



**CONSPEC**<sup>®</sup>

Innovation that digs deeper.

# T1298



Smart Solutions for Safety and Productivity.



The T1298 Smart Head Minehop Wireless Transmitters provide improved accuracy, response time and long life while reducing cost, equipment redundancy, and configuration time.

Each T1298 Smart Head Minehop Wireless Transmitter operates on the Minehop Networking Platform by Newtrax allowing deployment where cabling is impractical and facilitates post-accident atmospheric monitoring.

- **Plug and Play Sensor Technology – Smart Head Minehop Wireless Transmitters Store Important Values Including Sensor Technology, Sensor Ranges, Temperature Compensation Tables, Calibration Values and History**
- **Over 45 Days Operation on a single D-Cell Battery**
- **Reduced Signal Noise as Sensor Reading is Digitized at the Source**
- **Fully Configurable via Conspec CDI Software**
- **Full Range of Electrochemical Toxic Gases, Hydrogen (H<sub>2</sub>), Oxygen (O<sub>2</sub>) and Mini-Weather Station (Wet & Dry Bulb Temperature, Barometric Pressure and Humidity Available)**
- **Acts as a Repeater on the Minehop Networking Platform by Newtrax**
- **Hot Swappable Replacement Sensor Heads for Ease of Maintenance and Calibration**
- **Low Power Consumption – less than 20mA**
- **One Year Warranty**

### ***Ease of Installation***

Smart Head Minehop Wireless Transmitters can be easily deployed without the need for wiring wherever the Minehop Wireless Platform is installed and are easily re-deployable when monitoring needs change.

### ***Increased Accuracy***

Smart Head Remote Sensors are easily mounted at the ideal location for the target gas thus increasing accuracy with heavier and lighter than air gases.

### ***Plug and Play Sensor Technology***

The Minehop SCADA Platform auto-detects each Smart Head Minehop Wireless Transmitter and automatically recognizes the settings stored within the transmitter.

### ***High Environmental Immunity***

Smart Head Remote Sensors undergo factory calibration through the full operating range of the sensor to allow individualized temperature compensated readings through the full span of the sensor cell. Humidity is also controlled through the unique design of the sensor cell assembly.

### ***Preventative Maintenance Condition Monitoring***

Calibration Alert Mode can be activated to remind users ahead of pre-planned calibration schedule for each attached Smart Head Sensor. Calibration History for all attached Smart Head Sensors is stored and analysis mode can be activated to alert for the need for plug-in sensor replacement.

### ***Increased Sensor Data Through Digital Communications***

Each Smart Head Minehop Wireless Transmitter communicates to the surface using digital communications (MODBUS RTU) through the Minehop Wireless Platform by Newtrax. This ensures that signal noise between the Smart Head Minehop Wireless Transmitter and the surface is significantly reduced and allows for the retrieval of other important operating parameters such as operating temperature and voltage for improved sensor cell performance analysis.

### ***Certified for use in Coal Mines***

Smart Head Minehop Wireless Transmitters are internationally certified for use in high methane environments.



# T1298 Specifications

## Mechanical

Enclosure	NEMA 4x/IP66 Anti-Static PVC & Stainless Steel Enclosure
Dimensions	4.75" x 5.75" x 8" / 12.1cm x 14.6cm x 20.3cm
Weight	2 lbs / 0.9 kg
Mounting	Plate Mounted, Holes for Suspension, Grooves for Slot Usage

## Electrical

Operating Voltage	3.6VDC (from 1 x TDL-5930 D-Cell Battery)
Cable Connections	Serial (for direct configuration)
Current Consumption	less than 20mA
Communication protocol	MODBUS RTU or MODBUS TCP-IP via Minehop Networking Platform by Newtrax (900MHz MESH)

## Environmental

Operating Temperature	-4°F to 120°F (-20°C to 50°C)
Operating Humidity	10% to 95% RH Non-Condensing
Temperature Compensation	Full Range

## System

Status LEDs	2 x Status LED (1 x Green, 1 x Red) for Network Status – Solid Green: Strong Signal, Flashing Green: Medium Signal, Flashing Red: Weak Signal, Solid Red: No Signal 1 x Dual Colour Status LED for Operation Status – Flashing Green: Normal Operation, Flashing Red: Comm./Sensor Fail Solid Green: Calibration Zero Gas, Solid Red: Calibration Span Gas
Operating Modes	2 – Normal and Calibration
Alarm Set Points	3 x User Defined Alarm Set Points.
Remote Configuration	Conspec CDI Windows Software (Included with Purchase)



# T1298 Specifications

	Oxygen T1298-1125, T1298-1125-IS	Carbon Monoxide (CO) T1298-03XX, T1298-03XX-IS (XX- range)	Nitric Oxide (NO) T1298-0912, T1298-0912-IS
<b>Specifications</b>			
Sensor Type	Electrochemical	Electrochemical	Electrochemical
Detection Range	0-25% Vol.	0-50ppm, 0-100ppm, 0-500ppm, 0-1000ppm	0-100ppm
<b>Performance</b>			
Response Time	T90: <15s	T50: <10s T90: <30s	T90: <10s
Accuracy	0.1% Vol.	0.5ppm	0.5ppm
Zero Drift	<5% per year	<5% per year	Max. 9ppm
L-T Output Drift	<0.1% of signal per year	<1% of signal per year	2% of signal per month
<b>Certifications</b>			
CSA/ESA	Pending, ESA Evaluation Available	Pending, ESA Evaluation Available	Pending, ESA Evaluation Available
IECeX	Pending	Pending	Pending
CE/ATEX	Pending	Pending	Pending
MSHA	Pending	Pending	Pending
UL	Pending	Pending	Pending
<b>Recommended Sensor Placement</b>			
Placement	4-6ft./120-180cm above Ground/Floor	4-6ft./120-180cm above Ground/Floor	4-6ft./120-180cm above Ground/Floor
<b>Replacement Sensor Cell</b>			
Part Number	CA0037	CA0040	CA0050

	Nitrogen Dioxide (NO2) T1298-1051, T1298-1051-IS	Ammonia (NH3) T1298-0112	Sulfur Dioxide (SO2) T1298-1322
<b>Specifications</b>			
Sensor Type	Electrochemical	Electrochemical	Electrochemical
Detection Range	0-50ppm	0-100ppm	0-200ppm
<b>Performance</b>			
Response Time	T50: <10s T90: <40s	T50: <20s T90: <120s	T90: <15s
Accuracy	0.1ppm	2ppm	0.1%
Zero Drift	Max. 0.2ppm	<10% per 6 months	Max: 0.1ppm
L-T Output Drift	<2% of signal per month	<5% of signal per month	<2% of signal per month
<b>Certifications</b>			
CSA/ESA	Pending, ESA Evaluation Available	Pending, ESA Evaluation Available	Pending, ESA Evaluation Available
IECeX	Pending	Pending	Pending
CE/ATEX	Pending	Pending	Pending
MSHA	Pending	Pending	Pending
UL	Pending	Pending	Pending
<b>Recommended Sensor Placement</b>			
Placement	4-6ft./120-180cm above Ground/Floor	6-18inches/15-45cm below Ceiling	6-18inches/15-45cm above Ground/Floor
<b>Replacement Sensor Cell</b>			
Part Number	CA0007	CA0004	CA0046

# T1298 Specifications

	Hydrogen (H2) T1298-0623	Hydrogen Chloride (HCl) T1298-0751	Hydrogen Sulfide (H2S) T1298-0822, T1298-0822-IS
<b>Specifications</b>			
Sensor Type	Electrochemical	Electrochemical	Electrochemical
Detection Range	0-2000ppm	0-50ppm	0-200ppm
<b>Performance</b>			
Response Time	T50: <25s T90: <50s	T50: <25s T90: <120s	T50: <10s T90: <35s
Accuracy	2ppm	0.5ppm	0.25ppm
Zero Drift	Max -35ppm	Max 1.5ppm	Max. 2ppm
L-T Output Drift	<2% of signal per month	<2% of signal per month	<1% of signal per month
<b>Certifications</b>			
CSA/ESA	Pending, ESA Evaluation Available	Pending, ESA Evaluation Available	Pending, ESA Evaluation Available
IECeX	Pending	Pending	Pending
CE/ATEX	Pending	Pending	Pending
MSHA	Pending	Pending	Pending
UL	Pending	Pending	Pending
<b>Recommended Sensor Placement</b>			
Placement	6-18inches/15-45cm below Ceiling	6-18inches/15-45cm above Ground/Floor	4-6ft./120-180cm above Ground/Floor
<b>Replacement Sensor Cell</b>			
Part Number	CA0015	CA0005	CA0008

	Hydrogen Cyanide (HCN) T1298-XX31	Chlorine (Cl2) T1298-0421	Mini-Weather Station T1298-MW
<b>Specifications</b>			
Sensor Type	Electrochemical	Electrochemical	Temperature, Barometric Pressure, Humidity
Detection Range	0-30ppm	0-20ppm	
<b>Performance</b>			
Response Time	T50: <25s T90: <50s	T50: <30s T90: <60s	<10s
Accuracy	0.5ppm	0.1ppm	<1%
Zero Drift	<5%	Max. 0.2ppm	Max 1%
L-T Output Drift	<5% per month	<2% of signal per month	<1% of signal per year
<b>Certifications</b>			
CSA/ESA	Pending, ESA Evaluation Available	Pending, ESA Evaluation Available	Pending, ESA Evaluation Available
IECeX	Pending	Pending	Pending
ATEX	Pending	Pending	Pending
MSHA	Pending	Pending	Pending
UL	Pending	Pending	Pending
<b>Recommended Sensor Placement</b>			
Placement	6-18inches/15-45cm above Ground/Floor	6-18inches/15-45cm above Ground/Floor	4-6ft./120-180cm above Ground/Floor
<b>Replacement Sensor Cell</b>			
Part Number	CA0053	CA0014	N/A

Smart Head Minehop Wireless Transmitters for other gasses not listed are available upon request. Contact Conspec for Availability.



# T1298 Specifications

## Accessories

T1336-XXXX	Replacement Smart Head Plug In Sensor Assembly – Remote (XXXX - Specify Gas and Range)
T1336-XXXX-IS	Replacement Smart Head Plug In Sensor Assembly – Remote (Intrinsically Safe) (XXXX – Specify Gas and Range)
T1336-MW	Replacement Smart Head Plug In Sensor Assembly – Remote Mini-Weather Station
T1336-MW-IS	Replacement Smart Head Plug In Sensor Assembly – Remote (Intrinsically Safe) Mini-Weather Station
TDL-5930	Replacement Battery for Smart Head Minehop Wireless Transmitters (Intrinsically Safe Certified)
CDI	Conspec CDI Software
P3013-SH	Smart Head Calibration Cap
P3013-SH-1	Smart Head Calibration Cap w/ 4'x3/16" I.D. x 5/16" O.D Tubing
P1879	Calibration Kits (see Calibration Supplies Specifications Sheet)
P1880	Calibration Gas Cylinders (see Calibration Supplies Specifications Sheet)

Conspec Controls Ltd.  
 25 Klondike Drive  
 Toronto, Ontario, Canada  
 M9L 1S1

Phone: +1 (416) 661-0500 • Fax: +1 (416) 736-1684  
 Toll Free (Can./US only): +1 (877) 526-6773  
 sales@conspec.ca • www.conspec.ca

Conspec Controls Ltd.  
 666 Burrard Street  
 Vancouver, BC, Canada  
 V6C 3P6

Phone: +1 (604) 642-6123 • Fax: +1 (604) 688-2419  
 Toll Free (Can./US only): +1 (877) 526-6773  
 sales@conspec.ca • www.conspec.ca

Conspec Controls Pty., Ltd.  
 Suite 2, 1 Shaw Road  
 Ingleburn, NSW 2565  
 Australia

Phone: +61 (2) 9829-3633 • Fax: +61 (2) 9829-3488  
 Toll Free (Can./US only): +1 (877) 526-6773  
 sales@conspec.au • www.conspec.ca

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