



BW-PS64D Series

64 channel high precision pressure scanning valve

Technical manual



Introduction

BW-ps64d pressure scanning valve is a 64 channel scanning output device with a differential pressure test range of 120kPa, which can measure the multi-point pressure values of UAV and wind tunnel environment. This product has 64 groups of test nozzles to output the pressure values in scanning mode, and the maximum speed can reach 200Hz. The device can directly output the pressure value in digital mode, eliminating the converter accessories required by traditional analog equipment, and its accuracy can stably reach 0.05% FS of total range.

Bw-ps64d adopts high-quality and reliable differential pressure type film pressure sensing chip, and ensures the measurement accuracy through algorithm. Through various compensations such as pressure correction system, nonlinear compensation, temperature compensation and drift compensation, the error caused by interference can be greatly eliminated and the product accuracy level can be improved. Bw-ps64d is a fully autonomous digital pressure scanning valve in small volume, which can be easily integrated into the user's system.

Characters

- High accuracy 0.05%FS
- Dynamic barometric measurement
- Mechanical pneumatic calibration system
- working temperature: $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$
- Excellent overvoltage performance
- High long-term stability

Application

- Wind tunnel monitoring
- pneumatic probe
- UAV
- Large aircraft

Feature



Electrical Specifications

Power Supply	9~36V DC
Working Current	40mA (DC 12V)
Working Temperature	-20~+70°C
Storage Temperature	-30~+80°C



Performance Index

	Range	Differential pressure 120kPa
Pressure Index	Accuracy	0.05%FS
	Zero Point Offset	< 0.05 %FS
	Temperature zero return difference (42h)	0.02uV/V
	Overvoltage performance	2MPa
Physical Characteristics	Size	L84.5*W42*H41.6 (mm)
	Net Weight	250g
Interface	Output Frequency	5~200Hz
	Baud rate of serial communication	2000000
	Digital output format	ASCII & HEX
Pressure Chip Test Stability	Load Static Voltage Characteristic	$\leq 0.03 \pm \%FS/10MPa$
	Long-term Stability (1000h, 135°C)	$\pm 5uV/V$
	Nonlinearity	$\leq 0.3 \pm \%FS$
MTBF	≥ 3000 hs/time	
Working Temperature	-20°C ~ +70°C	

Stability: Temperature rise from room temperature 23 ° C to 85 ° C, hold for 30hs and then return to room temperature, and measure the zero drift during the whole 42 hours

all values in this table are tested under the condition of voltage 5V DC and temperature 25±3°C.



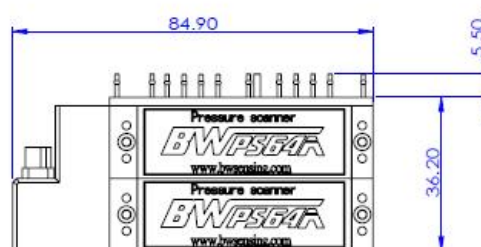
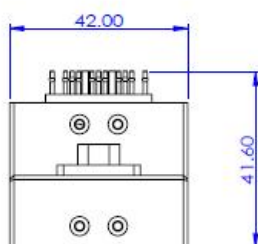
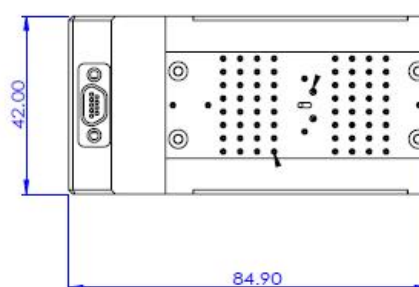
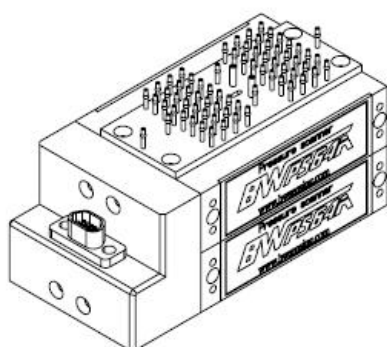
Mechanical

Connector	J30J-9ZK
IP Grade	IP66
Shell Material	aviation aluminum
Installation	9 group 1.1mm Metal airtight tube(RF1.25mm)

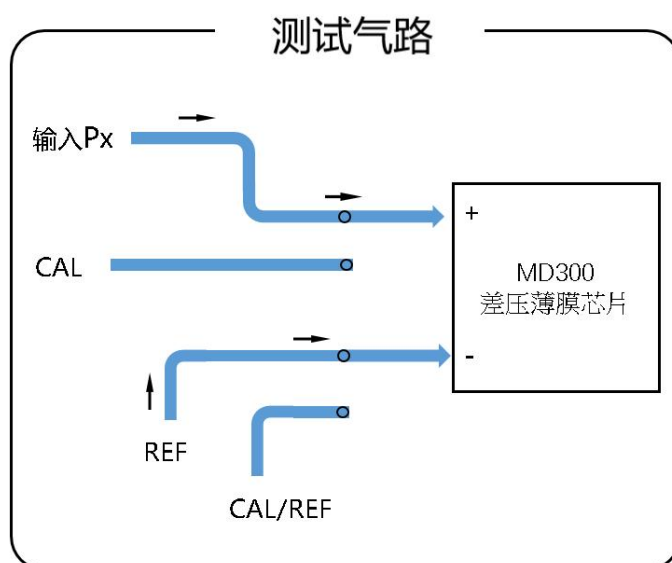
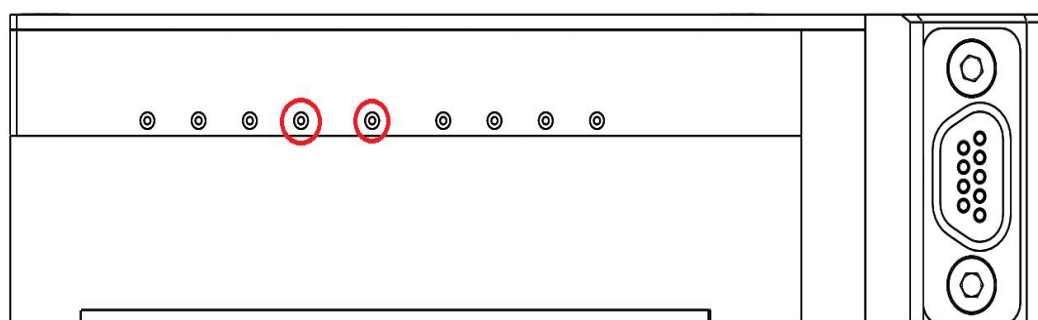


Package Size

L84.9*W42*H41.6 (mm)



Test mode gas path

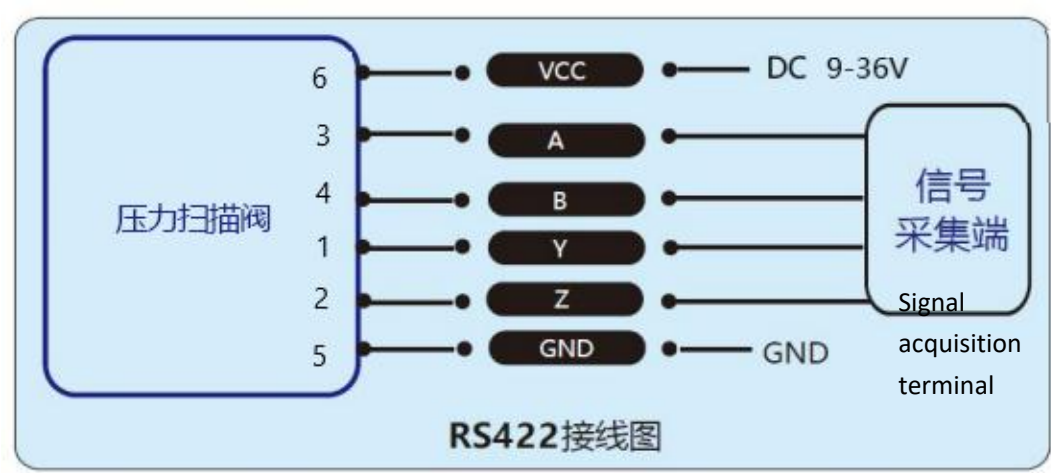


The gas route in the test environment has 8 input terminals Px and the differential pressure common pressure terminal REF. The gas path is switched to the test environment through the front PA piston air nozzle, the test pressure is directly input to the differential pressure chip through the upper air nozzle, and then the differential pressure is input to the pressure chamber through the atmospheric pressure to complete the differential pressure comparison and obtain the complete data.

Electrical Connection

Cable Definition

6	5、8	4	3	2	1	7	9
DC 9-36V	GND	RXD- (B)	RXD+ (A)	TXD- (Z)	TXD+ (Y)	INT	NC

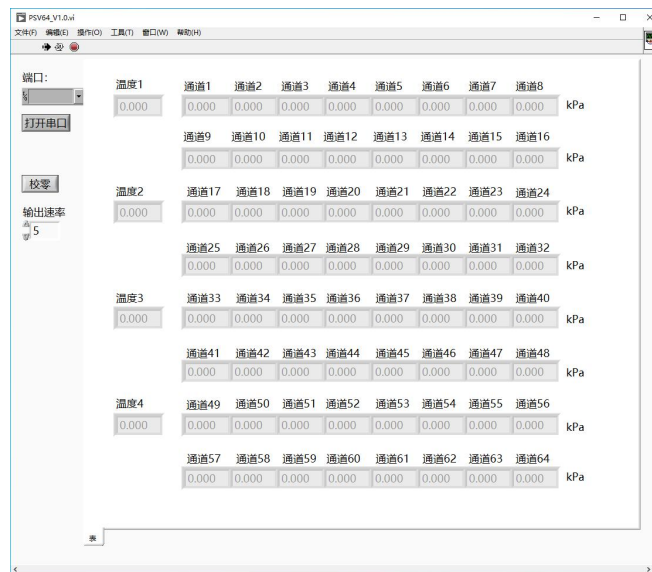


Accessories

Parts Name	Qty
2mm_PU hose (Length30cm)	1
RS422 to USB adapter	1
Portable waterproof and seismic case	1
Rubber tube sleeve (single nozzle)	1

Debug software

8-channel pressure scanning valve with software host computer can be directly connected through 422 to USB serial port, power supply needs external 9-36V DC power supply, the software is divided into the overview of 64-channel data and the overall complete wave mode of two parts.



The complete wave pattern is a group of 64 channels ,The presentation is as follows:



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scanning valve**

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