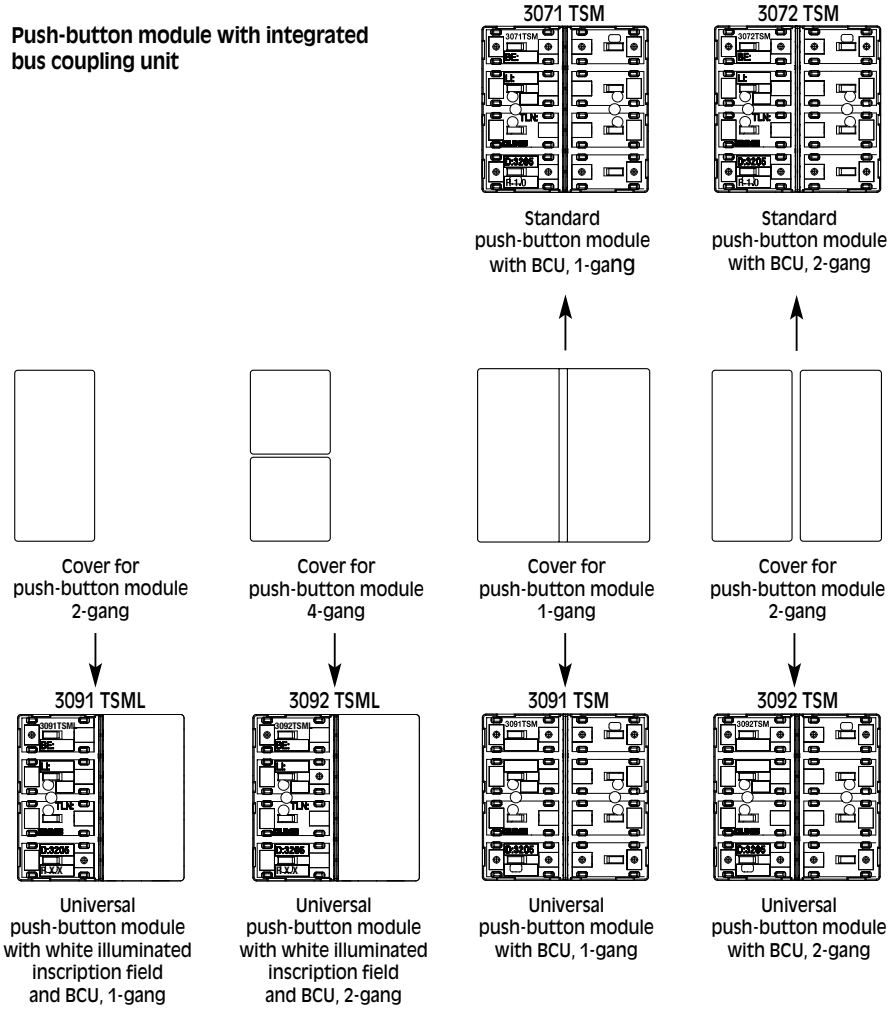
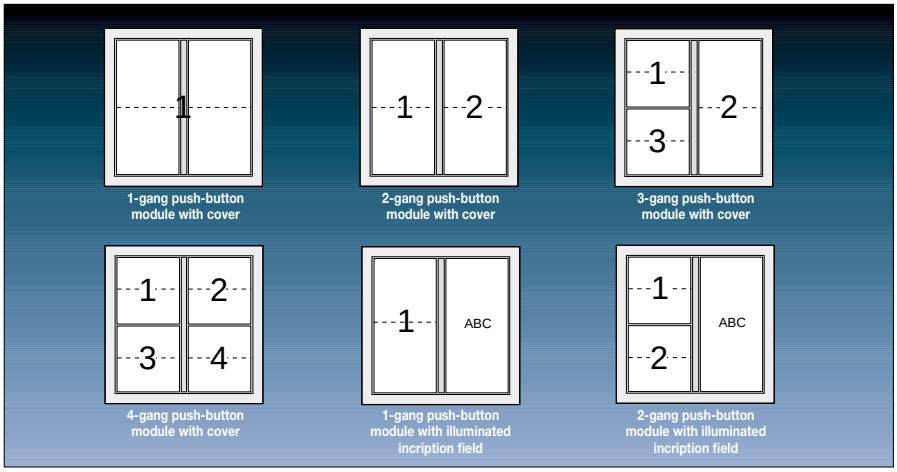
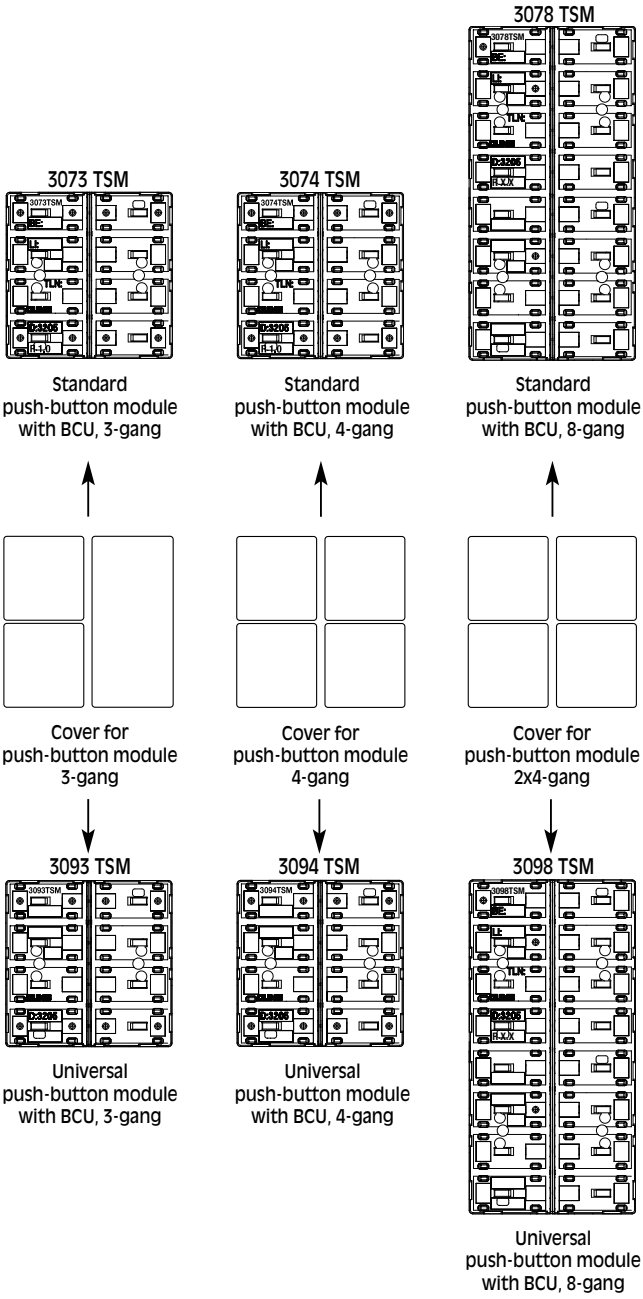
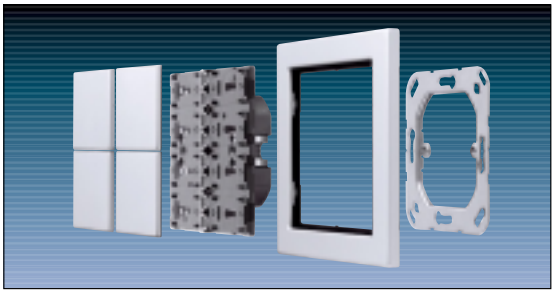
MAXIMUM FLEXIBILITY DUE TO MODULAR DESIGN

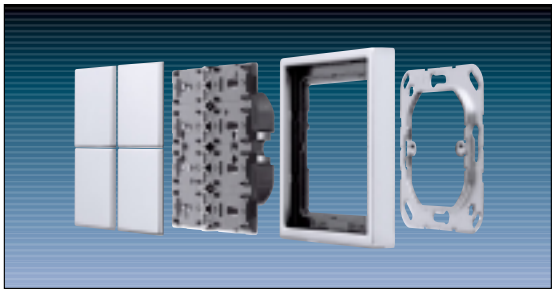






The new generation of FD modules is already fitted at the factory with an integrated bus coupler. This saves time and money during the installation. The devices are parameterised via the push-buttons and not via the bus coupler as usual. The range incorporates two variants: standard and universal for 1- to 4-gang covers. The 8-gang push-button module is completely new and offers up to 16 functions. There is also a version with an illuminated labelling field in 1- and 2-gang versions.
The new FD modules offer a further plus point for architectural creativity since the current 30 series can now be combined with the frames of the LS design. The installation is carried out via a supporting frame which is supplied with the respective push-button module. The snapshots indicate the difference between the two installations. When installing FD frames, the collar is aligned with the flush-type box. When using the LS design, it points towards the frame. This special design creates the requirement for integrating modules both in the flat FD frames and the conventional LS frames. The visual effect is equally convincing in both versions.

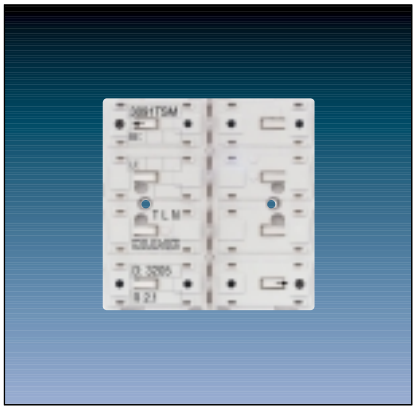


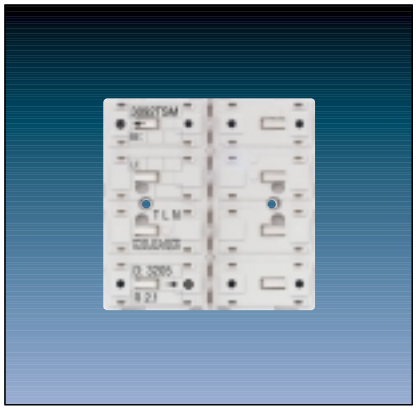


FD-design

FD Standard push-button module

1





2

	Ref.-No.
FD Standard push-button module	
with integrated BCU	
1-gang	**3071 TSM**
2-gang	**3072 TSM**

3

After a press on the key, the push-button module will transmit software-dependent telegrams to the KNX. These may be telegrams for switching, push-button operation, dimming or for shutter control. It is also possible to program value-transmitting functions such as dimming value transmitter or light-scene extension units. The 1- and 2-gang versions allow also mixed applications.
A blue operation LED can serve as orientation lighting.

4

Technical data:

KNX supply	
Voltage:	21 – 32 V DC (SELV)
Power consumption:	typically 150 mW
Connection:	Bus terminal (KNX Typ 5.1)
External supply:	–
Protection:	IP 20
Safety class:	III
Mark of approval:	KNX
Ambient temperature:	–5°C ... +45°C
Storage/transport temperature:	–25°C ... +70°C (storage above +45°C reduces the lifetime)
Mounting position:	any
Minimum distances:	none
Fastening:	Fixing to the supporting frame by means of the attached plastic screws

5 Software Applications:

No.	Summarized description		Version
1	Switching, status	Switching, status 100312	1.2
2	Switching, acknowledgement	Switching, acknowledgement 100A12	1.2
3	Dimming	Dimming 102A01	0.1
4	Shutter	Shutter 102B01	0.1
5	Shutter with status object	Shutter with status object 108C01	0.1
6	Dimming/shutter	Dimming/shutter 103A01	0.1
7	Switching/dimming	Switching/dimming 103C01	0.1
8	Switching/shutter	Switching/shutter 103B01	0.1
9	Switching/push-button operation	Switching/push-button operation 103101	0.1
10	Value transmitter	Value transmitter 101C01	0.1

Scope of functions:

Switching
- Function of operating LED and of status LED parameterizable.
- Command on key-press parameterizable (ON, OFF).
- The status LED indicates the current state of the object. If a key is pressed (e.g. ON) and if the push-button module does **not** get a positive acknowledgement (IACK) from an addressed actuator, the object status is updated, but the corresponding status LED is **not** lit up.
- Within application “Switching, acknowledgement” the status LED is ON for a parameterizable time in case of a positive acknowledgement from an addressed actuator.

Dimming
- Function of operating LED and of status LED parameterizable.

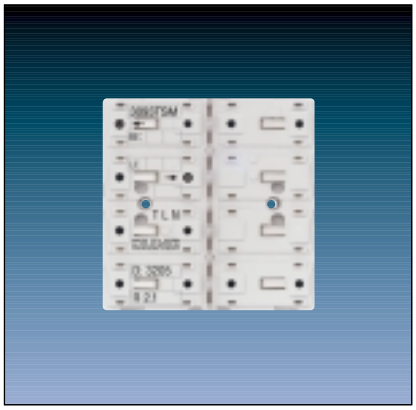
Shutter
- Both, the operation and also the status LED can be controlled by separate objects (status indication) or be permanently ON or OFF. The status LED can additionally act as key-press indicators.
- Operating concept for shutter control parameterizable.
- Time between short-time and long-time operation and slat adjustment time presettable depending on operating concept.
- Rocker configuration and key functions presettable.

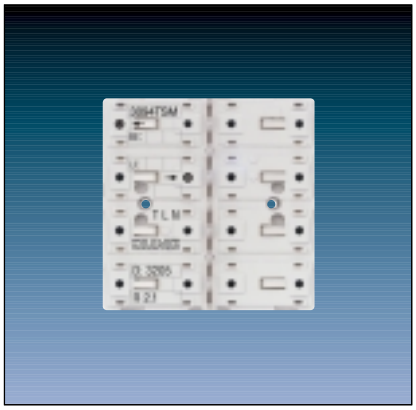
Light-scene extension unit / Value transmitter
- When a key is pressed for less than 1 s, the parameterised light-scene is recalled and the pertaining status LED switched on for about 1 s. If a key is pressed during a light-scene recall with storage function for more than 5 s, a storage telegram corresponding to the parameterised light-scene will be transmitted and the status LED is lit up for 4 s. Pressing a key with storage function for a time between 1 s and 5 s is without effect.
- The status LED lights up after a key-press only in conjunction with a positive acknowledgement (IACK) from an addressed actuator.
- Function of operating LED and of status LED parameterizable.
- Mode of operation (value transmitter/light-scene recall with/without storage function) freely selectable.
- Values (1 byte) or light-scene numbers (1 ... 8) for all keys individually parameterizable.

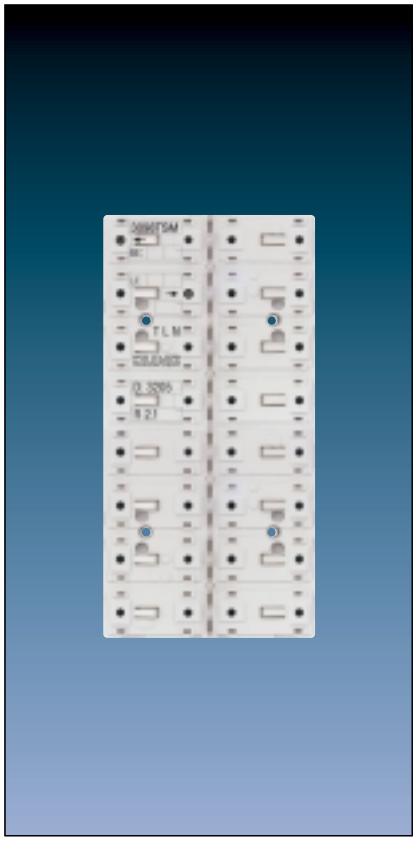
FD-design

FD Standard push-button module

1







2

	Ref.-No.
FD Standard push-button module	
with integrated BCU	
3-gang	**3073 TSM**
4-gang	**3074 TSM**
8-gang	**3078 TSM**

3

After a press on the key, the push-button module will transmit software-dependent telegrams to the KNX. These may be telegrams for switching, push-button operation, dimming or for shutter control. It is also possible to program value-transmitting functions such as dimming value transmitter or light-scene extension units.
A blue operation LED can serve as orientation lighting.

5

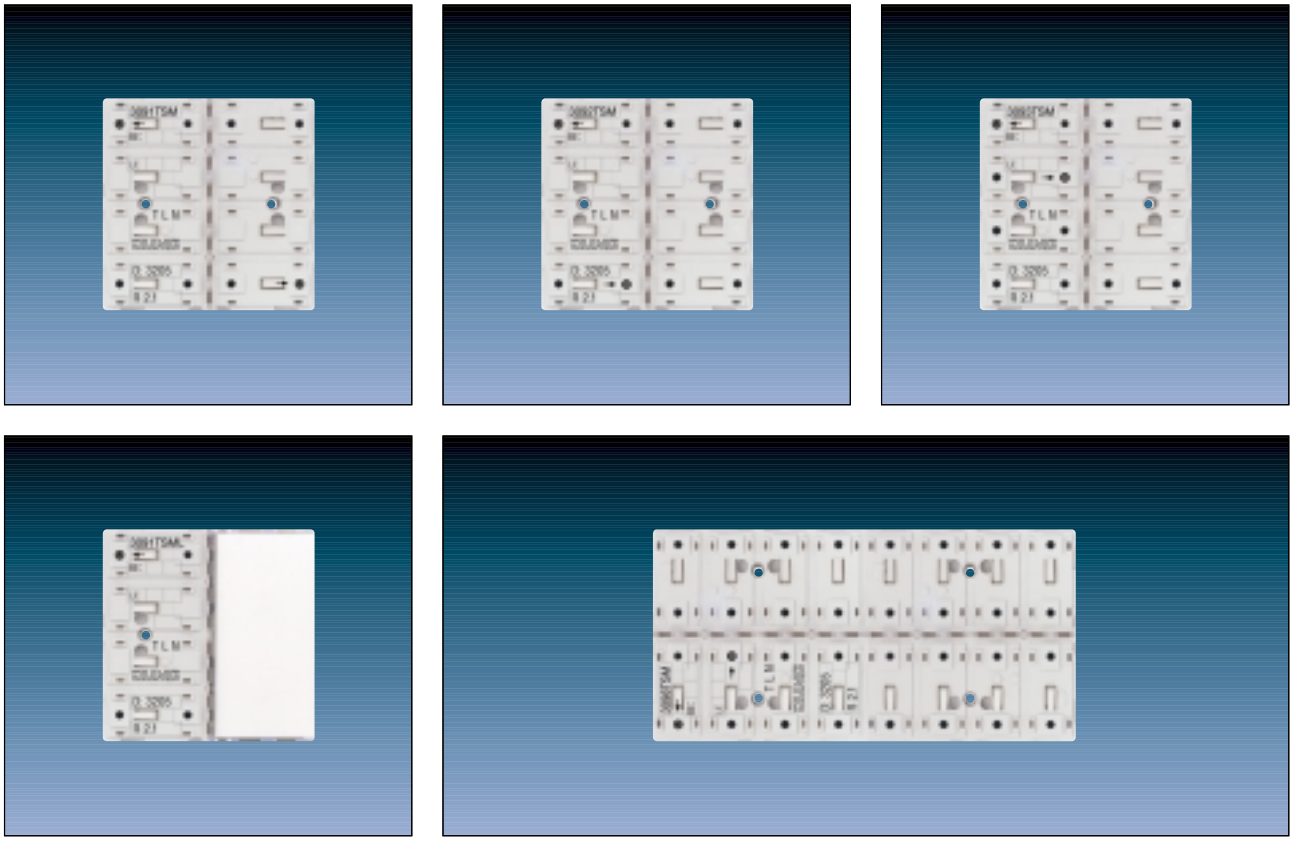
Software Applications:

No.	Summarized description		Version
1	Switching, status	Switching, status 102E01	0.1
2	Switching, acknowledgement	Switching, acknowledgement 102F01	0.1
3	Dimming	Dimming 102D01	0.1
4	Shutter	Shutter 102C01	0.1
5	Value transmitter	Value transmitter 101D01	0.1

FD-design

FD Universal push-button module

1



2

	Ref.-No.
FD Universal push-button module	
with integrated BCU	
1-gang	**3091 TSM**
2-gang	**3092 TSM**
3-gang	**3093 TSM**
4-gang	**3094 TSM**
8-gang	**3098 TSM**
with illuminated inscription field	
1-gang	**3091 TSML**
2-gang	**3092 TSML**

3

The FD universal push-button module is connected directly to the bus line and fixed to the metal supporting frame by means of the attached plastic screws.

Each of the square buttons can be used as one rocker or as two separate push-buttons (keys). The button can be operated either vertically or horizontally.
If a button is used as one rocker, with certain functions additional special functions can be called up by pressing the rocker centrally.
Depending on the adjusted function, it sends telegrams, e.g. to actuators for switching ON/OFF lights, for dimming lights, for recalling or saving light scenes, for moving shutters/blinds up or down and for adjusting louvers or value transmitter functions like dimming value, brightness value, light scene extension or temperature values.
Each button has two red LED which can be switched permanently ON or OFF, be used as status or operation indication or be controlled by a separate object.
A blue LED can serve as an orientating light, can be switched ON or OFF permanently or be controlled by a separate object.

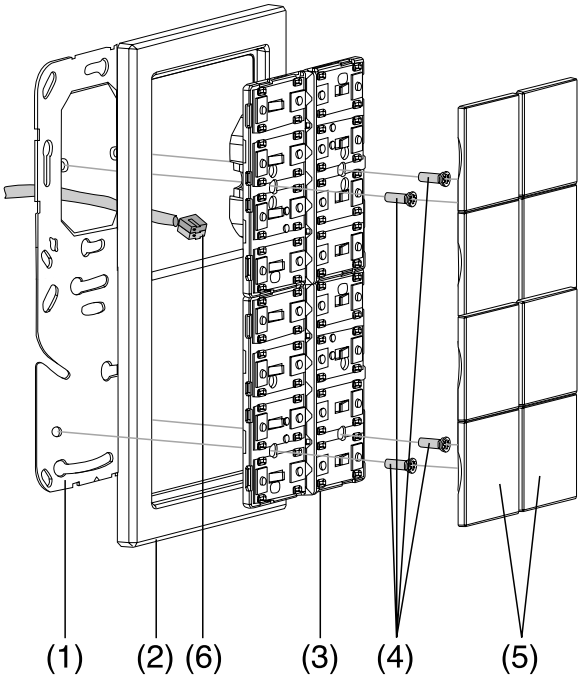
The FD universal push-button modules have to be equipped with the chosen design covers.
The metal supporting frame can be turned. This way, it is possible to use the FD push-button module either with the special FD frames or with the standard LS 990, LS plus, ES, AL, AN, GO frames.

4 Technical data:

KNX supply

Voltage:	21 – 32 V DC (SELV)
Power consumption:	typically 150 mW
Connection:	Bus terminal (KNX Typ 5.1)
External supply:	–
Protection:	IP 20
Safety class:	III
Mark of approval:	KNX
Ambient temperature:	–5°C ... +45°C
Storage/transport temperature:	–25°C ... +70°C (storage above +45°C reduces the lifetime)
Mounting position:	any
Minimum distances:	none
Fastening:	Fixing to the supporting frame by means of the attached plastic screws

Mounting:
(8-gang version)



a. Metal supporting frame (1) to be mounted on a wall box. Marking “TOP” = on top; “A” in front for FD frame or “B” uin front for LS 990.
b. Attach design-frame (2) onto the supporting frame.
c. Connect push-button module (3) with standard bus terminal (6) to the KNX, and attach it to the supporting frame.
d. Fix the push-button module (3) to the supporting frame by means of the plastic screw (4)
(dismounting/burglar protection) screw the plastic screws slightly only.
e. Download the physical address to the device before mounting the design covers (5).

ONLY for version 8-gang:
When mounting on a single wall box (no wall box under the lower part) generate space for the lower plastic screws in the wall, approx. 10 mm (e.g. drill 6 mm). use the supporting frame for positioning.

5 Special features:

8-gang, Ref.-No. 3098 TSM
The device has an integrated temperature sensor. This way, the device can be integrated in the room temperature measurement in connection with e.g. a Room Controller (RCD) or to indicate the temperature on any display.

1-gang, Ref.-No. 3091 TSML
2-gang, Ref.-No. 3092 TSML
The devices offer an illuminated inscription field. The illumination with white LED can be switched ON or OFF permanently or be controlled by a separate object.

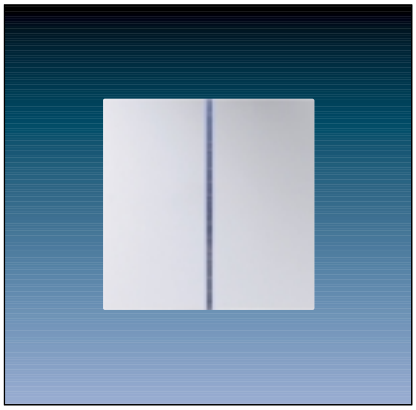
Scope of functions:

- Each button can be used as one rocker or as two separate push-buttons. The button can be operated either vertically or horizontally.
- Each button can be used for switching, dimming, shutter/blinds, value transmitter 1 or 2 byte or light scene extension.
- For each rocker or push-button, the operation of two independent channels can be adjusted while both channels have the same functions as a single push-button.
- For each button, two status LED are available.
- If a status LED is linked internally to a rocker/push-button, it can display the operation or the current status of a communication object.
- If a status LED is used independent of a rocker/push-button, it can be switched ON or OFF permanently, display the status of an own communication object, display the status of a room temperature sensor or the result of a comparator of 1 byte values with or without algebraic sign.
- The blue operation LED can be switched ON or OFF permanently, turned into a flashing mode, or be controlled by a communication object.
- Depending on the adjusted basic function, a rocker can also evaluate a centered push.
- In switching functions the reaction on pressing/releasing, switch ON, switch OFF or toggling can be adjusted.
- In dimming functions the adjustment for single level/two level control, times for short and long operation, dimming in steps, telegram repetition at long operation and a stop telegram at the end of operation is possible.
- In shutter function the single level/two level control, four different operation concepts, times for short and long operation and the blades adjustment can be defined.
- In the 1 or 2 byte value transmitter it is possible to adjust the range (0 ... 100 %, 0 ... 255, 0 ... 65535, 0 ... 1500 LUX, 0 ... 40°C), the value when pressing, value adjustment at long operation with various step width, times for an optional over flow when reaching the end of the value range.
- In light scene control it is possible to adjust: the internal storing of eight light scenes with eight output channels, the recall of the internal light scenes by an adjustable light scene number, the object type of the outputs, the blocking or releasing of the single output values of a light scene, the sending delay time for the single outputs.
  In the light scene extension function up to 64 light scenes can be recalled and stored.
- When used as a temperature controller satellite, adjustments are possible for:
  Changing between the operation modes with high or normal priority, defined choose of an operation mode, changing of the presence status, set value adjustment.
- All rocker/push-buttons can be inhibited by a 1 bit object. The polarity of the inhibit object and the behavior at the beginning of inhibit can be set. During an active locking, all rocker/push-buttons or single rocker/push-buttons can be without function, can release the function of a selected rocker/push-button or carry out one of two adjustable inhibit functions.
- All LEDs of the sensor can blink at the same time, e.g. to display an alarm.
  The value of the alarm object for the conditions alarm/no alarm, acknowledge of the alarm by pushing a button, transmitting the ACK to other devices can be adjusted.

FD-design

Cover for FD push-button module

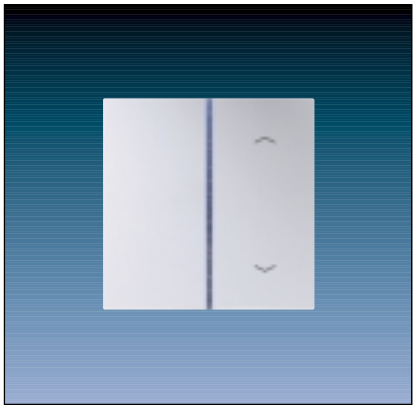
1



2

	Ref.-No.
Cover for FD push-button module	
to clip on push-button module 1-gang	
ivory	**FD 901 TSA**
white	**FD 901 TSA WW**
light grey	**FD 901 TSA LG**
Metal versions	
stainless steel	**FDES 2901 TSA**
aluminium	**FDAL 2901 TSA**
anthracite	**FDAL 2901 TSA AN**
Suitable modules:	**3071 TSM, 3091 TSM**

1



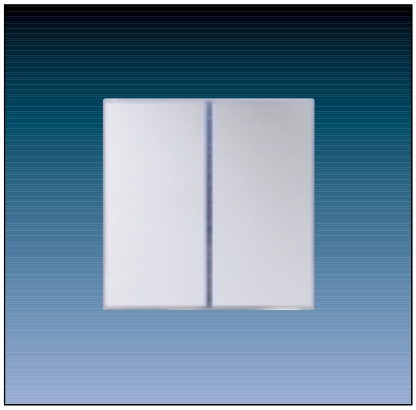
2

	Ref.-No.
Cover for FD push-button module with symbols	
to clip on push-button module 1-gang	
ivory	**FD 901 TSAP**
white	**FD 901 TSAP WW**
light grey	**FD 901 TSAP LG**
Metal versions	
stainless steel	**FDES 2901 TSAP**
aluminium	**FDAL 2901 TSAP**
anthracite	**FDAL 2901 TSAP AN**
Suitable modules:	**3071 TSM, 3091 TSM**

FD-design

Cover for FD push-button module

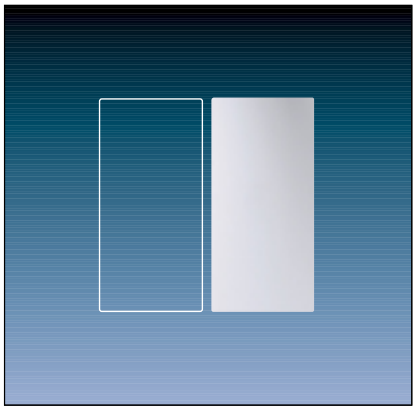
1



2

	Ref.-No.
Cover for FD push-button module with inscription plate 68.5 x 68.5 mm	
to clip on push-button module 1-gang	
ivory	**FD 901 TSANA**
white	**FD 901 TSANA WW**
light grey	**FD 901 TSANA LG**
Metal versions	
stainless steel	**FDES 2901 TSANA**
aluminium	**FDAL 2901 TSANA**
anthracite	**FDAL 2901 TSANA AN**
Suitable modules:	**3071 TSM, 3091 TSM**

1



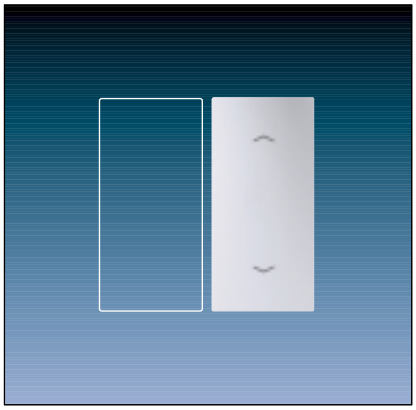
2

	Ref.-No.
Cover for FD push-button module	
to clip on push-button module 2-gang or 3-gang	
ivory	**FD 902 TSA**
white	**FD 902 TSA WW**
light grey	**FD 902 TSA LG**
Metal versions	
stainless steel	**FDES 2902 TSA**
aluminium	**FDAL 2902 TSA**
anthracite	**FDAL 2902 TSA AN**
Suitable modules:	**3072 TSM, 3073 TSM, 3092 TSM, 3093 TSM, 3091 TSML**

FD-design

Cover for FD push-button module

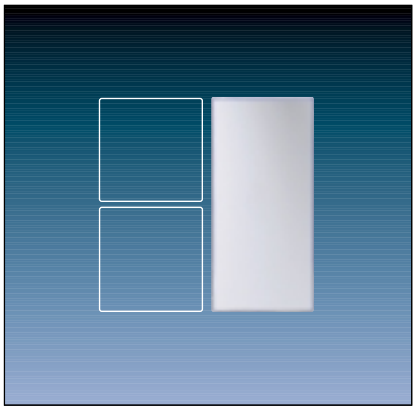
1



2

	Ref.-No.
Cover for FD push-button module with symbols	
to clip on push-button module 2-gang or 3-gang	
ivory	**FD 902 TSAP**
white	**FD 902 TSAP WW**
light grey	**FD 902 TSAP LG**
Metal versions	
stainless steel	**FDES 2902 TSAP**
aluminium	**FDAL 2902 TSAP**
anthracite	**FDAL 2902 TSAP AN**
Suitable modules:	**3072 TSM, 3073 TSM, 3092 TSM, 3093 TSM, 3091 TSML**

1



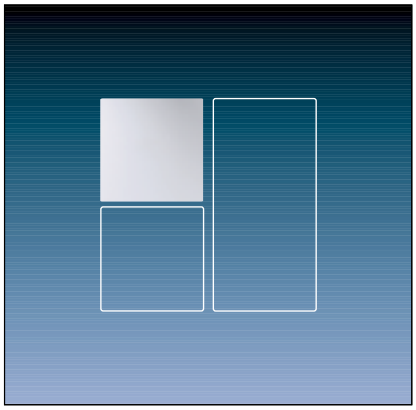
2

	Ref.-No.
Cover for FD push-button module with inscription plate 32 x 68.5 mm	
to clip on push-button module 2-gang or 3-gang	
ivory	**FD 902 TSANA**
white	**FD 902 TSANA WW**
light grey	**FD 902 TSANA LG**
Metal versions	
stainless steel	**FDES 2902 TSANA**
aluminium	**FDAL 2902 TSANA**
anthracite	**FDAL 2902 TSANA AN**
Suitable modules:	**3072 TSM, 3073 TSM, 3092 TSM, 3093 TSM, 3091 TSML**

FD-design

Cover for FD push-button module

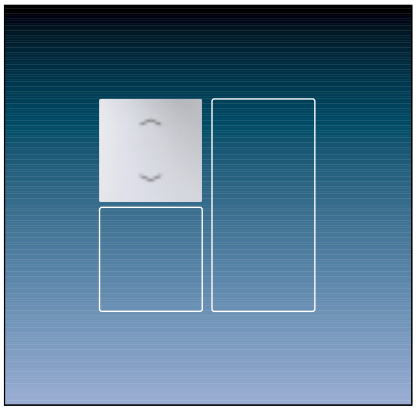
1



2

	Ref.-No.
Cover for FD push-button module	
to clip on push-button module 3-gang or 4-gang	
ivory	**FD 904 TSA**
white	**FD 904 TSA WW**
light grey	**FD 904 TSA LG**
Metal versions	
stainless steel	**FDES 2904 TSA**
aluminium	**FDAL 2904 TSA**
anthracite	**FDAL 2904 TSA AN**
Suitable modules:	**3073 TSM, 3074 TSM, 3093 TSM, 3094 TSM, 3078 TSM, 3098 TSM, 3092 TSML**

1



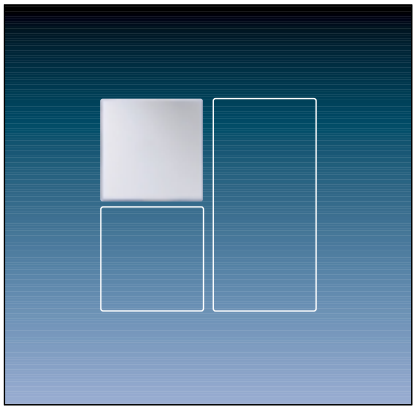
2

	Ref.-No.
Cover for FD push-button module with symbols	
to clip on push-button module 2-gang or 3-gang	
ivory	**FD 904 TSAP**
white	**FD 904 TSAP WW**
light grey	**FD 904 TSAP LG**
Metal versions	
stainless steel	**FDES 2904 TSAP**
aluminium	**FDAL 2904 TSAP**
anthracite	**FDAL 2904 TSAP AN**
Suitable modules:	**3073 TSM, 3074 TSM, 3093 TSM, 3094 TSM, 3078 TSM, 3098 TSM, 3092 TSML**

FD-design

Cover for FD push-button module

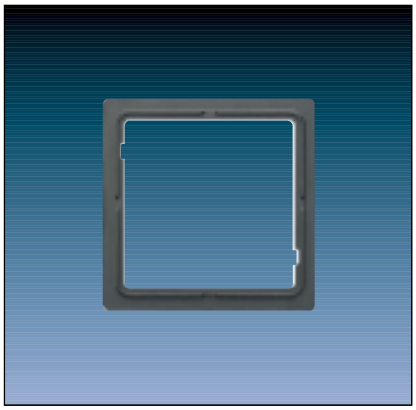
1



2

	Ref.-No.
Cover for FD push-button module with inscription plate 32 x 33 mm	
to clip on push-button module 3-gang or 4-gang	
ivory	**FD 904 TSANA**
white	**FD 904 TSANA WW**
light grey	**FD 904 TSANA LG**
Metal versions	
stainless steel	**FDES 2904 TSANA**
aluminium	**FDAL 2904 TSANA**
anthracite	**FDAL 2904 TSANA AN**
Suitable modules:	**3073 TSM, 3074 TSM, 3093 TSM, 3094 TSM, 3078 TSM, 3098 TSM, 3092 TSML**

1

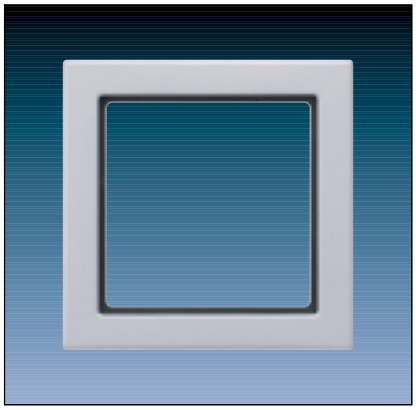


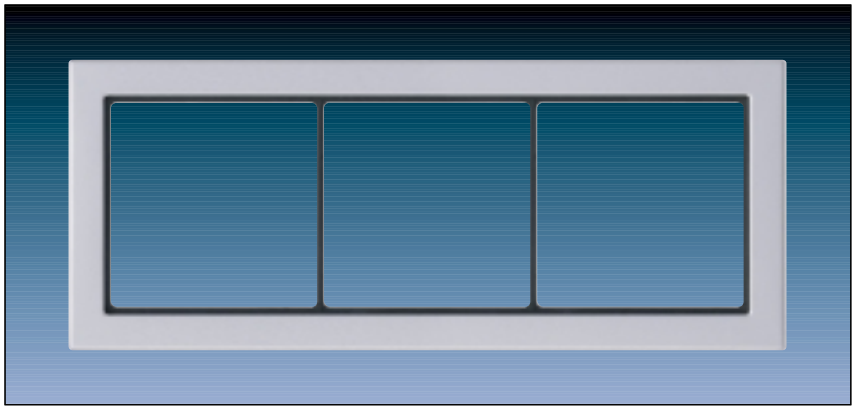
2

	Ref.-No.
Intermediate frame	**FD 981 Z**

3 For the installation of SCHUKO sockets, data/TV sockets and rotary dimmer of the design ranges LS 990, Stainless Steel, Aluminium and Anthracite into FD frames.

1





2

		Ref.-No.
Frames for vertical and horizontal installation		
ivory	1-gang 96 x 96 x 6.3 mm	**FD 981 W**
	2-gang 96 x 167 x 6.3 mm	**FD 982 W**
	3-gang 96 x 238 x 6.3 mm	**FD 983 W**
white	1-gang 96 x 96 x 6.3 mm	**FD 981 WW**
	2-gang 96 x 167 x 6.3 mm	**FD 982 WW**
	3-gang 96 x 238 x 6.3 mm	**FD 983 WW**
light grey	1-gang 96 x 96 x 6.3 mm	**FD 981 LG**
	2-gang 96 x 167 x 6.3 mm	**FD 982 LG**
	3-gang 96 x 238 x 6.3 mm	**FD 983 LG**
Metal versions		
aluminium	1-gang 96 x 96 x 6.3 mm	**FDAL 2981**
	2-gang 96 x 167 x 6.3 mm	**FDAL 2982**
	3-gang 96 x 238 x 6.3 mm	**FDAL 2983**
stainless steel	1-gang 96 x 96 x 6.3 mm	**FDES 2981**
	2-gang 96 x 167 x 6.3 mm	**FDES 2982**
	3-gang 96 x 238 x 6.3 mm	**FDES 2983**
anthracite	1-gang 96 x 96 x 6.3 mm	**FDAL 2981 AN**
	2-gang 96 x 167 x 6.3 mm	**FDAL 2982 AN**
	3-gang 96 x 238 x 6.3 mm	**FDAL 2983 AN**