

1. Basic data

EQH-280 Twin tower heatless desiccant air dryer		
1.1 Standard state deals with air conditions		
Flow rate*	m³/min	28
Air inlet pressure	MPa	0.6-1.0
Pressure drop	MPa	≤0.021
Air inlet temp.	°C	≤38
Inlet air dew point temp.	°C	≤10
Ambient temp.	°C	≤40
Outlet pressure dew point temp.	°C	-20~-40
*Related to 1bar a and 20°C according to ISO 7183		
1.2 Working condition		
Fluid	/	Compressed air
Max inlet air temp.	°C	50
Max ambient temp.	°C	45
Regenerative gas consumption	%	13
Cycle switching time	Min	6
1.3 Ontology characteristics		
Length×width×height	mm	1410×1100×2178（EST.）
Weight	kg	900（Prediction）
Air inlet and outlet pipe diameter	inch	DN80
Interface flange standard	/	HG/T20592-2009
1.4 Electrical characteristics		
Power supply	Voltage	1Phase/220V/50Hz
Power consumption	KW	0.25
1.5 Main parts		
Pneumatic butterfly valve	Zero leakage, 304 stainless steel	
Adsorption bucket	Reasonable empty tower flow rate, low pressure drop, ensuring contact time	
Adsorbent	Joint research and development customization, efficient adsorption, reliable regeneration	
Controller	Microcomputer automatic control, simple and convenient operation	
1.6 Protective device		
Heating temp. overload protection	/	/
1.7 Optional configuration (Not quote in this model)		

Factory: FUJIANEPSEA INDUSTRIAL CO.,LTD

Marketing & RD Center: GUANGDONG EPSEA INDUSTRIAL CO.,LTD

1. Stainless steel air pipe.
2. Special power supply voltage or frequency.
3. Dew point meter.

1.8 correction coefficient

Temperature °C	38°C	40°C	45°C	50°C
Correction factor C1	1	0.9	0.68	0.53
Pressure MPa	0.4MPa	0.5MPa	0.6MPa	≥0.7MPa
Correction factor C2	0.625	0.75	0.875	1

Actual flow rate = nominal flow rate × C1×C2;

When the pressure < 0.5MPa, the instrument gas source needs to be connected externally, and the instrument gas source requires 0.5-0.6MPa.

Remark

We reserve the right to change the above product parameters, subject to final confirmation when ordering.

2. Control systems

2.1 Operating parameters

Parameter name	Measuring range	Standard/Optional
Inlet temp.	0-300°C	Optional
Outlet temp.	0-300°C	Optional
Regenerative exhaust gas temperature	0-300°C	Optional
Tower A pressure sensor	-100~1000KPa	Optional
Tower B pressure sensor	-100~1000KPa	Optional
Exhaust dew point temperature	-60~+20°C	Optional
Inlet pressure sensor	-100~1000KPa	Optional
Outlet pressure sensor	-100~1000KPa	Optional
Tower A temp.	0-300°C	Optional
Tower B temp.	0-300°C	Optional

2.2 Control function

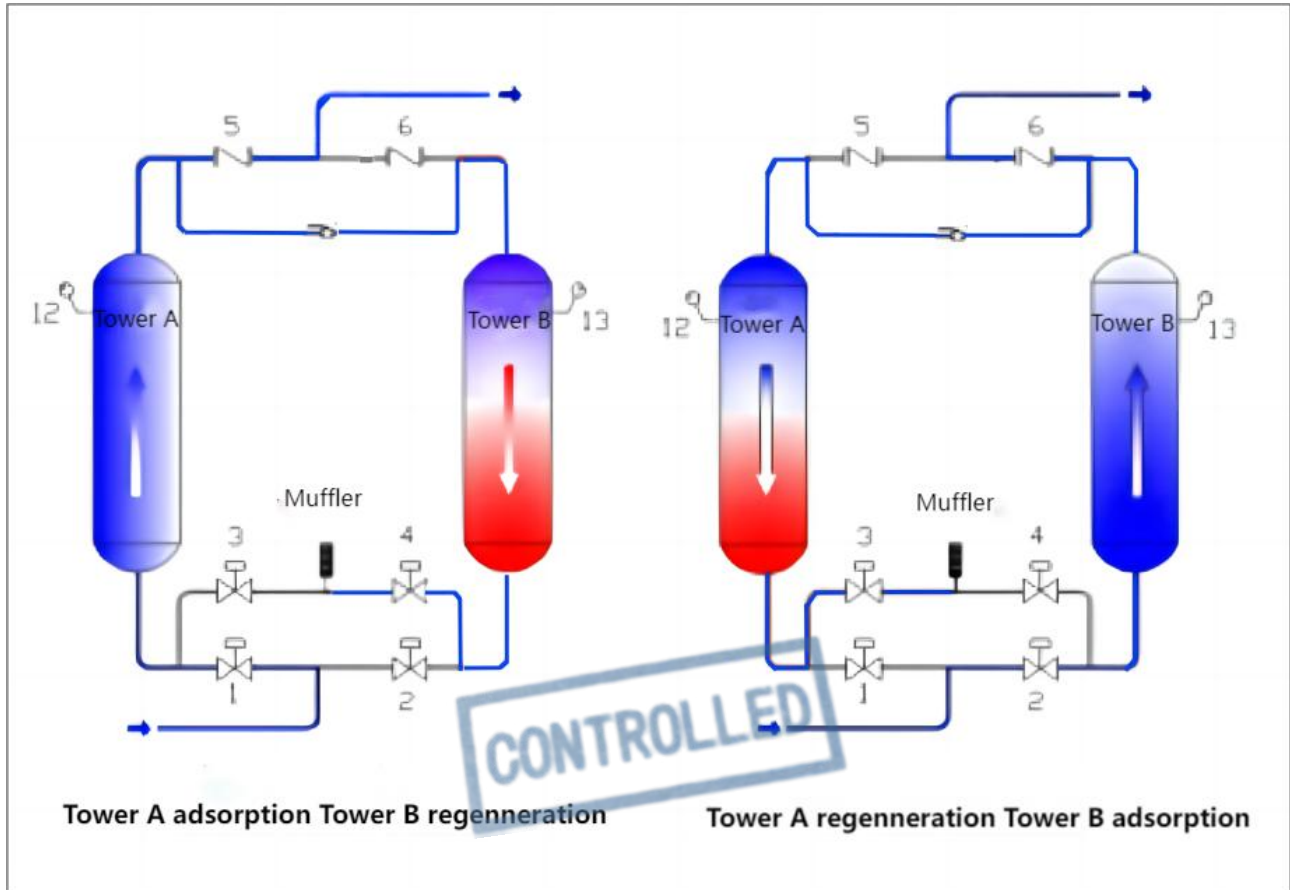
Parameter name	Measuring range	Standard/Optional
Remote start.	Dry contact	Optional
Remote stop.	Dry contact	Optional
Remote chain start and stop	Dry contact	Standard
Remote control mode	Dry contact	Optional
Operation signal	Dry contact	Optional
Fault signal	Dry contact	Optional
Telecommunication	RS485	Optional
Valve failure	Alarm Instructions/Shutdown	Optional
Dew point energy saving control	Achieve energy saving control mode	Optional
High dew point	Alarm Instructions/No shutdown	Optional

Factory: FUJIANEPSEA INDUSTRIAL CO.,LTD

Marketing & RD Center: GUANGDONG EPSEA INDUSTRIAL CO.,LTD

3.Functional Features Introduction

(1) Principle process PI diagram



(2) Work flow

The compressed air enters the adsorption Tower A through valve 1, the air is dried and the dried air reaches the outlet through valve 5, where a portion of the air is separated from the air stream as regeneration gas before it reaches the outlet. And through the flow control of regeneration regulating valve 9, flows into the Tower B. Regeneration Tower B has moisture adsorbed from the last half cycle, regeneration gas takes away this moisture and is emptied through valve 4 and the silencer, this is the and regeneration stage. After a set period of time, valve 4 closed, adsorption Tower B began to boost to the pressure balance of the two towers, boosting takes a certain amount of time to ensure that the pressure balance of the two towers, otherwise it may cause pressure fluctuations at the outlet. After half a cycle, valve 1 closed, while valve 2 open. Now Tower B starts drying the air while Tower A goes into regeneration. The adsorption Tower B operates for half a cycle and then returns to the regeneration state. This period is one work cycle.

(3) Main Features of Suction Dryer

- The lower flow rate of the empty tower (0.15-0.25m/s) effectively prevents the desiccant from "boiling" in the tower. The resistance of the flow through the tower is reduced and the wear between the adsorbent particles is reduced.
- Longer contact time ensures that the desiccant is in full contact with the air medium.
- The unique structure design of air flow in the tower ensures uniform distribution of air flow on the cross-section of the tower, especially for the larger equipment of the tower diameter, effectively prevents the phenomenon of air flow tunnel.
- Reliable performance, low failure rate. The main components are of high quality, stable performance, continuous trouble-free operation for a long time.
- Pressure loss is small, the use of high-flow piping design and low-pressure loss butterfly valve design, low pressure loss, less than 0.021MPa;
- Long valve life ;
- The control program and control system of dryer are self-developed, designed and manufactured to integrate control, display, energy saving, high efficiency and stability, and its control system is reliable and reasonable;
- The dryer takes full account of the design margin and can operate normally under various variable load conditions of the air compressor.



Due to the continuous updating of technology, we reserve the right to make changes and upgrades to our products without prior notice, so please refer to the final product when ordering.

Document version number: Version C3

Preparation date: December , 2024

Factory: FUJIANEPSEA INDUSTRIAL CO.,LTD

Marketing & RD Center: GUANGDONG EPSEA INDUSTRIAL CO.,LTD