

Version 1.0

QJ-16927-35-2022

SPECIFICATION

OF PRODUCTS

CUSTOMER :

PRODUCT NAME:ULTRASONIC FLOW TRANSDUCER

PART NUMBER: PSC1.0M020102H2CE0-B0

Approved by	Checked by	Drawn by
陶锋烨 2022.5.20	黄国华 2022.5.20	胡余平 2022.5.20

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Approval Sheet	
Customer	
Supplier P/N	PSC1. 0M020102H2CE0-B0
CustomerP/N	

Customer's Approval Certificate	
Checked & Approval by	
Date	

Version	Reason Of Modification	Modification	Drawn	Checked	Approval	Date

Please return this copy as a certification of your approval.

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1 SCOPE

This specification shall cover the characteristics of flow transducer for PSC1.0M020102H2CE0-B0 ultrasonic water meter.

2 PART NO.

PART NUMBERING	CUSTOMER PART NO	SPECIFICATION NO
PSC1.0M020102H2CE0-B0		

3 PART NUMBERING

PS	C	1.0M	020102	H2	CE0	—	B0
①	②	③	④	⑤	⑥		⑦

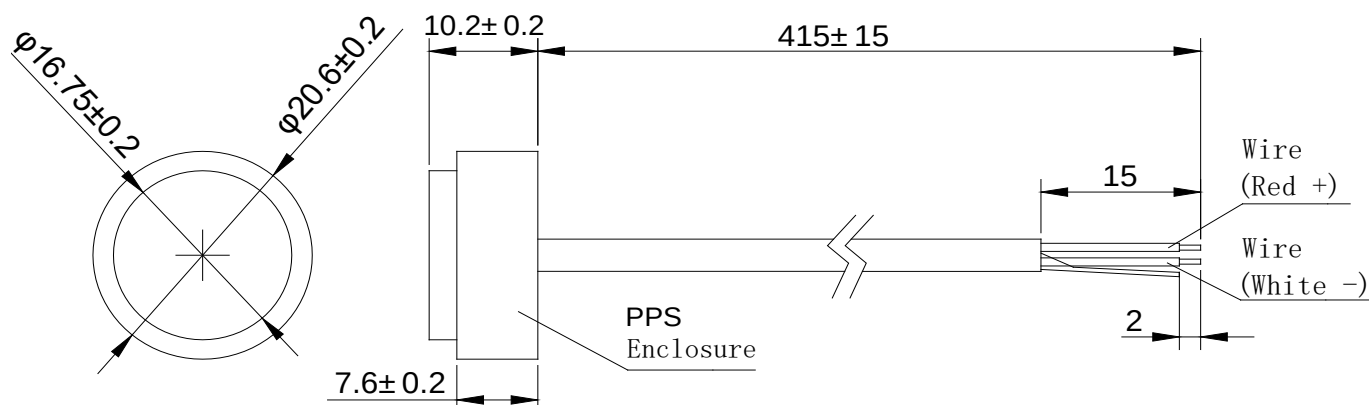
NO.	CODE	EXPLAIN
①	PS	Ceramic transducer
②	C	Ultrasonic
③	1.0M	Nominal Frequency
④	020102	Size
⑤	H2	CeramicMaterial Code
⑥	CE0	Special Requirement
⑦	B0	Bulk Package

4 OUTLINE DRAWING AND DIMENSIONS

4.1 Appearance: No visible damage and dirt.

4.2 The products conform to the RoHS directive and national environment protectionlaw.

4.3 Dimensions (Unit: mm)



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5 RATING

Items	Unit	Content
Operating Temperature Range	℃	0. 1~80
Storage Temperature Range	℃	-40~85
Water-Pressure Resistance	MPa	2. 4
Working Voltage max.	V	36

6 ELECTRICAL SPECIFICATIONS

Items	Unit	Content
Nominal Frequency (Fn)	MHz	1.0 ± 0.1
1MHz Impedance (R1)	Ω	200~450
Static Capacitance (Cp)	pF	$1300 \pm 20\%$
Opposite signal Output Amplitude (Vp-p)	mV	≥ 1000

7 ELECTRIC PERFORMANCE TEST

7.1 Test Conditions

Parts shall be measured under a condition (Temp.: $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$, Humidity: 40%~70% R.H).

7.2 Test Methods

Item	Test Methods
Nominal Frequency (Fn)	Measuring thickness vibration mode, Agilent 4294A/E5100 Impedance analyzer
1MHz Impedance (R1)	Measuring thickness vibration mode, Agilent 4294A/E5100 Impedance analyzer
Static Capacitance (Cp)	Digital Electric Bridge (at 1kHz/1V)
Opposite signal Output Amplitude (Vp-p)	Test condition: frequency: 1MHz, Excitation voltage 2Vp-p, 10 square wave, test distance $110 \pm 2\text{mm}$, output impedance: 50Ω ; Input impedance: 1Ω . Measurement in water, water temperature 25°C

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8 ENVIRONMENTAL TEST

No.	Item	Test Condition	Post test requirements
8.1	High Temperature Exposure	The transducer is subjected to $(85 \pm 2) ^\circ\text{C}$ for $(96 \pm 1)\text{h}$, room temperature recovery time: 1h~2h	Signal output amplitude change $\leq 30\%$ Impedance change $\leq 30\%$
8.2	Low Temperature	The transducer is subjected to $(-40 \pm 2) ^\circ\text{C}$ for $(96 \pm 1)\text{h}$, room temperature recovery time: 1h~2h	Signal output amplitude change $\leq 30\%$ Impedance change $\leq 30\%$
8.3	Temperature Cycle	Subject the transducer to $(-40 \pm 2) ^\circ\text{C}$ for 30 min. followed by a high temperature of $(85 \pm 2) ^\circ\text{C}$ for (30 ± 3) min cycling shall be repeated 5 times, room temperature recovery time: 1h~2h	Signal output amplitude change $\leq 30\%$ Impedance change $\leq 30\%$
8.4	Humidity Test	The transducer is subjected to 90%~95% relative humidity, $60^\circ\text{C} \pm 2^\circ\text{C}$ for $(96 \pm 1)\text{h}$, room temperature recovery time: 1h~2h	Signal output amplitude change $\leq 30\%$ Impedance change $\leq 30\%$
8.5	Temperature Cycling in Water	Low temperature $(3 \pm 2) ^\circ\text{C}$, keep (30 ± 3) s, then convert to high temperature $(65 \pm 2) ^\circ\text{C}$, keep (30 ± 3) s, conversion time: 18s, cumulative cycling 5000 times, room temperature recovery time: 1h~2h	Signal output amplitude change $\leq 30\%$ Impedance change $\leq 30\%$

9 PACKAGE

Each package has 4 inner boxes, each inner box has 150 pieces of ultrasonic flow transducers.

Dimensions of outer packing case(mm)	Dimensions of Inside box (mm)	Gross weight (kg)
365×320×195	307×169×85	9

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10 OTHER

10.1 The main composition of the transducer chip is lead zirconium titanate ceramics. Please pay attention to the local environmental protection regulations when the waste is abandoned.

10.2 This specification mentions the quality of the component as a single unit under specified test 6.1 conditions. Please ensure the component is thoroughly evaluated in your application.

10.3 The wire of transducer, red for positive, white for negative, When in use, the white wire can be connected with the metal shell。

10.4 Please return one of these specifications after your signature of acceptance.

10.5 When something gets doubtful with this specification, we shall jointly work to get an agreement.

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