CERTIFICATE

Issued to: Applicant: Marquardt GmbH Schloss-Strasse 16 78604 Rietheim-Weilheim, Germany

Licensee: Marquardt GmbH Schloss-Strasse 16 78604 Rietheim-Weilheim, Germany

Product	:	Rocker and toggle switches
Trade name(s)	:	MARQUARDT
Type(s)/model(s)	:	18 SERIES

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of

- a type test according to the standard EN IEC 61058-1:2018 and EN 61058-1-1/2016
- an inspection of the production location according to CENELEC Operational Document CIG 021
- a certification agreement with the number 983346

DEKRA hereby grants the right to use the ENEC certification mark

The ENEC certification mark may be applied to the product as specified in this certificate for the duration of the ENEC certification agreement and under the conditions of the ENEC certification agreement.

This certificate is issued on 15 January 2019 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 71-106704

DEKRA Certification B.V.

B.T.M. Holtus Managing Director

© Integral publication of this certificate is allowed

ACCREDITED BY THE DUTCH ACCREDITATION COUNCIL

K. Lin Certification Manager







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BEKRA



ProductRocker and toggle switchesTrade name(s):Type(s)/model(s):MARQUARDTType(s)/model(s):1800, 1801, 1802,, 1803, 1804, 1805, 1806, 1808, 1809, 1811, 1812, 1813, 1814, 1818, 1819, 1821, 1822, 1823, 1824, 1828, 1829, 1850, 1852, 1855, 1858, 1881, and 1883.Type of switch:Contact opening:-full disconnection - micro disconnection (pattern nos. 4 and 4/2)Class:Degree of protection:Degree of protection:IP40Degree of pollution:3Category to heat and fire insulting material:Treminals:-:-:-:Category to heat and fire insulting material::	Product data	
Trade name(s) : MARQUARDT Type(s)/model(s) : 1800., 1801., 1802., 1803., 1804., 1805., 1806., 1809., 1809., 1811., 1812., 1813., 1814., 1819., 1821., 1822., 1823., 1824., 1828.,		· Rocker and toggle switches
Type(s)/model(s) : 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1808, 1809, 1811, 1812, 1813, 1814, 1818, 1819, 1821, 1822, 1823, 1824, 1828, 1		
1811., 1812., 1813., 1814., 1818., 1819., 1821., 1822., 1823., 1824., 1828., 1829., 1850., 1855., 1856., 1881. and 1883.Type of switch: common type (C.T.) incorporatedRated voltage: 250 V~Contact opening: - full disconnection - micro disconnection (pattern nos. 4 and 4/2)Class: incorporatedDegree of pollution: 3Category to heat and fire: 750 °C and 850 °C Insulating materialTerminals: Tacking resistant (250 V)Rated impulse withstand voltage: 2500 VMaterial group: IIIaTerminals: - solder terminals - solder terminals - tab terminals - tab terminalsDescription: for class suitch resistant (2,8 x 0,8 mm and 4,8 x 0,8 mm) - screw terminalsPeduct data - type 1800.: rocker switch resistive and motor resistive and motorType of switch: rocker switch resistive and motorPattern no.: 1Pattern no. <td< td=""><td></td><td></td></td<>		
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Type reference : common type (C.T.) Type of switch : incorporated Rated voltage : 250 V~ Contact opening : - full disconnection - micro disconnection (pattern nos. 4 and 4/2) Class : for class II appliances Degree of protection : IP40 Degree of pollution : 3 Category to heat and fire : 750 °C and 850 °C Insulating material : tracking resistant (250 V) Rated impulse withstand voltage : 2500 V Material group : IIIa Terminals : - solder terminals, - PCB terminals - PCB terminals : - kab terminals (2,8 x 0,8 mm and 4,8 x 0,8 mm) - screw terminals Description : body and actuating member of thermoplastic material Markings : trade name, type reference, electrical ratings and temperature limit on the base Product data - type 1800. : rocker switch Type of switch : rocker switch Rated current : 10(4) A and 6(4) A Circuit to be controlled : resistive and motor Pattern no. : 1 Temperature limit : T100/55 Number of cycles : 0.000 operat		1824., 1828., 1829., 1850., 1852., 1855., 1858., 1881. and
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Temperature limit : T100/55		
- resistive and capacitive		
Number of cycles : - 50.000 operating cycles for 6(4) A and 8(8) A	Number of cycles	
- 10.000 operating cycles for 4(2) A, 10(4) A 12(4) A,	2	
5/50 A and 5/70 A		

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Product data – type 1802.

Type of switch Pattern no. Rated current Pattern no. Rated current Pattern no. Rated current Temperature limit Circuit to be controlled

Number of cycles

Product data – type 1803.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data - type 1804.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data – type 1805.

Type of switch Pattern no. Rated current Temperature limit Circuit to be controlled

Number of cycles

Design Series resistor of pilot lamp

Product data – type 1806.

Type of switch Rated current Circuit to be controlled Pattern nos. Temperature limit Number of cycles

Design

- rocker switch, which makes momentary or continuous contact
 2
 6(4) A, 8(8) A, 10(4) A, 12(4) A, 5/50 A and 5/70 A
 2(N.O.)
 4(2) A, 6(4) A and 10(4) A
- : 2(N.C.)
- : 4(2) A and 10(4) A
- : T100/55
- : resistive and motor
 - resistive and capacitive
- : 50.000 operating cycles for 6(4) A and 8(8) A
 - 10.000 operating cycles for 4(2) A, 10(4) A, 12(4) A, 5/50 A and 5/70 A

:	rocker switch, which makes momentary or continuous contact
:	10(4) A, 6(4) A, 4(2) A
:	resistive and motor
:	6
:	T100/55

- : 10.000 operating cycles for 10(4) A and 4(2) A
 - 50.000 operating cycles for 6(4) A
- rocker switch, which makes momentary or continuous contact
 10(4) A, 6(4) A and 4(3) A
- : resistive and motor
- : 6 and 6/2
- : T100/55
- : 10.000 operating cycles for 10(4) A and 4(3) A
 - 50.000 operating cycles for 6(4) A
- : rocker switch, which makes momentary or continuous contact : 2
- : 6(4) A, 8(8) A, 10(4) A, 12(4) A, 5/50 A and 5/70 A
- : T100/55
- : resistive and motor
- resistive and capacitive
- : 50.000 operating cycles for 6(4) A and 8(8) A
- 10.000 operating cycles for 10(4) A, 12(4) A, 5/50 A and 5/70 A
- : optional provided with pilot lamp
- : 120 330 Kohm
- : rocker switch, which makes momentary or continuous contact : 10(4) A, 6(4) A, 4(2) A
- : resistive and motor
- : 1, 1+1 and 6+1
- : T100/55
- : 10.000 operating cycles for 10(4) A and 4(2) A
 - 50.000 operating cycles for 6(4) A
- : optional provided with pilot lamp



Series resistor of pilot lamp

: 120 - 330 Kohm

Product data – type 1808.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data – type 1809.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data - type 1811.

Type of switch
Rated current
Circuit to be controlled
Pattern no.
Temperature limit
Number of cycles

Product data – type 1812.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data - type 1813.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data – type 1814.

Type of switch Rated current Circuit to be controlled Pattern nos. Temperature limit Number of cycles : rocker switch, which makes momentary or continuous contact

- : 6(2) A
- : resistive and motor
- : 4
- : T100/55
- : 10.000 operating cycles
- : rocker switch, which makes momentary or continuous contact : 6(2) A
- : resistive and motor
- : 4/2
- : T100/55
- : 10.000 operating cycles
- : toggle switch, which makes momentary or continuous contact : 10(4) A, 6(4) A, 4(2) A
- : resistive and motor
- : 1
- : T100/55
- : 10.000 operating cycles for 10(4) A and 4(2) A
 - 50.000 operating cycles for 6(4) A

: toggle switch, which makes momentary or continuous contact

- : 10(4) A, 6(4) A
- : resistive and motor
- : 2
- : T100/55
- : 10.000 operating cycles for 10(4) A
 - 50.000 operating cycles for 6(4) A
- : toggle switch, which makes momentary or continuous contact
- : 10(4) A, 6(4) A
- : resistive and motor
- : 6
- : T100/55
- 10.000 operating cycles for 10(4) A
- 50.000 operating cycles for 6(4) A
- : toggle switch, which makes momentary or continuous contact
- : 10(4) A, 6(4) A, 4(3) A
- : resistive and motor
- : 6 and 6/2
- : T100/55
- : 10.000 operating cycles for 10(4) A and 4(3) A
 - 50.000 operating cycles for 6(4) A



Product data – type 1818.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data - type 1819.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data - type 1821.

Type of switch Rated current Ciruit to be controlled Pattern no. Temperature limit Number of cycles

Product data - type 1822.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data - type 1823.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data - type 1824.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data - type 1828.

Type of switch Rated current

- : toggle switch, which makes momentary or continuous contact
- : 6(2) A
- : resistive and motor
- : 4
- : T100/55
- : 10.000 operating cycles

: toggle switch, which makes momentary or continuous contact

- : 6(2) A
- : resistive and motor
- : 4/2
- : T100/55
- : 10.000 operating cycles
- : toggle switch, which makes momentary or continuous contact : 6(4) A
- . 0(4) A
- : resistive and motor
- : 1
- : T100/55
- : 50.000 operating cycles
- : toggle switch, which makes momentary or continuous contact
- : 6(4) A
- : resistive and motor
- : 2
- : T100/55
- : 50.000 operating cycles

: toggle switch, which makes momentary or continuous contact

- : 6(4) A
- : resistive and motor
- : 6
- T100/55
- : 50.000 operating cycles
- : toggle switch, which makes momentary or continuous contact
- : 6(4) A
- : resistive and motor
- : 6/2
- : T100/55
- 50.000 operating cycles

: toggle switch, which makes momentary or continuous contact : 6(2) A



Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data – type 1829.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

Product data – type 1850.

Type of switch Rated current Pattern no. Circuit to be controlled Temperature limit Number of cycles Contact opening Design Series resistor of pilot lamp

Product data – type 1852.

Type of switch Rated current Pattern no. Circuit to be controlled Temperature limit Number of cycles

Product data - type 1855.

Type of switch Rated current Pattern no. Circuit to be controlled Temperature limit Number of cycles Design Series resistor of pilot lamp

Product data - type 1858.

Type of switch Rated current Pattern no. Circuit to be controlled

Temperature limit Number of cycles

- : resistive and motor
- : 4
- : T100/55
- : 10.000 operating cycles

: toggle switch, which makes momentary or continuous contact : 6(2) A

- : resistive and motor
- : 4/2
- : T100/55
- : 10.000 operating cycles
- : rocker switch
- : 4(1) A
- : 1
- : resistive and motor
- : T85/55
- : 10.000 operating cycles
- : full disconnection
- : optional provided with pilot lamp
- : 120 330 Kohm
- : rocker switch
- : 4(1) A
- : 2
- : resistive and motor
- : T85/55
- : 10.000 operating cycles
- : rocker switch
- : 4(1) A
- : 2
- : resistive and motor
- : T85/55
- : 10.000 operating cycles
- : optional provided with pilot lamp
- : 120 330 Kohm
- : rocker switch
- : 6(4) A, 10(4) A, 5/100 A
- : 1, 2
- : resistive and motor
 - resistive and capacitive
- : T100/55
- : 50.000 operating cycles for 6(4) A
 - 10.000 operating cycles for 5/100 A and 10(4) A



: rocker switch, which makes momentary or continuous contact

Product data – type 1881.

Type of switch Pattern no. Reated current Pattern no. Rated current Pattern no. Rated current Circuit to be contolled

Temperature limit Number of cycles

: - resistive and motor - resistive and capacitive : T100/55

: 4(2) A, 6(4) A and 10(4) A

: 4(2) A and 10(4) A

: - 50.000 operating cycles for 6(4) A and 8(8) A

: 6(4) A, 8(8) A, 10(4) A, 12(4) A, 5/50 A and 5/70 A

- 10.000 operating cycles for 4(2) A, 10(4) A 12(4) A, 5/50 A and 5/70 A

Product data – type 1883.

Type of switch Rated current Circuit to be controlled Pattern no. Temperature limit Number of cycles

- : rocker switch, which makes momentary or continuous contact : 10(4) A, 6(4) A, 4(2) A : resistive and motor : 6

: 1

: 1(N.O.)

: 1(N.C.)

- : T100/55
- : 10.000 operating cycles for 10(4) A and 4(2) A
 - 50.000 operating cycles for 6(4) A

TESTS

Test requirements

EN IEC 61058-1:2018 EN 61058-1-1:2016

Test result

The test results are laid down in DEKRA test file 223282800.



Additional information

Additional tests according to Clause 30 of the following standards are performed with positive results for switches marked with the letter "G" on the switch or the label of the smallest shipping container.

- IEC 60335-1:2010
- EN 60335-1:2002

Resistance to heat and fire: Insulation material around connections within an area of 3,0 mm.

- Glow-wire test 750 °C; no flame.
- Glow-wire test 850 °C; flame, if any, extinguished within 30 seconds after removal of the glow-wire.
- Glow-wire Ignition Temperature ≥ 775 °C; tested on raw material plates with the thickness of 0,75 mm, 1,5 mm and 3,0 mm.

Models: 1800., 1803., 1804., 1806., 1811., 1812., 1813., 1814., 1821., 1822., 1823., 1824., 1883. The contact material of the switches is Ag/Cu optional silver plated. The contact material of the switches may also be manufactured with Ag/Ag. Shape and color of actuating members and housings may vary.

Models: 1808., 1809., 1818., 1819., 1828., 1829. The contact material of the switches is Ag/Cu (Ag/Cu version.) The contact material for type 1808. may also be manufactered with Ag/Ag.

Models: 1801., 1802., 1805., 1881.

Ratings: 6(4) A - 250 V~, 5E4; 10(4) A - 250 V~, 1E4; 5/50 A - 250 V~, 1E4 rocker switches / contacts Ag/Cu

Ratings: 8(8) A - 250 V~, 5E4; 12(4) A - 250 V~, 1E4; 5/70 A - 250V~, 1E4 rocker switches / contacts Ag/Ag

Ratings: 6(4) A - 250 V~, 5E4; 10(4) A - 250 V~, 1E4 biased switches N.O. and N.C. / contacts Ag/Cu

Shape and color of actuating members and housings may vary.

Model: 1858.

The switch with the resistive and capacitive load 5/100 A is after the normal operation, additional subjected to a slow speed test of 100 operating cycles with an actuating speed of 0,5 mm/sec.

The switch with the resistive and capacitive load 5/100 A does also comply with the clause 14.6 of the: IEC 60065:2001 + A1:2005 + A2:2010 EN 60065:2002 + A1:2006 + A11:2008 + A2:2010

This certificate replaces certificate No. 2142185.01 which we herewith declare invalid.

Conclusion

The examination proved that all requirements were met.

Factory locations

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