

## Metal Switch Short Stroke



MCS 19 painted green



MCS 19 actuator painted green



MCS 19 stainless steel

**Description**

- Momentary switch available in version Standard, with Point Illumination, Lettering, varnished in different colours
- Assembly by mounting with nut -
- Pin connections, Pins with Soldering Aid or Clip for Pins

**Approvals**

- EMC: EMC directive 2004/108/EWG

**Characteristics**

- Housing and actuator material types: zinc die-cast with nickel plating or stainless steel
- Wide range of materials, colours, lettering, colours of illumination
- Switching voltage 48 VDC, switching current 125 mA
- Zinc die-cast for housing and actuator
  - For indoor use, no illumination, no lettering
- Stainless Steel for actuator
  - Optional point illumination and laser lettering with standard or customer-specific symbols
- Stainless Steel for housing and actuator
  - for use in harsh environments outdoors
- Varnished Version
  - Colour adjustments to customer housings possible, as standard: Signal colors red, green and yellow, optional: housing or actuator varnishing according to provided color specifications
  - the varnished actuators are sealed by transparent lacquer after the laser lettering

**Weblinks**

[html-datasheet](#), [General Product Information](#), [Approvals](#), [CE declaration of conformity](#), [RoHS](#), [CHINA-RoHS](#), [e-Shop](#), [CAD-Drawings](#), [Product News](#), [Detailed request for product](#)

**Technical Data****Electrical Data**

Supply Voltage	LED operating data are listed in separate table
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**Contact Material Silver**

Switching Voltage	min. 4 VDC , max. 48 VDC
Switching Current	max. 125 mA
Rated Switching Capacity	1.2 W
Lifetime	1 million actuations at Rated Switching Capacity
Contact Resistance	< 50 m $\Omega$ , < 150 m $\Omega$ after lifetime
Insulation Resistance	> 100 M $\Omega$
Duration of Bounce	< 5 ms

**Contact Material Gold**

Switching Voltage	min. 50 mVDC, max. 24 VDC
Switching Current	max. 80 mA
Rated Switching Capacity	0.36 W
Lifetime	1 million actuations at Rated Switching Capacity
Contact Resistance	< 50 m $\Omega$ , < 150 m $\Omega$ after lifetime
Insulation Resistance	> 100 M $\Omega$
Duration of Bounce	< 5 ms

**Mechanical Data**

Actuating Force	3.7 N
Actuating Travel	0.4 mm,
Lifetime	1 million actuations
Shock Protection	IK 05 ,
Tightening Torque	0.4 Nm with Sealing Ring, 1.5 Nm without Sealing Ring

**Climatical Data**

Operating Temperature	-20 to +60 °C
Storage Temperature	-20 to +60 °C
IP-Protection	IP 65 Front Side Contact Area, IP 40 Front Side mechanical,
Salt Spray Test (acc. to DIN 50021-SS)	24 h / 48 h / 96 h Residence Time

**Other Data**

Contact Material	Ag / Au
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**Soldering Data**

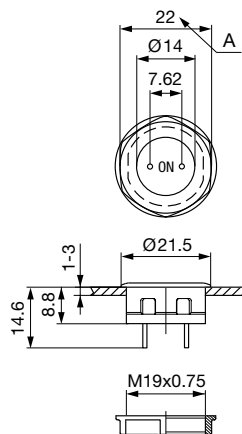
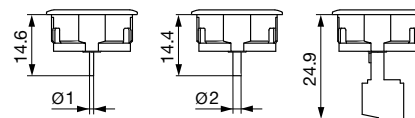
Tinning	260 °C / 2 sec according to DIN IEC 60068-2-20
Solderability	260 °C / 2 sec (IEC 68-2-20 Test Ta Method 1)
Resistance to Soldering Heat	260 °C / 5 sec (IEC 68-2-20 Test Tb Method 1A)

**Material**

Housing	Stainless Steel 1.4305 / Zinc Die Casting Nickel Plated
Actuator unlettered	Zinc Die Casting Nickel Plated
Actuator lettered	Stainless Steel
Contact	CuZn37 2,5 $\mu$ m Ag
Snap Dome	X 12 CrNi 177 gold plated
Socket	PA

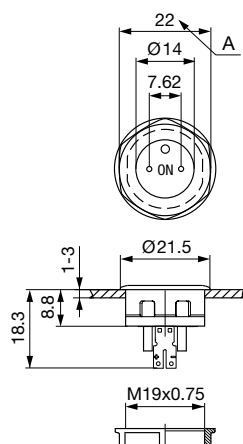
**Dimensions**

MCS 19

**MCS 19 Connection Versions**

Drawing 1: Pins  
 Drawing 2: Pins with Soldering Aid  
 Drawing 3: Clip for Pins

## MCS 19 PI



## Legend:

Zinc Die Casting Version:

x = 1 mm without sealing ring

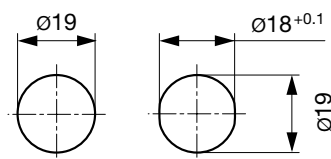
x = 2 mm with sealing ring

Stainless Steel Version:

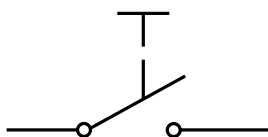
x = 1 mm without sealing ring

x = 1,7 mm with sealing ring

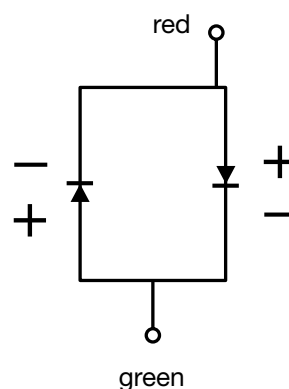
## Dimensions



## Diagrams



## MCS 19 PI Bi-colour-LED



## Point Illumination

Operating Data	Forward Current max.	Forward Voltage at 10 mA	Forward Voltage max.
LED red	30 mA	1.9 VDC	3.0 VDC
LED green	30 mA	2.1 VDC	3.0 VDC
LED yellow	30 mA	2.1 VDC	3.0 VDC
LED blue	20 mA	3.8 VDC	4.5 VDC
LED red/green	25 mA	2.0 VDC	2.5 VDC

Attention: Switches are delivered without series resistor.

## Recommendation of series resistors for point illumination

LED-Color	I <sub>D</sub> [mA]	I <sub>DMax</sub> [mA]	U <sub>D</sub> [V]*	U <sub>DMax</sub> x [V]*	U <sub>V</sub> [V]	R <sub>V</sub> [Ω]	R <sub>V</sub> <sup>E24</sup> [Ω]	P <sub>V</sub> [W]**	U <sub>V</sub> [V]	R <sub>V</sub> [Ω]	R <sub>V</sub> <sup>E24</sup> [Ω]	P <sub>V</sub> [W]**	U <sub>V</sub> [V]	R <sub>V</sub> [Ω]	R <sub>V</sub> <sup>E24</sup> [Ω]	P <sub>V</sub> [W]
red	10	---	1,9	---	5	310	330	0,03	12	1010	1000	0,10	24	2210	2200	0,22
	---	30	---	3,0		67	68	0,06		300	300	0,27		700	750	0,63
	10	---	2,1	---		290	300	0,03		990	1000	0,10		2190	2200	0,22
green	---	30	---	3,0		67	68	0,06		300	300	0,27		700	750	0,63
	10	---	2,1	---		290	300	0,03		990	1000	0,10		2190	2200	0,22
Yellow	---	30	---	3,0		67	68	0,06		300	300	0,27		700	750	0,63
	10	---	3,8	---		120	120	0,01		820	820	0,08		2020	2200	0,20
blue	---	20	---	4,5		25	27	0,01		375	390	0,15		975	1000	0,39
	10	---	2,0	---		300	300	0,03		1000	1000	0,10		2200	2200	0,22
red/green	---	25	---	2,5		100	100	0,06		380	390	0,24		860	910	0,54




I <sub>D</sub>	LED-Forward Current [10mA]
I <sub>DMax</sub>	LED-Forward Current max. [20mA/25mA/30mA]
U <sub>D</sub>	LED-Forward voltage [10mA]
U <sub>DMax</sub>	LED-Forward voltage max. [20mA/25mA/30mA]
R <sub>V</sub>	Series Resistor (calculated)
R <sub>V</sub> <sup>E24</sup>	Series Resistor (regarding E24-Resistor series)
P <sub>V</sub>	Power dissipation concerning R <sub>V</sub> (calculated)

## Lettering

The last three digits in the order number define the lettering:

000	No Lettering
001-074	Standard Lettering
101-	Customized Lettering

## Order Index Lettering

001 = <b>A</b>	021 = <b>U</b>	041 = ÷	061 = <b>EIN</b>
002 = <b>B</b>	022 = <b>V</b>	042 = *	062 = <b>AUS</b>
003 = <b>C</b>	023 = <b>W</b>	043 = =	063 = <b>AUF</b>
004 = <b>D</b>	024 = <b>X</b>	044 = #	064 = <b>AB</b>
005 = <b>E</b>	025 = <b>Y</b>	045 = ↔	065 = <b>ON</b>
006 = <b>F</b>	026 = <b>Z</b>	046 = †	066 = <b>OFF</b>
007 = <b>G</b>	027 = <b>0</b>	047 = →	067 = <b>UP</b>
008 = <b>H</b>	028 = <b>1</b>	048 = ←	068 = <b>DOWN</b>
009 = <b>I</b>	029 = <b>2</b>	049 = ↓	069 = <b>HIGH</b>
010 = <b>J</b>	030 = <b>3</b>	050 = ↑	070 = <b>LOW</b>
011 = <b>K</b>	031 = <b>4</b>	051 = %	071 = <b>ON/OFF</b>
012 = <b>L</b>	032 = <b>5</b>	052 = √	072 = <b>START</b>
013 = <b>M</b>	033 = <b>6</b>	053 = <b>CTRL</b>	073 = <b>RESET</b>
014 = <b>N</b>	034 = <b>7</b>	054 = <b>RETURN</b>	074 = 
015 = <b>O</b>	035 = <b>8</b>	055 = <b>SHIFT</b>	075 = 
016 = <b>P</b>	036 = <b>9</b>	056 = <b>LOCK</b>	076 = 
017 = <b>Q</b>	037 = <b>+</b>	057 = <b>STOP</b>	
018 = <b>R</b>	038 = <b>-</b>	058 = <b>ENTER</b>	
019 = <b>S</b>	039 = <b>.</b>	059 = <b>BACK</b>	
020 = <b>T</b>	040 = <b>x</b>	060 = <b>LINE</b>	

## Lettering Colour of Laser Lettering

Material	Lettering Colour	
Stainless Steel	black	Filled letters

For further Lettering details see also weblink:

[General Product Information](#)

## Variants

Terminal	Kontakte	Housing Material	Actuator Material	Lettering	Illumination	Color LED	Config. Code	Bestellnummer
Pins	Ag	Zinc Diecasting	Zinc Diecasting	without Lettering	non-illuminated	-	MCS 19 Zinc	1241.2800
Pins with Solde- ring Aid	Ag	Zinc Diecasting	Zinc Diecasting	without Lettering	non-illuminated	-	MCS 19 Zinc	1241.2801
Clip for Pins	Ag	Zinc Diecasting	Zinc Diecasting	without Lettering	non-illuminated	-	MCS 19 Zinc	1241.2802
Pins	Ag	Zinc Diecasting	Stainless Steel	without Lettering	non-illuminated	-	MCS 19 Zinc/Stainless Steel	1241.2805
Pins	Ag	Zinc Diecasting	Stainless Steel	with Lettering	non-illuminated	-	MCS 19 Zinc/Stainless Steel	1241.2805.057
Pins with Solde- ring Aid	Ag	Zinc Diecasting	Stainless Steel	without Lettering	non-illuminated	-	MCS 19 Zinc/Stainless Steel	1241.2806
Clip for Pins	Ag	Zinc Diecasting	Stainless Steel	without Lettering	non-illuminated	-	MCS 19 Zinc/Stainless Steel	1241.2807
Pins	Au	Zinc Diecasting	Zinc Diecasting	without Lettering	non-illuminated	-	MCS 19 Zinc	1241.2810
Clip for Pins	Au	Zinc Diecasting	Zinc Diecasting	without Lettering	non-illuminated	-	MCS 19 Zinc	1241.2812
Pins	Au	Zinc Diecasting	Stainless Steel	without Lettering	non-illuminated	-	MCS 19 Zinc/Stainless Steel	1241.2815
Clip for Pins	Au	Zinc Diecasting	Stainless Steel	without Lettering	non-illuminated	-	MCS 19 Zinc/Stainless Steel	1241.2817
Pins	Ag	Stainless Steel	Stainless Steel	without Lettering	non-illuminated	-	MCS 19 Stainless Steel	1241.2820
Pins with Solde- ring Aid	Ag	Stainless Steel	Stainless Steel	without Lettering	non-illuminated	-	MCS 19 Stainless Steel	1241.2821
Clip for Pins	Ag	Stainless Steel	Stainless Steel	without Lettering	non-illuminated	-	MCS 19 Stainless Steel	1241.2822
Clip for Pins	Au	Stainless Steel	Stainless Steel	without Lettering	non-illuminated	-	MCS 19 Stainless Steel	1241.2827
Pins with Solde- ring Aid	Ag	Stainless Steel	Stainless Steel	without Lettering	Point Illumination	red	MCS 19 PI	1241.2830
Pins with Solde- ring Aid	Ag	Stainless Steel	Stainless Steel	without Lettering	Point Illumination	green	MCS 19 PI	1241.2831
Pins with Solde- ring Aid	Ag	Stainless Steel	Stainless Steel	without Lettering	Point Illumination	yellow	MCS 19 PI	1241.2832
Pins with Solde- ring Aid	Ag	Stainless Steel	Stainless Steel	without Lettering	Point Illumination	red / green	MCS 19 PI	1241.2833
Pins with Solde- ring Aid	Ag	Zinc Diecasting	Stainless Steel	without Lettering	Point Illumination	red	MCS 19 PI	1241.2855
Pins with Solde- ring Aid	Ag	Zinc Diecasting	Stainless Steel	without Lettering	Point Illumination	green	MCS 19 PI	1241.2856
Pins with Solde- ring Aid	Ag	Zinc Diecasting	Stainless Steel	without Lettering	Point Illumination	yellow	MCS 19 PI	1241.2857
Pins with Solde- ring Aid	Ag	Zinc Diecasting	Stainless Steel	without Lettering	Point Illumination	red / green	MCS 19 PI	1241.2858
Pins with Solde- ring Aid	Ag	Zinc Diecasting	Stainless Steel	without Lettering	Point Illumination	blue	MCS 19 PIPI	1241.2859
Pins with Solde- ring Aid	Ag	Zinc Dieca- sting, varnished	Stainless Steel	without Lettering	non-illuminated	-	MCS 19 Housing Var- nished	1241.2874.5

Order numbers MCS 19, varnished versions (Colour of the switch housing or the actuator): 1241.28XX.A => A = 1 (yellow) / 3 (red) / 5 (green)

Order numbers MCS 19, illuminated versions (Point Illumination): 1241.2876.A.XXX.B and respectively 1241.2880.A.XXX.B => B = 1 (red) / 2 (green) / 3 (yellow) / 4 (blue) / 5 (red-green)

For Lettering versions see tables "Lettering" and "Order Index Lettering" to determine the symbol

Plastic nut with gasket are enclosed in the box.

**Packaging unit** 20 , in box with insert (20 pcs, with connecting terminal 10 pcs.)



- Actuating elements in ESD safe packaging
- Screw nuts and sealing rings in a bag (enclosed in the box)



- Actuating elements in ESD safe packaging
- Screw nuts and sealing rings in a bag (enclosed in the box)

## Accessories

### Description



Connecting Terminal MCS 19  
Connecting Terminal