

Product Manual

Vandal resistant switch MCS 30

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## 1 DESCRIPTION

The switch has a mounting diameter of 30 mm. The switch front surface is very flat thus minimizing the exposure to vandalism. The MCS 30 with ring illumination provides excellent tactile feeling when actuated.

The integrated ring illumination is available in various illumination colors.

Customized laser printing, pictures or text can be designed for the stainless steel actuator.

The attached nut and sealing ring enables a quick and sealed installation into the front panel.

## 2 TECHNICAL DATA AND DIMENSIONAL DRAWINGS

### 2.1 Technical Data

<u>Electrical Data</u>		Contact Material Silver
Switching Voltage max.	(V <sub>DC</sub> )	48
Switching Voltage min.	(V <sub>DC</sub> )	4
Switching Current max.	(mA)	125
Rated Breaking Capacity	(W)	1.2
Lifetime (at Rated Breaking Capacity)	(mill.)	1
Initial Contact Resistance new	(mΩ)	≤ 50
Initial Contact Resistance (after 1 mill.)	(mΩ)	≤ 150
Insulation Resistance	(kΩ)	> 100'000
Duration of Bounce typ.	(ms)	< 5

<u>Mechanical Data</u>		
Actuating Force min.	(N)	3.7
Actuating Travel	(mm)	0.4
Lifetime	(mill.)	1

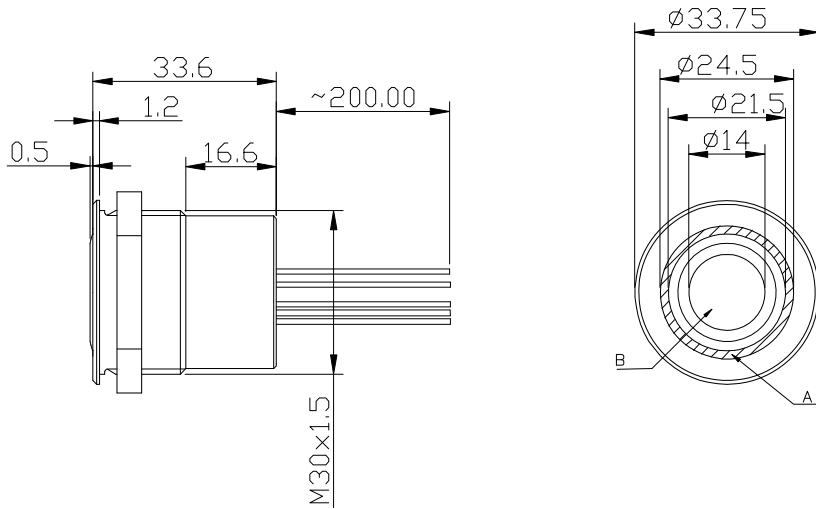
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<b>Climatical Data</b>		
Operating Temperature	(°C)	-20 to +60
Storage Temperature	(°C)	-20 to +60

<b>Ring Illumination</b>				
	Forward current max. (mA)	Forward Voltage at IF=10 mA (VDC)	Light Intensity at IF=20 mA (mcd)	Wavelength group IF = 20 mA (nm)
Operating Data <b>LED red</b>	20	typ 2.0 max. 2.3	71 bis 180	645
Operating Data <b>LED green</b>	20	typ 3.3 max. 4.2	180 bis 224	523
Operating Data <b>LED yellow</b>	20	typ 2.0 max. 2.4	112 bis 280	591
Operating Data <b>LED blue</b>	20	typ 3.5 max. 3.9	35,5 bis 90	465
Operating Data <b>LED white</b>	25	typ 3.5 max. 4.2	90 bis 180	

<b>Materials</b>	
<b>Component</b>	<b>Material</b>
Housing of switch	Zinc diecasting nickel plated
Actuator unlettered	Zinc diecasting nickel plated
Actuator lettered	Stainless steel 1.4305
Illumination housing	Aluminium anodized

## 2.2 Component Dimensions



### Legend:

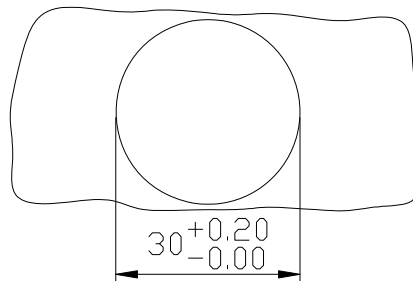
- A = Illumination Area
- B = Actuating Area
- C = Width Across Flats

### Lettering:

- optional with and without lettering
- location of the wires to the location of the lettering is not defined

## 2.3 Drilling Diagram

Front panel drilling



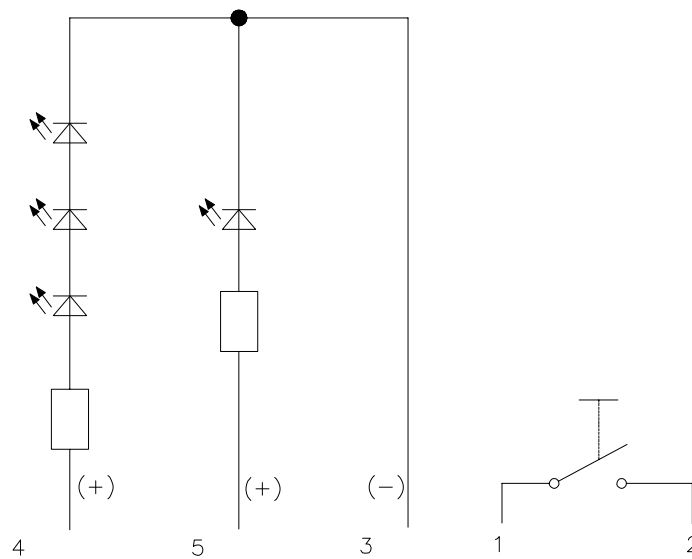
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## 2.4 Terminal Assignment

For 12 V and 24 V power requirement:

On the connection side the switch has 4 or 5 wires depending on the type of illumination. The colours of the wire 4 and 5 correspond with the illumination colours. The wire 3 (black) is the command ground. Cable 1 und 2 (2-times white) are input and output of the switch.



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### 3 PART NUMBERS

#### 3.1 24 V Version

Part number	Version	Illumination	Power requirement
1241.6400	Standard without lettering	red	24 V
1241.6401	Standard without lettering	green	24 V
1241.6402	Standard without lettering	yellow	24 V
1241.6403	Standard without lettering	red - green	24 V
1241.6404	Standard without lettering	blue	24 V
1241.6405.XXX	Standard with lettering	red	24 V
1241.6406.XXX	Standard with lettering	green	24 V
1241.6407.XXX	Standard with lettering	yellow	24 V
1241.6408.XXX	Standard with lettering	red - green	24 V
1241.6409.XXX	Standard with lettering	blue	24 V

----- Legend index (see page 8)

#### 3.2 12 V Version

Part number	Version	Illumination	Power requirement
<i>1241.6421</i>	<i>Standard without lettering</i>	<i>red</i>	<i>12 V</i>
<i>1241.6422</i>	<i>Standard without lettering</i>	<i>green</i>	<i>12 V</i>
<i>1241.6423</i>	<i>Standard without lettering</i>	<i>yellow</i>	<i>12 V</i>
<i>1241.6424</i>	<i>Standard without lettering</i>	<i>red - green</i>	<i>12 V</i>
<i>1241.6425</i>	<i>Standard without lettering</i>	<i>blue</i>	<i>12 V</i>
<i>1241.6426.XXX</i>	<i>Standard with lettering</i>	<i>red</i>	<i>12 V</i>
<i>1241.6427.XXX</i>	<i>Standard with lettering</i>	<i>green</i>	<i>12 V</i>
<i>1241.6428.XXX</i>	<i>Standard with lettering</i>	<i>yellow</i>	<i>12 V</i>
<i>1241.6429.XXX</i>	<i>Standard with lettering</i>	<i>red - green</i>	<i>12 V</i>
<i>1241.6430.XXX</i>	<i>Standard with lettering</i>	<i>blue</i>	<i>12 V</i>

----- Legend index (see page 8)

➤ *Items in italics are available upon request*

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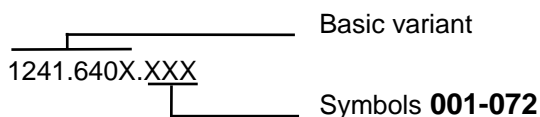
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### 3.3 Lettering

The last three digits in the part no. define the lettering.

000	No lettering
001-072	Standard lettering
101-	Customized lettering

#### Example for lettering



#### Ordering indices for lettering

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

### 3.4 Font Size

<b>Single characters:</b>	height 5 mm, font size: Helvetica normal DIN1451 E1
<b>Legends, max. 6 characters:</b>	height 2,5 mm, font size: Helvetica condensed DIN1451-3E
<b>Symbols (Indices 037-052):</b>	capitals height 5 mm, font size: True Type, Symbol

### 3.5 Standard Colour for Lettering

Stainless steel: black (filled lettering)

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## 4 PACKAGING

### MSC 30 Metallic Switch

MSC 30	Air cushion bag 1 piece	20 pieces per box
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Nuts with sealing rings are packaged separately and are enclosed in the box.



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## 5 QUALIFICATION TESTS

### 5.1 IP Protection Class

IP Degree of Protection IEC/DIN/EN/ 60529	Switch Front side	IP 40
	Switching Unit	IP 65
	Illumination	IP 67

### 5.2 IK Protection Class

Test carried out centrally.

IK Protection Class DIN EN 50102	IK 05
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### 5.3 Salt Spray Test

*The salt spray test is only valid for the actuating element and not for the complete switch.*

#### Stainless steel version

Salt spray test according to DIN 50021- SS  
24h, 48h and 96h residence time

The surface of the stainless steel material is covered with a molecular-passiv layer. Only under very unfavourable conditions, it is possible that iron and rust molecules as well as base metals penetrate the passive layer as foreign substances (pollutions) and initiate the rust process.

The actuation of the switch was not affected. After the residence time the tested samples were cleaned under running water and all rust spots could be removed.

#### Zinc diecasting nickel-plated

Salt spray test according to DIN 50021- SS  
24h residence time

The surface of the zinc diecasting version shows no signs off corrosion.

## 6 ROHS COMPLIANT

All articles are ROHS-compliant.



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