

CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** FM16US0268X
3. **Equipment:** YT-3300, YT-3350, YT-3301, YT-3302, YT-3303, Smart Valve Positioner.
(Type Reference and Name) RI-3300, RI-3350, RI-3301, RI-3303 A Rotork Brand, Smart Valve Positioner.
4. **Name of Listing Company:** Rotork YTC Limited
5. **Address of Listing Company:** 81, Hwanggeum-ro, 89 beon-gil Gimpso-si Gyeonggi-do 10048 Republic of Korea
6. The examination and test results are recorded in confidential report number:

3053175 dated 27th December 2016

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:2018, FM Class 3610:2018, FM Class 3611:2004, FM Class 3810:2018, ANSI/ISA 61010-1 (82.02.01): 2004, ANSI/ISA 60079-0:2009, ANSI/ISA 60079-11:2009, ANSI/NEMA 250:2003, ANSI/IEC 60529:2004
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

Certificate issued by:

J.E. Marquedant
VP, Manager, Electrical Systems

7 July 2019

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

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10. Equipment Ratings:

Intrinsically Safe for Class I, II, III Division 1, Groups A, B, C, D, E, F, and G hazardous (classified) locations in accordance with drawing SKC-18601_D-150326 or SKC-18062;

Nonincendive With Nonincendive Field Wiring Parameters for Class I, II, III, Division 2, Groups A, B, C, D, E, F, and G hazardous (classified) locations in accordance with drawing SKC-18601_150326 or SKC-18062.

Intrinsically Safe for Class I, Zone 0, Group IIC hazardous (classified) locations in accordance with drawing SKC-18601_D-150326 or SKC-18062.

Type 4X and IP66 or IP54

11. The marking of the equipment shall include:

Class I, Div 1, Groups ABCD

Class I, Zone 0 AEx ia IIC

Class II/III, Div 1, Groups EFG

Class I, II, III, Div 2, Groups ABCDEFG

Type 4X IP66 or IP54

AMBIENT TEMP: -40°C to 60°C (T5) / -40°C to 40°C (T6)

12. Description of Equipment:

General - The YT-33XX and RI-33XX Series Smart Valve Positioners are designed to control valve stroke in response to an input signal of 4 to 20 mA. There is a signal output option for HART communications. There is a 4 to 20mA position feedback signal option, PTM

Construction - The YT-33XX and RI-33XX Series Smart Valve Positioners electronic enclosure is made of aluminum or stainless steel and has an option with a remote feedback module.

Ratings - The YT-33XX and RI-33XX Series Smart Valve Positioners operate at 16-28 Vdc. The Valve Positioners are rated for use in an ambient temperature range of -40°C to +60°C for a Temperature Class of T5 and -40°C to +40°C for a Temperature Class of T6.

Entity Parameters :

Connection	<u>U_i</u> (Vdc)	<u>I_i</u> (mA)	<u>P_i</u> (W)	<u>C_i</u> (nF)	<u>L_i</u> (μH)
Positioner	28	93	0.65	0.55	12
TR (Transmitter)	28	93	0.65	57.5	12
Limit Switch Dry Contact (Mechanical) Upper and Lower	28	93	0.65	0	0
Limit Switch, Non-Contact (Proximity) – Upper and Lower Pepperl & Fuchs NJ1, 5-F-N, Type 1	16	25	0.034	30	50
Limit Switch, Non-Contact (Proximity) – Upper and Lower Pepperl & Fuchs NJ1, 5-F-N, Type 2	16	25	0.064	30	50

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Limit Switch, Non-Contact (Proximity) – Upper and Lower Pepperl & Fuchs NJ1, 5-F-N, Type 3	16	52	0.169	30	50
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All other protection techniques, the electronic connection has the following values:

Nonincendive Field Wiring Parameters :

Connection	Vmax (Vdc)	I _{max} (mA)	C _i (nF)	L _i (μH)
Positioner	28	100	0.55	12
TR (Transmitter)	28	93	57.5	12
Limit Switch Dry Contact (Mechanical) Upper and Lower	28	93	0	0
Limit Switch, Non-Contact (Proximity) – Upper and Lower Pepperl & Fuchs NJ1, 5-F-N, Type 1 and Type 2	16	25	30	50
Limit Switch, Non-Contact (Proximity) – Upper and Lower Pepperl & Fuchs NJ1, 5-F-N, Type 3	16	52	30	50

YT-3300abcLdRefghi, YT-3350abcLdRefghi, Smart Valve Positioner

- a = Motion Type; L or R
- b = Acting Type; S or D
- c = Explosion Proof: A or AG
- d = Lever Type L: 0, 1, 2, 3, 4, 5 or 6
- e = Lever Type R: 1, 2, 3, 4, 5 or 6
- f = Conduit – Air Connection: 1, 2, 3, 4 or 5
- g = Communication: 0 or 2
- h = Option: 0, 1, 2, 3, 4 or 5
- i = OperatingTemp: S or L

YT-3301abcLdRefghij, YT-3302abcLdRefghij, Smart Valve Positioner

- a = Motion Type; L or R
- b = Acting Type; S or D
- c = Explosion Proof: A or AG
- d = Level Type L: 0, 1, 2, 3, 4, 5 or 6
- e = Level Type R: 1, 2, 3, 4 or 5
- f = Conduit – Air Connection: 1, 2, 3, 4 or 5
- g = Communication: 0 or 2
- h = Option: 0 or 1
- i = Operating Temp: S or L
- j = Cable Length : 1, 2, 3 or 4

YT-3303abcLdRefghi, Smart Valve Positioner

- a = Motion Type; L or R
- b = Acting Type; S or D
- c = Explosion Proof: A or Ag
- d = Level Type L: 0, 1, 2, 3 or 4
- e = Level Type R: 1, 2, 3, 4 or 5
- f = Conduit – Air Connection: 1, 2, 3, 4 or 5
- g = Communication: 0 or 2
- h = Option: 0 or 1
- i = Operating Temp: S or L

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- f = Conduit – Air Connection: 1, 2, 3, 4 or 5
- g = Communication: 0 or 2
- h = Option: 0, 1, 2, 3, 4 or 5
- i = OperatingTemp: S or L

RI-3301abcLdRefghij, RI-3302abcLdRefghij A Rotork Brand, Smart Valve Positioner

- a = Motion Type; L or R
- b = Acting Type; S or D
- c = Explosion Proof: A or AG
- d = Level Type L: 0, 1, 2, 3, 4, 5 or 6
- e = Level Type R: 1, 2, 3, 4 or 5
- f = Conduit – Air Connection: 1, 2, 3, 4 or 5
- g = Communication: 0 or 2
- h = Option: 0 or 1
- i = Operating Temp: S or L
- j = Cable Length : 1, 2, 3 or 4

RI-3303abcLdRefghi A Rotork Brand, Smart Valve Positioner

- a = Motion Type; L or R
- b = Acting Type; S or D
- c = Explosion Proof: A or Ag
- d = Level Type L: 0, 1, 2, 3 or 4
- e = Level Type R: 1, 2, 3, 4 or 5
- f = Conduit – Air Connection: 1, 2, 3, 4 or 5
- g = Communication: 0 or 2
- h = Option: 0 or 1
- i = Operating Temp: S or L

13. Specific Conditions of Use:

1. The model enclosure contains aluminum which is considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact or friction.
2. To prevent the risk of electrostatic sparking, the enclosure shall only be cleaned with a damp cloth.
3. Dust tight conduit seals must be used in Class II & III environments.

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

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15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
27 th December 2016	Original Issue.
5 th April 2017	<u>Supplement 1:</u> Report Reference: – RR209007 dated 5 th April 2017 Description of the Change: Added tapped exhaust option to all models.
3 rd July 2018	<u>Supplement 2:</u> Report Reference: – PR449570 dated 3 rd July 2018 Description of the Change: Added Model YT-3302 and miscellaneous component changes on other models.
24 th August 2018	<u>Supplement 3:</u> Report Reference: – RR214971 dated 24 th August 2018 Description of the Change: Added RI-33XX Series Smart Valve Positioner and updated assembly documentation details.
7 th July 2019	<u>Supplement 4:</u> Report Reference: – RR218810 Dated 7 th July 2019 Description of the Change: Updated company name from Young Tech Co Ltd to Rotork YTC Limited along with labels and documentation, as well as updated FM Class Standards 3600, 3615, and 3810 to latest editions.

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