



SW1008X-C/R Installation Manual

Rev 0.2

January 9, 2009

SAFETY INSTRUCTIONS

BE SURE TO READ THIS MANUAL BEFORE INSTALLING THE WIRELESS WIRE SYSTEM.

DESCRIPTION

The Wireless Wire system provides two banks of eight switch inputs/outputs to be sent wirelessly between up to 32 remote locations. Each of the eight terminals on each unit can function as either a switch input or a switched output. When a switch, connected to an unit, is closed the corresponding terminal on all other units of the same bank will behave as a closed switched outputs to ground.

The system uses Zigbee technology to create a mesh network between all the nearby nodes which allows for much larger distances to be covered by the radios. If a remote location is too distant to connect to the network another node located midway can act as a repeater for the first unit.

Each network must contain precisely one coordinator node (usually located at the control centre). A coordinator node that detects a pre-existing network will not function.

Each unit has a jumper to select one of two banks. Units will only communicate with other units that have the same jumper setting. Other models are available with 16 terminals that provide access to both banks simultaneously.

SPECIFICATIONS

Power Requirements	6 to 42 V DC < 0.25 A
Maximum Voltage on Switches	500 V
Maximum Output Current Sink	2 A
Radio Range	> 1 km (typical)
Maximum Number of Units on the Network	32

PACKAGE CONTENTS

- Wireless Wire Unit
- Set of 3 mounting tabs (2 white and 1 black)
- Installation Manual



MOUNTING THE UNIT ON DIN-RAIL

Use the following steps to mount the unit onto a length of DIN-Rail.

1. Insert each of the three mounting tabs into the slots on the bottom of the unit. The tabs should be pushed in from the inside of the device. The black tab only fits into the middle slot.
2. Push each tab until it locks into place.
3. The unit can then snap onto an already mounted piece of DIN-Rail (not included).

To release the unit from the rail use a small flat-headed screw driver to pry up on the black tab that protrudes from the top. The unit should then easily snap off the rail.



MOUNTING THE UNIT WITH SCREWS

Use the following steps to mount the unit using screws.

1. Insert each of the three mounting pegs into the slots on the bottom of the unit. The pegs should be pushed in from the outside of the device. The black tab only fits into the middle slot.
2. Push each tab until it locks into place.
3. Position the unit then drive #6, pan head, screws through the eyeholes in each tab.

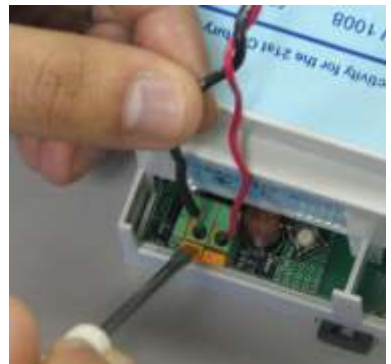


WIRING INSTRUCTIONS

For each wire you wish to connect, strip it's jacket between 1/4" and 1/2". Then, using a small screwdriver press down on the orange tab at the front of the terminal block and insert the wire. Release the tab and the wire should be gripped by the connector. A brief tug on the wire should not pull it from the socket.

It is important to ensure that none of the wire's conductor protrudes outside of the terminal block.

Wires should be between 16 and 24 AWG.

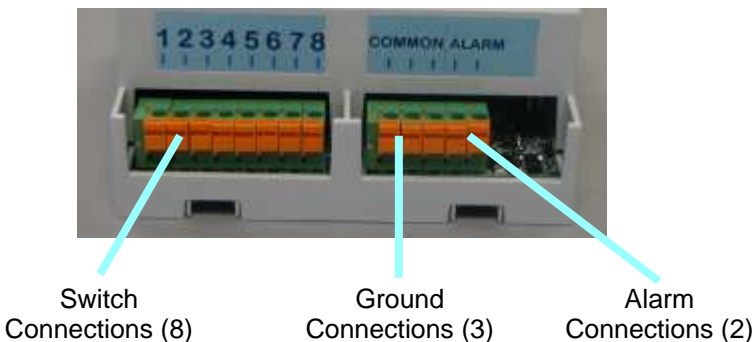
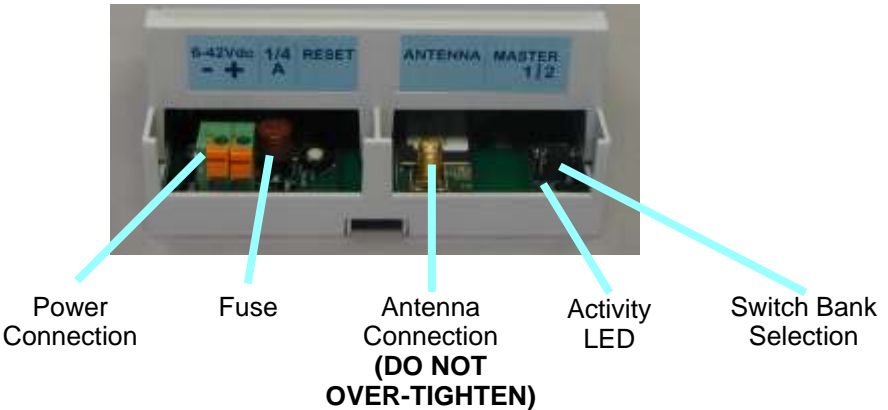


INSTALLATION INSTRUCTIONS

Refer to the diagrams below to make the following connections. **Note:** be sure to read the wiring instructions in the previous section to ensure proper electrical connections are made.

1. Connect the Antenna to the unit using an SMA cable. **WARNING:** Do not over-tighten this connector as it may break off the board. The connector screw **MUST** only be hand tight and a wrench should not be used.
2. Connect, as needed, switches or outputs to the terminals labelled 1 through 8.
3. Select the bank of switches this unit will belong to. Units will only mirror the switches of other units with the same jumper setting. **Note:** this must be set prior to the power being applied.
4. Optionally connect any alarms as required.
5. Connect the power source to the unit with ground on the terminal labelled '-' and power on the terminal labelled '+'.

Once the unit is powered the activity LED will pulse slowly. Then after a radio link is established with another unit the LED will turn solid green and flash whenever there is activity on any of the switches inputs or outputs.



ALARMS

The behaviour of the alarm depends on the model of the unit. The alarm connections behave as switched outputs to ground.

MODEL SW1008A-C/R

The alarms on this model are both set closed if any one of the switch inputs become open. When no switches are open the alarms are open.

MODEL SW1008B-C/R

On this model Switch 8 acts as an acknowledgement for the alarms. If any of Switches 1 to 7 become open then both alarm outputs will become closed. After the alarm is acknowledged when Switch 8 is momentarily closed, Alarm 1 will be immediately cleared. Alarm 2 will be cleared after the alarm is acknowledged and the alarming switches have been closed.

MODEL SW1008C-C/R

This model acts like 1008B-C/R except only Switches 4 to 7 will trigger an alarm. Switches 1 to 3 will not effect the alarms.

MODEL NUMBERING

Example:

SW1008A-C

Alarm Code¹

- A - Simple Alarm
- B - Acknowledged Alarm
- C - Partial Acknowledged Alarm

Device Network Type

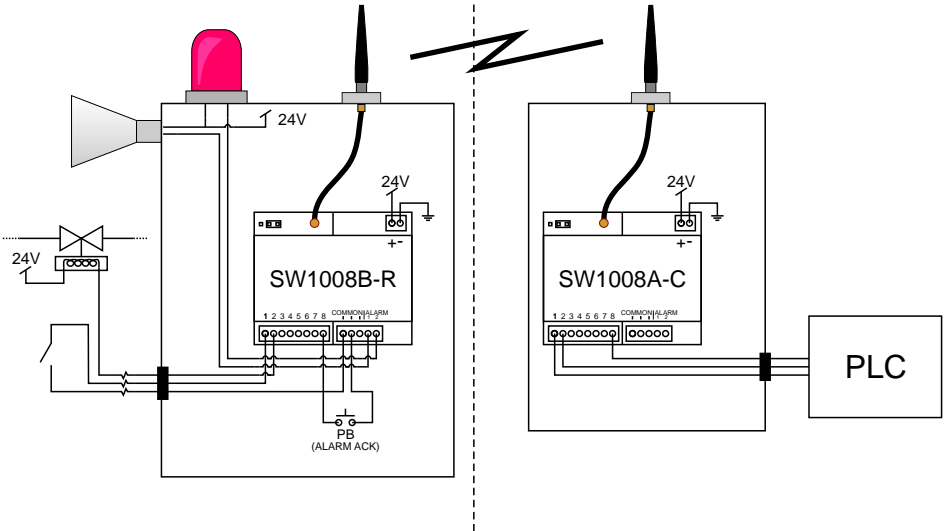
- C - Coordinator²
- R - Remote

1. See the 'Alarms' section above for more details.
2. Every network must have precisely one Coordinator device

EXAMPLE SCHEMATIC

Remote Site

Control Center



With this setup the PLC is able to control the valve and detect when the switch is opened or closed. Additionally when the switch becomes open it will sound an alarm horn and turns on a warning light. The push button will clear the alarm and signal the PLC.

Additional remote sites can be setup which connect switches or devices to terminals 3 to 7 (or by using the second bank).

TROUBLE SHOOTING

Problem: The LED does not flash after applying power to the unit.

Possible Solutions:

- Check that the power is properly connected and making contact.
- Ensure the power supply voltage is correct: between 6V and 42V.
- Check that the fuse has not blown. If it has replace it with an equivalent 1/4A fuse.

Problem: The LED flashes but never turns solid green.

Possible Solutions:

This indicates a problem with the radio link between nodes.

- Ensure that the antenna is connected properly and positioned in a reasonably open space with no metal surfaces close which shield it.
- The unit may be out of range. Try inserting another unit midway between it and the nearest node.

Problem: Multiple nodes have a solid green LED but switch closures do not get sent between them.

Possible Solutions:

- The nodes may be set to different banks. Ensure that the switch bank jumper on all the nodes is the same.
- Check the connections. If the LED doesn't flash when a switch changes state it may indicate the switch is not correctly connected. If the LED does flash it may indicate the output is not correctly connected.

LIMITED PRODUCT WARRANTY

Deltatee Enterprises Ltd. (Deltatee) warrants, to the original purchaser, this product against defects in materials or workmanship for a period of one (1) year from the date of original purchase. During this period Deltatee will repair or replace a defective product or part, at their discretion, with a new or refurbished product without charge FOB Deltatee. No warranty shall apply when damage is caused by or repair is required due to any of the following:

1. Use of the product outside of its intended purpose or application it was designed for;
2. Use of an improper power source;
3. Accident, alteration, abuse or misuse of the product or;
4. Fire, wear, damage, theft, war, riot, hostility, or Acts of God.

These warranties and remedies are exclusive and all other warranties, express or implied, written or oral, including the implied warranties of merchantability or fitness for any particular purpose are excluded.

To receive warranty consideration a RMA must be obtained and the defective product returned to Deltatee.

PRODUCT LIABILITY

Deltatee shall not be liable for any loss, damage (including without limitation, direct or indirect damages for personal injury, property damage, loss of business profits, business interruption or any other pecuniary loss) or expense arising directly or indirectly out of the purchase, installation or operation of its products. In no event shall Deltatee be liable for special, indirect, incidental or consequential damages of any kind or nature due to any cause. Deltatee neither assumes or authorizes any representative or other person to assume for it any obligation or liability other than is expressly set forth herein.

The laws of the province of Alberta, Canada, govern this agreement, the products and accompanying instructions and manuals. The purchaser and any other related parties, further agree that any litigation shall be commenced in the courts in the city of Calgary in the province of Alberta, Canada.

CONTACT INFORMATION

Deltatee Enterprises Ltd.
202, 1439 - 17th Avenue SE
Calgary, Alberta
Canada T2G 1J9

Phone: 1-403-250-3533
Fax: 1-403-263-2170
Email: info@wirelesswire.com