(1) # EU-Type Examination Certificate

TRANSLATION

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – **Directive 2014/34/EU**

(3) Number of Certificate of EU-Type Examination:

TPS 21 ATEX 083811 0009 X Issue 02

(4) Equipment: Solenoid
Type: K 10 Ex, K 15 Ex, K 20 Ex, K 25 Ex, K25 Ex HT, K 32 Ex, K 40 Ex and K 50 Ex

(5) Manufacturer: müller co-ax gmbh

(6) Address: Friedrich-Müller-Str. 1
74670 Forchtenberg
GERMANY

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) TÜV SÜD Product Service GmbH, notified body No. 0123 in accordance with Article 17 of the Council Directive 2014/34/EU of the European Parliament and of the Council dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II of the Directive.
The examination and test results are recorded in the confidential reports 713403608 and 713191116.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018
EN 60079-18:2015/A1:2018
EN IEC 60079-7:2015/A1:2018
EN IEC 60079-31:2024

(10) If the sign “X“ is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and the construction of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacturer and supply of this equipment.

(12) The marking of the equipment shall include the following:

II 2G Ex eb mb IIC T4 Gb or II 2D Ex mb tb IIIC 135 °C Db

II 2G Ex eb mb IIC T3 Gb or II 2D Ex mb tb IIIC 185 °C Db

Certification Body Explosion Protection
Ridlerstraße 65, 80339 Munich

Munich, 2026-04-08

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Dipl.-Ing. Ulrich Jacobs

Schedule

(13) **EU-Type Examination Certificate TPS 21 ATEX 083811 0009 X** Issue 02

(14) Description of equipment:

The Solenoid types K10 Ex, K15 Ex, K20 Ex, K25 Ex, K25 Ex HT, K32 Ex, K40 Ex and K50 Ex are used to operate valves and are designed in the types of protection Increased safety “e” and Protection by encapsulation “m” or in the types of protection Protection by encapsulation “m” and Protection by enclosure “t”. The enclosure is closed at the top by a lid. At one side a thread entry has been mounted to accommodate a separately certified cable gland. Inside the enclosure, a coil and other electric components are installed.

Technical Data:

Volt-age (V)	K10 Ex Current / power (A / W)		K15 Ex Current & power (A / W)		K20 Ex Current & power (A / W)	
	T3	T4	T3	T4	T3	T4
230	0,19 / 43,0	0,19 / 43,0	0,25 / 58,4	0,19 / 44,4	0,23 / 52,8	0,23 / 52,8
220	0,24 / 52,0	0,18 / 39,4	0,24 / 53,4	0,24 / 53,4	0,28 / 61,4	0,22 / 48,3
210	0,23 / 47,4	0,23 / 47,4	0,29 / 60,6	0,23 / 48,7	0,27 / 56,0	0,27 / 56,0
200	0,22 / 43,0	0,22 / 43,0	0,27 / 55,0	0,27 / 55,0	0,25 / 50,8	0,25 / 50,8
125	0,45 / 55,7	0,36 / 44,6	0,50 / 63,1	0,40 / 50,0	0,44 / 55,4	0,38 / 47,2
120	0,43 / 51,4	0,43 / 51,4	0,48 / 58,1	0,38 / 46,1	0,43 / 51,1	0,43 / 51,1
110	0,43 / 46,9	0,43 / 46,9	0,55 / 60,1	0,44 / 48,9	0,52 / 56,9	0,39 / 42,9
98	0,53 / 51,5	0,38 / 37,3	0,60 / 59,1	0,49 / 47,7	0,54 / 53,1	0,46 / 45,2
48	1,00 / 48,1	1,00 / 48,1	1,09 / 52,1	1,09 / 52,1	1,06 / 51,0	1,06 / 51,1
24	1,94 / 46,5	1,94 / 46,5	2,16 / 51,7	2,16 / 51,7	2,61 / 62,5	2,05 / 49,2
20	2,62 / 52,4	2,01 / 40,2	2,29 / 45,7	2,29 / 45,7	2,99 / 59,7	2,17 / 43,4

Voltage (V)	K25 Ex Current / power (A / W)		K32/40 Ex Current & power (A / W)		K50 Ex Current & power (A / W)	
	T3	T4	T3	T4	T3	T4
230	0,25 / 58,3	0,25 / 58,3	0,34 / 77,8	0,34 / 77,8	0,42 / 96,2	0,42 / 96,2
220	0,30 / 65,6	0,30 / 65,6	0,40 / 87,6	0,40 / 87,6	0,50 / 109,4	0,50 / 109,4
210	0,35 / 73,0	0,28 / 59,7	0,38 / 79,8	0,38 / 79,8	0,47 / 99,7	0,47 / 99,7
200	0,33 / 66,2	0,27 / 54,2	0,46 / 91,5	0,36 / 72,4	0,58 / 116,1	0,58 / 116,1
125	0,50 / 61,9	0,41 / 51,1	0,74 / 92,3	0,52 / 65,4	0,90 / 112,4	0,90 / 112,4
120	0,48 / 57,1	0,48 / 57,1	0,69 / 83,2	0,71 / 85,1	0,86 / 103,4	0,86 / 103,4
110	0,58 / 63,7	0,58 / 63,7	0,79 / 86,8	0,79 / 86,8	0,98 / 103,7	0,98 / 103,7
98	0,63 / 61,6	0,52 / 50,5	0,88 / 86,5	0,88 / 86,5	1,07 / 104,5	1,07 / 104,5
48	1,64 / 78,9	1,20 / 57,7	1,47 / 70,6	1,47 / 70,6	2,00 / 96,0	2,00 / 96,0
24	2,41 / 57,8	2,41 / 57,8	3,33 / 80,0	3,33 / 80,0	3,93 / 94,4	3,93 / 94,4
20	3,23 / 64,5	3,23 / 64,5	4,17 / 83,3	4,17 / 83,3	5,02 / 100,5	5,02 / 100,5

Voltage (V)	K25 Ex HT Current / power (A / W)
	T4
230	0.18 / 41.9
110	0.31 / 34.5
24	1.86 / 44.7

Assignment of ambient temperature and temperature class / surface temperature

Ambient temperature range	**Temperature class** (gas)
-30 °C ≤ T_a ≤ 80 °C	T4
-30 °C ≤ T_a ≤ 120 °C	T3

Ambient temperature range	**Max. permitted surface temperature** (dust)
-30 °C ≤ T_a ≤ 80 °C	135 °C
-30 °C ≤ T_a ≤ 120 °C	185 °C

Temperatures and duty cycle limitations are defined as follows:

Voltage (V)	Max ambient temperature (°C)	Duty cycle (%)	Temperature class
DC 20-230	40	100	T4
DC 20-230	60	50	T4
DC 20-230	80	30	T4
DC 20-230	120	100	T3
AC ≥ 98	40	100	T4
AC ≥ 98	60	50	T4
AC ≥ 98	80	30	T4
AC ≤ 98	40	100	T4
AC ≤ 98	60	50	T4
AC ≤ 98	80	30	T4
AC ≥ 98	120	100	T3
AC ≤ 98	100	100	T3
DC 24 V – HT*	70	100	T4
AC 110 V – HT*	70	100	T4
AC 230 V – HT*	70	100	T4

* K25 HT version only

(15) Test report: 713403608 and 713191116

(16) Special conditions for safe use:

Short-circuit protection:

A fuse corresponding to its rated current (max. 3 x I rated current according to IEC 60127) or a motor protection switch with short-circuit and thermal quick release (set to rated current) must be preconnected of each solenoid as short-circuit protection.

The rated fuse voltage must be equal to or greater than the specified rated voltage of the solenoid. The breaking capacity of the fuse link must be equal to or greater than the maximum short-circuit current to be assumed at the installation location (usually 1500 A).

In case of use of conduit adapter, the conduit connected shall be terminated in an enclosure that provides a minimum ingress protection of IP 54 in accordance with IEC 60079-0

(17) Essential health and safety requirements:

met by standards listed under (9)