

**A.S.P. Electro-Technology Ltd**  
**INFORMATION SHEET**

## APEX – Gas Detector / Transmitter

Apex takes all the best elements of gas detection design and combines them into one unit. Apex provides the highest performance, installation flexibility, a wide range of accessories and a choice of communication outputs. All this is provided in a package that is easy to install, operate and maintain.

**Typical applications include:**

<b>Petrochemical -</b>	Exploration drilling rigs, production platforms, FPSO's, oil and gas terminals, chemical plants, oil and gas tankers
<b>Heavy Industrial -</b>	Steel manufacture, ship building
<b>Manufacturing -</b>	Automotive, glass and ceramics, aerospace, printing and coating, cosmetics
<b>Pharmaceutical -</b>	Research labs, solvent storage areas, process areas, demineralisation plants

**Transmitter**

The robust hazardous area approved Apex transmitter housing and mounting bracket is made from 316 Stainless Steel. It has a large backlit LCD display, simple 4 button operation, 3 fully configurable relay outputs and selectable sink, source or isolated 4-20mA signal. The transmitter is common to all types of sensor.

**Sensor**

The Apex Sensor can be mounted directly on the transmitter or remotely up to 100m away. There are two versions of sensor; one for both catalytic and electrochemical type sensor cartridges and one for the thick film (semi conductor) type cartridges.

**Smart cartridge**

The sensors can be fitted with a choice of over 40 toxic gas ranges and wide range of detectable flammable gases. Each cartridge is pre calibrated and simply plugs into the sensor. The Intrinsically Safe design allows cartridges to be changed with the unit under power. The transmitter recognizes a newly fitted sensor cartridge and automatically reads all the configuration information from it.



**Easy to Install**

- Sensor can be remotely mounted up to 100m from the transmitter
- On board relays allow for local audible/visual alarms
- Strong integral 316 STST mounting bracket
- Large easy access cable entries
- Easy access terminal blocks
- Wide range of accessories

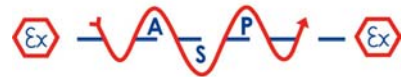
**Easy to Use**

- Intuitive menu operating system
- Clear on screen instructions guide user
- Simple for button operation
- Multiple language options
- Transmitter recognizes new sensor cartridges
- Easy to change gas types
- Large clear backlit graphical LCD display

**Easy to Maintain**

- Simple plug in under power sensor cartridge
- Smart cartridges are supplied pre calibrated
- Common transmitter for all gas types
- Simple filter replacement





## GENERAL SPECIFICATION

<b>Power supply</b>	24Vdc nominal (18-32Vdc)
<b>Power consumption (typical)</b>	Apex 3W toxic, 4.6W catalytic, 4.6W thick film
<b>Outputs</b>	
Relay outputs:	A1, A2 and Fault 2A at 30Vdc* selectable normally open or normally closed and normally energised or normally de-energised
Analogue signal:	4-20mA sink, source or isolated output
Digital output:	LonWorks (optional)
<b>Material and weight</b>	316 Stainless Steel 5.25kg (11.55lbs)
<b>Accuracy</b>	Baseline $\pm 3\%$ , at 50% FSD $\pm 4\%$
<b>Repeatability</b>	$\pm 2\%$ at 50% FSD
<b>Linearity</b>	$< 5\%$ FSD
<b>Response time (typical)</b>	Catalytic T50 $< 5$ seconds, T90 $< 10$ seconds Toxic T50 $< 12$ seconds, T90 $< 30$ seconds
<b>Stability (typical)</b>	
Temperature:	$< \pm 5\%$ FSD (zero), $< \pm 5\%$ FSD (span)
Time:	$< \pm 3\%$ FSD / year (zero), $< \pm 4\%$ FSD / year (span)
<b>Operating temperature</b>	$-40^{\circ}\text{C}$ to $+65^{\circ}\text{C}$ ( $-40$ to $+150^{\circ}\text{F}$ ). Operating temperature of electrochemical cell cartridges is cell dependent LCD display operates over $-20^{\circ}\text{C}$ to $+65^{\circ}\text{C}$ 0-99% (non condensing)
<b>Operating humidity</b>	0-99% (non condensing)
<b>Environmental protection</b>	IP66/67 to BS EN60529:1992 (Equiv. NEMA 4X / NEMA 6)
<b>Approvals</b>	CE Approved to all applicable European directives EMC EN50270: 1999 type 2
<b>Performance standards</b>	Exam (DMT) EN50054/50057/50271 CSA C22.2 No.152 (with cartridge 2110B3754)
<b>Certification</b>	ATEX II 2G EEx d ia IIC CSA Class 1, Division 1 groups B, C and D C22.2 No.152 UL Class 1, Division 1 groups B, C and D, and Class 1, Zone 1 AExd [ia] IIC ATEX and UL T4 $-40$ to $+80^{\circ}\text{C}$ ( $-40$ to $+176^{\circ}\text{F}$ ), T5 $-40$ to $+55^{\circ}\text{C}$ ( $-40$ to $+131^{\circ}\text{F}$ ) CSA T4 $-40$ to $+75^{\circ}\text{C}$ ( $-40$ to $+167^{\circ}\text{F}$ ), T5 $-40$ to $+55^{\circ}\text{C}$ ( $-40$ to $+131^{\circ}\text{F}$ ) * CSA / UL rating 1A at 28Vdc

Available gases and ranges\*

Gas	Formula	Ranges	Cell type
Flammable	Various	0-100%LEL	CAT/TF
Ammonia	NH3	0-50ppm, 0-100ppm, 0-400ppm or 0-1000ppm	ECC/TF
Arsine	AsH3	0-0.2ppm	ECC
Boron trichloride	BCl3	0-6ppm	ECC
Bromine	BR2	0-0.4ppm	ECC
Carbon monoxide	CO	0-100ppm, 0-200ppm or 0-500ppm	ECC
Chlorine	Cl2 0-2ppm,	0-5ppm or 0-15ppm	ECC
Chlorine dioxide	ClO2	0-0.4ppm	ECC
Diborane B2H6	0-0.4ppm	ECC	
Dichlorosilane	SiH2Cl2	0-10ppm	ECC
Fluorine	F2	0-4ppm	ECC
Germane	GeH4	0-0.8ppm	ECC
Hydrogen	H2	0-1000ppm	ECC
Hydrogen bromide	HBr	0-12ppm	ECC
Hydrogen chloride	HCl	0-20ppm	ECC
Hydrogen cyanide	HCN	0-20ppm	ECC
Hydrogen fluoride	HF	0-12ppm	ECC
Hydrogen sulfide	H2S	0-15ppm, 0-20ppm, 0-50ppm or 0-100ppm	ECC/TF
Nitric oxide	NO	0-100ppm	ECC
Nitrogen dioxide	NO2	0-12ppm	ECC
Oxygen	O2	0-21%V/V	ECC
Phosphine	PH3	0-1.2ppm	ECC
Silane	SiH4	0-20ppm	ECC
Sulfur dioxide	SO2	0-8ppm, 0-15ppm, 0-50ppm	ECC

CAT- Electrocatalytic, ECC- Electrochemical Cell, TF- Thick Film Semi Conductor  
\*For other gases and ranges not listed contact Zellweger Analytics.

## Supplied by:

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