SENSE*ABLE*™

SMART BUTTONS, TOUCH OR PUSH SENSITIVE

WE CAN STILL CALL THEM - JUST BUTTONS
More than 8000 varieties of our versatile smart buttons

Table of Contents

Touch-Buttons - at a glance

The electronic touch button measure the electric field, to detect the presence of a conductive mass for example a hand, finger, grounded metals or liquids.

As soon as a hand or finger touches the surface the button detects the presence and instantly indicates this event. Due to the physical non-pressure detection, operating the switches is very comfortable. Their 100% solid-state design with no moving parts inside allows unlimited operations with no wear. They are not affected by loose clothing, debris etc, objects which accidentally activate optical sensor types.

Push-Buttons - at a glance

The electronic push buttons utilize a special internal design, to make the sensing face insensitive to conductive mass yet sensitive to applied force. This behavior makes these buttons a perfect alternative to touch buttons which would cause false-trigger when conductive liquids come in contact to their sensing face.

All buttons come with up to two external inputs to enable the device or to drive the LEDs independently from the internal status of the button.

Features

Touch or push operation

No moving parts

Bright optical dual-color feedback

100% water- and oil-tight - IP67

Vandalism proof design - up to IK10

Shock resistant - completely sealed

Up to two external LED-enable-inputs

Fits into standard Ø22.5 mm mounting holes

Extreme lifespan
Several 100 milion operations

Touch switches have teach-in recalibration feature
Enables the integrator to change sensitivity on-site

▼ Available Symbols

#1	START #2	STOP #3	ON OFF #4[1]	RESET #5	#6	START #7	STOP #8
START STOP #9[1]	#10	#11	ON #12	OFF #13	START STOP #14[1]	#15	↓ #16
↑ #17	→ #18	← #19	#20	#21	#22	#23[1]	#24[2]
#25	#26	#27	#28	#29	#30	SOS #31	#32[1]
ON OFF #33[1]	START STOP #34[1]	#35[2]					

[1] for ´TOGGLE´ mode only.
[2] for ´COMBO´ mode only.
Customer specific symbols on request.

Touch-sensitive buttons

The touch sensitive functionality of the button enables the safe and comfortable operation of devices.

Due to their functional principle, touch devices basically show a diverse responsiveness to different materials. Therefore all touch-buttons can be re-calibrated to match different glove types by an integrator on-site.

Pressure sensitive Buttons

Pressure sensitive electronic buttons are absolutely immune to water on their touch surface. On top of that their responsiveness reduces unwanted activation caused when people lean against it.

These buttons are found in all areas where touch-buttons due to their way of operation, can not be used but the advantages of electronic buttons without movable parts are called for.

Dual color LED-feedback

All buttons are equipped with bright LEDs. These show stand-by as well as operation.

The buttons are basically available in 3 series:

3-pole connection:
The status of the LEDs is handled by the button itself. It switches automatically between both statuses.

4-pole connection:
The device contains an auxiliary input to enable functionality of the button. When this one is active the stand-by indicator lights up.
The switch to operation LED takes place automatically.

5-pole connection:
These devices contain two auxiliary inputs from which both LEDs can be switched independently from each other, as well as independently from the operation of the button.

Extreme lifespan

The consistent implementation of the full electronic design without movable parts, results in devices in which the wear can barely be determined.

Shockproof

All versions of our devices, including the pressure sensitive models, are completely filled with resin. Due to this, they are not only remarkably shock resistant, they keep sand or similar small particles from entering.

Vandalism proof design

All buttons and indicators have a housing made of stainless steel. The touch surface consists of shatterproof polycarbonate. The same material which bullet proof glass and shatterproof motor helm visors are made of.

IO-Link

Devices which support IO-Link-Protocol have many advantages: For example, devices can be centrally managed and configured from a remote PLC. During the exchange, the device parameters are automatically restored. The advantage of this feature is that the standstill period is reduced to a minimum.

On top of all this the buttons can be individually configured by IO-Link. Configuration includes operation modes (dynamic, static, toggle) as well as the emulation of the LED control inputs.

Housing models Ø22 mm

Buttons from the series Ø22 mm are available in different mechanical models:

Standard:
Modest design button made from stainless steel (1.3405).

Protector:
Derived from standard series but with an additional protective ring.

Flush:
Button made from stainless steel (1.3405) that can be flush mounted into materials with a thickness of up to 3 mm.

Hygienic:
Buttons with a bezel of stainless steel (1.4571) insure a strongly reduced angle of 35° to the mounting surface and therefore supports optimum residue free sanitation.

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▼ Dynamic Mode

Buttons with dynamic operation are used when a precise single impulse is required to start a process; a typical example would be machine operation. The dynamic circuit ensures that the impulse is generated for long enough to be recognized by the machine, but no longer than necessary.

3-pole	4-pole	5-pole
LED management is handled solely by the switch. Activating the switch turns the 'idle' LED off and the 'engaged' LED on.	The switch remains unlit as long as it has not been enabled by its corresponding input. Once the switch is enabled it turns the 'idle' LED on. Activating the switch turns the 'idle' LED off and the 'engaged' LED on.	Both LEDs are decoupled from the status of the button. Each LED has its own control input which enables or disables it at any time.

3-pole   4-pole   5-pole

Any other impulse length is possible - just ask

▼ Static Mode

Buttons with static operation, activate their output as long as the operator touches or pushes the button. They behave like simple mechanical push buttons.
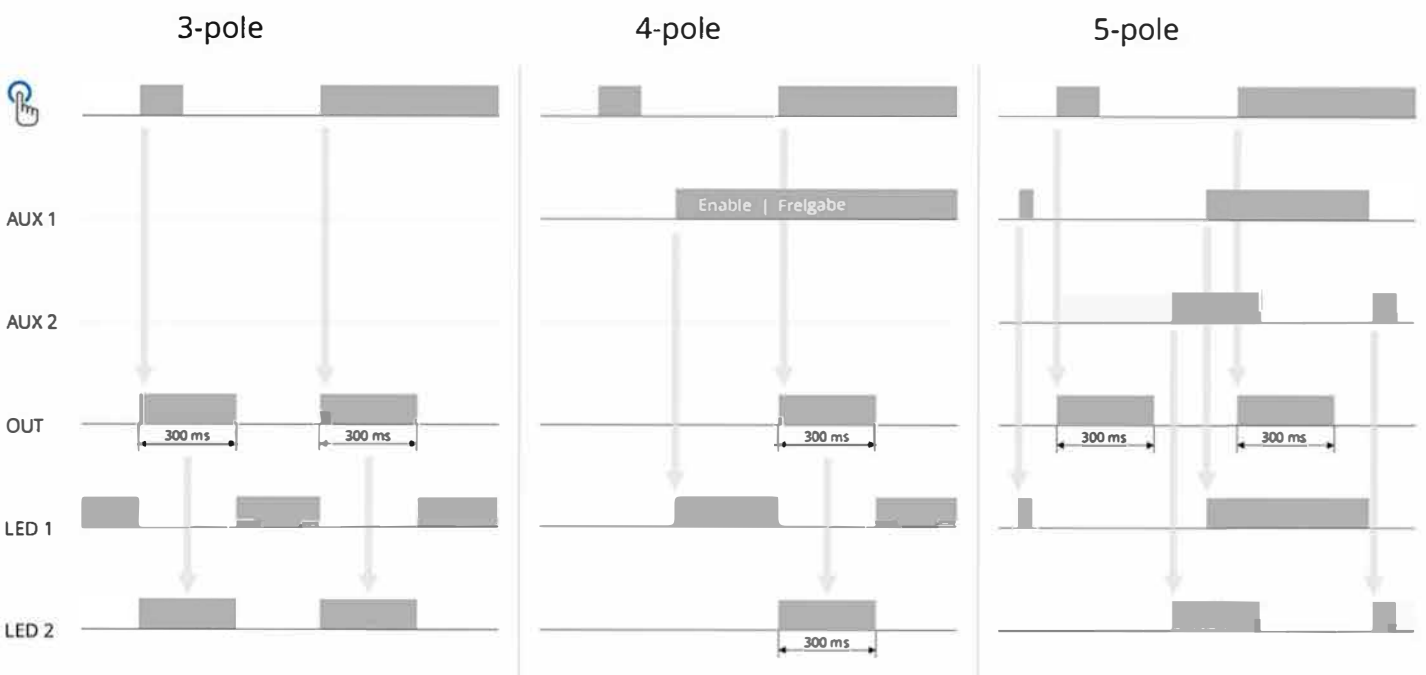
3-pole	4-pole	5-pole
LED management is handled solely by the switch. Activating the switch turns the 'idle' LED off and the 'engaged' LED on.	The switch remains unlit as long as it has not been enabled by its corresponding input. Once the switch is enabled it turns the 'idle' LED on. Activating the switch turns the 'idle' LED off and the 'engaged' LED on.	Both LEDs are decoupled from the status of the button. Each LED has its own control input which enables or disables it at any time.

3-pole

4-pole

5-pole

AUX 1

AUX 2

OUT

LED 1

LED 2

Enable | Freigabe

Functions

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▼ Toggle Mode

Buttons with toggle circuit, alter their output status every time they are activated. The output status remains latched until the next activation. When restarting after a power outage, the default status of toggle-mode switches is the safe "OFF" mode, thus avoiding unwanted activation of switched devices.
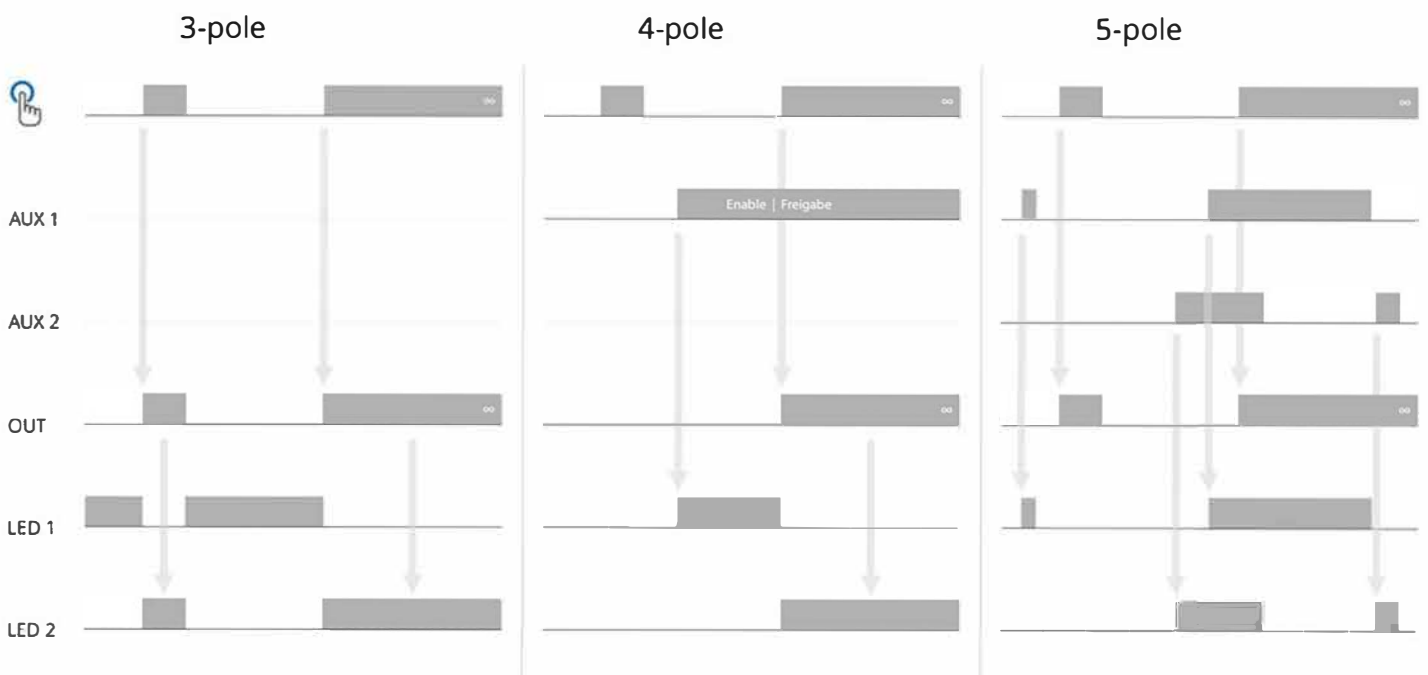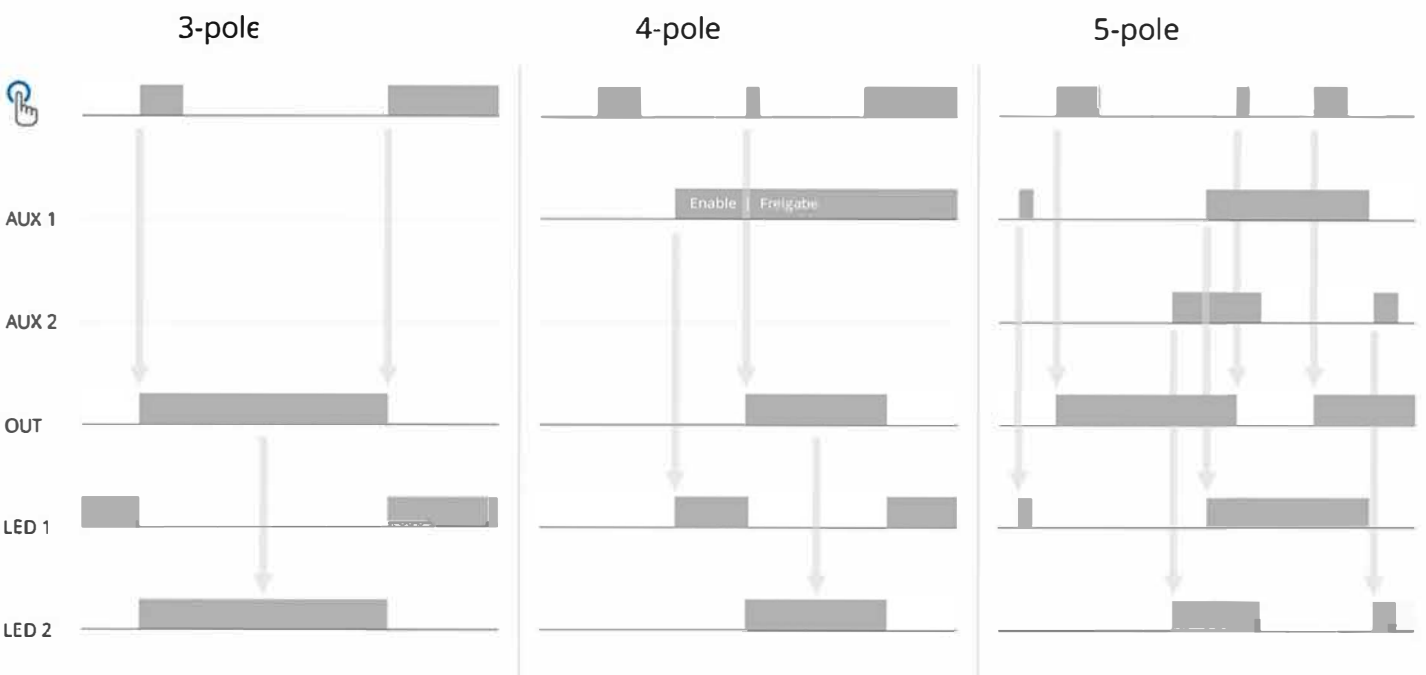
3-pole	4-pole	5-pole
LED management is handled solely by the switch. Activating the switch turns the 'idle' LED off and the 'engaged' LED on.	The switch remains unlit as long as it has not been enabled by its corresponding input. Once, the switch is enabled it turns the 'idle' LED on. Activating the switch turns the 'idle' LED off and the 'engaged' LED on.	Both LEDs are decoupled from the status of the button. Each LED has its own control input which enables or disables it at any time.

3-pole   4-pole   5-pole

AUX 1

AUX 2

OUT

LED 1

LED 2

▼ Combo Mode

Buttons with combo circuit, can be used in static mode where the output is active if the button is touched or pushed. A fast double activation latches the button in a permanent on-mode from where it can be released by an additional activation.
This mode was specifically designed to operate automatic doors or large gates that sometimes need to remain open for a longer period.
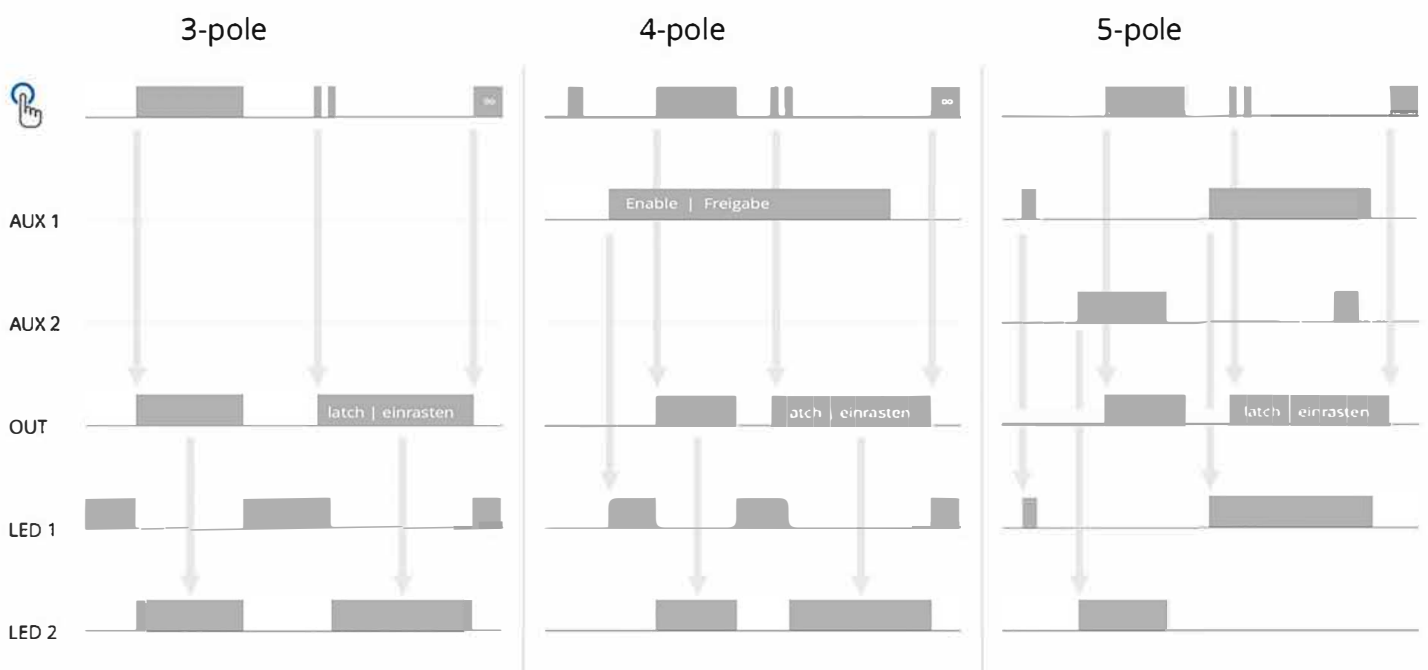
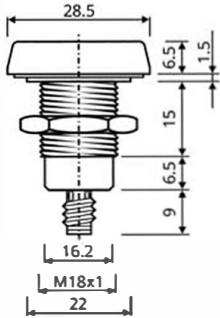| 3-pole	4-pole	5-pole
LED management is handled solely by the switch. Activating the switch turns the 'idle' LED off and the 'engaged' LED on.	The switch remains unlit as long as it has not been enabled by its corresponding input. Once the switch is enabled it turns the 'idle' LED on. Activating the switch turns the 'idle' LED off and the 'engaged' LED on.	Both LEDs are decoupled from the status of the button. Each LED has its own control input which enables or disables it at any time.

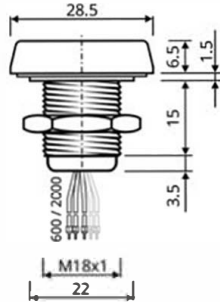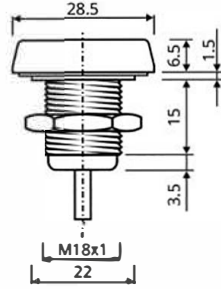### 3-pole

AUX 1	
AUX 2	
OUT	latch | einrasten
LED 1	
LED 2	

4-pole

AUX 1	Enable | Freigabe
AUX 2	
OUT	latch | einrasten
LED 1	
LED 2	

5-pole

AUX 1	
AUX 2	
OUT	latch | einrasten
LED 1	
LED 2	

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▼ Ø22 - Standard

Connector M8 | Strands | Cable | Terminal
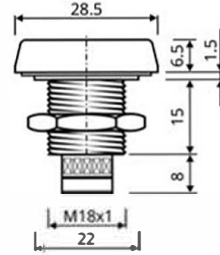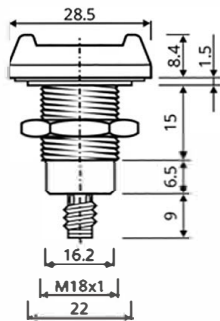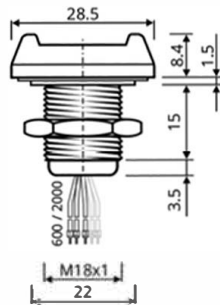

available as touch or push button and 7-color LED-indicator
all dimensions are in mm

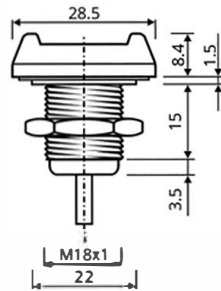## ▼ Ø22 - Protector

Connector M8 | Strands | Cable | Terminal

available as touch or push button and 7-color LED-indicator
all dimensions are in mm

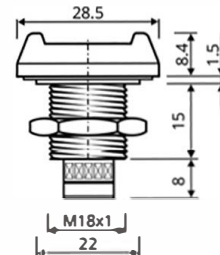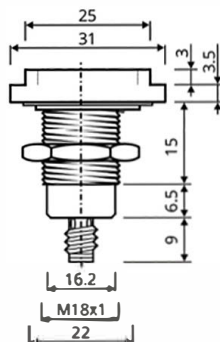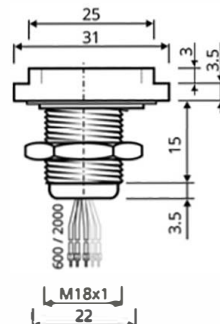## ▼ Ø22 - Flush

Connector M8 | Strands | Cable | Terminal

available as touch or push button and 7-color LED-indicator
all dimensions are in mm

▼ Ø22 - Hygienic

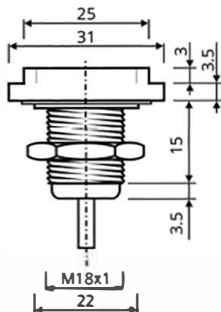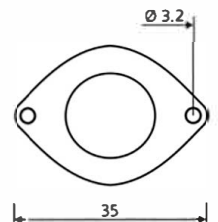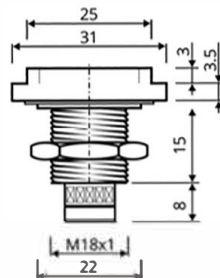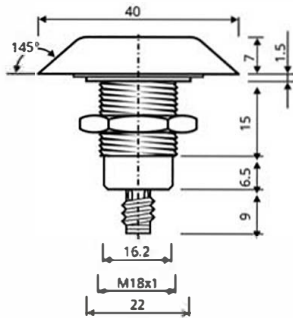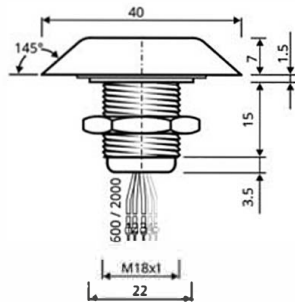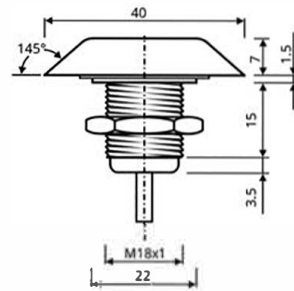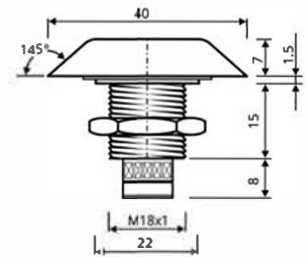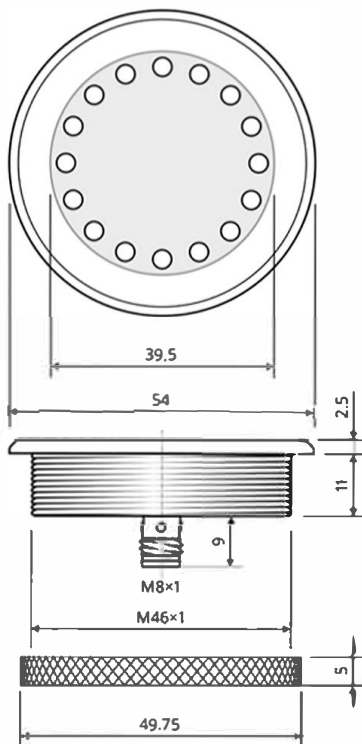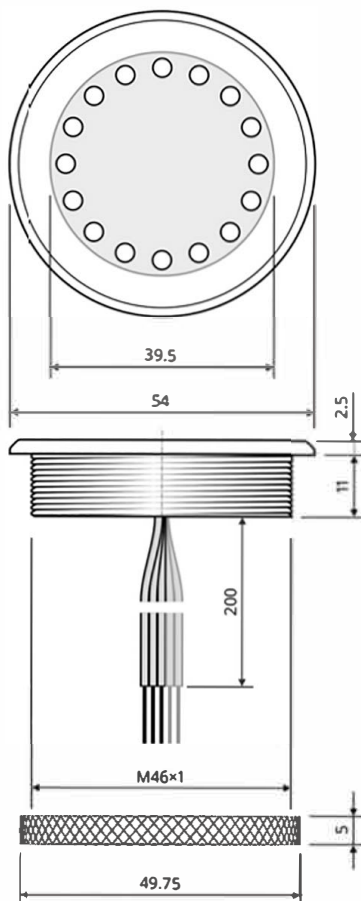| Connector M8	Strands	Cable	Terminal

available as touch or push button and 7-color LED-indicator
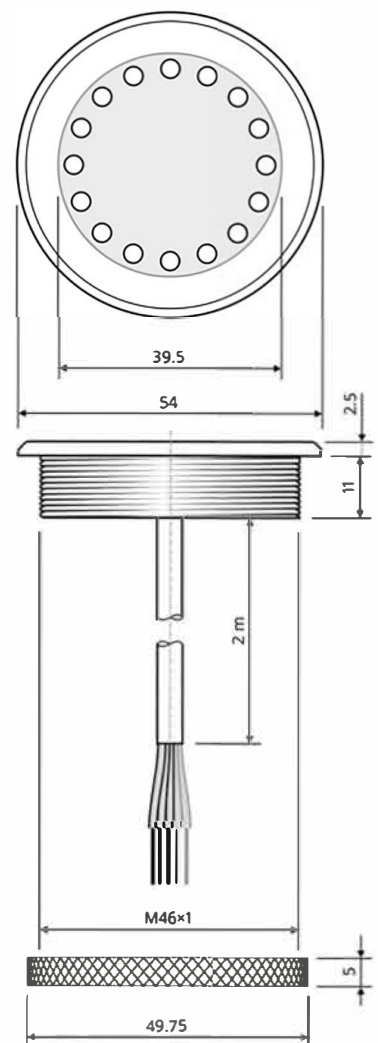all dimensions are in mm

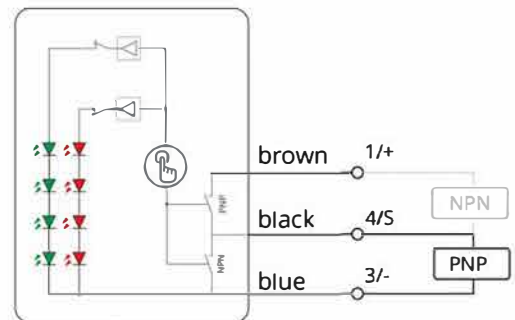## ▼ Ø46 - Standard - touch-button

Connector M8	Strands	Cable

Technical Specifications	CE
Number of Operations	Unlimited
Operating Voltage	15... 35 V$_{DC}$
Reverse Polarity Protection	built-in
Current Consumption	< 30 mA @ 24 V
Current Load Capability	200 mA
Short Circuit Protection	built-in - self-resetting
Input Voltage NPN	0...0.33 x Vcc
Input Voltage PNP	0.66 x Vcc... Vcc
Indicator Type	High Efficient LED
Operating Temperature	-25... +60 °C
IP Class Front	Ø22: IP67 | Ø46: IP69k
IP Class Back	IP67
IK Class Front	Ø22: Ik10 | Ø46: Ik09
Sensing Face Material	Polycarbonate
Housing Material	Stainless Steel '1.4305'
Bezel Material	Stainless Steel '1.4305'
	* Hygienic '1.4571'

▼ Internal schematics and external connections

3-pole connection:
The status of the LEDs is handled by the button itself. It switches automatically between both statuses.

4-pole connection:
The device contains an auxiliary input to enable functionality of the button. When this one is active the stand-by indicator lights up. The switch to operation LED takes place automatically.
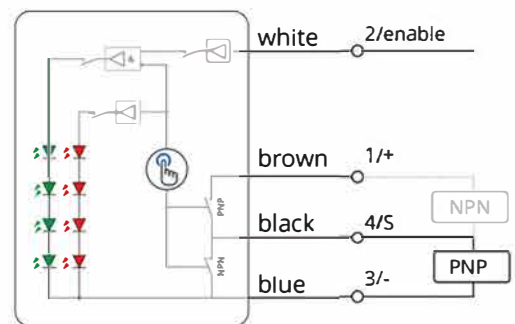
5-pole connection:
These devices contain two auxiliary inputs from which both LEDs can be switched independently from each other, as well as independently from the operation of the button.

▼ Intelligent Buttons

Housing

22
46

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Wires / Leitungen

3   3-pole

4   4-pole, Enable

5   5-pole, 2x LED
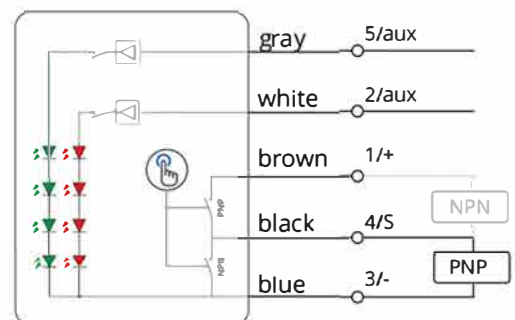
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Colors idle | engaged

GR   Green | Red

BR   Blue | Red

WG   White | Green

WR   White | Red

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Symbol

Page 4

TS 22 D - 3 P O G R - N8 #1

| Page 14	Page 7-10	Page 6 (I/O - Link)	Page 11-12
Prefix	Function	Output	Connection
See overview	D dynamic	PO PNP, NO	N8 Connector M8
	S static	PC PNP, NC	3N8 300 mm PUR, Connector M8
	T toggle	NO NPN, NO	3N12 300 mm PUR, Connector M12
	C Combo	NC NPN, NC	S200 PVC single strands, 200 cm
		IO IO-Link®	N2P PVC-Cable, 2m
			TB5 Terminal block

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Default configuration for IO-Link® is:
static operation, 3-pole, green-red.
All parameters can be changed on
protocol level.

Prefix

TS   Touch Sensitive, Standard

TP   Touch Sensitive, Protector

TF   Touch Sensitive, Flush mount

TH   Touch Sensitive, Hygienic)*

PS   Pressure Sensitive, Standard

PP   Pressure Sensitive, Protector

PF   Pressure Sensitive, Flush mount

PH   Pressure Sensitive, Hygienic

Ø22
ONLY
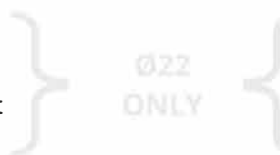
)* Note: Touch sensitive buttons are sensitive
against water on their touch surface. Keep
that in mind when you decide for this type.