Manuals+ — User Manuals Simplified.

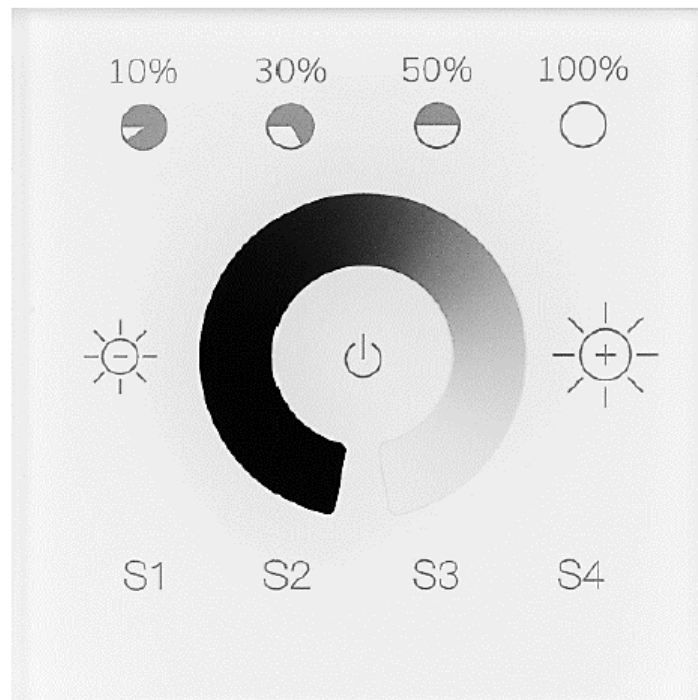

LEDVANCE MCU
TOUCH DALI-2

LEDVANCE MCU TOUCH DALI-2 Controllers

Contents

LEDVANCE MCU TOUCH DALI-2 Controllers

Specifications:

- Product Name: MCU TOUCH DALI-2
- Model Numbers: MCU TOUCH DALI-2 – EAN: 4058075837546, MCU TOUCH DALI-2 TW – EAN: 4058075837560
- Application Areas: Suitable for meeting rooms, rooms with motion detectors, rooms with partition walls, and more

Product Features:

- State of lighting after mains interruption can be customized
- Multiple dimming levels and CCT settings available
- RESET function for MCU and connected DALI drivers

Product Benefits:

- Convenient user operation
- Customizable light settings for different scenarios
- Easy installation with mounting options for flush box and surface mounting

Mounting:
For flush box mounting, follow the dimensions and fixation hole pattern provided. Switch off mains and DALI supply during installation. For surface mounting, use the SURFACE MOUNT FRAME (4058075843561) following the cable/wire preparation steps.

Configuration:
To set the behavior after mains interruption or RESET the device, follow the instructions provided in the manual. Make sure to switch off mains and DALI supply before accessing the rotary switch on the backside of the MCU.

Handling:

For user operation, simply interact with the central element of the MCU as instructed for specific actions like adjusting brightness levels or turning off lights.

FAQ:

1. **Q: How do I reset the MCU and connected DALI drivers?**

   A: Follow these steps – Switch off mains of the MCU and all connected devices, set the upper rotary switch on the backside of the MCU to position 9, then switch on mains of the MCU and all connected devices. Note the previous switch position, turn off lights via a Short Touch to the central element of the MCU if they are ON, wait until light goes to 100%, set rotary switch back to original position, and switch on mains of the MCU and connected devices.

2. **Q: What happens after a DALI RESET command is sent?**

   A: A DALI RESET command is sent to all connected drivers, and the minimal dimming level is reset to 1%. If multiple MCUs are interconnected and powered up, RESET is performed by all MCUs.

MCU TOUCH / TOUCH TW – Features & benefits

Product Features

- Dimming and switching of DALI fixtures via touch sensitive glass surface
- Change of color temperature* in combination with DALI DT8 drivers
- Scene storage and recall of up to 4 scenes per device
- Control up to 25 DALI LED drivers per active control unit**
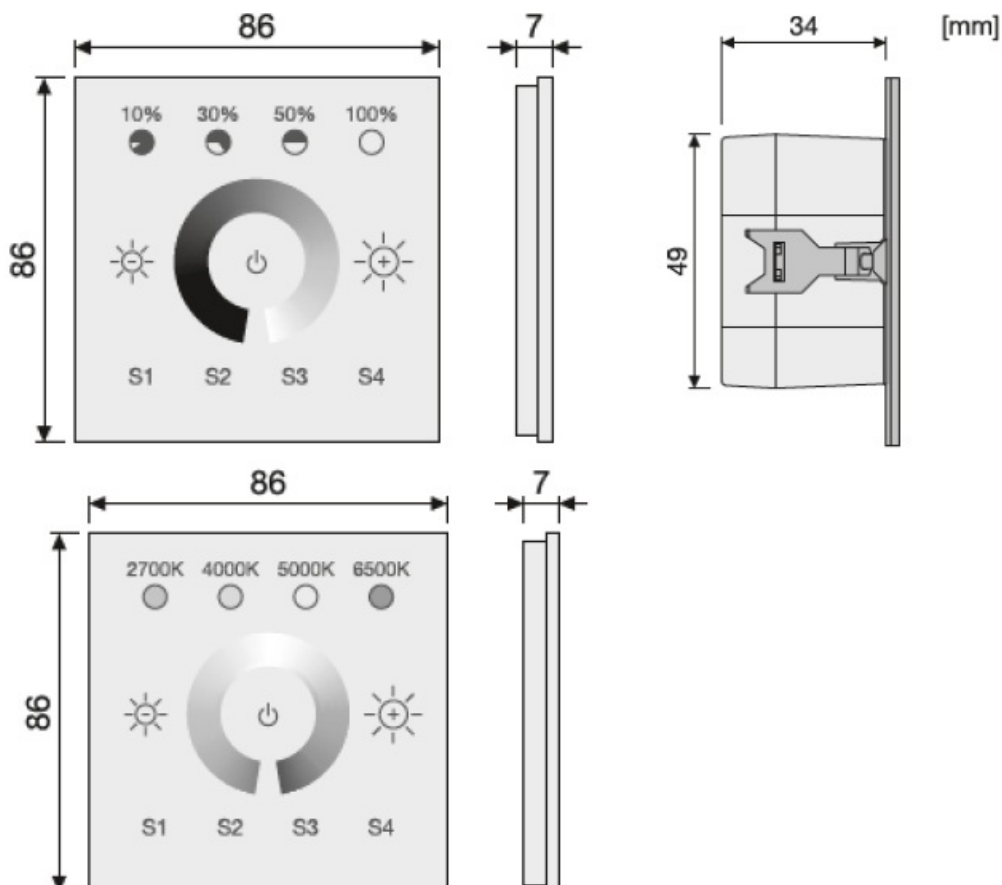
Product Benefits

- All in one solution with integrated DALI power supply
- Plug and control ready
- Level preset for simple recall with one Touch
- Interconnection of up to 4 MCU's with automatic synchronization via DALI
- Suitable for rooms with separation walls
- Possibility of combination with standard motion detectors
- Fits into standard flush device boxes with > 40mm depth
- Works in active** (= mains powered) or passive mode (= without mains power)
- Automatic or manual memory of switch on level
- Individual setting of lowest dimming level
- Configuration of power on state after mains interruption by rotary switch

Application areas

- Conference rooms
- Residential / Shop/ Hospitality areas

MCU TOUCH / TOUCH TW – Flush mounting

Suitable flush boxes
For concrete walls / for hollow walls
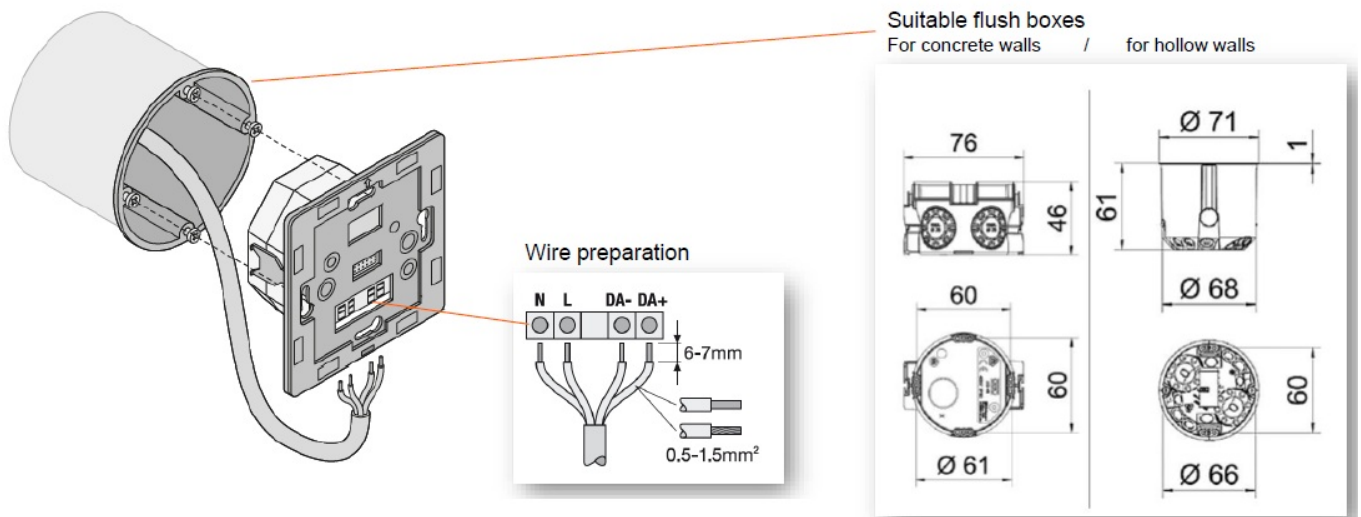
Wire preparation

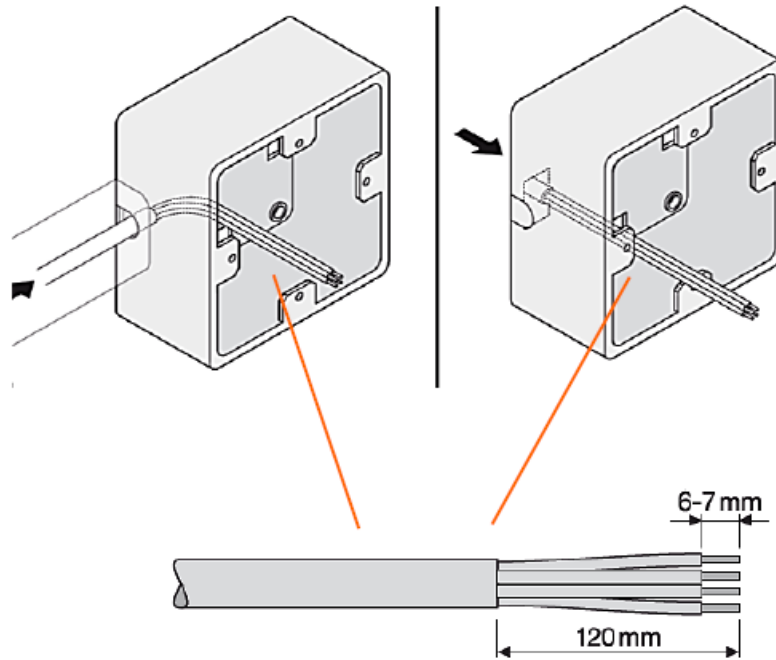⚠ **Switch off mains and DALI supply during installation !**
MCU TOUCH / TOUCH TW – Surface mounting

Mounting principle

SURFACE MOUNT FRAME
(4058075843561)

Dimensions and fixation hole pattern

80

10.50

10.50

10.50

4.50

60

60

60

ø2.70

80

8.00

ø4.50

42

10

10

59mm

59mm

ø6mm
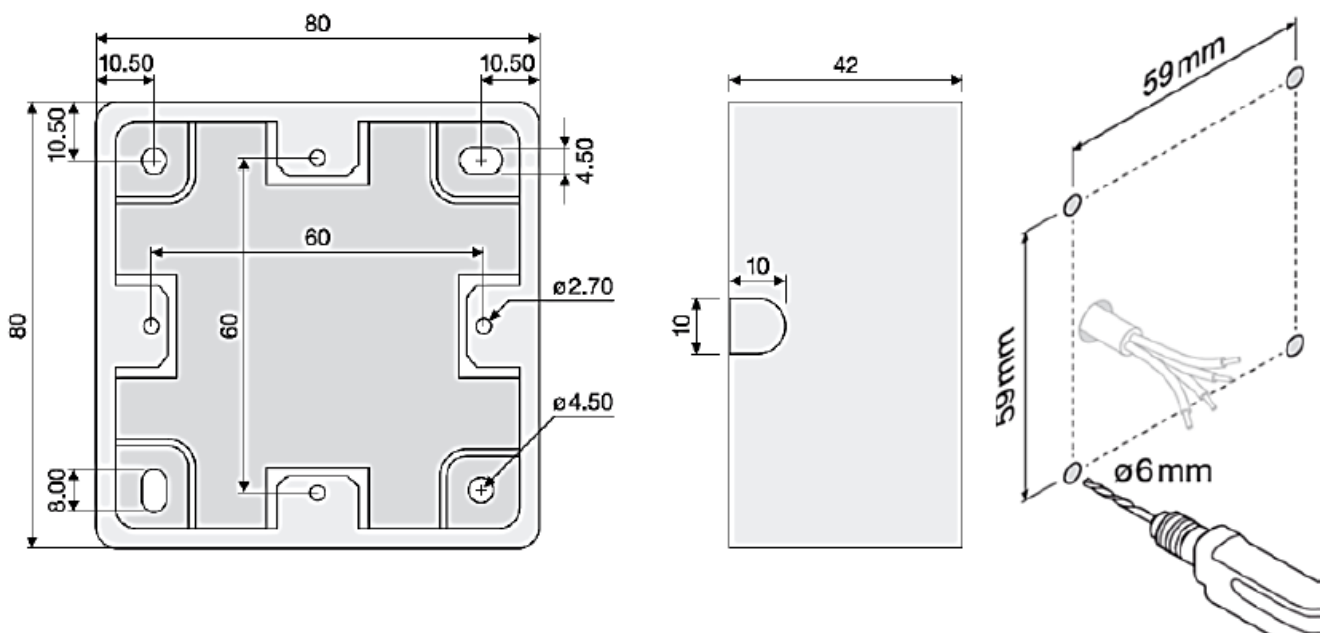
Side cable entry   Rear cable entry
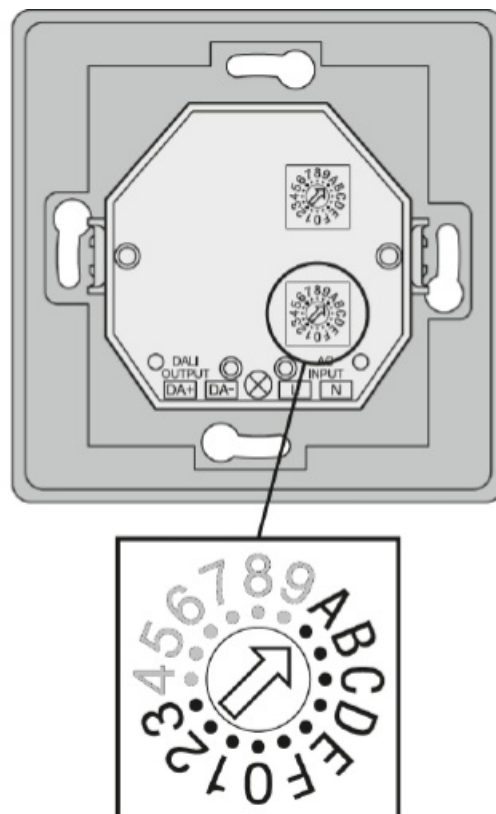
6-7 mm

120 mm

Cable / wire preparation

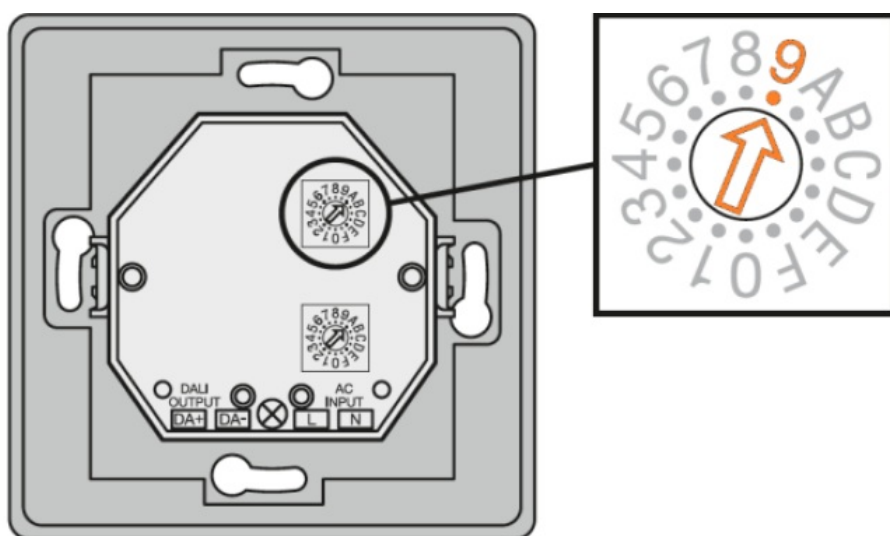⚠ **Switch off mains and DALI supply during installation !**

MCU TOUCH / TOUCH TW – Configuration: Behaviour after mains interruption

State of the lighting after mains interruption can be set by the rotary switch on the backside of the MCU
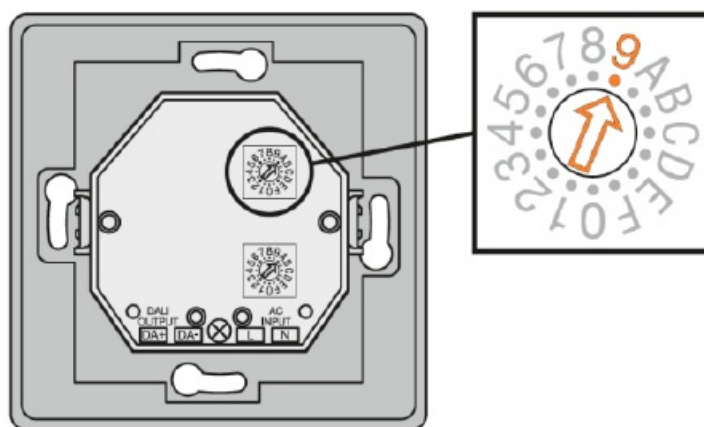
Setting	MCU TOUCH DALI-2	MCU TOUCH DALI-2 TW
A	Last dimming level and switching state before mains interruption will be re-established	Last dimming level / last CCT and switching state before mains interruption will be re-established
B	Dimming level stored as Scene 1 (S1)	Dimming level and CCT stored Dimming level stored as Scene 1 (S1)
C	10% brightness	10% brightness, CCT = 4000K
D	20% brightness	20% brightness, CCT = 4000K
E	30% brightness	30% brightness, CCT = 4000K
F	50% brightness	50% brightness, CCT = 4000K
0	80% brightness	80% brightness, CCT = 4000K
1	100% brightness	100% brightness, CCT = 4000K
2	OFF (Light level 0%)	OFF (Light level 0%)
3	No command send after Power up	
4-9	Reserved (do not use)	

Switch off mains and DALI supply before accessing the rotary switch on the backside!
MCU TOUCH / TOUCH TW – Configuration: RESET

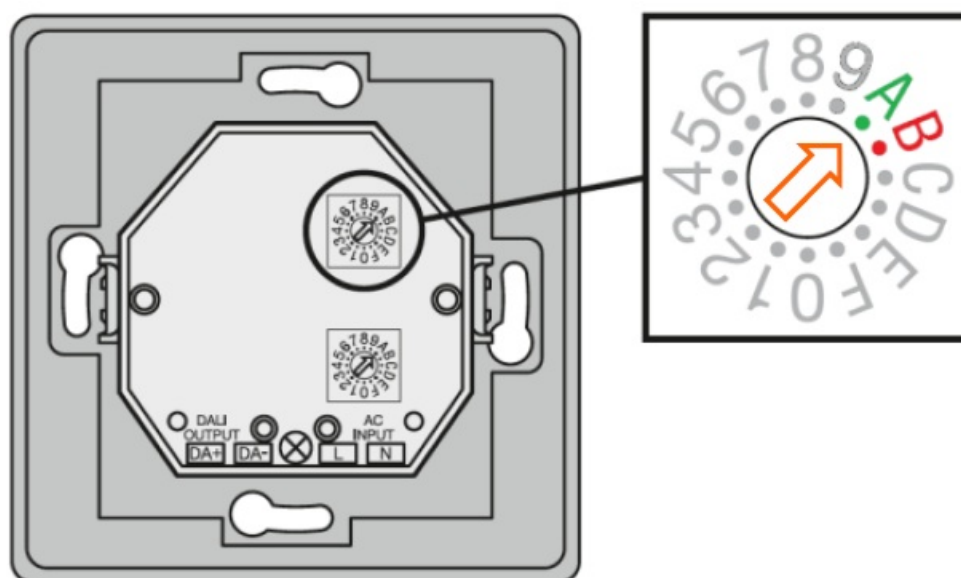| RESET MCU and the connected DALI drivers		Remark
Step 1:	**Switch off mains** of the MCU and of all connected devices, then **set upper rotary switch** on the backside of the MCU **to position 9**	Note previous position of the switch
Step 2:	**Switch on mains** of the MCU and of all connected devices	
Step 3:	If light is ON, **Switch Off lights via a Short Touch to the central element of the MCU**	
Step 4:	**Touch the central element of the MCU > 10s** until light goes to 100%	A DALI RESET command is sent to all connected drivers and the minimal dimming level is reset to 1%. If multiple MCU are interconnected and powered up, RESET is performed by all MCU.
Step 5:	**Switch off mains** of the MCU and of all connected devices, then **set rotary switch** back **to the original position**	
Step 6:	**Switch on mains** of the MCU and of all connected devices	

Switch off mains and DALI supply before accessing the rotary switch on the backside!
MCU TOUCH / TOUCH TW – Configuration: Set minimum dimming level

Setting the minimal dimming level		Remark
Step 1 :	**Switch off mains** of the MCU and of all connected devices, then **set upper rotary switch** on the backside of the MCU **to position 9**	Note previous position of the switch
Step 2 :	**Switch on mains** of the MCU and of all connected devices	
Step 3 :	If light is OFF, **Switch On lights via Short TOUCH to central element of the MCU**	
Step 4 :	**Adjust brightness level** by the + / – sun elements until desired minimal brightness level is achieved	If 1% or low dimming levels cannot be achieved, please RESET the MCU and the drivers.
Step 4 :	**Touch the central element of the MCU for > 10s** until lights blink	Current brightness level is stored as new minimum dimming level. If multiple MCU are interconnected and powered up, new Minimum level applies to all MCU.
Step 5 :	**Switch off mains** of the MCU and of all connected devices, then **set rotary switch** back **to the original position**	
Step 6 :	**Switch on mains** of the MCU and of all connected devices	

Switch off mains and DALI supply before accessing the rotary switch on the backside!
**MCU TOUCH / TOUCH TW – Configuration: Enable / Disable Scene storage**

Enable / Disable Scene storage		Remark
Step 1 :	**Switch off mains** of the MCU and of all connected devices	
Step 2 :	**Enable Scene Storage (S1-S4):** Set upper rotary switch to position **A** **Disable Scene Storage (S1-S4):** Set upper rotary switch to position **B**	If multiple MCU are installed in a room, scene storage can be enabled / disabled for each MCU individually
Step 3 :	**Switch on mains** of the MCU and of all connected devices	

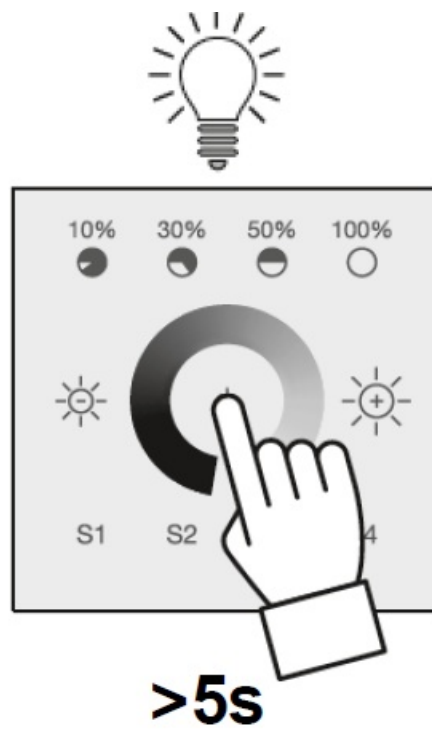**Switch off mains and DALI supply before accessing the rotary switch on the backside!**

MCU TOUCH / TOUCH TW – User operation

Switch ON / OFF
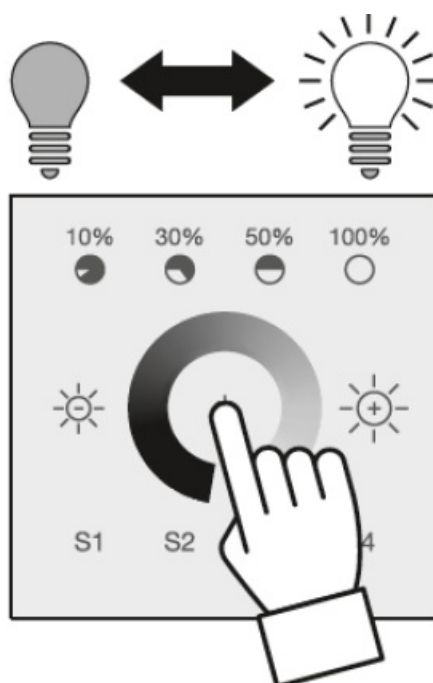
- To switch on / off briefly touch the central element of the MCU.
- Switching direction toggles with each touch.

Define manual Switch ON behaviour

- To store a fixed brightness and CCT* for Switch ON, adjust brightness and CCT* value as desired and store by an extended touch to the central element for >5s.
 (Note: Extended touch for user operation is only enabled in turnkey position A)
- Storage is indicated by two times blinking of the lights.
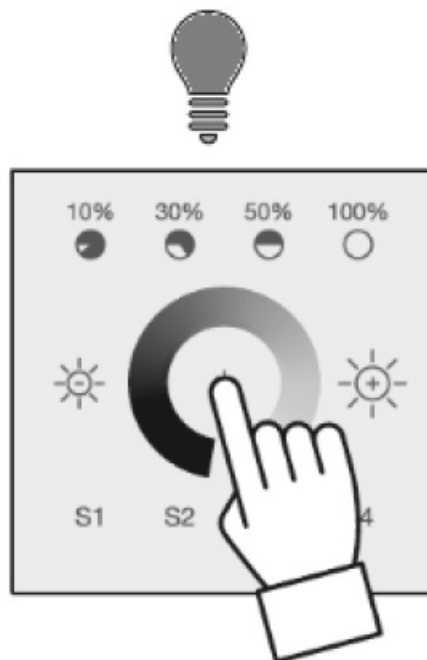

- To delete a fixed brightness and CCT* for Switch ON, switch off the light and touch the central element for > 5s.
  (Note: Extended touch for user operation is only enabled in turnkey position A)
- Deletion is indicated by lights switching ON to 100%/4000K. After deletion of fixed levels, the last values before manual OFF will be used for Switch ON.

Dimming
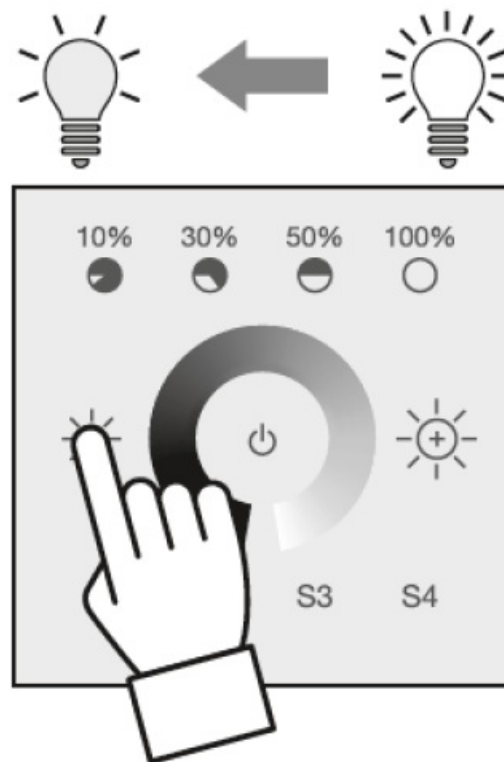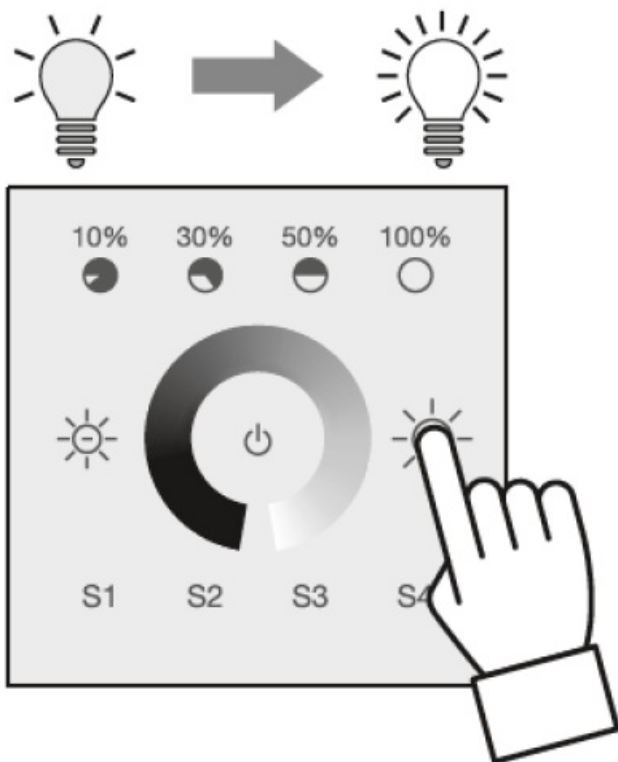
- If light is switched on: light level can be increased by touching the Sun(+) symbol on the righthand side and decreased by touching the Sun(-) symbol on the lefthand side. A brief touch allows a stepwise change of the light level while a permanent touch leads to a continuous change until touch is released or min. / max. is reached.
- The minimum dimming level can be restricted as described in the chapter "Configuration" of this guide
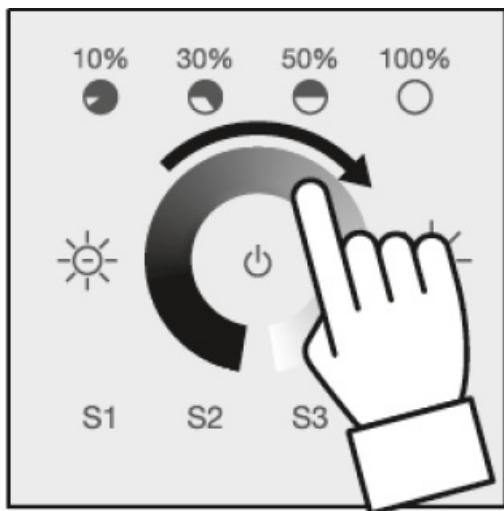
- If light is switched on: light level can be increased by sliding over the circle* around the central element in clockwise direction and decreased by a counterclockwise slide.
- A dedicated light level can be recalled by briefly touching to the corresponding position of the circle*.

Recall a fixed brightness level*
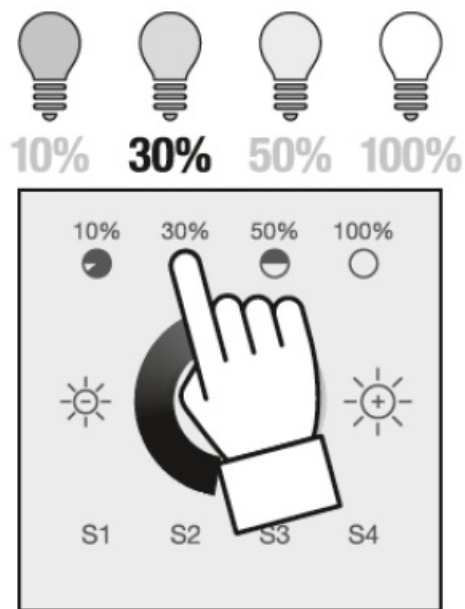
- To recall a fixed brightness level, briefly touch one of the top line elements labelled with 10% / 30% / 50% / 100%.

Recall a fixed colour temperature**

- To recall a fixed colour temperature (CCT), briefly touch one of the top line elements labelled with 2700K / 4000K / 5000K / 6500Kelvin.
  (Note: light must be switched on before recalling a CCT)

Tune colour temperature**

2700K – 6500K

| 2700K | 4000K | 5000K | 6500K |

S1   S2   S4

- If light is switched on: CCT can be increased by sliding over the circle* around the central element in clockwise direction and decreased by a counterclockwise slide.
- A dedicated CCT can be recalled by briefly touching to the corresponding position of the circle.

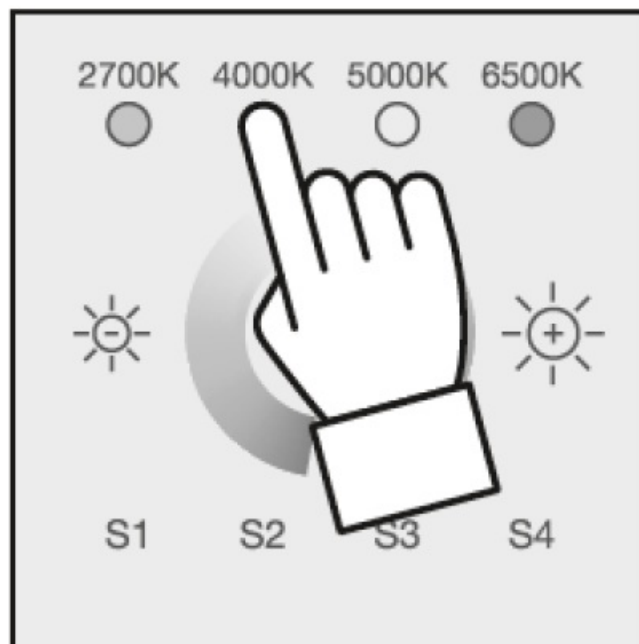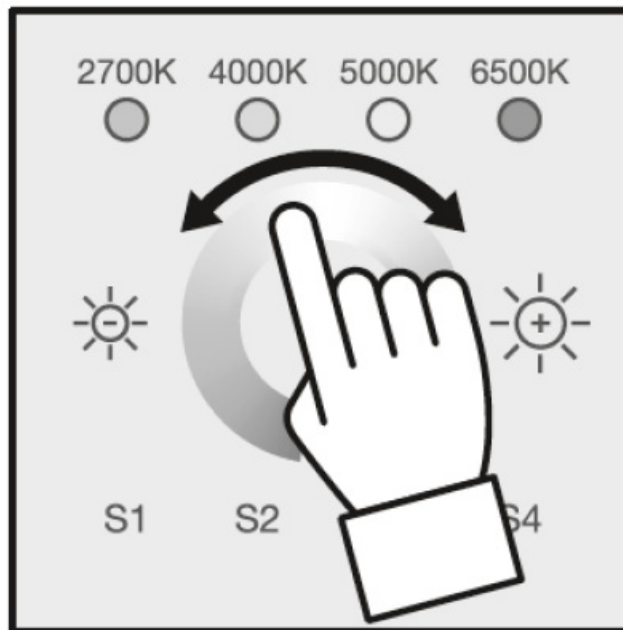**Scene setting and recall**

| 10% | 30% | 50% | 100% |

S2   S3   S4
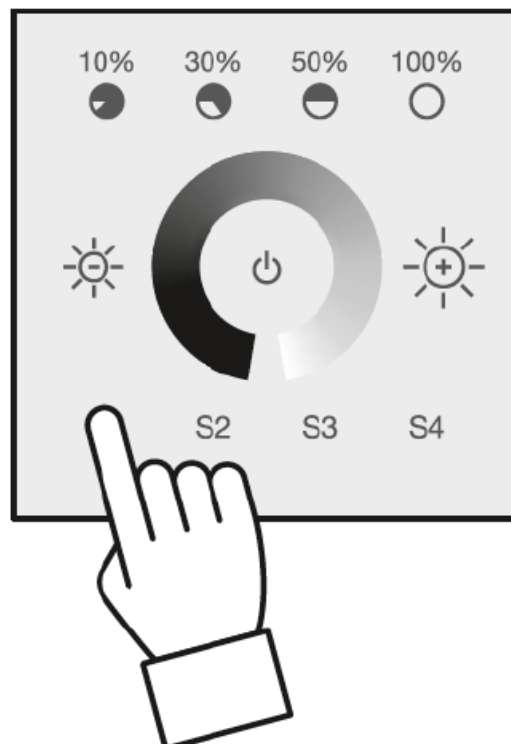
- To store a preferred light level and colour temperature* touch one of the S1-S4 elements for more than 5s until the light flashes.
  Remarks:
  - Scene setting is enabled in position A of the upper turnkey and disabled in position B.
    If scenes should be protected from accidental change by users, please set the turnkey to pos. B after

scene storage.

- Scene setting is stored in the corresponding MCU only, allowing individual scene sets in different MCU. If identical scene sets in multiple MCU are required, please process storage subsequently on all installed MCU without changing the light setting in-between.
- Scene values are stored in the non-volatile memory of the device.
- To recall a stored light level and colour temperature* briefly touch one of the elements S1-S4

MCU TOUCH / TOUCH TW – Application example 1: Meeting room

Description
FUNCTIONALITY

- Up to 25 luminaires shall be controlled by a broadcast DALI signal
- Dimming and switching of all luminaires shall be possible at both entry doors of the room

PRINCIPLE SETUP

- A MCU TOUCH is installed at both entry doors
- The MCU at one door is connected to mains and acts as central DALI bus power supply (= active MCU)
- The second MCU is connected to DALI only and is supplied from the DALI bus (= passive MCU)
- All luminaires are connected to mains and the DALI bus

OPTIONS

- If tunable white luminaires shall be controlled, please use MCU TOUCH DALI-2 TW
- If number of luminaires is > 25, please connect second MCU also to mains

Installation scheme
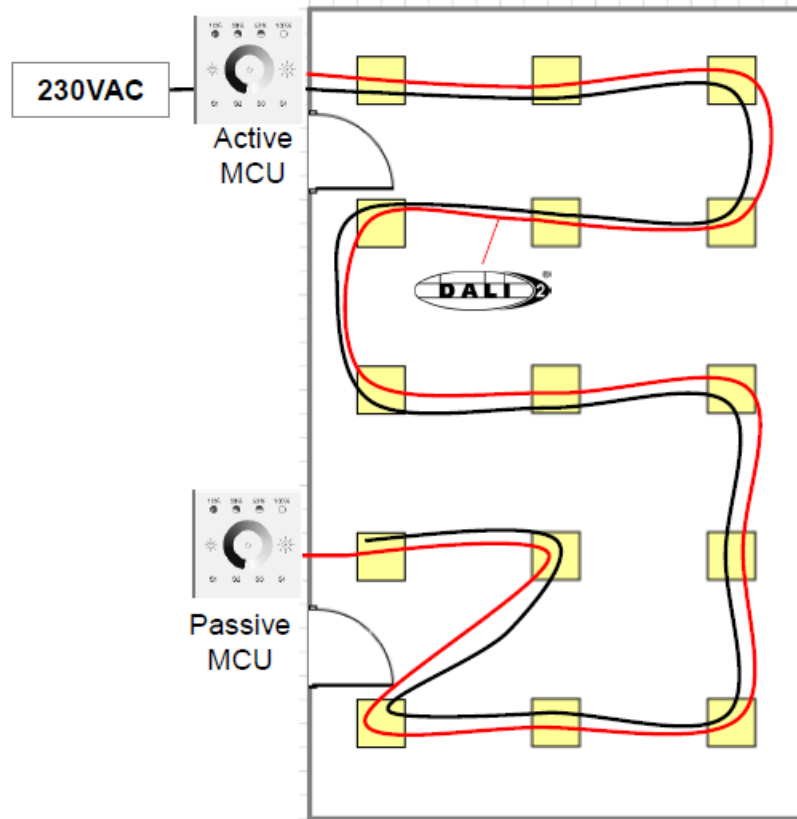
Installation

Safety

- Switch off mains and DALI supply during installation !
- DALI must be treated like mains voltage

Wiring

- Max. total DALI wire length: 300m
- Recommended DALI wire diameter 1,5mm²
- DALI and mains voltage may be routed in the same cable (e.g. NYM 5×1,5mm²)

Hints:

- Ensure correct polarity DA+/DA- when connecting the second MCU
- Respect the max. number of luminaires per circuit breaker

Commissioning

- To avoid that lights are switched on after a temporary mains interruption please set lower turnkeys of all MCU to identical position A (=last state) or position 2 (=OFF)(=OFF)

Possible system size

- Max. 25 DALI drivers per active DALI MCU
- Max. 4 DALI MCU per system
- Each Active MCU can power 1 passive MCU via DALI bus

Wiring diagram 1:

MCU TOUCH / TOUCH TW – Application example 2: Room with motion detectors
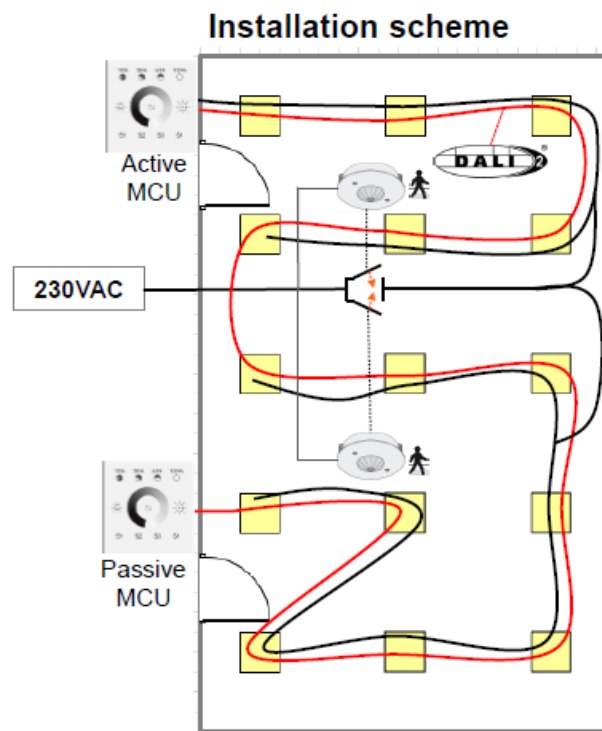
Description
FUNCTIONALITY

- Up to 25 luminaires shall be switched on by standard motion detectors
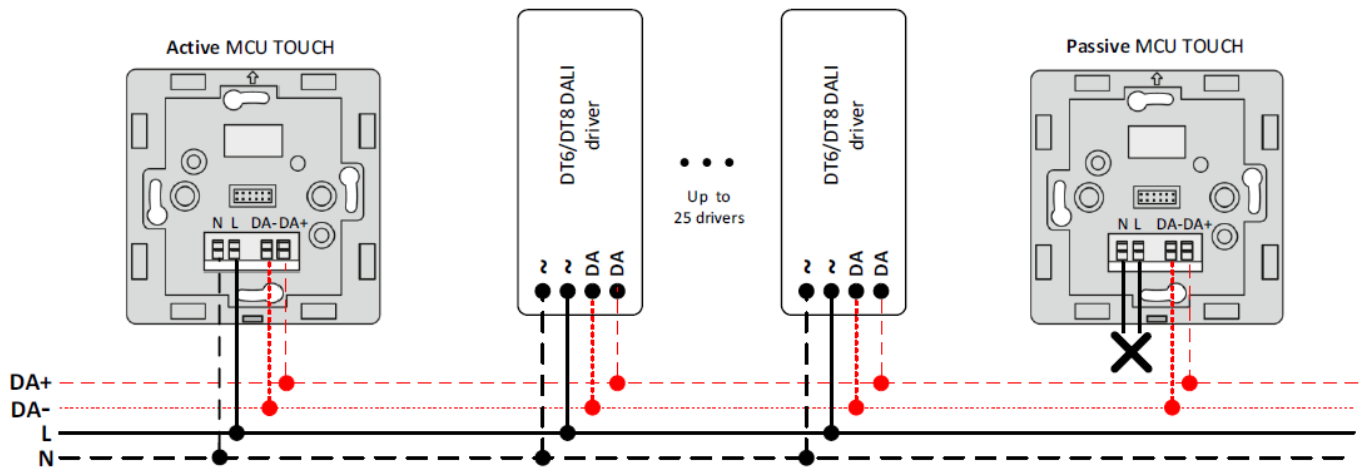- Dimming and switching of all luminaires shall be possible at both entry doors of the room if persons are present

PRINCIPLE SETUP

- A MCU TOUCH is installed at both entry doors

- The MCU at one door is connected to mains and acts as central DALI bus power supply (= active MCU)
- The second MCU is connected to DALI only and is supplied from the DALI bus (= passive MCU)

   All luminaires are connected to the DALI bus

- Mains of all luminaires and the active MCU is switched via the load contacts of the detectors

Installation
Safety

- Switch off mains and DALI supply during installation !
- DALI must be treated like mains voltage

Wiring

- Max. total DALI wire length: 300m
- Recommended DALI wire diameter 1,5mm²
- DALI and mains voltage may be routed in the same cable (e.g. NYM 5×1,5mm²)

Hints:

- Ensure correct polarity DA+/DA- when connecting the second MCU
- Respect the max. number of luminaires per circuit breaker and max. load at the switched sensor output

Commissioning

- Fully automatic ON/OFF by motion detection:

   Set lower turnkeys of all MCU to identical position B*-F or 0,1

- Semi automatic (= Manual ON via MCU and automatic OFF via Motion detector): Set lower turnkeys of all MCU to pos. 2
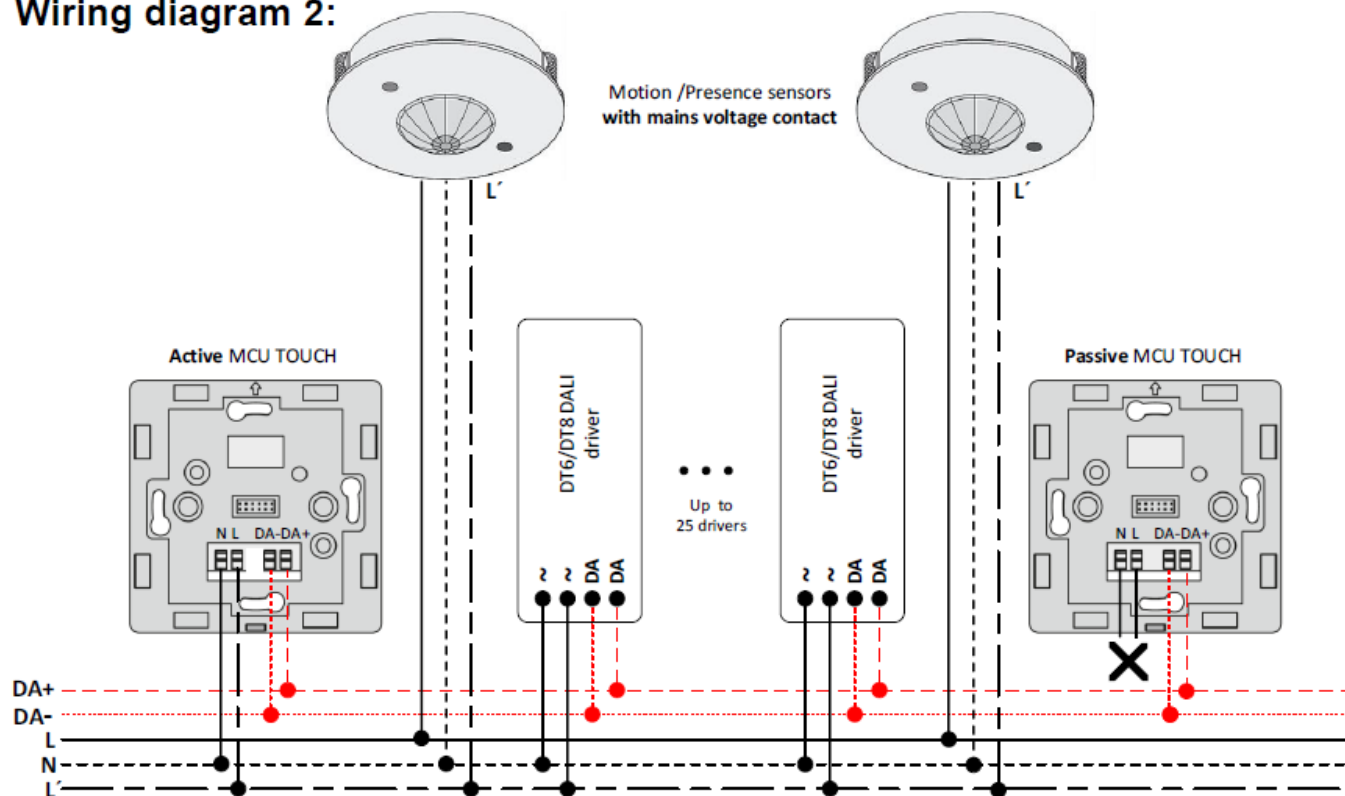
Possible system size

- Max. 25 DALI drivers per active DALI MCU
- Max. 4 DALI MCU per system
- Each Active MCU can power 1 passive MCU via DALI bus

Wiring diagram 2:

Motion /Presence sensors with mains voltage contact

Active MCU TOUCH

N L DA-DA+

DT6/DT8 DALI driver

Up to 25 drivers

DT6/DT8 DALI driver

Passive MCU TOUCH

N L DA-DA+

DA+
DA-
L
N
L'

* If lower turnkey pos. B is used, disable scene storage by setting upper turnkey also to pos. B

MCU TOUCH / TOUCH TW – Application example 3: Room with room with partition walls

Installation scheme

230VAC

Active MCU

DALI 2

230VAC

Active MCU
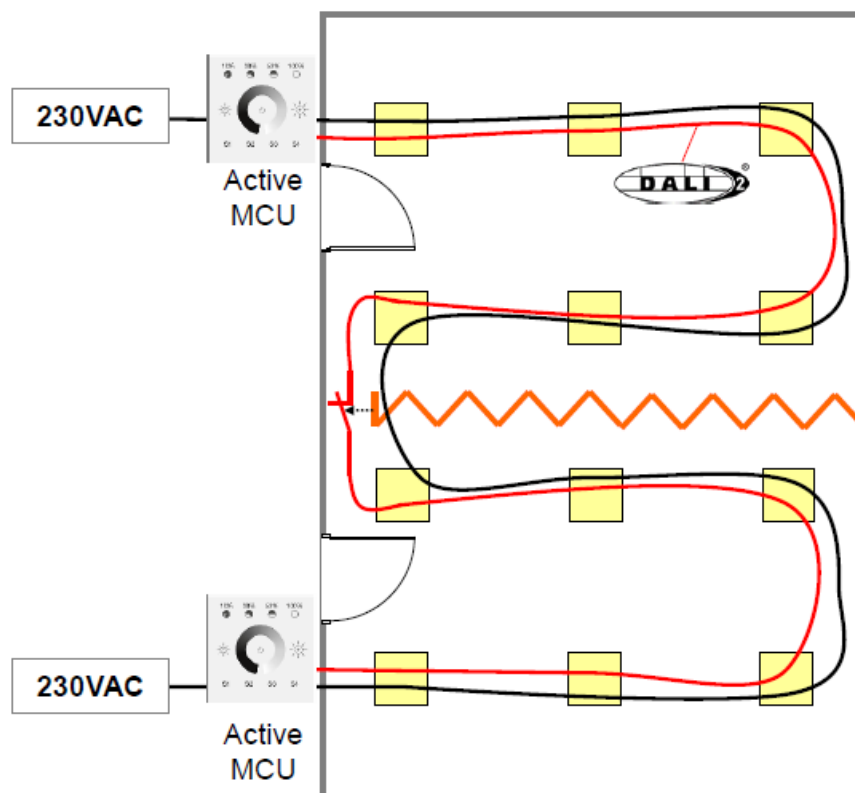
Description
FUNCTIONALITY

- Central dimming and switching of all luminaires shall be possible at both entry doors of the room when separation wall is open
- Independent control of each part room shall be possible as soon as soon as the room is split in two separate rooms by closing the wall

PRINCIPLE SETUP

- A MCU TOUCH is installed at both entry doors
- Both MCU at are connected to mains and act as DALI bus power supply (= active MCUs)
- While the DALI wires of both part rooms are interconnected when the wall is open, the DALI connection between both parts is interrupted at one pole when the wall is closed
- All luminaires are connected to mains and the DALI bus of the DALI MCU of the corresponding part room.

OPTIONS

- If tunable white luminaires shall be controlled, please use MCU TOUCH DALI-2 TW

Installation hints
Safety

- Switch off mains and DALI supply during installation !
- DALI must be treated like mains voltage

Wiring

- Max. total DALI wire length: 300m
- Recommended DALI wire diameter 1,5mm²
- DALI and mains voltage may be routed in the same cable (e.g. NYM 5×1,5mm²)

Hints:

- Ensure correct polarity DA+/DA- when connecting the second MCU
- Respect the max. number of luminaires per circuit breaker

Commissioning

- To avoid that lights are switched on after a temporary mains interruption please set lower turnkeys of all MCU to identical position A (=last state) or position 2 (=OFF)

Possible system size

- Max. 25 DALI drivers per active DALI MCU
- Max. 4 DALI MCU per system
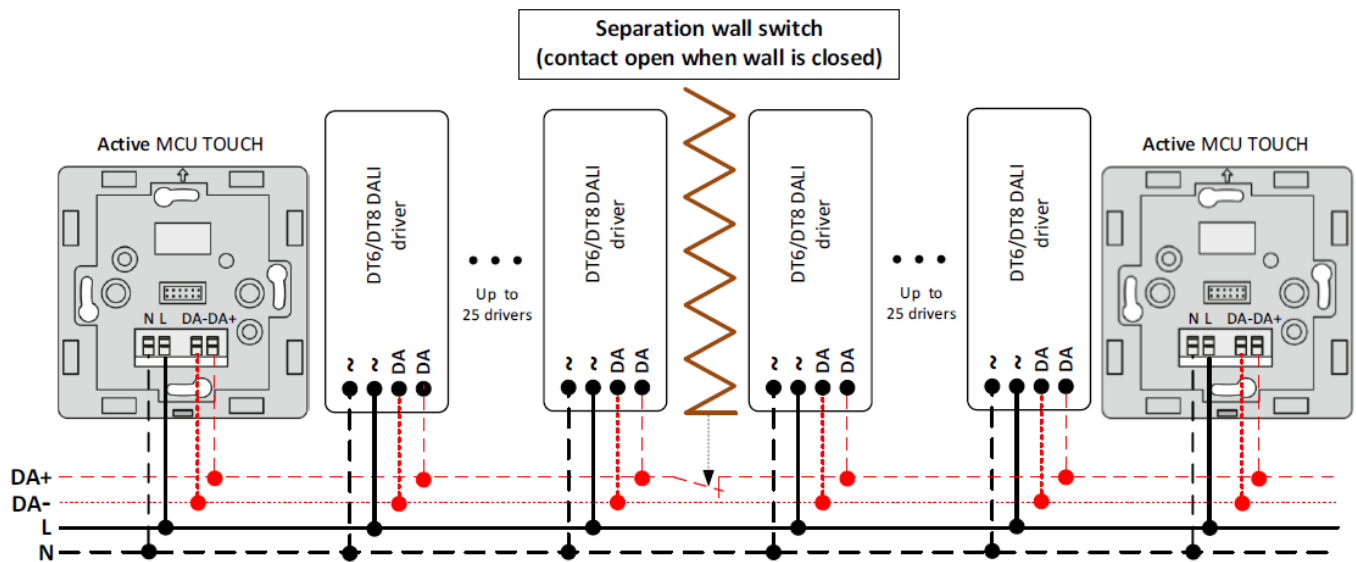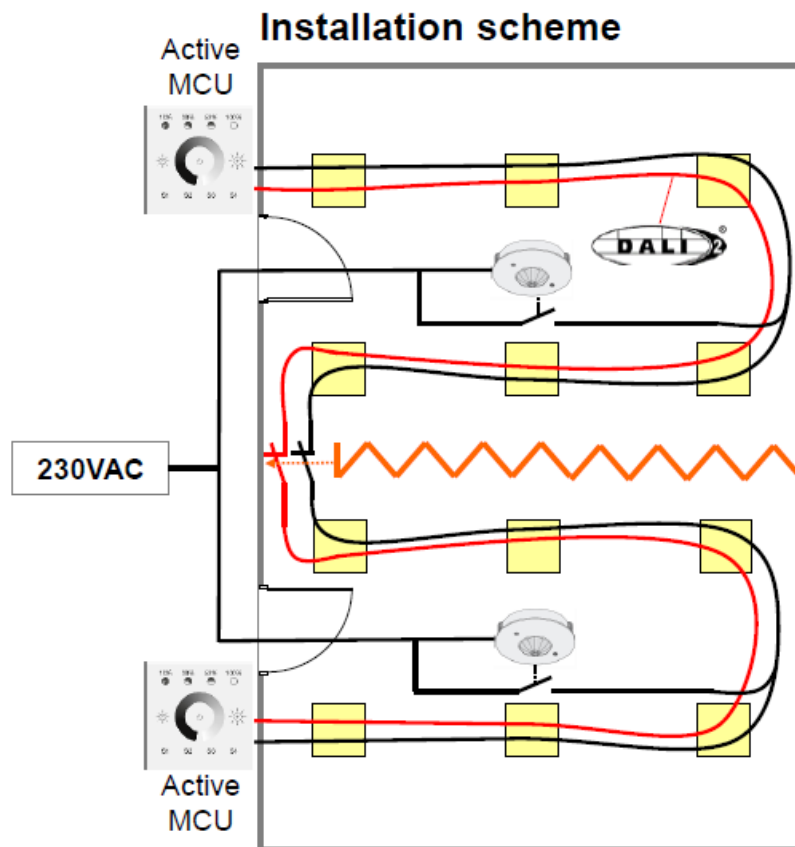- Each Active MCU can power 1 passive MCU via DALI bus

Wiring diagram 3:

MCU TOUCH / TOUCH TW – Application example 4: Room with room with partition walls and motion detectors

Description
FUNCTIONALITY

- If separation wall is closed light is switched on individually in each room part when motion is detected and can then be dimmed and switch via the MCU of this room part.
- If separation wall is open light is switched on centrally for the whole when motion is detected by one of the sensors. If the room is occupied and the wall is open, a central manual control of all luminaires is possible via both MCU.

PRINCIPLE SETUP

- A MCU TOUCH is installed at both entry doors
- All MCU are connected to mains (= active MCUs)

  Luminaires of a room part are connected to the DALI bus of the MCU in this room part
- Mains supply of the luminaires and the MCU in a part room are switched via the motion detector in this part
- When separation wall is opened the DALI Bus of the part rooms are interconnected
- When separation wall is opened the mains output of the motion detectors are interconnected

OPTIONS

- If tunable white luminaires shall be controlled, please use MCU TOUCH DALI-2 TW

Installation hints
Safety

- Switch off mains and DALI supply during installation !
- DALI must be treated like mains voltage

Wiring

- Max. DALI wire length (total for all room parts): 300m
- Recommended DALI wire diameter 1,5mm²
- DALI and mains voltage may be routed in the same cable (e.g. NYM 5×1,5mm²)

Hints:

- Ensure correct polarity DA+/DA- when connecting the second MCU
- Respect the max. number of luminaires per circuit breaker and max. load at the switched sensor output
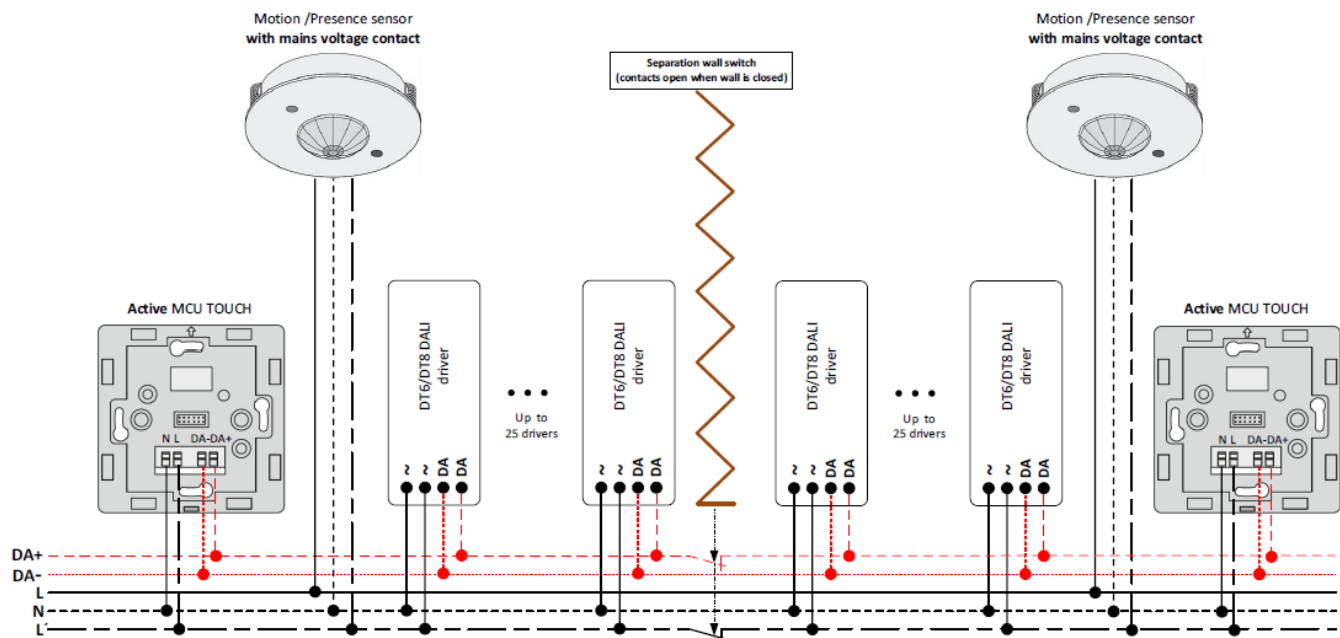
Commissioning

- Fully automatic ON/OFF by motion detection: Set turnkeys of all MCU to identical position B*-F, or 0,1
- Semi automatic (= Manual ON via MCU and automatic OFF via Motion detector): Set turnkeys of all MCU to position 2
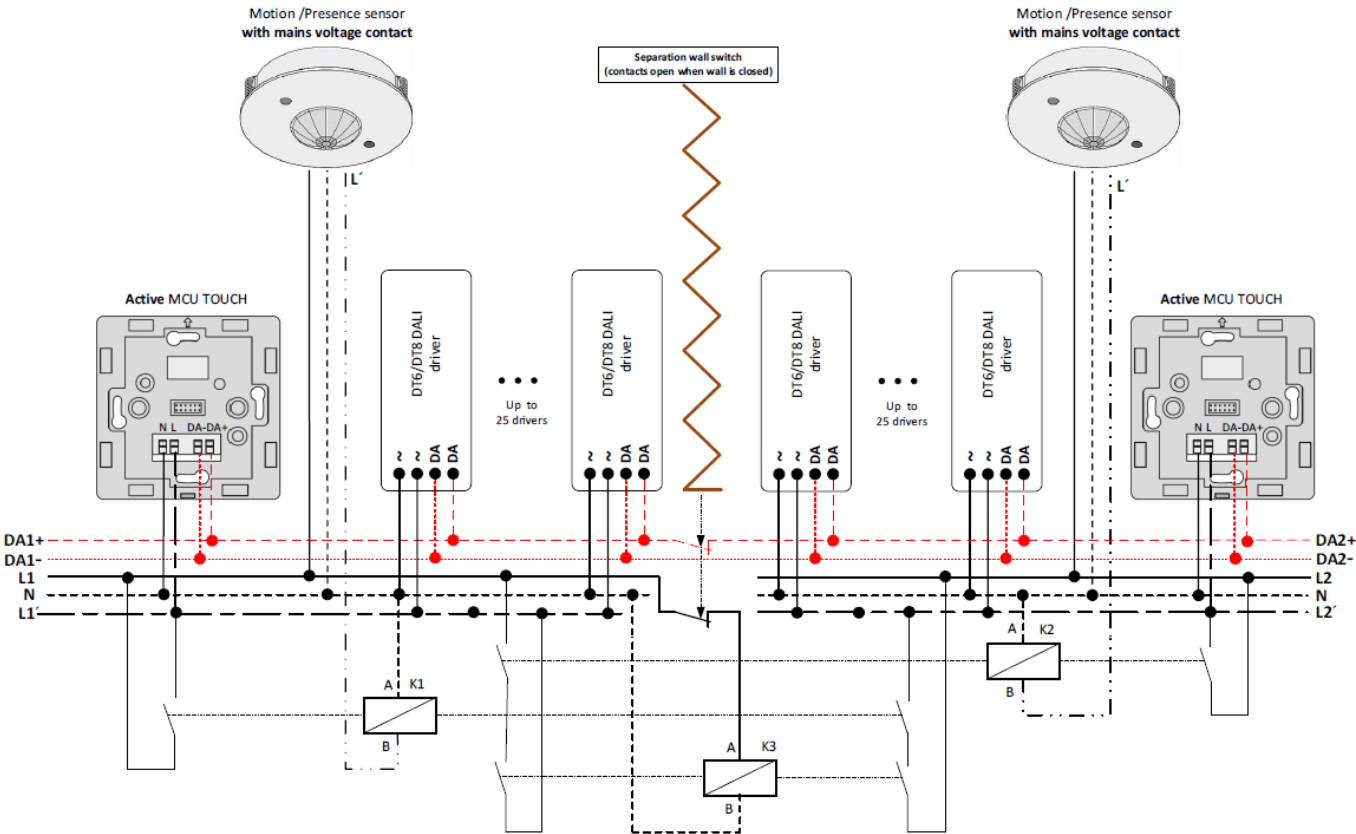
Possible system size

- Max. 25 DALI drivers per room part
- Max. 4 room parts with one active DALI MCU each

Wiring diagram 4a :

* If lower turnkey pos. B is used, disable scene storage by setting upper turnkey also to pos. B

Wiring diagram 4b: dividable room with motion detectors, separate mains circuits for the part rooms

Questions and Answers

1. **Q: How can I set an individual level / a individual CCT for automatic switch on when motion is detected?**

   A: Temporarily set the upper turnkey of all MCU to position A, ensure that separation wall is open and the MCU are interconnected via DALI and are powered up. The adjust the brightness and the CCT to the desired levels and store this level individually by touch >5s to S1 element of all individual MCUs . Finally set the turnkey of all

MCU to position B

2. **Q: As the of room parts are bigger, they can not be covered by the detection area of a single motion detector, how can I increase the number of detectors?**
A: If you need multiple detectors in one part room just interconnect the Outputs with switched phase (L') of the detectors

3. **Q: What if the high number of drivers per part room exceeds the load capacity of the switching contact of the motion detector?**
A: If the max. capacitive load of the detector is not sufficient, please use a power conductor / power relay in-between luminaires and load contact of the motion detector

4. **Q: What if the room parts are connected to different phases and circuit breakers and may therefore not be interconnected by the switch contact of the movable wall?**
A: In this case you need additional power conductors, please see corresponding wiring diagram

5. **Q: Can I use also daylight dependent control?**
A: If the selected motion detectors have an integrated light sensor, it is possible to set a brightness threshold directly at the sensors. That avoids an unnecessary switch on if sufficient daylight is available. A closed loop / daylight harvesting control is not possible

6. **Q: Can I use DALI sensors instead of the standard motion detectors?**
A: No, the MCU does not support other DALI control devices such as DALI Sensors or DALI Push button couplers.

7. **Q: Can I connect a MCU to another DALI control system or a BMS solution?**
A: No, the MCU is a standalone control solution

8. **Q: Is it possible to control more than 25 drivers with one single MCU ?**
A: Yes. If you need to control more luminaires, please use an external DALI power supply. The MCU should not be connected to mains but supplied out of DALI (=passive MCU). Consider 10mA as DALI current consumption of the MCU and 2mA for each driver.

9. **Q: Can I mix/interconnect MCU SELECT and MCU TOUCH in the same installation?**
A: In principle that is possible, as there may be some limitations concerning the synchronization of MCU of different type, this combination is not officially recommended

Troubleshooting

1. **Q: What can I do if some luminaires have a different dimming behavior than the rest ?**
A: Most probably not all DALI drivers have ex-factory settings. Please perform a RESET as described at the beginning of this application guide

2. **Q: I have installed two MCU, why do the lights behave differently depending which MCU I use?**
A: To ensure a complete synchronization, the MCU must be interconnected and powered when configuration settings such as storing a Switch On level or a Min level are done

3. **Q: The MCU is not working, and lights stay always at 100%, what is the possible root cause?**
A: Most probably the DALI bus voltage is missing, and the luminaires are at System failure level. Please check DALI voltage with a multimeter (typically: ~16V DC). Possible root cause: The MCU has no mains supply or the DA+/DA- wires of interconnected are mixed up at one MCU or the number of drivers / passive MCU is too high

Technical data

	MCU TOUCH DALI-2	MCU TOUCH DALI-2 TW
Input voltage range (AC)	100-240V (50/60Hz)	100-240V (50/60Hz)
Power consumption	0.7-2.7W	0.7-2.7W
Allowed wire diameter	0.5-1.5mm²	0.5-1.5mm²
Protection class	II	II
Protection type	IP 20	IP 20
Ambient temperature range	-20…+50°C	-20…+50°C
Humidity range	10-95%	10-95%
Max. total DALI wire length	**100m@0.5mm²** / **200m@1.0mm²** / **300m@1.5mm²**	**100m@0.5mm²** / **200m@1.0mm²** / **300m@1.5mm²**
Max. DALI output current *	65mA	65mA
DALI input current**	10mA	10mA
Dimming range	1-100%	1-100%
CCT setting range	—	2700-6500K
Dimensions (l x w x h)	86x86x41mm	86x86x41mm
Net weight	182g	182g
Lifetime	50.000h	50.000h

*Mains supplied MCU (=active MCU) / **DALI supplied MCU (= passive MCU)
THANK YOU

Documents / Resources

	LEDVANCE MCU TOUCH DALI-2 Controllers [pdf] MCU TOUCH DALI-2, MCU TOUCH DALI-2 TW, MCU TOUCH DALI-2 Controllers, MCU TOUCH DALI-2, Controllers

References

- **User Manual**