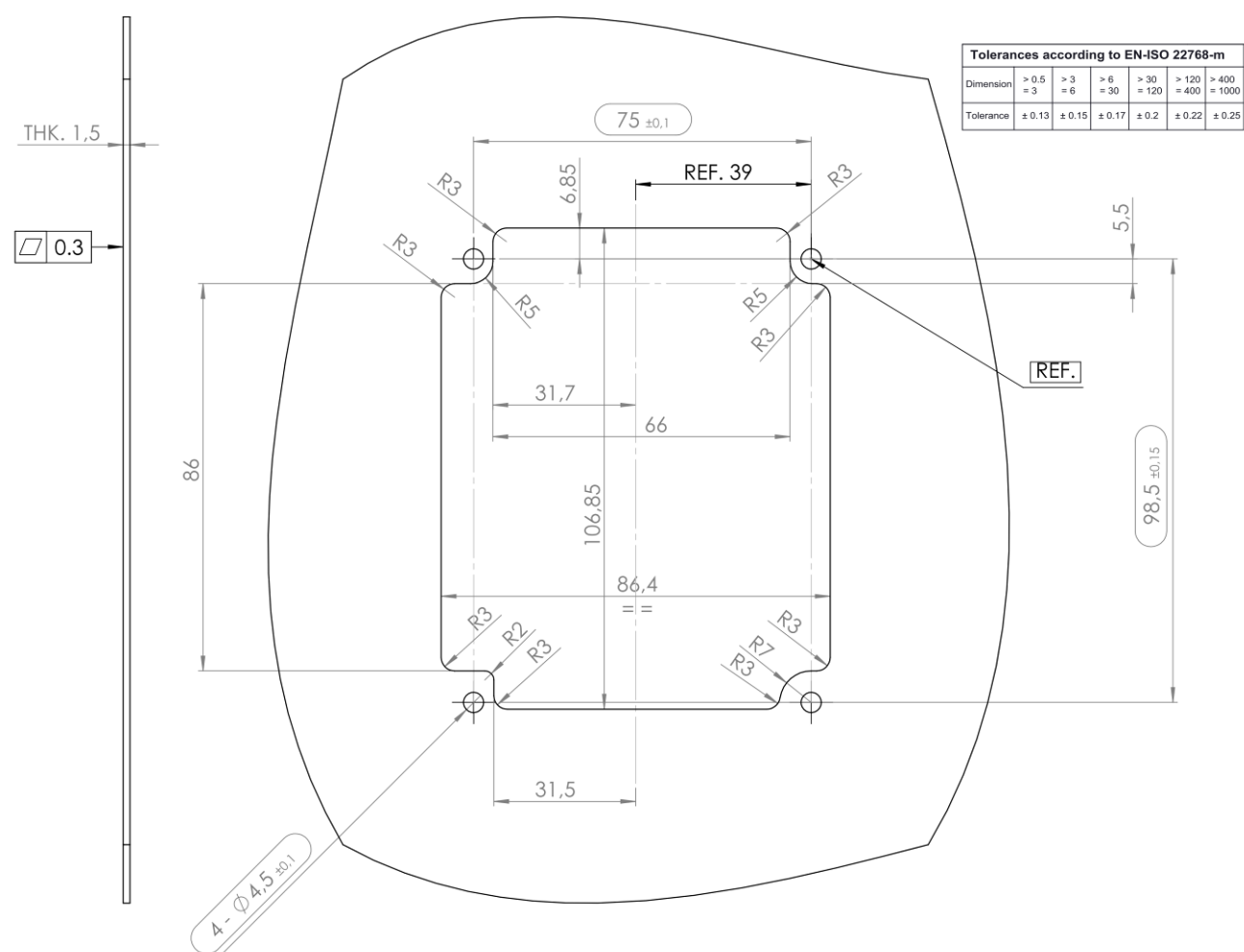


FIGURE 7 – Panel drilling of BV1000GTV

12.3 FIXING INDICATIONS FOR BV1000GTV

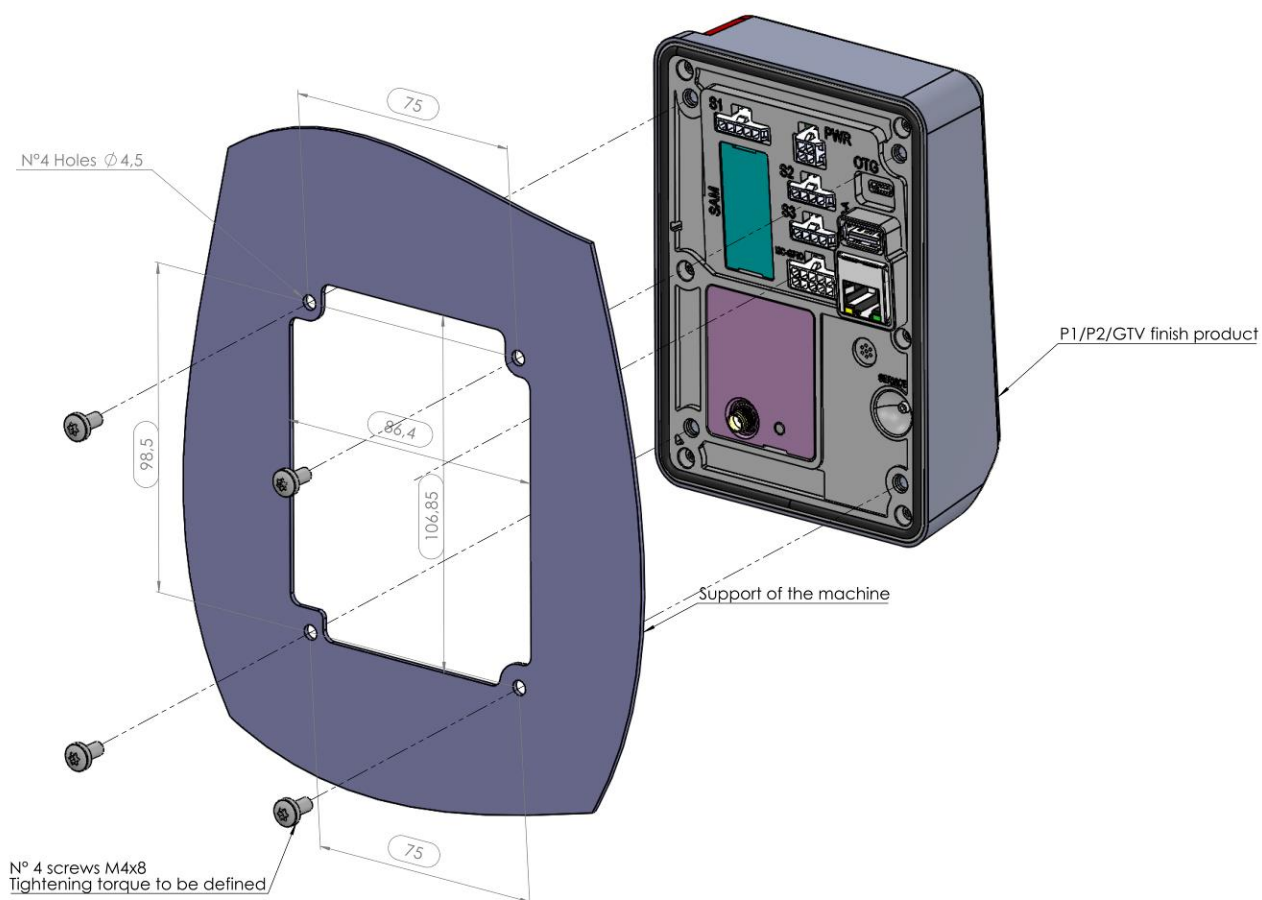


FIGURE 8 – Panel Fixing for BV1000GTV

Note: Recommended fixing torque: 0,6Nm.

12.4 INSTALLATION ADVISED

When installing the BV1000GTV in unattended transaction/payment machines, consider the following for the ADA Standards for Accessible Design compliance.

Where a forward or side reach is unobstructed, the high reach shall be 48 inches (1220mm) maximum and the low reach shall be 15 inches (380 mm) minimum above the finish floor “(AFF)” or ground.

Operable parts shall be placed within one or more of the reach ranges

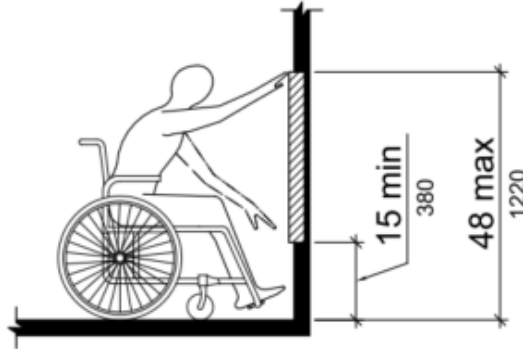


FIGURE 9 – ADA min and max heights of installation

Consider the requirements for PIN entry protection described in paragraph [“PIN ENTRY PROTECTION”](#).

13 HOW TO CONTACT US

Dear customer thanks you for the choice of our products.

To satisfy any your requirements you can contact us at the following address:



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