COMBIKEY

GET CREATIVE
DESIGN YOUR OWN BUTTON

EN

CONTENT

The Combikey button family of TSL ESCHA meets the highest requirements of durability with an unbreakable, robust housing construction. Since these buttons are used on road and rail transportation vehicles, they are exposed to most adverse environmental conditions. They are suitable for outdoor applications and thus steadily proven under frost, heat, dirt, and humidity.

In order to ensure maximum reliability, the Combikey buttons are manufactured with metal components. They are not only tested against graffiti removers but also resistant to aggressive cleaning chemicals. Furthermore, pictographs are proven against wear or vandalism.

| Stainless steel button panel | Metal button surface | Pictograph | Transparent protective cover (PC) |

Endless combinations of switching functions, touch surfaces, mounting rings, LED colors, and pictographs make the Combikey a versatile button family. Its great selection allows for the creation of personalized and extremely robust products. Since decades, buses, light rails, subways, and high-speed trains drive around the world with Combikey buttons that have proven high durability.

Thanks to the integrated microcontroller of high-tech electronics, a number of different functions can be easily implemented in Combikey buttons, including but not limited to blinking lights and sound sequences.

BUTTONS FOR STRICT REQUIREMENTS

HIGHLIGHTS

ROBUST

Frost-resistant

Dustproof

Protection level IP67

Wear proof

Maintenance-free

INTERCHANGEABLE

Raised symbols
TSI PRM approved

Adjustable
sound signals

Adjustable
light signals

Vandal-resistant

Additional options

Resistant
to cleaning chemicals
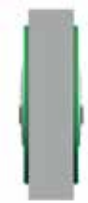
HIGHLIGHTS
AT A GLANCE

CONFIGURATION

CONSTRUCTION TYPES

Six different engineering designs of the Combikey Series allow this product family to be installed in various areas of application.
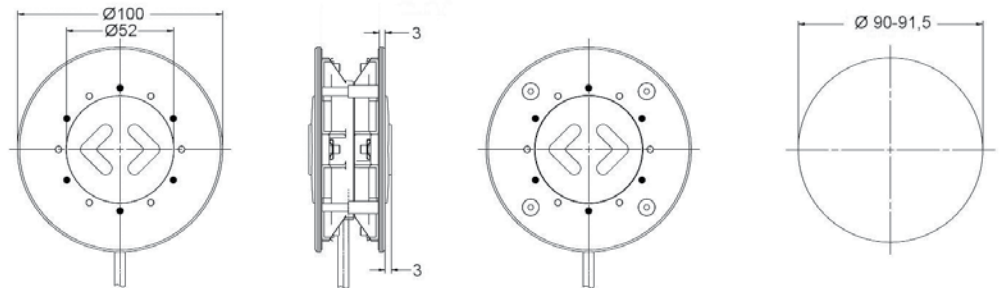

Wall installation

CONSTRUCTION TYPE 1

Function:	Double-sided
Description:	Inner push button assembly on exterior button with screws. Wireless connection between the two buttons is possible thanks to a built-in connector with distance compensation
Applications:	Wall installation for three different wall thickness min. 29mm - max. 44mm

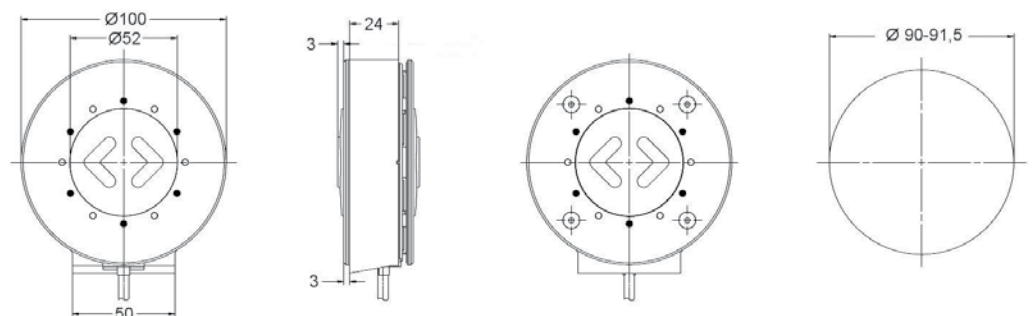Glass door installation
with space ring

CONSTRUCTION TYPE 2

Function:	Double-sided
Description:	Inner push button (pre-assembly with space ring) assembly on exterior button with screws. Wireless connection between the two buttons is possible thanks to a built-in connector with distance compensation
Applications:	Glass door, door thickness from 4mm – 8mm

Configuration Status "Construction and Mounting Type"

Glass door installation
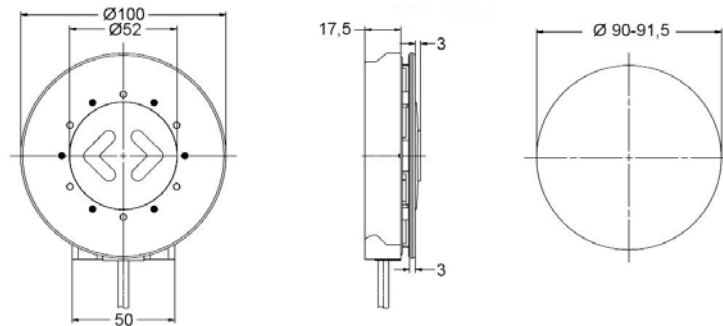
CONSTRUCTION TYPE 3

Function:	1-sided
Description:	Rear assembly with housing cover without visible front screws
Applications:	Glass door, door thickness from 3.5mm – 6mm

CK button with Zentraflex ring on wall

CONSTRUCTION TYPE 4
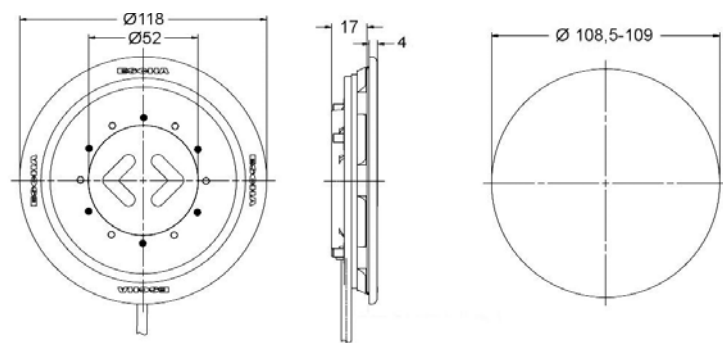
|	
Function:	1-sided
Description:	Front button assembly with Zentraflex fixing ring. Screw less flush-mounted installation
Applications:	Exterior bus or wagon doors, door thickness 1.5mm (3mm upon request)

IT´S ALL ABOUT THE DETAILS

CONFIGURATION

CONSTRUCTION TYPE 5

Function: 1-sided
Description: Front button assembly with rear wall fastening with auto-adjusting fixing claws
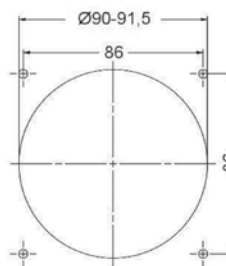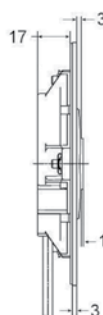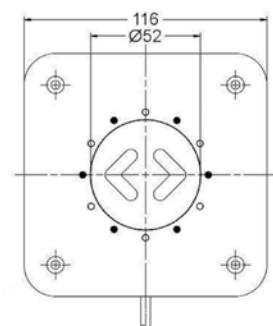Applications: Wall or boarding door
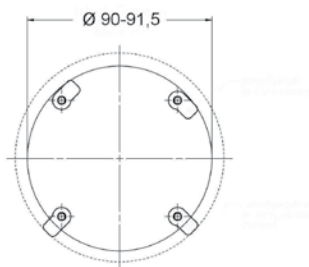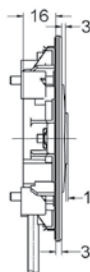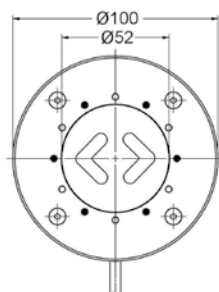
CK– Wall installation
with fixing claws

CONSTRUCTION TYPE 6

Function: 1-sided
Description: Front button assembly with front panel and visible screws
Applications: Indoor or outdoor and for mounting on minimal depth

Visible front panel screws

Configuration Status "Construction and Mounting Types"

CONFIGURATION

COLOR SELECTION FOR MOUNTING RINGS AND FRONT PANELS

Frequently used colors for CK mounting rings and CK front panels

TRAFFIC YELLOW
similar to RAL1023

LIGHT GRAY
similar to RAL7035

BRIGHT RED ORANGE
similar to RAL2008

TRAFFIC GRAY A
similar to RAL7042

TRAFFIC RED
similar to RAL3020
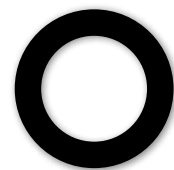
TRAFFIC GRAY B
similar to RAL7043

TRAFFIC BLUE
similar to RAL5017

TRAFFIC WHITE
similar to RAL9016

NIGHT BLUE
similar to RAL5022

TRAFFIC BLACK
similar to RAL9017

TRAFFIC GREEN
similar to RAL6024

STAINLESS STEEL
matte shot-blasted

Configuration Status "Color Selection"
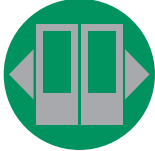
LOOKING
SHARP

RAL colors are only for reference. Slight color deviations are inevitable in the manufacturing process.

CONFIGURATION

PICTOGRAPHS

Commonly used graphic symbols for orientation, information, and guidance (more variants upon request).

B1
Silver background
Blue symbol similar to RAL 5017

B61
Red background similar to RAL 3020
White symbol similar to RAL 9016

B40
Blue background similar to RAL 5017
White symbol similar to RAL 9016

B26.2
Green background similar to RAL 6024
Silver symbol similar to RAL 9006

B2
Blue background similar to RAL 5017
White symbol similar to RAL 9016

B71
Blue background similar to RAL 5017
Silver symbol similar to RAL 9006

B11
Yellow background similar to RAL 1023
Black symbol similar to RAL 9017

B9
Yellow background similar to RAL 1023
Black symbol similar to RAL 9017

B53
Black background similar to RAL 9017
White symbol similar to RAL 9016

B7
Yellow background similar to RAL 1023
Black symbol similar to RAL 9017

B59.2
Blue background similar to RAL 5017
White symbol similar to RAL 9016

B34
Yellow background similar to RAL 1023
Black symbol similar to RAL 9017

Configuration Status "Pictographs"

B8
Yellow background similar to RAL 1023
Black symbol similar to RAL 9017

B46
Green background similar to RAL 6024
White symbol similar to RAL 9016

B12
Yellow background similar to RAL 1023
Black symbol similar to RAL 9017

B47
Red background similar to RAL 3020
White symbol similar to RAL 9016

B35
Yellow background similar to RAL 1023
Black symbol similar to RAL 9017

B28
Silver background similar to RAL 9006
Black symbol similar to RAL 9017

B39
Green backround similar to RAL 6024
Black symbol similar to RAL 9017
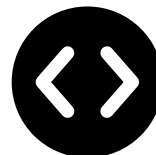
B55
Black background similar to RAL 9017
White symbol similar to RAL 9016

B84
Yellow background similar to RAL 1023
Black symbol similar to RAL 9017

B33
Blue background similar to RAL 5017
White symbol similar to RAL 9016

B31
Blue background similar to RAL 5017
White symbol similar to RAL 9016

B50
Yellow background similar to RAL 1023
Black symbol similar to RAL 9017

STRAIGHTFORWARD

CONFIGURATION

B62
Red background similar to RAL 3020
White symbol similar to RAL 9016

B48
Blue background similar to RAL 5017
White symbol similar to RAL 9016

B30
Red background similar to RAL 3020
White symbol similar to RAL 9016

B60
Blue background similar to RAL 5017
White symbol similar to RAL 9016

B70
Night blue background similar to RAL 5022
Signal white symbol similar to RAL 9003

B54
Black background similar to RAL 9017
White symbol similar to RAL 9016

B66
Blue background similar to RAL 5017
White symbol similar to RAL 9016

B57
Black background similar to RAL 9017
White symbol similar to RAL 9016

B43
Blue background similar to RAL 5005
White symbol similar to RAL 9016

B64
Blue background similar to RAL 5017
White symbol similar to RAL 9016

B44
Blue background similar to RAL 5005
White symbol similar to RAL 9016

B51
Red background similar to RAL 3020
White symbol similar to RAL 9016

Configuration Status "Pictographs"

RAL colors are only for reference. Slight color deviations are inevitable in the manufacturing process.

B56
Red background similar to RAL 3020
White symbol similar to RAL 9016

B69
Night blue background similar to RAL 5022
Signal white symbol similar to RAL 9003

STRAIGHTFORWARD

CONFIGURATION

TACTILE ACTIVATION SURFACE

Due to the modular design of the Combikey buttons, pictographs and tactile touch surfaces can be combined. Tactile symbols are subtly raised. Designs and sizes are in full compliance with EN14752 and TSI-PRM.

T00

Transparent button surface
without tactile symbol

T03

Transparent button surface
with tactile key (Lock)

T01

Transparent button surface
with tactile open arrows

T05

Transparent button surface
with tactile speaker (message)

T02

Transparent button surface
with tactile close arrows

T13

Transparent button surface
with tactile "Alarm"

T04

Transparent button surface
with tactile "i" as information symbol

T06

Transparent button surface
with tactile open and close arrows

Configuration Status "Tactile Symbols"

T10

Transparent button surface
with tactile dot

T15

Transparent button surface
with Braille "ramp" (Grade-2 Braille)

T11

Transparent button surface
with two tactile dots

T07

Transparent button surface
with tactile "SOS"

T12

Transparent button surface
with three tactile dots

T09

Transparent button surface
with tactile "WC"

T14

Transparent button surface
with Braille "ope" (Grade-2 Braille)
and tactile open arrows

T08

Transparent button surface
with tactile cup symbol

FEEL THE
INFORMATION

CONFIGURATION

Some light and sound signal examples are presented on the following pages.

Different light and sound signals are triggered accordingly as programmed in the button. However, it is also possible to trigger functions by an external controller. For this purpose, the Combikey Series has three inputs; In1, In2, and In3.

To better exemplify, it is possible to disable the button during night hours, indicate a door out of service, or shut off the orientation tone at night. The possibilities are as varied as the application requirements.

The combination of light, sound, and input signals as well as the desired functionality of the output are custom-built.

The following tables show some of the many possibilities of the Combikey Series. Each table stands for a custom-made button parameter, and it describes the light and sound of each operational status.

LIGHT AND SOUND SIGNALS

The Combikey Series offers a wide variety of light and sound signals. The following table shows a selection of standard versions. Other variations are available upon request.

LIGHT SIGNALS

 L0

 L1

 L2

 L3

 L4

 L5

 L6

 L7

 L8
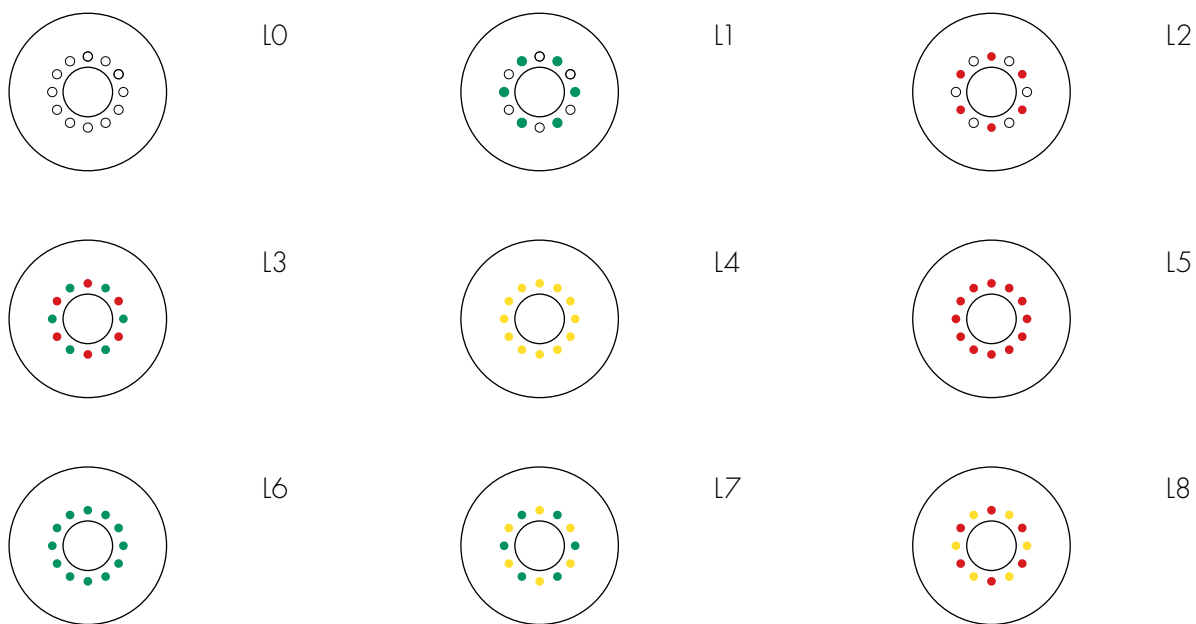
SOUND SIGNALS

The maximum sound pressure of the CK is 53dBA at one meter distance.

	A0	A1	A2	A3
Tone frequency:	–	3.5 kHz	3.8 kHz	3.5 kHz
Tone length:	–	0.5 sec.	0.05 sec.	Unlimited
Interval:	–	1-time	0.5 Hz	–
Description:	–	Confirmation	Orientation	Prolonged

Configuration Status "Light and Sound Signals"

SEE AND HEAR THE BUTTON

CONFIGURATION

CONFIGURATION EXAMPLES

PROGRAM A10 – BUTTON FUNCTION 1-SIDED

INPUT				ENABLE			ACTIVATED			DISCRIPTION
IN 1	IN 2	IN 3	UB	LED	TON	OUT	LED	TON	OUT	
0	-	-	0	L0	A0	-	L0	A0	-	· 6 green and 6 red LEDs
0	-	-	1	L0	A0	-	L2	A1	Ein	· 4 connection cables · Button activation with UB
1	-	-	1	L1	A0	-	L3	A1	Ein	· Red LEDs are internally wired
1	-	-	0	L0	A0	-	L0	A0	-	· Sound signals are internally wired · Green LEDs are connected via PLC In1

PROGRAM A7 – BUTTON FUNCTION DOUBLE-SIDED

INPUT				ENABLE			ACTIVATED			DISCRIPTION
IN 1	IN 2	IN 3	UB	LED	TON	OUT	LED	TON	OUT	
0	-	-	0	L0	A0	-	L0	A0	-	· 6 green and 6 red LEDs
0	-	-	1	L0	A0	-	L2	A0	Ein	· 4 connection cables · Button activation with UB
1	-	-	1	L1	A0	-	L3	A0	Ein	· Red LEDs are internally wired
1	-	-	0	L0	A0	-	L0	A0	-	· Green LEDs are connected via PLC In1

PROGRAM A8 – BUTTON FUNCTION 1-SIDED

INPUT				ENABLE			ACTIVATED			DISCRIPTION
IN 1	IN 2	IN 3	UB	LED	TON	OUT	LED	TON	OUT	
0	-	-	0	L0	A0	-	L0	A0	-	· 6 green and 6 red LEDs
0	-	-	1	L0	A0	-	L2	A0	Ein	· 4 connection cables · Button activation with UB
1	-	-	1	L1	A0	-	L3	A0	Ein	· Red LEDs are internally wired
1	-	-	0	L0	A0	-	L0	A0	-	· Green LEDs are connected via PLC In1

PROGRAM H8 – BUTTON FUNCTION DOUBLE-SIDED

INPUT				ENABLE			ACTIVATED			DISCRIPTION
IN 1	IN 2	IN 3	UB	LED	TON	OUT	LED	TON	OUT	
0	0	0	0	L0	A0	-	L0	A0	-	· 12 green, 12 red and 12 yellow LEDs
0	0	0	1	L0	A0	-	L0	A1	Ein	· 6 connection cables
1	0	0	1	L6	A0	-	L6	A1	Ein	· Button activation with UB
0	1	0	1	L4	A0	-	L4	A1	Ein	· Green LEDs are connected via PLC In1
0	0	1	1	L5	A0	-	L5	A1	Ein	· Yellow LEDs are connected via PLC In2
1	1	0	1	L0	A0	-	L0	A1	Ein	· Red LEDs are connected via PLC In3
0	1	1	1	L0	A0	-	L0	A1	Ein	· Audio signals are internally wired
1	0	1	1	L0	A0	-	L0	A1	Ein	· No mixed colors possible
1	1	1	1	L0	A0	-	L0	A1	Ein	· green/yellow/red separately switchable

PROGRAM A9 – BUTTON FUNCTION DOUBLE-SIDED

INPUT				ENABLE			ACTIVATED			DISCRIPTION
IN 1	IN 2	IN 3	UB	LED	TON	OUT	LED	TON	OUT	
0	0	0	0	L0	A0	-	L0	A0	-	· 6 green and 6 red interior LEDs
0	0	0	1	L0	A0	-	L0	A0	Ein	· 6 green and 6 red exterior LEDs
1	0	0	1	L1	A0	-	L0	A0	Ein	· 6 connection cables
0	1	0	1	L2+L2	A0	-	L2+L2	A0	Ein	· Button activation with UB
0	0	1	1	L1	A0	-	L1	A0	Ein	· Green interior LEDs are connected via PLC In1
1	1	0	1	L3+L2	A0	-	L3+L2	A0	Ein	· Red LEDs are connected via PLC In2
0	1	1	1	L3+L2	A0	-	L3+L2	A0	Ein	· Green exterior LEDs are connected via PLC In 3
1	0	1	1	L1	A0	-	L1	A0	Ein	
1	1	1	1	L3+L3	A0	-	L3+L3	A0	Ein	

Configuration Status "Button Function"

CONNECTIVITY

PIN ASSIGNMENT FOR PLUG NO. 65

PIN	1	2	3	4	5	6	Appearance
Color	Brown	White	Blue	Black	Gray	na	
Signal	+UB	In 1	Gnd (0V)	Out	In 2	–	
Number of poles	6						
Plug type	Rectangular plug, MATE-N-LOK®						
Cable	Radox TENUIS, TW / S5F® 5x0.5 mm						
Manufacturer	TYCO Electronics / AMP, 794895-1						
Protection level	IP67						
Cable length	10 cm						

PIN ASSIGNMENT FOR PLUG NO. 64

PIN	1	2	3	4	Appearance
Color	Brown	White	Blue	Black	
Signal	+UB	In 1	Gnd (0V)	Out	
Number of poles	4				
Plug type	Rectangular plug, MATE-N-LOK®				
Cable	Radox TENUIS, TW / S4F® 4x0.5 mm				
Manufacturer	TYCO Electronics / AMP, 794805-1 corresponds BN65074				
Protection level	IP67				
Cable length	10 cm				

PIN ASSIGNMENT FOR PLUG NO. 61

PIN	1	2	3	4	5	6	Appearance
Color	Brown	White	Blue	Black	Gray	Red	
Signal	+UB	In 1	Gnd (0V)	Out	In 2	In 3	
Number of poles	4 – 8						
Plug type	Circular connector, M12x1 screw						
Cable	Radox TENUIS, TW / S-F® 4-6x0.5 mm						
Manufacturer	ESCHA M12x1, 4-, 5-, 6-polig WAS4...WAS6						
Protection level	IP67						
Cable length	50 cm						

Note: 6 and 8 pole versions only allow for operating voltage <60V

PIN ASSIGNMENT FOR PLUG NO. 60

PIN	1	2	3	4	Appearance
Color	Brown	White	Blue	Black	
Signal	+UB	In 1	Gnd (0V)	Out	
Number of poles	4				
Plug type	Circular Connectors, combined snap-in snap-lock M8x1 screw and corresponding BN 65074				
Cable	Radox TENUIS, TW / S4F® 4x0.5 mm				
Manufacturer	ESCHA diameter 8mm M8x1 (SSFP4), 4-pole, SSP4				
Protection level	IP67				
Cable length	10 cm				

Note: 6 and 8 pole versions only allow for operating voltage <60V

CONNECTION DIAGRAM PNP

6-Wire type
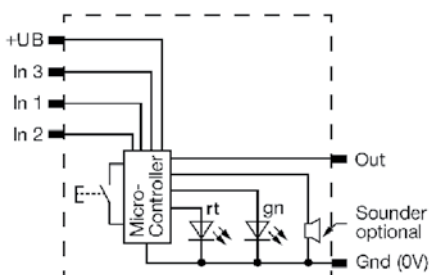
5-Wire type
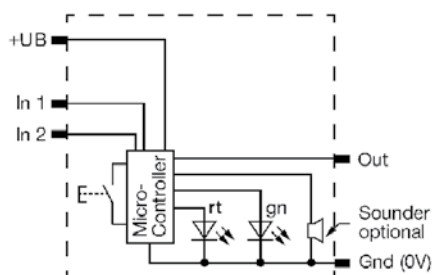
4-Wire type
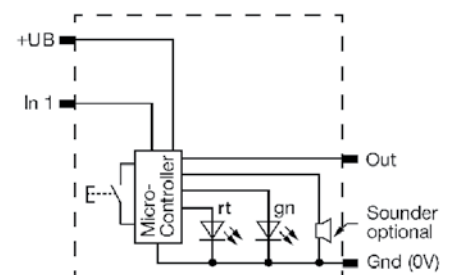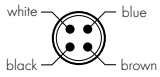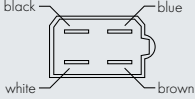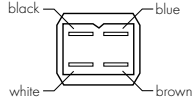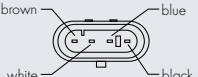
Configuration Status "Connection"

CONNECTIVITY
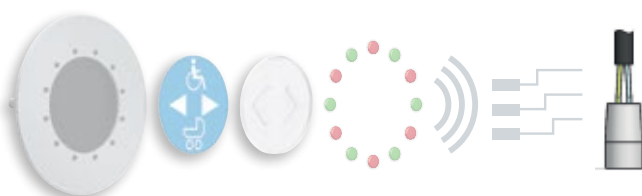
ADDITIONAL CONNECTORS AND TECHNICAL DATA

Plug nr.	Discription	Poles	Manufacturer	Appearance
0	Circular connectors	4	TYCO Electronics/AMP ArtNr.: 0-0925 0750-0	white / blue / black / brown
1	Flat connectors FASTIN-FASTON	4	TYCO Electronics/AMP ArtNr.: 180901	black / blue / white / brown
2	Flat connector FASTIN-FASTON	4	TYCO Electronics/AMP 626 057	black / blue / white / brown
66	SUPERSEAL connector	4	TYCO Electronics/AMP 2821061-1	brown / blue / white / black
71	Rectangular plug	4	GERMAN DTM044P-4P	brown / black / white / blue

TECHNICAL DATA

Electrical Data		Mechanical Data		Environmental Conditions	
Nominal voltage	24 VDC, 36VDC, 72 VDC, 110 VDC	Housing material and button surface	UV-Stabilized Poly-carbonate (UL94 V-0)	Operating life	Approx. 7,000,000 press cycles
Operating voltage	Refer to nominal voltage +/-30%	Zentraflexring	NBR (Nitrile Butadiene Rubber)	Operating temperature	-40°C to +80°C
Nominal current	Max. 50 mA or 200 mA	Mounting ring	V2A, Powder-coated	Protection level	Waterproof front IP67 EN60529 approved
Operating current	Approx. 10 mA	Button diameter	Refer to construction type section (p. 6)		
Switching output	PNP or NPN	Activation force	Approx. 7.5 – 9N Length approx. 0.15mm		
		Connection options	Refer to connections section (p. 20)		

GET
the digital version
NOW!

At TSL Downloads!

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