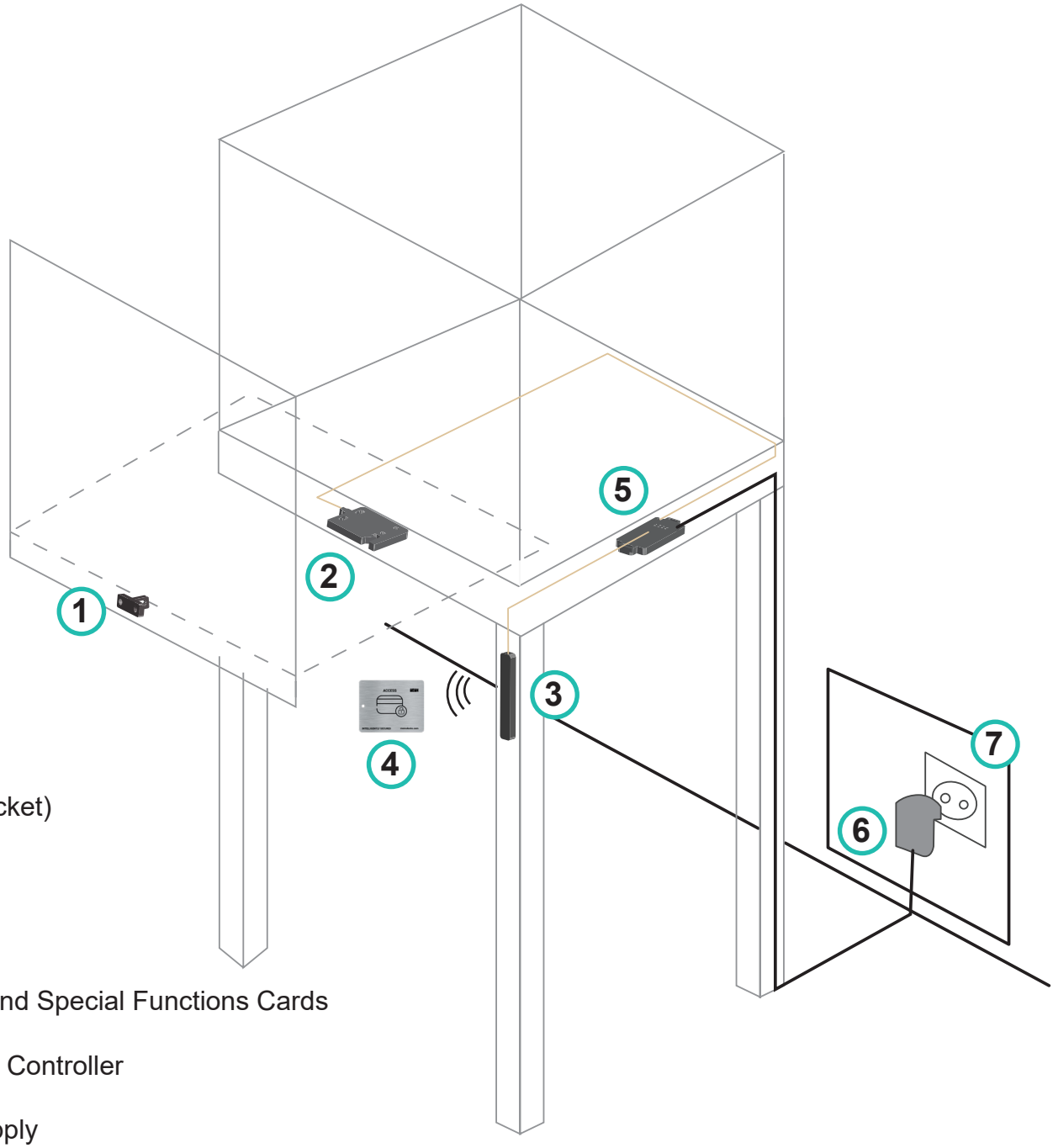
MEMO INSTALLATION GUIDELINE
READERS III, V and VII

This guideline is specifically showing the installation of MEMO´s READER (III), AIR2-LINE controllers and MMV-2002 locks.

This document is applicable for all MEMO AIR2-LINE READERS Types (III, V and VII), controllers and locks in principal.



1. Latch (bracket)
2. Lock
3. **Reader V**
4. Key fobs and Special Functions Cards
5. AIR2-LINE Controller
6. Power Supply
7. Wall Socket

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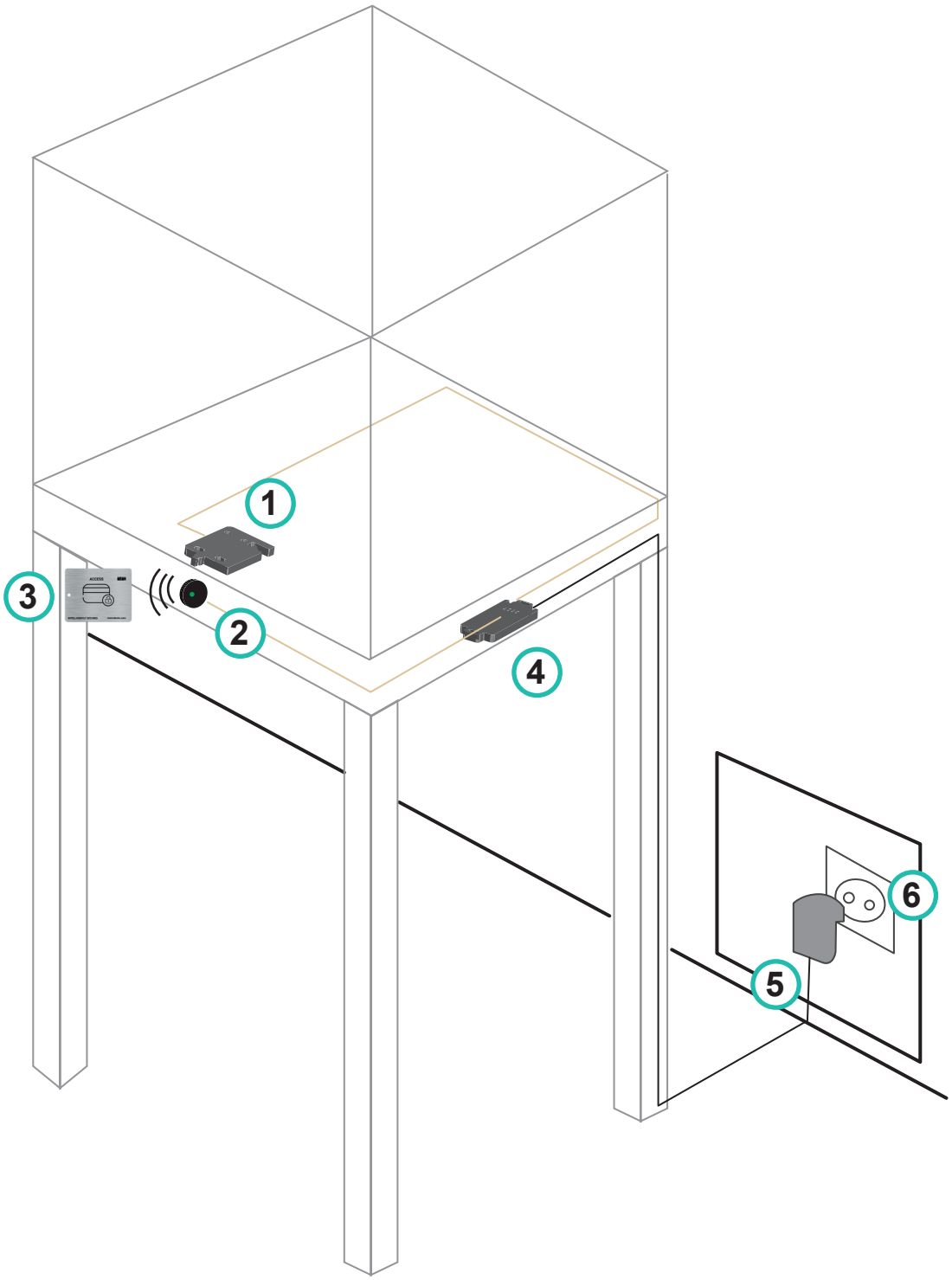

1. Lock

2. Reader VII

3. Key fobs and Special Functions Cards

4. AIR2-LINE Controller

5. Power Supply

6. Wall Socket

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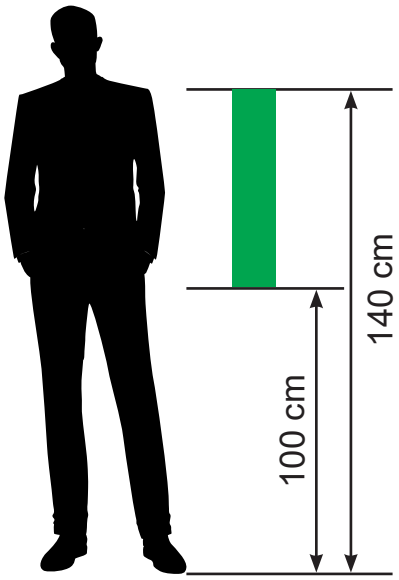
PLAN READER INSTALLATION

1. CONSIDER READER INSTALLATION

Consider best reader position regarding:
- Best User Handling
- Best Surface Protection
- Best Reading Range
- Surrounding Materials
- Best Reader & Cable Fixation

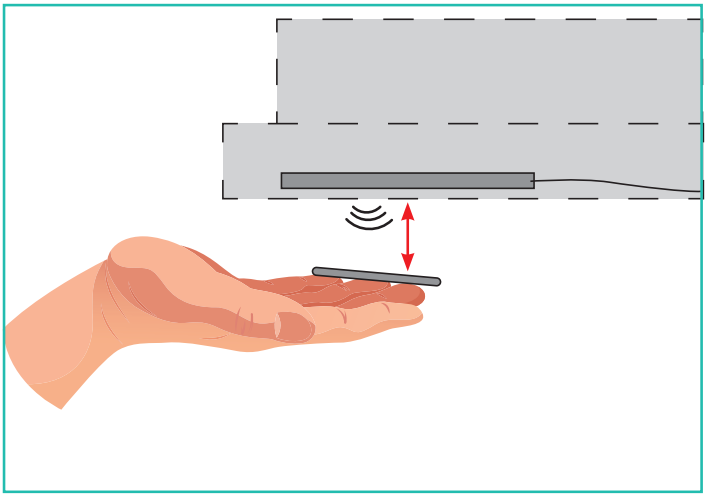
Best User Handling
Consider that position of reader in a show case must be in the convenient range of reach by short and tall users.



100-140 cm = 40 -55 inches

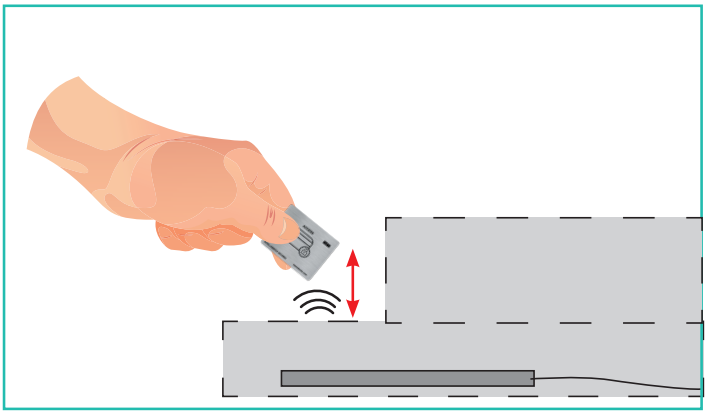
Readers should be installed in a final height between 100 and 140cm, exceed these measures only in special cases.

Best Surface Protection Users will present keys to the reader at the furniture surface. Presenting a key at a distance to the surface works perfectly fine when installation is done correct.



Nevertheless, some users touch and scratch the surface when presenting a key!

Select a reader position, facing downwards is recommended whenever possible!



Optimizing the READING RANGE is protecting surface also – follow next page carefully.

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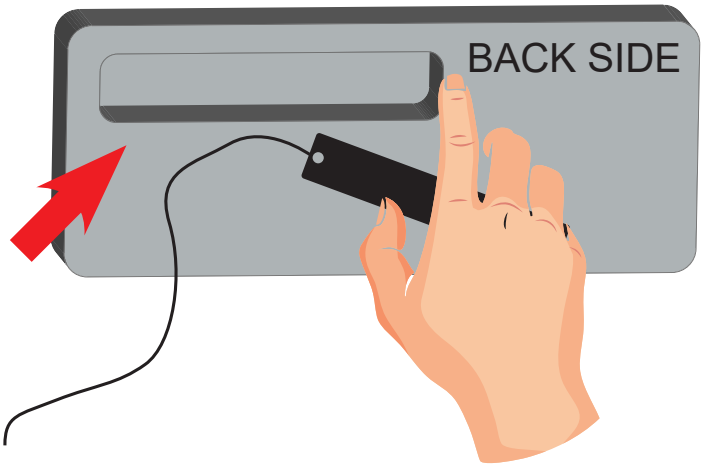
PLAN READER INSTALLATION

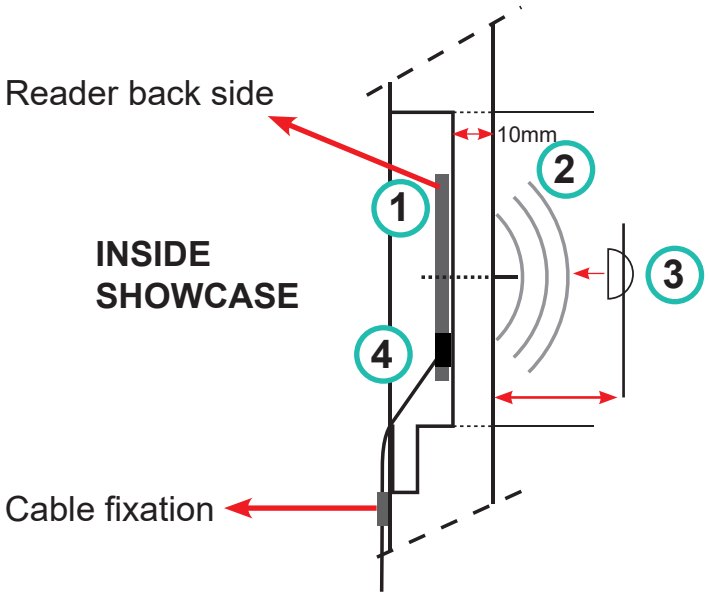
BEST READING RANGE

Front Panel or Door must be milled down (5mm recommended) to a thickness of 5-10mm to ensure a good READING RANGE for keys to the outside.

Test Reading Range on MOCK-UP always with KEY-FOBS & CARDS!



1) Reader is transmitting signals to the outside
of the show case
2) The outside Reception area. Is reduced by the thickness of the front panel
3) Reader Space milled out for better reading range.
4) Mounting by screws, Gluing or clamping

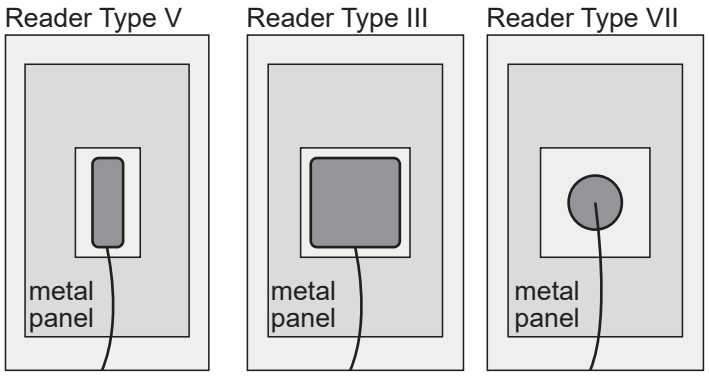


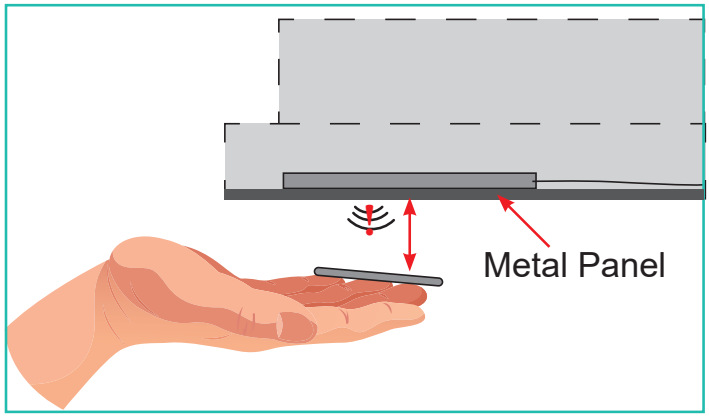
SURROUNDING MATERIALS

Consider that any kind of metal is blocking the communication between reader and keys.

Select the reader position carefully regarding the surrounding materials. Predicting the behavior near to metal is impossible, we strongly recommend to build a mock-up and test READING RANGE in a specific setup.

Metal surfaces, mirrors, paints with metal particles are blocking or weakening the READING RANGE – test Range on a MOCKUP before building the final product.





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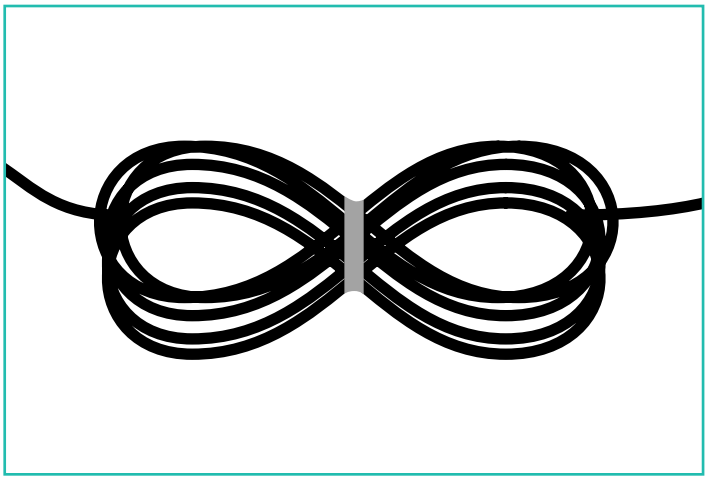
PLAN READER INSTALLATION

BEST READER & CABLE FIXATION

Consider that the reader must be fixed in its position so that it stays in place. Any way of mounting is fine, as long as it works – glue and tape might get weak over time!



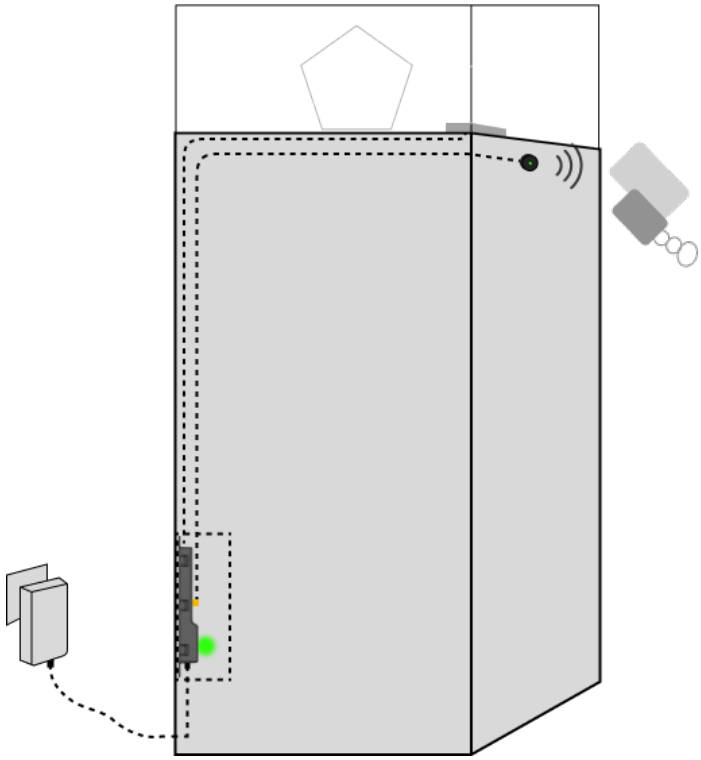
Consider the area in the show case where reader cable is placed towards the controller. Either you prepare a milling groove or a cable channel to lead the cable controlled and protected – this avoids possible damages while use of show cases.

Consider, how to fix the Reader and where cables are running inside to be protected against damages!

**Damages may ocure by moving parts as drawer rails or material which is placed inside
by users!**

BUILD A MOCKUP

Before starting a production always build a mockup with identic dimensions and materials to test the proper operation.



Give special attention when running cables between different modules of a show case – leave openings for cables, convenient to install them by hand.

Plan how to fix the reader and how to keep cables in place.

Install reader in the MOCKUP and test reading range – perform the test with Key Fobs AND with Key Cards.

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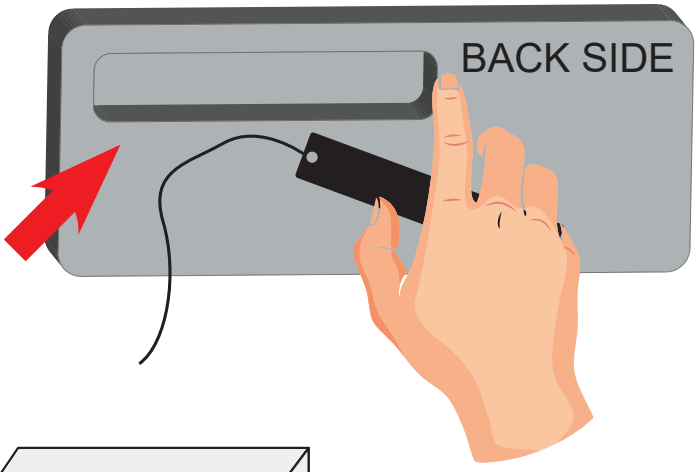
READER INSTALLATION

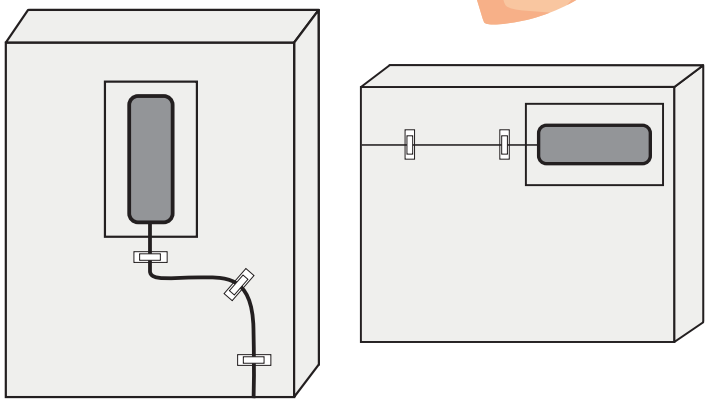
2. READER INSTALLATION



Perform the following simple steps:
- Fix Reader Properly
- Feed Cable to Controller and fix
- Connect Cable to Controller

Fix Reader Properly

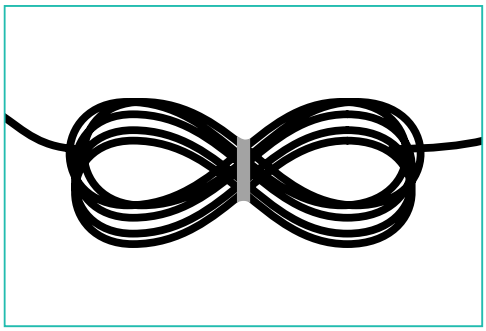
When the thickness of the front panel is more than 5-10mm there must be an area prepared for the mounting of the MEMO reader. This area must be milled down to a thickness of 5-10mm to ensure a maximum reading range to the outside.



Fix reader by pushing the clip into place, make sure it will not come loose over time!

Make sure “Backside” Label faces to the inside of the show case!

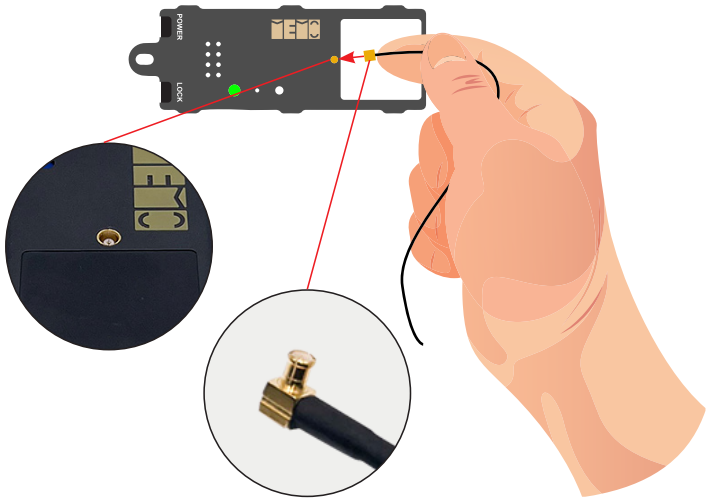
Feed Cable to Controller and fix



Cables must be feed inside the show case to lead to the controller. Put cables in a milled-out groove or in a cable channel to protect cable of damages.

Uncontrolled, loose cables must be avoided under any circumstances!

Connect Cable to Controller

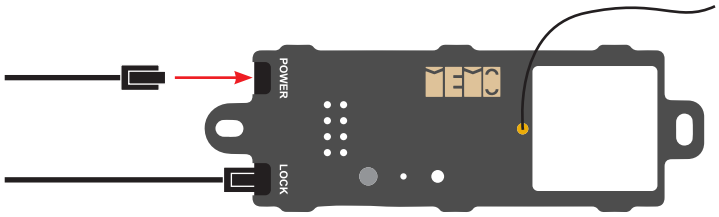


Connect the golden SME screw terminal to the controller by hand. Screw the terminal all the way until the end.

Do not fix it with too high torque, screw by hand, do NOT use tools!

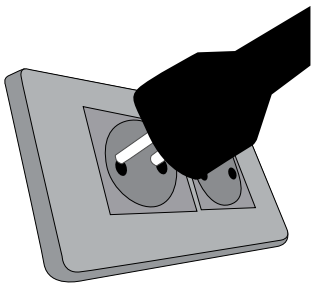
TEST THE INSTALLATION

3. TEST THE INSTALLATION

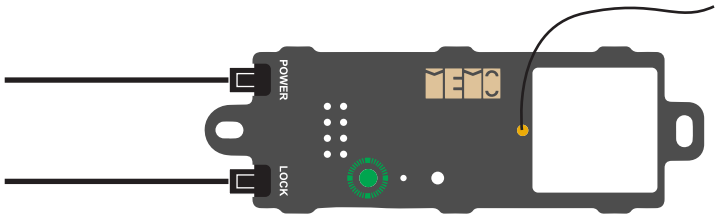


Perform the following simple steps:
- Check Power & Connections
- Check Reading of KEY FOBs & CARDs

Check Power & Connector

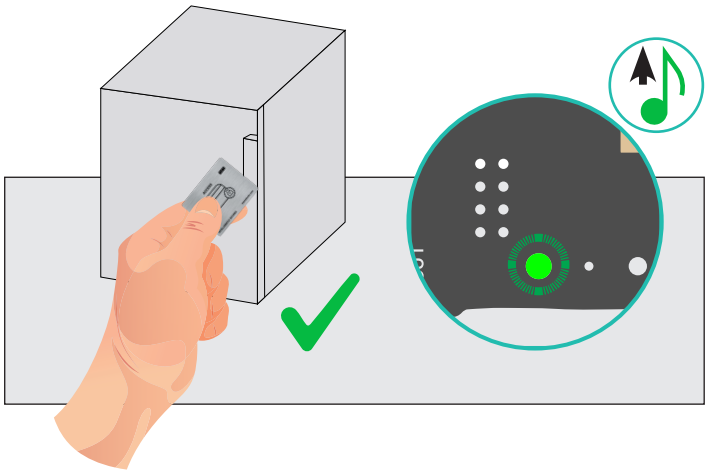


- Step 1: check that black power connector is inserted completely in the controller.
- Step 2: check that power plug is inserted in the wall socket completely
- Step 3: check that GREEN “Power”-LED on the controller is ON



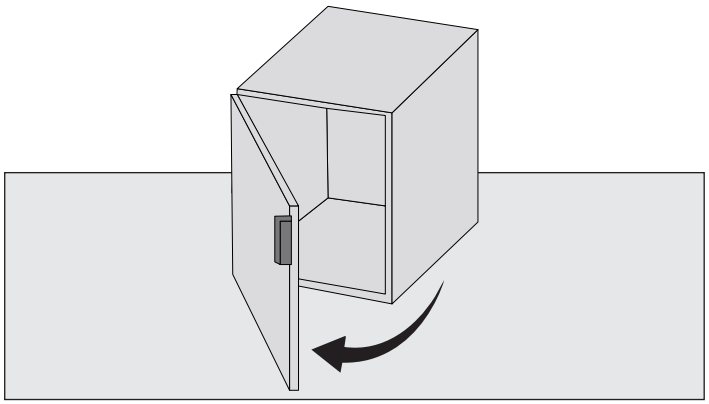
- **When GREEN “Power”- LED is ON, the controller has power and is ready for operation.**

Check Reading in General



Present Key Fob at batch point by approaching the (programmed) Key Fob from the outside of the show case and go close to the panel surface.

Listen to a beep sound and watch the “Antenna” LED on the controller – as soon as a beep sounds and LED turns to ON, the key is recognized, and reader is working.



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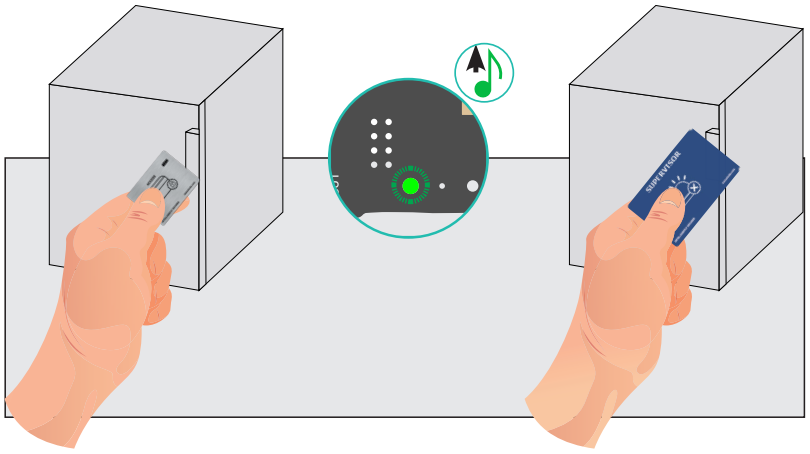
TEST THE INSTALLATION

Check Reading RANGE

- Step 1: approach key fob from approx. 10cm (4 inches) and go closer slowly.
- Step 2: listen to the beep sound and stop movement when sound starts.
- Step 3: stay frozen in that distance and measure from key to panel surface – it shall be approx. 2,5cm = 1 inch.
- Step 4: repeat test with Key Card – usually key fobs have smaller range, but some environment gives shorter reading range with Cards.

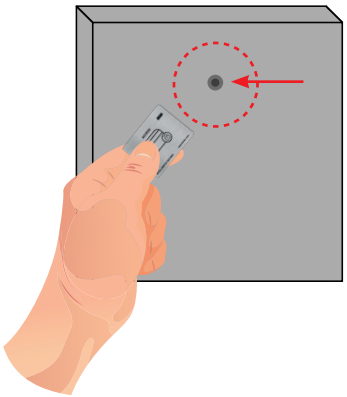
Test with Key-Fob



Test with Key-Card

Mark Reading BATCH POINT

- Step 1: measure from the inside and mark the center of reader at the outside, if this is not possible, proceed with step 2.
- Step 2: move key fob around and watch exactly for the point when the reading sound signal is triggered.



From the outer side do a batch point to remember the reader position in the future.

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TEST THE INSTALLATION – COMMON ISSUES

COMMON ISSUES

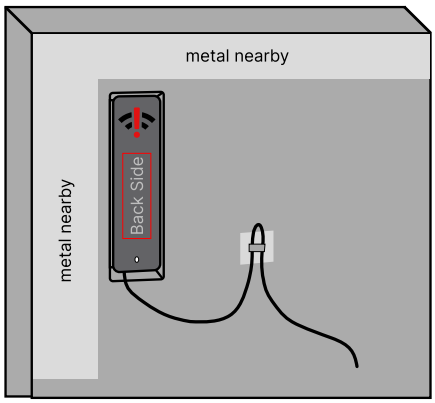
Experience from our technical support shows the following issues on the row of frequent questions:

- Check Material around Reader
- Check exact Batch Point
- Check Correct Presentation of Keys
- Check Reader Orientation
- Check Connector at Controller
- Check Controller on Power
- Check Cable for damages
- Check Reader fixation inside
- Check other cables in parallel

Check Material around Reader

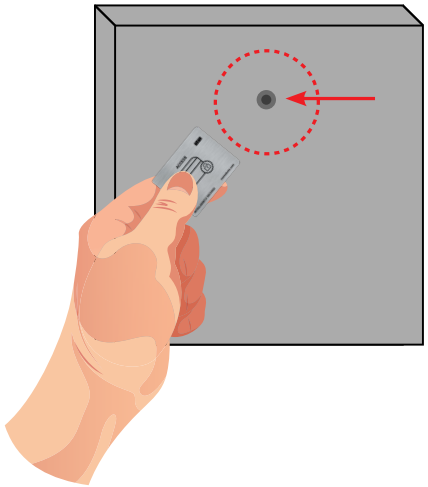
Any kind of metal is blocking or weakening. the signal by physical effects – connect a spare reader to controller and test if keys work with a different reader outside of the show case.

Make sure that there is no metal next to the reader in order to minimize signal blocking.



Check exact Batch Point

Presenting the Key precisely at the right batch point is essential – the reading range should be approx. 1,5cm = 0,6 inch around the ideal point – mark that point for easy use.



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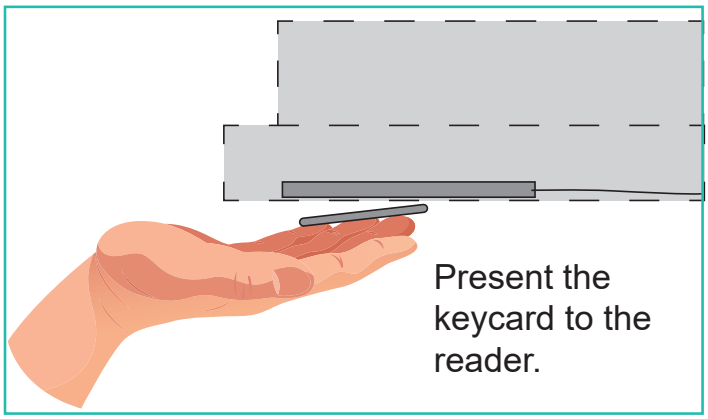
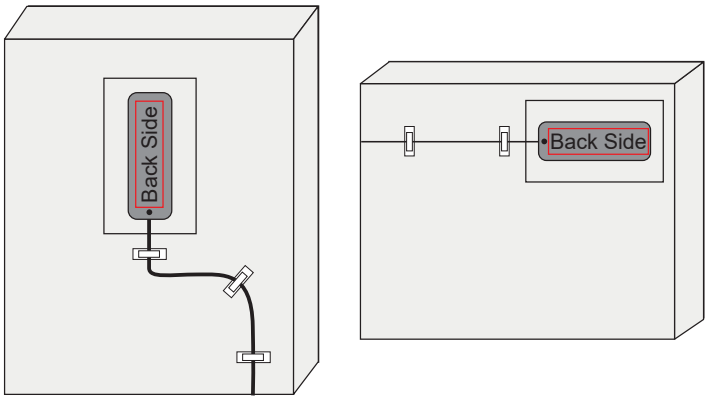
TEST THE INSTALLATION – COMMON ISSUES

Check correct Presentation of Keys
Presenting the Key in a slow and controlled move is essential to give the system time for communication – fast and hectic moves do not allow communication between keys and reader.

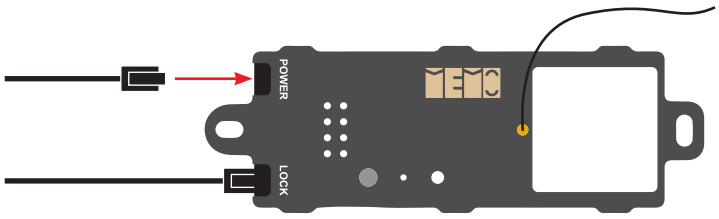


Check Reader Orientation

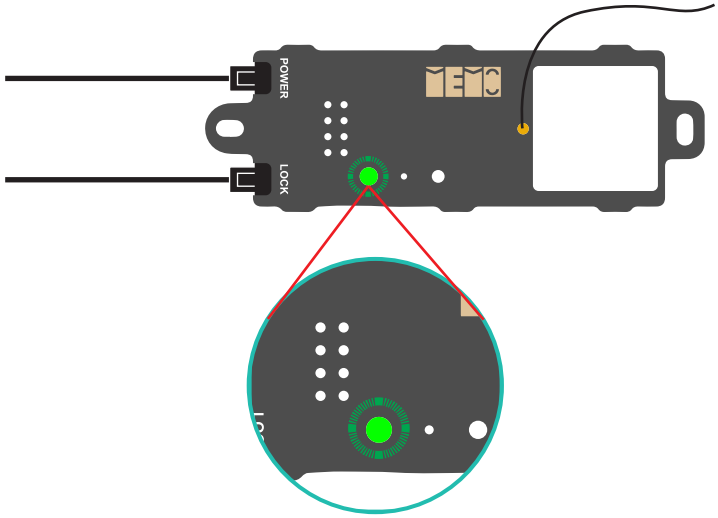
Make sure the reader is fixed with the “Backside”-Label oriented to the inside of the show case – wrong orientation is reducing reading range by. 5mm (0,2 inch).



Check Connector at Controller
Reader Connector on controller might have been damaged during installation, check by hand if golden screw terminal is stable.



Check Controller
Check green “Power”-LED on controller – test controller by pulling green connector – push it back and wait for 3-tone sound signal. No sound signal – check electric power from socket.



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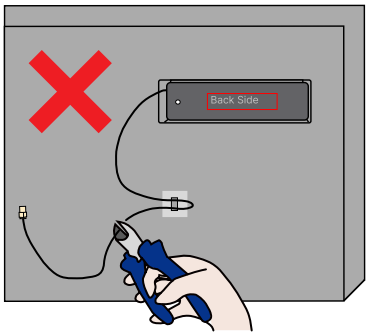
TEST THE INSTALLATION – COMMON ISSUES

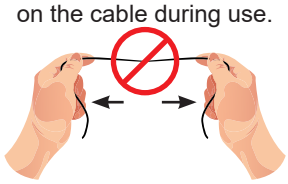
Check Cable for damages

During assembly and transport of show cases the cables might have been squeezed, elongated or even cut – connect another reader to controller and check function.
Don't cut / bend reader cable during the installation.

Do not use tools to cut or modify the cable.



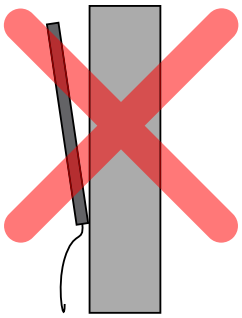
Avoid pulling or putting tension on the cable during use.



Bending or twisting the cable can damage its internal structure.

Check Reader fixation inside

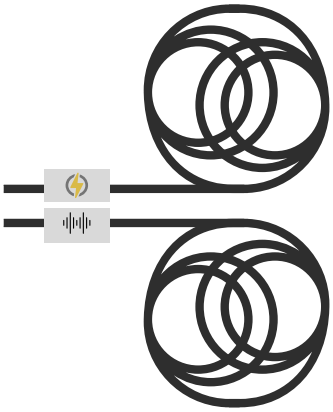
Make sure the reader is installed flat and neat to the panel. Angled or loose fixation is reducing reading range, in worst case Keys are not detected at all.



Make sure that the reader is positioned correctly.

Check other cables in parallel

High Power Cables and High Frequency cables in the same conduit or in the same cable channel may cause disturbances and weaken or even block the reader signal, in worst case Keys are not detected at all.



Avoid routing high power or high frequency cables alongside the reader cable — this may cause interference and reading failures.

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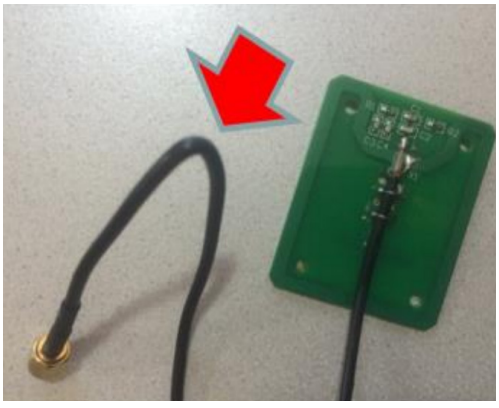
TEST THE INSTALLATION – COMMON ISSUES EXAMPLES

Reader cable will break

Reader cable squeezed.

Reader cable bended.



Drill hole Not sufficient when Metal is close.

Panel thickness above Reader to big.

Metal near the reader may block or reflect the signal, causing key/card reading failures.

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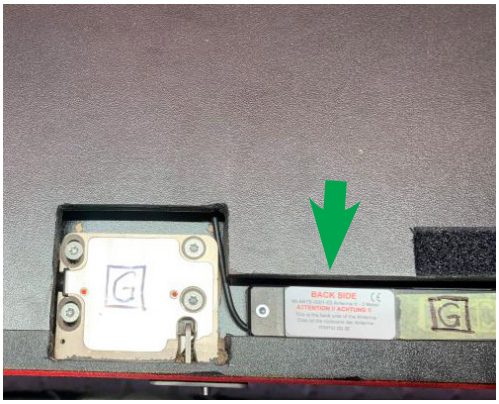
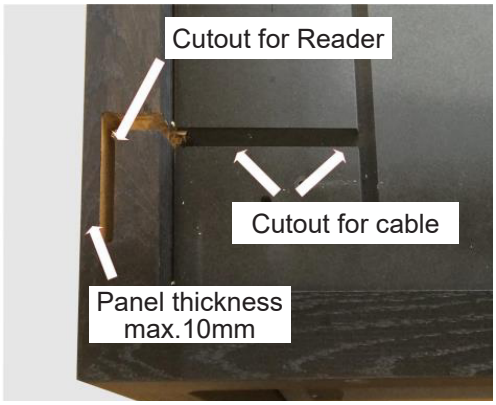
TEST THE INSTALLATION - GOOD INSTALLATION EXAMPLES

Reader mounted recessed

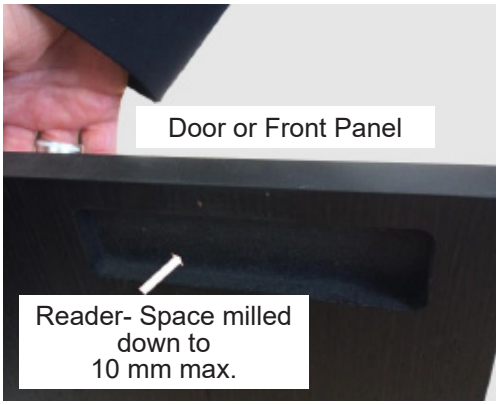
Reader mounted recessed



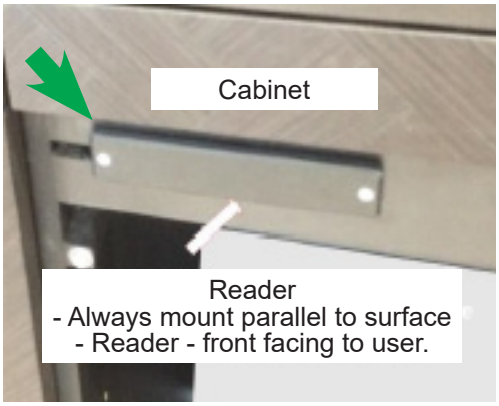
Reader cutout



Reader Cutout door panel



Reader mounting



Reader Positioning