

FOOD-SPECIFIC INLINE BRIX REFRACTOMETER

MODEL: CZ-Y (Dome Type)



SINCE 1999

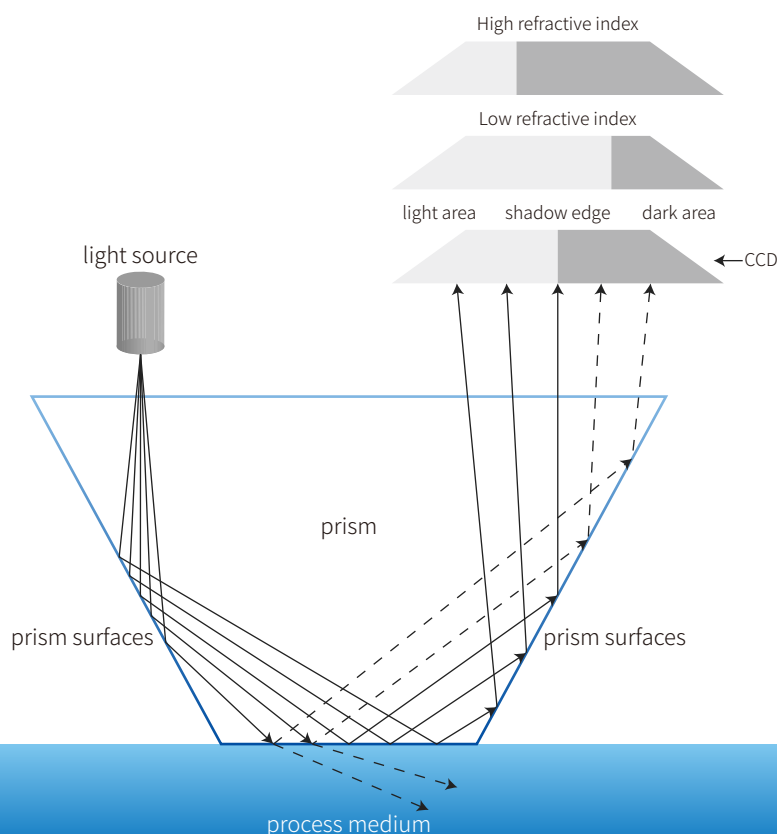
Manufacturer with 27 years of experience

V1.0

1.Description

CZ-Y dome series products are new products developed by Chaohui. They have self-cleaning function. With the special circulation pool, they can avoid the adhesion of impurities and bubbles in the liquid and improve the sensor's ability to resist dirt and bubbles.

It can transmit the measurement data to external devices through 4~20mA or RS485, and automatically perform temperature compensation according to the temperature change of the measured medium. When the temperature of the measured medium changes, the Brix value (soluble solids) after temperature compensation is displayed, and the output signal changes too.



Principle of measurement

2.Features

- ◆ Accurate, fast, stable and reliable measurement.
- ◆ High resolution and accuracy.
- ◆ 24-hour data monitoring.
- ◆ Residue-free design, in line with CIP requirements.

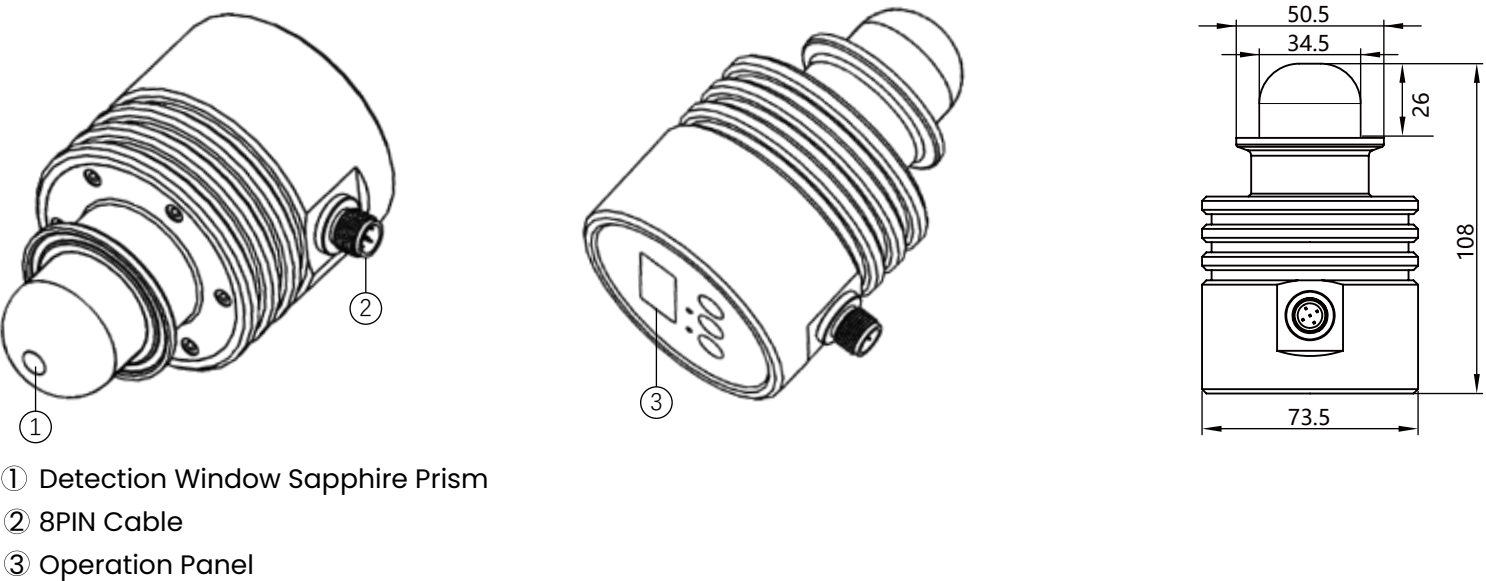
3.Applications

- ◆ Real-time monitoring of soluble solids (Brix value) of products by various beverage manufacturers.
- ◆ Continuous monitoring of soluble solids content (Brix value) in evaporation, dissolution, mixing, dilution, extraction and other process flows.
- ◆ Real-time detection of concentration of various industrial solutions, such as cutting fluid, lubricating oil, cleaning fluid, emulsion, and release agent.
- ◆ Concentration detection of various aqueous solutions (food, sauce, beer, wort, pharmaceutical, beverage, juice, stock solution, chemical solution, slurry, etc.)

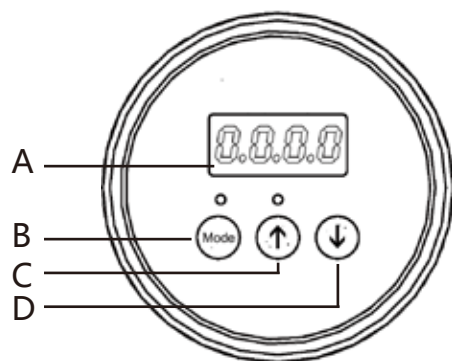
4. Technical Specifications

Measurement items	Refractive index, temperature, brix
Measurement range	nD:1.33299-1.35568 / Brix:0.0-15.0% nD:1.33299-1.42009 / Brix:0.0-50.0% nD:1.33299-1.52000 / Brix:0.0-90.0%
Resolution	nD:0.0001 / Brix:0.1% / T:0.1℃ nD:0.0005 / Brix:0.5% / T:0.1℃
Accuracy	nD:0.0003 / Brix:0.3% / T:0.1℃ nD:0.0005 / Brix:0.5% / T:0.1℃
Measurement frequency	1 time/5s (default)
Temperature compensation	10-80℃
Medium temperature	10-110℃
Prism material	Artificial sapphire
Wetted material	316L (customizable: 2205, Hastelloy C-276)
Power	12-24V DC current<100mA
Output signal	4-20mA / RS485
Communication protocol	Standard Modbus (protocol customizable)
Protection	Measuring parts IP67
Work pressure	Max 1MPa
Process media	Cutting fluid, emulsion, sugar, juice, milk, soft drinks, etc.
Installation	Quickly install the card type (optional: thread, flange)

5. Appearance characteristics



6. Panel and Operation



A. 4-digit red digital tube

B. Mode key

C. Up arrow key

D. Down arrow key

Accessories: Default 2m 8-core cable, customizable. (1-10m)

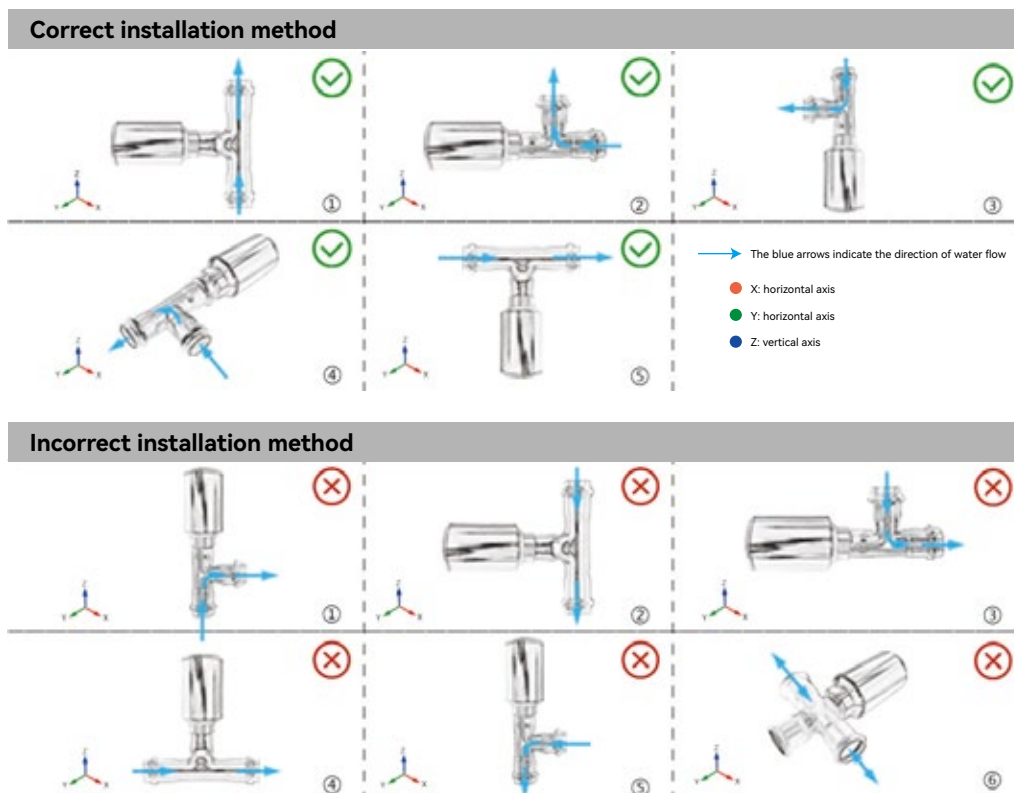
Installation method: quick-connect, pipe or box installation. (Other installation methods can be customized)



7. Installation

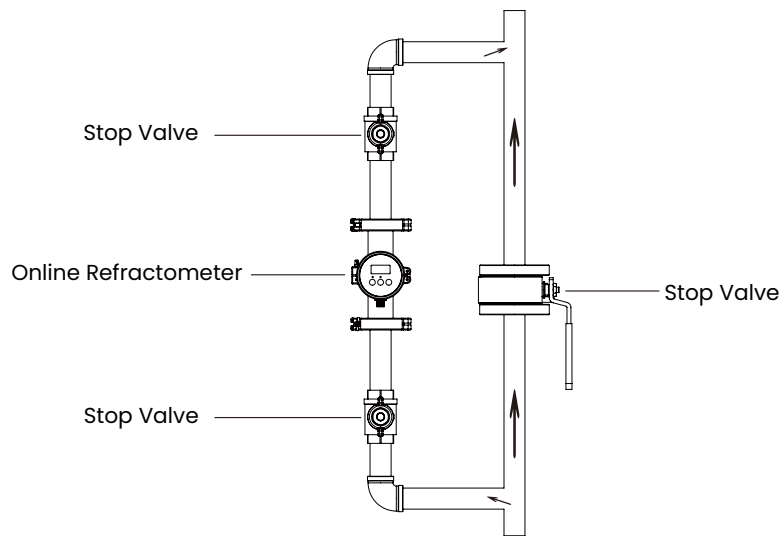
7.1. Pipeline installation

The detection point of this product must be completely and continuously covered by liquid to ensure stable and reliable measurement. Based on this principle, this product must not be installed vertically with the detection point downward, which will make it highly likely that the detection window point will not contact the measured liquid. The following figure lists several recommended installation methods and several incorrect installation methods.



7.2. Bypass installation

In order to facilitate product maintenance, the bypass installation without a circulation pump is as shown below:



8. Relationships between Brix(%) Values and Refractive Index (n_D) Values

%	n _D ²⁰	%	n _D ²⁰	%	n _D ²⁰	%	n _D ²⁰	%	n _D ²⁰
0	1.33299	20	1.36384	40	1.39986	60	1.44193	80	1.49071
1	1.33442	21	1.36551	41	1.40181	61	1.44420	81	1.49333
2	1.33586	22	1.36720	42	1.40378	62	1.44650	82	1.49597
3	1.33732	23	1.36889	43	1.40576	63	1.44881	83	1.49862
4	1.33879	24	1.37060	44	1.40776	64	1.45113	84	1.50129
5	1.34026	25	1.37233	45	1.40978	65	1.45348	85	1.50398
6	1.34175	26	1.37406	46	1.41181	66	1.45584	86	1.50670
7	1.34325	27	1.37582	47	1.41385	67	1.45822	87	1.50940
8	1.34477	28	1.37758	48	1.41592	68	1.46061	88	1.51220
9	1.34629	29	1.37936	49	1.41799	69	1.46303	89	1.51490
10	1.34782	30	1.38115	50	1.42009	70	1.46546	90	1.51770
11	1.34937	31	1.38296	51	1.42220	71	1.46790	91	1.52050
12	1.35093	32	1.38478	52	1.42432	72	1.47037	92	1.52340
13	1.35250	33	1.38661	53	1.42647	73	1.47285	93	1.52620
14	1.35408	34	1.38846	54	1.42863	74	1.47535	94	1.52910
15	1.35568	35	1.39032	55	1.43080	75	1.47787	95	1.53200
16	1.35729	36	1.39220	56	1.43299	76	1.48040		
17	1.35891	37	1.39409	57	1.43520	77	1.48295		
18	1.36054	38	1.39600	58	1.43743	78	1.48552		
19	1.36218	39	1.39792	59	1.43967	79	1.48811		

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