VANDAL-PROOF MECHANICAL SWITCHES

Along with the Piezo switches SCHURTER also has vandal-proof mechanical switches in its product range. These metal switches are distinquished by their attractive design, high quality, robust workmanship and cost-effectiveness.





Standard Versions Other Versions (as well as laser labeling) on request.	M19 MCS Metallic		M19 MCS Metallic illuminated	
	Without Legend	**With Legend**	**Without Legend**	**With Legend**
Housing material	zinc diecasting	zinc diecasting	zinc diecasting	zinc diecasting
Actuation material	zinc diecasting	stainless steel	stainless steel	stainless steel
Switching function	N.O.	N.O.	N.O.	N.O.
Point Illumination	—	—	●	●
Contact material	silver	N.O.	silver	silver
Nut and O-ring seal	All switches are supplied with nut and O-ring seal			
Part numbers				
Pins — Pins	1241.2800	1241.2805.xxx		
Pins with soldering aids	1241.2801	1241.2806.xxx	●	●
Clamp of threaded terminal	1241.2802	1241.2807.xxx	—	—
Contact maker — Solder terminal	—	—	—	—
Solder plug-type connections 1 pole	—	—	—	—
Solder plug-type connections 2 pole	—	—	—	—
Color of housing — natural	●	—	●	●
black	—	—	—	—
green	—	—	—	—
blue	—	—	—	—
red	—	—	—	—
gold	—	—	—	—
Color of actuator — red	—	—	—	—
green	—	—	—	—
gold	—	—	—	—
natural	●	—	●	●
Color of LED — red	—	—	1241.2855	1241.2855.xxx
green	—	—	1241.2856	1241.2856.xxx
yellow	—	—	1241.2857	1241.2857.xxx
red/green	—	—	1241.2858	1241.2858.xxx

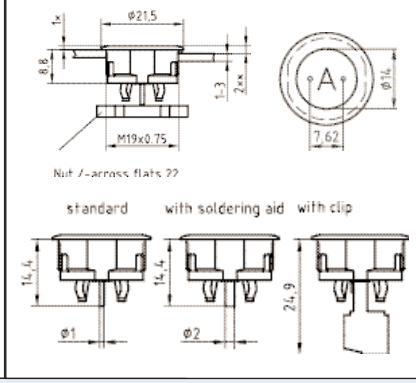
Point illumination MCS 19:

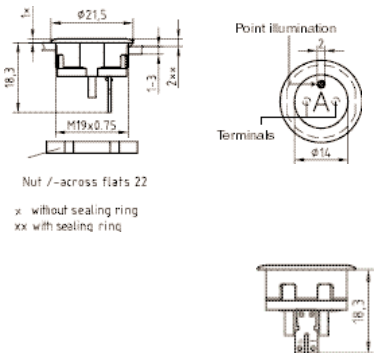
Data of standard LEDs (without built-in resistor)



Bi-Color

Color	Current mA (max.)	Voltage V (IF=10 mA)	Voltage V (IF 20 mA)
red	45	1.6	-
green	45	2.0	-
yellow	45	2.0	-
red/green	45	-	2/2.2



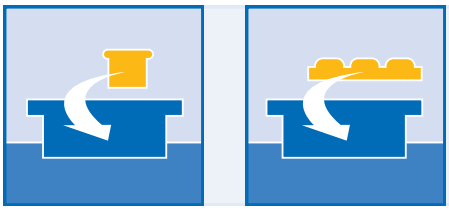


Technical Data For Mechanical Switches

Electrical data	MCS 19		LDT Metallic	SLX / SLV
Contact material	gold*[1]	silver	–	gold
Switching voltage max.	24 VDC	48 VDC	50 VDC	48 V AC/DC
Switching voltage min.	50 mVDC	4 VDC	100 mVDC	0,5 V
Switching current max.	80 mA	125 mA	200 mA	100 mA
Rated breaking capacity	0,36 W	0,72 W	1,2 W	1 W
Lifetime (at rated breaking capacity)	10^6 cycles	10^6 cycles	10^5 cycles	10^6 cycles
Initial contact resistance new	< 50 m	< 50 m	< 20 m	< 100 m
Initial contact resistance after lifetime	< 150 m	< 150 m	> 25 m	> 1
Isolation resistance (IEC 512-2)	> 10^8	> 10^8	> 10^{10}	–
Contact bounce	typ. < 5 ms	typ. < 5 ms	typ. 0,5 ms	100 ms

Mechanical data			
Min. actuation force	3,7 N	1,5 ± 0,3 N	3 N
Contact travel	0,4 mm	2 mm	3 mm
Degree of protection	switching unit IP 65	front side: IP	IP 65
Degree of protection for external mechanical use after DIN EN 50102	IK 05	67 –	–

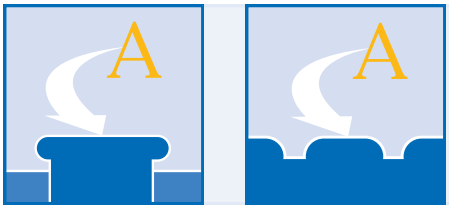
Climatic data			
Operating temperature	-20°C to +60°C	-25°C to +85°C	-30°C to +70°C
Storage temperature	-25°C to +60°C	-25°C to +85°C	-50°C to +85°C



INTEGRATION ALS SYSTEMLÖSUNG
INTEGRATION AS SYSTEM SOLUTION

Entsprechend den kundenspezifischen Anforderungen liefert Schurter auch komplette Funktionseinheiten. Hierbei werden die Taster oder Tastaturen in Ihre individuelle Gehäusefront eingebaut. Für die Integration weiterer Bauteile und Elektronik-Baugruppen bietet Schurter auch fertig assemblierte Systemlösungen. Wie beispielsweise die Tischausführung für Metallic Panel Tastaturen: Hier wird das Eingabesystem in ein Pultgehäuse mit integriertem Trackball für die Mouse-steuerung eingebaut.

In line with customer requirements, *Schurter also offers complete function units. The switches or keypads are installed in your specific front panel. Schurter additionally offers completely assembled system solutions for integration of further components and electronic modules. An example is the desktop version for Metallic Panel keypads: the input system is installed in a desktop housing with integral trackball for mouse control.*



BESCHRIFTUNG
LETTERING

Abhängig von Einsatzgebiet und Schrifttype bieten sich unterschiedliche Möglichkeiten der Beschriftung an.

Taster und PC-Tastaturen werden standardmäßig mit dem Laser beschriftet. Für spezielle Anwendungen kann die Beschriftung auch durch Ätzen oder Gravieren mit farbiger Unterlegung erfolgen.

Die PC-Tastaturen werden im deutschen, englischen und US-Layout ebenfalls generell laserbeschriftet. Weitere länderspezifische Beschriftungen werden auf Kundenwunsch ab Werk angeboten.

Zur Beschriftung der Taster können folgende Standards eingesetzt werden:

Depending on the application and font, *there are various lettering possibilities.*

Switches and PC keypads are laser-lettered as standard. For special applications, the lettering can also be etched or engraved with a coloured background.

PC keypads are also laser-lettered with German, British or U.S. layouts. Further country-specific letterings are available on request.

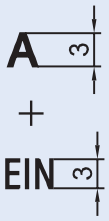
The following standards can be used for key letterings:

BESTELL-INDIZES BESCHRIFTUNG
ORDER INDEX LETTERING

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

Symbole 053-060 und 067-072 nur für MCS19 Metallic und MCS30 ringbeleuchtet

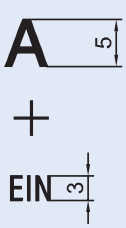
Symbols 053-060 and 067-072 only for MCS19 Metallic and MCS30 ring illuminated



PSE M16 ANZEIGEELEMENT
PSE M16 INDICATOR

- **Einzelne Schriftzeichen: Helvetica normal DIN 1451-1E**
- **Symbole (037-052): True-Type-Schrift Symbol, Versalhöhe 3 mm**
- **Schriftzüge mit max. 3 Zeichen in Linie: Helvetica normal DIN 1451-1E**

- *Single characters: Helvetica normal DIN 1451-1E*
- *Symbols (037-052): True Type symbol, capitals height 3 mm*
- *Legends with max. 3 characters in a line: Helvetica normal DIN 1451-1E*



PSE M16 UNBELEUCHTET, M19, M24/27/30 RINGBELEUCHTET
PSE M16 NON-ILLUMINATED, M19, M24/27/30 RING ILLUMINATED

- **Einzelne Schriftzeichen: Helvetica normal DIN 1451-1E**
- **Symbole (037-052): True-Type-Schrift Symbol, Versalhöhe 5 mm**
- **Schriftzüge mit max. 3 Zeichen in Linie: Helvetica normal DIN 1451-1E**

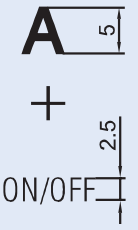
- *Single characters: Helvetica normal DIN 1451-1E*
- *Symbols (037-052): True Type symbol, capitals height 5 mm*
- *Legends with max. 3 characters in a line: Helvetica normal DIN 1451-1E*



PSE eT, M22 BELEUCHTET / UNBELEUCHTET
PSE eT, M22 ILLUMINATED / NON-ILLUMINATED

- **Einzelne Schriftzeichen: Helvetica normal DIN 1451-1E**
- **Symbole (037-052): True-Type-Schrift Symbol, Versalhöhe 5 mm**
- **Schriftzüge mit max. 3 Zeichen in Linie: Helvetica normal DIN 1451-1E**

- *Single characters: Helvetica normal DIN 1451-1E*
- *Symbols (037-052): True Type symbol, capitals height 5 mm*
- *Legends with max. 3 characters in a line: Helvetica normal DIN 1451-1E*



MCS19 METALLIC, MCS30 RINGBELEUCHTET
MCS19 METALLIC, MCS30 RING ILLUMINATED

- **Einzelne Schriftzeichen: Helvetica normal DIN 1451-1E**
- **Symbole (037-052): True-Type-Schrift Symbol, Versalhöhe 5 mm**
- **Schriftzüge mit max. 6 Zeichen in Linie: Helvetica condensed DIN 1451-3E**

- *Single characters: Helvetica normal DIN 1451-1E*
- *Symbols (037-052): True Type symbol, capitals height 5 mm*
- *Legends with max. 6 characters in a line: Helvetica condensed DIN 1451-3E*

STANDARDFARBEN FÜR BESCHRIFTUNG
STANDARD COLOUR FOR LETTERING

- **Edelstahl: schwarz, Schrift gefüllt**
- **Alu natur: grau, Schrift gefüllt**
- **Alu eloxiert: weiß, Schrift gefüllt**
- **Kunststoff: auf Anfrage**

Alu natur nur nach Kundenfreigabe

- *Stainless steel: black, filled lettering*
- *Alu natural: grey, filled lettering*
- *Alu anodized: white, filled lettering*
- *Plastic: on request*

Alu natural only after receipt of technical release statement of the customer

KENNWERTE MECHANISCHE TASTER
DATA VANDALPROOF MECHANICAL SWITCHES



VORTEILE *BENEFITS*

- **Robuste Verarbeitung** *Rugged design*
- **Schutz gegen Vandalismus** *Protection against vandalism*
- **Beste Qualität und hohe Lebensdauer durch hochwertige Materialien**
  Highest quality and long service life due to high-quality materials
- **Sichere taktile Eingabe-Rückmeldung**
  Reliable tactile feedback of input
- **Hervorragendes Preis-Leistungs-Verhältnis**
  Exceptional price/performance ratio
- **Variable Farbgestaltung und Beschriftung**
  Versatile colourdesign and lettering

		MCS18/22 ES	MCS19	SSM	MCS30
Elektrische Kennwerte *Electrical data:*					
Kontaktmaterial		gold	silber*	Au/Ni	silber*
Contact material		gold	silver*	Au/Ni	silver*
Schaltspannung max.	[VDC]	24	48	50	48
Switching voltage max.					
Schaltspannung min.	[VDC]	50 mV	4 V	3	4 V
Switching voltage min.					
Schaltstrom max.	[mA]	50	125	50	125
Switching current max.					
Nennschaltleistung	[W]	1.2	0.72	2.5	
Rated breaking capacity					
Lebensdauer (bei Nennschaltleistung)	[10^6]	0.3	1	20	1
Lifetime (at rated braking capacity)					
Durchgangswiderstand neu	[m]	< 10	< 50		< 50
Initial contact resistance new					
Durchgangswiderstand nach Lebensdauer 1 Mio.	[m]	< 30	< 150		< 150
Initial contact resistance after lifetime 1 Mio.					
Isolationswiderstand (IEC 512-2)	[ ]	> 10^8	> 10^8		> 10^8
Insulation resistance					
Prellzeit	[ms]	< 5	< 5	1	< 5
Contact bounce					
Mechanische Kennwerte *Mechanical data:*					
Betätigungskraft	[N]	2.8	3.7	2.8	3.7
Actuating force					
Betätigungsweg	[mm]	1.7	0.4	0.3	0.4
Contact travel					
Schutzklasse	[IP]	40	40 Frontside 65 Switch	65 Frontside 40 Rear	40 Frontside 65 Switch
Degree of protection					
Schutz gegen äußere mech. Beanspruchung (DIN EN 50102)	[IK]	IK 07	IK 05	IK 03	IK 05
Protection against external mechanical use (DIN EN 50102)					
Klimatische Kennwerte *Climatic data:*					
Betriebs-/Lagertemperatur	[°C]	-25 - +85	-25 - +60	-40 - +85	-25 - +60
Operating/storage temperature					