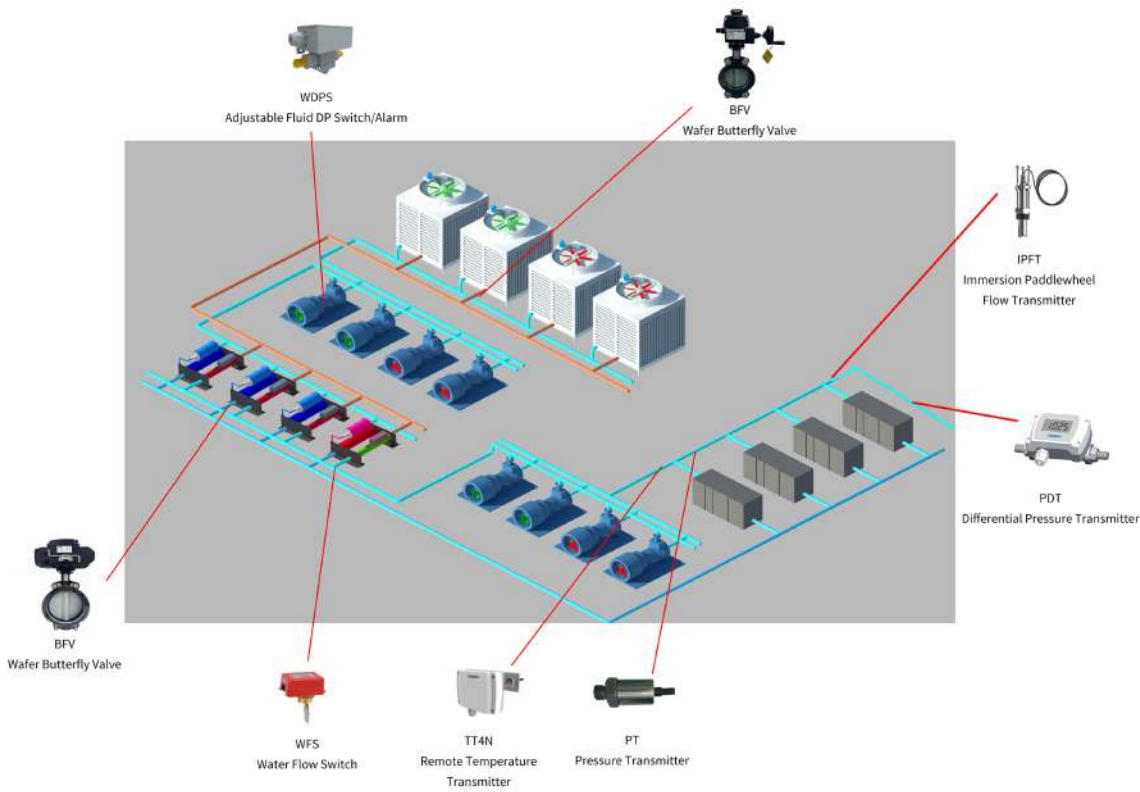




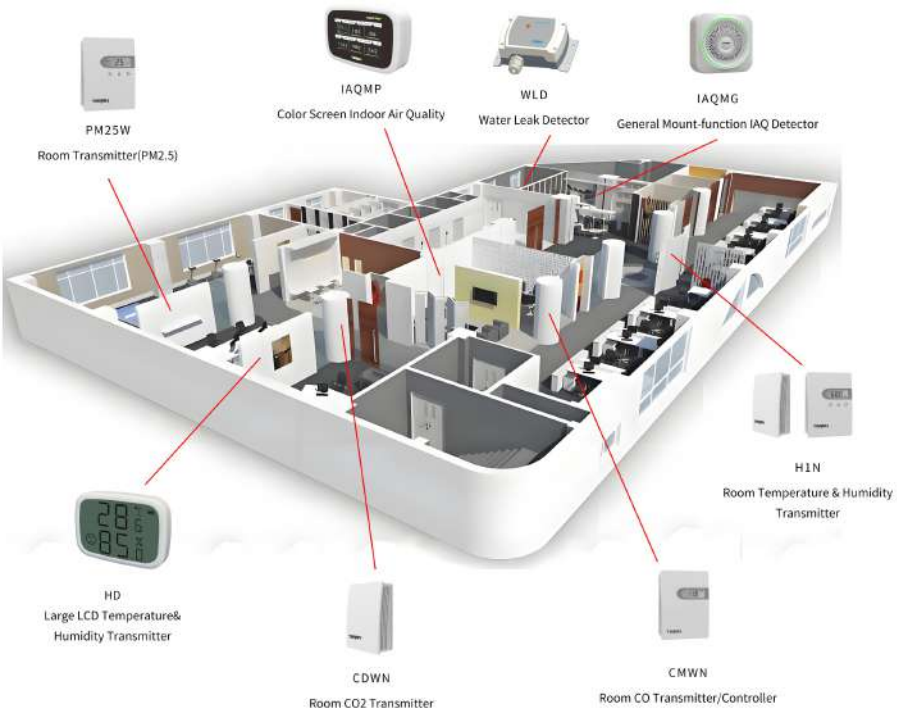
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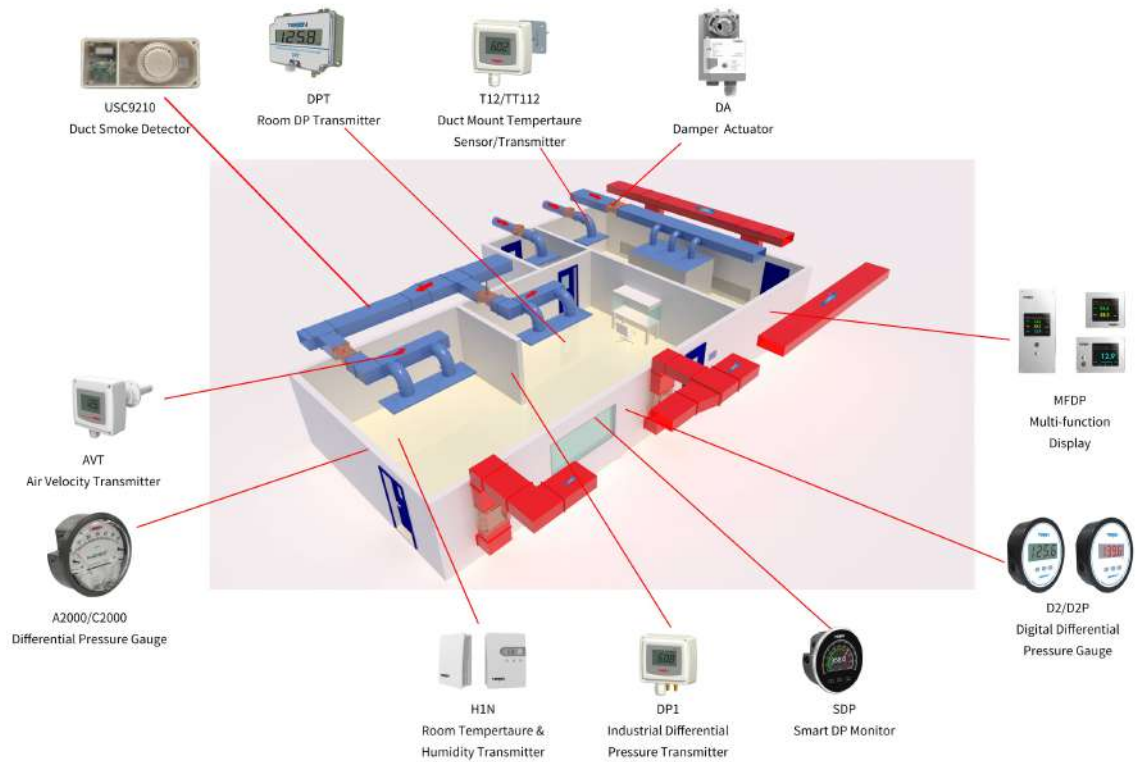
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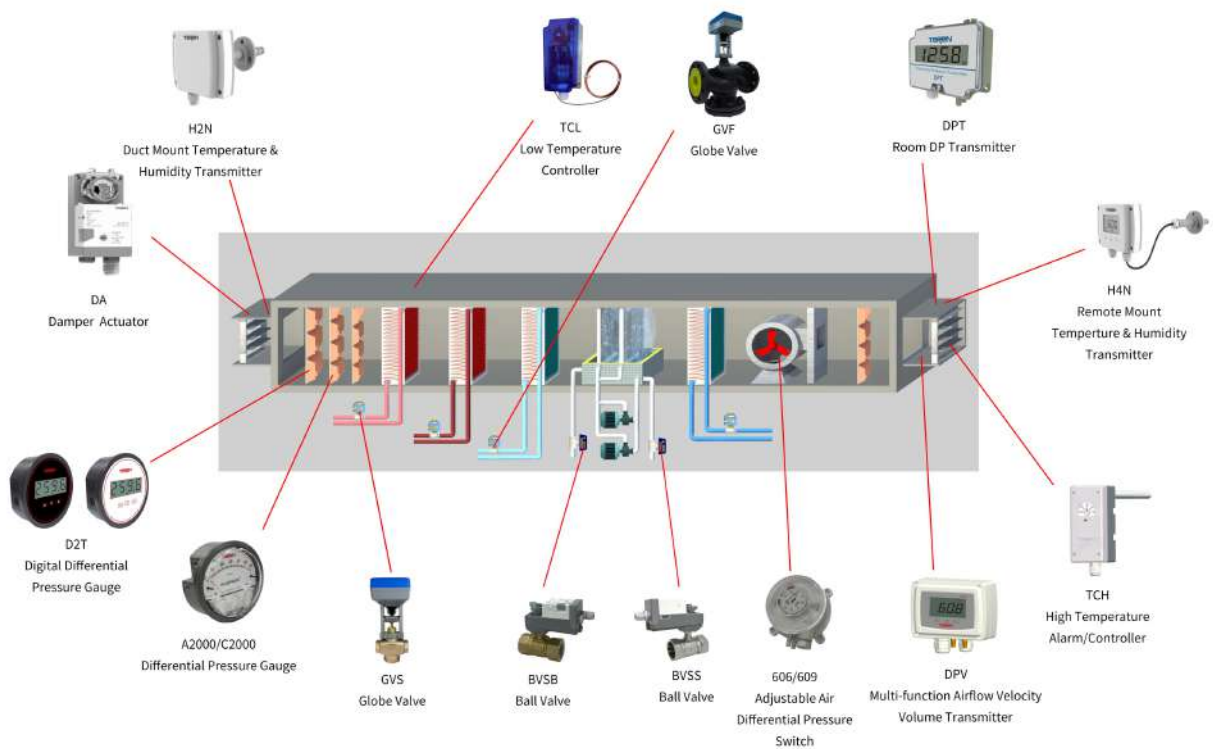
Building Automation



Clean Room



Terminal Unit



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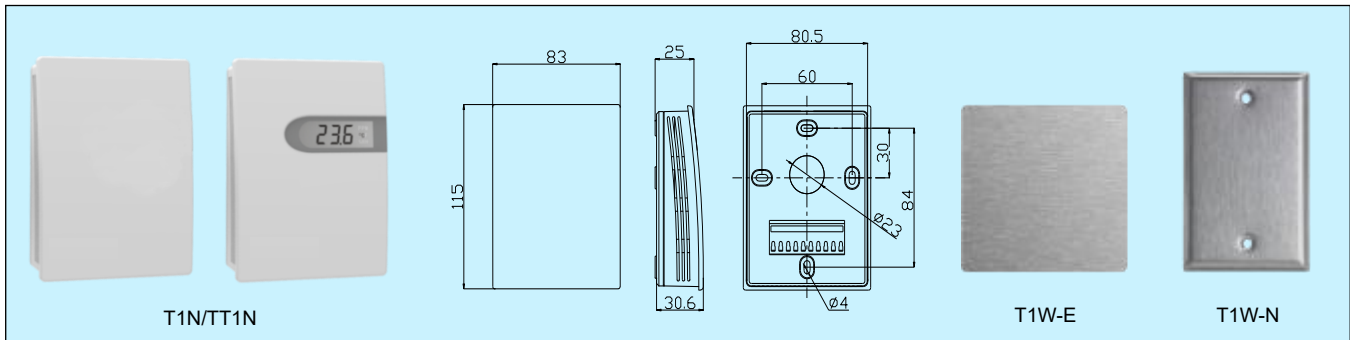
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T1N/T1W/TT1N Room/Wall Mount Temperature Sensor/Transmitter



Applications & Features

- Apply for indoor environment temperature measurement. T1N and TT1N are room environment. T1W is flush mount and measures room temperature via the stainless-steel plate for wash down or polluted environments. T1N and T1W are sensors only, while the TT1N is transmitter
- High performance thermistor & RTD, ensure accurate temperature measurement
- Multiple output optional, light and state of art housing, easy installation
- Over voltage and reverse polarity protection, high reliability and anti-interference capability
- Wide temperature range and fast response
- All electrical terminals are on the inside bottom, avoid any possible damage to PCB when wiring

Protection: IP30

Weight: T1N: 95g; T1W-E: 95g; T1W-N: 80g; TT1N: 145g

Approval: CE

Models

TT1N series room temp. transmitter

Model	TT1N	Room Temp. transmitter
Output	1	0~10VDC
	2	4~20mA (2 wires)
	8	RS~485/Modbus
	E	0~5VDC
Range	1	0~50°C
	2	0~100°C
Display	0	N/A
	1	LCD

Specifications

T1N/T1W series temperature sensor

Sensor: High accuracy thermistor or RTD, see models

Output: Thermistor or RTD, see models and resistance table

Accuracy: Typical 0.2~0.5°C @ 25°C, see models

Wiring: 2 wires or 3 wires (RTD)

(3 wires connection could obtain better accuracy)

Work Temp.: -30~70°C, 0~95%RH (Non condensing)

Models

T1N room temp. sensor/T1W wall mount temp. sensor

Model	T1N	T1W-E	T1W-N	Room Temp. sensor
				Wall mount Temp. sensor, China/EU style
				Wall mount Temp. sensor, North America style
Thermistor or RTD*	3			PT1000, ±0.2°C @25°C
	4			PT100, ±0.2°C @25°C
	5			NTC20K, ±0.2°C @25°C
	6			Ni 1000, ±0.5°C @25°C
	7			NTC10K-II, ±0.2°C @25°C
	9			NTC10K-III, ±0.3°C @25°C
	A			NTC10K-A, ±0.3°C @25°C

*See resistance table.

TT1N series temperature transmitter

Sensor: Digital temperature sensor

Range: see models

Output: 4~20mA (2 wires), 0~10VDC, 0~5V, RS-485/Modbus

Output Load: ≤500Ω (current), ≥3KΩ (voltage)

Accuracy: ≤±0.3°C @0~100°C

Power: 0~10V:24VDC/24VAC±20%; 4~20mA:24VDC±20%

Display: Optional LCD, resolution 0.1 °C, with unit

Work Temp.: -20~70°C (LCD: 0~70°C), 0~95%RH (Non cond.)

Storage Temperature: -30~70°C

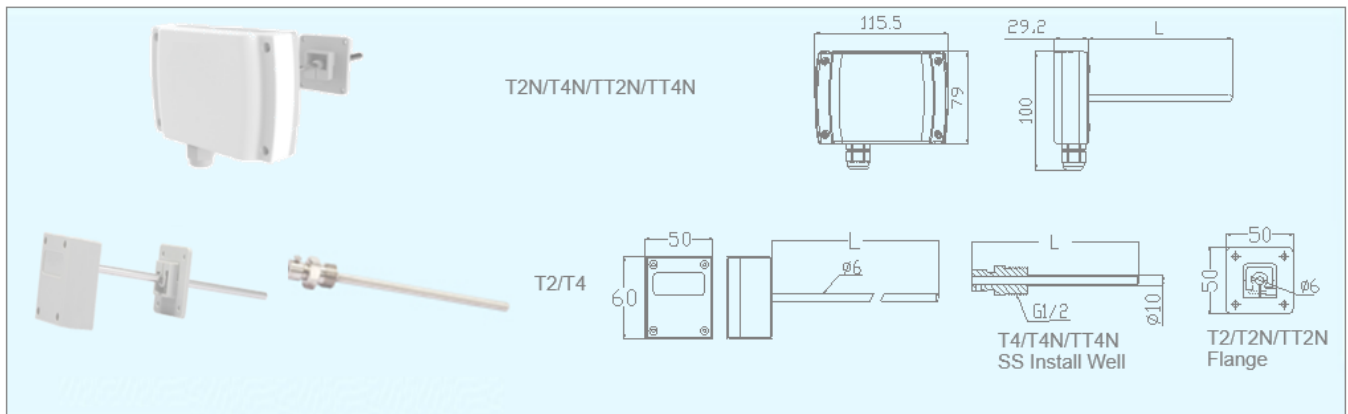
Housing: T1N/TT1N: fire retardant PC(UL94V-0)

T1W: Stainless steel

Resistance table:

T (°C)	3	4	5	6	7	9	A
	PT1000	PT100	NTC20K	Ni1000	NTC10K-II	NTC10K-III	NTC10K-A
-40	842.71	84.27	806,400	830.84	325,931	209,800	206,100
-35	862.46	86.25	572,550	851.15	236,365	161,200	155,500
-30	882.22	88.22	411,110	871.69	173,161	123,900	118,400
-25	901.91	90.19	298,440	892.47	128,108	95,590	91,000
-20	921.6	92.16	218,900	913.48	95,674	74,340	70,580
-15	941.23	94.12	162,110	934.74	72,102	58,460	55,240
-10	960.86	96.09	121,200	956.24	54,814	46,120	43,560
-5	980.43	98.04	91,450	977.99	42,022	36,450	34,580
0	1,000.00	100.00	69,600	1,000.00	32,477	28,870	27,630
5	1,019.51	101.95	53,410	1,022.26	25,295	23,130	22,170
10	1,039.03	103.90	41,320	1,044.79	19,848	18,620	17,970
15	1,058.48	105.85	32,210	1,067.59	15,687	15,060	14,690
20	1,077.94	107.79	25,290	1,090.65	12,483	12,240	12,080
25	1,097.33	109.73	20,000	1,113.99	10,000	10,000	10,000
30	1,116.73	111.67	15,920	1,137.62	8,062	8,214	8,319.00
35	1,136.07	113.61	12,760	1,161.52	6,539	6,781	6,952.00
40	1,155.41	115.54	10,290	1,185.71	5,335	5,626	5,834.00
45	1,174.69	117.47	8,346	1,210.20	4,378	4,691	4,917.00
50	1,193.97	119.40	6,808	1,234.98	3,611	3,929	4,160.00
55	1,213.20	121.32	5,584	1,260.06	2,995	3,323	3,533.00
60	1,232.42	123.24	4,605	1,285.44	2,496	2,816	3,013.00
65	1,251.59	125.16	3,817	1,311.14	2,090	2,390	2,579.00
70	1,270.75	127.08	3,179	1,337.14	1,758	2,033	2,217.00
75	1,289.86	128.99	2,661	1,363.47	1,486	1,733	1,914.00
80	1,308.97	130.90	2,237	1,390.12	1,261	1,482	1,659.00
85	1,328.02	132.80	1,889	1,417.09	1,075	1,272	1,451.00
90	1,347.07	134.71	1,602	1,444.39	920	1,098	1,265.00
95	1,366.06	136.61	1,363	1,472.03	790	950.20	1,111.00
100	1,385.06	138.51	1,165	1,500.00	681	824.60	978.80

T2/TT2, T4/TT4, Series Temperature Sensor/Transmitter



Applications & Features

- These sensors/transmitters can be used for temperature measurement in duct air, water and steam pipe
- High performance thermistor & RTD, ensure accurate temperature measurement
- Multiple output optional, Light, and state of art housing, easy installation
- Over voltage and reverse polarity protection, high reliability, and anti-interference capability
- Wide temperature range and fast response
- High protection rate up to IP65

Specifications

T2/T4, T2/4N series temperature sensor

Sensor: High accuracy thermistor or RTD, see models

Output: Thermistor or RTD, see models and resistance table

Accuracy: Typical $\pm 0.2 \sim 0.4^\circ\text{C}$ @25°C, see models

Wiring: 2 wires or 3 wires (RTD)

(3 wires connection could obtain better accuracy)

Work Temp. (Whole product): -40~70°C, 0~95%RH (Non cond.)

Medium Temperature (Probe): -40~100°C

TT2/4N series temperature transmitter

Sensor: PT1000, class A

Range: see models

Output: 4~20mA (2 wires) or 0-10VDC, 0-5VDC

Output Load: $\leq 500\Omega$ (current), $\geq 3k\Omega$ (0-10VDC), $\geq 2k\Omega$ (0-5VDC)

Total accuracy: $\leq \pm 0.5^\circ\text{C}$ @0~50°C, see accuracy curve

Power: Current 18.5~35VDC ($R_L=500\Omega$) 8.5~35VDC ($R_L=0\Omega$)

Voltage: 16~35VDC, 16~28VAC

Work Temp. (Whole product): -30~70°C, 0~95%RH (Non cond.)

Medium Temperature (Probe): -40~100°C

Storage Temperature: -30~70°C

Housing: Fireproof ABS, SS probe($\phi 6\text{mm}$), SS Well

Protection: IP65

Weight: T2:160g; T4:340g; T2N:270g; T4N:480g;

TT2N:280g; TT4N:465g;

Approval: CE

Models

T2,4 /T2,4N temperature sensors

Model	T2/T2N		Duct mount temperature sensor
	T4/T4N		Immersion temperature sensor
Thermistor or RTD*		3	PT1000, $\pm 0.2^\circ\text{C}@25^\circ\text{C}$
		4	PT100, $\pm 0.2^\circ\text{C}@25^\circ\text{C}$
		5	NTC20K, $\pm 0.4^\circ\text{C}@25^\circ\text{C}$
		6	Ni 1000, $\pm 0.4^\circ\text{C}@25^\circ\text{C}$
		7	NTC10K-II, $\pm 0.4^\circ\text{C}@25^\circ\text{C}$
		9	NTC10K-III, $\pm 0.4^\circ\text{C}@25^\circ\text{C}$
		A	NTC10K-A, $\pm 0.4^\circ\text{C}@25^\circ\text{C}$
Probe Length		0	75mm
		1	125mm
		2	200mm
		7	Others

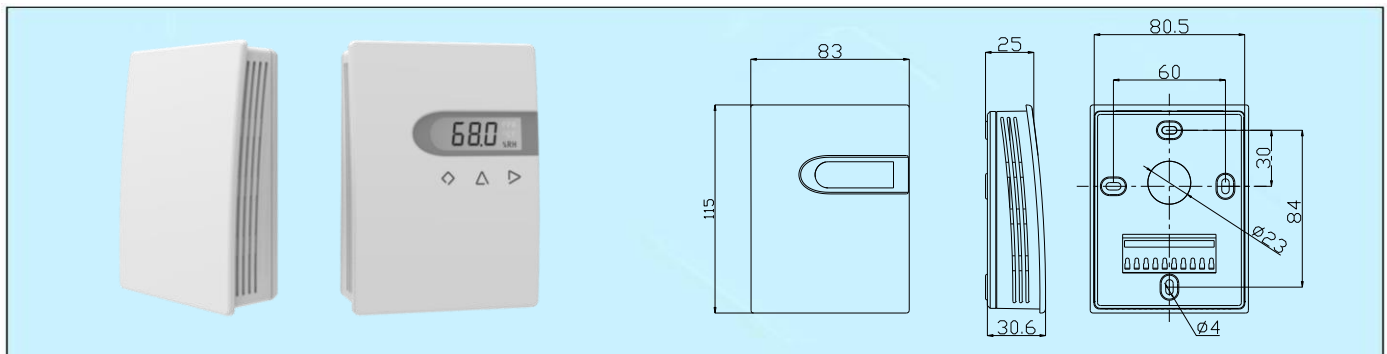
TT2/4N series temperature transmitter

Model	TT2N		Duct mount temperature transmitter
	TT4N		Immersion temperature transmitter
Output		1	0~10V
		2	4-20mA (2 wires)
		E	0~5V
Range		1	0-50°C
		2	0-100°C
		3	-40-60°C
		7	others
Probe Length		0	75mm
		1	125mm
		2	200mm
		7	Others

T4/T4N/TT4N Well

Model	A-T		Stainless Steel Well
Probe Length		0	75mm
		1	125mm
		2	200mm

H1N Room Temperature & Humidity Transmitter



Applications & Features

- Apply for indoor air T/RH measurement with good performance digital sensor & circuit. The sensor is 100% field changeable without re-calibration
- Good long term stability, reliability and fast response
- State of art housing. All electrical terminals are on the inside bottom, avoid any possible destroy to PCB when wiring
- Multiple outputs optional, over voltage and reverse polarity protection, and good anti-interference capability
- LCD & function keys can set parameters and calibrate output, so the product can be a stand alone controller

Specifications

Relative Humidity

Sensor: Digital polymer

Range: 0~100%RH

Output: 4~20mA (2 wires), 0~10VDC (3 wires), RS485/Modbus

Accuracy: 2, 3%RH (25°C, 20~80%RH)

Hysteresis: <±1%RH

Response time: <10s (25°C, in slow air)

Drift: <±0.5%RH/year

Temperature

Sensor: Digital, RTD or thermistor, see models

Range: 0~50°C

Output: see Models

Accuracy: transmitter: <±0.4°C(0.3°C) @ 5~60°C, see models

Power: Current: 18.5~35VDC (R_L=500Ω); 8.5~35VDC (R_L=0Ω)

Voltage: 16~28VAC/ 16~35VDC

Output Load: ≤500Ω (current), ≥2KΩ (voltage)

Relay output: 2xSPST, 0.5A/30VDC

Display and Keys: 4 bits LCD, with unit indication, backlight (4~20mA N/A), 3 keys, see details on LCD & Keys operation

Display Resolution: 0.1°C, 0.1%RH

Temp. Limit: -20~70°C, 5~95%RH (Non cond.)

Storage Temperature: -20~80°C

Housing: fire retardant PC(UL94V-0),

Protection: IP30

Approval: CE

Weight: 110g

Models

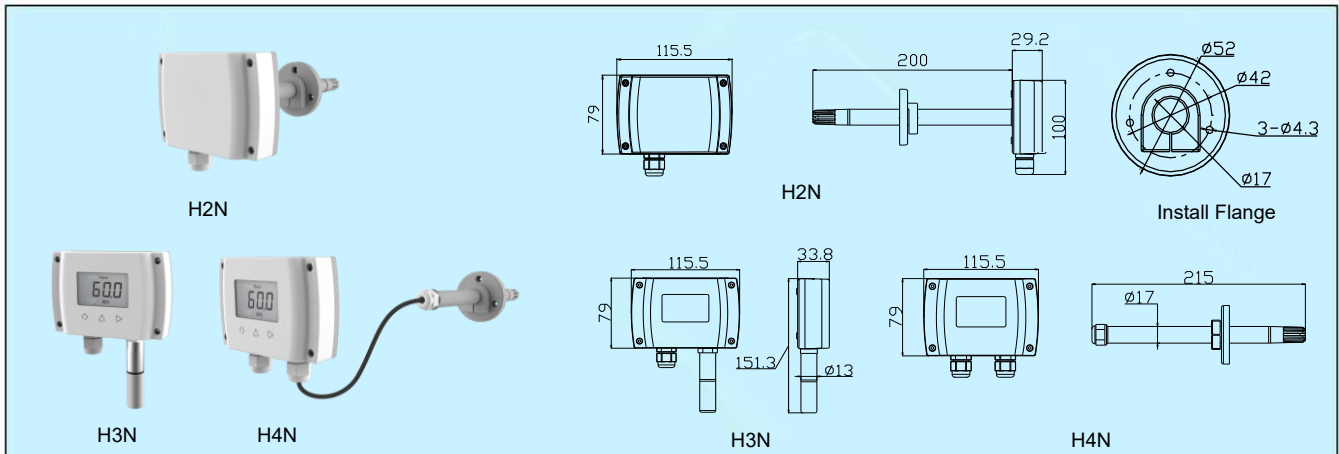
Model	H1N						Room T/RH transmitter
RH Accuracy		2					±2%RH (0.3°C) ±3%RH (0.4°C)
RH Output			1				0~10VDC (3 wires) 4~20mA (2 wires) RS485/Modbus
Temp. Output				0			No
				1			0~10VDC (3 wires)
				2			4~20mA (2 wires)
				3			PT1000, ±0.2°C@25°C
				4			PT100, ±0.2°C@25°C
				5			NTC20K, ±0.2°C@25°C
				6			Ni 1000, ±0.5°C@25°C
				7			NTC10K-II, 0.2°C@25°C
				8			RS485/Modbus
				9			NTC10K-III, 0.3°C@25°C
				A			NTC10K-A, 0.3°C@25°C
Temp. Range					0		No
					1		0~50°C
					7		others
Relay						0	No
						1	2xSPST (4-20mA N/A)
LCD& Keys						0	No
						1	LCD
						2	LCD & Keys

1. Current output products are powered on RH circuit, so RH circuit must be powered.

2. When temp. output is 1 or 2, the range 1-7 is applicable. Otherwise, always use 0.

3. See resistance table on page 1 of this catalog.

H2,3,4N Temperature & Humidity Transmitter



Applications & Features

- Humidity and temperature transmitters H2N (duct), H3N(outside) and H4N(remote) are designed for environment monitoring and controlling in industrial and commercial buildings.
- High performance digital sensors and circuits, ensure accurate measurement and temperature compensation
- Digital technology applied, multiple outputs optional, over voltage and reverse polarity protection, high reliability and anti-interference capability
- LCD display temperature and humidity alternatively
- LCD & function keys can set parameters and calibrate output, so the product can be a stand alone controller
- Good long term stability and reliability
- 100% field changeable sensor without re-calibration
- Fast response
- High protection rate up to IP65

Specifications

Relative Humidity

Sensor: Digital polymer

Range: 0~100%RH

Output: see models

Accuracy: 2%, 3%, (25°C, 20~80%RH)

Hysteresis: <±1%RH

Response time: <10s (25°C, in slow air)

Drift: <±0.5%RH / year

Temperature

Sensor: Digital temperature sensor or RTD/thermistor

Range: 0~50°C, 0~100°C, -40~60°C, or others

Output: see models

Accuracy: Transmitter: ≤ ±0.4°C @ 5~60°C or 0.3°C @ 5~60°C

RTD or thermistor: typical 0.2~0.4°C@ 25°C, see models

Power: Current: 18.5~35VDC (R_{load}=500Ω)
8.5~35VDC (R_{load}=0Ω)

Voltage: 16~28VAC/ 16~35VDC

Output Load: ≤500Ω (current), ≥2KΩ (voltage)

Relay output: 2xSPST, 0.5A/30VDC

Display and keys: 4 digits LCD, with unit indication, backlight (4-20mA N/A), 3 touch keys, see more details on LCD & Keys operation

Work Temp.: -30~70°C(LCD:0~50°C)

5~95%RH (Non condensing)

Housing: Fireproof ABS housing, UHMW-PE filter(H2/H4N), SS probe and sintered filter(H3N)

Protection: IP65

Weight: H2N:360g; H3N:270g; H4N:430g

Approval: CE

Models

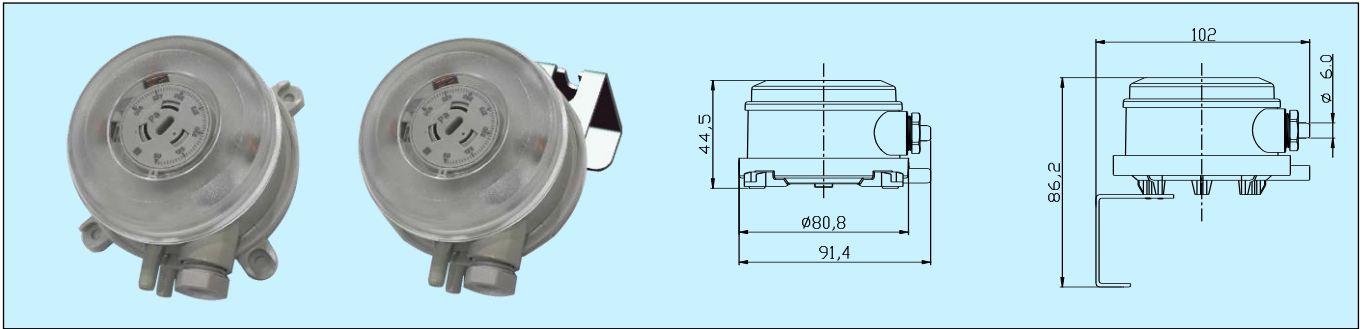
Model	H2N						Duct mount Temp./RH transmitter
	H3N						Outside air Temp./RH transmitter
	H4N						Remote mount Temp./ RH transmitter
RH Accuracy		2					±2%RH(0.3°C)
		3					±3%RH(0.4°C)
RH Output			1				0-10VDC(3 wires)
			2				4-20mA(2 wires)
			8				RS485/Modbus
Temp. Output				0			No
				1			0-10VDC(3 wires)
				2			4-20mA(2 wires)
				3			PT1000, ±0.2°C@25°C
				4			PT100, ±0.2°C@25°C
				5			NTC20K,±0.2°C@25°C
				6			Ni 1000, ±0.5°C@25°C
				7			NTC10K-II, 0.2°C@25°C
				8			RS485/Modbus
				9			NTC10K-III,0.3°C@25°C
				A			NTC10K-A, 0.3°C@25°C
Temp. Range					0		No
					1		0-50°C
					2		0-100°C
					3		-40-60°C
					7		others
Relay						0	No
						1	2xSPST(4-20mA N/A)
LCD & Keys						0	No
						1	LCD
						2	LCD & Keys

*1. H2,3,4N series current products are powered by RH circuit, so the RH circuit must be powered. Otherwise, it could not work.

*2. Only when the temperature output is 1 or 2, the temperature range 1-7 is applicable. Otherwise, always use 0 as temperature range selection.

*3. See resistance table on page 1 of this catalog.

606 Adjustable Differential Pressure Switch



Applications & Features

Monitoring overpressure, vacuum and differential pressure of the air and other non-combustible, non-aggressive gases

Specifications

Adjustable range: 4 ranges, see models

Pressure limit: 7500Pa (-30~75°C)

Working and storage temperature: -30~75°C

Pressure port: Φ 5.0mm ID PVC tube, +/P1 is high, -/P2 is low

Service life: over 10^6 switching cycles

Electrical contact: SPDT, 2A/250VAC, 1A/30VDC

Max. switching frequency: 6 switching cycles/min

Electrical connection: Flag or screw terminals

Repeatability: $\pm 2\%$

Materials: housing PC, diaphragm silicone, contact silver plated brass

Weight: 135g with bracket, 85g without bracket

Protection: IP54

Approval: CE

Accessories (should be ordered separately)

Part No.	Description
1001	Individual accessory package: clear PVC tube 2m, static pressure tip (1003) 2 pcs, screws 4 pcs
1003	1 pc static pressure tip, straight type, 0° angle opening
1004	Individual accessory package: clear PVC tube 2m, total pressure tip (1005) 2 pcs, screws 4 pcs
1005	1 pc total pressure tip, straight type, 60° angle opening
1008	Individual accessory package: clear PVC tube 2m, static pressure tip (1009) 2 pcs, screws 4 pcs
1009	1 pc static pressure tip, L type, 0° angle opening
Kit-1001	Accessory kit, clear PVC tube 100m, static pressure tip (1003) 120 pcs, screws 240 pcs
Kit-1004	Accessory kit, clear PVC tube 100m, total pressure tip (1005) 120 pcs, screws 240 pcs
Kit-1008	Accessory kit, clear PVC tube 100m, static pressure tip (1009) 120 pcs, screws 240 pcs



Models

Model	606				Adjustable Air Differential Pressure Switch
Enclosure	0				With install ear
	1				No ear, with bracket
Adjustable range	0				20~300Pa
	1				50~500Pa
	2				100~1000Pa
	3				0.5~2.5kPa
Engineering unit	0				Pa
	7				mbar
	8				inch wc
	9				mm wc
Terminal	0				Flag terminal
	1				Screw terminal

606.0xxx has OEM package with 60 pcs/carton. P/N is 606.0xxx-OEM.

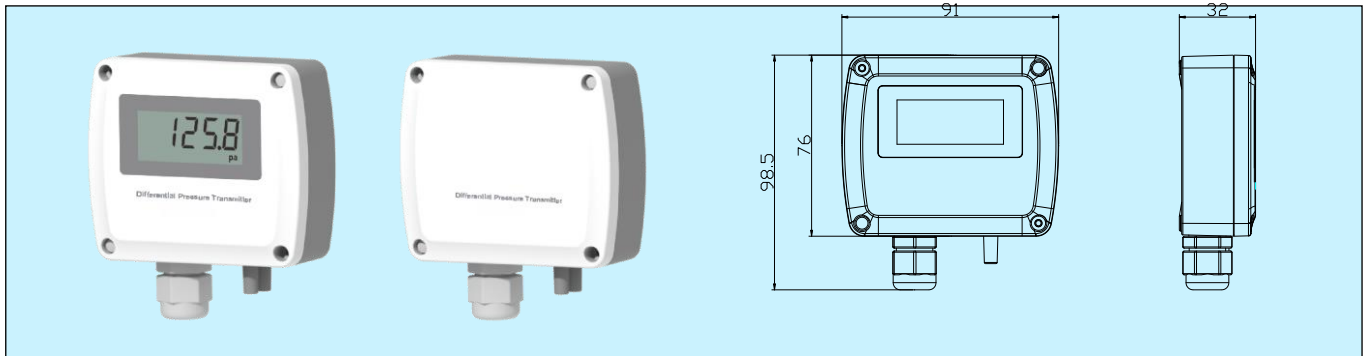
The accessories Kit-1001/1004/1008 can be ordered with the OEM model.

Dead Band

Part No.	Range	Dead Band
606.X0XX	20~300Pa	Typical 15Pa
606.X1XX	50~500Pa	Typical 25Pa
606.X2XX	100~1000Pa	Typical 50Pa
606.X3XX	0.5~2.5kPa	Typical 100Pa

Dead Band is factory set. Customers can not adjust.

DPTL Differential Pressure Transmitter



Applications & Features

- Apply high accuracy MEMS sensor and digital technologies, can measure positive, negative or differential pressure. DPTL is for surface mount and DPTL-F is for flush mount
- It can measure system pressure of fan, filter, etc., and can apply to various clean room, biological safety cabinet, clean bench, ducts collection, medical or pharmaceutical machine, etc.
- Multiple ranges, engineering units, outputs and optional LCD
- Over voltage and reverse polarity protection for power inputs and outputs, high reliability
- Good performance with accuracy of 1.0% and range as low as 25Pa
- Function keys: zero calibrate, unit select, response time set, etc.

Specifications

Medium: non-combustible, non-corrosive air, insensitive to moisture, dust, condensation and oil

Working Temp.: -20~70°C

Medium Temp.: 0~60°C

Temp. Compensation: 0~50°C

Range: 25Pa(±12.5Pa) ~10kPa(±5kPa)

Accuracy: ±1.0%FS (±2.0%FS@25Pa range)

Long term stability: ±0.5%FS/Year

Thermal effect: <0.05%FS/°C (zero), <0.08%FS/°C (FS)

Response Time: 0.5/1/2/5s, can be set by DIP switches

Zero set: easy to reset by external key

Process Connection: 5mm ID tubing

Display: 5 digits LCD, size 44x18mm, with unit indication

Units: 5 units, selected by DIP switches

Output: 0~5V/0~10V/4~20mA(2 or 3 wires), RS485/Modbus

Output Load: ≤500Ω (current), ≥2kΩ (voltage)

Power: Voltage: 16~28VAC/ 16~35VDC

Current: 18.5~35VDC (R_L=500Ω); 8.5~35VDC (R_L=0Ω)

Housing: PC, fire retardant UL94V-0

Protection: IP65

Weight: 180g

Approval: CE

Accessories: flush mount panel (model DPTL-A), can be ordered separately

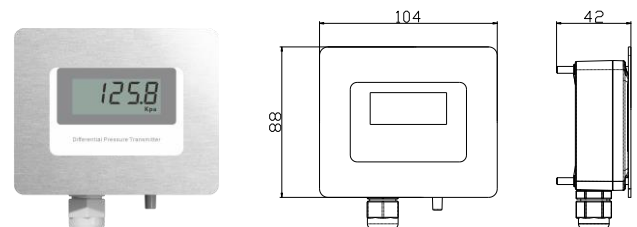
Models

Model	DPTL			DP transmitter
	DPTL-F			Flush mount DP transmitter
Range		x		Range selection
Output		1		0~5V/0~10V/4~20mA (3 wires)
		2		4~20mA (2 wires)
		8		RS485/Modbus
Display			0	N/A
			1	LCD

DPTL-F Flush Mount DP Transmitter

It's the combination of DPTL (with LCD) and flush mount panel (model DPTL-A). The specifications are the same as DPTL. And the model is DPTL-Fxx1(with LCD).

It's for flush mount in various clean room or equipment. The 316 brushed stainless steel panel does not have any dust collection, easy and safe to clean. The size is W104×H88×T1.5(mm). The opening is W94×H78.5×D42(mm). The LCD size is 44x18(mm).

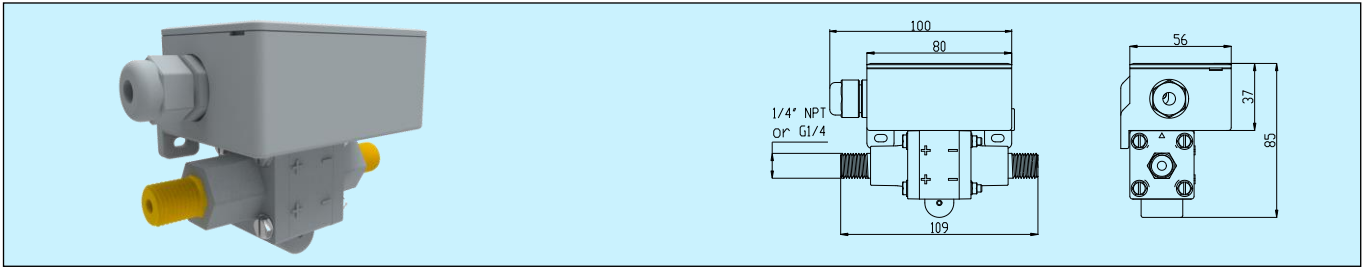


Ranges

Code	UNIT & Range & Display Resolution					
	Pa	Pa	kPa	in wc	mm wc	mbar
0	0-25	25.0	0.025	0.100	2.50	0.250
1	0-60	60.0	0.060	0.250	6.00	0.600
2	0-125	125.0	0.125	0.500	12.00	1.250
3	0-250	250.0	0.250	1.000	25.00	2.500
4	0-500	500.0	0.500	2.000	50.00	5.000
5	0-1000	1000	1.000	4.000	100.0	10.00
6	0-2500	2500	2.500	10.00	250.0	25.00
7	0-5000	5000	5.000	20.00	500.0	50.00
8	0-10000	10000	10.000	40.00	1000.0	100.00

1. Set the 5 engineering units by DIP switches and the related LCD indicator will be on.
2. For zero center models, add "Z" at the end of the model. For example, DPTL1xxZ, means the range is -30-0-30Pa. Only ranges 1~6 have this selection.

WDPS Adjustable Fluid Diff. Pressure Switch/Alarm



Application & Features

Monitor the pressure drop, overpressure and other differential pressure of non-combustible, non-aggressive liquids such as water or oil. It can be used in the control of water flow in various heat exchanger, chiller, or water pump and filter.

Specifications

Adjustable ranges and Dead Band(DB): see models

Max static pressure: 16bar

Working medium temperature: -10~70°C

Working temperature: -20~70°C

Storage temperature: -30~80°C

Electrical characteristics:

Model	WDPS	WDPS1	WDPS2
Power	-	85~250VAC	9~28VAC/DC
LED Alarm	-	Red/Green LED	Red/Green LED
Relay	SPDT,3A/30VDC, or 3A/250VAC	-	SPST, 3A,30VDC/AC
EMC	GB14536.1/GB14536.7, IEC60730-1/IEC60730-2-6		
Electrical wiring	Screw terminals		

Pressure connection: G1/4, 1/4" NPT or others

Repeatability: ±2%

Material:

Hydrolysis resistant nylon housing (flame retardant UL94V-0), copper pressure connector, NBR membrane

Weight: 370g

Protection: IP65

Approval: CE

Accessories (should be ordered separately):

Buffer Tube or Pressure Snubber should be applied according to specific application, refer to Accessories.

Models

Model	WDPS	WDPS1	WDPS2	Fluid DP Switch Fluid DP Alarm (LED Alarm) Fluid DP Switch & LED Alarm
Adjustable Range and Dead Band	0	Range 8~20kPa, DB 4±2kPa		
	1	Range 10~40kPa, DB 4±3kPa		
	2	Range 10~100kPa, DB 5±4kPa		
	3	Range 20~200kPa, DB 10±6kPa		
	4	Range 100~400kPa, DB 18±13kPa		
Process Connection	2	1/4 NPT		
	4	G1/4		
	7	Others		

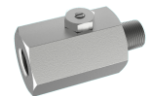
Accessories (should be ordered separately)



Buffer Tube
A-S51-G/ A-S51-N



Buffer Tube
A-S52-G/ A-S52-N

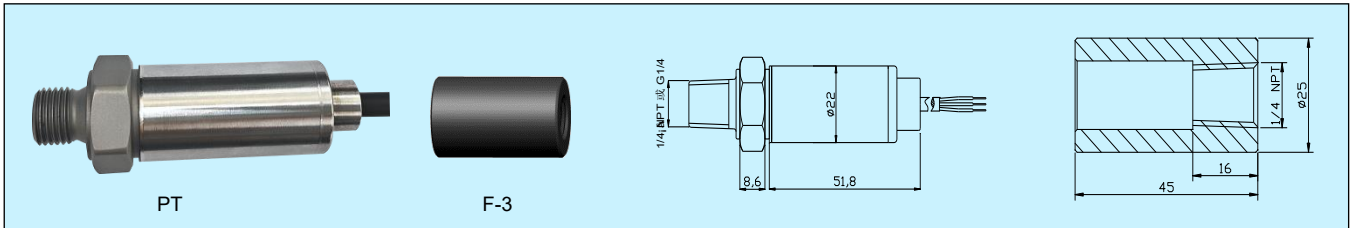


Pressure Snubber
A-S53-G/

A-S53-N

Model	Descriptions
A-S51-N	Buffer tube, straight connect, for protecting pressure instruments in water systems. SS304, temperature 150°C, pressure 2Mpa, 1/4"NPT, one end is external thread and the other is internal
A-S51-G	Buffer tube, straight connect, for protecting pressure instruments in water systems. SS304, temperature 150°C, pressure 2Mpa, G1/4, one end is external thread and the other is internal
A-S52-N	Buffer tube, 90° angle connect, for protecting pressure instruments in water systems. SS304, temperature 150°C, pressure 2Mpa, 1/4"NPT, one end is external thread and the other is internal
A-S52-G	Buffer tube, 90° angle connect, for protecting pressure instruments in water systems. SS304, temperature 150°C, pressure 2Mpa, G1/4, one end is external thread and the other is internal
A-S53-N	Pressure snubber, for protecting pressure instruments in water systems by dampening surges and pulsations. SS304, temperature 150°C, pressure 3.5Mpa, 1/4"NPT, one end is external thread and the other is internal
A-S53-G	Pressure snubber, for protecting pressure instruments in water systems by dampening surges and pulsations. SS304, temperature 150°C, pressure 3.5Mpa, G1/4, one end is external thread and the other is internal

PT Pressure Transmitter



Applications & Features

For pressure measurement of compatible fluid and gas

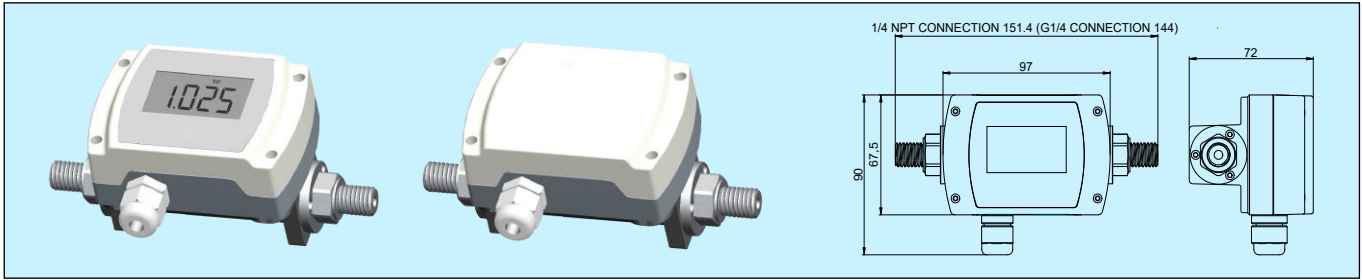
Specifications

Sensor: glass micro fused silicon strain sensor
Power: 10~30VDC
Output: 4~20mA (2 wires), load 0~500Ω@10~30VDC
Range: see models
Temp. limit: Work -20~85°C; Medium -40~125°C; Compensation 0~55°C
Accuracy: ±0.5%FS (BFSL)
Stability: ≤0.5%FS/Year
Pressure limits: overload 200%FS, burst 500%FS
Response time: ≤50ms
Medium compatibility: 17-4PH stainless steel
Housing: 304 SS
Protection: IP67
Approval: CE
Accessory: F-3-N for 1/4 NPT and F-3-G for G 1/4 screw thread, should be ordered separately. Use the same packing if ordered along with PT transmitter. And it is recommended to apply the buffer tube or pressure snubber, see Accessories.

Models

Models	PT			Pressure Transmitter
Output		2		4~20mA
Range		2		0~6 bar
		3		0~10 bar
		4		0~16 bar
		5		0~25 bar
		6		0~40 bar
Process Connection			2	1/4 NPT
			4	G1/4
			7	Others
Electrical Connection			1	Cable (1m)

PDT Differential Pressure Transmitter



Applications & Features

For diff. pressure measurement of compatible fluid and gas

Specifications

Sensor: Glass micro fused silicon strain sensor

Power: Current: 18.5~35VDC ($R_L=500\Omega$), 8.5~35VDC ($R_L=0\Omega$),
Voltage output: 16~35VDC, 16~28VAC

Output: 4~20mA (2 wires), 0~10VDC (3 wires) or RS485

Output Load: $\leq 500\Omega$ (current), $\geq 2k\Omega$ (0-10VDC)

Accuracy: Typical $\pm 0.5\%FS$ (BFSL), see range specifications

Range: see range specifications

Display: LCD, with unit indication (kPa/mbar/in WC/bar/MPa)

Temp. limit: work -20~70°C; medium -20~85°C; compensation 0~55°C

Pressure Limit: see range specifications

Response time: $\leq 500ms$

Medium compatibility: 17-4PH stainless steel

Housing: sensor: 17-4PH stainless steel; sensor: die cast aluminum;
enclosure: fire retardant ABS+PC(UL94V-0)

Protection: IP65

Weight: 0.5kg

Approval: CE

Install bracket: Included in the packing. It is recommended to apply the buffer tube or pressure snubber, see Accessories

Models

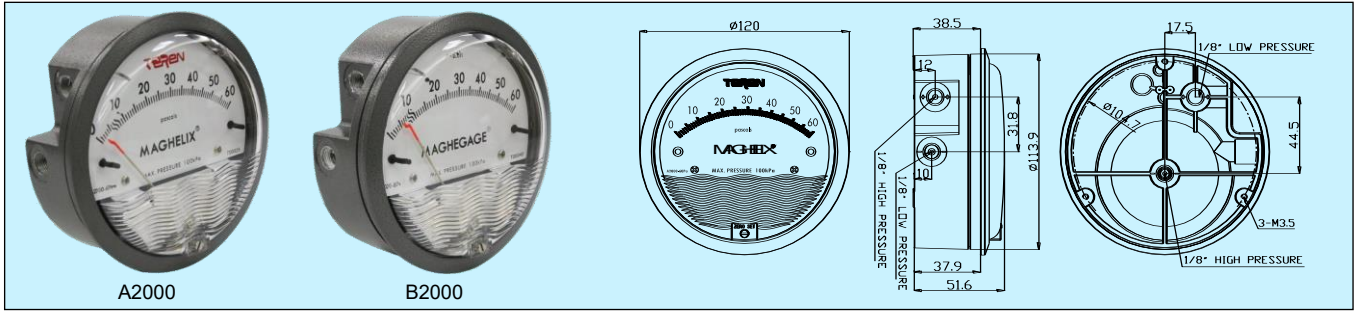
Models	PDT				Diff. Pressure Transmitter
Output		1			0~10V
		2			4~20mA
		8			RS485/Modbus RTU
Range			X		see range specifications
Process Connection			2		1/4 NPT
			4		G1/4
			7		Others
Display				0	N/A
				1	LCD

Range specifications

Range		Pressure limits in both side ports			Accuracy (BFSL)	Temperature Coefficient
		Rated	Overload	Burst		
Code	bar	bar	bar	bar	%FS	%FS/°C
0	0~0.5	3.5	7	17.5	1.0	0.15
1	0~1	3.5	7	17.5	0.5	0.1
2	0~2	3.5	7	17.5	0.5	0.05
3	0~4	7	14	35	0.5	0.05
4	0~6	10	20	50	0.5	0.05
5	0~10	10	20	50	0.5	0.05
6	0~10	16	32	80	0.5	0.05
7	0~16	16	32	80	0.5	0.05

The factory set engineering unit is bar. Customer can switch to others with the UNIT button on the PCB.

A2000/C2000 Differential Pressure Gauge



Applications & Features

- They can measure system pressure of fan, blower, filter, furnace draft and orifice plates. And they can also measure pressures in various clean room, bio-safety cabinet, clean bench, industrial cleaner, medical equipment, air sampler, pharmaceutical and grain & food machine, etc.
- 68 models available for different ranges and units
- With simple and frictionless movement, it quickly indicates air or gas pressure, either positive, negative or differential
- The design resists shock, vibration and over pressures
- Ultra-thin design: the flushed part is only 38.5mm, and the overall thickness is only 52.2mm
- Patented state of art wave shape decorative front cover
- Standard accuracy up to 2% and high accuracy up to 1%FS
- Optional mirror scale overlay eliminating parallax reading error and brushed 304 SS or chrome plated bezel for A2000
- A2000 (use trademark MAGHELIX) has very fine parts and assembly procedures to ensure extraordinary accuracy, stable and reliable for long term application. Each one have a Test Report for multiple points and precision packing. While C2000 is same A2000 but shall have ABS case and bezel.

Specifications

Service: Air and non-combustible compatible gases

Housing: Die cast aluminum case and bezel, with PC cover

Protection: IP67

Accuracy: $\pm 2\%$ FS ($\pm 3\%$ on 125Pa, $\pm 4\%$ on 60Pa) @21°C

Pressure Limits: -70 to 100 kPa

Size: 101.5mm (4") diameter dial face, 115.5 mm (4-9/16") dia. opening for flush mount

Temperature Limits: -7 to 60°C (20 to 140°F)

Connections: 1/8" NPT female high and low pressure taps, duplicated, one pair side and one pair back

Weight: 440g

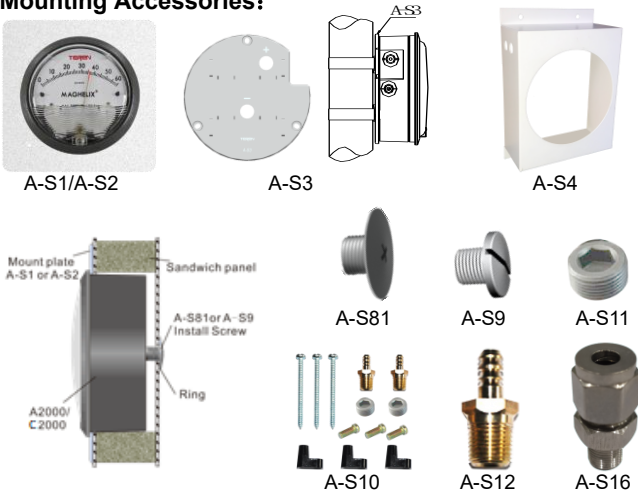
Mounting method: Flush or surface in vertical position

Standard accessory: Model A-S10, including two 1/8" NPT pipe plugs, two 1/8" NPT to 3/16" rubber tubing adapters and three flush mounting adapters with screws

Other Accessories: sold separately, see Accessories

Approval: RoHS (A2000)

Mounting Accessories:



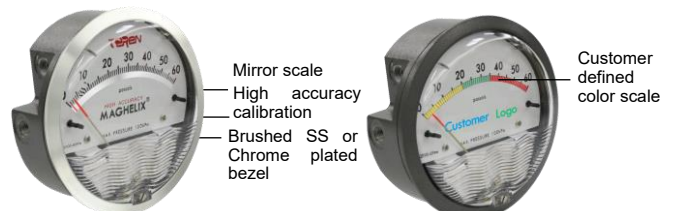
Models (For A2000, use C for ABS case and bezel)

Model Number	Range Pa	Model Number	Range in w.c
A2000-60NPa**	10-0-50	A2000-00N**	0.05-0-2
A2000-60Pa**	0-60	A2000-00**	0- 25
A2000-100Pa*	0-100	A2000-0*	0- 50
A2000-125Pa*	0-125	A2001	0-1.0
A2000-250Pa	0-250	A2002	0-2.0
A2000-500Pa	0-500	A2003	0-3.0
A2000-750Pa	0-750	A2004	0-4.0
Zero Center Ranges Pa		A2005	0-5.0
A2300-60Pa**	30-0-30	A2006	0-6.0
A2300-120Pa*	60-0-60	A2008	0-8.0
A2300-250Pa	125-0-125	A2010	0-10
A2300-500Pa	250-0-250	A2012	0-12
Model Number	Range kPa	A2015	0-15
A2000-1KPa	0-1	A2020	0-20
A2000-1.5KPa	0-1.5	A2025	0-25
A2000-2KPa	0-2	A2030	0-30
A2000-3KPa	0-3	A2040	0-40
A2000-4KPa	0-4	Zero Center Ranges in w.c.	
A2000-5KPa	0-5	A2300-00**	.125-0-.125
A2000-8KPa	0-8	A2300-0*	.25-0-.25
A2000-10KPa	0-10	A2301	.5-0-.5
Zero Center Ranges kPa		A2302	1-0-1
A2300-1KPa	.5-0-.5	A2304	2-0-2
A2300-2KPa	1.0-0-1.0	A2310	5-0-5
Model Number	Range mm wc	Model Number	Range cm w.c.
A2000-6MM**	0-6	A2000-15CM	0-15
A2000-10MM*	0-10	A2000-20CM	0-20
A2000-15MM*	0-15	A2000-25CM	0-25
A2000-25MM	0-25	A2000-50CM	0-50
A2000-30MM	0-30	A2000-80CM	0-80
A2000-50MM	0-50	A2000-100CM	0-100
A2000-80MM	0-80	Zero Center Ranges cm w.c.	
A2000-100MM	0-100	A2300-4CM	2-0-2
A2000-150MM	0-150	A2300-10CM	5-0-5
A2000-250MM	0-250	A2300-20CM	10-0-10
A2000-300MM	0-300	Zero Center Ranges mm w.c.	
A2000-500MM	0-500	A2300-6MM**	3-0-3
		A2300-10MM*	5-0-5
		A2300-20MM	10-0-10

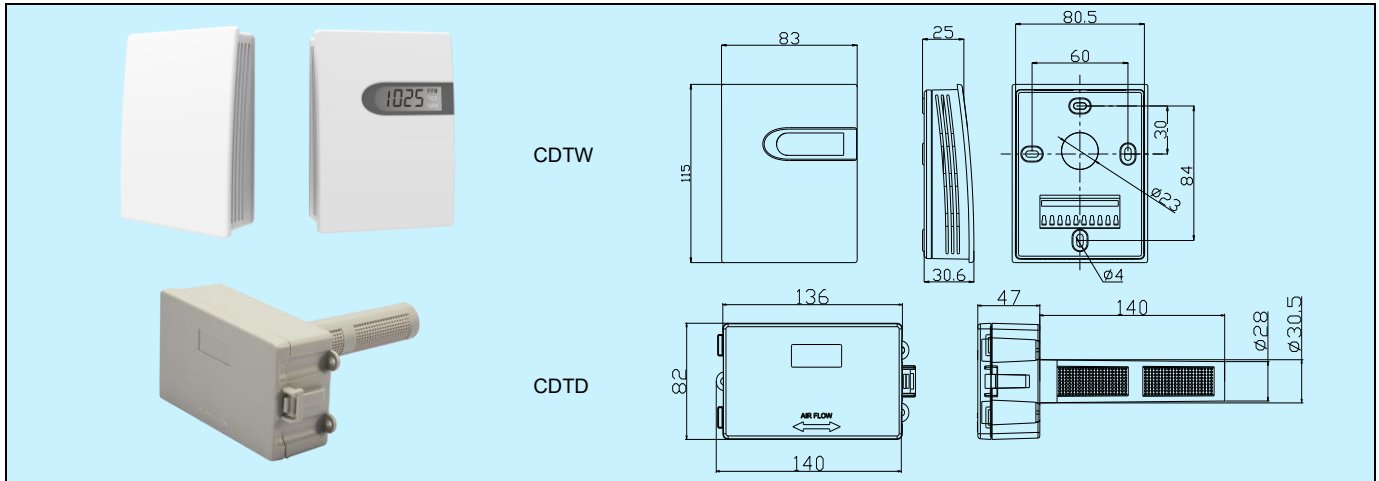
**Accuracy 4%; *Accuracy 3%; others accuracy 2%.

Options:

1. **Mirror Scale:** Eliminates parallax reading error, to order add suffix -M.
2. **Brushed 304 SS Bezel:** Corrosion resistant bezel, to order add suffix -S.
3. **Chrome plated bezel:** to order add suffix -C.
4. **High Accuracy Calibration (A2000):** Calibrated to accuracy 2%/1.5/1% respectively, which are as twice as standard MAGHELIX gages, with Mirror Scale and Calibration Certificate, to order add suffix -H.
5. **Customer defined color scale:** Max. 3 color (red-yellow-green) to indicate the alarm status. to order add suffix -Y.



CDT Carbon Dioxide (CO₂) / Temperature Transmitter



Applications & Features

- CDT series carbon dioxide (CO₂) & temperature transmitters are designed for monitoring & controlling indoor air quality and temperature
- CDTW is suitable for wall mount and CDTD is suitable for duct mount
- High performance NDIR digital sensor and circuit, ensure precise measurement and temperature compensation
- Multiple optional RTD or thermistor sensors, compatible with a variety of control systems
- Stable, reliable and fast response
- 15 years of CO₂ sensor life without maintenance
- All electrical terminals are on the inside bottom, avoid any possible destroy to PCB when wiring (CDTW)
- Digital technology applied, multiple outputs optional, over voltage and reverse polarity protection, high reliability and anti-interference capability
- Large LCD with unit indicator (CDTW), display carbon dioxide (CO₂) and temperature alternatively (no temperature display for RTD or thermistor models)

Specifications

Carbon dioxide (CO₂)

Sensor: NDIR sensor, with ABC algorithm*
Sampling Method: diffusion
Accuracy: (40+3%MV) ppm
Response time(T90): <120s (30cc/min, low airflow)
Drift: <±10ppm/year
Range: 0~2000ppm (measure range 400~2000ppm)
Output: 4~20mA, 0~10V, RS485/Modbus

Temperature

Sensor: Digital, RTD or thermistor, see models
Range: 0~50°C
Accuracy: see accuracy table
Output: 4~20mA, 0~10V, RS485/Modbus or RTD/ thermistor

Power supply: 16~28VAC/16-35VDC

Load resistance: ≤500Ω (Current output), ≥2kΩ (Voltage output)

Display: Optional LCD Display (CDTW)

Display resolution: 1ppm, 0.1°C

Working environment: 0~50°C, 0~95%RH (Non-cond.)

Temp. compensation: 0~50°C

Storage temperature: -20~60°C

Housing material: fire retardant PC(UL94V-0) (CDTW),
 fire retardant ABS(UL94V-0) (CDTD)

Protection: IP30 (CDTW), IP54 (CDTD)

Weight: 175g(CDTW), 415g(CDTD)

Approval: CE

***ABC algorithm:** Automatic Baseline Correction, it constantly keeps track of the sensor's lowest reading over a few days interval and slowly corrects for any long-term drift detected as compared to the expected fresh air value of 400 ppm CO₂.

Models

Model	CDTW			Wall mount CO ₂ / Temp. Transmitter
	CDTD			Duct mount CO ₂ / Temp. Transmitter
CO ₂ Output		1		4~20mA/0~10VDC
		C		RS485/Modbus
Temp. Output			1	4~20mA / 0~10VDC
			3	PT1000, ±0.2°C @25°C
			4	PT100, ±0.2°C @25°C
			5	NTC20K, ±0.2°C @25°C
			6	Ni1000, ±0.5°C @25°C
			7	NTC10K-II, ±0.2°C @25°C
			9	NTC10K-III, ±0.3°C @25°C
			A	NTC10K-A, ±0.3°C @25°C
Display (CDTW)			0	N/A
			1	LCD

*1. All products are factory set to 4~20mA as output default, and can be set to 0~10V by jumper on the PCB

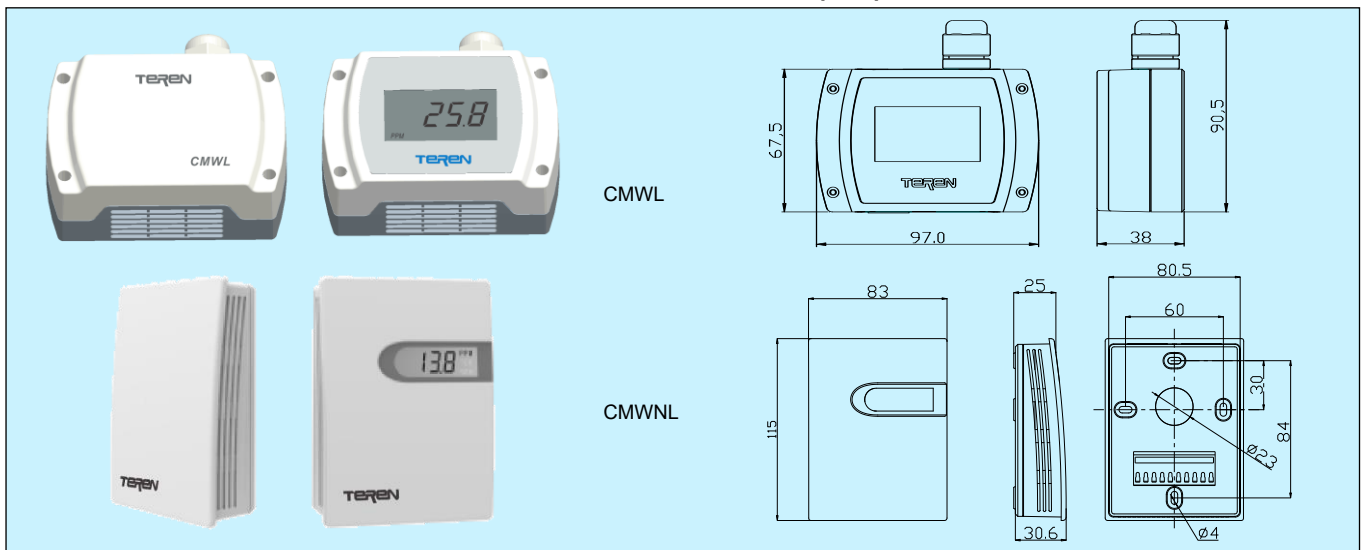
*2. See resistance table on page 1 of this catalog.

Accuracy table for temperature

Outputs	CDTW	CDTD
0~10V DC	<±0.5°C@10~40°C	<±0.5°C@10~40°C
4~20mA	<±0.8°C@10~40°C	<±0.5°C@10~40°C
RS485/Modbus	<±0.5°C@10~40°C	<±0.5°C@10~40°C
RTD/ thermistor	See models	See models

* When select RTD/ thermistor, CDTW total error will be 0.5°C more than the accuracy in the models.

CMWL/CMWNL Carbon Monoxide (CO) Transmitter



Applications & Features

- It's necessary to control the ventilation of car park and vehicle maintenance and test work shop according to many building's HVAC regulations. Considering of energy efficiency, demand controlled ventilation (DCV) is needed to provide enough fresh air according to CO concentration. These transmitters are designed for the control of ventilation system to safety and energy saving operations
- Electrochemical sensor gives good long term accuracy, sensitivity and reliability
- The sensor has more than 5 years life span to protect customer's investment, long-term stable performance and low drift, only need periodical recalibration as long as 12 months or more
- Digital technology applied, multiple outputs optional, over voltage and reverse polarity protection, high reliability and anti-interference capability
- Different housings meet different installation requirements, CMWL is for wall mount with better protection, while CMWNL for general room application

Specifications

CO sensor: Electrochemical gas sensor

Sampling Method: Diffusion

Range: 0~100ppm or 0~300ppm

Accuracy: $\pm 5\%$ FS@25°C, typical $\pm 10\%$ FS@5~50°C

Resolution: 1 ppm

Repeatability: $< \pm 3\%$ FS

Stability: $< \pm 5\%$ /year@0-100ppm, $< \pm 10\%$ /year@0-300ppm

Pressure range: standard atmospheric pressure $\pm 10\%$

Service life: more than 5 years

Response time (T90): < 60s

Warm-up time: < 1 min

Load Resistance: $\leq 500\Omega$ (current output), $\geq 2k\Omega$ (voltage output)

Power: Current: 18.5~35VDC ($R_L=500\Omega$) 8.5~35VDC ($R_L=0\Omega$)
Voltage: 16~28VAC/16~35VDC

Output: 4~20mA (2 wires), 0-10VDC, RS485 / Modbus

Work environment: 5~50°C(continuous),
15~90% RH (Non- cond.)

Storage Temperature: -10~55°C

Housing Fire retardant PC(UL94V-0) (CMWNL),
Fire retardant ABS+PC(UL94V-0) (CMWL)

Protection: IP33 (CMWL), IP30 (CMWNL)

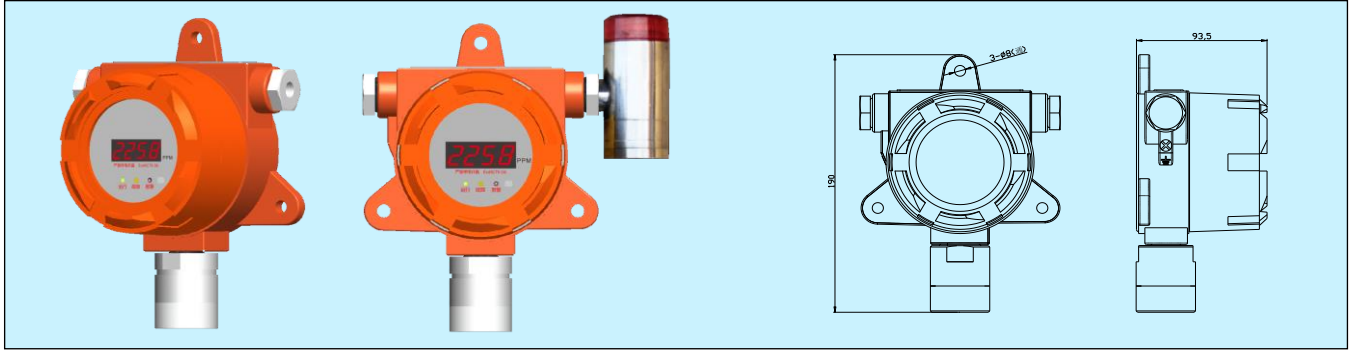
Weight: 190g (CMWL), 160g(CMWNL)

Agency Approval: CE

Models

Model	CMWL	CMWNL	Wall mount CO transmitter	Room CO transmitter
Output		1	0~10VDC(3 wires)	
		2	4~20mA(2 wires)	
		8	RS485/ Modbus	
Range		0	0~100ppm	
		1	0~300ppm	
Display		0	N/A	
		1	LCD	

G3Ex Explosion Proof Combustible/Toxic Gas Detector



Applications & Features

- Industrial die cast aluminum explosion proof housing, with the sensor module placed in a separated metal probe chamber, ensure electrically isolated from the housing
- Moisture and corrosion resistant, IP66 protection rate, can be used in various harsh and hazardous environments
- Professional high sensitivity gas sensors, stable signal, high precision, wide measuring range and good linearity
- State of art housing, easy installation
- Modular sensor assembly, easy replacement and maintenance
- Optional explosion proof audible & visual alarm and remote controller
- Meet explosion proof standards GB 3836.1-2010 and GB 3836.2-2010 with certificate Ex d II C T6 Gb. Apply for zone 1&2 hazardous area where there are explosive mixtures of IIA, IIB, IIC, T1-T6 combustible gas, vapor and air

Specifications

Gases and specifications: see the table below
Power: 18~30VDC
Output: 0~10V, 4~20mA (3 wires), RS485/Modbus
Relay: SPST, 3A/30VDC
Load: $\geq 2k\Omega$ (0-10V), $\leq 500\Omega$ (4-20mA)
Display: LED digital display, power/fault/alarm LED indicator
Operating condition: combustible gas -40~70°C, toxic gas -20~55°C, 10~95%RH(Non-cond.), pressure 86~106kPa
Housing: die cast aluminum housing, SS probe and SS sintered mesh filter

Protection: IP66

Agency Approvals: Ex d II C T6 Gb, ATEX (2014/34/EU), EMC (2014/30/EU, EN50270), CMC Metrological Certificate
Weight: 1.4kg

Explosion proof audible & visual alarm: model ASG24VDC, sound intensity $\geq 90dB@0.1m$, light intensity 1800~2400mcd, to be ordered separately

Intrinsically safe infrared remote controller: model FYF3, for field programming, to be ordered separately

General infrared remote controller: model YK-0, for safe zone programming, to be ordered separately

Models

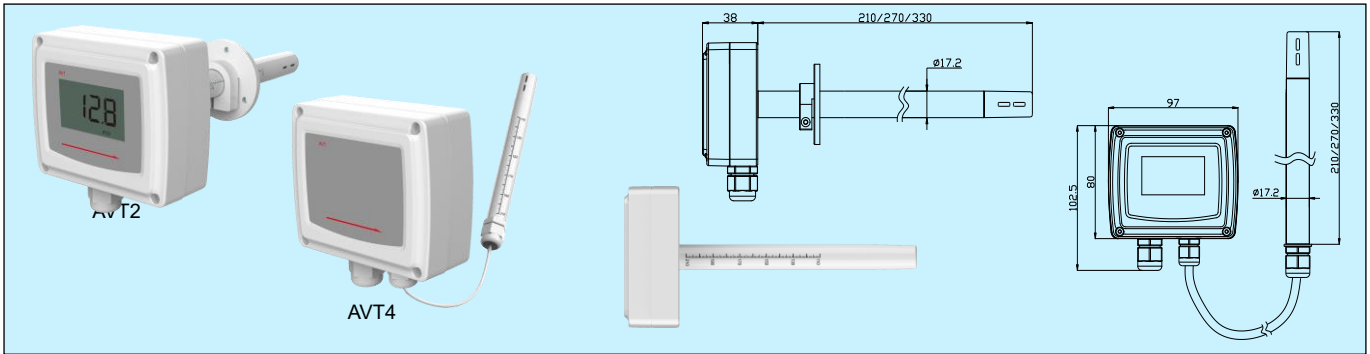
Model	G3Ex			Ex-proof Combustible/Toxic Gas Detector
Gas Type & Range		1		O ₂ , 0~30% VOL
		2		H ₂ S, 0~100 μ mol/mol
		3		CH ₄ , 0~100%LEL
		4		CO, 0~100 μ mol/mol
		5		CO, 0~500 μ mol/mol
		6		CO, 0~1000 μ mol/mol
		7		NO ₂ , 0~20 ppm
		8		Combustible, 0~100% LEL
		9		Other
Output		1		0~10V
		2		4~20mA(3 wires)
		8		RS485/Modbus
Relay Output		0		NA
		1		1×SPST,3A/30VDC

Detected Gases and Specifications

Code	GAS	Sensor type	Range	Accuracy	Repeatability	Response time	Sensor Life*	Remark
1	O ₂	Electrochemical	0-30%VOL	0.7%VOL	1%	60S	2-3year*	Resolution 0.1% VOL
2	H ₂ S	Electrochemical	0-100 μ mol/mol	5 μ mol/mol	2%	60S	2-3year*	Drift<+/-10 ppm/year
3	CH ₄	Catalytic Combustion	0-100%LEL	5%FS	2%	30S	2-3year	LEL:5.0V% Resolution 0.1% LEL
4	CO	Electrochemical	0-100 μ mol/mol	5 μ mol/mol	2%	60S	2-3year*	Resolution 1 μ mol/mol
5	CO	Electrochemical	0-500 μ mol/mol	5 μ mol/mol	2%	60S	2-3year*	Resolution 1 μ mol/mol
6	CO	Electrochemical	0-1000 μ mol/mol	5 μ mol/mol	2%	60S	2-3year*	Resolution 1 μ mol/mol
7	NO ₂	Electrochemical	0-20 ppm	3%FS	2%	60S	2year *	Resolution 0.1 ppm
8	Combustible	Catalytic Combustion	0-100%LEL	5%FS	2%	30S	2-3year	LEL:5.0V%(CH ₄) Resolution 0.1% LEL

*1: @23±3°C, 40±10%RH

AVT Air Velocity Transmitter



Applications & Features

- It is designed for air velocity monitoring and controlling in the ventilation system and reducing energy consumption in BMS and various HVAC application. It is applied for single point air velocity measurement. AVT2 is for duct mount, AVT4 is for remote installation
- Based on thermal anemometer principle, use innovative and sensitive hot-film sensor, which is insensitive to dust and dirt, easy to install and maintain
- No moving parts, provide accurate, reliable, sensitive and long-term measurement, with good temp. compensation
- Digital technology applied to ensure output accuracy
- Over voltage and reverse polarity protection with high reliability and anti-interference capacity
- Multiple outputs, ranges and optional LCD display
- Innovative probe design with various lengths available with scales on

Specifications

Air velocity sensor: Hot-film sensor

Range: 0~5/10/15/20m/s or 0~16/32/48/64ft/s, jumper selectable

Accuracy: m/s: $\pm(0.2\text{m/s}+5\% \text{ reading})$ or $\pm(0.2\text{m/s}+3\% \text{ reading})$

@0.5~20m/s; ft/s: $\pm(0.65\text{ft/s} +5\% \text{ reading})$ or $\pm(0.65\text{ft/s} +3\% \text{ reading})$ @1.6~64ft/s 25°C, 55%RH, 1013hPa

Response time: typical 2s

Angle dependence: $< 3\% \text{reading} @ |\Delta\alpha| < 10^\circ$

Temperature compensation: 10~40°C

Temp. output(option): range 0~50°C, accuracy $< \pm 0.5^\circ\text{C}@25^\circ\text{C}$

Output: 4~20mA(3 wires), 0~10/0~5VDC, RS485/Modbus

Output Load: $\leq 500\Omega$ (current), $\geq 2\text{k}\Omega$ (voltage)

Display: LCD, with unit m/s or ft/s, DIP switch selectable

Power: 16~28VAC/16~35VDC

Working Environment: -20~70°C, 0~95%RH(Non cond.)

Housing: fire retardant PC (UL94 V-0)

Protection: IP65

Weight: 440g

Approval: CE

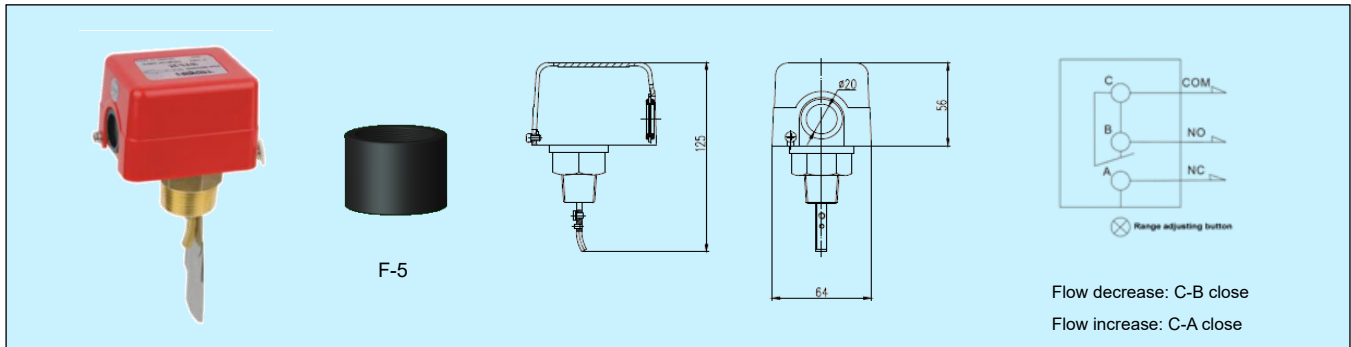
Models

Model	AVT2	AVT4			Duct mount air velocity transmitter Remote mount air velocity transmitter
Accuracy		3 5			$\pm(0.2\text{m/s}+3\% \text{ reading})$ $\pm(0.2\text{m/s}+5\% \text{ reading})$
Output			1 8		4~20mA/0~10V/0~5VDC RS485/Modbus
LCD Display				0 1	N/A LCD
Probe Length				1 2 3	210 mm 270 mm 330 mm

1. All products are factory set to 4-20mA as output default, and can be set to 0-10V or 0-5V by DIP switch.

2. When temperature output is needed, add suffix -T after the model number. And the output is the same as air velocity

WFS Water Flow Switch



Applications & Features

The paddle type WFS is designed to monitor and control the flow rate of water, chilled water, cooling water or other liquid system.

Specifications

Contact: SPDT, 10A/250VAC

Paddle materials: Stainless Steel

Medium connection: Brass, 1" NPT

Electrical connection: Screw terminals

Switch body materials: steel

Cover materials: ABS

Contact cycle: 500K

Environment temp.: 5~50°C

Medium temp.: 5~100°C

Working pressure: 1.0Mpa

Max pressure: 1.6Mpa

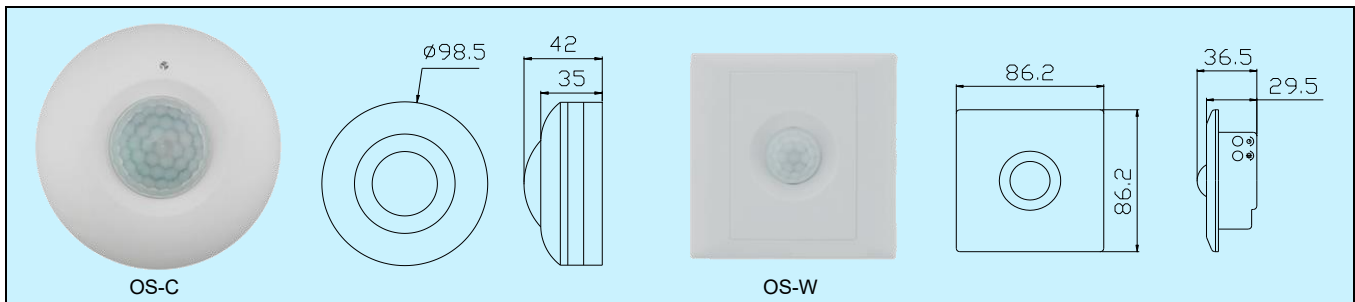
Weight: 0.5Kg

Accessory: Model F-5, carbon steel, should be ordered separately. When ordered along with the WFS, it is packed in the same package

Paddles Selection

ITEM	Range liter/min	D Band liter/min	Pipe		Paddle number
			in	mm	
1	16~32	6	1	25	1
2	22~50	8	1.25	32	2
3	30~72	9	1.5	40	2
4	55~110	15	2	50	2
5	70~130	20	2.5	65	3
6	105~200	30	3	80	3
7	250~480	50	4	100	4
8	480~920	90	5	125	4
9	720~1420	120	6	150	5
10	1420~2850	200	8	200	5

OS Occupancy Sensor/ Detector



Applications & Features

- Suitable for passageway, corridor, toilet, basement, garage and other public places, such as lighting, exhaust fan and other automatic switch control. OS-W is wall mount and OS-C is ceiling mount
- Based on PIR infrared sensor and photosensitive sensor combination technology, high sensitivity, strong reliability, safe and convenient, intelligent energy saving
- Fully automatic induction, switch on for occupancy, delay off for vacancy automatically
- Application of photosensitive automatic control, no induction in day or high illumination circumstance, illumination can be adjusted
- Automatic random delay, switch on for occupancy and continue to turn on if detecting activity, and delay off until detecting no activity
- Temperature compensation and anti RFI/EMI
- Light and state of art housing, easy installation and using

Specifications

Sensor: PIR infrared sensor, photo resistance sensor

Power supply: 20~28VDC

Output: SPST, 10A resistive / 4A inductive, 30VDC/250VA

Life circle: 10^5 times

Light control range (adjustable): Night/Full day (default night)

Delay closing time (adjustable): OS-W:15s~20 min(default 15s)
OS-C: 2s~30 min(default 16s±30%)

Detect area: cone angle 140°, distance 5-8 m($\leq 24^\circ$)

Mount Height: wall mount height is about 1.5m, and ceiling mount height is about 2~4m

Working environment: -20~50°C, 0~95%RH(Non-cond.)

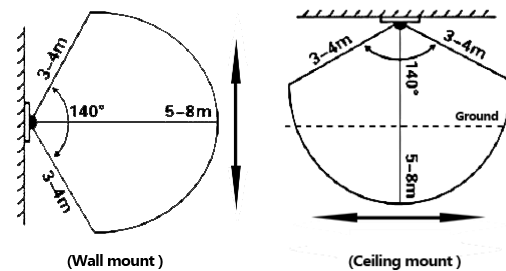
Storage temperature: -30~70°C

Housing: fireproof ABS(except Fresnel lenses), IP30

Weight: OS-C:120g, OS-W:110g

Approval: CQC

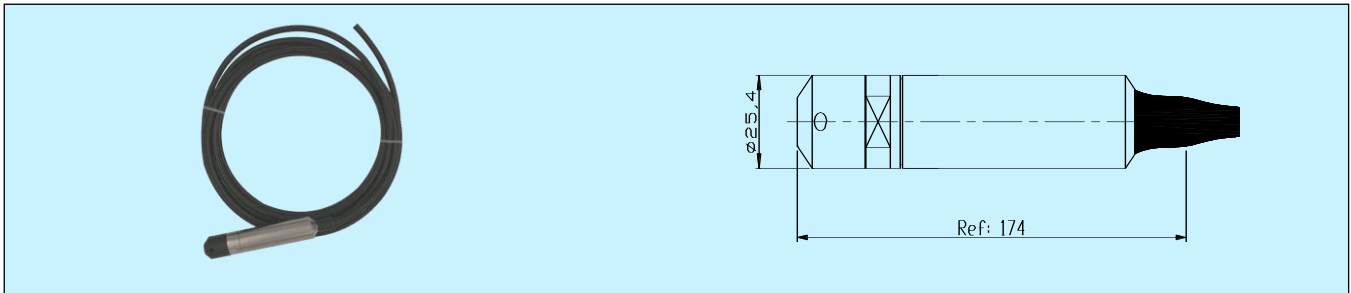
Detect area diagram:



Models

Models	OS-W	OS-C
	Wall mount occupancy sensor / detector	Ceiling mount occupancy sensor / detector

LT Submersible Level Transmitter



Applications & Features

- Measuring liquid level, based on the proportion principle of liquid static pressure with height
- Applied to water supply, industrial process control, water conservancy, environmental protection, chemical industry and other liquid level measurement and control
- All stainless-steel integrated structure, anti-blocking, anti-shock, multiple waterproof design, easy to install
- Built-in circuit with high precision, stability and reliability
- Ventilation waterproof wire, internal condensation prevention design

Specifications

Power: 9~36VDC

Range: see models

Output: 4~20mA (2 wires)

Accuracy: $\cong \pm 0.5\%FS$ (BFSL)

Load: $<(U-9)/0.02 \Omega$, U for power

Overload pressure: 200%FS

Response time: $\leq 50ms$

Working temperature: $-20\sim 60^{\circ}C$

Medium temperature: $-40\sim 85^{\circ}C$, $\leq 95\%RH$

Stability: $\pm 0.1\%FS/Year$

Thermal effect: $\pm 0.05\%FS/^{\circ}C$

Materials: Body, 304 stainless steel;
Diaphragm, 316 stainless steel

Protection: IP68

Approval: CE

Models

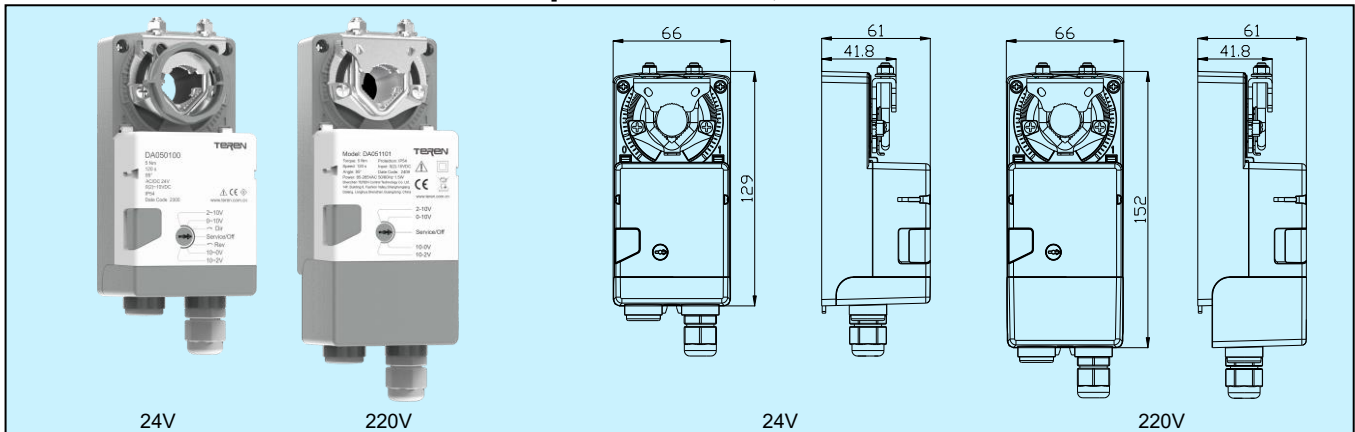
Model	LT			Level Transmitter
Range		xx		1~50m H ₂ O
Cable			Cxx	Cable length, m

Frequently used ranges: 1,2,3,4,5,6,8,10,12,15m H₂O

Frequently used cables: 3,4,5,6,7,8,10,12,14,16m

Frequently used models: LT03C05, LT05C06, LT10C12

DA05 Damper Actuator, 5Nm Series



Applications & Features

- Special designed for the control of dampers of various HVAC system and equipment
- Easily assemble: connect the damper and actuator, the adapter can self-centered the connection shaft. Can be applied to dampers with different size shaft
- Mechanical limit: can be adjusted within the full stroke
- Mechanical position indication: can adjust the indicator freely
- Manual operation: can be manual operated with the button, convenient for user to manually adjust the actuator when the power is off or the control signal input is absence
- Multi-function selection knob: select control signal, rotate direction and stop/shutdown status, very convenient to set multiple operating modes
- Highly reliable: full stroke overload protection function, no limit switch, self-stop at the end point
- Removable terminal cover design, convenient and easy for installation and wiring
- High service life: using industrial design, stable and reliable operation, long life
- External position switch: the position setpoint can be adjusted freely and installed on site. The wiring direction can be conveniently set to left or right

Specifications

Torque: 5 Nm

Damper size: $\leq 1 \text{ m}^2$ (see details in the manual)

Direction of rotation: set by knob

Position indicator: mechanical

Manual override: set by push button

Angle of rotation: max. 95°

Running time: 120s

Connection shaft: circular $\Phi 6 \sim 15 \text{ mm}$, square $4.5 \sim 11 \text{ mm}$, min. length 43mm

Power:

Power Range	19.2~28.8V AC/DC	85~265V, 50/60Hz
Consumption	Act 1W, Hold 0.5W	Act 1.5W, Hold 0.8W
Protection	class III-low voltage safe	class II-totally insulated

Control Signal: on/off, 3 pos; 0~10V (input impedance 250k Ω); 4~20 mA (input impedance 200 Ω); RS485/Modbus

Internal feedback: 0(2)~10VDC (max. output 1mA); 4~20mA (max. load 500 Ω); RS485/Modbus-RTU

Internal switch: 2 \times SPDT, 0.5A/30VDC

External position switch: 1 or 2, SPDT, 0.5A/250VAC, must be ordered separately, see External Position Switch

Electrical connection: screw terminal

Mode of operation: Type 1 to EN60730-1

Work temp.: $-30 \sim 50^\circ \text{C}$, 95%RH, no cond. (EN60730-1)

Storage temp.: $-40 \sim 80^\circ \text{C}$

Noise level: $\leq 35 \text{ dB}$

Protection: IP54

Weight: 0.58kg (24V models)

Approval: CE

Models

Model	DA05			5Nm Damper Actuator
Power		0 1		24VAC/DC 85~265VAC
Control signal		0 1 2 8		on/off, 3-pos 0(2)~10VDC 4~20mA RS485/Modbus RTU
Internal feedback			0 1 2 8	N/A 0(2)~10VDC 4~20mA RS485/Modbus RTU
Internal switch				0 1 N/A 2 \times SPDT, 0.5A/30VDC

When control signal is 0, feedback should be 0. If control signal is 1, feedback may be 0 or 1. If control signal is 2, feedback may be 0 or 2. If control signal is 8, feedback may be 0 or 8.

External Position Switch (must be ordered separately):

The external position switch can feedback the position status of the actuator. Suitable for field installation, can replace the function of the internal switch and can adjust the position set point freely.

Model: SW1(1 \times SPDT,0.5A/250VAC); SW2(2 \times SPDT,0.5A/250VAC)

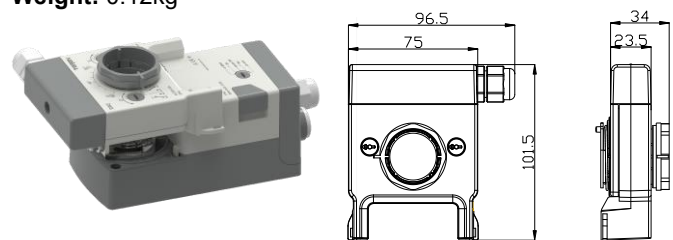
Work temp.: $-30 \sim 50^\circ \text{C}$, 0~95%RH, no cond. (EN60730-1)

Storage temp.: $-40 \sim 80^\circ \text{C}$

Power Protection: class II-totally insulated

Enclosure Protection: IP54

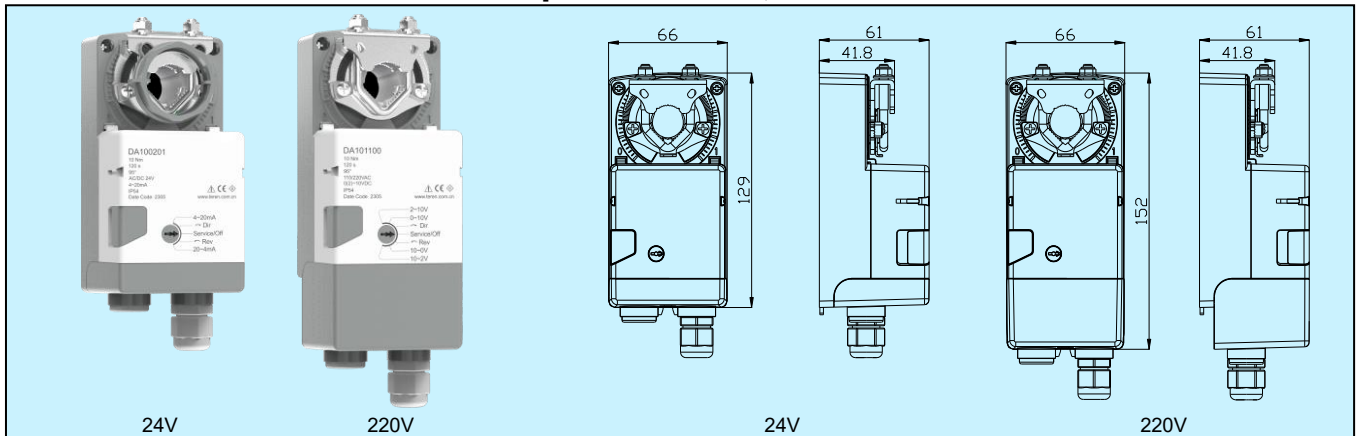
Weight: 0.12kg



Note 1: The content of this page is a complete catalog of DA05 products. But the subsequent content is the instruction manual of its 24VDC/AC products. 220VAC products have an independent manual.

Note 2: The product's standard torque is 5 Nm, usually is applicable for dampers with size less than 1 m^2 . However, due to the differences of materials, structures, installations, and the applied ventilation system's pressure or flow condition, the needed torque may be different.

DA10 Damper Actuator, 10Nm Series



Applications & Features

- Special designed for the control of dampers of various HVAC system and equipment
- Easily assemble: connect the damper and actuator, the adapter can self-centered the connection shaft. Can be applied to dampers with different size shaft
- Mechanical limit: can be adjusted within the full stroke
- Mechanical position indication: can adjust the indicator freely
- Manual operation: can be manual operated with the button, convenient for user to manually adjust the actuator when the power is off or the control signal input is absence
- Multi-function selection knob: select control signal, rotate direction and stop/shutdown status, very convenient to set multiple operating modes
- Highly reliable: full stroke overload protection function, no limit switch, self-stop at the end point
- Removable terminal cover design, convenient and easy for installation and wiring
- High service life: using industrial design, stable and reliable operation, long life
- External position switch: the position setpoint can be adjusted freely and installed on site. The wiring direction can be conveniently set to left or right

Specifications

Torque: 10 Nm

Damper size: $\leq 2 \text{ m}^2$ (see details in the manual)

Direction of rotation: set by knob

Position indicator: mechanical

Manual override: set by push button

Angle of rotation: max. 95°

Running time: 120s

Connection shaft: circular $\Phi 8\sim 17\text{mm}$, square $5.8\sim 12\text{mm}$, min. length 43mm

Power:

Power Range	19.2~28.8V AC/DC	85~265V, 50/60Hz
Consumption	Act 1.5W, Hold 0.5W	Act 2.5W, Hold 0.8W
Protection	class III-low voltage safe	class II-totally insulated

Control Signal: on/off, 3 pos; $0\sim 10\text{V}$ (input impedance $250\text{k}\Omega$); $4\sim 20 \text{ mA}$ (input impedance 200Ω); RS485/Modbus

Internal feedback: $0(2)\sim 10\text{VDC}$ (max. output 1mA); $4\sim 20\text{mA}$ (max. load 500Ω); RS485/Modbus

Internal switch: $2\times \text{SPDT}$, $0.5\text{A}/30\text{VDC}$

External position switch: 1 or 2, SPDT, $0.5\text{A}/250\text{VAC}$, must be ordered separately, see External Position Switch

Electrical connection: screw terminal

Mode of operation: Type 1 to EN60730-1

Work temp.: $-30\sim 50^\circ\text{C}$, 95%RH, no cond. (EN60730-1)

Storage temp.: $-40\sim 80^\circ\text{C}$

Noise level: $\leq 40\text{dB}$

Protection: IP54

Weight: 0.64kg (24V models)

Approval: CE

Models

Model	DA10			10Nm Damper Actuator
Power	0			24VAC/DC
	1			85~265VAC
Control signal	0			on/off, 3-pos
	1			$0(2)\sim 10\text{VDC}$
	2			$4\sim 20\text{mA}$
	8			RS485/Modbus RTU
Internal feedback	0			N/A
	1			$0(2)\sim 10\text{VDC}$
	2			$4\sim 20\text{mA}$
	8			RS485/Modbus RTU
Internal switch	0			N/A
	1			$2\times \text{SPDT}$, $0.5\text{A}/30\text{VDC}$

When control signal is 0, feedback should be 0. If control signal is 1, feedback may be 0 or 1. If control signal is 2, feedback may be 0 or 2. If control signal is 8, feedback may be 0 or 8.

External Position Switch (must be ordered separately):

The external position switch can feedback the position status of the actuator. Suitable for field installation, it can replace the function of the internal switch and can adjust the position set point freely.

Model: SW1($1\times \text{SPDT}$, $0.5\text{A}/250\text{VAC}$); SW2($2\times \text{SPDT}$, $0.5\text{A}/250\text{VAC}$)

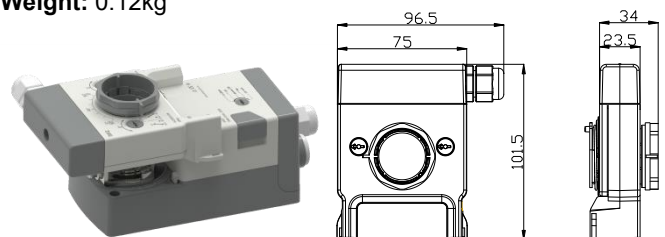
Work temp.: $-30\sim 50^\circ\text{C}$, $0\sim 95\% \text{RH}$, no cond. (EN60730-1)

Storage temp.: $-40\sim 80^\circ\text{C}$

Power Protection: class II-totally insulated

Enclosure Protection: IP54

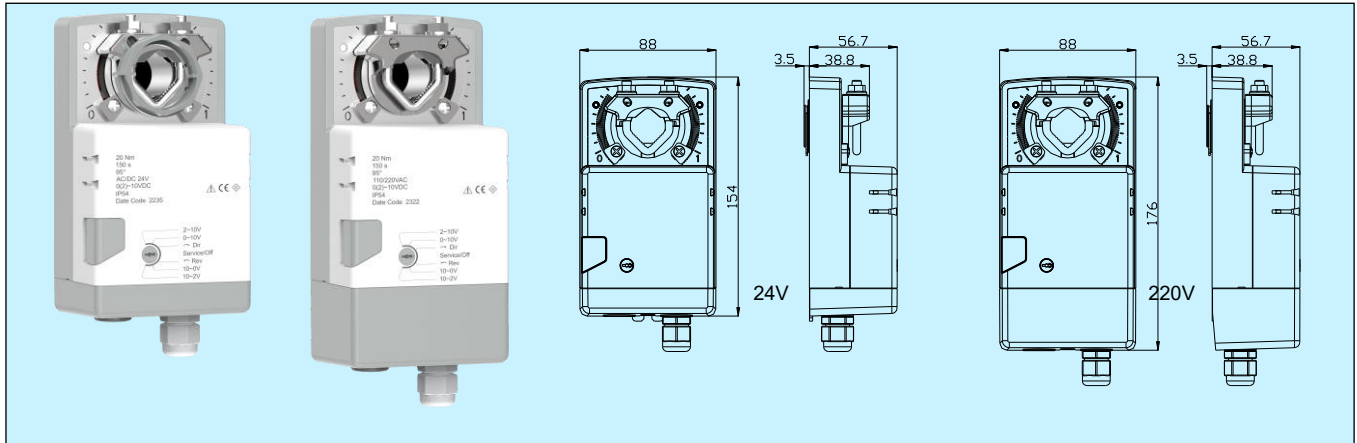
Weight: 0.12kg



Note 1: The content of this page is a complete catalog of DA10 products. But the subsequent content is the instruction manual of its 24VDC/AC products. 220VAC products have an independent manual.

Note 2: The product's standard torque is 10 Nm, usually is applicable for dampers with size less than 2 m^2 . However, due to the differences of materials, structures, installations, and the applied ventilation system's pressure or flow condition, the needed torque may be different

DA20 Damper Actuator, 20Nm Series



Applications & Features

- Special designed for the control of dampers of various HVAC system and equipment
- Easily assemble: connect the damper and actuator, the adapter can self-centered the connection shaft. Can be applied to dampers with different size shaft
- Mechanical limit: can be adjusted within the full stroke
- Mechanical position indication: can adjust the indicator freely
- Manual operation: can be manual operated with the button, convenient for user to manually adjust the actuator when the power is off or the control signal input is absence
- Multi-function selection knob: select control signal, rotate direction and stop/shutdown status, very convenient to set multiple operating modes
- Highly reliable: full stroke overload protection function, no limit switch, self-stop at the end point
- Removable terminal cover design, convenient and easy for installation and wiring
- High service life: using industrial design, stable and reliable operation, long life
- External position switch: the position setpoint can be adjusted freely and installed on site. The wiring direction can be conveniently set to left or right

Specifications

Torque: 20 Nm

Damper size: $\leq 4 \text{ m}^2$ (see details in the manual)

Direction of rotation: set by knob

Position indicator: mechanical

Manual override: set by push button

Angle of rotation: max. 95°

Running time: 150s

Connection shaft: Circular $\Phi 10\sim 20\text{mm}$, square $8\sim 14\text{mm}$, min. length 43mm

Power:

Power Range	19.2~28.8V AC/DC	85~265V, 50/60Hz
Consumption	Act 3W, Hold 0.8W	Act 3.5W, Hold 1.2W
Protection	class III-low voltage safe	class II-totally insulated

Control Signal: on/off, 3 pos; $0\sim 10\text{V}$ (input impedance $250\text{k}\Omega$); $4\sim 20 \text{ mA}$ (input impedance 200Ω); RS485/Modbus

Internal feedback: $0(2)\sim 10\text{VDC}$ (max. output 1mA); $4\sim 20\text{mA}$ (max. load 500Ω); RS485/Modbus-RTU

Internal switch: $2\times\text{SPDT}$, $0.5\text{A}/30\text{VDC}$

External position switch: 1 or 2, SPDT, $0.5\text{A}/250\text{VAC}$, must be ordered separately, see External Position Switch

Electrical connection: screw terminal

Mode of operation: Type1 to EN60730-1

Work temp.: $-30\sim 50^\circ\text{C}$, $95\%\text{RH}$, no cond. (EN60730-1)

Storage temp.: $-40\sim 80^\circ\text{C}$

Noise level: $\leq 40\text{dB}$

Protection: IP54

Weight: 1kg (24V models)

Approval: CE

Models

Model	DA20				20Nm Damper Actuator
Power	0				24VAC/DC
	1				85~265VAC
Control signal	0				on/off, 3-pos
	1				$0(2)\sim 10\text{VDC}$
	2				$4\sim 20\text{mA}$
	8				RS485/Modbus RTU
Internal feedback	0				N/A
	1				$0(2)\sim 10\text{VDC}$
	2				$4\sim 20\text{mA}$
	8				RS485/Modbus RTU
Internal switch	0				N/A
	1				$2\times\text{SPDT}$, $0.5\text{A}/30\text{VDC}$

When control signal is 0, feedback should be 0. If control signal is 1, feedback may be 0 or 1. If control signal is 2, feedback may be 0 or 2. If control signal is 8, feedback may be 0 or 8.

External Position Switch (must be ordered separately): The external position switch can feedback the position status of the actuator. Suitable for field installation, it can replace the function of the internal switch and can adjust the position set point freely.

Model:

SW1A ($1\times\text{SPDT}$, $0.5\text{A}/250\text{VAC}$); **SW2A** ($2\times\text{SPDT}$, $0.5\text{A}/250\text{VAC}$)

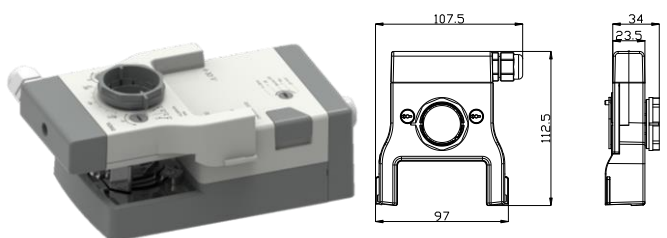
Work temp.: $-30\sim 50^\circ\text{C}$, $0\sim 95\%\text{RH}$, no cond. (EN60730-1)

Storage temp.: $-40\sim 80^\circ\text{C}$

Power Protection: class II-totally insulated

Enclosure Protection: IP54

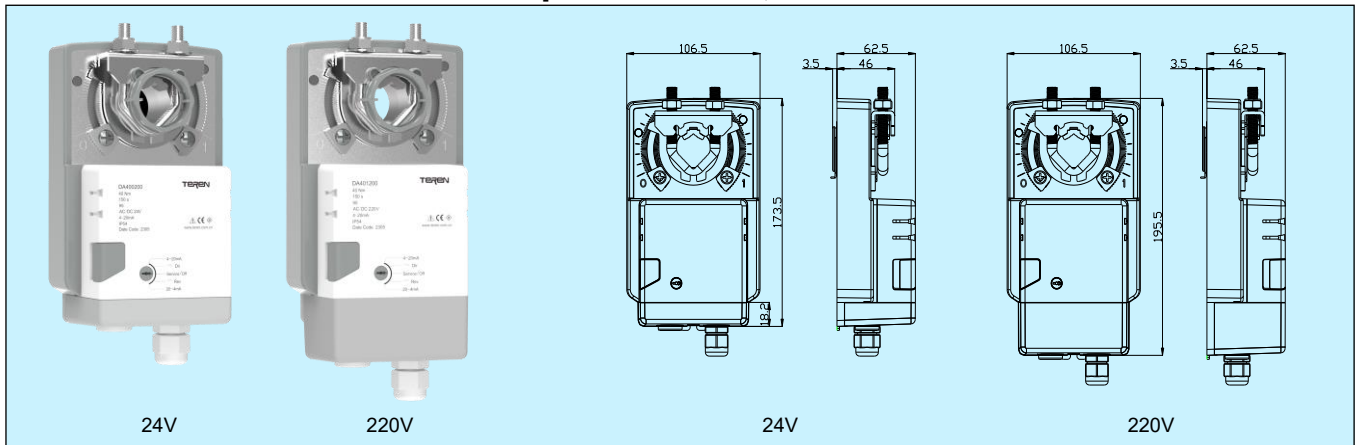
Weight: 0.13kg



Note 1: The content of this page is a complete catalog of DA20 products. But the subsequent content is the instruction manual of its 24VDC/AC products. 220VAC products have an independent manual.

Note 2: The product's standard torque is 20 Nm, usually is applicable for dampers with size less than 4 m^2 . However, due to the differences of materials, structures, installations, and the applied ventilation system's pressure or flow condition, the needed torque may be different.

DA40 Damper Actuator, 40Nm Series



Applications & Features

- Special designed for the control of dampers of various HVAC system and equipment
- Easily assemble: connect the damper and actuator, the adapter can self-centered the connection shaft. Can be applied to dampers with different size shaft
- Mechanical limit: can be adjusted within the full stroke
- Mechanical position indication: can adjust the indicator freely
- Manual operation: can be manual operated with the button, convenient for user to manually adjust the actuator when the power is off or the control signal input is absence
- Multi-function selection knob: select control signal, rotate direction and stop/shutdown status, very convenient to set multiple operating modes
- Highly reliable: full stroke overload protection function, no limit switch, self-stop at the end point
- Removable terminal cover design, convenient and easy for installation and wiring
- High service life: using industrial design, stable and reliable operation, long life
- External position switch: the position setpoint can be adjusted freely and installed on site. The wiring direction can be conveniently set to left or right

Specifications

Torque: 40 Nm
Damper size: $\leq 8 \text{ m}^2$ (see details in the manual)
Direction of rotation: set by knob
Position indicator: mechanical
Manual override: set by push button
Angle of rotation: max. 95°
Running time: 150s
Connection shaft: Circular $\Phi 12\sim 26.7\text{mm}$, square $12\sim 18\text{mm}$, min. length 50mm

Power:

Power Range	19.2~28.8V AC/DC	85~265V, 50/60Hz
Consumption	Act 8W, Hold 1.5W	Act 8.5W, Hold 1.5W
Protection	class III-low voltage safe	class II-totally insulated

Control Signal: on/off, 3 pos; $0\sim 10\text{V}$ (input impedance $250\text{K}\Omega$); $4\sim 20 \text{ mA}$ (input impedance 200Ω); RS485/Modbus

Internal feedback: $0(2)\sim 10\text{VDC}$ (max. output 1mA); $4\sim 20\text{mA}$ (max. load 500Ω); RS485/Modbus-RTU

Internal switch: $2\times \text{SPDT}$, $0.5\text{A}/30\text{VDC}$

External position switch: 1 or 2, SPDT, $0.5\text{A}/250\text{VAC}$, must be ordered separately, see External Position Switch

Electrical connection: screw terminal

Mode of operation: Type1 to EN60730-1

Work temp.: $-30\sim 50^\circ\text{C}$, 95%RH, no cond. (EN60730-1)

Storage temp.: $-40\sim 80^\circ\text{C}$

Noise level: $\leq 45\text{dB}$

Protection: IP54

Weight: 1.8kg (220V models)

Approval: CE

Models

Model	DA40				40Nm Damper Actuator
Power		0			24VAC/DC 85~265VAC
		1			
Control signal			0		on/off, 3-pos
			1		$0(2)\sim 10\text{VDC}$
			2		$4\sim 20\text{mA}$
			8		RS485/Modbus RTU
Internal feedback				0	N/A
				1	$0(2)\sim 10\text{VDC}$
				2	$4\sim 20\text{mA}$
				8	RS485/Modbus RTU
Internal switch					N/A
				0	N/A
				1	$2\times \text{SPDT}$, $0.5\text{A}/30\text{VDC}$

When control signal is 0, feedback should be 0. If control signal is 1, feedback may be 0 or 1. If control signal is 2, feedback may be 0 or 2. If control signal is 8, feedback may be 0 or 8.

External Position Switch: (must be ordered separately):
 The external position switch can feedback the position status of the actuator. Suitable for field installation, it can replace the function of the internal switch and can adjust the position set point freely.

Model: SW1A($1\times \text{SPDT}$, $0.5\text{A}/250\text{VAC}$); SW2A($2\times \text{SPDT}$, $0.5\text{A}/250\text{VAC}$)

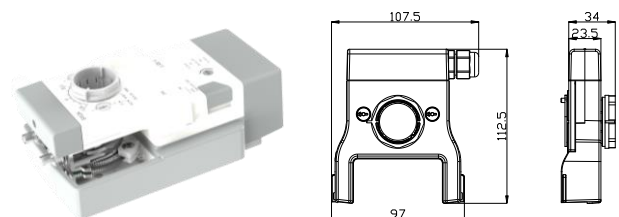
Work temp.: $-30\sim 50^\circ\text{C}$, $0\sim 95\%\text{RH}$, no cond. (EN60730-1)

Storage temp.: $-40\sim 80^\circ\text{C}$

Power Protection: class II-totally insulated

Enclosure Protection: IP54

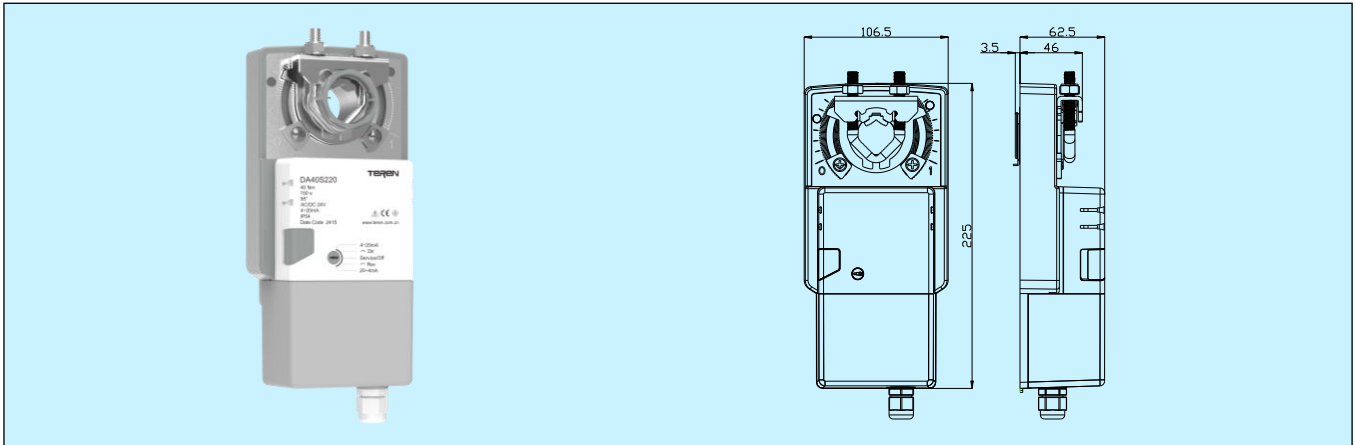
Weight: 0.13kg



Note 1: The content of this page is a complete catalog of DA40 products. But the subsequent content is the instruction manual of its 220VAC products. 24VDC/AC products have an independent manual.

Note 2: The product's standard torque is 40 Nm, usually is applicable for dampers with size less than 8 m^2 . However, due to the differences of materials, structures, installations, and the applied ventilation system's pressure or flow condition, the needed torque may be different.

DA40S Fail-safe Damper Actuator, 40Nm Series



Applications & Features

- Special designed for the control of dampers of various HVAC system and equipment
- Easily assemble: connect the damper and actuator, the adapter can self-centered the connection shaft. Can be applied to dampers with different size shaft
- Mechanical limit: can be adjusted within the full stroke
- Mechanical position indication: can adjust the indicator freely
- Manual operation: can be manual operated with the button, convenient to manually adjust the actuator when the power is off, or the control signal input is absent
- Multi-function selection knob: select control signal, rotate direction and stop/shutdown status, very convenient to set multiple operating modes
- In case of external power failure, the actuator can still run to the selected fail-safe position with internal capacitors
- Standard or medium speed optional
- Highly reliable with full stroke overload protection function, can self-stop at the end without limit switch
- Removable terminal cover, easy for installation and wiring
- Industrial design, stable and reliable operation, long life
- External position switch: the position setpoint can be adjusted freely and installed on site. The wiring direction can be conveniently set to left or right

Specifications

Torque: 40 Nm

Damper size: $\leq 8 \text{ m}^2$ (see details in the manual)

Direction of rotation: Set by knob

Position indicator: Mechanical

Manual override: Set by push button

Angle of rotation: Max. 95°

Running time: Standard 150s, medium speed 75s optional

Connected shaft: Circular $\Phi 12\sim 26.7\text{mm}$, square $12\sim 18\text{mm}$, min. length 50mm

Driver: Brushless DC motor (BLDC)

Power: 19.2~28.8V AC/DC

Power consumption: Act 8.5W, Hold 1.5W, Charge 4W

Power protection: Class III-low voltage safe

Control Signal: on/off, 3 pos; 0~10V (input impedance 250K Ω); 4~20 mA (input impedance 200 Ω); RS485/Modbus

Internal feedback: 0(2)~10VDC (max. output 1mA); 4~20mA (max. load 500 Ω); RS485/Modbus-RTU

Internal switch: 2xSPDT, 0.5A/30VDC

External position switch: 1 or 2, SPDT, 0.5A/250VAC, must be ordered separately, see External Position Switch

Fail-safe position: Zero or Full scale, set by DIP switch

Fail-safe delay time: 2s

Fail-safe running time: <45s

Capacitor charge time: <15min

Capacitor service life: >10 years

Electrical connection: Screw terminal

Service life: 100,000 cycles (full stroke, standard speed)

Mode of operation: Type1 to EN60730-1

Work temp.: $-30\sim 50^\circ\text{C}$, 95%RH, no cond. (EN60730-1)

Storage temp.: $-40\sim 80^\circ\text{C}$

Noise level: $\leq 45\text{dB}$

Protection: IP54

Protection: IP54

Weight: 1.9kg

Approval: CE

Models

Model	DA40S		Fail-safe Damper Actuator, 40Nm
Control signal		0	on/off, 3-pos
		1	0(2)~10VDC
		2	4~20mA
		8	RS485/Modbus RTU
Internal feedback		0	N/A
		1	0(2)~10VDC
		2	4~20mA
		8	RS485/Modbus RTU
Internal switch		0	N/A
		1	2xSPDT, 0.5A/30VDC

1. When control signal is 0, feedback should be 0. If control signal is 1, feedback may be 0 or 1. If control signal is 2, feedback may be 0 or 2. If control signal is 8, feedback may be 0 or 8.

2. If select medium speed 90s, add suffix M to the model.

External Position Switch: (must be ordered separately):

The external position switch can feedback the position status of the actuator. Suitable for field installation, it can replace the function of the internal switch and can adjust the position set point freely.

Model: SW1A(1xSPDT, 0.5A/250VAC); SW2A(2xSPDT, 0.5A/250VAC)

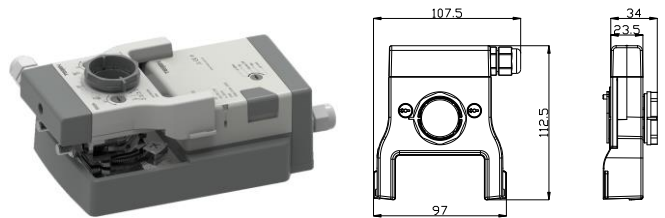
Work temp.: $-30\sim 50^\circ\text{C}$, 0~95%RH, no cond. (EN60730-1)

Storage temp.: $-40\sim 80^\circ\text{C}$

Power Protection: Class II-totally insulated

Enclosure Protection: IP54

Weight: 0.13kg



Note: The product's standard torque is 40 Nm, usually is applicable for dampers with size less than 8 m^2 . However, due to the differences of materials, structures, installations, and the applied ventilation system's pressure or flow condition, the needed torque may be different.