(1) # EU - Type Examination Certificate

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

(3) EU - Type Examination Certificate Number

EPS 17 ATEX 1 174 X **Revision 3**

(4) Equipment: TS800, TS805 Series Smart Valve Positioner

(5) Manufacturer: Tissin Co., Ltd.

(6) Address: 201-1105, No 397, Seokcheon-ro, Ojeong-gu, Bucheon-si, Gyeonggi-do, Korea 14449

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

(8) Bureau Veritas Consumer Products Services Germany GmbH, notified body No. 2004 in accordance with Article 21 given in the Directive 2014/34/EU of the European Parliament and of the Council of 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 documentation under the reference number 17TH0339.

(9) Compliance with the essential health and safety requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-11:2012**

(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 annex to this certificate.

(11) This EU - Type Examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacture of this equipment and its placing on the market. Those requirements are not covered by this certificate.

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

II 1G Ex ia IIC T5/T6 Ga
II 1D Ex ia IIIC T115°C/T92°C Da IP66

Certification department of explosion protection

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Tuerkheim, 2023-09-13

(13) # Annex

(14) **EU - Type Examination Certificate EPS 17 ATEX 1 174 X** **Revision 3**

(15) Description of equipment:

The electropneumatic positioners TS800/TS805 control the position of linear or rotary valves according to the input signal 4 - 20 mA DC. The output signal is a pneumatic pressure – single or double acting - regulated by an inductive actuator, called torque motor. The supply pressure is 0.14 to 0.7 MPa. The pressure unit is a compact block built in into the housing of the positioner with air supply and air output connectors on the side of the housing.

The electronic circuit supplied by the analogue supply and signal current 4 - 20 mA works digitally supported by a microprocessor. The microprocessor serves for many additional tasks as Auto Calibration or PID-control. The position is measured by a single turn potentiometer. The device can be manually parameterized and adjusted by push buttons when the cover is removed. As an option the supply current can be superimposed by the digital HART-signal to communicate with a control unit.

As another option the feedback of the valve position (PTM) is possible via the current output signal 4 - 20 mA. The feedback signal is galvanically isolated from the supply circuit.

The status information can be displayed by a LCD-Display. The axis of the limit switches and the indicator is driven by a gear connected with the potentiometer.

Type TS805 has stainless steel enclosure.

Type TS820 has an external measuring potentiometer in an own housing.

IP rating for all enclosures is IP66 according to EN 60529.

Electrical data:

For the main circuit and the option PTM, Alarm 1, Alarm 2, Limit Switches “Dry Contact”.
Maximum values:

Ui = 28 V
Ii = 101 mA
Pi = 707 mW
Linear characteristic

Ci = 0.6 nF differentially between the lines or 2.2 nF against ground
Li = 6 µH
The circuit is galvanically isolated against earth and against each other.

For the option Limit switches “Proximity”.
Maximum values:

Ui = 16 V
Ii = 26 mA
Pi = 34 mW
Linear characteristic

Ci = 30 nF differentially between the lines or 2.2 nF against ground
Li = 50 µH
The circuit is galvanically isolated against earth and the other circuits.

(16) Reference number: 17TH0339

(17) Special conditions for safe use:

The enclosure made of aluminum alloy is considered to present a potential risk of ignition by impact or friction. Particularly, care must be taken during installation and use to prevent impact or friction for applications that specifically require EPL Ga equipment.

If the enclosures of the equipment incorporates the non-metallic parts which may generate an ignition capable level of electrostatic charge, the equipment shall be installed in a location where the external conditions cannot result in the build-up of electrostatic charge on such surfaces. For example, the equipment shall be installed in the location protected from direct airflow causing a charge transfer. Additionally, the equipment shall only be cleaned with a damp cloth and caution should be used when being handled.

Do not open when an explosive atmosphere is present.
The equipment shall not be opened for installation, repair or overhaul in hazardous area. The use shall consult the manufacturer if there is any problem during the usage.

T5 / T112°C:	-40 °C to +60 °C
T6 / T92°C:	-40 °C to +40 °C

(18) Essential health and safety requirements:

Met by compliance with standards.

Certification department of explosion protection Tuerkheim, 2023-09-13

Ulrich Feike