



# CERTIFICATE OF CONFORMITY

Certificate.- No.: TA 385234538

Product tested:	Pressure Transmitter	Applicant:	YW-VRV Industries LTD. No.8885 Hutai Road, Baoshan District, Shanghai, China
		Manufacturer:	YW-VRV Industries LTD. No.8885 Hutai Road, Baoshan District, Shanghai, China
Type Designation:	VRVP2000/1/2, YTF/CY Series (Refer to appendix 1)		
Systematic Capability:	SC3 (SIL 3 Capable)		
Safety integrity Level:	Type B Element/ SIL 2 Capability in 1oo1 configuration HFT=0 SIL 3 Capability in 1oo2 configuration HFT=1; Route 1H It is suitable to be used in safety function loop according to the description defined in safety manual and appendix 1		
Standard(s) / Product - Certification Basis:	IEC 61508 Parts 1-7:2010		
Safety Function:	Pressure Transmitter with 4-20mA 2-wire interface will measure pressure within the stated safety accuracy.		
Application Restrictions:	The unit must be properly designed into a Safety Instrumented Function per the Safety Manual requirements.		
Comments:	The issue of this certificate is based upon an examination, whose results are documented in Assessment Report TASH-231122412-R01.		

According to the below stated assessment report(s), the specified product complies with the applicable requirements of the mentioned standard(s).

This Certificate of Conformity has been granted to the applicant based on the results of testing performed by the applicant/manufacturer or an approved laboratory, the consequent review of the test report by TÜV AUSTRIA (SHANGHAI) CO., LTD, and assessment of the instruction manual, product or the production process of this product by TÜV AUSTRIA (SHANGHAI) CO., LTD. Revisions to the referenced certification basis or any change of the design, materials, components or processing may require the repetition of all or some of the qualification evaluation in order for the report and therefore this associated certificate to remain valid. Furthermore the General Conditions for a Certificate of Conformity on a national or international Standard concerning a specified product are valid.



2023-11-27  
Date of Issue

  
Ivan Huang, Certification representative

The validity of this certificate: Max. 3 years from the date of issue.

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The holder of this document is advised that the information contained hereon reflects the certification body's findings on the date of issue and within the limits of the applicant's instructions, if any.

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TASH-CP-005-F01, Rev.02



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## Appendix 1

The product versions used for the assessment are the following:

Product	Model	Version number
Pressure Transmitter	VRVP2000/1/2, YTF/CY Series (see 1.1 of assessment report)	V4.0 (HW) V3.0 (SW)

## Safety Function details

SF1, high trip and when the signal acquisition equipment has 4 ~ 20mA signal range monitoring capability  
 SF2, low trip and when the signal acquisition equipment has 4 ~ 20mA signal range monitoring capability  
 High trip & Low trip: when the measured pressure is higher/Lower than the safety threshold, the safety instrument function will be triggered.

## Hypothesis and calculation results

Hypothesis taken into account are the following:

- the mode of operation is either "Low demand" or "High demand" mode;
- the TI (Proof Test Interval) is 2 years;
- the MTTR<sub>DD</sub> (Mean Time To Restoration) used for each component is 8 hours;
- the MRT<sub>DU</sub> (Mean Repair Time) used for each component is 8 hours;
- CPT (Coverage of Proof test) is 80% according to safety manual;
- PTD (Proof Test Duration, Online) is 8 hours;
- MT (Mission Time) is 20 years;
- failure rates are considered constant and do not take into account early life and end-of-life failures;

Model	Component architecture	$\lambda_{sd}(FITs)$	$\lambda_{su}(FITs)$	$\lambda_{dd}(FITs)$	$\lambda_{du}(FITs)$	SFF(%)	PFD (T <sub>i</sub> =2years)
VRVP2000/1/2, YTF/CY Series	1oo1 configuration	11.00	194.04	25.45	9.14	96.2%	2.24E-4
	1oo2 configuration	11.00	194.04	25.45	9.14	96.2%	2.25E-5

## Conditions and limits

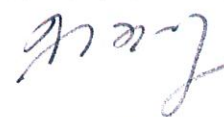
Use of the product must comply with the terms of use in order to preserve SIL3 properties. These rules are reminded in the section 9.1 of the assessment report (ref: TASH-231122412-R01).

Acceptable environmental constraints and design lifetime for the product are stated in the following document:

- Safety manual

These elements must be checked for each integration of the product, as well as during the operation and maintenance phases.

This certificate does not imply compliance with European Directive and does not allow for provision of a CE marking.



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