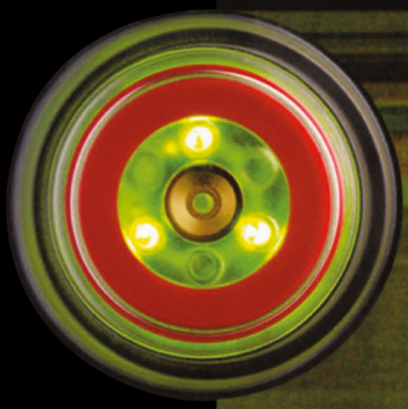
ESCHA

TSL



A TURCK Company

Welcome to ESCHA TSL Door-Opening Buttons Catalogue.

ESCHA launched the first short-stroke button 25 years ago. Since then, we have developed into a specialist in custom-made switching- and signal solutions for road- and rail vehicles.

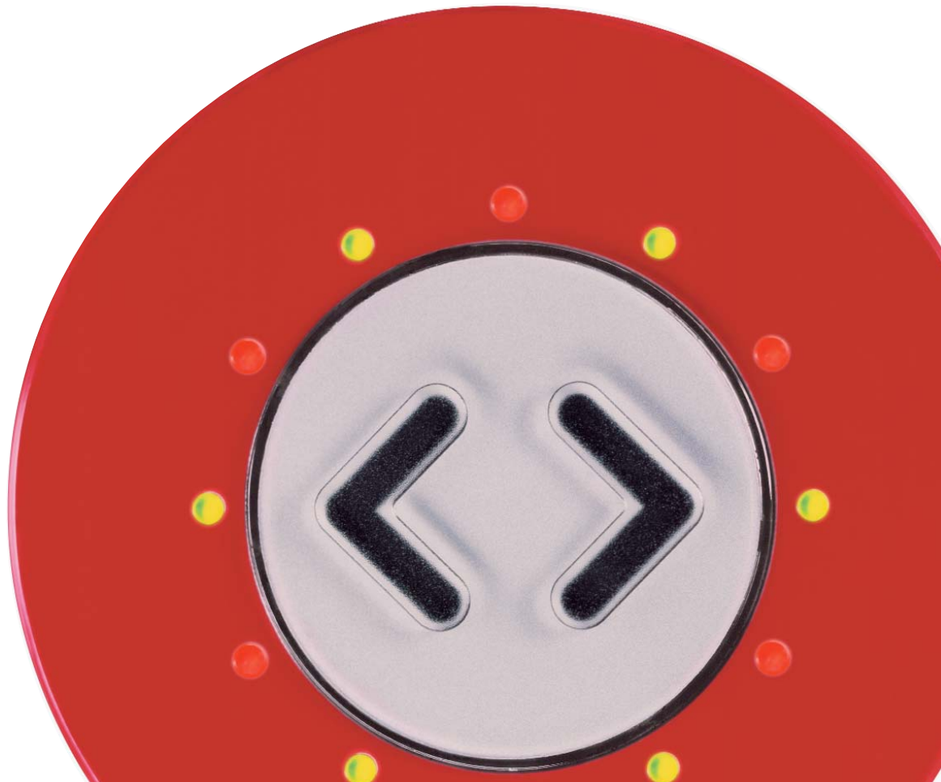
Our buttons are currently manufactured in over 2,000 different versions and are getting more daily. This catalogue is your guide to a wide range of switching variants, mounting solutions, pictograms and colours.

Talk to us about the button meeting your specific requirements.

Door-opening buttons GB. 08.08 **Item-No.: 1000112**
Further product catalogues are included within our general catalogue:

Hand-pole buttons:	Item-No.: 1000114
Warning-, signal- and display units for road- and rail vehicles:	Item-No.: 1000116
LED-lamps for public areas:	Item-No.: 1000118
Wiring systems for switching- and display units:	Item-No.: 1000120

Give us a call (Tel. +49 2353 66796–0)
or order per internet **www.escha.tsl.de**



Features

Dust- and waterproof
according to IP67

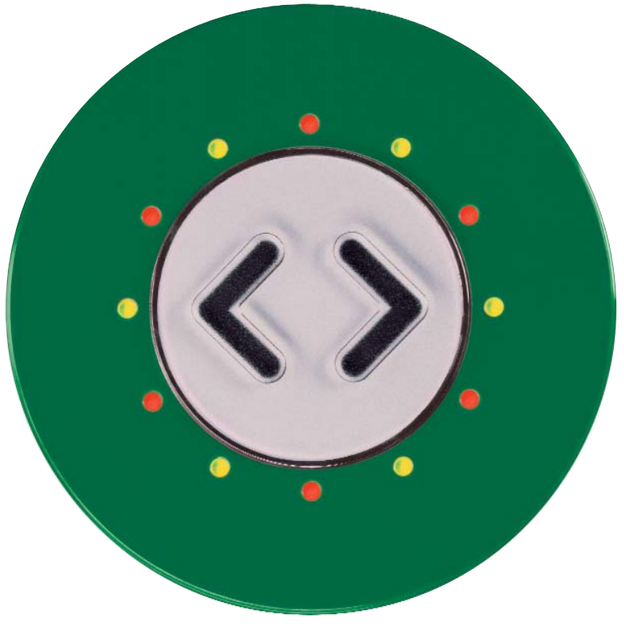
No freezing of switching
elements | frost-proof up
to -40°C

Optional acoustic signals

Tactile surface structure

Microprocessorcontrolled

Halogen-free
connecting cable



MP Safe switching in smallest space under extreme conditions.

The ESCHA-switching principle is based on a hermetically sealed one-part switch housing, operates wear-resistant, independent of temperature, dust or humidity. The MP is weatherproof, suitable for washing-plants and resistant to conventional detergents.

Stand-by- and switching-mode display are effected by 4 LEDs in different colour combinations.

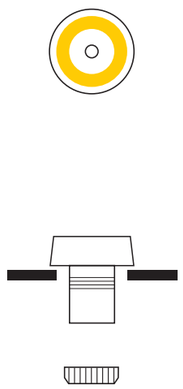
The mounting hole for the smallest ESCHA short-stoke button is 30 mm.

MP Mounting variants | page 10–11

IP67 Hal

MP30
Back-sided mounting

with milled nut

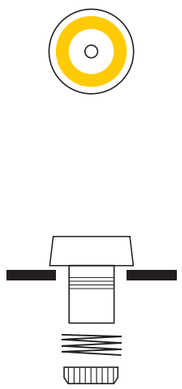


MP30T
Button with timer function

in all mounting variants available

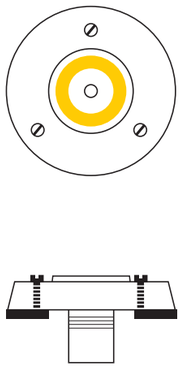
MP31
Back-sided mounting

with milled nut and compression spring limiting propeller thrust for thin walls



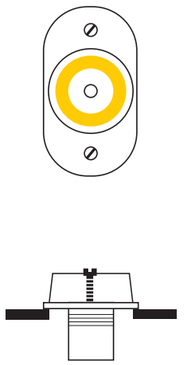
MP32
Front-sided mounting

with Fixingring



MP33
Front-sided mounting

with Adapterplate



Nominal voltage
24 VDC, 36 VDC, 72 VDC, 110 VDC
± 30 %

Switching current
approx. 200 mA

Closed-circuit current
approx. 10 mA (without LEDs)

Switching principle
One-part, hermetically sealed switch housing with multi-point contact and airpressure compensation system, back-end electronics, output signal PNP (NO), short-circuit proof, reverse polarity protection, button debouncing, switching-impulse length corresponding to activation period, min. 500ms

LED-variants

MP30, MP31, MP32, MP33
Standard
3 LED stand-by display + 1 LED confirm display
3 x green + 1 x red; 3 x red + 1 x green
others on request

MP30T
Standard
stand-by display 1 LED
1 x red
others on request

Operating temperature
–40°… +80°C

Storage temperature
–40°… +95°C

Life cycle
7 Mio. Switching cycles

Activation force
7.5… 9N

Switching path
0.15 mm

Materials

Switch housing	PC, UV stabilized
Contacts	CuZn, gold-plated
Sealing	NBR
Milled nut	PA6 GF
Fixingring	POM
Adapterplate	V2A, powder-coated
Cable	PUR, halogen-free

Standards | Tests

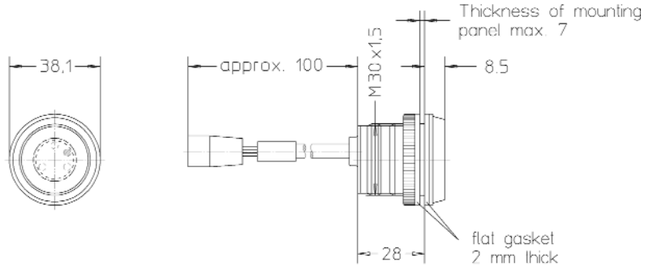
Protection degree	Front-sided IP67, according IEC 60529 Back-sided IP60, according IEC 60529
Mechanic- | Dynamic- strength	according to IEC 61373 and EN 50155
Climate- | Corrosion-resistance	according to EN 50155
Inflammability degree	S1 according DIN 5510
High-voltage strength	according IEC 60077-1
Approvals	EWG Type approval (Kraftfahrtbundesamt e1) GOST- R

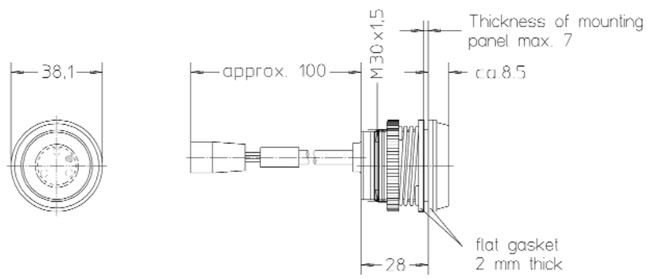
Switching function | Connectivity configuration

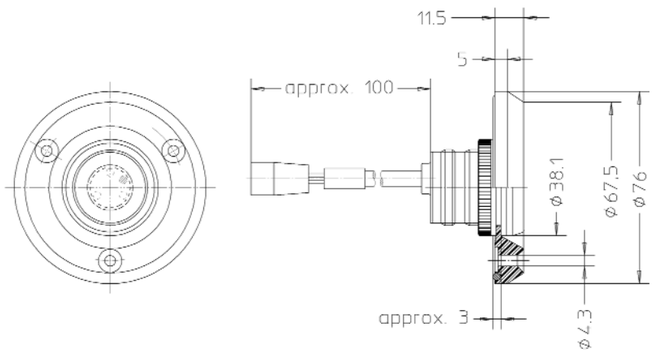
	0V	+V_{CC}	output	LED_1*
MP30, MP31, MP32, MP33				
Function 1 (3-wire) 3 LED stand-by at power-on +V_{CC} 1 LED confirm activation	blue	brown	black	
Function 2 (4-wire) 3 LED stand-by separately controlled 1 LED confirm activation	blue	brown	black	white
MP30T				
Function 1 (3-wire) 1 LED stand-by at power-on +V_{CC} confirm: LED off, switch on actuator (e.g. solenoid valve) switching period programmable	blue	brown	black	

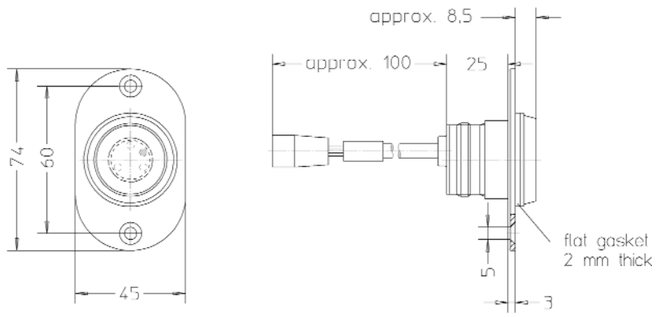
*LED_1: stand-by display

Dimensions

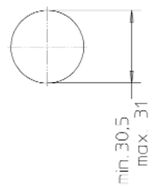




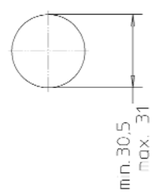




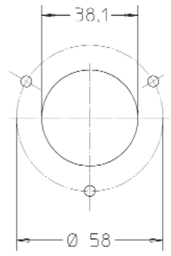
Mounting sections | Holes



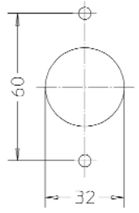
MP30 One-hole mounting, front-sided insertion of button, single screwing with milled nut on back-side



MP31 One-hole mounting, front-sided insertion of button, single screwing with milled nut on back-side, compression spring limiting propeller thrust for thin walls



MP32 complete front-sided mounting with fixing-ring, fixing by three screws (not included in scope of delivery)



MP33 complete front-sided mounting with robust adapterplate of powder-coated stainless steel, for very narrow mounting positions, fixing by two screws (not included in scope of delivery)

Light ivory
similar to RAL1015

Traffic green
similar to RAL6024

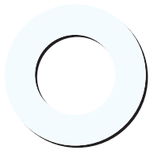
Traffic yellow
similar to RAL1023

Traffic grey A
similar to RAL7042

Pure orange
similar to RAL2004

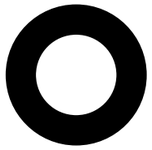
Traffic grey B
similar to RAL7043

Traffic red
similar to RAL3020



Traffic white
similar to RAL9016

Traffic blue
similar to RAL5017



Traffic black
similar to RAL9017

Capri blue
similar to RAL5019

MP30T
Pictogram: water flow
Traffic blue
similar to RAL5017

The colours shown here are no RAL-colours. Please use standard RAL-range for exact colour selection.

Please contact us for other inner-ring colours, texts on inner-ring or pictograms.

Colour selection of fixing-rings and adapter-plates for MP32 and MP33 can be seen on page 42 and 43.

MP Inquiry | So that you will not forget anything, simply mark with a cross and send us a fax or go to internet **Fax +49 2353 66796-99 | www.escha-tsl.de/anfragekompass**

Mounting variants | page 10–11

MP30 ○ MP31 ○ MP32 ○ MP33 ○

Nominal voltage | page 8

24V ○ 36V ○ 72V ○ 110V ○

LED-variants | page 8

Special LED: _____ 3gn+1rd ○ 3rd+1gn ○

Switching function | page 9

MP30, MP31, MP32, MP33: fct. 1 ○ fct. 2 ○ MP30T ○

Colour inner-ring | page 12

RAL _____ Special colour: _____

Colour fixingring/adapterplate (MP32/MP33) | page 42–43

RAL _____ Special colour: _____

Connector (Standard cable length approx. 100mm) | page 44–45 without plug (2m cable) ○

Type-No.: _____ Special connector: _____

Special length: _____ Special cable: _____

Your data

Name: _____
Company: _____
Address: _____
_____
Phone: _____
E-mail: _____

Thank you ☺

PK one button – endless variants, combined out of different switching functions, touch surfaces and fixingrings, five mounting variants and endless colours and pictograms.

Create your specific button!

The ESCHA-switching principle, based on a hermetically sealed one-part switch housing, operates wear-proof, independent of temperature, dust or humidity.

The PK has been used on busses, trams and high-speed trains for many years.

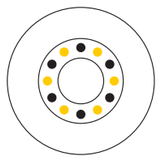
PK variants

PK21
PK22
PK23
PK28

Highend version

6+6 LED for stand-by- and confirm display

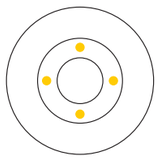
Optionally with acoustic check-back signal



PK25
PK26
PK27
PK29

Economy version

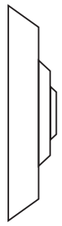
4 LED stand-by display



PK Fixing variants and touch surface versions

PK21
PK25

Fixingring:	flat
Screws:	visible
Touch surface:	flat
Pictograms:	flat

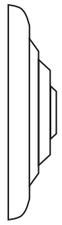


PK28
PK29

Fixingring:	flat
Screws:	visible
Touch surface:	projected
Pictogram:	tactile

PK22
PK26

Fixingring:	projected
Screws:	covered
Touch surface:	flat
Pictograms:	flat



PK23
PK27

Fixingring:	projected
Screws:	covered
Touch surface:	projected
Pictogram:	tactile

Nominal voltage
24 VDC, 36 VDC, 72 VDC, 110 VDC, 24 – 110 VDC
± 30 %

Switching current
approx. 200 mA

Closed-circuit current
approx. 10 mA (without LEDs)

Switching principle
One-part, hermetically sealed switch housing with multi-point contact and airpressure compensation system, back-end electronics, output signal PNP (NO), short-circuit proof, reverse polarity protection, button debouncing , switching-impulse length corresponding to activation period, min. 500 ms, optionally microprocessor controlled with integrated switch powersupply for multivoltage range

LED-variants
6 LED stand-by display + 6 LED confirmation display
optional: 6 LED stand-by display + 5 LED confirmation display + 1 LED out-of-order display

Standard
6 x green + 6 x red; 6 x green + 5 x red + 1 x yellow
others on request

Acoustics (optional)
Orientation-, confirm-, or warn sound individually programmable duration- or interval sound frequency range of 1…5 kHz, sound pressure max. 53 dBA

Operating temperature
–40°… +80°C

Storage temperature
–40°… +95°C

Life cycle
7 Mio. switching cycles

Activation force
7.5… 9N

Switching path
0.15 mm

Materials

Switch housing	PC, UV stabilized
Contacts	CuZn, gold-plated
Sealing dome	EPDM
Fixingring	PA6GF15
Zentraflexring	NBR
Cable	PUR, halogen-free

Standards | Tests

Protection degree	Front-sided IP67, according IEC 60529 Back-sided IP67, according IEC 60529
Mechanic- | Dynamic-strength	according to IEC 61373 and EN 50155
Climate- | Corrosion-resistance	according to EN 50155
Inflammability degree	S1 according DIN 5510
High-voltage strength	according IEC 60077-1
Approvals	EWG Type approval (Kraftfahrtbundesamt e1) DB-standard BN65074 | Buttons for boarding doors GOST-R

Switching function | Connectivity configuration

	0V	+V_{CC}	output	LED_1*	LED_2*	sound
Function 1 (3-wire) 6 LED stand-by at power-on +V_{CC} 6 LED confirm at activation	blue	brown	black			
Function 2 (4-wire) 6 LED stand-by separately controlled 6 LED confirm at activation	blue	brown	black	white		
Function 3 (5-wire) 6 LED stand-by separately controlled 6 LED confirm separately controlled	black	white	brown	blue	grey	
Function 4 (6-wire) 6 LED stand-by separately controlled 6 LED confirm separately controlled separately controlled acoustics	yellow	orange	black	brown	red	green
Function 5 Individual programming of output signal, LED function, separate inputs and acoustics						

*LED_1: Stand-by display
LED_2: Confirm display

Nominal voltage
24 VDC, others on request
±30%

Switching current
approx. 50 mA

Closed-circuit current
approx. 10 mA (without LEDs)

Switching principle
One-part, hermetically sealed switch housing with multi-point contact and airpressure compensation system, back-end electronics, output signal PNP (NO), switching-impulse length corresponding to activation period, min. 500 ms

LED-variants
Standard
4 LED stand-by display
4 x green
others on request

Operating temperature
–40°... +80°C

Storage temperature
–40°... +95°C

Life cycle
7 Mio. switching cycles

Activation force
7.5... 9N

Switching path
0.15 mm

Materials

Switch housing	PC, UV stabilized
Contacts	CuZn, gold-plated
Sealing dome	EPDM
Fixingring	PA6GF15
Zentraflexring	NBR
Cable	PUR, halogen-free

Standards | Tests

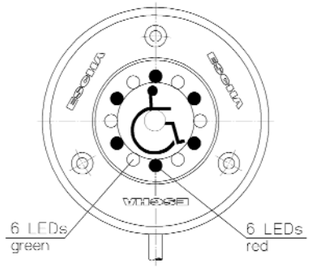
Protection degree	Front-sided	IP67, according IEC 60529
	Back-sided	IP67, according IEC 60529
Mechanic- | Dynamic-strength		according to IEC 61373 and EN 50155
Climate- | Corrosion-resistance		according to EN 50155
Inflammability degree		S1 according DIN 5510
High-voltage strength		according IEC 60077-1

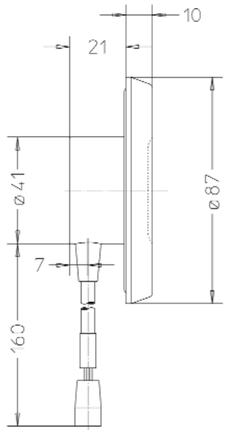
Switching function | Connectivity configuration

	0V	+Vcc	output	LED_1*	LED_2*	sound
Function 2 (4-wire) 4 LED stand-by separately controlled no confirmation	blue	brown	black	white		

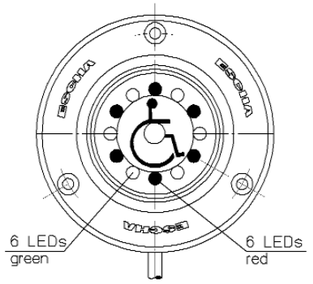
*LED_1: Stand-by display
LED_2: Confirm display

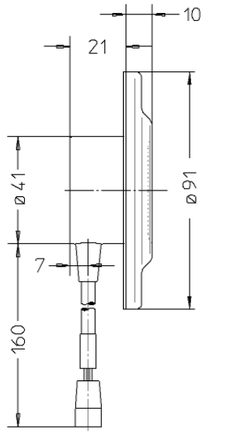
Dimensions



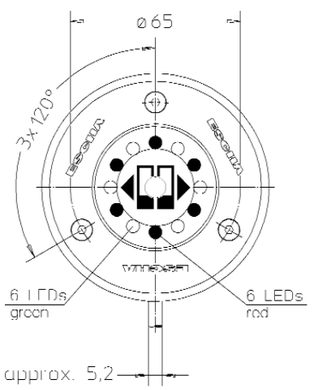


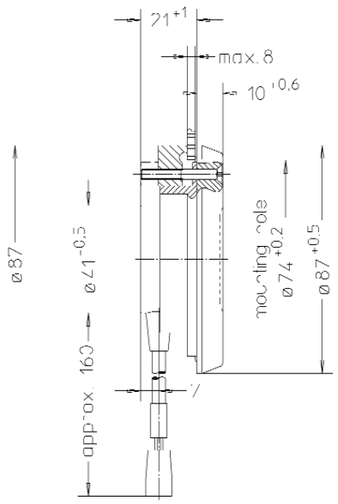
Ø 65mm-hole circle





Ø 76mm-hole circle

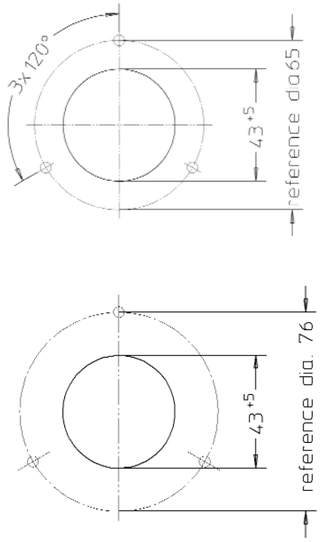




Mounting sections | Holes

Position A

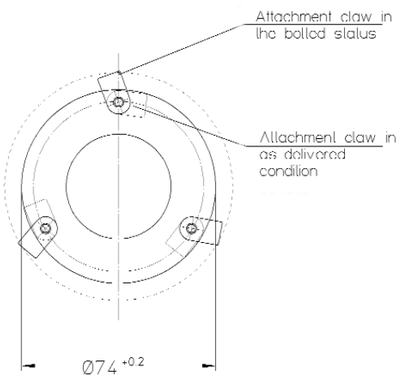
Position V



Screw mounting classical mounting variant with three screws in 65mm hole-circle (screws not included in scope of delivery). Please observe the two positioning options A und V.

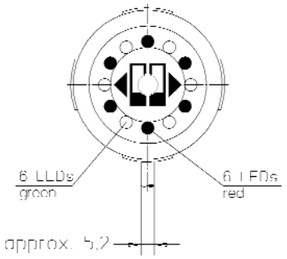
3x120° in Ø 65mm-hole-circle

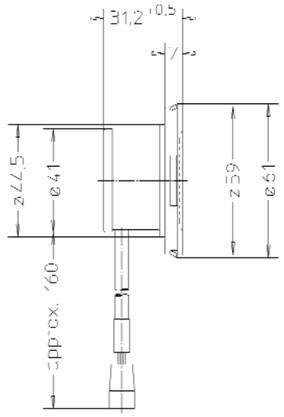
3x120° in Ø 76mm-hole-circle

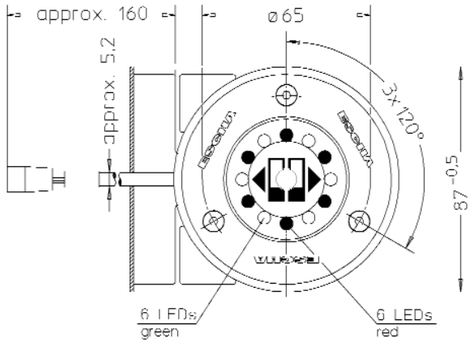


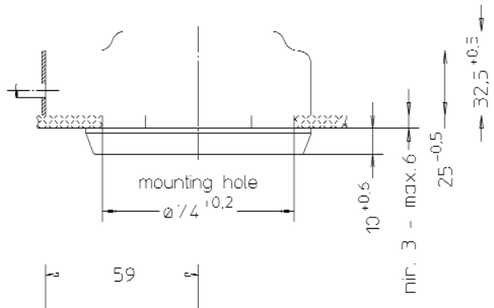
Back-wall mounting with fixing claws
Easy front mounting, fixing by self-adjustable fixing claws, different wall thicknesses are easily compensated, screws included in scope of delivery

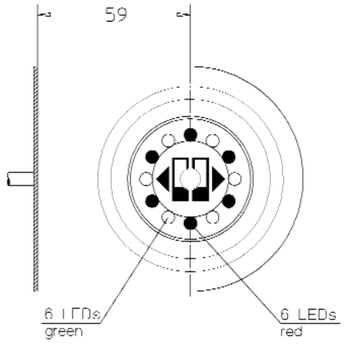
Dimensions



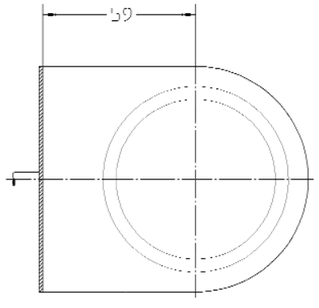






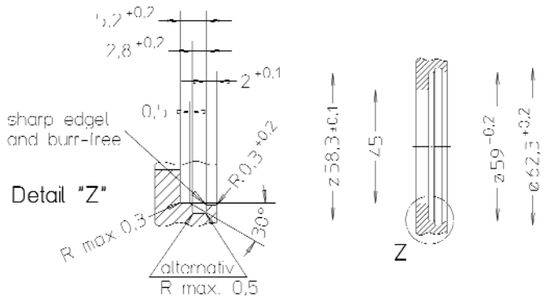


Push-button, inner side-view, 2-sided function



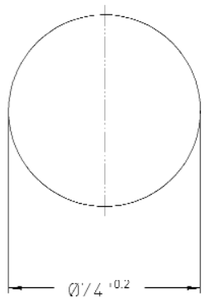
Push-button, inner side-view, 1-sided function

Mounting sections | Holes



Without screws by Zentraflexring

Flush-mounting, time-tried on high-speed trains up to 450 km/h

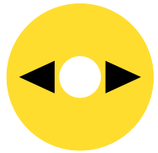


Glass mounting 1- | 2-sided

Easy glassdoor mounting, button is held by a fixingring during mounting so that inner-housing cover and outer fixingring can be easily screwed together (screws included in scope of delivery), adaptation to different door profiles possible
Available angles: 0° | 10° | 25°

Arrows OPEN

PK_.B10
ye: RAL1023
Arrows OPEN
bk: RAL9017



PK_.B41
ye: RAL1023
Arrows OPEN
bk: RAL9017

PK_.B22
rd: RAL3020
Arrows OPEN
wh: RAL9016

PK_.B9
bu: RAL5017
Arrows OPEN
silv: RAL9006

PK_.B17
silv: RAL9006
Arrows OPEN
bu: RAL5017

PK_.B8
gn: RAL6024
Arrows OPEN
silv: RAL9006

PK_.B38
gn: RAL6024
Arrows OPEN
wh: RAL9016

PK_.B45
gn: RAL6024
Arrows OPEN
wh: RAL9016

PK_.B20
gr: RAL7042
Arrows OPEN
bk: RAL9017

Arrows OPEN tactile

PK_.B66
ye: RAL1023
Arrows OPEN
tactile
bk: RAL9004

PK_.B42
gn: RAL6024
Arrows OPEN
tactile
bk: RAL9004

PK_.B25
silv: RAL9006
Arrows OPEN
tactile
bk: RAL9004

PK_.B56
bk: RAL9004
Arrows OPEN
tactile
wh: RAL9016

Arrows CLOSED

PK_.B39
rd: RAL3020
Arrows CLOSED
wh: RAL9016

PK_.B46
rd: RAL3020
Arrows CLOSED
wh: RAL9016

PK_.B57
bu: RAL5017
Arrows CLOSED
silv: RAL9006

Arrows CLOSED tactile

PK_.B43
rd: RAL3020
Arrows CLOSED
tactile
bk: RAL9004

PK_.B29
silv: RAL9006
Arrows CLOSED
tactile
bk: RAL9004

Arrows OPEN +text

PK_.B67
ye: RAL1023
Arrows OPEN
+text
bk: RAL9017

PK_.B7
rd: RAL3020
Arrows OPEN
+text
silv: RAL9006

PK_.B15
rd: RAL3003
Arrows OPEN
+text
silv: RAL9006

PK_.B54
rd: RAL3020
Arrows OPEN
+text
silv: RAL9006

PK_.B5
bu: RAL5017
Arrows OPEN
+text
silv: RAL9006

PK_.B24
gn: RAL6024
Arrows OPEN
+text
wh: RAL9016

Arrows OPEN +text

PK_.B31
gn: RAL6024
Arrows OPEN
+text
wh: RAL9016

PK_.B24
gn: RAL6024
Arrows OPEN
+text
silv: RAL9006

PK_.B49
gr: RAL7042
Arrows OPEN
+text
wh: RAL9016

PK_.B32
rd: RAL3020
Arrows CLOSED
+text
wh: RAL90167

PK_.B6
bu: RAL5017
Arrows CLOSED
+text
silv: RAL9006

PK_.B55
gn: RAL6024
Arrows CLOSED
+text
silv: RAL9006

Arrows OPEN +door

PK_.B13
ye: RAL1023
Arrows OPEN
+door
bk: RAL9017

PK_.B16
rd: RAL3020
Arrows OPEN
+door
silv: RAL9006

PK_.B51
bu: RAL5017
Arrows OPEN
+door
silv: RAL9006

PK_.B40
gn: RAL6024
Arrows OPEN
+door
silv: RAL9006

Arrows OPEN +Picto-gram

PK_.B14
ye: RAL1023
Arrows OPEN
+pram
bk: RAL9017

PK_.B421
ye: RAL1023
Arrows OPEN
pram/wheelchair
bk: RAL9017

PK_.B52
bu: RAL5017
Arrows OPEN
pram/wheelchair
wh: RAL9016

Picto-grams

PK_.B47
ye: RAL1023
wheelchair
bk: RAL9017

PK_.B2
bu: RAL5017
wheelchair
wh: RAL9016

PK_.B4
silv: RAL9006
wheelchair
bu: RAL5017

PK_.B18
ye: RAL1023
pram
bk: RAL9017

PK_.B23
bu: RAL5017
pram
wh: RAL9016

PK_.B1
silv: RAL9006
pram
bu: RAL5017

Picto-
grams

PK_.B19
silv: RAL9006
Bike
gn: RAL6024

PK_.B30
gr: RAL7035
Hand
gn: RAL6024

PK_.B11
ye: RAL1023
Info
bk: RAL9017

PK_.B12
rd: RAL3020
Alarm bell
wh: RAL9016

PK_.B48
bk: RAL9017
Signal
wh: RAL9016

Text

PK_.B34
rd: RAL3020
text
silv: RAL9006

PK_.B33
gn: RAL6024
text
silv: RAL9006

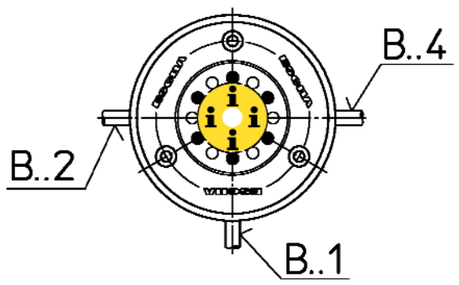
PK_.B37
rd: RAL3020
text
wh: RAL9016

PK_.B57
gn: RAL6024
text
wh: RAL9016

blank

PK_.B50
ye: RAL1023

PK_.B3
gold



The RAL-colours can only be slightly achieved. Deviations are permissible. The colours shown here are no RAL-colours. Please use standard RAL-range for exact colour selection.

Please observe position of cable in relation to pictogram. Order example PK21, Pictogram info, cable on right side: **PK21.B11.4**.

The illustrated view corresponds to outer side of vehicle. The pictogram on the inner side of vehicle is accordingly mounted mirror-inverted on the vertical axis.

ESCHA-short-stroke Push-Buttons were developed for operation on road- and rail vehicles.

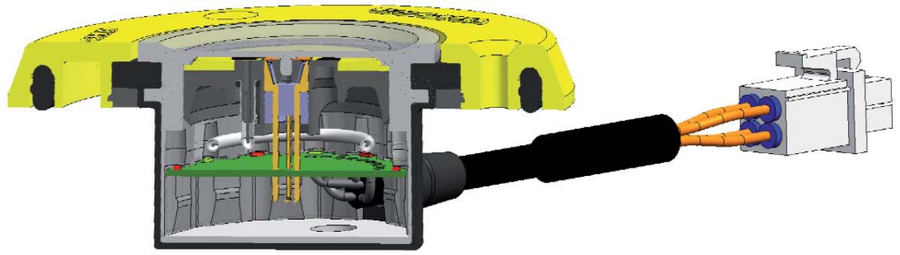
ESCHA-short-stroke Push-Buttons described here are exposed to outdoor- and thus extreme conditions: cold, heat (sun), repeated temperature changes, humidity (spray water), dirt, chemicals etc.

Furthermore, special electrical and mechanical requirements are realized: function reliability, avoiding weather-related impulsing, light signal, temperature independent- as well as constantly low activation force, antiblocking of the switching- or activation elements, impact and vibration resistance, operating reliability, long life and maintenance-free.

Design features

The buttons **MP** and **PK** operate on the same principle which consists of these main design features.

- Fully closed, one-part switch housing with an integrated elastic and transparent activation surface which does not need any sealing elements
- Use of high-grade plastics
- Hermetically closed switch chamber with airpressure-compensation system
- Mechanical multi-point contact
- Elastic decoupling of switch housing from fixing
- Integrated electronics, optionally microprocessorcontrolled (PK-range)



The ESCHA-switching principle

PK Inquiry | So that you will not forget anything, simply mark with a cross and send us a fax or go to internet. **Fax +49 2353 66796-99** | **www.escha-tsl.de/anfragekompass**

Button variants | page 16–17

Highend PK21 ○ PK22 ○ PK23 ○ PK28 ○

Nominal voltage | page 16

24V–110V ○ 24V ○ 36V ○ 72V ○ 110V ○

LED-variants | page 16

6gn+6rd ○ 6gn+5rd+1ye ○ Special LED: _____

Switching function | page 17

fct.1 ○ fct.2 ○ fct.3 ○ fct.4 ○ fct.5 ○

Acoustic | page 16 Confirm: _____ kHz Intervall: _____ Hz none ○

Orientation: _____ kHz Intervall: _____ Hz none ○

others: _____ kHz Intervall: _____ Hz

Mounting variants | page 20–23

Screw mounting ○ Back wall with claws ○ Zentraflexring ○

Glass mounting 1-sided ○ Glass mounting 2-sided ○

Pictogram.cable outlet | page 24–26

B _____ . Special pictogram: _____

Fixingring colour | page 42–43

RAL _____ Special colours: _____

Connector (Standard cable length approx. 160mm) | page 44–45 without plug (2m cable) ○

Type-No.: _____ Special connector: _____

Special length: _____ Special cable: _____

Your data

Name: _____
Company: _____
Address: _____

Phone: _____
E-mail: _____

PK Inquiry | So that you will not forget anything, simply mark with a cross and send us a fax or go to internet. **Fax +49 2353 66796-99** | **www.escha-tsl.de/anfragekompass**

Button variants | page 18–19

Economy PK25 ○ PK26 ○ PK27 ○ PK29 ○

Nominal voltage | page 18

24V ○ Special voltage: _____

LED-variants | page 18

4gn ○ Special LED: _____

Mounting variants | page 20–23

Screw mounting ○ Back wall with claws ○ Zentraflexring ○

Glass mounting 1-sided ○ Glass mounting 2-sided ○

Pictogram.cable outlet | page 24–26

B _____ . Special pictogram: _____

Fixingring colour | page 42–43

RAL _____ Special colours: _____

Connector (Standard cable length approx. 160mm) | page 44–45 without plug (2m cable) ○

Type-No.: _____ Special connector: _____

Special length: _____ Special cable: _____

Your data

Name: _____
Company: _____
Address: _____

Phone: _____
E-mail: _____

Thank you ☺

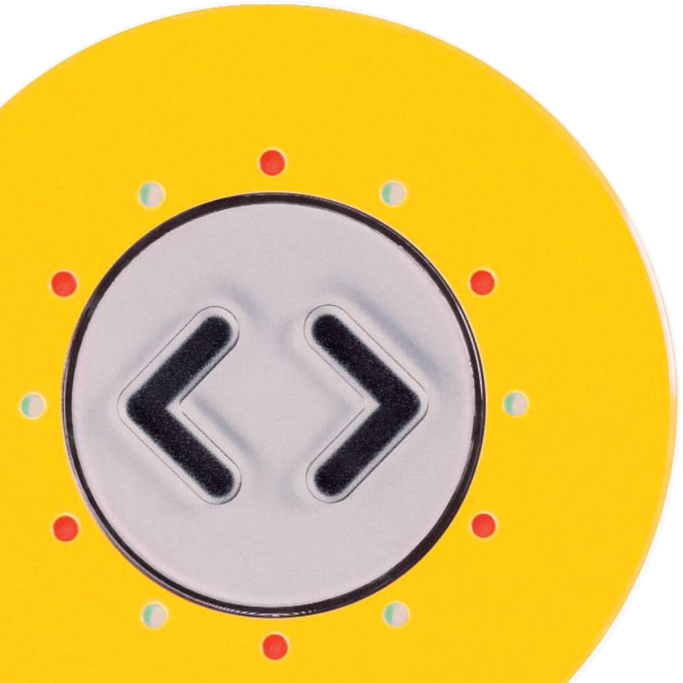
CK vandalism-proof stainless steel button in extremely flat version.

The extra large touch surface of 23 cm², tactile surface structure, optical and acoustic check-back signals are specially designed to meet the requirements of the handicapped.

Microprocessors provide for the programming of individual switching functions.

The buttons are dust- and water-proof according to IP67. The stainless steel surface is resistant to aggressive detergents and graffiti removers.

IP67 · µP · Hal



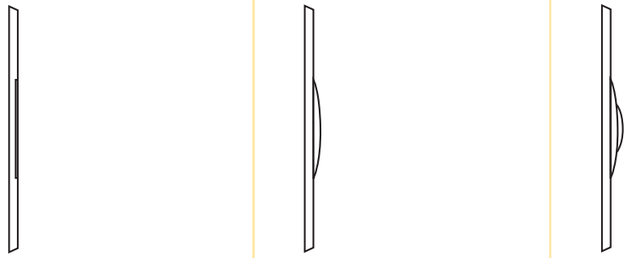
6+6 LED
alternating
controlled

6+6 LED
semi-circular
controlled

12x1 LED
Individually controlled,
free colour selection,
RGB-LEDs possible

CK variants

	CK70	**CK71**	**CK72**
	CK80	**CK81**	**CK82**
Touch surface:	flat	projected	projected
Pictogram:	flat	with protective cap	tactile, with protective cap



Nominal voltage 24 VDC, 110 VDC, 24 – 110 VDC
±30%

Switching current approx. 200 mA

Closed-circuit current approx. 10 mA (without LEDs)

Switching principle Electromechanical short-stroke button, back-end electronics, output signal PNP (NO), short-circuit proof, overvoltage- and reverse polarity protection, button debouncing, switching-impulse length corresponding to activation period, min. 500 ms, optionally microprocessorcontrolled with integrated switch power-supply for multivoltage range

LED-variants 6 LED stand-by display + 6 LED confirmation display alternating, semi-circular or individually controlled

Standard: alternating 6 x green + 6 x red
others on request, RGB-LED possible

Acoustics (optional) Orientation-, confirm-, or warn sound individually programmable duration- or interval sound frequency range of 1…5 kHz, sound pressure max. 53 dBA

Operating temperature –40°…+80°C

Storage temperature –40°…+95°C

Life cycle 7 Mio. switching cycles

Activation force 7.5…9N

Switching path 0.4 mm

Materials

Fixingring	V2A, powder-coated
Fixing plate	PA6GF
Contacts	CuZn, gold-plated
Protective cap	PC, UV stabilized
Cover housing	PA6GF15
Distance ring	PA6GF15
Sealing	NBR
Cable	PUR, halogen-free

Standards | Tests

Protection degree	Front-sided IP67, according IEC 60529 Back-sided IP60, according IEC 60529
Mechanic- | Dynamic-strength	according to IEC 61373 and EN 50155
Climate- | Corrosion-resistance	according to EN 50155
Inflammability degree	S1 according DIN 5510
High-voltage strength	according IEC 60077-1
Approvals	EWG Type approval (Kraftfahrtbundesamt e1) GOST-R

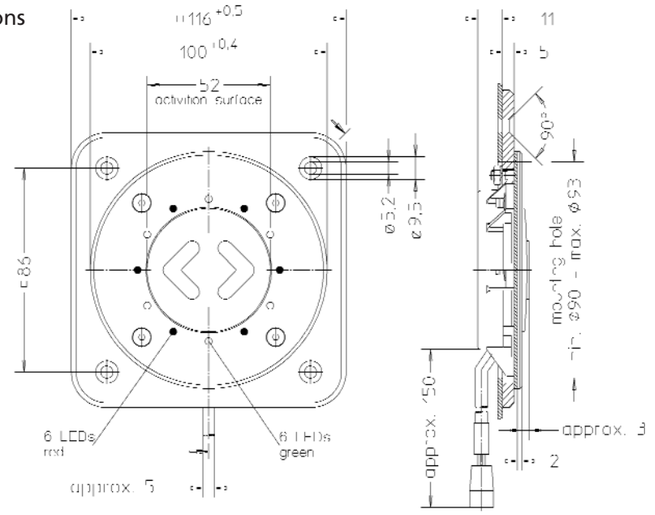
Switching function | Connectivity configuration

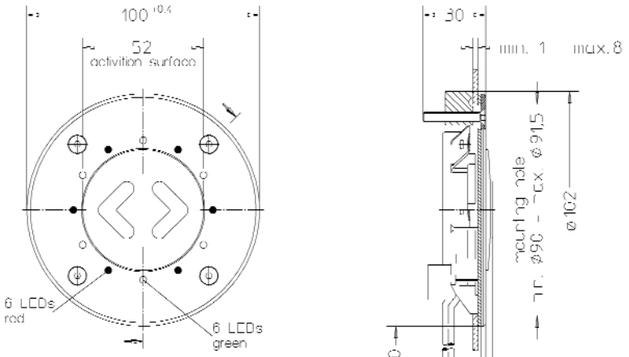
	0V	+V_{CC}	output	LED_1*	LED_2*	sound
Function 1 (3-wire) 6 LED stand-by at power-on +V_{CC} 6 LED confirm at activation	blue	brown	black			
Function 2 (4-wire) 6 LED stand-by separately controlled 6 LED confirm at activation	blue	brown	black	white		
Function 3 (5-wire) 6 LED stand-by separately controlled 6 LED confirm separately controlled	black	white	brown	blue	grey	
Function 4 (6-wire) 6 LED stand-by separately controlled 6 LED confirm separately controlled separately controlled acoustics	yellow	orange	black	brown	red	green

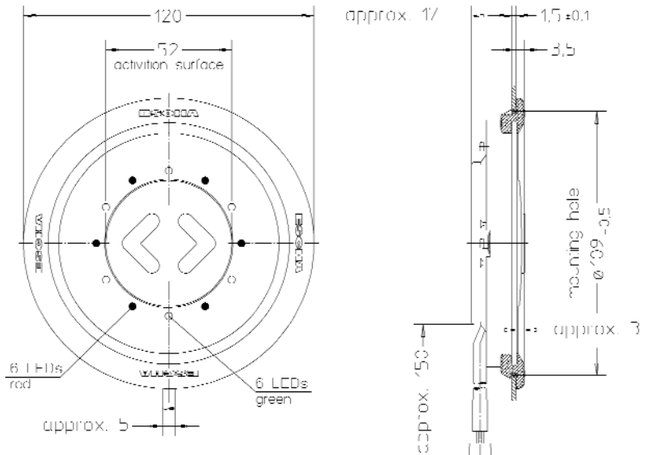
Function 5
Individual programming of output signal, LED function, separate inputs and acoustics

*LED_1: Stand-by display
LED_2: Confirm display

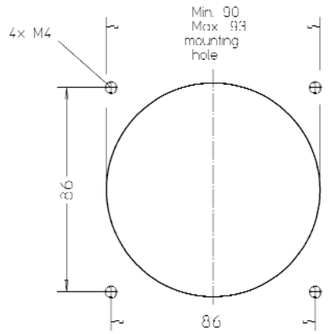
Dimensions





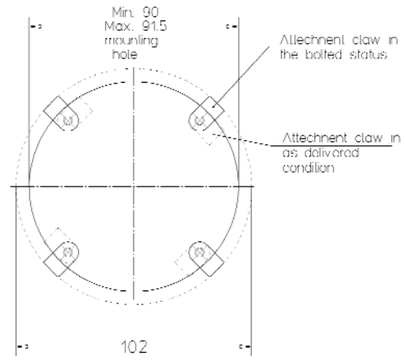


Mounting sections | Holes



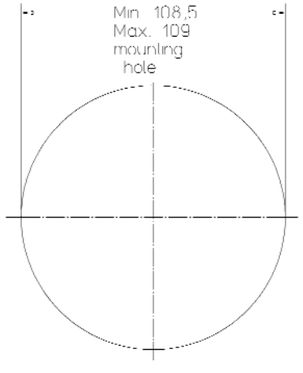
Screw mounting with fixing plate

Front-sided mounting with pre-mounted fixing plate, fixing by four screws (not included in scope of delivery), best for inner areas and extremely slight mounting depth



Back-wall mounting with fixing claws

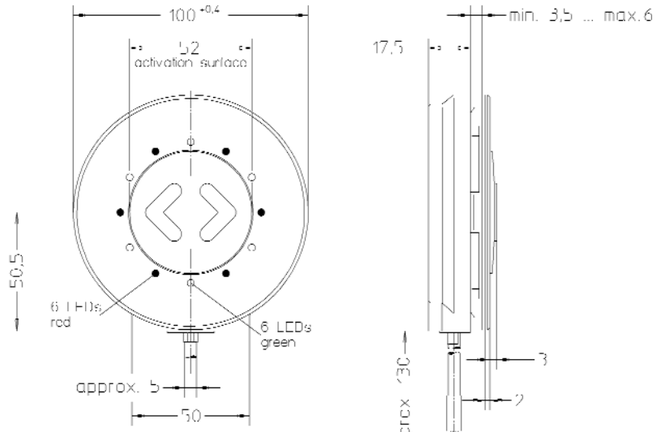
Easy front mounting, fixing by self-adjusting fixing claws, different wall thicknesses are easily compensated, screws included in scope of delivery

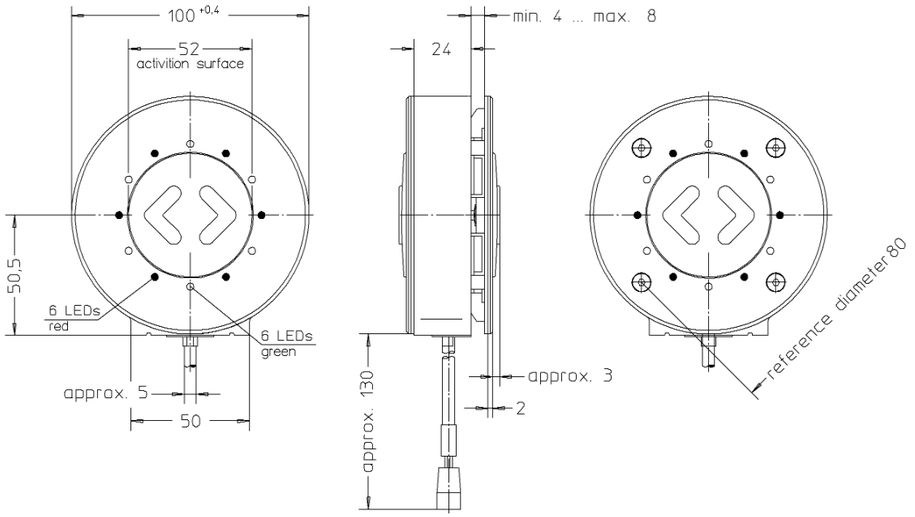


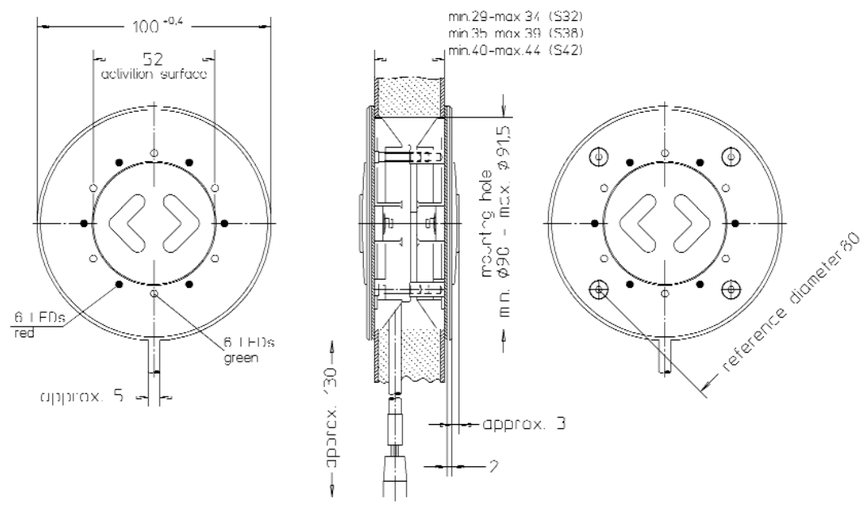
Screwless rubberring mounting

Easy mounting with flexible ring of NBR, mounting ring provides for additional corner protection. Various mounting rings are available for wall thickness of 1.5 mm and 3 mm

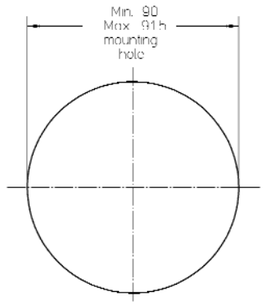
Dimensions



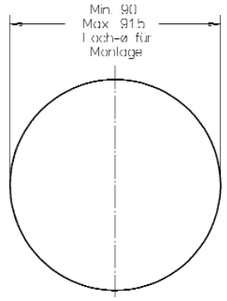




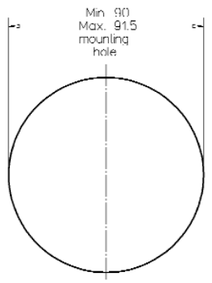
Mounting sections | Holes



Cover housing Fixing from back side by cover housing and four screws (included in scope of delivery), invisible screws on front side, suitable for glass mounting, glass thickness 3.5 mm to 6mm. Adaptation to different door profiles possible. Available angles: 0° | 6° | 10° | 25°



Glass mounting | 2-sided Easy mounting inner button and distance ring pre-mounted, outer button is connected with inner button by four screws (screws included in scope of delivery), adaptation to various door profiles by different distance rings possible, suitable for glass thickness of 4 mm to 8mm, electrical connection of both buttons is without cable by an integrated connector with distance compensation. Adaptation to different door profiles possible. Available angles: 0° | 6° | 10° | 25°



Double-wall mounting | 2-sided Easy mounting, outer button connected with inner button by four screws (screws included in scope of delivery), distance from inner- and outer wall can be 29 mm to 44 mm, electrical connection of both buttons is without cable by an integrated connector with distance compensation.

Arrows OPEN

CK_.B12
ye: RAL1023
Arrows OPEN
bk: RAL9017

CK_.B9
ye: RAL1023
Arrows OPEN
bk: RAL9017

CK_.A9
Alu, anodised
gold: colour No. 62
Arrows OPEN
bk: colour No. 12

Arrows OPEN tactile

CK_.B35
ye: RAL1023
Arrows OPEN
tactile
bk: RAL9017

CK_.B42
rd: RAL3020
Arrows OPEN
tactile
wh: RAL9016

CK_.B46
gn: RAL6024
Arrows OPEN
tactile
wh: RAL9016

CK_.B39
gn: RAL6024
Arrows OPEN
tactile
bk: RAL9017

CK_.B28
silv: RAL9006
Arrows OPEN
tactile
bk: RAL9017

CK_.B55
bk: RAL9017
Arrows OPEN
tactile
wh: RAL9016

Arrows CLOSED tactile

CK_.B47
rd: RAL3020
Arrows CLOSED
tactile
wh: RAL9016

CK_.B29
silv: RAL9006
Arrows CLOSED
tactile
bk: RAL9017

Arrows OPEN +text

CK_.B14
or: RAL2002
Arrows OPEN
+text
wh: RAL9016

CK_.B13
rd: RAL3020
Arrows OPEN
+text
silv: RAL9006

CK_.B22
rd: RAL3020
Arrows OPEN
+text
silv: RAL9006

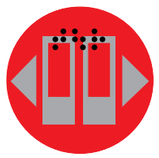
CK_.B5
bu: RAL5017
Arrows OPEN
+text
silv: RAL9006

Arrows CLOSED +text

PK_.B6
bu: RAL5017
Arrows CLOSED
+text
silv: RAL9006

Arrows OPEN +door

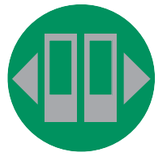
CK_.B10
rd: RAL3020
Arrows OPEN
+door
silv: RAL9006



CK_.B25
rd: RAL3020
Arrows OPEN
+door (braille)
silb: RAL9006

CK_.B3
rd: RAL3020
Arrows OPEN
+door
bk: RAL9017

CK_.B27
bl: RAL5017
Arrows OPEN
+door
silv: RAL9006



CK_.B26
gn: RAL6024
Arrows OPEN
+door
silv: RAL9006

Arrows OPEN +door

CK_.B8
ye: RAL1023
Arrows OPEN
pram/wheelchair
bk: RAL9017

CK_.B34
ye: RAL1023
Arrows OPEN
wheelchair
bk: RAL9017

CK_.B7
ye: RAL1023
Arrows OPEN
pram
bk: RAL9017

Arrows OPEN +Picto-gram

CK_.B31
bu: RAL5017
Arrows OPEN
pram/wheelchair
wh: RAL9016

CK_.B11
ye: RAL1023
wheelchair
bk: RAL9017

CK_.B37
ye: RAL1037
wheelchair
bu: RAL5022

CK_.B2
bu: RAL5017
wheelchair
wh: RAL9016

Pictograms

CK_.B4
gr: RAL7035
Hand
gn: RAL6024

CK_.B53
bk: RAL9017
wheelchair
wh: RAL9016

CK_.B20
bu: RAL5017
wheelchair
projected
wh: RAL9016

CK_.B40
bu: RAL5017
pram
wh: RAL9016

CK_.B1
silv: RAL9006
pram
bu: RAL5017

CK_.B36
ye: RAL1037
Info
bu: RAL5022

CK_.B50
ye: RAL1023
Handicapped
bk: RAL9017

CK_.B33
bu: RAL5017
Handicapped
wh: RAL9016

CK_.B30
rd: RAL3020
Bell
wh: RAL9016

CK_.B38
rd: RAL3020
SOS
gr: RAL7045

CK_.B54
bk: RAL9017
Light
wh: RAL9016

CK_.B57
bk: RAL9017
WC
wh: RAL9016

Picto-grams

Pictograms

CK_.B56
rd: RAL3020
SOS
wh: RAL9016

CK_.B56.1
bk: RAL9017
SOS
rd: RAL3020

CK_.B21
silv: RAL9006
SOS
rd: RAL3020

Pictograms tactile

CK_.B43
bu: RAL5005
WC
1 dot tactile
wh: RAL9016

CK_.B44
bu: RAL5005
Water
2 dots tactile
wh: RAL9016

CK_.B45
or: RAL2003
Dryer
3 dots tactile
wh: RAL9016

CK_.B48
bu: RAL5017
coffee cup
tactile
wh: RAL9016

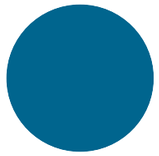
Text

CK_.B32
ye: RAL1023
text
bk: RAL9017

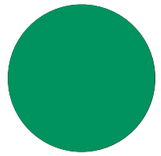
CK_.B51
rd: RAL3020
text (braille)
wh: RAL9016

blank

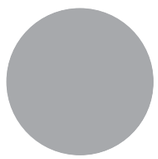
CK_.F4
or: RAL2011



CK_.B49
bu: RAL5017

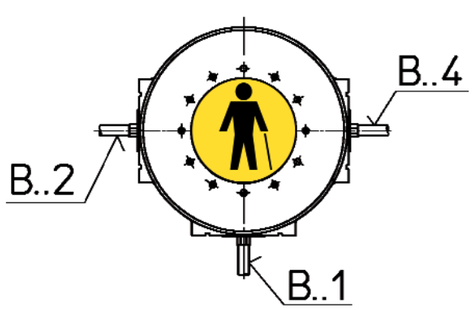


CK_.F3
gn: RAL6024



CK_.F1
silv: RAL9006

CK_.F2
bk: RAL7021



The RAL-colours can only be slightly achieved. Deviations are permissible. The colours shown here are no RAL colours. Please use standard RAL-range for exact colour selection.

Please observe position of cable in relation to pictogram. Order example CK70, Pictogram No. 50., cable on right side: **CK70.B50.4**.

The illustrated view corresponds to outer side of vehicle. The pictogram on the inner side of vehicle is accordingly mounted mirror-inverted on the vertical axis.

CK Inquiry | So that you will not forget anything, simply mark with a cross and send us a fax or go to internet. **Fax +49 2353 66796-99** | **www.escha-tsl.de/anfragekompass**

Button variants | page 31

CK70 ○ CK71 ○ CK72 ○ CK80 □ CK81 □ CK82 □

Nominal voltage | page 32 24V ○ 110V ○ 24V–110V ○

LED-Variants | page 32 6gn+6rd ○ other LED-colours: _____

alternating ○ semi-circular ○ individually controlled ○

Individual? _____

Switching function | page 33

fct. 1 ○ fct. 2 ○ fct. 3 ○ fct. 4 ○ fct. 5 ○

Acoustic | page 32 Confirm: _____ kHz Intervall: _____ Hz none ○

Orientation: _____ kHz Intervall: _____ Hz none ○

others: _____ kHz Intervall: _____ Hz

Mounting variants | page 34–37

Screw mounting with plate ○ Back wall with claws ○ Rubber-ring mounting ○

Cover housing ○ Glass mounting 2-sided ○ Double-wall mounting ○

Pictogram.cable outlet | page 38–40

B _____ . Special pictogram: _____

Fixingring colours | page 42–43

RAL _____ Special colours: _____

Connector (Standard cable length approx. 160 mm) | page 44–45 without plug (2 m cable) ○

Type-No.: _____ Special connector: _____

Special length: _____ Special cable: _____

Your data

Name: _____
Company: _____
Address: _____
Phone: _____
E-mail: _____

Thank you ☺

Light ivory
similar to RAL1015

Fire red
similar to RAL3000

Sulphur yellow
similar to RAL1016

Ruby red
similar to RAL3003

Rape yellow
similar to RAL1021

Traffic red
similar to RAL3020

Traffic yellow
similar to RAL1023

Ultra navy blue
similar to RAL5002

Yellow orange
similar to RAL2000

Traffic blue
similar to RAL5017

Pastel orange
similar to RAL2003

Capri blue
similar to RAL5019

Pure orange
similar to RAL2004

Patina green
similar to RAL6000

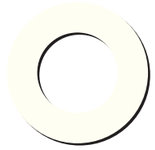
Light red orange
similar to RAL2008

Leaf green
similar to RAL6002

Traffic green
similar to RAL6024

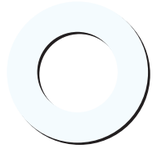
Traffic grey B
similar to RAL7043

Silver grey
similar to RAL7001



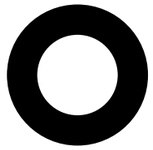
Pure white
similar to RAL9010

Granite grey
similar to RAL7026



Traffic white
similar to RAL9016

Platinum grey
similar to RAL7036



Traffic black
similar to RAL9017

Traffic grey A
similar to RAL7042

Stainless steel
shot-blasted
with glass balls
(only for CK)

Other colours
on request

The colours illustrated here are no RAL-colours. Please use standard RAL-range for exact colour selection.

The fixing-rings of the buttons MP und PK are plastic moulded parts (POM,PA6GF15), granulate-coloured.

The adapter plates of the MP-range, mounting-plate of PK-range and the fixing rings of the CK-buttons consist of stainless steel, the colouring is effected by powder-coating.

The ESCHA door-opening buttons are available with an open cable head and pre-manufactured cable bushings or a connector.
You can see here three standard cable qualities and the common connectors. Should you not find your specific connection, contact us. We will provide a custom-made solution.

PUR halogen-free

A cable for protected wiring, easy and flexible operations inside and outside rail vehicles and busses.

Type-code:	Li9Y11YFHFV
Jacket colour:	black
Wire material:	PP
Conductor material:	EL-Cu, verzinnt
Flame protection:	UL1587§1061

PUR halogen-free irradiated

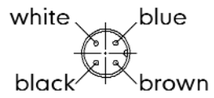
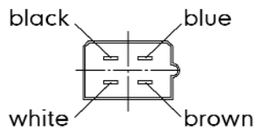
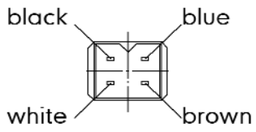
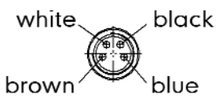
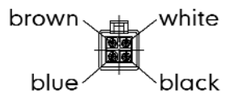
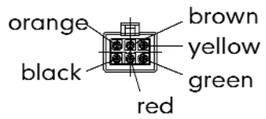
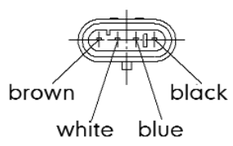
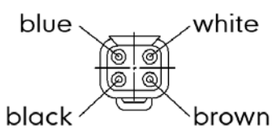
A cable for protected wiring, permanently flexible operations inside and outside rail vehicles and busses.

Type-code:	D12YSL11X
Jacket colour:	orange
Wire material:	PE
Conductor material:	EL-Cu, tinned

RADOX® GKW S

A cable for protected wiring inside and outside rail vehicles and busses.

Type-code:	Tenius-TW/S
Jacket colour:	black
Wire material:	GKW TP/GKW TS
Conductor material:	EL-Cu, tinned
Flame protection:	DIN5510-2, NF F16-101, BS 6853

	plug-No.	description	Pole	Brand Item-No./Typecode
	0	Round connector Ø2mm	4	TYCO Electronics/AMP Item-No.: 0-925 075-0
	1	Flat connector FASTIN-FASTON 6.3x0.8	4	TYCO Electronics/AMP Item-No.: 180901-0
	2	Flat connector FASTIN-FASTON 2.8x0.8	4	TYCO Electronics/AMP Item-No. 626 057-0
	60	Round connector Snap-in + M8x1 screwed IP67	3-4	ESCHA Bauelemente 3- and 4-poles SSP3 | SSP4 according to BN65074
	61	Round connector M12x1 screwed IP67	4-8	ESCHA Bauelemente 4-, 5-, 6- and 8-poles WAS4...WAS8 according to BN65074
	64	Rectangular connector MATE-N-LOK IP67	4	TYCO Electronics/AMP Item-No. 794805-1
	65	Rectangular connector MATE-N-LOK IP67	6	TYCO Electronics/AMP Item-No. 794895-1
	66	SUPERSEAL-Connector IP67	4	TYCO Electronics/AMP Item-No. 282106-1
	71	Rectangular connector IP67	4	DEUTSCH DTM04-4P

Polycarbonate PC, UV stabilized is a thermoplast, which combines many advantageous properties, such as rigidity, impact strength, transparency, form and dimensional stability, good insulating properties and thermal stability. Polycarbonate is used in door-opening buttons for the one-part, hermetically sealed switch housings of the MP and PK product range. Polycarbonate is highly resistant to mineral acids, saturated aliphatic carbons, gasoline, greases and oils. The material is not especially resistant to solvents, naphtha, caustic solutions, acetone and ammonia.

Polyamide PA, glass fiber reinforced GF Glass fiber reinforced polyamides are characterized by high rigidity and hardness and higher operating temperatures as compared with non-reinforced materials. This thermoplast displays excellent mechanical stability even at high ambient temperatures. It absorbs water from the environment (ca. 2.8%) and stores it as a chemically bonded H_2O group in the molecular structure. This makes the material elastic and unbreakable, even at temperatures down to -40°C. Polyamide, glass fiber reinforced is used in door-opening buttons, e.g. as a PK fixing-ring .

Polyoxymethylene POM is a semi-crystalline thermoplastic polymer and is used wherever high rigidity and high mechanical strength are required in combination with springiness and/or good sliding friction behavior. The material is resistant to water, alcohols, aliphatic and aromatic carbons, caustic solutions, fuels, greases, oils, brake fluids and coolants. We use polyoxymethylene in fastening rings for the MP-range.

Nitrile butadiene rubber NBR is an elastomer used as a sealing element to achieve the required IP protection degrees in ESCHA door-opening buttons. Rubber manufactured from NBR is resistant to many chemicals, mineral oils and greases and displays low abrasive behavior, high resistance to aging and has a large operating temperature range from -40°C to +125°C. NBR is not weather-resistant and not resistant to high-flash-point hydraulic fluids and synthetic lubricants.

Ethylene propylene terpolymer EPDM is used for sealing elements with a weight by volume of more than 10g. It can be used at temperatures from -40°C to +120°C and is generally very resistant to weather and water. The requirements for behavior in fire in accordance with the standard railway norms are fullfilled.

Polyurethane PUR, halogen-free is a cable material, which was specially developed for permanently flexible control lines and for use under extreme conditions. PUR is especially useful due to its high abrasion resistance. The material is very resistant to oils, lubricants and coolants, as well as other aggressive media. The thermal endurance is +90°C.

Polyurethane, irradiated. The typical properties of PUR are significantly improved by electron irradiation crosslinking of the PUR material. This increases not only the mechanical stability and resistance to chemicals, but also abrasion and temperature resistance. PUR irradiated is suitable for thermal endurance of +105°C.

RADOX® GKW S RADOX® insulating and encasing materials are primarily electron irradiated materials with special properties: high temperature resistance, excellent behavior in fire, reduced wall thicknesses and good working properties.

Stainless steel V2A for rugged operating conditions on roads and rail vehicles we use powder-coated stainless steels for screws, fixingrings or adapterplates. This makes the door-opening buttons resistant to vandalism and to cleaning agents and graffiti removers. The powder coating enables us to design surfaces in any desired color.

IEC 60529 | Protection classes for electrical equipment

Electrical equipment has to be protected for safety reasons against external influences, such as dust, foreign objects, contact, humidity and water. This protection is provided by means of housings. IEC60529 is the basis for the definition and labeling of the protection class of a housing. The extent of the protection is demonstrated by standardized test methods.

The protection degrees are indicated by a code consisting of the two letters IP (International Protection) and a two-digit number for the degree of protection.

The first digit indicates the degree of protection against contact and foreign objects.

The second digit indicates the degree of protection against the damaging penetration of water.

The protection degrees have the following form:

Digit 1

0	Not protected	
1	Protected against access to dangerous elements with the back of the hand. Protected against solid foreign objects with a diameter of Ø 50 mm.	
2	Protected against access to dangerous elements with the fingers. Protected against solid foreign objects with a diameter of Ø 12,5 mm.	
3	Protected against access to dangerous elements with a tool. Protected against solid foreign objects with a diameter of Ø 2,5 mm.	
4	Protected against access to dangerous elements with a wire. Protected against solid foreign objects with a diameter of Ø 1 mm.	
5	Protected against access to dangerous elements with a wire. Dust-protected.	Penetration by dust is not fully prevented, but the dust cannot penetrate in such a quantity so as to hinder satisfactory operation of the equipment or safety.
6	Protected against access to dangerous elements with a wire. Dust-proof.	No penetration by dust.

Digit 2

0	Not protected	
1	Protected against dripping water	
2	Protected against dripping water when the housing it tilted up to 15°	
3	Protected against spraying water	Water, sprayed at an angle of up to 60° on both sides of the perpendicular; must have no damaging effect.
4	Protected against splashing water	Water sprayed from any direction against the housing may have no damaging effects.
5	Protected against water jet	Penetration by dust is not fully prevented, but the dust cannot penetrate in such a quantity so as to hinder satisfactory operation of the equipment or safety.
6	Protected against strong water jet	No penetration by dust.
7	Protected against the effects of temporary immersion in water	Water may not penetrate in a quantity that causes damaging effects if the housing is immersed in water for 30 minutes at a depth of 1 meter.
8	Protected against the effects of prolonged immersion in water	Water may not penetrate in a quantity that causes damaging effects if the housing is immersed in water permanently under conditions that have to be agreed upon by the manufacturer and the user. However, the conditions must be more difficult than for code number 7.
9K	Protected against water under high pressure, steam jet cleaning	

IEC 61373 – Rail applications | Equipment of railway vehicles – Tests for vibrations and shocks.
This international standard defines the requirements for the tests of equipment intended for use on railway vehicles that are subjected to vibrations and shocks that are normal for railway operation. To ensure that the quality of the equipment is acceptable, it has to endure tests of a reasonable duration that simulate the operating conditions during the expected service life.

Number 8/9	Vibrations, wide band vibrations
Number 10	Shocks, half-sine

EN 50155 – Railway applications | Electronic devices on railway vehicles.
Electronic components on railway vehicles are subjected to many external influences, such as temperature deviations, vibrations, shocks and strong electric fields. The standard specifies the requirements for measuring, control, regulation and safety of devices under these conditions. It covers operating conditions, dimensioning, design and testing of the electronic devices, in addition to the basic hardware and software requirements deemed necessary for an effective, reliable device.

Number 12.2.3	Cold test Ad
Number 12.2.4.	Dry heat test Bd
Number 12.2.5.	Wet heat, cyclical Db 55
Number 12.2.9.1	Insulation test
Number 12.2.9.2	Dielectric strength test
Number 12.2.10	Salt spray test Ka (Class ST3)
Number 12.2.11	Vibrations, shock and jolt tests

DIN 5510-2 – Preventive fire protection in rail vehicles | Fire behavior and fire side effects of materials and components. This standard defines the requirements for fire behavior and fire side effects (smoke and drop forming capacity) deemed necessary for the materials and components used for the construction of rail vehicles.

DIN 32974 – Acoustic signals in public traffic areas This standard assigns a functional meaning to acoustic signals – as far as possible – with signal classes that suggest appropriate action based on the signal properties (characterized, for example, by the audio frequency, clock frequency, sound pressure level, pulse frequency, signal duration, etc.); i.e. the acoustic signal should inherently indicate whether the signal is a warning, notification, release, orientation or confirmation signal.

DIN EN 50306-1 – Cables and wires for rail vehicles with improved behavior in fire The purpose of this standard is to standardize cables and wires that are safe and reliable when used correctly; to define the properties, performance and design requirements that contribute to safety directly or indirectly; and to define test procedures for compliance with these test methods

DIN EN 13272 – Electric lighting in rail vehicles used in public transportation This European standard defines the criteria for the design of electric lighting systems that apply for the interiors of rail vehicles used in public transportation under all operating conditions. The lighting must enable performance of all tasks connected with sight.

IEC 60077-1 – Railway applications – Electrical equipment on rail vehicles
Part 1: General operating conditions and general rules
Number 9.3.3.1. High-voltage test

Directive 2006/28/EG – Electromagnetic compatibility of motor-driven vehicles and their electric and electronic components EMC is an important quality characteristic of any product. Electromagnetic compatibility (EMC) of a device, system or plant refers to limiting the emission of electromagnetic interference to a degree that ensures trouble-free operation of other devices in the vicinity and also ensuring sufficient resistance to external electromagnetic interference, so that the device can be operated as intended at the planned location under the electromagnetic interference conditions to be expected there.

DIN EN 50121-3-2 – Electromagnetic compatibility – Part 3.2: Rail vehicles – Devices
This European standard defines EMC (electromagnetic compatibility) requirements for interference emissions and resistance of electric and electronic devices intended for use in rail vehicles.

DIN 75077 Motorbuses for physically-handicapped persons The purpose of this standard is to define minimum requirements for motorbuses beyond the applicable traffic regulations in order to enable the safe and comfortable transport of mobility-handicapped persons.

BN 65074 Buttons for entry doors This railway standard attempts to standardize the interface between man and machine at the passenger doors. It describes the technical requirements for a standardized door-opening button. The standard applies to entry doors in passenger trains and multiple-unit trains.

EN 14752 Railway applications – Side entry systems This standard describes the requirements for request buttons and door buttons (external and internal) for the blind and visually-impaired. The buttons must be tactile with high contrast.

Directive 2001/85/EG – Special regulations for vehicles for personal transportation with more than eight seats This directive describes special requirements for the operation and design of com munication devices at handicapped seats.

Contact

Design+Coverfoto: Jana Eilhardt
Building+Productfotos: Tobias Mense Fotodesign

Head office

ESCHA TSL GmbH
Elberfelder Str. 1
D-58553 Halver
Phone: +49 2353 66796-0
Fax: +49 2353 66796-99
www.escha-tsl.de
info@escha-tsl.de

Branch office

ESCHA TSL GmbH
Gerhard Freinik
D-65529 Waldems | Langgasse 3 a
Phone: +49 6082 929056
Fax: +49 6082 929057
Mobil: +49 175 2240098
g.freinik@escha-tsl.de

Representations

Belgium
Multiprox N. V.
Lion d'Orweg 12
B-9300 Aalst
Phone: +32 53 766566
Fax: +32 53 783977
mail@multiprox.be

China
Turck(Tianjin)Sensor Co.Ltd.
No. 18 Xinghuasizhi Road Xiqing
TEDA Tianjin 30081
VR China TJ-300385 Tianjin
Phone +86 22 83988188
Fax: +86 22 83988111
turck@public1.tpt.tj.cn

Denmark
Hans Følsgaard A/S
Theilsgaards Torv 1
DK-4600 Køge
Phone: +45 43 208600
Fax: +45 43 968855
hf@hf.net

Great Britain
TURCK Banner Ltd.
Blenheim House
Hurricane Way
GB-Wickford, Essex SS11 8YT
Phone: +44 1268 578888
Fax: +44 1268 763648
info@turckbanner.co.uk

India
TURCK India Automation Pvt. Ltd.
International Convention Centre
A-603/604, 6th Floor
ICC Trade Towers
Senapati Bapat Road
Pune-411016
Maharashtra-India
Phone: +91 9820173367
Fax: +91 2025630039
anuj.nijhawan@turck.com

Italy
Turck Banner S.r.l.
Via San Domenico 5
I-20010 Bareggio (MI)
Phone: +39 02 90364291
Fax: +39 02 90364838
info@turckbanner.it

Canada
Hirotronix Inc.
687 Sir Richard's Rd
CAN-Mississauga ON L5C 1A3
Phone: +1 905 272 0075
Fax: +1 905 270 7955
sales@hirotronix.com

South Korea
Turck Korea Co, Ltd.
Room No. 406, Gyeonggi Technopark
1271-11, Sa 1-Dong, Sangnok-Gu, Ansan
ROK426-901 Gyeonggi-Do
Phone: +82 31 5004555
Fax: +82 31 5004558
sensor@sensor.co.kr

Netherlands
Turck B.V.
Postbus 297
Ruiterlaan 7
NL-8000 AG Zwolle
Phone: +31 38 4227750
Fax: +31 38 4227451
info@turck.nl

Norway
HF DANYKO AS
Postboks 48
N-4891 Grimstad
Phone: +47 37090940
Fax: +47 37090941
danyko@hf.net

Austria
MBM Industrietechnik
Vertriebsges.m.H.
Leopold Mitterstöger-Str. 38
A-3012 Wolfsgraben
Phone: +43 2233 7282
Fax: +43 2233 728212
office@mbm-industrietechnik.at

Poland
Turck sp.zo.o
Zeromskiego 1
PL-45053 Opole
Phone: +48 77 4434800
Fax: +48 77 4434801
turck@turck.pl

Portugal
Salmon&Cia.Lda.
Rua Cova da Moura 2-6°
P-1399-033 Lisboa
Phone: +351 21 3920130
Fax: +351 21 3920189
salmon@salmon.pt

Turkey
Gökhan Elektrik
Malzemeleri Sanayi ve Ticaret LTD STI.
Perpa Elektrokent is Merkezi A Blok
K.8 No.692-694
TR-80270 Okmeydani-Istanbul
Phone: +90 212221 3236
Fax: +90 212221 3240
gokhan@gokhanelektrik.com

Russian Federation
Turck Rus OOO
Altufyevskoe shosse, 1/7
RUS-127106 Moscow
Phone: +7 495 2342661
Fax: +7 495 2342665
russia@turck.com

Sweden
HF SVERIGE AB
Kanalvägen 10c
S-19461 Upplands Väsby
Phone: +46 8 55540985
Fax: +46 8 55540987
hf.sverige@hf.net

Switzerland
Dietrich&Blum AG
Hertistrasse 31
CH-8304 Wallisellen
Phone: +41 848 300700
Fax: +41 848 300701
dbnet@dietrichundblum.ch

Slovakia
MARPEX S.R.O.
Sportovcov 672
SK-01841 Dubnica Nad Váhom
Phone: +421 42 4426986
Fax: +421 42 4426987
marpex@marpex.sk

Spain
Comercial Key, S.L.
Padilla, 216 Entl. 1
E-08013 Barcelona
Phone: +34 93 2464545
Fax: +34 93 2465509
key@comercialkey.com

Czech Republic
Turck S.R.O.
Hradecká 1151
CZ-50002 Hradec Králové
Phone: +420 49 5518766
Fax: +420 49 5518767
turck@turck.cz

Romania
TURCK Automation Romania SRL
Str. Iuliu Tetrat nr. 18, sector 1
RO-011914 Bucuresti
Phone: +40 21 2314087
Fax: +40 21 2314087
info@turck.ro

Hungary
Turck Hungary Kft.
Könyves Kalman Krt. 76
H-1087 Budapest
Phone: +36 1 4770740
Fax: +36 1 4770741
turck@turck.hu