MONITORING AND ALARMING DEVICE

# ESD500 Combustible/Toxic Gas Detector

ISO9001 Supplier

Class Certificate

Export Supply

Introduction ●Combustible and toxic gas leakage inspection instrument in industrial application ●Ex-proof certificate Exd ⅡC T6 Gb/Ex d ib ⅡC T6 Gb ●Dust Ex-proof certificate Ex tD A21 IP66 T8...



## Key Highlights

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|---|---|
| **Category** | Monitoring And Alarming Device |
| **Standard** | ISO |
| **Material** | Items ESD500 1 Display No 12 Screw connection M20X1.5, 1/2NPT internal t... |
| **Weight / Size** | Items ESD500 1 Display No 12 Screw connection M20X1.5, 1/2NPT internal t... |
| **Certificate** | ABS, LR, BV, DNVGL, NK, KR, IRS, RMRS, CCS |

We can supply according to your requirement, drawings, class certificate needs, and delivery schedule.

## Technical Specifications

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|---|---|---|---|
| **Category** | Monitoring And Alarming Device | **Model / SKU** | ESD500-Combustible-Toxic-Gas-Detector |

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|---|---|
| **Standard** | ISO |
| **Material** | Items ESD500 1 Display No 12 Screw connection M20X1.5, 1/2NPT internal thread (select G3/4 or G1/2 or 3/4NPT) 2 Detected gases combustible gas/toxic gas 13 Weight 1.5kg (aluminum alloy, with audial & visual alarm) 1.42kg (aluminum alloy, without audial& visual alarm) 3.48k g (aluminum alloy, with audial & visual alarm) 3.4k g (stainless, without audial& visual alarm) 3 Detecting principle Catalytic/electrochemical 4 Measurement Range 0 ~ 100%LEL (combustible gas) see appendix for toxic gas measure scope 14 Explosion proof certificate Exd ⅡC T6 Gb/Ex tD A21 IP66 T80℃ (combustible gas detector) Ex d ib ⅡC T6 Gb/Ex t D ibD A21 IP66 T80℃ (toxic gas detector) 5 Accuracy ±3%LEL (combustible gas)/±3%FS (toxic gas) 15 Fire safety certificate CCCF 6 Repeatability ±2% 16 China metrology certification CMC 7 Response time T90 < 20S(Catalytic) see appendix for toxic gas response time 17 Standard GB 15322.1-2003, GB 3836.1-2010, GB 3836.2-2010, GB 3836.4-2010, GB 12476.1-2013, GB 12476.4-2010, GB 12476.5-2013, JJF 1363-2012, JJF 1368-2012, JJF 1421-2013, JJF 1364-2012 8 Power supply 24VDC （normal work voltage scope：10 ~ 30VDC) 9 Power consumption ＜2.5W (combustible gas) ＜1.5W (toxic gas) 18 IP rating IP66 10 Output signal RS485 BUS output RS485 BUS output+relay (1A@24VDC) RS485 BUS output+relay (1A@24VDC)+audial & visual alarm(96dB@0.1m away ) 19 Temperature scope -40℃ ~ 70℃ 11 Main material ADC12 aluminum alloy/316 stainless steel 20 Humidity scope 10 ~ 95%RH(non-condensing ） 21 Atmospheric pressure 86 ~ |

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|---|---|
| | 106KPa Flammable Gases Detectable by ESD500 No. |

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|---|---|
| **Weight / Size** | Items ESD500 1 Display No 12 Screw connection M20X1.5, 1/2NPT internal thread (select G3/4 or G1/2 or 3/4NPT) 2 Detected gases combustible gas/toxic gas 13 Weight 1.5kg (aluminum alloy, with audial & visual alarm) 1.42kg (aluminum alloy, without audial& visual alarm) 3.48k g (aluminum alloy, with audial & visual alarm) 3.4k g (stainless, without audial& visual alarm) 3 Detecting principle Catalytic/electrochemical 4 Measurement Range 0 ~ 100%LEL (combustible gas) see appendix for toxic gas measure scope 14 Explosion proof certificate Exd ⅡC T6 Gb/Ex tD A21 IP66 T80℃ (combustible gas detector) Ex d ib ⅡC T6 Gb/Ex t D ibD A21 IP66 T80℃ (toxic gas detector) 5 Accuracy ±3%LEL (combustible gas)/±3%FS (toxic gas) 15 Fire safety certificate CCCF 6 Repeatability ±2% 16 China metrology certification CMC 7 Response time T90 < 20S(Catalytic) see appendix for toxic gas response time 17 Standard GB 15322.1-2003, GB 3836.1-2010, GB 3836.2-2010, GB 3836.4-2010, GB 12476.1-2013, GB 12476.4-2010, GB 12476.5-2 013, JJF 1363-2012, JJF 1368-2012, JJF 1421-2013, JJF 1364-2012 8 Power supply 24VDC（normal work voltage scope：10 ~ 30VDC) 9 Power consumption ＜2.5W (combustible gas) ＜1.5W (toxic gas) 18 IP rating IP66 10 Output signal RS485 BUS output RS485 BUS output+relay (1A@24VDC) RS485 BUS output+relay (1A@24VDC)+audial & visual alarm(96dB@0.1m away ) 19 Temperature scope -40℃ ~ 70℃ 11 Main material ADC12 aluminum alloy/316 stainless steel 20 Humidity scope 10 ~ 95%RH(non-condensing ) 21 Atmospheric |
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|---|---|---|---|
| | pressure 86 ~ 106KPa Flammable Gases Detectable by ESD500 No. | | |
| **Warranty** | 12 Months unless specified otherwise | **Origin** | China |

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## Introduction

●Combustible and toxic gas leakage inspection instrument in industrial application

●Ex-proof certificate Exd ⅡC T6 Gb/Ex d ib ⅡC T6 Gb

●Dust Ex-proof certificate Ex tD A21 IP66 T80℃/Ex tD ibD A21 IP66 T80℃

●RS485 Bus

●Changeable sensor design

## Specifications

| No. | Items | ESD500 | No. | Items | ESD500 |
|---|---|---|---|---|---|
| 1 | Display | No | 12 | Screw connection | M20X1.5, 1/2NPT internal thread (select G3/4 or G1/2 or 3/4NPT) |
| 2 | Detected gases | combustible gas/toxic gas | 13 | Weight | 1.5kg (aluminum alloy, with audial & visual alarm)<br>1.42kg (aluminum alloy, without audial& visual alarm)<br>3.48k g (aluminum alloy, with audial & visual alarm)<br>3.4k g (stainless, without audial& visual alarm) |
| 3 | Detecting principle | Catalytic/electrochemical | | | |
| 4 | Measurement Range | 0 ~ 100%LEL (combustible gas) see appendix for toxic gas measure scope | 14 | Explosion proof certificate | Exd ⅡC T6 Gb/Ex tD A21 IP66 T80℃ (combustible gas detector) Ex d ib ⅡC T6 Gb/Ex t D ibD A21 IP66 T80℃ (toxic gas detector) |
| 5 | Accuracy | ±3%LEL (combustible gas)/±3%FS (toxic gas) | 15 | Fire safety certificate | CCCF |
| 6 | Repeatability | ±2% | 16 | China metrology certification | CMC |

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|---|---|---|---|---|---|
| 7 | Response time | T90 < 20S(Catalytic)<br>see appendix for toxic gas response time | 17 | Standard | GB 15322.1-2003, GB 3836.1-2010,<br>GB 3836.2-2010, GB 3836.4-2010, GB 12476.1-2013, GB 12476.4-2010,<br>GB 12476.5-2 013, JJF 1363-2012, JJF 1368-2012, JJF 1421-2013, JJF 1364-2012 |
| 8 | Power supply | 24VDC（normal work voltage scope：10 ~ 30VDC) | | | |
| 9 | Power consumption | < 2.5W (combustible gas) < 1.5W (toxic gas) | 18 | IP rating | IP66 |
| 10 | Output signal | RS485 BUS output<br>RS485 BUS output+relay (1A@24VDC)<br>RS485 BUS output+relay (1A@24VDC)+audial & visual alarm(96dB@0.1m away ) | 19 | Temperature scope | -40℃ ~ 70℃ |
| 11 | Main material | ADC12 aluminum alloy/316 stainless steel | 20 | Humidity scope | 10 ~ 95%RH(non-condensing ) |
| | | | 21 | Atmospheric pressure | 86 ~ 106KPa |

## Flammable Gases Detectable by ESD500

| No. | Description | Formula | No. | Description | Formula |
|---|---|---|---|---|---|
| K001 | Methane | $CH_4$ | K022 | Pentane | $C_5H_{12}$ |
| K002 | Methylbenzene | $C_6H_5CH_3$ | K023 | Hexane | $CH_3(CH_2)_4CH_3$ |
| K003 | Methanol | $CH_3OH$ | K024 | Heptane | $C_7H_{16}$ |
| K004 | Methyl formate | $HCOOCH_3$ | K025 | Octane | $CH_3(CH_2)_3CH_3$ |
| K005 | Ethyl formate | $HCOOCH_2CH_3$ | K026 | Nonane | $CH_3(CH_2)_7CH_3$ |
| K006 | Ethyl methyl ether | $CH_3OCH_2CH_3$ | K027 | Carbon monoxide | CO |
| K007 | Ethane | $CH_3CH_3$ | K028 | Ammonia | $NH_3$ |
| K008 | Ethyne | CH≡CH | K029 | Hydrogen | $H_2$ |

| | | | | | |
|---|---|---|---|---|---|
| K009 | Ethanol | $CH_3CH_2OH$ | K030 | Benzene | $C_6H_6$ |
| K010 | Ethylbenzene | $CH_3CH_2C_6H_5$ | K031 | Iso-butane | $(CH_3)_2CHCH_3$ |
| K011 | Ethylene | $CH_2=CH_2$ | K032 | Isopropanol | $(CH_3)_2CHOH$ |
| K012 | Methyl acetate | $CH_3COOCH_3$ | K033 | 1-Butanol | $CH_3(CH_2)_2CH_2OH$ |
| K013 | Ethyl acetate | $CH_3COOCH_2CH_3$ | K034 | Cyclohexane | $CH_2(CH_2)_4CH_2$ |
| K014 | N-butyl acetate | $CH_3COOCH_2(CH_2)_2CH_3$ | K035 | Cyclopentane | $CH_2(CH_2)_3CH_2$ |
| K015 | Propane | $CH_3CH_2CH_3$ | K036 | Epoxypropane | $CH_3CHCH_2O$ |
| K016 | Propanol | $CH_3CH_2CH_2OH$ | K037 | Ethylene oxide | $CH_2CH_2O$ |
| K017 | Propylene | $CH_2=CHCH_3$ | K038 | Diethyl ether | $(CH_3CH_5)_2O$ |
| K018 | Acetone | $(CH_3)_2CO$ | K039 | Dimethyl ether | $(CH_3)_2O$ |
| K019 | Butane | $C_4H_{10}$ | K040 | Xylene | $C_6H_4(CH_3)_2$ |
| K020 | Butanone | $CH_3CH_2COCH_3$ | K041 | Gasoline | $C_4$~$C_{12}$hydrocarbon mixture |
| K021 | Butadiene | $CH_3CH_2COCH_3$ | K042 | Jet fuel, kerosene | $C_9$~$C_{16}$hydrocarbon mixture |

## Toxic Gases Detectable by ESD500

| No. | Description | Formula | Measurement Range(ppm) |
|---|---|---|---|
| D001 | oxygen | $O_2$ | 0-25%v/v |
| D002 | Carbon monoxide | CO | 0-100/200/500/1000 |
| D003 | Hydrogen sulfide | $H_2S$ | 0-20/50/100 |
| D004 | Hydrogen | $H_2$ | 0-1000 |

| | | | |
|---|---|---|---|
| D005 | Ammonia | $NH_3$ | 0-100/500/1000 |
| D006 | Chlorine | $CL_2$ | 0-10/20 |
| D007 | Nitric oxide | NO | 0-100/500 |
| D008 | Nitrogen dioxide | $NO_2$ | 0-20/50 |
| D009 | Sulfur dioxide | $SO_2$ | 0-20/100 |
| D010 | Vinyl Chloride | $C_2H_3CL$ | 0-20/100 |
| D011 | Acrylonitrile | $C_3H_3N$ | 0-100/200 |
| D012 | Methanol | $CH_3OH$ | 0-100/200/500 |
| D013 | Formaldehyde | $CH_2O$ | 0-50/100/200/500 |
| D014 | Ethylene oxide | $C_2H_4O$ | 0-20/100/200 |
| D015 | Hydrogen chloride | HCL | 0-30/50 |
| D016 | Hydrogen fluoride | HF | 0-10 |
| D017 | Hydrogen cyanide | HCN | 0-30 |
| D038 | Tetrahydrothiophene | $C_4H_8S$ | 0-25 |