

HSDP-A Series

Air Differential Pressure Transmitter

Honeywell HSDP-A series Air Differential Pressure Transmitters are mainly used to measure air differential pressure or gauge pressure. They are applied to air pressure control of central air-conditioning air system, VAV and fan control, environmental pollution control, pressure difference control of clean room, smoke hood control, oven pressurization and boiler ventilation control, etc.

Features

- High-precision MEMS micro-pressure core body.
- Wide temperature range compensation and sensitive pressure response.
- A variety of functional parameters can be set by DIP switches, and the product has a wide range of applications.
- Optional display function, 5-digit LCD digital display shows clearly.
- Manual zero pressure value correction can be performed on site.
- Screwless clamshell buckle design for easy wiring and setting.



Order Information and Technical Specification

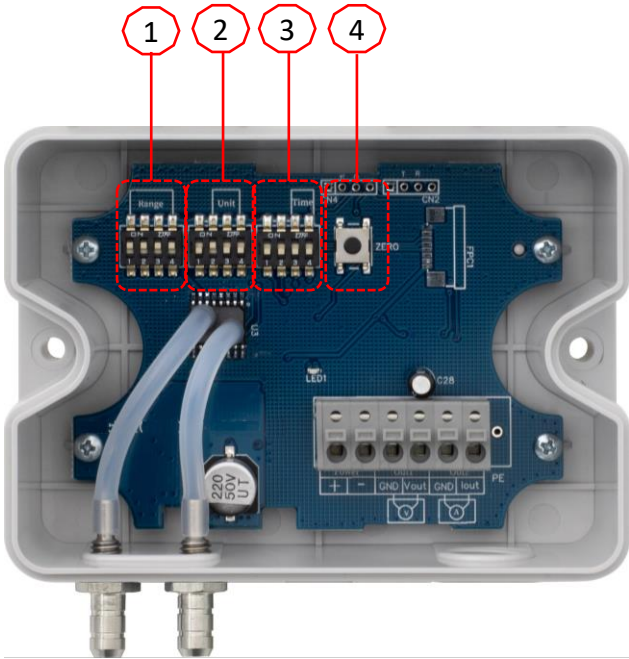
SKU	Max measuring range (Pa)	Output signal or Communication Protocol	Display Option
HSDP-A100U	-100 to 100	0-10V and 4-20mA	NO
HSDP-A1000U	-1000 to 1000	0-10V and 4-20mA	NO
HSDP-A10000U	-10000 to 10000	0-10V and 4-20mA	NO
HSDP-A100UL	-100 to 100	0-10V and 4-20mA	YES
HSDP-A1000UL	-1000 to 1000	0-10V and 4-20mA	YES
HSDP-A10000UL	-10000 to 10000	0-10V and 4-20mA	YES
HSDP-A100M	-100 to 100	Modbus RTU	NO
HSDP-A1000M	-1000 to 1000	Modbus RTU	NO
HSDP-A10000M	-10000 to 10000	Modbus RTU	NO
HSDP-A100ML	-100 to 100	Modbus RTU	YES
HSDP-A1000ML	-1000 to 1000	Modbus RTU	YES
HSDP-A10000ML	-10000 to 10000	Modbus RTU	YES

Basic Parameters

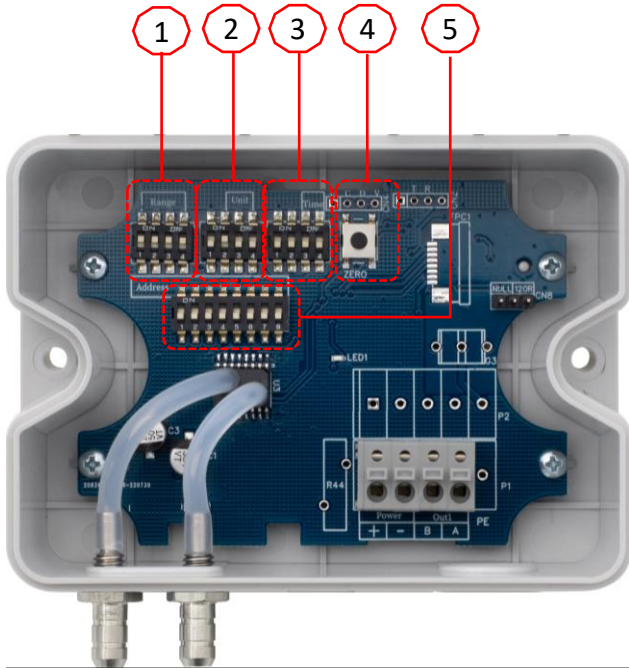
Accuracy	HSDP-A100xx	$\pm 1.0\%FS^* @ 25^{\circ}C$
	HSDP-A1000xx HSDP-A10000xx	$\pm 1.0\%FS$ (within Compensation Temperature Range)
Stability	HSDP-A100xx	$\pm 2\%FS / \text{Year}$
	HSDP-A1000xx HSDP-A10000xx	$\pm 0.25\%FS / \text{Year}$
Compensation Temperature Range	$-10^{\circ}C$ to $+60^{\circ}C$	
Applicable Medium	Air and Neutral Gas	
Medium Temp. Range	$-20^{\circ}C$ to $+70^{\circ}C$	
Operation Environment	$-20^{\circ}C$ to $+70^{\circ}C$, 0 to 95%RH (Non-condensing)	
Storage Environment	$-40^{\circ}C$ to $+70^{\circ}C$, 0 to 95%RH (Non-condensing)	
Power Supply	0-10V and 4-20mA: 12 to 30VDC/24VAC $\pm 20\%$ Modbus: 9 to 30VDC	
Power Consumption	$\leq 1.5W$	
Operation Current	0-10V and 4-20mA: $\leq 30mA$ RS485: $< 20mA$	
Max Circuit Load	4-20mA: $\leq 250\Omega$; 0-10V: $\geq 10k\Omega$	
Reaction Time	0.5S, 1S, 2S, 4S (DIP setting)	
Connection number for RS485 RTU devices	A maximum of 64 devices can be connected to a single network segment	
Overload Pressure	HSDP-A100xx	5KPa
	HSDP-A1000xx	10KPa
	HSDP-A10000xx	80KPa
Protection standard	IP65 (EN 60529)	
Housing Material	Housing: PC Core sealing ring: Silicone Rubber	
Accessory	2 meters PVC hose	
Certification	CE (EN IEC 61000-6-1: 2019; EN IEC 61000-6-3:2021); RoHS	

* FS is the abbreviation of Full scale.

Functions and Parameter Settings



0-10V and 4-20mA output models


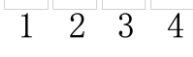
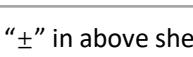


Modbus communication models

DIP zone	1	2	3
Enlarged picture of DIPs			
Function	Measuring range setting	DIP1: Auto-zero setting DIP 2, 3 and 4: range unit setting	DIP 2: Baud rate setting (Modbus model only) DIP 3 and 4: Reaction time setting
DIP zone	4	5	
Enlarged picture of DIPs			
function	Manual Zero reset button	Modbus address code setting (Modbus model only)	

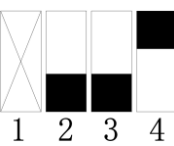

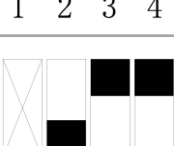

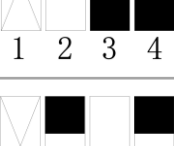
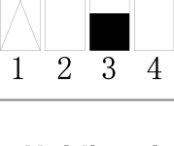
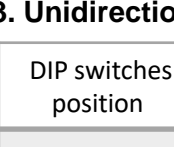


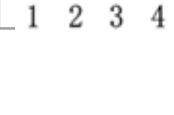
Measuring Range Setting

1. Default DIP switches position and Measuring range



DIP switches position	SKU	Pa	mmH2O	mbar	inH2O	mmHG	kPa
	HSDP-A100xx	±100.0	±10.00	±1.000	/	/	/
	HSDP-A1000XX	±1000.0	±100.0	±10.0	±4.00	±7.50	±1.000
	HSDP-A10000xx	±10000.0	±1000.0	±100.00	±40.00	±75.00	±10.000

“±” in above sheet means bidirectional range, for example: ±100Pa means the range is -100 Pa to 100 Pa.

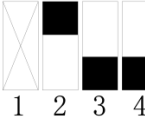
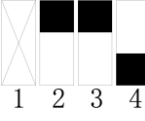


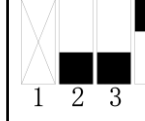
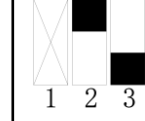
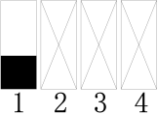
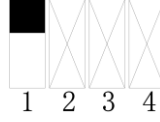
2. Measuring Range Setting: Set No.2 to No.4 DIP switch

DIP switches position	SKU	Pa	mmH2O	mBar	inH2O	mmHg	kPa
	HSDP-A100XX	10.0	1.00	0.100	/	/	/
	HSDP-A1000XX	100	10.0	1.00	0.40	0.75	0.100
	HSDP-A10000XX	1,000	100.0	10.00	4.00	7.50	1.000
	HSDP-A100XX	25.0	2.50	0.250	/	/	/
	HSDP-A1000XX	250	25.0	2.50	1.00	1.87	0.250
	HSDP-A10000XX	2,500	250.0	25.00	10.00	18.75	2.500
	HSDP-A100XX	50.0	5.00	0.500	/	/	/
	HSDP-A1000XX	500	50.0	5.00	2.00	3.750	0.500
	HSDP-A10000XX	5,000	500.0	50.00	20.00	37.50	5.000
	HSDP-A100XX	75.0	7.50	0.750	/	/	/
	HSDP-A1000XX	750	75.0	7.50	3.00	5.62	0.750
	HSDP-A10000XX	7,500	750.0	75.00	30.00	56.20	7.500
	HSDP-A100XX	100.0	10.00	1.000	/	/	/
	HSDP-A1000XX	1,000	100.0	10.0	4.00	7.50	1.000
	HSDP-A10000XX	10,000	1,000.00	100.00	40.00	75.00	10.000

3. Unidirectional or bidirectional range setting: set No.1 DIP switch

DIP switches position	Introductions
	The range remains unidirectional: 0 is the minimum value, and the range value set by the DIP No.2 to No.4 is the maximum value. For example: HSDP-A1000XX, the range value set by DIP No.2 to No. 4 is 1000Pa, and the range is unidirectional (positive), then the actual range is 0-1000Pa.
	The range becomes bidirectional: from negative to positive with zero in the middle. For example: HSDP-A1000XX, the range value set by DIP No.2 to No.4 is 1000Pa, after the range is set to bidirectional, the zero point is in the middle, and the actual range becomes -500Pa to 500Pa.

Measuring Range Units and Auto-zero Settings

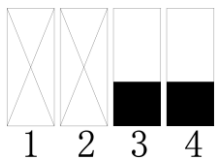
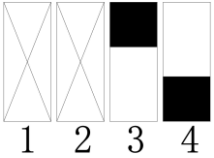
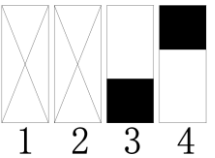
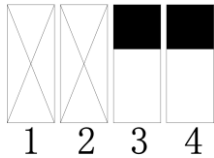
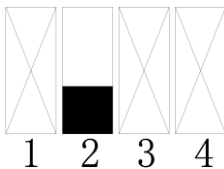
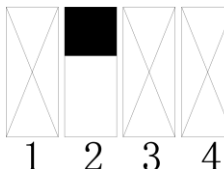
Unit Setting	Pa	mmH2O	mBar	inH2O	mmHg	kPa
Set DIP No.2 to No.4						
Auto-zero Setting						
Set DIP No.1	Do not start Auto-zero reset at boot (default)			Start Auto-zero reset at boot		

Automatic and Manual Zero reset

- 1.When the automatic zero reset is turned on, please ensure that there is no differential pressure between the positive and negative air inlets when power on, and the auto-zero reset data will not be saved.
2. If you choose not to start auto-zero reset after power on, you can manually reset it through the manual zero reset button. Open the panel and short press the manual reset button to reset, please keep the positive and negative air inlets without differential pressure to reset manually.

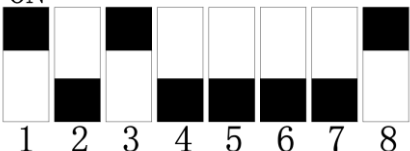


Reaction time and baud rate (Modbus models) settings

Reaction time	0.5s	1s	2s	4s	
Set DIP No.3 and No.4	 1 2 3 4	 1 2 3 4	 1 2 3 4	 1 2 3 4	
Set Baud rate	 1 2 3 4			 1 2 3 4	
Set DIP No.2 Only Modbus models	Baud rate: 9600			Baud rate: 19200	

Modbus ID Address Code Setting

ON



1248163264128

ADDRESS

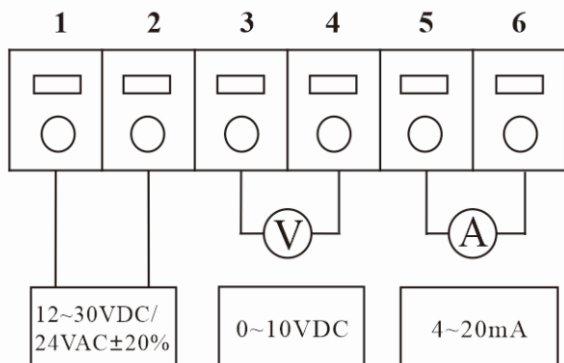
Dial to the ON side, add the corresponding numbers on the "ADDRESS " zone to get the address code.

Example for left picture: 1+4+128=133 (0X85H)

Note: Only when the DIP address is 0, the device ID address can be modified by software. For details about the Modbus setting method, please refer to the product installation manual.

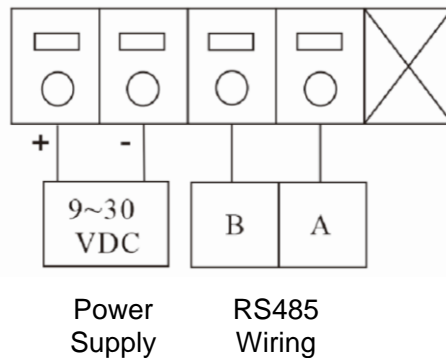
Wiring

0-10V and 4-20mA output models

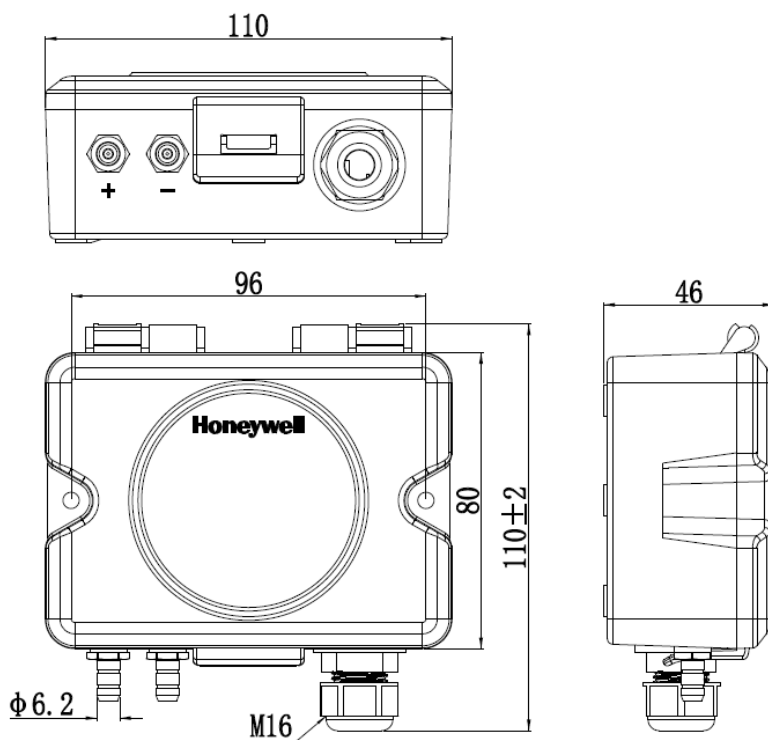


- | | |
|-------------------------|-------------------------|
| 1 Power supply Positive | 2 Power supply Negative |
| 3 Output signal ground | 4 Output 0-10V |
| 5 Output signal ground | 6 Output 4-20mA |

Modbus communication models



Dimension (mm)



For more information,

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