

Translation

(1) **EU-Type Examination Certificate**

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres, Directive 2014/34/EU



(3) **Certificate Number** TÜV 10 ATEX 555391 X **issue:** 01

(4) for the product: Force transducer / load cell resp. metering shaft type KA.-.-EX and KA.-.-E-EX

(5) of the manufacturer: **A. S. T. - Angewandte System-Technik GmbH**

(6) Address: Marschnerstraße 26
01307 Dresden
Germany

Order number: 8003007193

Date of issue: 2019-01-17

- (7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.
- (8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential ATEX Assessment Report No. 19 203 247469.


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

EN IEC 60079-0:2018

EN 60079-11:2012

except in respect of those requirements listed at item 18 of the schedule.

- (10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.
- (11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the product shall include the following:

 II 1 G Ex ia IIC T4 Ga
II 1 D Ex ia IIIC T200 °C Da
Or alternatively
II 2 G Ex ia IIC T4 Gb
II 2 D Ex ia IIIC T200°C Db

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the notified body

Röder 

Hanover office, Am TÜV 1, 30519 Hannover, Tel. +49 511 998-61455, Fax +49 511 998-61590

This certificate may only be reproduced without any change, schedule included.
Excerpts or changes shall be allowed by the TÜV NORD CERT GmbH

(13) **SCHEDULE**

(14) **EU-Type Examination Certificate No. TÜV 10 ATEX 555391 X issue 01**

(15) **Description of product**

The force transducers / load cells resp. metering shafts type KA.-.-EX and KA.-.-E-EX are used for the static and the dynamic measurement of forces and masses. The connection of the force transducer and metering shaft is normally realized in 4-wire technology, for load cells realized in 6-wire technology.

The compressive force resp. compressive load generates a proportional, positive output signal.

Type code:

KAM-S-EX, KAD-EX, KAD-S-EX, KAD-T-EX, KAB-EX, KAU-EX, KAS-EX, KAM-EX, KAM-B-EX, KAM-PR-EX, KAF-EX, KAL-EX, KAN-R-EX and KAK-S-EX

KAM-S-E-EX, KAD-E-EX, KAD-S-E-EX, KAD-T-E-EX, KAB-E-EX, KAU-E-EX, KAS-E-EX, KAM-E-EX, KAM-B-E-EX, KAM-PR-E-EX, KAF-E-EX, KAL-E-EX, KAN-R-E-EX and KAK-S-E-EX

Electrical data:

For the force transducers / load cells resp. metering shafts type KA.-.-EX

Supply	In type of protection Intrinsic Safety Ex ia IIC / IIIC
(In 4-wire technology:	only for the connection to certified intrinsically safe
Strands red-black or red-blue or brown-yellow	circuits.
In 6-wire technology:	
Strands brown-yellow or brown-green)	

Maximum values:

$U_i = 10 \text{ V}$
 $I_i = 120 \text{ mA}$
 $P_i = 650 \text{ mW}$

Effective internal capacitance C_i

Capacitance of the connected cable C_c

Effective internal inductance L_i

Inductance of the connected cable L_c

For the connected cable the following applies

$C_c \leq$	200 pF/m
$L_c \leq$	1 $\mu\text{H/m}$

For the force transducers / load cells resp. metering shafts type KA.-.-E-EX

Supply	In type of protection Intrinsic Safety Ex ia IIC / IIIC
(In 4-wire technology:	only for the connection to certified intrinsically safe
Strands red-black or red-blue or brown-yellow	circuits.
In 6-wire technology:	
Strands brown-yellow or brown-green)	

Maximum values:

$U_i = 12 \text{ V}$
 $I_i = 100 \text{ mA}$
 $P_i = 650 \text{ mW}$

Effective internal capacitance C_i

925 nF + capacitance of the connected cable C_c

Effective internal inductance L_i

Inductance of the connected cable L_c

For the connected cable the following applies

$$\begin{array}{ll} C_c \leq & 200 \text{ pF/m} \\ L_c \leq & 1 \text{ } \mu\text{H/m} \end{array}$$

Thermal data:

$$\text{Permissible range of the ambient temperature} \quad -20 \text{ }^\circ\text{C} \leq T_a \leq +60 \text{ }^\circ\text{C}$$

(16) Drawings and documents are listed in the ATEX Assessment Report No. 19 203 247469

(17) Specific Conditions for Use

1. It shall be ensured that the metallic conductive enclosures are connected with the potential equalization of the installation area. The electrically conductive connection shall be effective protected against corrosion and the contact pressure shall be ensured permanently.
2. Special precaution shall be taken for the use of the type KAM-S-EX resp. KAM-S-E-EX apparatuses in zone 0, the enclosure of those apparatuses is made out of light metal. An ignition hazard caused by impact or friction shall be excluded by installation.
3. The intrinsically safe circuit is not separated galvanically from the metallic enclosure. The potential equalization shall be ensured for the whole area of installation. Associated apparatuses with a galvanically separation between intrinsically safe circuit and non-intrinsically safe circuit shall be used.
4. The connection cables shall be installed fix.
5. The apparatus shall only be used for combustible dust with an ignition temperature (smouldering temperature) of greater than 200 °C.
6. The permissible ambient temperature range for the versions KAM-S-EX, KAD-S-E-EX, KAM-B-EX und KAM-B-E-EX is -20 °C to +60 °C.
7. For applications that require devices of EPL Gb, devices of EPL Ga may also be used. The same electrical parameters as EPL Ga must be applied. If a device of EPL Ga is used in an application requiring EPL Gb it may not be re-used in an application requiring EPL Ga. For applications that require devices of EPL Db, devices of EPL Da may also be used. The same electrical parameters as EPL Da must be applied. If a device of EPL Da is used in an application requiring EPL Db it may not be re-used in an application requiring EPL Da.

(18) Essential Health and Safety Requirements

No additional ones

- End of Certificate -