

Quick Start Guide

Thank you for purchasing the WC20i-Solar.

This **Quick Start Guide** provides brief procedures for the hardware installation of the WC20i-Solar with the selected WC20i and Tank Level equipment.

Important! It is assumed that the reader and installer have completed the FreeWave WC20i installation and setup training to follow the procedures in this document.

Note: For more detailed installation, connection, and configuration procedures, download the WC20i-Solar **User Manual** from the <http://support.freewave.com/> website. Registration is required to use this website.

The basic steps are:

- A. [Solar Power Connection \(on page 1\)](#)
- B. [Sensor Cable Routing on the WC20i \(on page 1\)](#)
- C. [WC20i-Solar Mounting and Care \(on page 2\)](#)
- D. [Rosemount 5300 Mounting \(on page 2\)](#) or [Vega Single Chamber Radar Mounting \(on page 3\)](#) or [Yokogawa EJA Series Mounting \(on page 3\)](#)

Included Equipment

Important! The WC20i-Solar package does **NOT** include the WC20i Endpoint. It is only the Solar Panel with its accompanying equipment.

WC20i-Solar Included Equipment

FreeWave Part #	Qty	Description
WC20i-Solar	1	WC20i Solar Panel kit with bracket, charger, and High Capacity battery pack
QSG0045AA	1	Quick Start Guide

User-supplied Equipment

Important! The items listed here are all optional and dependent upon the specific installation of the WC20i-Solar Kit with the selected WC20i and Tank Level equipment.

- U-bolts
- Hose clamps
- Phillips screwdriver
- Flat-head screwdriver
- Pliers
- Appropriate Tank Level Solar Panel Mounting Kit

Tank Level Solar Panel Mounting Kits

User-supplied Equipment - Tank Level Solar Panel Mounting Kits

FreeWave Part #	Qty	Description
Note: These mounting kits fit all FreeWave WC20i-Solar Panel Kits. Select a mounting kit based on the model of the attached sensor.		
WC20i-B-R5300	1	Rosemount 5300
WC20i-B-YOKO	1	Yokogawa EJA Series
WC20i-BKT-VEGA	1	Vega Single Chamber Radar

Solar Power Connection

Important! To ensure intrinsic safety is maintained, it is required that the installer follow these guidelines when connecting sensors to the WC20i Endpoint.

- The WC20i Endpoint must be purchased for use with the solar system.
- The solar ready WC20i Endpoint has a cable gland for the power cable.
 - The solar power cable must enter through the cable gland.
 - All wiring should be neat and orderly.
- This should be routed away from any sensor wires entering the WC20i Endpoint.
- Verify the solar power cable is routed through the power cable hold-down clamp and the power cable gland.
 - See [Figure 1](#) for proper wire routing.



Warning! The battery cable **MUST only be routed** through the power cable hold-down clamp and, as applicable, the solar power cable gland.

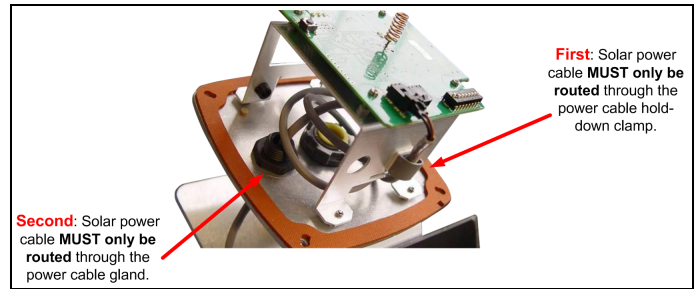


Figure 1: Solar Power Cable through the Power Cable Hold-down Clamp

Sensor Cable Routing on the WC20i

Important! To ensure intrinsic safety is maintained, the installer is required to follow these procedures when connecting sensors to a WAVECONTACT Endpoint. See [Figure 2](#) for the proper cable routing.

1. All wiring should be neat and orderly.
2. Strip the cable wires to the sensor so that there is minimal exposed un-insulated wire when inserted into the screw terminal.

Important! For both the battery powered and solar powered WC20i, sensor wires entering the enclosure **MUST** be routed and connected as shown

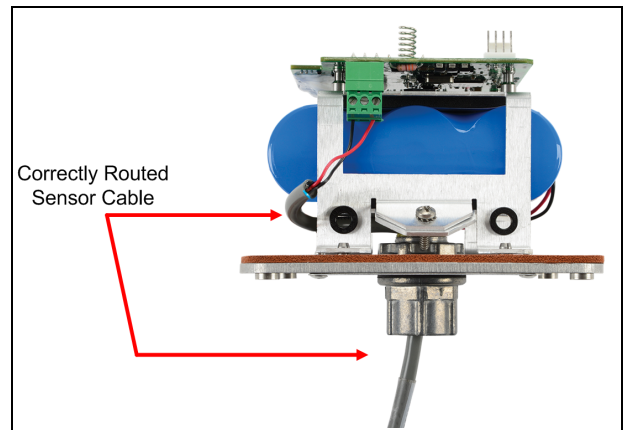


Figure 2: Correctly Routed Sensor Cable

3. Continue with [WC20i-Solar Mounting and Care \(on page 2\)](#).

WC20i-Solar Mounting and Care

Note: The [User-supplied Equipment \(on page 1\)](#) lists the FreeWave kits the WC20i-Solar can be attach to.

- The WC20i-Solar is attached to its own mounting bracket.
 - The bracket may be mounted to either a horizontal or vertical pole.
- Mount the WC20i-Solar so the mounting side of the triangle is vertical and the battery box is at the bottom.
- These sections show examples about specific Tank Level Solar Panel Mounting Kits:
 - [Rosemount 5300 Mounting \(on page 2\)](#)
 - [Vega Single Chamber Radar Mounting \(on page 3\)](#)
 - [Yokogawa EJA Series Mounting \(on page 3\)](#)

FREEWAVE Recommends: The WC20i-Solar should be installed with the solar panel facing South with a good view of the sky.

WC20i-Solar U-bolt Mounting Holes and Tabs

1. U-bolts are placed through the holes in the rear of the bracket for pole mounting. (A in [Figure 3](#))
2. Where applicable, the tabs on the bracket are bent to fit around the pole. (B in [Figure 3](#))

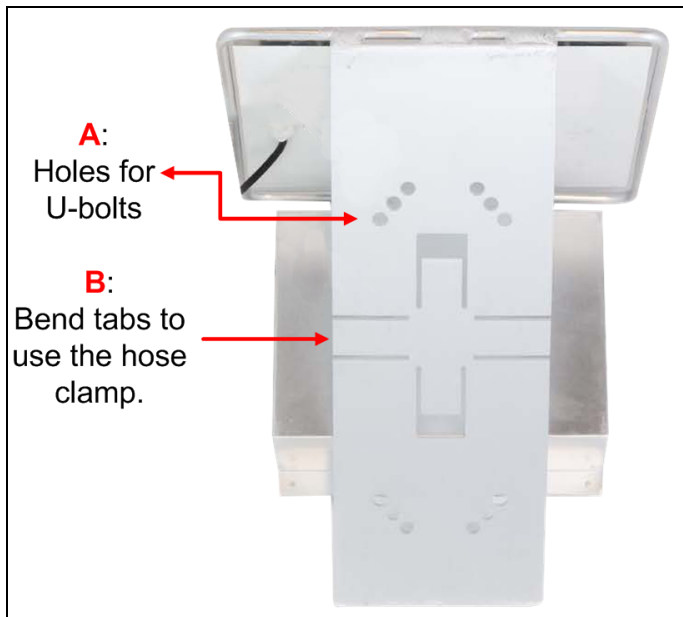


Figure 3: WC20i-Solar U-bolt Holes and Tabs

Cleaning Instructions

The outside of the enclosure may be cleaned with water, mild soap, and a damp cloth as needed.

Caution: High pressure washing is NOT recommended.

Warning! Electrostatic Discharge Hazard!

Care must be taken to avoid the potential of creating a charge on the enclosure or antenna.

Do NOT wipe with a dry cloth.

Do NOT brush against the enclosure with clothing or gloves.

AVERTISSEMENT: Risque de décharge électrostatique! Il faut veiller à éviter tout risque de changement de l'enceinte ou de l'antenne.

Ne pas essuyer avec un chiffon sec.

Ne pas brosser contre l'enceinte avec des vêtements ou des gants.



Rosemount 5300 Mounting

Included Equipment - WC20i-B-R5300

This is the equipment included with the FreeWave WC20i-B-R5300 kit:



Figure 4: Included Equipment - WC20i-B-R5300

Example - Mounted Rosemount 5300

This example shows how the FreeWave WC20i-B-R5300 kit is mounted to the Rosemount 5300.



Figure 5: WC20i-B-R5300 - Mounted with WC20i-Solar

Vega Single Chamber Radar Mounting

Included Equipment - WC20i-BKT-VEGA

This is the equipment included with the FreeWave WC20i-BKT-VEGA kit:



Figure 6: Included Equipment - WC20i-BKT-VEGA

Example - Mounted WC20i-BKT-VEGA

This example shows how the FreeWave WC20i-BKT-VEGA kit is mounted to the Vega Single Chamber Radar.



Figure 7: WC20i-BKT-VEGA - Mounted with WC20i-Solar

Yokogawa EJA Series Mounting

Included Equipment - WC20i-B-YOKO

This is the equipment included with the FreeWave WC20i-B-YOKO kit:



Figure 8: Included Equipment - WC20i-B-YOKO


Example - Mounted WC20i-B-YOKO

This example shows how the FreeWave WC20i-B-YOKO kit is mounted to the Yokogawa EJA Series.



Figure 9: WC20i-B-YOKO - Mounted with WC20i-Solar

Important!: This label MUST BE visible when the WAVECONTACT product is installed.

FREEWAVE <small>Boulder, CO USA www.freewave.com</small>		S/N: 00000001
Model: WC20i-Solar		
	CLASS I, DIVISION 1 GROUPS C, D TEMP CODE: T3 AMBIENT TEMP: -40°C to +60°C CONFORMS TO UL STD 913 CERTIFIED TO CAN/CSA STD C22.2 NO. 157	ENTITY PARAMETERS <small>Exi [Exi]</small> OUTPUT: Voc = 5.9 Vdc Isc = 3.06 A Pout = 0.8 W Ca = 999.9 uF La = 15.2 uH
INTRINSICALLY SAFE SECURITE INTRINSEQUE	WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY	AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE

WC20i-Solar ETL C1D1 Label



Warning! The available WC20i-Solar system is limited because of IS certification.
The WC20i-Solar system **cannot** not be used for all WC20i Endpoint models and configurations.

These WC20i models and configurations are supported for use with the WC20i-Solar:

- WC20i-485-S (with a sensor power draw of less than 10mA)
- WC20i-AN-S
- WC20i-DI-S
- WC20i-HART-S
- WC20i-KTh-S



Warning! The WC20i-AN-S Modular Endpoint operating in 4-20mA mode **CANNOT** be used with the WC20i-Solar kit.

Warning! Use of this equipment in a manner not specified by the manufacturer may impair the protection provided by the equipment.

The use of any parts not supplied by the manufacturer violates the safety rating of the equipment.



AVERTISSEMENT: L'utilisation de cet équipement d'une manière non spécifiée par le fabricant peut nuire à la protection fournie par l'équipement.
L'utilisation de pièces non fournies par le fabricant est contraire à la cote de sécurité de l'équipement.



Warning! When the WC20i-Solar kit is used, the WC20iInternal Lithium Battery Pack **MUST NOT BE** connected.

Warning! Electrostatic Discharge Hazard!

Care must be taken to avoid the potential of creating a charge on the enclosure or antenna.
Do NOT wipe with a dry cloth.

Do NOT brush against the enclosure with clothing or gloves.



AVERTISSEMENT: Risque de décharge électrostatique! Il faut veiller à éviter tout risque de changement de l'enceinte ou de l'antenne.
Ne pas essuyer avec un chiffon sec.
Ne pas brosser contre l'enceinte avec des vêtements ou des gants.

Important!: The associated apparatus provides intrinsically safe outputs.

L'appareil associé fournit des sorties à sécurité intrinsèque. See the for requirements when used in a Class I Division 1 area.

Learn More

For additional product information about the , visit www.freewave.com.

For additional product information or assistance, contact a local reseller, or contact FreeWave Technologies, Inc. at 303-381-9200 or 1-866-923-6168, or by email at moreinfo@freewave.com.

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The WC20i-Solar must be professionally installed and is only approved for use when installed in devices produced by FreeWave or third party OEMs with the express written approval of FreeWave Technologies, Inc. Changes or modifications should not be made to the device.

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