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APPENDIX L  
OF  
TEST REPORT T60823\_F

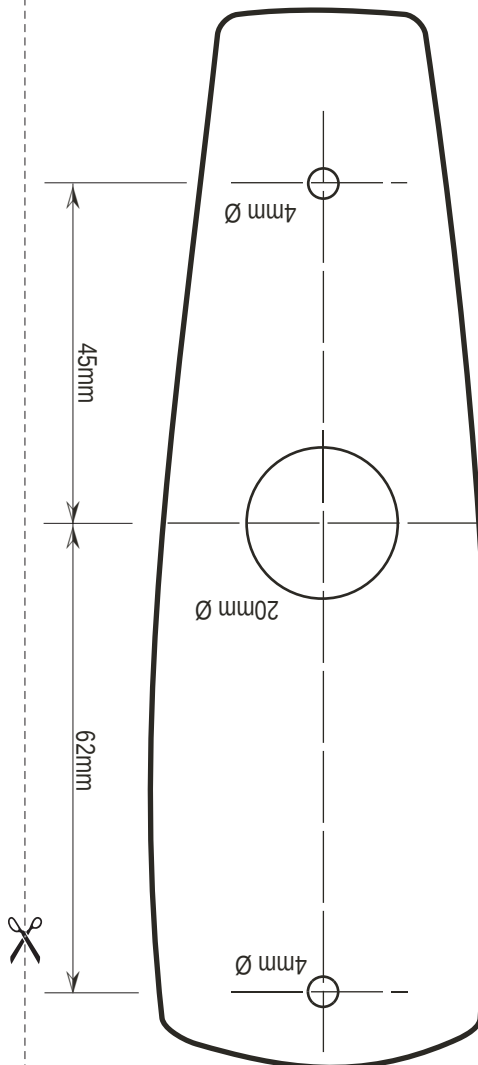
USER MANUAL

FCC ID: QVL-BT900P  
Manufacturer: BQT Solutions (Australia) Pty Ltd  
Test Sample: Contactless Smart Card Reader  
Model: BT900-D  
Serial Number: None

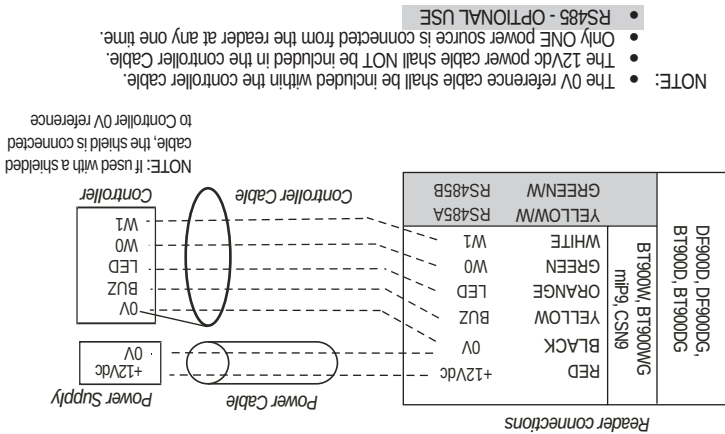
Date: 1<sup>st</sup> September 2006

**Drilling Template**

For all 9 Series readers  
 • 20mm (0.79") diameter hole for wire entry  
 • 2 x 4 mm (0.16") diameter holes for mounting screws  
 are 140mm x 45 mm (5.51" x 1.77")



## Wiring Schematic



## Regulatory Information

CE Mark  
 The 9 Series has passed all relevant tests and obtained CE approval.  
 C Tick  
 The 9 Series has passed all relevant requirements for application of C Tick.  
 FCC  
 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 instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause 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 measures:  
 - Reorient or relocate the receiving antenna  
 - Increase the separation between the equipment and receiver  
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected  
 - Consult the dealer or an experienced radio/TV technician for help

Any changes or modifications not expressly approved by BQT Solutions could void the user's authority to operate this equipment.  
 Designed & Manufactured in Australia

## Specifications

|                                      |                                                                               |
|--------------------------------------|-------------------------------------------------------------------------------|
| Output protocols                     | Wiegand 26-199 bit, RS485 or custom configurations (model dependent)          |
| Power requirements                   | 12Vdc                                                                         |
| Current consumption                  |                                                                               |
| Normal                               | 120mA                                                                         |
| Activated                            | 140mA                                                                         |
| Read range                           | 20 - 60mm (0.8" - 2.4")(typically)                                            |
| Operating temperature                | -25°C to +65°C (-13°F to 149°F)                                               |
| Relative humidity                    | 90% max, operating non-condensing                                             |
| Reader dimensions                    | 140mm (L) x 45mm (W) x 32mm (D) (5.51" x 1.77" x 1.26")                       |
| Status LED's                         | Green & Red                                                                   |
| Audible tone                         | Internal or external buzzer control                                           |
| Colour                               | Two toned – Silver & Charcoal                                                 |
| IP rating                            | IP 67                                                                         |
| miPASS 9 Series Mifare reader models | DF900 - DESFire<br>BT900 - Mifare<br>miP9 - SPEK<br>CSN9 - Card Serial Number |

Information contained in this document is subject to change without notice.

For further technical information visit our website at [www.bqtsolutions.com](http://www.bqtsolutions.com) or email [techsupport@bqtsolutions.com](mailto:techsupport@bqtsolutions.com).

Alternatively contact us at one of our global locations

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**smartersecuritytoday**



9

**series**  
**INSTALLATION GUIDE**  
 Version 2.9



### Introduction

Thank you for purchasing a miPASS 9 Series Mifare Contactless Smart Card Reader. Available in 4 different models catering for all security requirements large or small, whether your projects are price or functionality driven. The 9 Series reader models are:

- DF900 - DESFire
- BT900- Mifare (standard)
- miP9 - BQT SPEK
- CSN9 - Card Serial Number

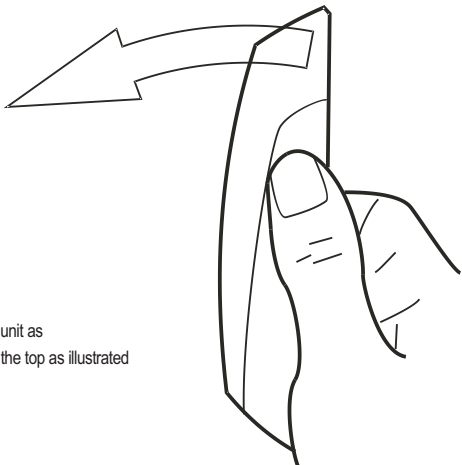
The 9 Series reader is used in security applications and interfaces into Wiegand applications.

The 9 Series reader is preset with specific 'Keys'. Valid smart cards are issued with the same 'Keys'. This ensures that the system cannot be compromised. (No 'Keys' used for CSN9 model)

The reader incorporates a LED and Buzzer to provide feedback to a person wishing to enter. The control of these is shared by the reader and security controller.

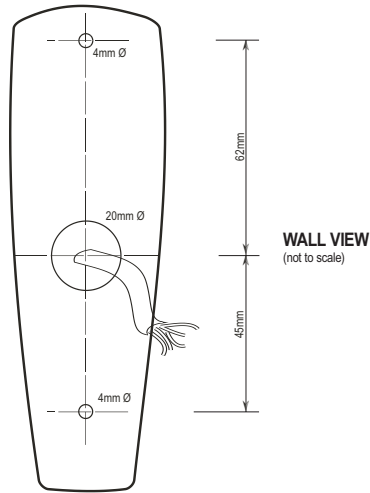
The 9 Series reader is low-profile and can be installed in new installations or as an upgraded reader in existing proximity access control systems.

### Installation



Remove the cover by holding the unit as shown and pulling the cover from the top as illustrated

If necessary, drill holes for the mounting screws in the wall or mounting box on which the reader unit will be placed. (Use the Drilling Template provided).



- Place the controller and power supply cable through the Grommit hole.
- Drill the holes as indicated by the arrows.

**Note:** Make sure that you don't drill through the cable.

Check your circuit diagram for the colour coding of the circuit wiring. The reader can be damaged beyond repair if the wiring is connected incorrectly.



If the reader has the same power supply as the door latch relay, make sure that the relay is protected by a fast Schottky diode. If the relay is not protected reader operation will be affected.

**NOTE:** Power to the unit is provided from the Listed control unit or from a separately supplied UL Listed 12 Vdc power-limited, access control power source.

Wiring methods shall be in accordance with the National Electrical Code, ANSI/NFPA 70.

- Connect the 0V wire to the Power 0V line.
- The 0V line of all power supplies MUST be connected to a common 0V reference point.
- Connect the Wiegand signal cables.
- Connect the Buzzer and the LED cables.
- Attach the 12Vdc wire last.
- Place the reader on the wall (Make sure the wires are not crushed)
- Insert and hand tighten the screws.
- Check that the reader is level before tightening the screws.

**NOTE:** Excessive tightening of screws may deform the casing, resulting in a damaged unit. This will void the warranty.

- Replace the cover.
- Power up the reader.

**NOTE:** The unit needs up to 15 seconds to set up before it can respond to a valid smart card.

### External Use

- Mount the reader on a suitable external single gang surface mount box.
- USA ONLY** - BQT mounting plate adaptor is available for mounting to a US single gang box.
- Make sure that the wire bundle to the 9 Series reader has an IP rating of at least IP67.
- Use warming pads if the temperature of the reader is expected to fall below -10°C (14°F).

### Handling

- Handle the 9 Series reader with care. Do not damage/drop unit before installation.
- The reader unit will not be waterproof if the casing is damaged. Replace the reader if the casing is damaged.

### Maintenance

- Once installed the 9 Series reader requires no maintenance.

### Troubleshooting

- If the reader doesn't respond when a valid smart card is presented, check the following.

| Symptom                            | Possible Cause                          | Check                                      |
|------------------------------------|-----------------------------------------|--------------------------------------------|
| LED is not lit                     | No power to the reader                  | Check the power supply to the reader.      |
| LED is Orange or Buzzer sounds low | Voltage to the reader is below 10V      | Check the power supply to the reader       |
| Reader doesn't respond             | Invalid card or card is faulty          | Check reader with another valid smart card |
| Reader beeps but lock doesn't open | Wiring to the controller may be faulty. | Check the wiring to the controller         |

**NOTE: If reader beeps when a valid smart card is presented then the reader is functioning.**

If the problem still persists then please contact your distributor for technical support and to obtain an RMA if required.

### Warranty

The 9 Series reader comes with a 5 year warranty from the date of dispatch from BQT Solutions. The warranty is void if the instructions contained within this manual have not been adhered to.

