Smart Auto Suction Gas Detector

DA - 800

GASDNA

1.Introduction

1.1 Product Overview

The DA-800 has a comprehensive range of advanced functions, making it an ideal detector for effectively preventing gas leak incidents in various industrial areas. The DA-800 is an advanced gas meter that functions as a field-indicating transmitter. It is capable of detecting the presence of combustible gas, toxic gas, and VOC (Volatile Organic Compounds) leaks. The device promptly displays the concentration levels on-site, and it efficiently converts the detection signals into standard current signals for external output. By utilizing the DA-800, industries can maintain optimal performance while minimizing risks associated with gas leaks, thereby promoting a secure working environment and environmental protection.

1.2 Product Description

The cutting-edge DA-800 transmitter is equipped with an easy-to-read LCD that displays gas concentrations by accurately converting the sensor's current and voltage signals. Through this process, it ensures stable and reliable readings, transforming them into standard current signals ranging from 4 to 20mA. These output signals can then be seamlessly transmitted to external devices, such as gas leakage alarm systems or controllers like PLC, DDC, MMR, and more. As a result, the DA-800 enables the creation of a sophisticated and integrated gas monitoring system, whether used independently or as a crucial component within a larger setup.

The DA-800 transmitter boasts an integrated microprocessor, delivering a plethora of precise and versatile functions. Its built-in high-resolution A/D converter ensures the transmission of accurate indicated values. The incorporation of a HIGH / LOW 2-stage alarm contact point enables flexible interlocking with external devices. Moreover, the transmitter provides a 4 – 20mA external output, enabling the transmission of signals over long distances of up to 2.5km. Utilizing programmed menus, users gain the power to customize and set their desired parameters to suit individual environmental requirements. This user-friendly feature allows seamless adaptation to different monitoring conditions, enhancing the overall efficiency and effectiveness of the gas monitoring system.

2. Product Features

· **Non-Open Automatic Calibration Function**

The non-open automatic calibration function of the device eliminates the need to open the detection unit cover during the calibration process. Instead, users can simply utilize a magnetic bar to touch the cover window, enabling calibration without physically accessing the internal components. This feature proves to be highly beneficial, especially in explosion-proof areas, as it ensures a safe and efficient calibration process without the need for opening the unit cover.

- **Explosion Proof**

  This explosion-proof detector is specifically engineered to operate safely in hazardous environments. It has specialized technology and robust construction methods to withstand and contain internal explosions. This device is equipped with explosion-proof enclosures, which effectively prevent the release of sparks, flames, or hot gases that could pose a danger. They are also equipped with highly sensitive gas sensors that can detect the presence of flammable or explosive gases in the surrounding environment.

- **Built-in HD (High Resolution) A/D Converter**

  The device is equipped with a high-resolution analog-to-digital (A/D) converter, ensuring precise and accurate conversion of analog signals into digital output. This technology enhances the accuracy of the output signal, resulting in reliable and trustworthy measurements.

- **User Programming**

  The device allows users to customize various settings, such as the detection range and other functions, according to their specific requirements and preferences. This feature provides flexibility and adaptability to meet diverse monitoring needs.

- **Analog 4-20mA Transmitter**

  With the analog 4-20mA output, the device enables stable and long-distance signal transmission of up to 2.5 kilometers. This ensures reliable communication and allows for extended signal transmission distances while maintaining signal integrity.

- **Alarm Output**

  The device also features an alarm output capability. It is equipped with a Single-Pole Single-Throw (SPST) relay contact that provides a two-step alarm functionality. This means it can trigger two separate alarm states, denoted as alarm 1 and alarm 2, enabling effective alerting and response to gas detection events.

- **Modbus RTU**

  The Modbus RTU protocol, implemented over RS-485, provides a robust and dependable method for signal communication. With Modbus RTU, the device supports reliable and long-distance signal transmission of up to 1.2 kilometers. This allows for effective communication across extended distances while ensuring signal integrity.

3. Product Specifications

Product Code	DA-800
Detection Method	Suction Type
Detection Principle	Refer the Gas list Section below
Display	LCD Display
Explosion Protection	Explosion Proof
Measuring Method	Suction Type
Sucking Capacity	0-1000 ml/min
Gas Sucking Distance	Within 100 m
Sensor Calibration	Auto Calibration with magnetic Switch
Response speed & Accuracy	Within 25sec, 90%, full scale, $\leq \pm 3\%$ / full scale
Measurement Range	Refer the Gas list Section below
Input Power	DC 18~30V,
External Output	4 ~ 20mA/Full Scale - 2.5km transmission
Detector Output	4-20 mA source or sink selectable 2mA = Fault 4-20 mA = Normal gas range 24 mA = Over range
Ambient Temperatures & Humidity Range	-10℃ ~ 50℃, 5 ~ 95% RH (Non-condensing)
Signal Wire	CVVS & CVVSB 1.25sq x 3 wire
Wire Conduit	1/2"PF
Installation Method & External Material	Wall or Pipe Mounting, Cast Aluminum Alloy
Explosion Proof approval & IP ratings	ExdIIB+H2 T6, Ex tD A21
Relay Output	2 Step- Relay Contact ALARM-1 relay SPNO ALARM-2 relay SPNO
Communication Output (Optional)	Modbus RTU based on RS-485, HART Communication
Zones	Certified for use in Zone 1 or Zone 2

4. Product Diagram

1/4"PT

175

198

1/4"PT

165

220

2-1/4"PT

127

2-1/2"PF
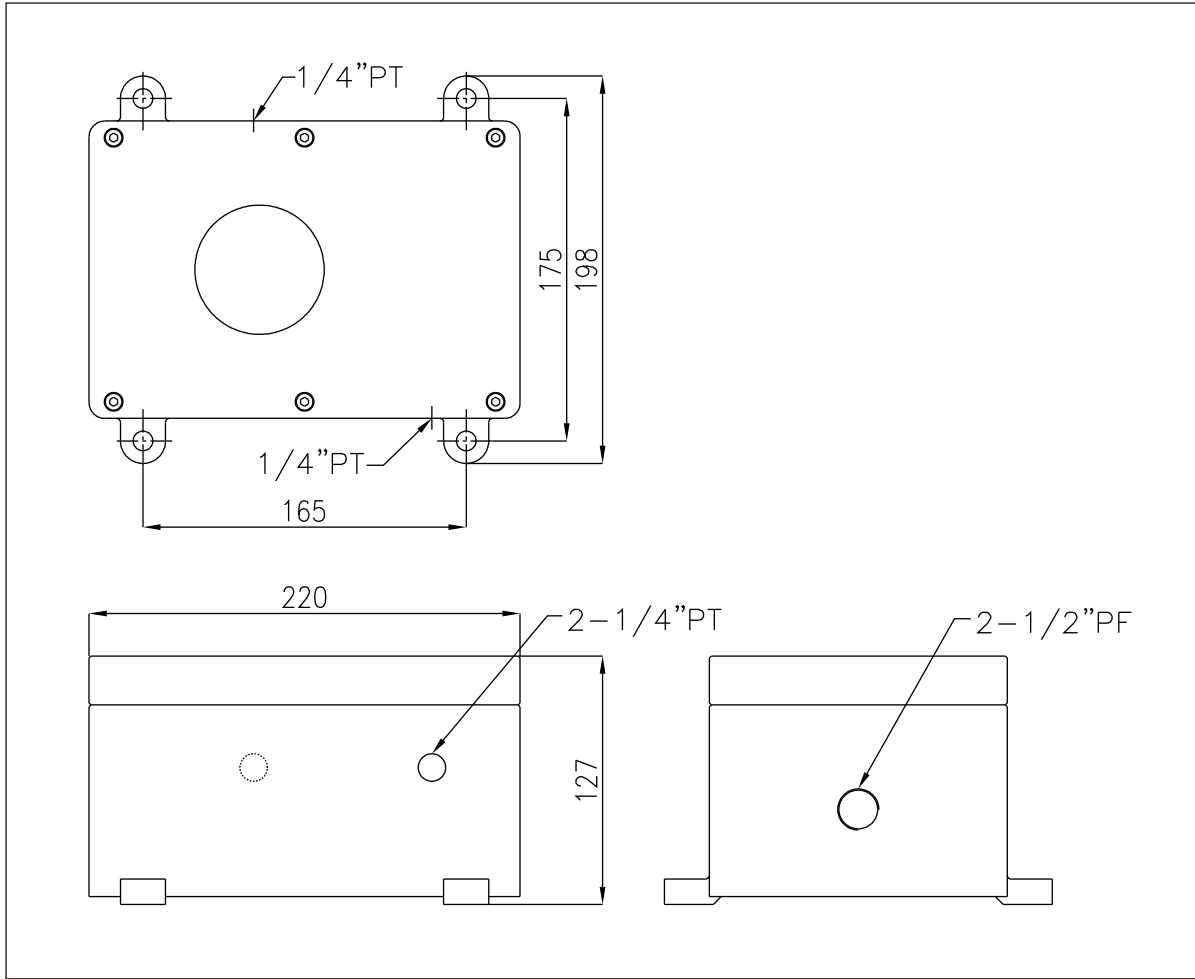
Unit: mm

5. Product Model No. & Gases Names

Gases Names	Chemical Formula	Range	Product Codes	Sensor Types
Acetylene	C2H2	0~10.0 PPM	DA-800-C2H2	Electrochemical
Ammonia	NH3	0 - 100 ppm	DA-800-NH3	Electrochemical
Argon	Ar	0~100% VOL	DA-800-AR	TCD
Arsine	AsH3	0 - 3.0 ppm	DA-800-AsH3	Electrochemical
Boron Trichloride	BCl3	0 - 10.0 ppm	DA-800- BCl3	Electrochemical
Boron Trifluoride	BF3	0-10.0 PPM	DA-800- BF3	Electrochemical
Bromine	Br2	0-2.0 PPM	DA-800-BR2	Electrochemical
Carbon Dioxide	CO2	0~5000 PPM	DA-800-CO2-L-ND	NDIR
Carbon Dioxide	CO2	0 - 5.00%VOL	DA-800-CO2-M-ND	NDIR
Carbon Dioxide	CO2	0~100% VOL	DA-800-CO2-H-ND	NDIR
Carbon Monoxide	CO	0-100 PPM	DA-800-CO-L	Electrochemical
Carbon Monoxide	CO	0-500 PPM	DA-800-CO-M	Electrochemical
Chlorine	CL2	0~5.0 PPM	DA-800-CL2	Electrochemical
Chlorine Dioxide	CLO2	0~5.0 PPM	DA-800-CLO2	Electrochemical
Chlorine Trifluoride	ClF3	0-5.0 PPM	DA-800-ClF3	Electrochemical
Diborane	B2H6	0-1.0 PPM	DA-800-B2H6	Electrochemical
Dichlorosilane	H2SiCl2	0~10.0 PPM	DA-800- H2SiCl2	Electrochemical
Difluoromethane	CH2F2	0~1000 PPM	DA-800-CH2F2-ND	NDIR
Disilane	Si2H6	0~20.0 PPM	DA-800- Si2H6	Electrochemical
Ethylene	C2H4	0~10.0 PPM	DA-800-C2H4	Electrochemical
Ethylene Oxide	ETO	0~10.0 PPM	DA-800-ETO	Electrochemical
Fluorine	F2	0 -5.0 ppm	DA-800- F2	Electrochemical
Formaldehyde	CH2O	0~10.0 PPM	DA-800-CH2O	Electrochemical
Germane	GeH4	0~1.0 PPM	DA-800-GeH4	Electrochemical

5. Product Model No. & Gases Names

Gases Names	Chemical Formula	Range	Product Codes	Sensor Types
Helium	He	0~100% VOL	DA-800-He	TCD
Hexafluoro butadiene	C4F6	0~1,000 PPM	DA-800-C4F6-ND	NDIR
Hydrazine	N2H4	0~2.0 PPM	DA-800-N2H4	Electrochemical
Hydrogen (% LEL)	H2	0~100%LEL	DA-800-H2-H	Electrochemical
Hydrogen (ppm)	H2	0~1000 PPM	DA-800-H2-L	Electrochemical
Hydrocarbon(%LEL)	HC	0~100%LEL	DA-800-HC-CAT	Catalytic
Hydrocarbon(%LEL)	HC	0~100%LEL	DA-800-HC-ND	NDIR
Hydrogen Bromide	HBr	0~10.0 PPM	DA-800-HBr	Electrochemical
Hydrogen Chloride	HCL	0~10.0 PPM	DA-800-HCL	Electrochemical
Hydrogen Cyanide	HCN	0~20.0 PPM	DA-800-HCN	Electrochemical
Hydrogen Fluoride	HF	0~10.0 PPM	DA-800-HF	Electrochemical
Hydrogen Selenide	H2Se	0~5.0 PPM	DA-800-H2Se	Electrochemical
Hydrogen Sulfide	H2S	0~10.0 PPM	DA-800-H2S	Electrochemical
Methanethiol	CH4S	0~20.0 PPM	DA-800- CH4S	Electrochemical
Methyl Fluoride	CH3F	0~1000 PPM	DA-800-CH3F	NDIR
Nitrogen Dioxide	NO2	0~30.0 PPM	DA-800-NO2	Electrochemical
Nitrogen Oxide	NO	0~100PPM	DA-800-NO	Electrochemical
Nitrous oxide	N2O	0~1000 PPM	DA-800-N2O	NDIR
Octafluorocyclobutane	C4F8	0~1000 PPM	DA-800-C4F8-ND	NDIR
Octofluorocyclopentene	C5F8	0~1000 PPM	DA-800-C5F8-ND	NDIR
Oxygen	O2	0~25.0 %VOL	DA-800-O2	Electrochemical
Oxygen	O2	0~25.0 %VOL	DA-800-O2-OP	Optical
Ozone	O3	0~5.00 PPM	DA-800-O3	Electrochemical
Phosphine	PH3	0~5.00 PPM	DA-800-PH3	Electrochemical
Phosphorous Oxychloride	POCL3	0~1.00 PPM	DA-800-POCL3	Electrochemical
Refrigerants	R290	0~100%LEL	DA-800-Propan-ND	NDIR
Silane	SiH4	0~10.0 PPM	DA-800-SiH4	Electrochemical

5. Product Model No. & Gases Names

Gases Names	Chemical Formula	Range	Product Codes	Sensor Types
Sulfur Dioxide	SO_2	0~20.0 PPM	DA-800-SO2	Electrochemical
Sulfur Hexafluoride	SF_6	0~1000 PPM	DA-800-SF6-ND	NDIR
Sulfur Tetrafluoride	SF_4	0~1000 PPM	DA-800-SF4-ND	NDIR
Tetrahydrothiophene	THT	0~100 PPM	DA-800-THT	Electrochemical
Trimethyl Borate	TMB	0~500 PPM	DA-800-TMB	Electrochemical
Tetra Ethyl Ortho Silicate	TEOS	0~50.0 PPM	DA-800-TEOS	Electrochemical
Tetrafluoromethane	CF_4	0~2000 PPM	DA-800-CF4-ND	NDIR
Trifluoro methane	CHF_3	0~2000 PPM	DA-800-CHF3-ND	NDIR
Tungsten Hexafluoride	WF_6	0~10.0 PPM	DA-800- WF6	Electrochemical
Vinyl Chloride	C_2H_3CL	0~10.0 PPM	DA-800-C2H3CL	Electrochemical
Volatile Organic Compounds	VOC	0~100 PPM	DA-800-VOC-L-PID	Photoionization
Volatile Organic Compounds	VOC	0~1000 PPM	DA-800-VOC-M-PID	Photoionization
Volatile Organic Compounds	VOC	0~5000 PPM	DA-800-VOC-H-PID	Photoionization