FREEDOM 6000

UNIVERSAL TRANSMITTER FOR TOXIC AND COMBUSTIBLE GASES

SCOTT SAFETY

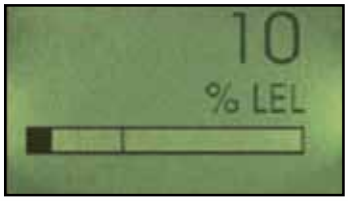
FREEDOM 6000
UNIVERSAL TRANSMITTER
THE SUREST PROTECTION FROM HAZARDOUS ENVIRONMENTS.

WITH SCOTT SAFETY, PROTECTION FROM HAZARDOUS GASES IS SIMPLE, SAFE AND SMART.

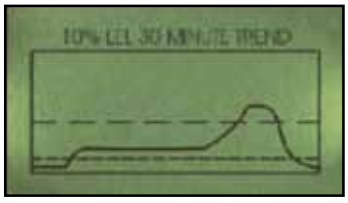
At Scott Safety, we're changing the way industry detects atmospheric hazards in the workplace. With the introduction of the Freedom 6000 universal transmitter, we've made it easier than ever to install, integrate and maintain a gas detection system. Whether detecting H_2S in a refinery or chlorine in a wastewater treatment facility, the Freedom 6000 transmitter can be a perfect fit for any industrial application.

INCORPORATING A UNIVERSAL TRANSMITTER— THE INDUSTRY GAME CHANGER.

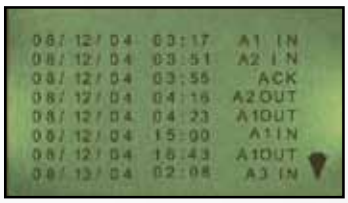
When a universal transmitter like the Scott Safety Freedom 6000 is incorporated into a fixed gas detection system, one common user interface is shared across all onsite transmitters. This shared access, combined with modular components common across multiple configurations, results in reduced inventory, reduced maintenance complexity, and reduced costs associated with training. In all, your fixed gas detection solution becomes simpler, easier and less expensive to operate.



EASY-TO-READ STATUS



BAR GRAPH TRENDING



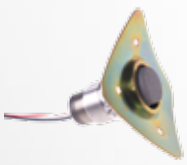
65 EVENT LOG

FREEDOM 6000

TOXIC

COMBUSTIBLE

ACCESSORIES



CURVED DUCT MOUNT

FLAT DUCT MOUNT

MODBUS RTU/3 RELAY

SENSOR RAINGUARD

INNOVATIVE ADD-ONS

Freedom 6000 universal transmitter is available with accessories that allow users to customise their experience to fit their needs.

ACCESSORIES INCLUDE:

- The isolated 4-20 mA module to separate transmitter power wiring from output signal wiring when required by application
- A MODBUS RTU/3 Relay output communications module to allow users to make use of multi-drop (daisy chain) wiring techniques to reduce wiring costs
- Sensor Rainguards to help protect the sensor from the harshest of environments
- Flow Cells to allow customers to bring a gas sample to a sensor/transmitter when the sample necessitates conditioning
- Duct Mounts to allow remote sensors to be mounted in ventilation systems to verify exhaust or inlet air is free of toxic or combustible gas

SCOTT SAFETY

PERFORMANCE
AND INNOVATION
THE MOST ADVANCED DESIGN AND SENSOR TECHNOLOGY

ROCK SOLID SENSOR TECHNOLOGY. ANOTHER FIRST FROM SCOTT SAFETY.

A fast, reliable response to hazardous gases is critical for a safe and profitable operation. That's why we developed a proprietary line of high performance ROCK SOLID sensors that are fundamentally different from any electrochemical sensor on the market.

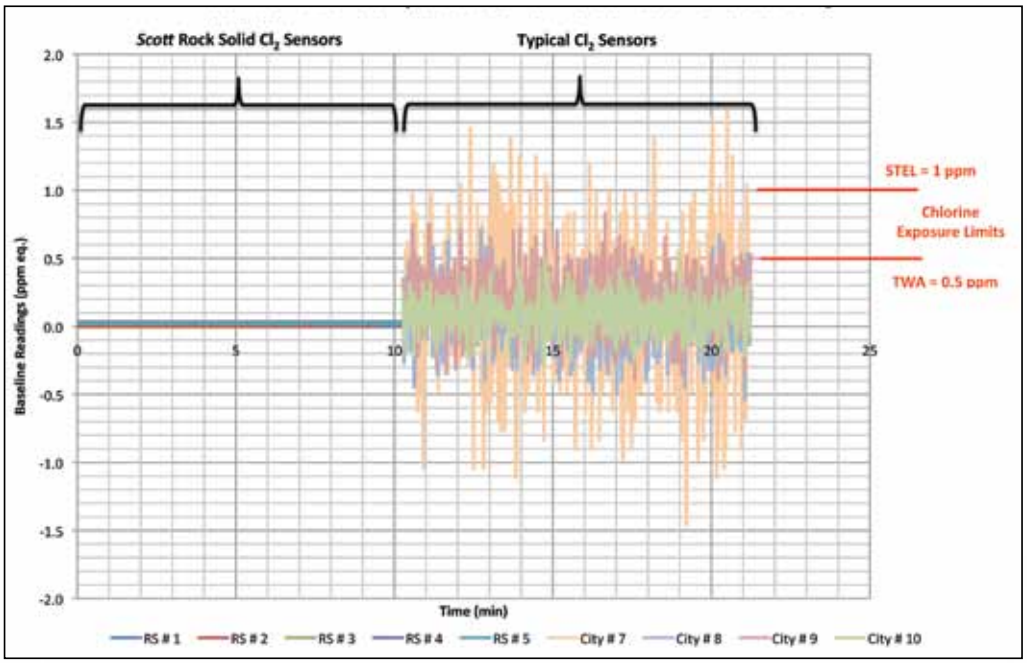
While others have promised the delivery of flexible, fast and smart sensor technologies, Scott Safety has built a reputation on providing innovative solutions. Only Scott Safety provides this smart sensor solution, designed by a skilled and dedicated research and development team committed to advancing sensor technologies and manufactured in-house to ensure quality control.

Simply put, this best-in-class transmitter has a high performance sensor that provides extremely low zero drift, faster speed of response and recovery time and greater specificity to target gases.

ROCK SOLID AT A GLANCE

- Minimal drift: performs reliably in harsh real-world environments by significantly reducing effects of temperature and humidity.
- High specificity: allows for much lower interference from other gases than conventional gas sensors, reducing cross interference from other gases present and lessening the likelihood of a false alarm.
- Digital ID: provides automatic recognition when sensors are replaced, reducing the likelihood of user error during maintenance in the field.
- Broader toxic gas detection: several ranges are available for each gas to optimize the sensor's response in the environment.

ROCK SOLID
TECHNOLOGY



SCOTT SAFETY ROCK SOLID SENSOR TECHNOLOGY.
Our advanced electrochemical, high performance ROCK SOLID sensors for the Freedom 6000 are available to detect most toxic gases.

- Arsine
- Boron trichloride
- Boron trifluoride
- Bromine
- Chlorine
- Chlorine dioxide
- Diborane
- Fluorine
- Hydrogen bromide
- Hydrogen chloride
- Hydrogen cyanide
- Hydrogen fluoride
- Ozone
- Phosphine
- Silicon tetrafluoride
- Sulfur dioxide
- Tungsten hexafluoride

EASE OF USE
AND MODULARITY
FLEXIBLE, EFFICIENT AND SIMPLE

- **THE MOST FLEXIBLE COMBUSTIBLE GAS DETECTION OFFERING IN THE INDUSTRY.**

  The Freedom 6000 universal transmitter is available with catalytic bead or infrared (IR) technology, but the real difference is how it's used: you can switch between catalytic bead and infrared technology in the field—an advantage you can only get from Scott Safety.

- **THE MOST EFFICIENT COST OF OWNERSHIP.**

  Freedom Direct is a seamless addition to the Freedom 6000. Fully interoperable with Freedom 6000, the Freedom Direct provides a lower cost of ownership than other detection systems, proving to be a better value. Our forward-thinking vision has driven us to create a smart detection system that can be adapted to accommodate improvements in facility safety, future technologies and changing industry requirements.

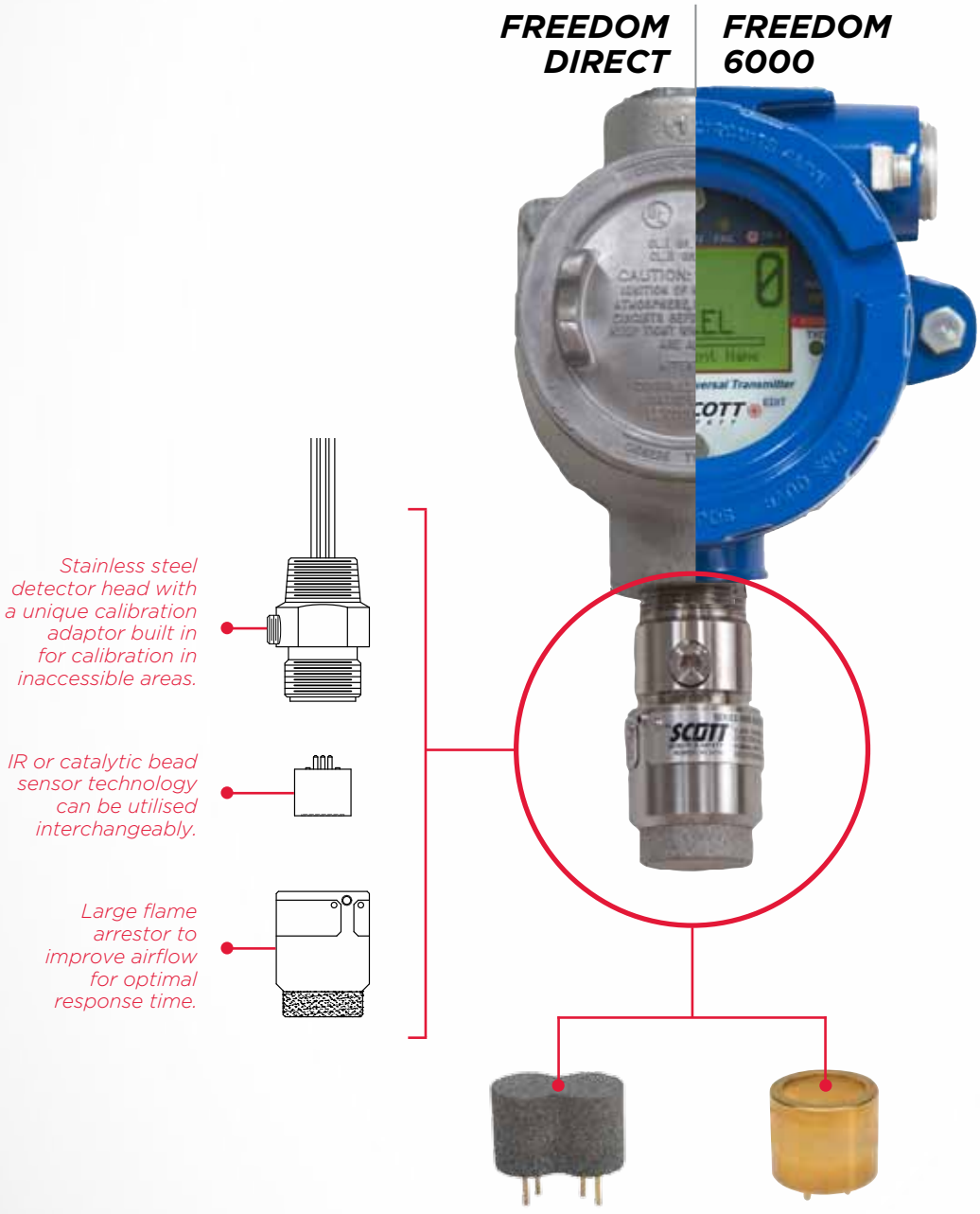
  The Freedom Direct is a smart, reliable detector that can be deployed today and is engineered to easily integrate with Freedom 6000 to meet future detection requirements. All of this adds up to the lowest cost of ownership and a greater return on investment for a superior detection solution.

- **UNPARALLELED FLEXIBILITY FOR GROWTH.**

  The Freedom 6000 universal transmitter and the Freedom Direct combustible detector share common components. Both can be used with a junction box to allow easier access to wiring, making unit change-out easier.

  Scalable and flexible, Freedom Direct offers reduced upfront costs. The Freedom Direct detector's simple design allows for easy installation, maintenance, and quick sensor change-out in the field, allowing customers to experience the true flexibility of the detector's capabilities. Our unique design provides the most economical way to add points of detection to remote locations or areas where local display is not required, providing a greater coverage of potentially hazardous areas.

FREEDOM DIRECT & FREEDOM 6000



The Freedom Direct detector can be used with a junction box to allow easier access to wiring, making unit change-out easier. (Shown with optional junction box.)

MAKING DETECTION EASIER AND SAFER IS JUST THE BEGINNING.

- Modular design for easy in-field component replacements and upgrades
- Plug-and-play sensor technology
- Monitors and alerts catalytic bead sensor life and recognises change-out when used with Scott Safety controllers
- Corrosion resistant housing protects sensors from the environment and contamination
- Meets global design and performance requirements.
- Meets NEMA 4x/IP66 standard, for environmental performance

Our modular system provides advantages that simplify your complete hazardous environment detection solution. This full product line gives you complete control and the ultimate in flexibility—from toxic to combustible gas. Whether it's gas detection, flame detection, or controllers, Scott Safety has your fixed detection needs covered.

SCOTT SAFETY

FLEXIBILITY AND ADAPTABILITY

A FLEXIBLE, SCALABLE SOLUTION FOR APPLICATIONS ACROSS INDUSTRY

The Freedom 6000 provides the ability to evolve with your changing needs—seamlessly leveraging your initial investment. Freedom 6000 delivers fully functional gas detection solutions that enable your facility to operate at its highest potential.

1

Verify office environments are monitored for toxic gases with the Freedom 6000 configured for toxic gases.

2

Monitor for combustible gases around storage tanks using Freedom 6000 configured with remote combustible infrared sensors near trenches.

3

Monitor fence lines with the Freedom 6000 configured for toxic gas noting prevailing winds.

INDUSTRY APPLICATIONS

FREEDOM 6000: A SOLID FOUNDATION FOR A WIDE VARIETY OF INDUSTRIES.

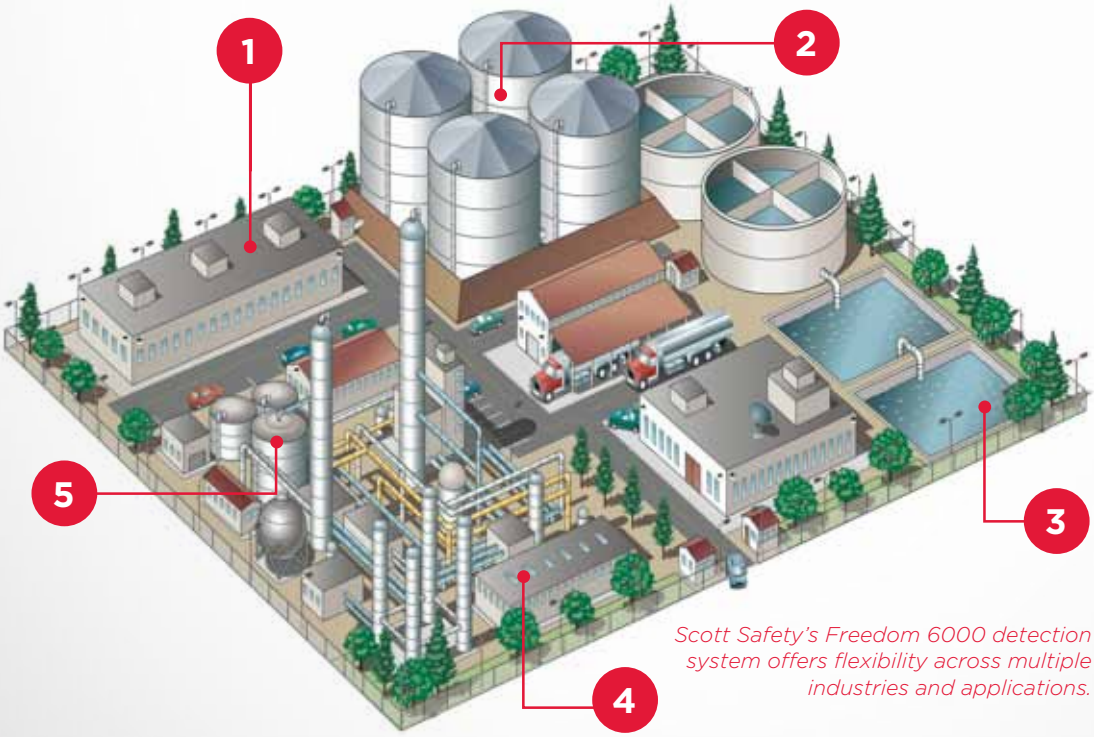
- Refineries
- Oil and gas production platforms
- Gas storage and distribution facilities
- Chemical plants
- Wastewater treatment facilities
- Food and beverage facilities

4

Monitor ventilation systems to verify low combustible gas levels utilising the Freedom 6000 with remote catalytic bead sensors and duct mount adapters.

5

Monitor combustible gases utilising the Freedom Direct connected to a Scott Safety 7800 controller.



Scott Safety's Freedom 6000 detection system offers flexibility across multiple industries and applications.

SCOTT SAFETY

ASSURED PROTECTION

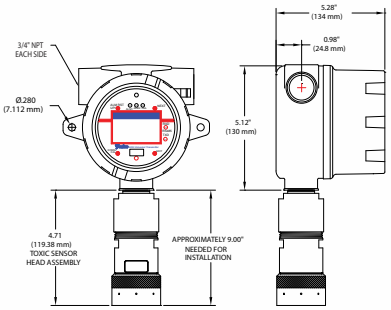
PROTECTION FROM A WIDER VARIETY OF HAZARDOUS ENVIRONMENTS

FREEDOM 6000 TOXIC GAS LIST

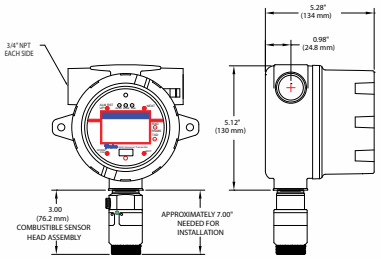
Gas Name	Sensor Type	Operating Temperature Range	Typical Response Time
Ammonia	Electrochemical	-5 to 50°C	<45
Arsine	ROCK SOLID Available	10 to 40°C	<45
Boron trifluoride	ROCK SOLID Available	-40 to 50°C	<45
Bromine	ROCK SOLID Available	-40 to 50°C	<20
Carbon monoxide	Electrochemical	-40 to 50°C	<20
Chlorine	ROCK SOLID Available	-40 to 50°C	<20
Chlorine dioxide	ROCK SOLID Available	-40 to 50°C	<20
Diborane	ROCK SOLID Available	-10 to 50°C	<60
Ethylene oxide (ETO)	Electrochemical	-20 to 50°C	<140
Fluorine	ROCK SOLID Available	-40 to 50°C	<20
Germane	Electrochemical	-40 to 50°C	<20
Hydrogen	Electrochemical	-40 to 50°C	<10
Hydrogen bromide	ROCK SOLID Available	-40 to 50°C	<60
Hydrogen chloride	ROCK SOLID Available	-40 to 50°C	<60
Hydrogen cyanide	ROCK SOLID Available	-10 to 50°C	<60
Hydrogen fluoride	ROCK SOLID Available	-40 to 50°C	<45
Hydrogen sulfide	Electrochemical	-40 to 50°C	<15
Methanol	Electrochemical	-40 to 50°C	<40
Methyl mercaptan	Electrochemical	-40 to 50°C	<20
Monomethylhydrazine	Electrochemical	-5 to 50°C	<45
Nitric oxide	Electrochemical	-40 to 50°C	<10
Nitrogen dioxide	Electrochemical	-5 to 50°C	<10
Oxygen	Electrochemical	-10 to 50°C	<15
Ozone	ROCK SOLID Available	-40 to 50°C	<20
Phosphine	ROCK SOLID Available	10 to 40°C	<45
Silane	Electrochemical	-25 to 50°C	<20
Silicon tetrafluoride	ROCK SOLID Available	-40 to 50°C	<45
Sulfur dioxide	ROCK SOLID Available	-40 to 50°C	<20
Tetraethyl orthosilicate	Electrochemical	-40 to 50°C	<60
Tungsten hexafluoride	ROCK SOLID Available	-40 to 50°C	<45

ASSURED PROTECTION

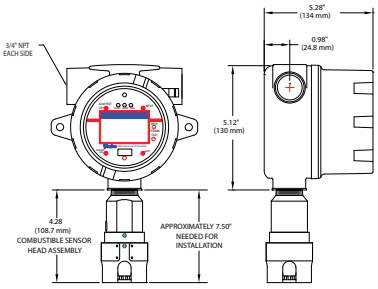
FREEDOM 6000 ALUMINUM TOXIC



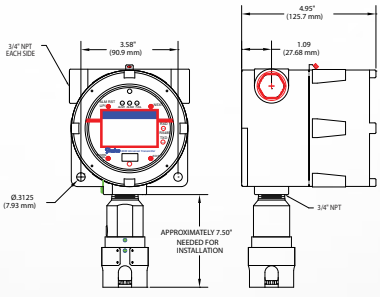
FREEDOM 6000 ALUMINUM COMBUSTIBLE



FREEDOM 6000 ALUMINUM (ATEX) COMBUSTIBLE



FREEDOM 6000 STAINLESS STEEL COMBUSTIBLE



Scott Safety, a business unit of Tyco International, is a premier manufacturer of innovative respiratory and other personal protective equipment and safety devices for industrial workers, fire and rescue services, police, military and civil defence organisations around the world. The Scott Safety product lines include self-contained breathing apparatus, supplied air and air-purifying respirators, gas detection instruments, thermal imaging cameras, air compressors, accountability systems, head, eye, hearing and face protection.

SPECIFICATIONS

TRANSMITTER SPECIFICATION

Electrical
10 - 30 VDC at less than 3 watts in 3-Wire 4-20 mA with Relays

Output
4-20 mA into 10 ohms input impedance, current source output, max loop resistance is 750 ohms

Accuracy
+/- 5% of full scale or +/-1 count

Temperature Drift
Less than .1% per degree Celcius above 60°C

Display
Backlighted graphical LCD displays 30-minute trend, bar graph and large engineering units

Environmental
-40°C to 60°C operating

Remote Sensor
Toxic sensor up to 15 metres. Combustible and CO_2 greater than 365 metres depending on user supplied wire gauge

TRANSMITTER MECHANICAL

Housing
Epoxy coated aluminum or 316 stainless steel housing

Conduit Entries
3 X 3/4" NPT

Water Dust Intrusion Rating
Rated IP 66/Nema 4X

Weight
2 kg aluminum toxic, 3.4 kg combustible stainless steel

OPTIONAL OUTPUTS

Relay/MODBUS Option
Form C rated 5 Amps @ 30 VDC and 240 VAC resistive loads, RS-485 MODBUS RTU

Isolated Output Option
Isolated 4-20 mA output

WARRANTY

2 years electronics/4 years housing

APPROVALS

Combustible Transmitter
Class I, Div 1 Groups A, B, C, D (Aluminum)
Class I, Div 1 Groups B, C, D (Stainless)
ATEX EX d IIC T5 Gb -40°C<Tamb< 70°C
INMETRO BR-Ex d IIC T5, - 40 °C ≤ Tamb ≤ + 70 °C
IECEx (pending)

Toxic Transmitter
Class I, Div 2 Groups B, C and D
Class I, Div 1 Groups B, C and D (pending)
ATEX (pending)
IECEx (pending)

ELECTROCHEMICAL (TYPICAL) SENSOR SPECIFICATION

Humidity
30-95% RH

Temperature
-40°C to +50°C

Pressure
Atmospheric +/- 10%

Response Time
<30 second T_{50}

INFRARED

Humidity
0-99% RH

Temperature
-20°C to +50°C

Response Time
5 second T_{20}

CATALYTIC BEAD

Humidity
0-99% RH

Temperature
-40°C to +200°C

Response Time
5 second T_{20}

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