

(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 11 ATEX 1 363 X**

**Revision 2**

(4) Equipment: Smart Positioner Type YT-2500/2550/2501, YT-2500+LS(dry-contact, non-contact)/YT-2550+LS(dry-contact, non-contact)

(5) Manufacturer: Young Tech Co., Ltd

(6) Address: 81, Hwanggeum-ro 89 beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do  
Republic of Korea

(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 10TH0214.

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

**EN 60079-0:2012+A11:2013**

**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 examination 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 2G Ex ia IIC T5/T6 Gb

II 2D Ex ia IIIC T100°C/T85°C Db IP6X

Certification department of explosion protection

Nuremberg, 2017-05-31



Holger Schaffer

(13)

## Annex

(14) **EU - Type Examination Certificate EPS 11 ATEX 1 363 X**

Revision 2

(15) Description of equipment:

The YT-2500/2550/2501 and YT-2500+LS(dry-contact, non-contact)/YT-2550+LS(dry-contact, non-contact) is an electro pneumatic positioner to control linear and rotary valves. The pressure is regulated by a piezo valve and the position of the pneumatic valve is measured by a potentiometer.

The YT-2500/2550/2501 and YT-2500+LS(dry-contact, non-contact)/YT-2550+LS(dry-contact, non-contact) has as an option a superimposed HART signal. Additionally the PTM module serves as feedback for the position of the valve. Two optional limit switches (contacts) can be built in.

The different intrinsically safe circuits are galvanically isolated against each other and against ground.

The isolation voltage is 500 VAC.

The version Revision 2 differs from the version Revision 1 in essential changes of the electronic circuit. The inductivities of the supply inputs have been reduced to 10  $\mu$ H. The other external data remain unchanged.

### Electrical data:

**Supply circuit** (versions YT-2500/2550/2501 and YT-2500+LS(dry-contact, non-contact)/YT-2550+LS(dry-contact, non-contact)) type of protection: Intrinsic Safety Ex ia IIC/IIB;

Maximum values:

$U_i = 28$  V

$i_i = 93$  mA

$P_i = 651$  mW

Linear characteristic

$C_i = 0.6$  nF differentially between the lines or 2.2 nF against ground

$L_i = 10$   $\mu$ H

The supply circuit is galvanically isolated against earth.

**Option circuits "Limit switches 1 and 2"** (only version YT-2500+LS(dry-contact)/ YT-2550+LS(dry-contact)); type of protection Intrinsic Safety Ex ia IIC/IIB maximum values:

$U_i = 28$  V

$i_i = 93$  mA

$P_i = 651$  mW

Linear characteristic

$C_i = 0$  nF

$L_i = 0$   $\mu$ H

The limit switch circuits are galvanically isolated against earth. All circuits are galvanically isolated against each other.

The Smart Positioner can also be operated by power supplies with the electrical data as follows.

YT-2500+LS can also be equipped instead of the dry-contact switches with the inductive non-contact switches NJ1,5-F-N, manufactured by Pepperl+Fuchs, certified under PTB 00 ATEX 2032 X, 5. supplement.

Evaluation and supply circuit	type of protection Intrinsic Safety Ex ia IIC/IIB resp. Ex ib IIC/IIB only for connection to certified intrinsically safe circuits Maximum values $U_i = 16 \text{ V}$ $I_i = 25 \text{ mA}$ $P_i = 34 \text{ mW}$ For the application as category-1 equipment the evaluation and supply circuit must correspond to type of protection intrinsic Safety Ex ia IIC/IIB
-------------------------------	--

Type 1	Type 2	Type 3	Type 4
$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$
$I_i = 25 \text{ mA}$	$I_i = 25 \text{ mA}$	$I_i = 52 \text{ mA}$	$I_i = 76 \text{ mA}$
$P_i = 34 \text{ mW}$	$P_i = 64 \text{ mW}$	$P_i = 169 \text{ mW}$	$P_i = 242 \text{ mW}$

The examination and test results are recorded in the confidential report 10TH0214.

**Option circuit "PTM"** (versions YT-2500/2550/2501 and YT-2500+LS(dry-contact, non-contact)/YT-2550+LS(dry-contact, non-contact)); type of protection: Intrinsic safety Ex ia IIC/IIB;

Maximum values:

$U_i = 28 \text{ V}$   
 $I_i = 93 \text{ mA}$   
 $P_i = 651 \text{ mW}$   
 Linear characteristic  
 $C_i = 0.6 \text{ nF}$  differentially between the lines or  $2.2 \text{ nF}$  against ground  
 $L_i = 10 \text{ }\mu\text{H}$

Type-specific temperature conditions, please refer to the switch certificate.

The PTM circuit is galvanically isolated against earth and the other circuits.



EU - Type Examination Certificate EPS 11 ATEX 1 363 X

Revision 2

**YT-2501**

The version YT-2501 equipped with an external potentiometer as position sensor has been added. The isolation voltage is 500 V. Only the original units "Linear Feedback Module" and "Rotary Feedback Module", manufactured by the company Youngtech may be connected via the "Cable Connector".

Maximum supply values for the potentiometer:

$U_o = 6.51 \text{ V}$

$I_o = 93 \text{ mA}$

$I_{o\_wiper} = 6 \text{ mA}$

$P_o = 0.465 \text{ W}$

$C_i = 13 \mu\text{F}$

$L_i = 0 \mu\text{H}$

Trapezoidal characteristic

(16) Reference number: 10TH0214

(17) Special conditions for safe use:

Impact testing on light transmitting parts was carried out with low impact energy. Applications with a high risk of impact or with risk of high impact energies are to be avoided.

The ambient temperature range deviates from standard temperature range and amounts:

Temperature class T5 / T100°C: -40°C to +60°C

Temperature class T6 / T85°C: -40°C to +40°C

(18) Essential health and safety requirements:

Met by compliance with standards.



Certification department of explosion protection

Holger Schäffer

Nuremberg, 2017-05-31