



## UNIPHOS Digi-Tx Digital Gas Transmitter



### DIGI-TX DIGITAL GAS TRANSMITTER

Uniphos-500 DT series digital gas transmitter is a field mountable device suitable for the detection and continuous monitoring of hazardous gases at industrial plant locations.

Apart from providing an RS-485 MODBUS-RTU digital output signal, that can be connected to a suitable control system, such as a Uniphos controller, DCS, PLC, etc, it also provides an industry standard 4-20 mA analog output.

The 500DT is available for a large variety of toxic and flammable gases, such as O<sub>2</sub>, combustibles (%LEL), CO, H<sub>2</sub>S, SO<sub>2</sub>, Cl<sub>2</sub>, NH<sub>3</sub>, HCN, HCl, NO<sub>2</sub>, etc.

### SALIENT FEATURES:

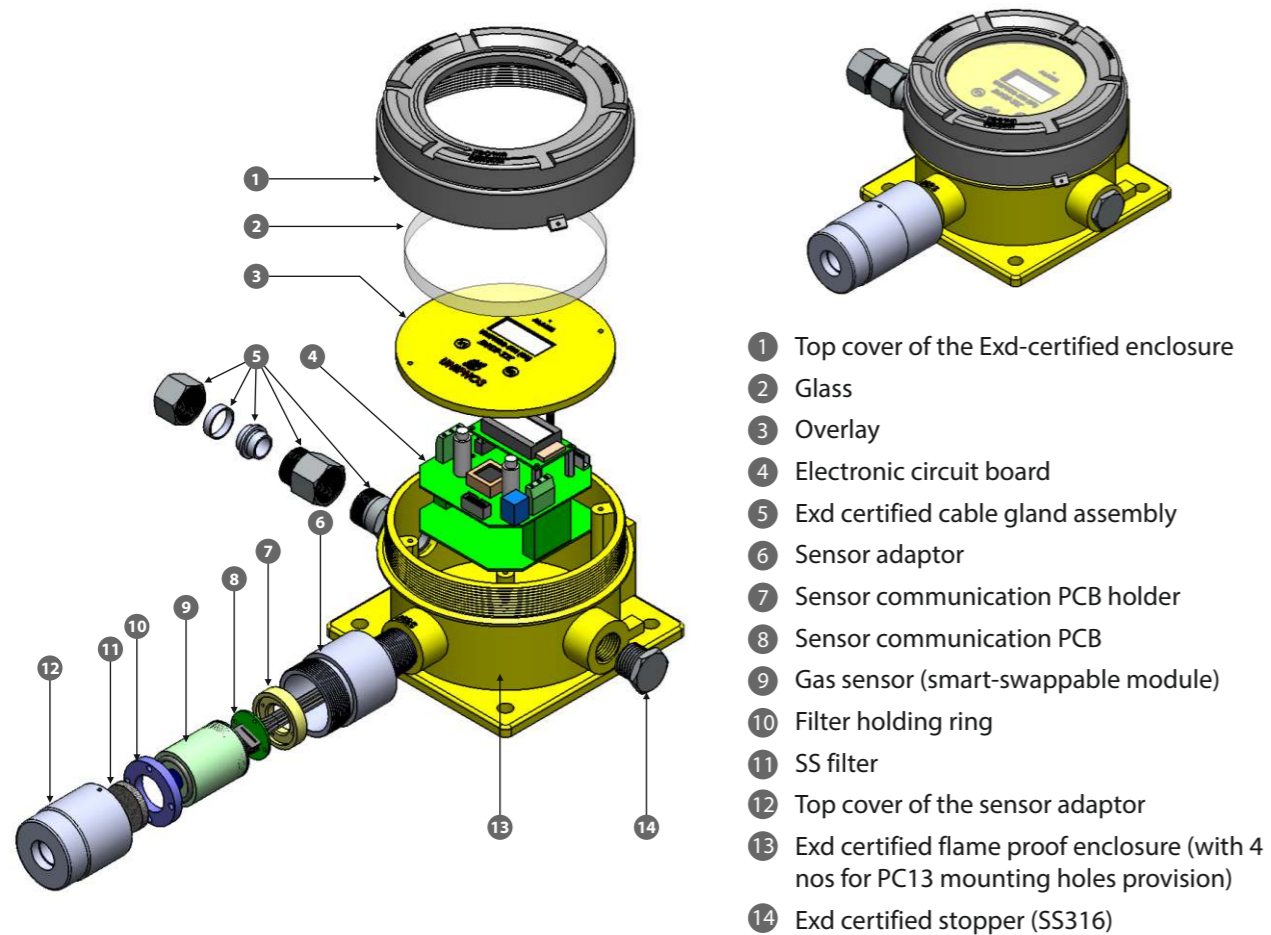
- 8x2 backlit Alphanumeric LCD display
- Non-intrusive calibration using magnetic wand
- Auto calibration - No adjustment required
- Tricolor LED for various alarm indications
- Fully configurable on-board potential free relay contact
- Industry standard 4-20mA analog signal output (soft tunable)
- 3 x inbuilt 3 potential free relay contacts (optional)
- Input (24V) voltage monitoring & low/high voltage detection and its prompting on display
- Cable fault detection and 4-20mA output signal disable
- Inbuilt ambient temperature sensor
- User settable alarm set-points
- Provision to mute relay output
- Self Testing of alarm LEDs and relays
- Indication for No sensor, over-range, baseline drift
- Digital Communication by RS 485

### APPLICATION AREAS

- Refineries
- Petrochemical Plants
- Pharmaceutical Plants
- Power Industries
- Pollution Monitoring



EXPLODED VIEW OF UNIPHOS-500DT



**DESCRIPTION**

Uniphos-500DT consists of two parts, viz. Digital Transmitter & Smart Gas Sensor Module. The smart gas sensor module contains a gas sensor and the necessary electronics to store the calibration data in its memory. This makes it independent of transmitter module and can work on any digital transmitter. The transmitter recognizes the smart sensor and all the data stored in it and functions accordingly for the programmed gas.

The Digital transmitter is housed in an explosion proof ("Exd" certified) wall mountable enclosure and is virtually maintenance-free. Its revolutionary design utilizes advanced micro-controller and non-volatile memory devices that allow for enhanced diagnostics and fault analysis. Advanced design features make installation and operation simpler and user friendly.

Normally, only a periodic calibration and bump check is needed to assure dependable performance. Field interchangeable plug-in sensor module enables users to replace the calibrated gas sensor module at ease & as per their requirements on the site. Sensor module from the transmitter requiring calibration can be sent to the laboratory for calibration.

Gas sensor modules are available for many gases of interest (Please refer Table 1). These modules include one of the following sensors viz. Electro-chemical detector, Non dispersive Infrared detector, Catalytic bead detector, Photo-ionization detector, Semiconductor thin film detector, etc.

**TABLE 1: SMART SENSOR MODULES AVAILABLE FOR GASES**

Gas Codes	Gas Name	Range	Resolution	Sensor Type
010A	Oxygen	0 - 25% V/V	0.1% V/V	EC
015A	Ozone	0 - 1 PPM	0.01 PPM	EC
020A	Carbon Monoxide	0 - 1000 PPM	1 PPM	EC
021A	Carbon Disulfide	0 - 100 PPM	1 PPM	EC
022A	Vinyl Chloro Monomer	0 - 100 PPM**	1 PPM	EC
023A	Styrene	0 - 100 PPM**	1 PPM	EC
024A	Acrylonitrile	0 - 100 PPM**	1 PPM	EC
025A	Carbon Dioxide	0 - 5% V/V	0.01% V/V	NDIR
025B	Carbon Dioxide	0 - 100% V/V	1% V/V	NDIR
030A	Hydrogen Sulphide	0 - 100 PPM	1 PPM	EC
035A	Mercaptan	0 - 20 PPM	0.1 PPM	EC
040A	Sulphur Dioxide	0 - 20 PPM	0.1 PPM	EC
050A	Phosphine	0 - 10 PPM	0.01 PPM	EC
055A	Phosgene	0 - 1 PPM	0.01 PPM	EC
060A	Chlorine	0 - 20 PPM	0.1 PPM	EC
061A	Bromine	0 - 20 PPM	0.1 PPM	EC
070A	Hydrogen Chloride	0 - 20 PPM	0.1 PPM	EC
071A	PCL3	0 - 10 PPM**	1 PPM	EC
072A	Hydrogen Fluoride	0 - 10 PPM	0.1 PPM	EC
073A	POCL3	0 - 20 PPM**	1 PPM	EC
075A	Hydrogen Cyanide	0 - 100 PPM	1 PPM	EC
081A	Nitrogen Dioxide	0 - 20 PPM	0.1 PPM	EC
082A	Ammonia	0 - 100 PPM	1 PPM	EC
082B	Ammonia	0 - 1000 PPM	1 PPM	EC
090A	Hydrogen	0 - 1000 PPM	1 PPM	EC
090B	Hydrogen	0 - 100% LEL	1% LEL	EC
090C	Hydrogen	0 - 100% LEL	1% LEL	Pellister
098A	Formaldehyde	0 - 10 PPM**	1 PPM	EC
099A	HC (Methane)	0 - 100% LEL	1% LEL	Pellister
099B	LPG	0 - 100% LEL	1% LEL	Pellister
099C	Acetylene	0 - 100% LEL	1% LEL	Pellister
099D	Butanol	0 - 100% LEL	1% LEL	Pellister
099E	Methane	0 - 100% LEL	1% LEL	NDIR
099F	Methane	0 - 100% V/V	1% V/V	NDIR
099G	HC (Methane)	500 - 10000 PPM**	10 PPM	Solid State
099H	Hydro Carbon	50 - 1000 PPM **	1 PPM	Solid State
100A	VOC (isobutylene)	0 - 1000 PPM	1 PPM	PID
100B	VOC (isobutylene)	0 - 4000 PPM	1 PPM	PID

EC: Electro Chemical, NDIR: Non Dispersive Infra Red, PID: Photo Ionization Detection  
 Note : Pl. contact us for any other special gas requirements other than that specified in the table.  
 \*Please consult factory for further information



## SPECIFICATIONS

Operating voltage: 18 to 28 VDC  
(Typically: 24 VDC)

Power Consumption: Less than 3 watt

Enclosure: Flame proof, cast aluminium alloy

Cable entries: ½" NPT (2 entries)

Size: 230mm x 220mm x 120mm

Weight: 2.5 Kg (Approx.)

### 3-wire cable system:

Wire 1: Supply voltage

Wire 2: signal 4 - 20 mA

Wire 3: return ground

**Recommended cable specifications:** 3 core copper wire, shielded armored cable R-12 ohm/Km per core and C - 0.15 mFd per Km and reactance 0.107 ohms/Km

**Output signal:** Industry standard 4 - 20 mA sourcing (Cable load driving capacity : 650 ohm maximum) RS - 485 (MOD - BUS) on 4 core cable

Sensor: Provision for smart-swappable gas sensor; which are available for Oxygen, combustible gases and toxic gases

Operating Temperature: -20°C to 50°C

Operating Pressure Range: Ambient +/- 10%

Operating Humidity Range: 0-95% RH  
(non-condensing)

### Standards complied:

IS/IEC: 60079-0: 2004

IS/IEC: 60079-1: 2007

IP-IS/2063-1987 (IEC60529: 2001)

Toughened glass window provision

Mounting: Suitable for mounting on walls or poles or similar support.


Exd Certified cable glands provision

SS-316 Sensor adaptor

Body Coating: Epoxy coating or PU color coating

## ORDERING INFORMATION FOR DIGITAL TRANSMITTER AND SMART SENSOR

### CERTIFICATIONS

- CCOE & CIMFR certified to Exd IIC, T6, IP66 (Cat. no. UJB20130)
- ATEX  II 2 G Ex d IIC T6 Gb Tamb -20° C to +40° C, in process

Due to continuing development we reserve the right to change specifications without prior notice.



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