SmartWireless® CX
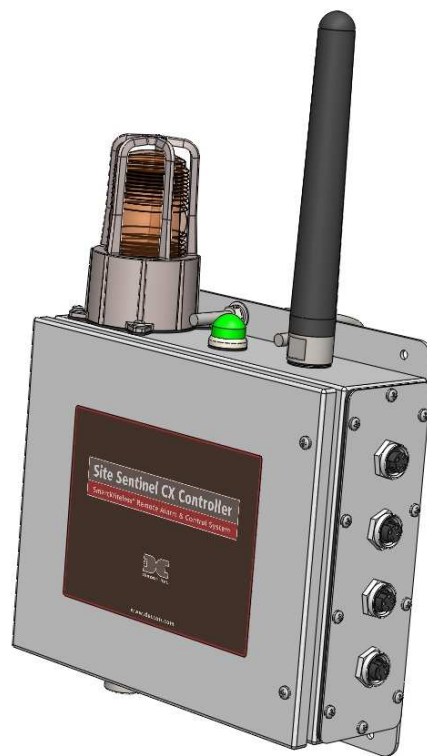
Sensor Station for SmartWireless® Mobile Gas Detection System

Operator's Installation and Instruction Manual

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Sentinel CX Sensor Station IM   Rev. 1.5   iv

1. Introduction

1.1 Features

The SmartWireless® CX Sensor Station (Figure 1) is an accessory to the SmartWireless® CXT. The CX wirelessly transmits the data from the sensors to the CXT and includes a battery that powers the radio, alarm devices, and the attached sensors. The CX can sustain up to four 4-20mA wired sensors.

Remote mounted gas detection sensors include any analog 4-20maDC device such as;

- toxic gas,
- combustible gas, or
- oxygen deficiency sensors.

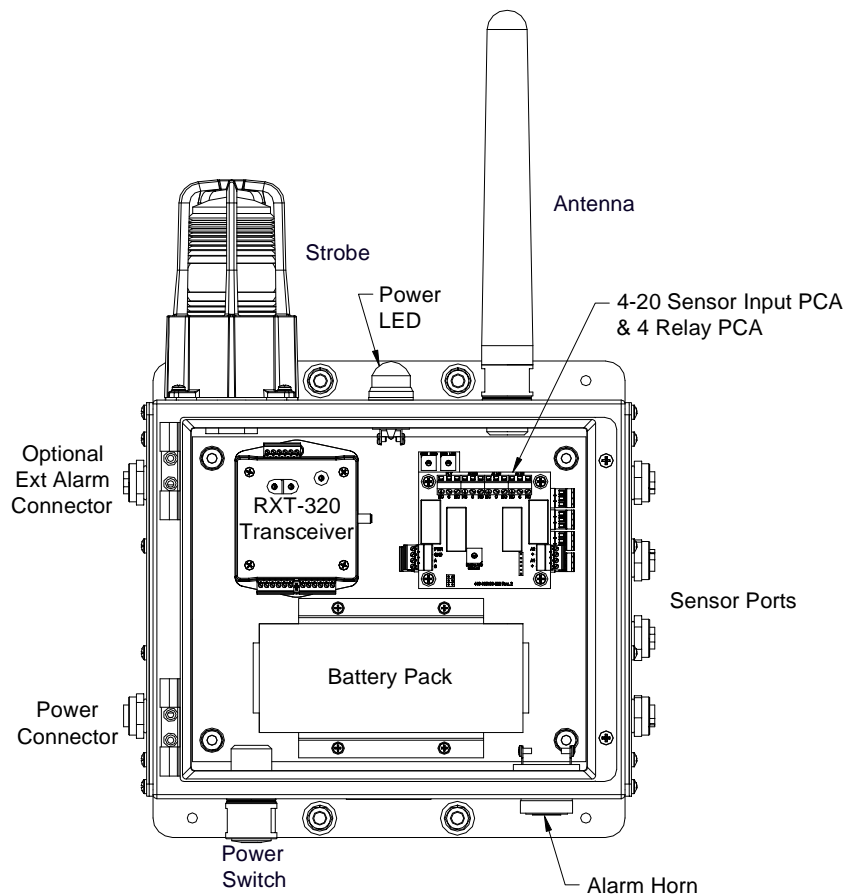Figure 1 SmartWireless® CX Sensor Station

The SmartWireless® CX Sensor Station package is a Division 2 assembly housed in a 316 stainless steel enclosure that offers various connector options for multiple configurations.

System components of the SmartWireless® gas detection system include;

- Smart Wireless CXT Controller
- Smart Wireless CX Sensor Station,
- alarm stations and
- gas detection sensors.

SmartWireless® CXT Controller

The Detcon SmartWireless® CXT controller is a multi-channel mobile gas detection control system mounted on a tripod or a suitable stand. The CXT can be utilized as a self-contained gas detection, display/alarm system package or wirelessly connected to the main network. The CXT is equipped with an auto configure system to automatically search for Detcon equipment associated with the controller.

SmartWireless® CX Sensor Station

The SmartWireless® CX Sensor Station is an accessory to the SmartWireless® CXT. The CX wirelessly transmits the data from up to 4 wired sensors back to the CXT and includes a battery that powers the radio, alarm devices, and the attached sensors.

Alarm Stations

Alarm stations can be used as part of the gas detection system. Class I Division 1 and Class I Division 2 alarm stations are available. The stations are battery powered and controlled wirelessly by the CXT. The strobe and horn installed on the CX are activated by the CXT when the alarms levels are reached.

Alarm options are as follows:

1. Integral audio visual mounted on the CX (Class 1; Division 2 only)
2. Standalone audio visual alarm station (Class 1; Division 2)
3. Standalone audio visual alarm station (Class 1; Division 1)

Gas Detection Sensors

Gas sensors with a 4-20mA output can be connected directly to the CX. The Model CX sensors from Detcon are designed specifically to work with the SmartWireless® CX.

Associated Accessories

The accessories associated for the CX Controller product are as follows:
Detcon Tripod
Detcon Battery Charging Accessory
Detcon Division 2 cables (various)
Detcon Operators Manual

1.2 Optional Components

Options for the SmartWireless® CX Sensor Station are as follows:
- strobe
- horn
- external 'Wet' or 'Dry' alarm port

1.3 Alarms and Fault Condition

The CX Sensor Station includes an optional strobe and/or a piezoelectric horn and an external alarm connector. The strobe is associated with Alarm 1, the horn is associated with Alarm2 and the external alarm connector utilizes all alarm outputs (alarm 1, 2, 3 and fault) for connection to external alarm devices. The external alarm outputs can be used to control annunciating devices or as signal inputs to other control devices. The CX permits alarm and fault conditions to cause an assigned relay to fire, triggering external alarm devices. When the alarm level is reached either the devices mounted to the box or attached to the external alarm connector are activated, or both. The assigned relay outputs will return to normal state when a gas alarm or a fault condition clears. The Alarm Relay Output can be either 'Wet' or 'Dry' determined

when the unit is ordered. The 'Wet output connector provides 12V outputs for external alarms. The 'Dry' output connector provides dry contacts for external power to control external alarms.

All alarms can be configured as Energized/De-Energized, Latching/Non-Latching and Silenceable/Non-Silenceable for the relays. This setup must be performed at the controller, refer to the controller manual for more information.

1.4 Power Supply-Internal Rechargeable Battery and Charging Accessory

SmartWireless® CX is powered by an internal rechargeable Smart Battery capable of delivering continuous operation in a no alarm condition for two to eight weeks depending on the quantity and type of sensors tied to the control panel. The internal re-chargeable battery pack shall only be charged in a non-hazardous area where the required operating temperature limits are 0C to +45C. It may be used in the field and be discharged in the temperature range of -20C to +60C.

⚠️ *CAUTION*	The internal re-chargeable battery pack shall only be charged in a non-hazardous area where the required operating temperature limits are 0C to +40C. Charging outside this temperature range may degrade the life of the battery pack.

⚠️ *CAUTION*	The Battery Pack Detcon PN 360-3S6PFP-290 contains an internal protection circuit which maintains its safe operation against all potential hazard conditions.

⚠️ *CAUTION*	No other Battery Pack except Detcon PN 360-3S6PFP-290 may be used in the operation of this device.

The internal battery can only be recharged in a non-hazardous area and only using the Detcon supplied Battery Charger Accessory that runs on AC power.

Detcon Approved Battery Charger Accessory Ratings:

AC Input Power
  Voltage: 100-240 VAC, 50-60 Hz (requires correct PN version for optional 110 or 220 VAC use)
  Current: 2.0 Amps maximum
DC Output Power
  Voltage: 24+/- 1 VDC
  Current: 3.1 Amps maximum

NOTE 1	No other Battery Charger or VDC input power source may be used with this CX Controller product.

1.5 Radio Module

The SmartWireless® CX offers a wireless option to connect it to the SmartWireless CXT and other devices wirelessly. The Radio Module includes a transceiver that operates at 2.4GHz and conforms to non-licensed radio frequency usage worldwide. Spread spectrum technology supports integrity and security for the wireless network.

The SmartWireless CXT and CX products use a wireless network with a mesh topology. If radio communication directly between two devices is impossible due to distance or obstruction, each wireless device is capable of locating an alternate route through an additional wireless device to communicate with the designated device. This innovative technology is designed to create a robust network that automatically routes around congestion and line-of-sight obstacles while improving throughput as subscriber device density increases.

The radio module is housed in a black ABS box mounted inside of the CX stainless steel enclosure. The standard package includes two PCAs mounted inside the black ABS box (radio PCA and Smart battery charging PCA), 5 dB antenna, and a protective antenna cover. The battery PCA includes circuitry to safely recharge the battery from a 24VDC input and a fuel gauge circuit to monitor the charge remaining in the battery.

The radio PCA includes a 2.4Ghz radio and a rotary switch for setting the RF channel of the system (Figure 2). Use a small screwdriver to rotate the switch until the arrow points to the desired RF channel number (16 channels available, 0h-Fh).

NOTE	All devices within the network must be on the same RF channel to operate correctly.

Each radio module is required to have a unique address. These addresses typically start at 01h and continue sequentially for each SmartWireless CX in the gas detection system. The radio PCA includes a pair of rotary switches to set this address (Figure 2).

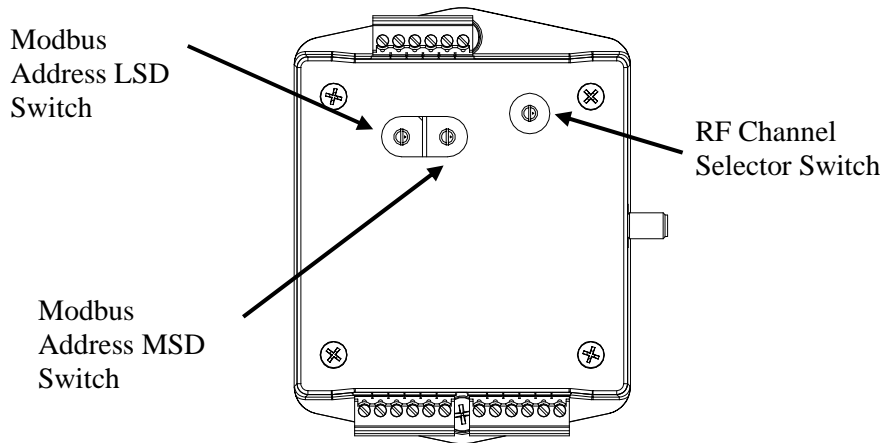| NOTE	The switch for the most significant digit (MSD) is on the right and the least significant digit (LSD) is on the left.

Figure 2 SmartWireless® CXT Radio Module

1.6 Sensor Inputs

The SmartWireless® CX Sensor Station includes a Sensor Input PCA that accepts 4-20mA inputs from up to 4 attached sensors. The PCA includes two rotary switches to set its Modbus address (Figure 3). This address is set to 01 for SmartWireless® systems using a CXT or Model X40 controller. If an MCX-32 controller is being used, this address needs to be unique for each CX Sensor Station in the system. For an MCX-32 system, the addresses should start at 40h and continue sequentially for each CX in the system.

Sensor Connector Ratings
  Voltage: 9-11.2 VDC
  Current: 100 mA max through any single sensor connector
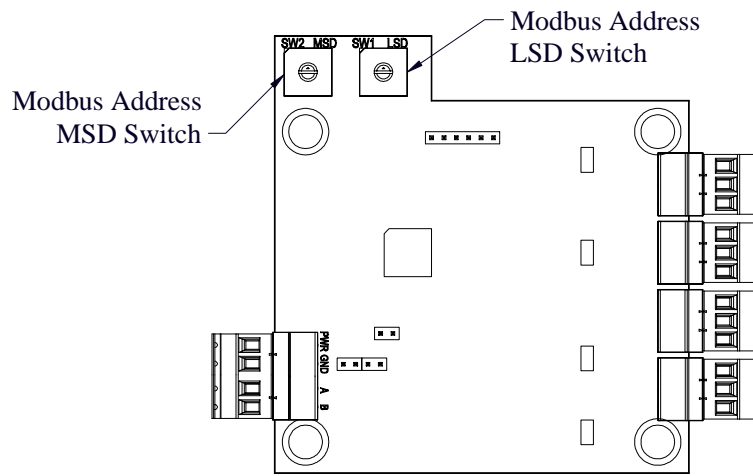
Figure 3 Sensor Input PCA

Four "quick connects" on the side of the CX are for sensor connection (Figure 4), supply power to the sensor from the internal battery and accept the 4-20mA signal from the sensor.

NOTE	Power supplied to the sensors is 11VDC. Any attached sensor must be designed to work at this voltage level.

The four sensor input lines are fused at the PC board level for safety purposes. These fuses are not designed for field replacement and shall not under any circumstances be attempted to be changed out by anyone but Detcon Factory trained Service personnel.

⚠ *CAUTION*	These PC board mounted fuses are not designed for field replacement and shall not under any circumstances be attempted to be changed out by anyone but Detcon Factory-Trained Service personnel.

Cable 1	Cable 2	Wire	Sensor Connection
Blue	Black	1	Power - (GND)
Brown	White	2	Power + (PWR)
Grey	Red	3	Unit Ground
Green/Yellow	Green	4	mA

Figure 4 Sensor Input Connector Pin-out

1.7 Alarm Outputs

The SmartWireless® CX can optionally include an internal Relay PCA for activating alarm annunciators. The Relay PCA includes four Class I Division 2 Groups A,B,C,D relays. If the SmartWireless® CX includes an attached strobe and/or horn, these devices are also activated by the Relay PCA.

Each Relay PCA must have a unique Modbus address. The Relay PCA includes a single rotary switch to set its Modbus address (Figure 5). The most significant digit of the address is hard-wired to "8". The least significant digit (LSD) is controlled by the rotary switch. The Relay PCA addresses should start at 80h and continue sequentially for each SmartWireless® CX in the system.
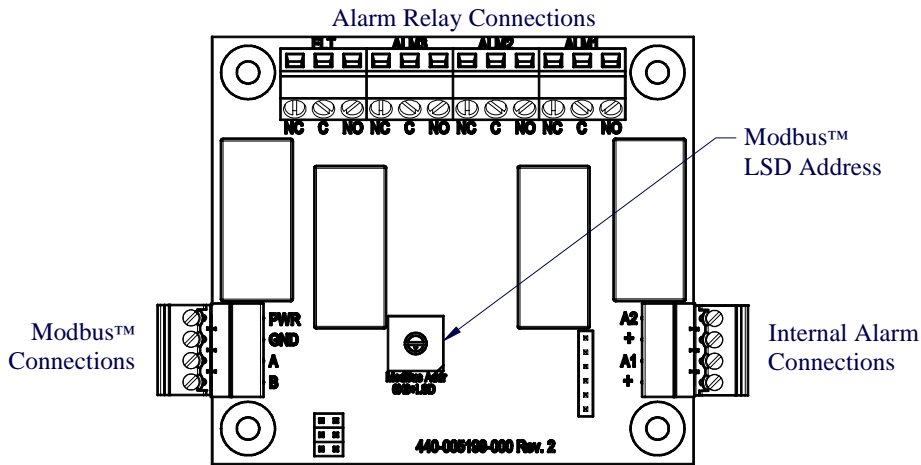
Figure 5 Relay PCA

If the SmartWireless® CX is ordered with the Relay PCA option, the Relay PCA can be configured to provide either 'Wet' or 'Dry' contacts for external annunciator activation. The 'Wet' contact option provides 11V Battery Power to external annunciators when an alarm is initiated. The 'Wet' relay contacts are rated for 9-11.1 VDC, 2A max total (A1, A2, A3, and FLT outputs combined). The "wet" contacts are available on a 5 pin Alarm Connector (Figure 6). These outputs are specifically meant for external 12V annunciators such as the external A1 C1D2 Horn, which is designed to operate on the unit's 12V Battery.
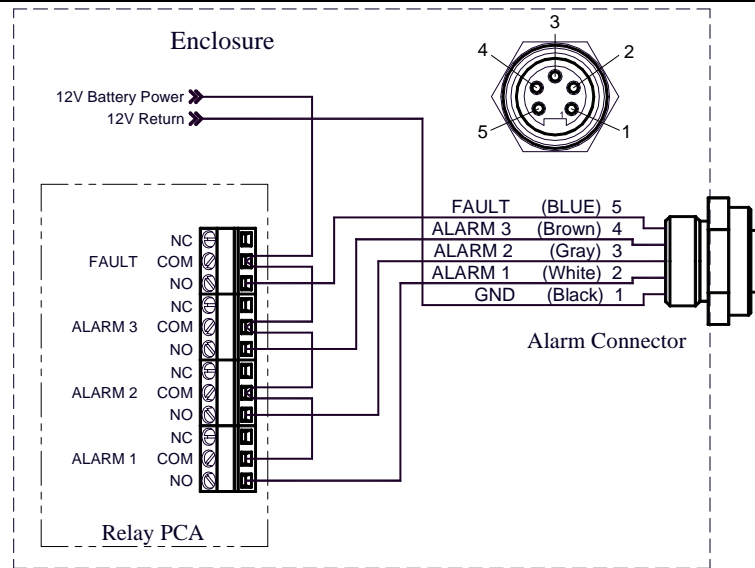
Figure 6 External Alarm Connector pin out for 'Wet' alarm contacts

Sensor Connector Ratings
Voltage: 9-11.2 VDC
Current: 2 Amps max through single relay connector (2 Amps max total across 4 connectors.
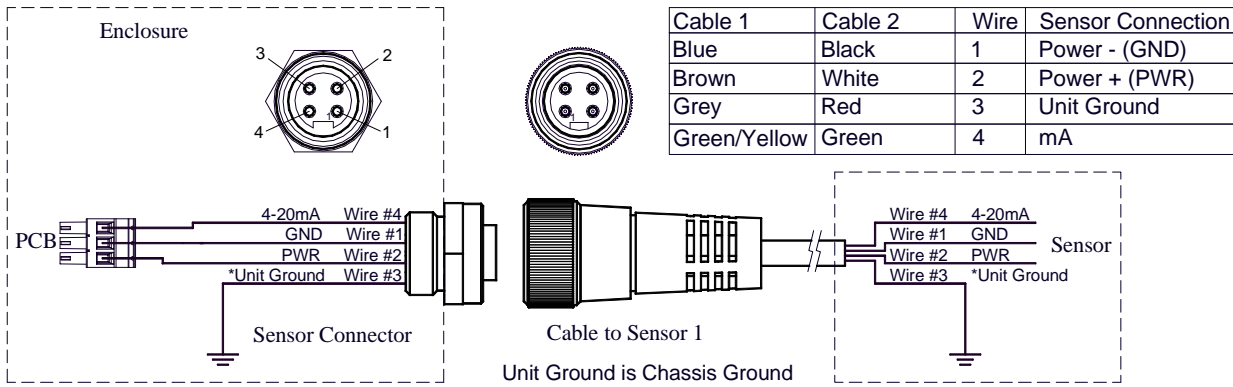
⚠️ *CAUTION* When utilizing 'Wet' contacts, the maximum power that can be drawn by the annunciators is 2A.

The SmartWireless® CX is also available with 'Dry' relay contacts (Figure 7). Dry relay Contacts allow the user to control annunciators that operate off an exterior power source that relies on the controller to provide only contact closure to apply voltage to the annunciator. The relays are rated for 120-220 VAC/24 VDC, 2 A max. It is important to note that the 'Dry' contact feature utilizes a common return for all annunciators.

Figure 7 External Alarm Connector Pin out for 'Dry' alarm contacts

1.8 Power Switch

Power to the SmartWireless® CX is controlled by a power switch located on the bottom of the enclosure (Figure 1). Pressing this switch while the power is off will turn the CX on.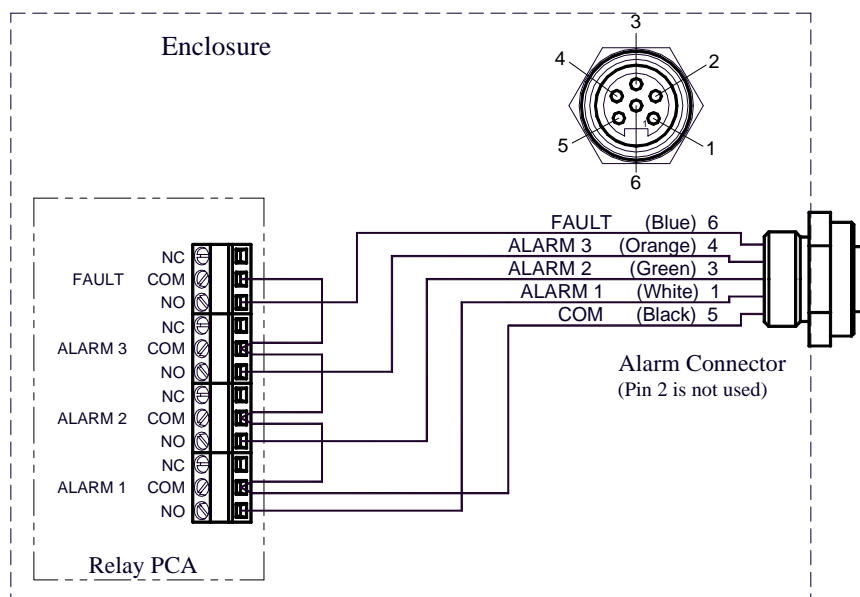 Pressing the switch while the power is on will turn the power off. When the power to the CX is on, the green LED indicator on top of the enclosure will be illuminated.

1.9 Power Connector

The internal battery inside the SmartWireless® CX Sensor Station can be recharged by connecting 24VDC to the power connector on the side of the enclosure (Figure 1). A VAC/24VDC battery charging adapter is included with every CX.

Detcon Approved Battery Charger Accessory Ratings:

AC Input Power
>   Voltage: 100-240 VAC, 50-60 Hz (requires correctly selected 110 VAC or 220 VAC Charger)
>   Current: 2.0 Amps maximum

DC Output Power
>   Voltage: 24+/- 1 VDC
>   Current: 3.1 Amps maximum

⚠️ *CAUTION*	The SmartWireless® CX Sensor Station must be charged with the Detcon supplied Battery Charger. (Detcon P/N: 976-0003BC-00T for 110VAC and P/N 976-0003BC-220 for 220VAC). Use of any other charger may damage the controller.

+24VDC   (White) 3
GND   (Black) 2
Chassis GND   (Green) 1
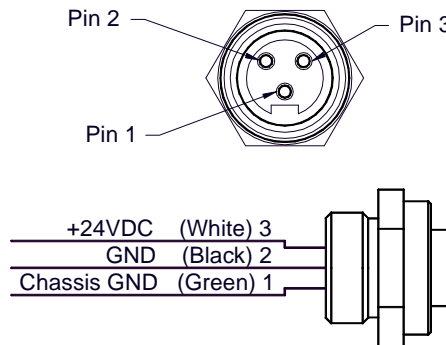
Figure 8 Power Connector

1.10 Remote I/O Cabling Accessory and Safe Use

The I/O cabling option designed for the CX Sensor Station and its safe use is described in the cabling Speciation section in Section 9.1. A specific list of Detcon approved cabling option lengths are given in the Spare Parts List.

Security clips, which require a tool for removal, are provided and are required for all I/O Turck connector based cables. All Turck connectors should have the security clip engaged at all times except for when disconnecting them in the safe area.

⚠ CAUTION	Use only Detcon specified cable accessories described in this Manual to maintain the Division 2 rating and safe use of this product.

⚠ CAUTION	Security clips, which require a tool for removal, are provided and are required for all I/O Turck connector based cables. Turck connectors should have the security clip engaged at all times except for when disconnecting in the safe area.

2. Safety Guidelines for safe use

If equipment is used in a manner not specified by Detcon, the protection provided by the equipment may be impaired. It is mandatory to read and follow all of the Safety Warnings and Cautions listed below.

⚠️ Warning	This apparatus is suitable for use in Class I, Division 2, Groups A,B,C,D, or unclassified locations.

⚠️ Warning	Explosion Hazard. Do not make any disconnections while the circuit is live or unless the area is known to be free of ignitable concentrations.

⚠️ Warning	Charging of the internal Battery Pack shall never be done while equipment is located in the Division 2 hazardous area. The equipment must be moved to a non-hazardous are for the battery charging to take place. The temperature during the indoor battery charging shall be between 0 - 40C.

⚠️ Warning	Explosion Hazard. Do not remove or replace the Lithium Ion Battery Pack unless power has been disconnected or unless the area is known to be free of ignitable concentrations.

⚠️ Warning	Substitution of any component may impair suitability for Division 2 use.

⚠️ Warning	Exposure to some chemicals may degrade the sealing properties of materials used in the following devices used in this equipment; namely the Div2 Strobe, relay contacts, and magnetic programming switches

⚠️ Warning	All Turck connectors have dust/water sealing caps that are mandatory to be installed on any connector that is not actively connected to a cable. This is required to maintain the safety rating of this device. These caps are tethered adjacent to each of the connector fittings for convenient connection.

⚠️ CAUTION	The user must consult this manual for more information about any location marked with this symbol.

⚠️ DANGER	Danger of electrical shock. User must ensure that power has been disconnected prior to installation or servicing of the equipment.

⚠️Warning	When moving the base CX Sensor Station handle it with 2 hands securely around the body of the unit so as to prevent a possible dropping or lifting hazard.

⚠️Warning	When wall mounting the CX Sensor Station, make sure to have 2 people working together and follow the recommended wall mounting instruction in Section 3.1.9, which requires suitable securement that holds four times the weight of the unit. This will prevent chances of a dropping hazard during the installation or prevent the risk of the unit falling off from the wall mount.

⚠️Warning	When moving or manipulating the CX Sensor Station mounted to the Tripod Assembly, 2 people are required to work together to avoid possible lifting risk. Do not place your fingers in the areas of the sliding tripod legs as there is risk of hand injury. Personnel should wear safety gloves while moving and setting up the tripod assembly.

⚠️Warning	To avoid accidental tip-over risk of injury, press and anchor the 3 pointed legs of the tripod deep and firmly into the soft ground. If the ground is too hard for use of the point, use an independent anchored pin and a short chain connecting to each leg to secure the unit.

⚠️Warning	To avoid a tripping hazard, hang a brightly colored flag type marker half down each tripod leg to provide visual warning of the location of the tripod legs.

⚠️Warning	To avoid any possible ergonomic risk in interfacing with the CX Sensor Station, make sure it is installed at a height of 4-5 feet. Place the unit in place where it is easy to access the front of the unit and as possible avoid placing it where there is constant direct sunlight.

3. Installation

3.1 Initial Setup

The Detcon tripod (P/N 975-TRIPOD-100) provides a stable and mobile base for the SmartWireless® CX Sensor Station. A maximum of two sensors can be secured to the tripod using Detcon brackets (P/N 943-004413-000) installed on the tripod.

1. Unpack the tripod, open the legs and place on a level surface. The tripod must have the 3 legs extended to widest position possible and be locked in place. The tripod must be firmly located on level terrain or this is an extreme safety risk of the unit tipping over and causing personnel harm or equipment damage. As is possible, the points of the tripod legs should be equally plunged into the ground to make the tripod most firmly stabilized.

⚠️ CAUTION	The tripod must have the 3 legs extended to widest position possible and be locked in place. It then shall be firmly located on level terrain or there is an extreme safety risk of the unit tipping over and causing personnel harm and/or equipment damage.

2. Mount the CX Sensor Station to the center pipe using the supplied U-bolts in accordance with Figure 9. The height position should be about 4-5 feet maximum to minimize tip-over potential. The U-bolts should be thoroughly tightened such that there is no vertical slide of the controller up or down the tripod center pipe. If it slides it may be a safety issue related to personnel injury.

⚠️ CAUTION	The installed height position should be 4-5 feet maximum to minimize tip-over potential. The U-bolts should be thoroughly tightened so there is no chance for vertical slide of the controller up or down the tripod center pipe. If it slides unexpectedly it is a safety issue related to personnel injury and/or tipping over.

NOTE	Position the CX controller on the tripod and position the tripod such that all disconnecting devices are readily accessible.

3. Install the 8" antenna on the antenna connector on the top right of the CX Sensor Station (Figure 1).

4. Secure the antenna cover over the antenna.

5. If sensors are being mounted on the tripod legs, attach the sensor mounting brackets to the tripod legs using the supplied 1/4" bolts, nuts and lock washers in accordance with Figure 10.
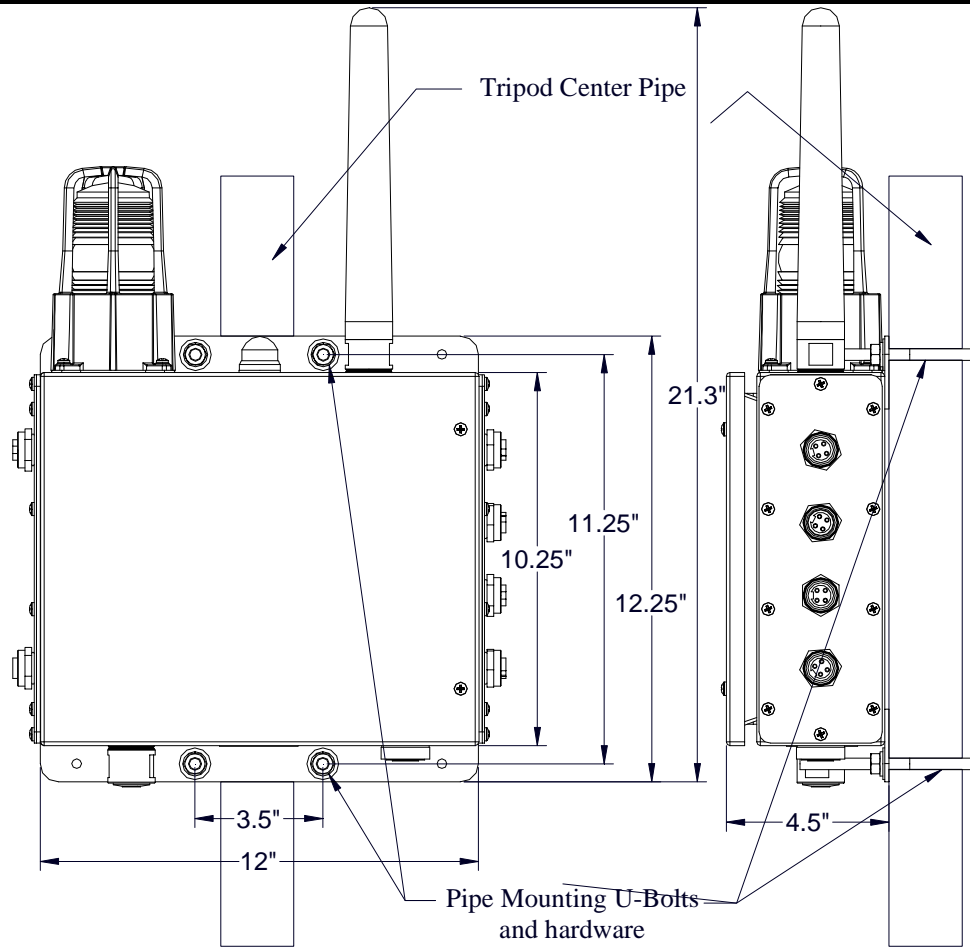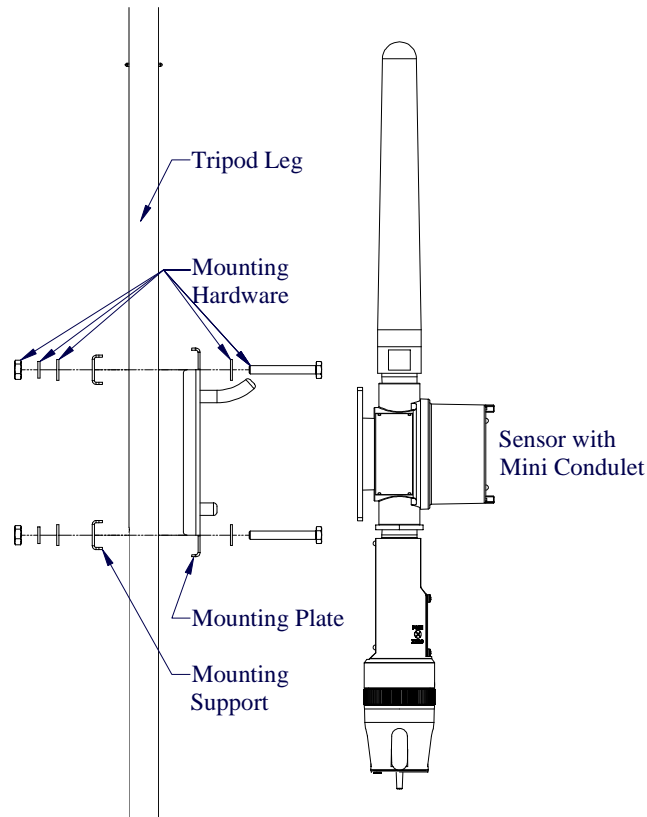
Figure 9 Mount CX on Tripod

Figure 10 Attach Sensor Brackets to Tripod

6. Hang the sensors on the brackets using the hook and pin supplied with the bracket.

7. Connect sensor cables to the sensor ports on the CX (Figure 1).

8. If the unit is ordered with the optional external A1 C1D2 Horn, the horn should be mounted either on the tripod, or on a separate tripod. . The optional A1 C1D2 Horn requires the cable for the External 'Wet' Alarms.

    a. The horn should be wired to the 'Wet' Alarm Output cable per Figure 11.

    b. The alarm Cable should be connected to the External Alarm Connector on the controller.
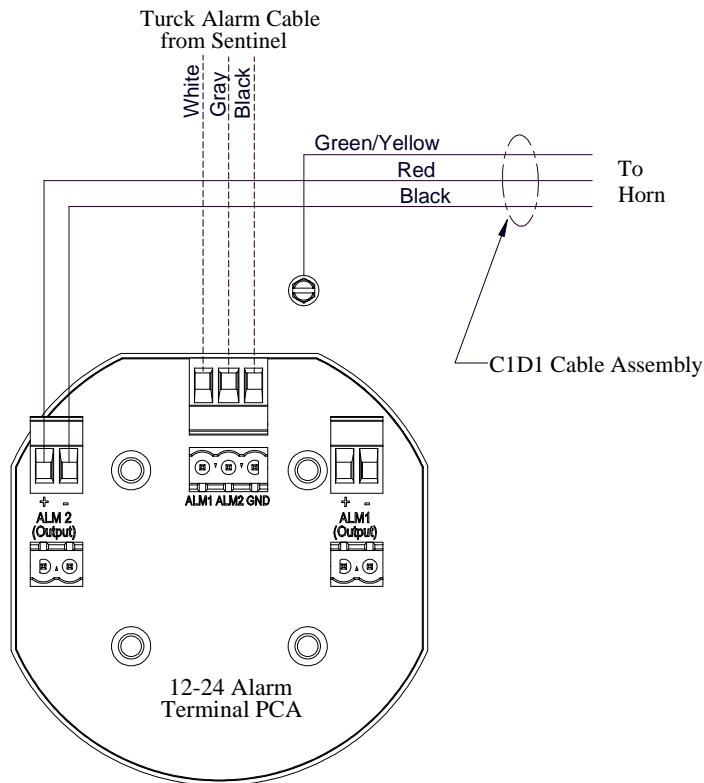

Figure 11 A1 C1D2 Alarm Connections

Battery Installation

9. Loosen the screws holding the door panel in place, and swing the front door of the enclosure open to gain access to the battery bracket.
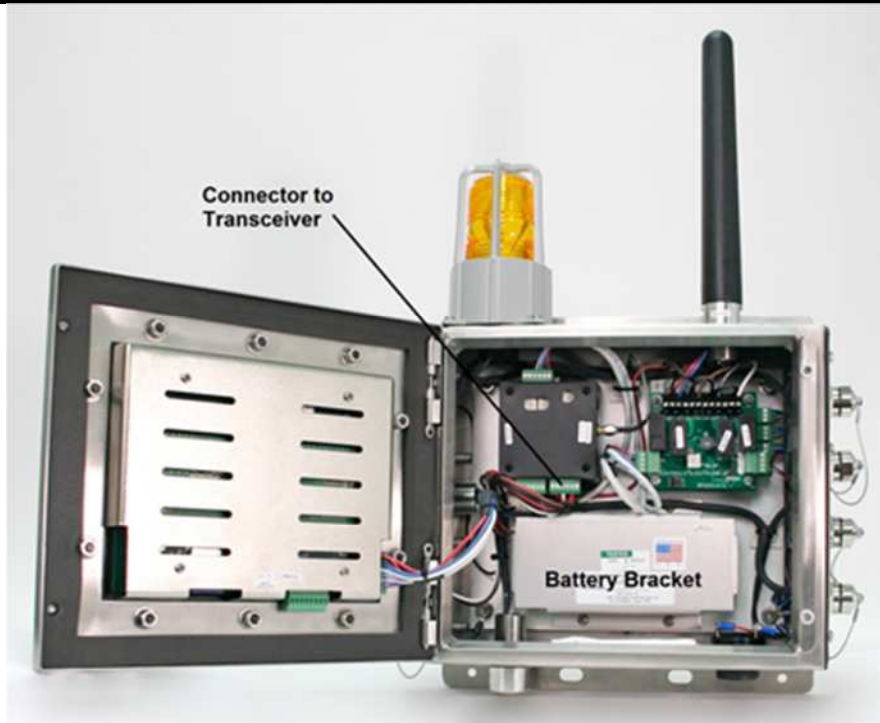
Figure 12 Enclosure

10. Unplug the connector from the transceiver, and move it out of the way to gain access to the screws holding the battery bracket in place. There should be enough of a service loop to safely move this connector out of the way for removal/installation of the battery bracket.
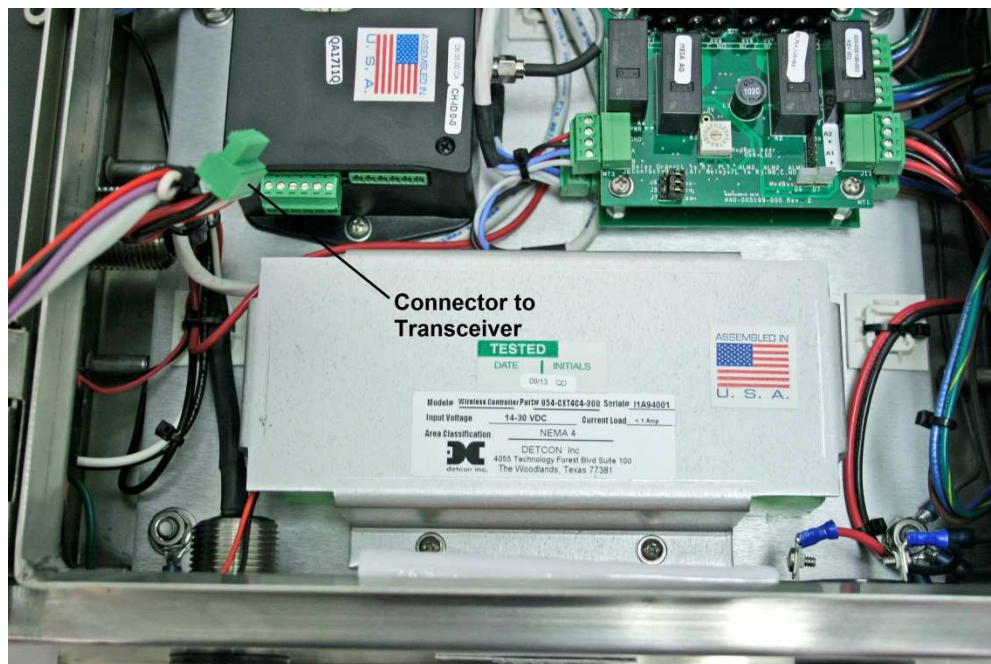
Figure 13 Connector to Transceiver

11. Remove the 6-32 screws and washers holding the battery bracket is place, and remove the bracket from the enclosure. Retain the screws and washers for installation of the bracket with the battery pack.
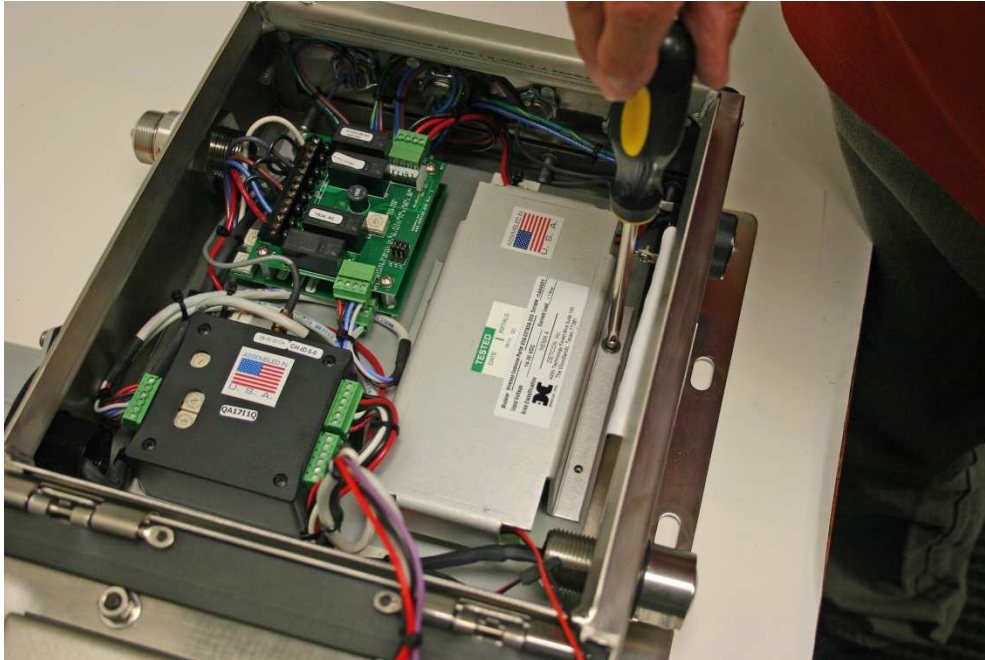
Figure 14 Battery Bracket in position

12. Install the battery pack in the bracket. The battery will fit snugly into the holder, being somewhat held in place by the foam padding in the bracket.
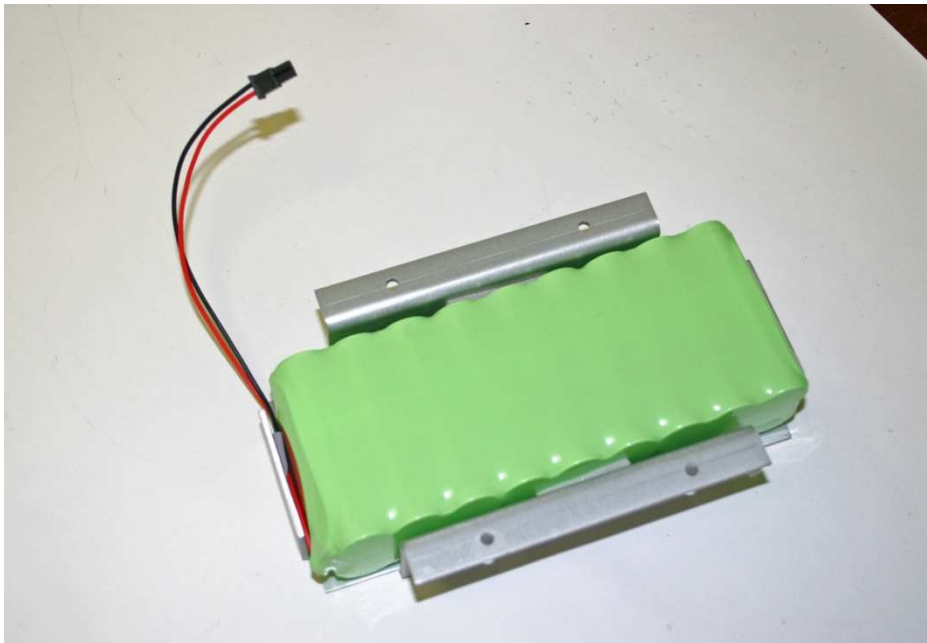
Figure 15 Battery and Battery Bracket

13. Position the battery bracket (and battery) with the connector on the left side, and install the battery and bracket in the enclosure using the 6-32 screws removed is step 11. Some wiring may need to be moved out of the way during this process to ensure that the wiring is not caught under the bracket.

14. Locate the connector mate for the battery connector, and plug the two connectors together.
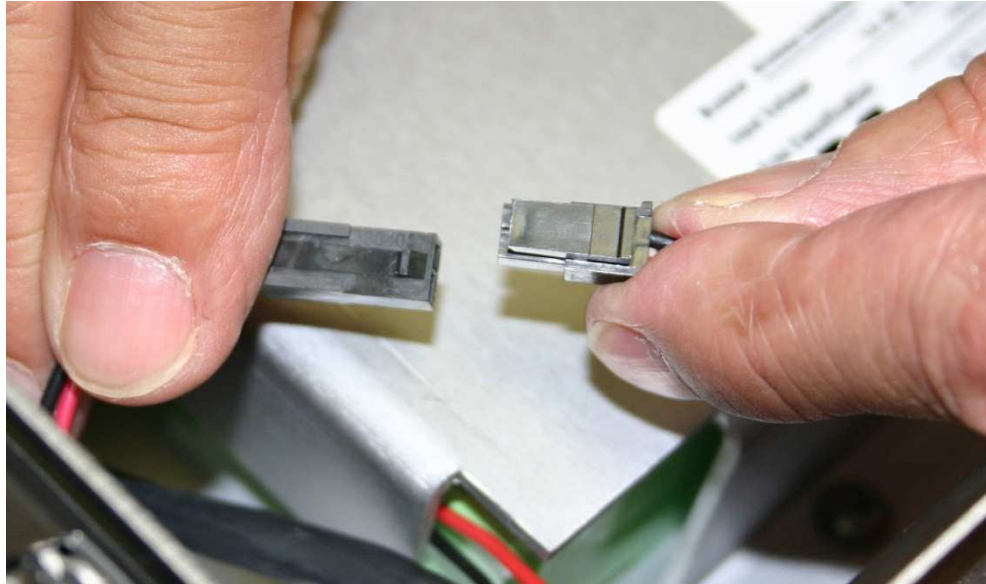
Figure 16 Battery Connections

15. Re-install the connector to the transceiver (removed in step 10).

16. Cycle power to ensure that the unit powers up. The LED on the top of the unit should illuminate to indicate power is applied. Close the front door panel and screw the front cover down. The screws should be tightened down to a 'snug' fit. These screws do not need to be tightened down completely, but need to be tightened down enough to give the front door a water tight seal.

17. Turn power on to the unit. The LED on the top of the unit should illuminate to indicate power is applied.

4. Recharging the Internal Battery Pack

4.1 Non-Hazardous and Indoor Location

At a safe time interval prior to full discharge of the internal battery pack, relocate the CX Sensor Station to a non-hazardous indoor location area that has suitable 110 VAC or 220 VAC AC power receptacles available.

4.2 Connecting to Mains Supply

Using the appropriate Battery Charging Accessory product (PN 976-0003BC-00T for 110 VAC or PN 976-0003BC-220 for 220 VAC), find the corresponding Mains Supply receptacle in an indoor non-hazardous area and plug-in the pronged end of the cable. Connect the Turck connector to the external port labeled external power. Turn on the power switch and begin charging. Operate the charger for the necessary time it takes to accomplish a full charge.

CAUTION	Only the Mains supply cord that is supplied with the Detcon-approved Battery Charger Accessory product shall be used. Use of any other Mains supply cords will impair the safety of this device.

Warning	Charging of the internal Battery Pack shall never be done while equipment is located in the Division 2 hazardous area. The equipment must be moved to a non-hazardous indoor location area for the battery charging to take place. The temperature during the indoor battery charging shall be between 0-40C.

Warning	The charging power supply is only safely rated for indoor use, so use of the Detcon charging accessory is limited to indoor non-hazardous areas.

5. Maintenance and Service Personnel Activities

NOTE	Only service or maintenance related activities as described below in Sections 5.1- 5.4 are allowed to be performed by the on-site un-certified service personnel. Any other required service or maintenance related activity shall only be performed by a Factory-Certified Detcon technician.

⚠️ *CAUTION*	Any maintenance or servicing performed outside the allowable scope of this section may impair the safe operation of this device.

The following is a list of items that are supplied standard with the CX Sensor Station. They can also be purchased for service or maintenance needs. These components are only to be supplied by Detcon as part of this product configuration. No substitutions are allowed.

Rechargeable Battery Pack (Detcon PN 360-3S6PFP-290)
Condensation Prevention Packet (Detcon PN 960-798434-000)
Battery Charging Accessory (Detcon PN 976-0003BC-00T or PN 976-0003BC-220)

5.1 Replacement of Condensation Prevention Packet

On an annual or bi-annual basis, the Condensation Prevention packet should be exchanged with a new packet. Remove the CX Sensor Station to a non-hazardous area and turn power OFF. Open hinged door and locate packet. Remove packet and replace with a new packet in the same physical position. Close hinged door and turn power ON.

5.2 Replacement of Lithium Ion Battery Pack

⚠️ Warning	Explosion Hazard. Do not remove or replace the Lithium Ion Battery Pack unless power has been disconnected or unless the area is known to be free of ignitable concentrations.

If there are any warnings or fault indicators that suggest there is a problem with the lithium ion battery pack (ie. not charging when expected), it should be removed and replaced. Relocate the CX Sensor Station to a non-hazardous area and remove power from the CX Sensor Station by turning the power switch to OFF. Open the hinged door to gain access to interior.   Locate the four screws that attach the metal bracket that secures the battery pack. Undo the four screws and set them aside carefully. Lift metal bracket and expose battery pack. Disconnect the two wire male/female connector to free the pack. Replace the old pack with a new pack and reverse the directions given above, making sure the wire connections are made correctly.

5.3 Proper Cleaning Procedure

If the unit requires cleaning, take a clean water-damped wet cloth and wipe off the exterior surfaces of the unit as required. Allow for air dry. It is **not** necessary to relocate the unit to a non-hazardous area to perform cleaning.

5.4 Servicing Risks and Verification of Safe State after Servicing

While performing any of the above-mention user-authorized service activities, proper caution shall be used to avoid safety risks.

The first protective measure and mandatory requirement is that the CX Sensor Station must be relocated to a non-hazardous area while performing these functions.

The second protective measure is to make sure the power switch is turned OFF while opening the enclosure and addressing internal components.

The third protective measure is to use static protection while touching any internal components within the controller enclosure.

The fourth protective measure is to follow these instructions properly and secure the hinged enclosure cover fully closed before returning unit to the hazardous area.

Once all servicing has been completed turn power ON and verify that all configured gas sensors are reading the correct value and also verify that the battery charge level is correct.   Once verified, it is safe to return the unit to active usage.

6. Troubleshooting Guide

Sensor COMM Error
- Verify all SmartWireless® CXT devices have a unique Modbus ID number.
- Verify the Sensor Input PCA and Relay PCA Modbus address are set correctly
- Verify the Radio Module Modbus address is set correctly

Sensor Fault
- Verify if sensor displays any fault. If so, follow sensor trouble shooting notes.
- Verify if sensor cell needs replacement.

Low Battery
- Attach external battery charger
- Verify solar panel (if used) is oriented correctly

Poor Link Quality
- Verify antenna is securely attached to all devices.
- Verify obstructions are eliminated or minimized between SmartWireless® CXT devices and controller or other CXT devices.

Slow Gas Response
- Some delay in gas response is normal if the network update rate is greater than zero. To increase response time, reduce the update rate. Reducing the update rate will reduce the battery life for devices.

SmartWireless® CXT not found during controller Auto Configure
- Verify CXT device set to correct RF Channel
- Verify Radio Module has correct Modbus address
- Verify the Sensor Input PCA and Relay PCA Modbus address are set correctly
- Verify a proper mA load is present on sensor input. Sensor inputs are not detected unless the mA input is greater than 1.9mA.

Contact the Detcon Service Department for further troubleshooting assistance at 713-559-9200

7. Customer Support and Service Policy

Detcon Headquarters
Shipping Address: 4055 Technology Forest Blvd, The Woodlands, Texas 77381
Mailing Address: P.O. Box 8067, The Woodlands Texas 77387-8067
Phone: 713.559.9200
Fax: 281.298.2868

- www.detcon.com
- service@detcon.com
- sales@detcon.com

All Technical Service and Repair activities should be handled by the Detcon Service Department via phone, fax or email (contact information given above). RMA numbers should be obtained from the Detcon Service Department prior to equipment being returned. For on-line technical service, have the model number, part number, and serial number of product(s) in question available.

All Sales activities (including spare parts purchase) should be handled by the Detcon Sales Department via phone, fax or email (contact information given above).

NOTE	All additional parts must be supplied by Detcon. Use of parts from a third party will void warranty and safety approvals.

NOTE	The CX Sensor Station should only be repaired by Detcon personnel or a Detcon trained representative.

8. Warranty Notice

Detcon Inc. warrants the SmartWireless® CX Sensor Station to be free from defects in workmanship of material under normal use and service for one year from the date of shipment.

Detcon Inc. will repair or replace without charge any such equipment found to be defective during the warranty period. Full determination of the nature of, and responsibility for, defective or damaged equipment will be made by Detcon Inc. personnel.

Defective or damaged equipment must be shipped to the Detcon Inc. factory or representative from which the original shipment was made. In all cases, this warranty is limited to the cost of the equipment supplied by Detcon Inc. The customer will assume all liability for the misuse of this equipment by its employees or other contracted personnel.

All warranties are contingent upon the proper use in the application for which the product was intended and does not cover products which have been modified or repaired without Detcon Inc. approval, or which have been subjected to neglect, accident, improper installation or application, or on which the original identification marks have been removed or altered.

Except for the express warranty stated above, Detcon Inc. disclaims all warranties with regard to the products sold. Including all implied warranties of merchantability and fitness and the express warranties stated herein are in lieu of all obligations or liabilities on the part of Detcon Inc. for damages including, but not limited to, consequential damages arising out of, or in connection with, the performance of the product.

9. Appendix

9.1 Specifications

System Specifications

Capacity:	Up to 4 Analog 4-20mA inputs
Sensor Inputs:	Up to 4 Analog 4-20mA
Outputs:	4 switched alarm outputs, (11VDC)
Warranty:	One year

Environmental Specifications

1) Operating Temperature:	-20C to +60C (for field use where battery pack is only discharging)
2) Operating Temperature:	0C to +40C (for non-hazardous area where battery is only charging)
Storage Temperature:	-40C to +85C
Humidity:	0-99%RH, non-condensing
Altitude:	0 – 2000m

Electrical Specifications

Battery Charger Input:	100-240 VAC, 50-60 Hz, Max Current 2 Amps
Battery Charger Output:	24 +/- 0.1 VDC nominal, Max Current 3.25 Amps
Internal Battery Pack:	Rechargeable Lithium–Ion, 9-11.2 VDC, 17.4Ah capacity
External Alarm Connectors:	'Wet': 9-11.1 VDC, 2A max total (A1, A2, A3, and FLT outputs combined)
	'Dry': Dry Contact 120-220VAC/24VDC, 2A Max
Sensor Input Connectors:	9-11.1 VDC, 100mA max per connector
RFI/EMI Protection:	Complies with EN61326
Electrical Classification:	NEMA 4X, Class I Division 2 Groups A,B,C,D

Cabling Specifications

External Alarms Cables:	Use only Detcon cables, termination insulation resistance > 10K ohms.
	'Wet': Connector style is 5 pin Turck connector with security clip.
	'Dry': Connector style is 6 pin Turck connector with security clip.
Sensor Input Cables:	Use only Detcon cables, termination insulation resistance > 10K ohms
	Connector style is 4 pin Turck connector with security clip.
Power Input Cable:	Use only Detcon Battery Charging Accessory product
	Connector style is 3 pin Turck connector with security clip.

Mechanical Specifications

Dimensions:	12" W x 21.3" H x 4.73" D (including antenna and strobe)
	12" W x 12.25" H x 4.73 D (without antenna and strobe)

Wireless Specifications

Frequency:	ISM 2.4GHz
Range:	Indoor/No Line of Sight – 1,000ft
	Outdoor RF Line of Sight – 1.5 Miles
Spread Spectrum:	Digital-Sequence Spread Spectrum (DSSS)
Modulation:	0-QPSK
Sensitivity:	-102dBm (1% PER)

9.2 Spare Parts and Wireless Accessories

Part Number	Spare Parts
976-0003BC-00T	CXT Battery Charger Accessory for 110 VAC
976-0003BC-220	CXT Battery Charger Accessory for 220 VAC
976-0003A4-200	Antenna Assembly
960-798434-000	Condensation Prevention Packet (replace annually)
894-7845K6-400	Hole Plug
500-005199-000	Relay Board
500-005194-000	Sensor Input Board
360-3S6PFP-ASM	Battery Pack
320-N45161-000	Power Switch
302-RSFCC0-05M	Connector Dust Cap
302-RFK40D-05M	Sensor Connector
302-RFK380-05M	Power Connector
302-RFK520-05M	External Alarm Connector for 'Wet' Relay Contacts
302-PRSF63-M20	External Alarm Connector for 'Dry' Relay Contacts
275-556160-432	Power LED Indicator
976-001320-CHR	Radio Module (320 Network)
Part Number	**Accessories**
975-TRIPOD-100	Detcon tripod
943-004413-000	Detcon Tripod sensor brackets
975-TRIPOD-MNI	Mini Sensor Tripod
980-PRSM40-02M	2m Sensor Cable (with security clip)
980-PRSM40-10M	10m Sensor Cable (with security clip)
980-PRSM40-30M	30m Sensor Cable (with security clip)
980-PRSM40-45M	45m Sensor Cable (with security clip)
980-PRSM52-02M	2m External Alarm Cable for 'Wet' Alarms (with security clip)
980-PRSM52-30M	30m External Alarm Cable for 'Wet' Alarms (with security clip)
980-PRSM52-45M	45m External Alarm Cable for 'Wet' Alarms (with security clip)
980-PRKM63-30M	30m External Alarm Cable for 'Dry' Alarms (with security clip)
980-PRKM63-45M	45m External Alarm Cable for 'Dry' Alarms (with security clip)

9.3 Revision Log

Revision	Date	Changes made	Approval
1.0	03/27/2013	Release	LBU
1.1	10/30/13	Update for removable battery pack	LBU
1.2	11/20/13	Updates for Approval Agency	BM
1.3	04/04/14	Updates to sensor wiring, and battery charging	BM
1.4	05/30/14	Various corrections, clarifications and addition of final Warnings	BM

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