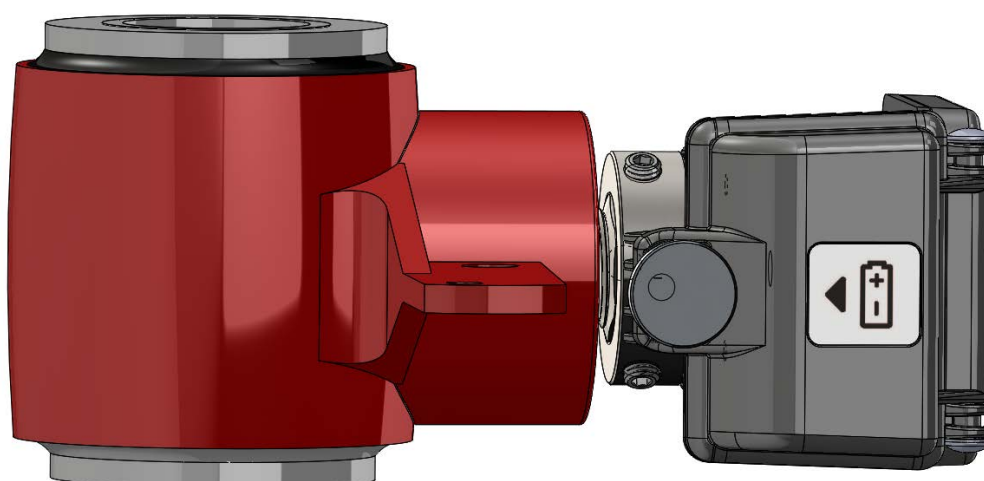

User Manual

CCWR



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1. Product Description

The CCWR is a wireless variant of our CC1 pump-off control load cell. The CCWR in conjunction with an appropriate load cell can transmit polished rod load wirelessly, which solves the industry wide problem of cable failures. After months of development in the field, working hand-in-hand with end users, our design addresses the most demanding concerns raised.

The CCWR technology sets our product apart from all wireless products currently available in the market. The primary advantage is extremely low power consumption. Despite the low power consumption, the product can deliver a continuous flow of data, high signal strength and long battery life. We also offer position sensing capability which is synchronized with the load measurement. This eliminates the need for Hall effect sensors or inclinometers with costly maintenance associated. The wireless enclosure also incorporates an independent compartment for both the wireless technology and the battery. This allows for easy, single handed access to the battery for replacement in the field. We carefully specified a pre-wired D-cell battery is inexpensive and commercially available worldwide.

- Continuous Flow of Data: 100 Readings per Second.
- Low Power Consumption: 12-18 month Battery Life.
- High Signal Strength: > +12dBm, 30m-300m Transmission.
- HazLoc Approved: UL Rated Class 1, Division 1 environments (see label for full approval).
- On-Board Position: $\pm 2\%$ Accuracy
- Security: Proprietary Wireless Transmission Protocol
- Ease of Use: Independent Battery Access, Commercially Available Battery.
- Weatherproof: IP67 rating, Rated for use in -70°F to 175°F (-55°C to 80°C).

1.1. Accessories

- Base Unit (Receiver).
- Antenna.
- Extension Cable.
- Magnetic Cable Clamps (4x).
- Remote Unit (Transmitter).
- Lithium Battery.
- User Manual.

1.2. Optional Accessories

- P/N 52-0093380 – Pole Mount U Bolt Bracket.
- P/N 52-0089758 – DIN Rail Mounting Bracket.

2. Mounting Instructions

IMPORTANT

The employees responsible for the equipment, installation and verification must take into consideration all the actions concerning this subject specified in IEC 60079-14:2013 ed. 5.0 (Electrical installations design, selection and erection) standard. In addition to general specifications associated with any system installed in hazardous locations, special attention should be paid for specific requirements regarding intrinsic safety.

2.1. Base Unit

The base of the device comes with a magnet to the rear for easy mounting to a metal surface inside or outside of the pump controller cabinet. The base mounts outside the hazardous area and is not intended to meet hazardous location safety standards. The antenna must be fitted with the band-pass filter, as this forms part of the FCC/IC radio approvals.



If the magnetic base is not directly attached, due to a non-metallic surface (or space constraints), the base can be suitably fastened to any structure using brackets, plates or other type of support.



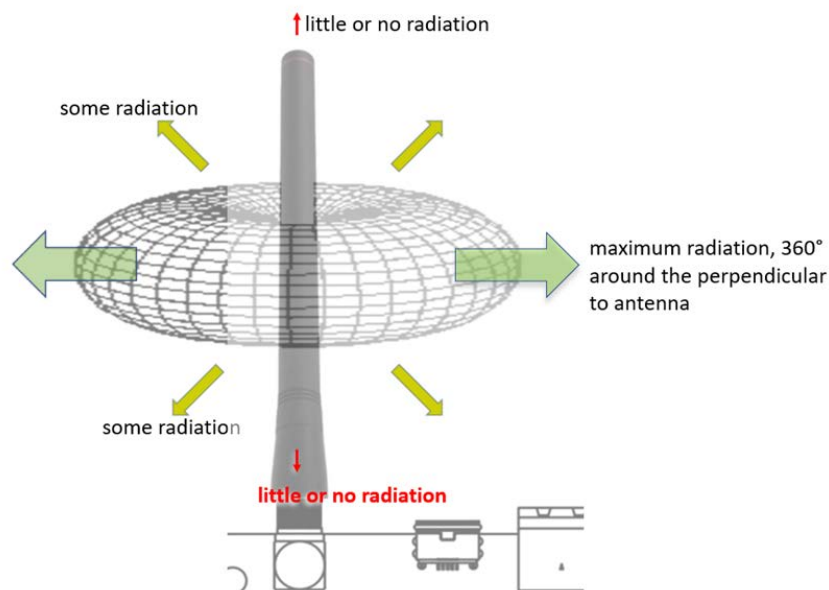
DIN rail mount



Pole mount with U-Bracket

IMPORTANT In order to achieve the best performance the antenna attached to the top right corner of the base unit must be perpendicular/horizontal to the antenna polished rod as shown in the above images.

You may optionally use an extension cable to mount the antenna. Make sure the RF filter is connected directly to the base unit.



2.2. Antenna Recommendations

- **Omni Directional Antenna**

CCWR base unit is equipped with an omni-directional antenna to provide the widest possible signal coverage.

- **RP-SMA Connector (Female)**

The antenna is provided with a threaded, weatherproof RP-SMA female connector. This connector must be properly tightened to the male connector on the enclosure.

- **Vertical Alignment**

Perpendicular/horizontal alignment of the antenna, relative to the polished rod is essential.

- **Line-of-sight**

Is important to find, whenever possible, a line of sight with the load cell where minimal obstacles reside along the RF path.

Note: Fresnel Zone, the area around the visual line-of-sight that radio waves spread out into after they leave the antenna must be clear as possible. Obstacles may weaken signal strength.

- **Antenna Height**

The base unit antenna can be positioned flexibly using the antenna extension cable. Mounting the antenna at a higher position to the base may help achieve better propagation.

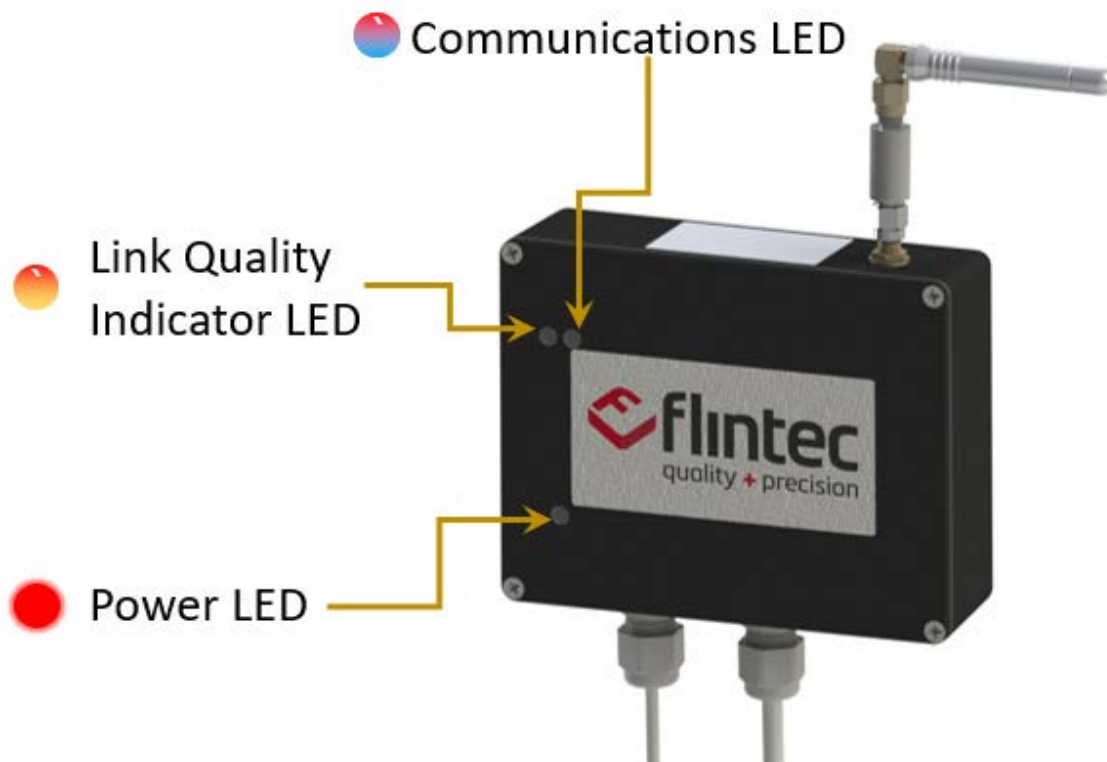
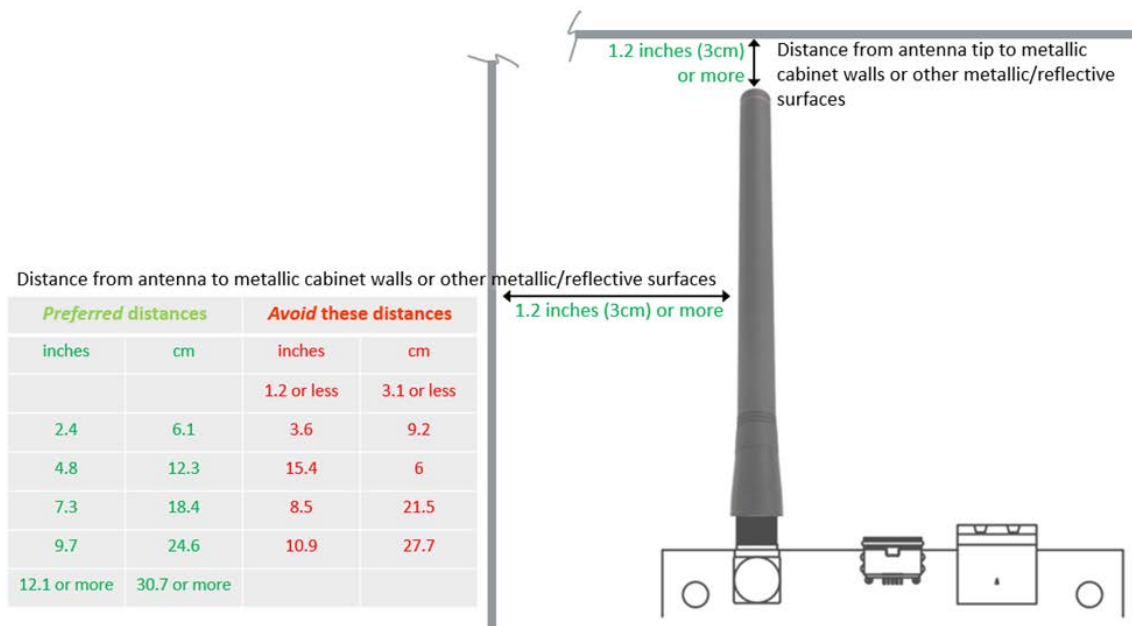
Note: The use of extension cables that always represent attenuation and signal strength losses should be avoided if possible.

- **Antenna Mating**

The recommended torque setting for the antenna/band-pass filter is 5lbs (0.56Nm).



Enclosure Mounting



2.3. Base Unit Connections

Base Unit Connections



Caution! The Base Unit is not intended to meet safety certifications.
Use appropriate safety procedures when installing.

12 to 24VDC
power input

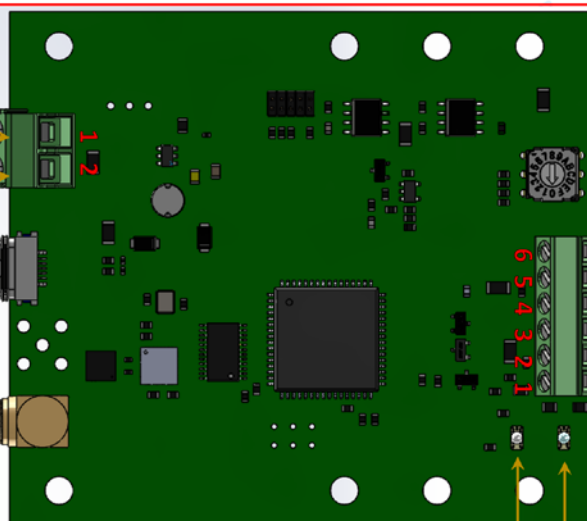
1: 12 to 24VDC

2: Ground

Antenna port



Caution! Unit is certified for use only with the antennas listed under [FCC Certification](#).



Power LED

Channel selection
rotary switch



6: Optional analog

5: Ground

4: Excitation + / Vref +

3: mV/V Signal + / mA +

2: mV/V Signal - / mA -

1: Excitation - / Vref -

Wireless strain gage
output, reference
voltage input

Communications LED

Indicator LED

SIGNAL CABLE COLOR CODE

RED

Excitation + / Vref +

GREEN

mV/V Signal + / mA +

WHITE

mV/V Signal - / mA -

BLACK

Excitation - / Vref -

YELLOW

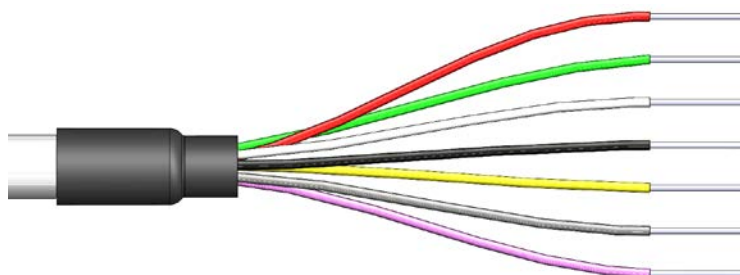
Shield (NC)

GRAY

Optional analog

VIOLET

Ground



POWER CABLE COLOR CODE

BLACK

Ground

YELLOW

Shield

RED

12 to 24VDC



WARNING: Insulate unused leads to prevent shorting.

Advertisement: Isolez les fils inutilisés pour éviter les courts-circuits.

2.4. Remote Unit (Wireless Load Cell)



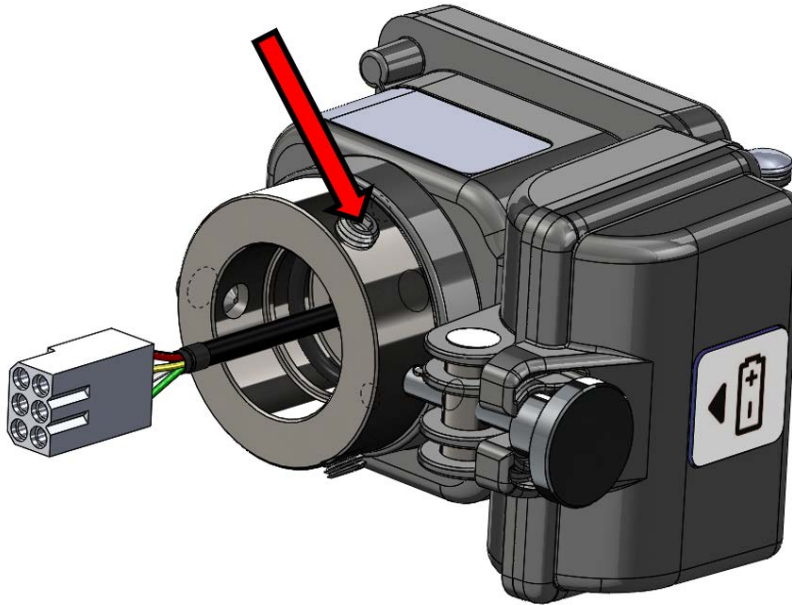
CCWR is mounted in the same way as other polished rod load cells. No special mounting procedure is required.

IMPORTANT

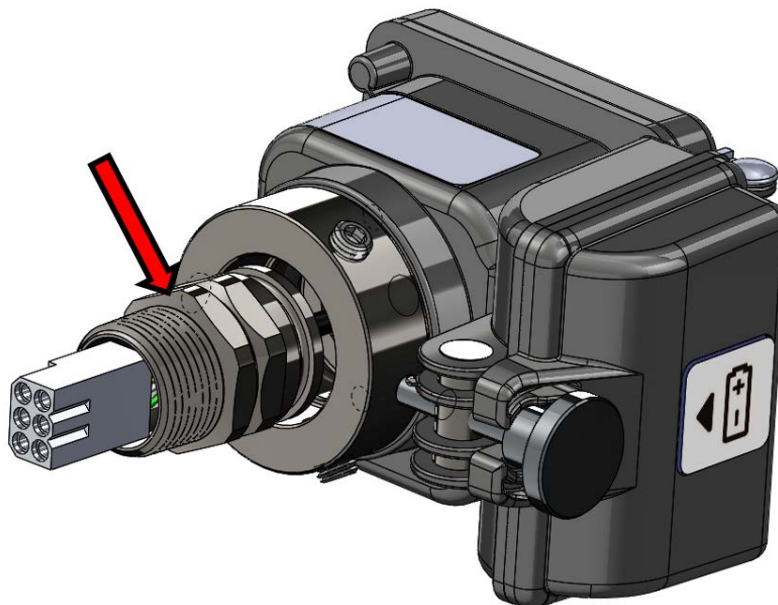
Position the remote unit (with the Flintec logo upright on the plastic enclosure).

2.4.1. Connect Load Cell to Remote Unit

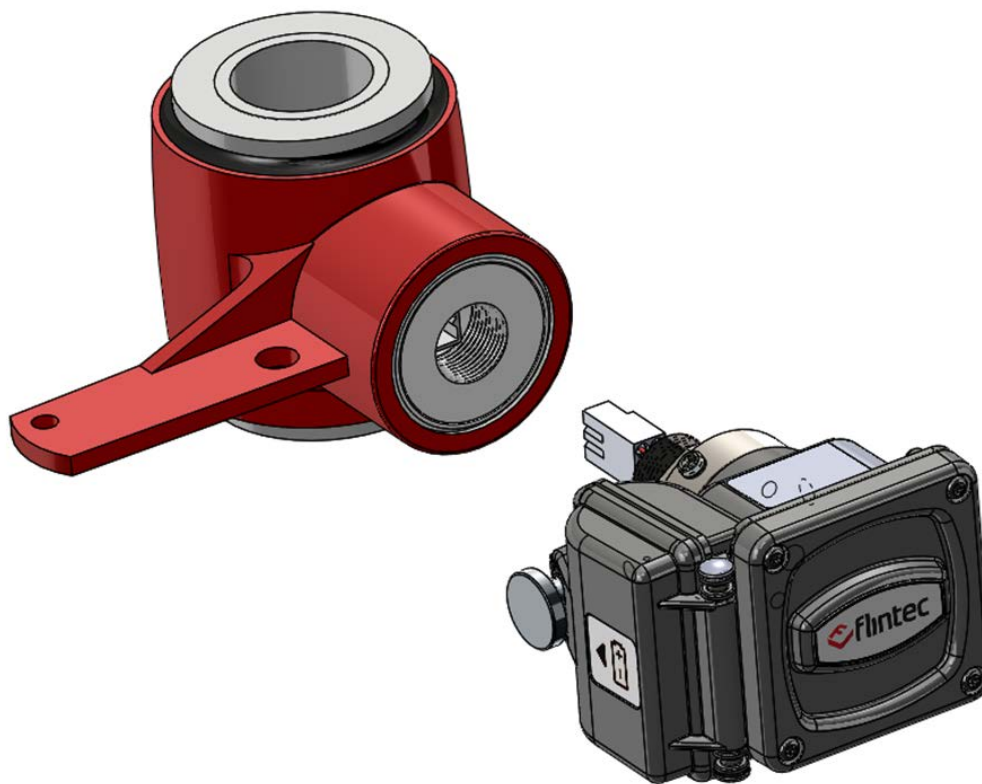
1. Loosen the 3 retaining screws.



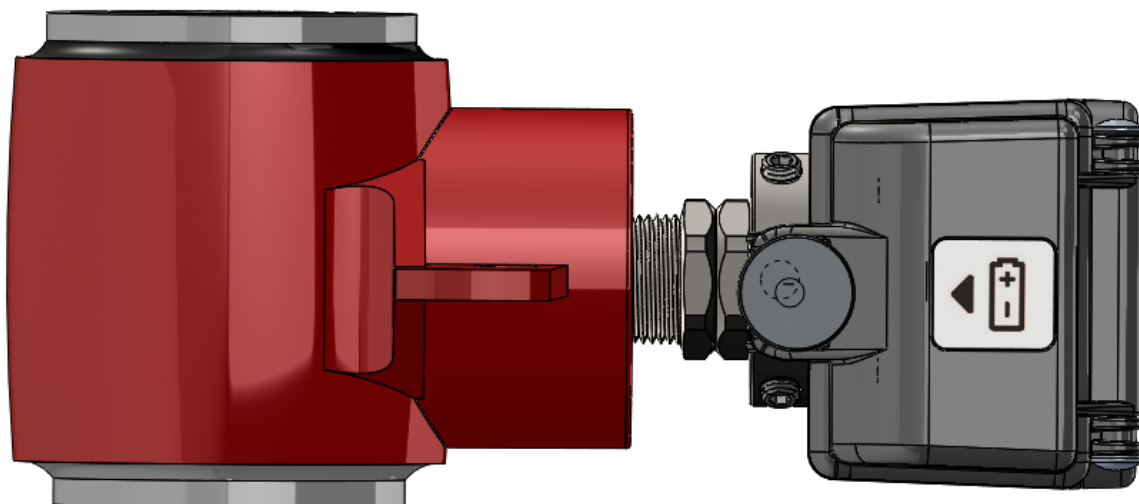
2. Insert the load cell adaptor (3/4-14 NPT) and keep free/loose from the assembly.



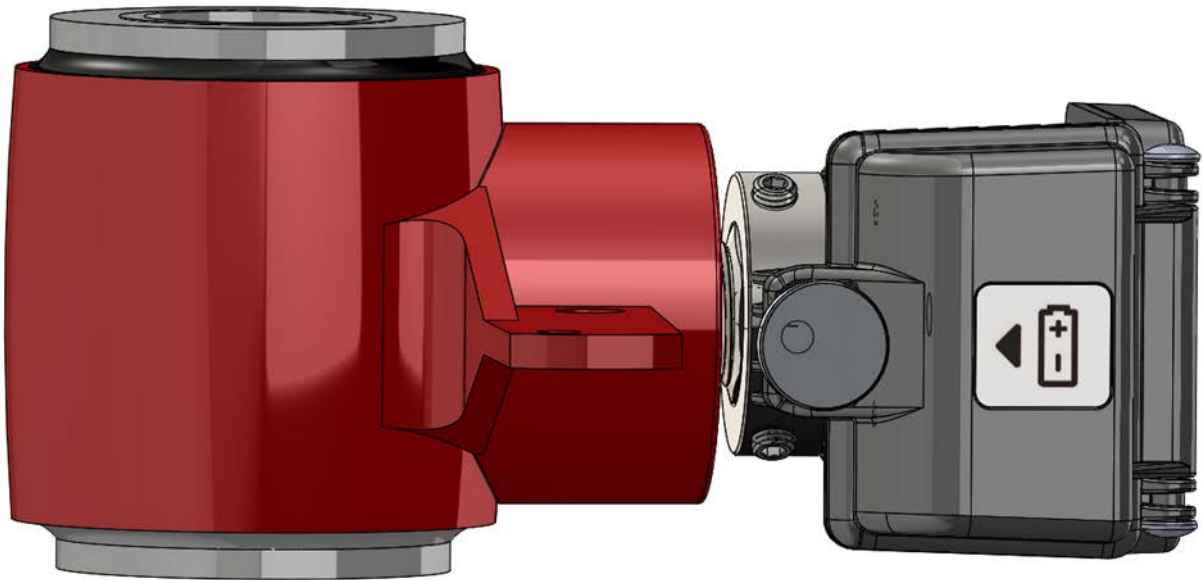
3. Mate the CCWR cable connector to the connector inside the load cell.



4. Fit the load cell adaptor to the load cell over the cable and tighten with a hand tool.



5. Push the remote assembly into the load cell adaptor, making sure the remote module is level with the load cell and battery compartment. To prevent damage from moving parts like rod rotator arm ensure the assembly is as shown below.
6. Final step, tighten the set/retaining screws.



3. Battery Installation

CCWR remote unit is powered by a primary cell battery and must be fitted suitably in the battery compartment. The person in charge of the installation must verify the battery undamaged or wet.



WARNING: This product is certified for use with **TADIRAN TL-5930/F**. Ensure the battery cable is tucked inside the compartment to prevent the cable being compressed when closing the door.

AVERTISSEMENT: Ce produit est certifié pour une utilisation avec TADIRAN TL-5930/F. Assurez-vous que le câble de la batterie est rentré à l'intérieur du compartiment pour éviter que le câble ne se comprime lors de la fermeture de la porte.



4. Equipment Maintenance

The only live maintenance permitted for this product is replacement of the battery pack which must be done in non-hazardous areas.

Health and safety standards in the workplace must be strictly observed for all personnel conducting maintenance tasks.

This manual must be read and carefully kept. The manual should be referenced before conducting any fitment or maintenance tasks.

Battery Replacement

CCWR remote unit (transmitter) is powered from a specific battery.

- TADIRAN – TL-5930/F

WARNING – Do not replace battery when an explosive atmosphere is present
Advertisement: Ne remplacez pas la batterie en présence d'une atmosphère explosive

Procedure

1. Open the battery compartment by loosening the battery doorknob.
2. Unplug the battery connector from housing by releasing the locking tab and pulling the connectors apart.
3. Remove the battery (dispose of battery in accordance with the manufacturer's instructions).
4. Insert a fresh battery and connect to the remove unit by mating the connectors.
5. Route the excess cable (inside the battery compartment) as to not cause any signs of cable pinching or compression.
6. Close the door and lock with the doorknob. Ensure the sealing gasket is properly seated in the locating groove.

IMPORTANT

Please refer to battery manufacturer, TADIRAN's guidelines (LTN0111) for disposal of Lithium batteries.

5. Operation

1. Disconnect or remove the power to the base unit.
2. Ensure the base antenna is connected with an RF filter. The RF filter must always be mounted on the base
3. The remote antenna is installed by the manufacturer; to preserve safety certifications, it is not intended to be removed.
4. Ensure the manufacturer supplied battery is connected to the remote unit.
5. The remote unit indicator LED, if viewable, will flash about twice per second.



Caution! To preserve safety certifications, do not attempt to remove the remote from its housing in order to view the LED.

6. Connect or apply power to the base unit.
7. The base and remote will connect on the last-used radio channel in about a second.
8. If the base is set to use an alternative channel, it will automatically switch the remote to the new channel. This will take a few seconds to reconfigure.
9. Normal operation begins.
10. A reconstructed version of the mV/V nominal load cell output will appear at the base output (for mA variant this is a 4-20mA current loop).
11. If radio interference occurs, an alternative channel may be selected.

Base Unit LEDs

-  Power LED (red)
'ON' continuously when nominal 12 to 24VDC power is applied
-  Link Quality Indicator LED (red/yellow)
Yellow: low radio signal strength
Red: very low radio signal strength
-  Communications LED (blue/red):

Flashing Pattern	State
~25Hz blue	Normal operation
Red flash, once	Communications error
1 – 4 blue flashes, then same number of 1 – 4 blue flashes	Switching to selected channel, then completed
1 – 4 blue flashes, then 10 quick blue flashes	Switching to selected channel, then failed
3 quick blue flashes	Communications loss; reverting to default channel
20 quick blue flashes	Communications loss on default channel

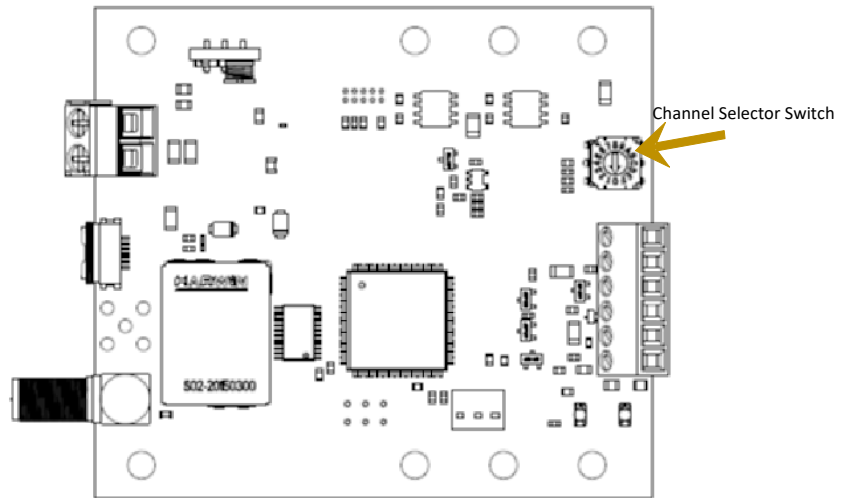
5.1. Base Unit Channel Selection

- To remove the base units top cover, use a crosshead screwdriver to remove the four screws.
- Use a small flat-head screwdriver to rotate the rotary channel selection switch to the appropriate channel required. This is not normally required, however, if there is significant RF traffic on that channel, changing to another may be necessary.
- When replacing the lid, care must be taken to ensure the light pipes are not damaged and the sealing gasket around the lid is maintained.



WARNING: If access to the PCB is necessary, gently lift the lid/cover off the base part of the housing (to prevent damaged to the 3 LED light tubes attached to the cover).

AVERTISSEMENT: Si l'accès au PCB est nécessaire, soulevez doucement le couvercle/couvercle de la partie de base du boîtier (pour éviter d'endommager les 3 tubes lumineux LED attachés au couvercle).



16-channel
selector rotary
switch



Switch Position	Channel #	Switch Position	Channel #
0	11*	8	19
1	12	9	20
2	13	A	21
3	14	B	22
4	15	C	23
5	16	D	24
6	17	E	24**
7	18	F	24**

Use a small, flat-blade screwdriver to rotate the switch to the desired channel.

The communication LED (Blue) will flash 1 – 4 times to indicate a new channel is selected, then flash the same number of times when channel change is completed.

*Default channel. At power-on, the remote unit will revert to the default channel. The base will power-up on the last-used channel. If there is no communications after 8 seconds, the base will revert to the default channel. Once communications are re-established, they will switch to the selected channel.

**Channels 25 and 26 are unused; channel 24 is used instead.

6. Technical Specification

CCWR Retrofit Wireless System Technical Specification		
Typical System Specifications with Flintec CC1 & CC3		
Variants/Capacities	lb	30k & 50k
Rated Load Output (RO)	mV/V	2.00 ± 0.5%
Rated Position Output	% FS (Stroke)	± 2
Non-Repeatability	% RO	± 0.1
Static Error Band	% FS Max	± 0.5
Compensated Temperature Range	°F (°C)	-14° to 150° (-25° to 65°)
Safe Operating Temperature Range	°F (°C)	-70° to 175° (-55° to 80°)
Temperature Effect on Zero	% RO/°F Max	± 0.0075
Temperature Effect on Output	%RO/°F Max	± 0.005
Zero Balance	% RO Max	± 1
Weight, (Appr. Remote Unit + LC e.g. CC1)	lb Nom.	4.5
Fatigue Rating (compression)	Cycles Min@Capacity	50,000,000
Shock Rating	g	Up to 500g
Vibration Rating	MIL-STD-810G	514.6; 516.6
Load-Cell Requirements		
Rated Load Output (Nominal RO)	mV/V	2
Excitation Voltage	V	+5V _{DC} to +10V _{DC}
Insulation Resistance (100V _{DC})	MΩ	≥ 500
Bridge Resistance	Ω	≥ 350
Protection According to EN 60529		IP67

Electronics Specification		
Remote and Base Transceiver Units Matched	Mac ID	(32bit) Specific; No External Connection - Paired Unit
Data Rate	Readings/Sec	100
Radio Frequency Band	GHz	2.45
Radio Channels	Selectable (*)	14
Telemetry Range	Feet (Meters) (*)	100 - 1000 (30-300)
RF Power Output (Remote Unit)	dBm (*)	13-15.5
RF Power Output (Base Unit)	dBm (*)	12.5-14
Remote Unit Battery Life	Min @ 100 rps (**)	12 to 18 months
Remote Unit Battery Type		Lithium D-Cell, 3.6V _{DC} , 19Ah (TL-5930/F).
Compensated Temperature Range	°F (°C)	-14° to 150° (-25° to 65°)
Operating Temperature Range	°F (°C)	-70° to 175° (-55° to 80°)
Base Unit		
Power Supply	VDC, mA	12 - 24; Min. 250mA
Virtual Excitation (External Ref) Voltage	VDC	4.8-10.1 (Ref 5 ± 0.05)
Virtual Bridge Resistance	Ω	700
Protection According to EN 60529		IP67 or higher

(*) 2-3dBm; Telemetry range will change according to site RF Channel Settings

(**) Battery Life changes as per RF output; latency; Temp; antenna distances etc. Refer to Manufacturer for details.

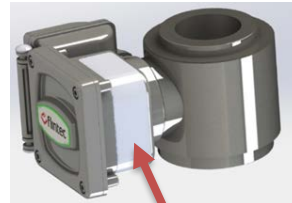
7. Markings

7.1. Remote Unit (Transmitter)

FLINTEC PO Box 24, Spur Rd 2, Phase 1, KEPZ, Katunayake, Sri Lanka.	MODEL	: CCWR	IECEx UL 20.0073X	Uo = 3.9V	This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation WARNING: DO NOT REPLACE BATTERY WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT. POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS Avertissement : Ne remplacez pas la batterie en présence d'une atmosphère explosive. Risque potentiel de charge électrostatique - voir les instructions Intrinsically Safe and sécurité intrinsèque and Exia
	PMN/HVIN	: CC1WRR	DEMKO 20 ATEX 2322X	Io = 662mA	
	S/N	: XXXXXXXX	II 1 G Ex ia IIC T4 Ga	Po = 550mW	
	FCC ID	: 2AUSA-CC1WRR	-55° ≤ Ta ≤ +80°C	Co = 461.8μF	
	IC	: 25535-CC1WRR	CLASS I, ZONE 0, AEx ia IIC T4 Ga	Lo = 0.8μH	
	MAC #	: XX.XX.XX.XX	CLASS I, DIV 1, GROUPS A,B,C,D; T4	Intrinsically safe when installed with control drawing No. 0090977	
	FIRMWARE #	: XXXX	DOM: YYYY-MM		
	FVIN	: XXXX			

Typical ATEX & IECEx Marking										
CE	0359	Ex	II	2	G	Ex	db	IIC	T4	Gb
↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Complies with European Directive*	Notified Body Number*	Specific Marking for Explosion Protection*	Equipment Group*	Equipment Category*	Environment*	Explosion Protection	Protection Type	Atmosphere Group	Temperature Class	Equipment Protection Level (EPL)

*ATEX only (ATEX 2014/34/EU)

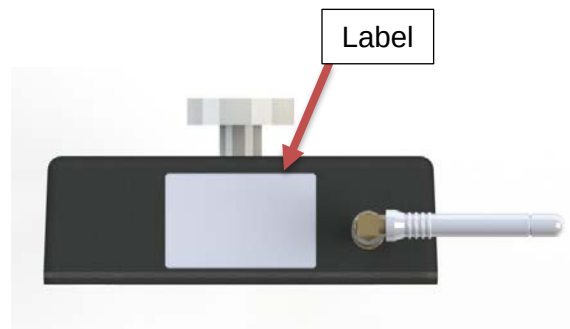


Label

Equipment Group	II	All areas except Mines.
Equipment Category & Enviro	1G	Gas, Vapor, Mist.
Explosion Protection	Ex	Conformity with some IECs protection modes.
Protection Type	ia	Intrinsic security “ia” protection mode than mines. Gases Groups.
Temperature Class	T4	Max surface temp 135°C (275°F).
Equipment Prot Level (EPL)	Ga	Gas Atmospheres. Very high level of protection.

7.2. Base Unit (Receiver)

flintec PO Box 24, Spur Rd 2, Phase 1, KEPZ, Katunayake, Sri Lanka.		This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation Made in Sri Lanka
MODEL	: XXXXXXXX	
PMN/HVIN	: CC1WRB	
S/N	: XXXXXXXX	
FCC ID	: 2AUSA-CC1WRB	
IC	: 25535- CC1WRB	
MAC #	: XX.XX.XX.XX	
FIRMWARE #	: XXXX	
FVIN	: XXXX	



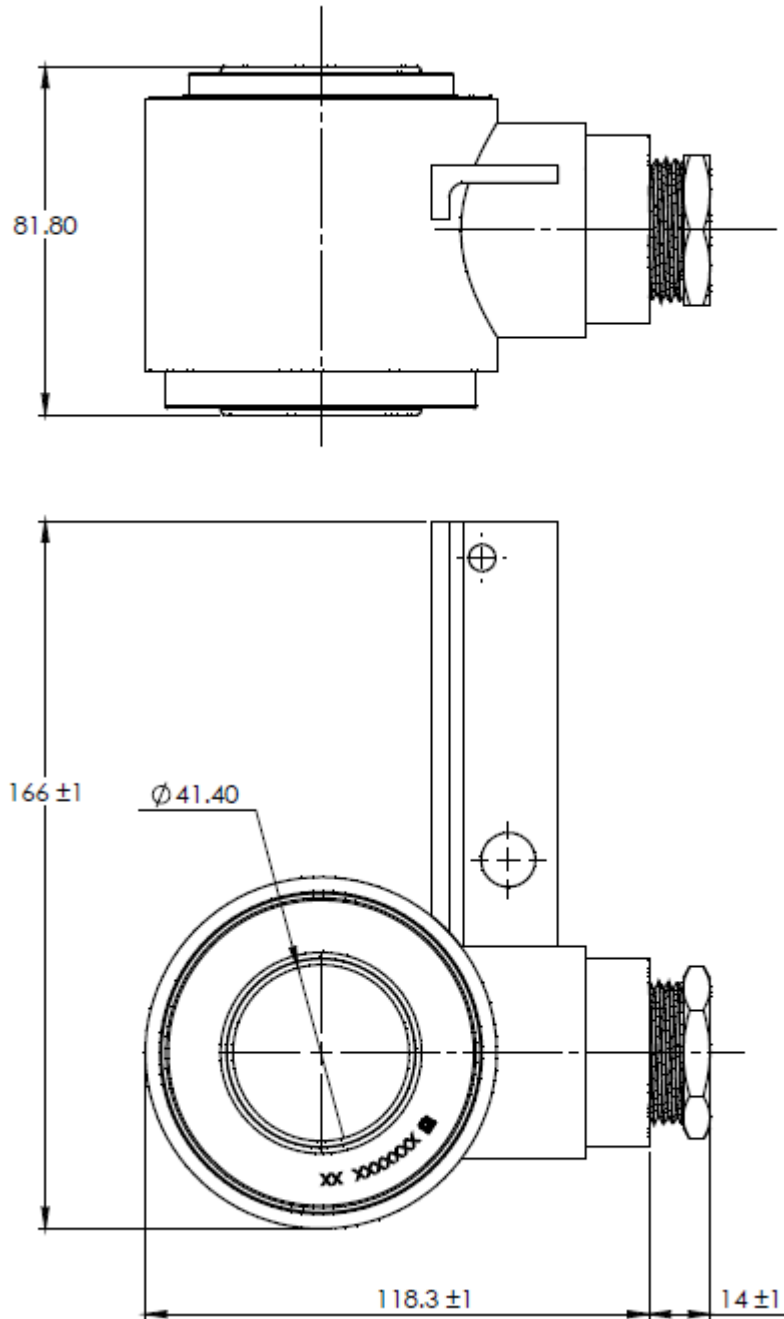
Label

Ordinary Location Markings

- Maximum Operating Temperature: 80°C accordingly.
- Maximum Humidity: 95 % without moisture condensation.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- Maximum Altitude: 2000 Meters

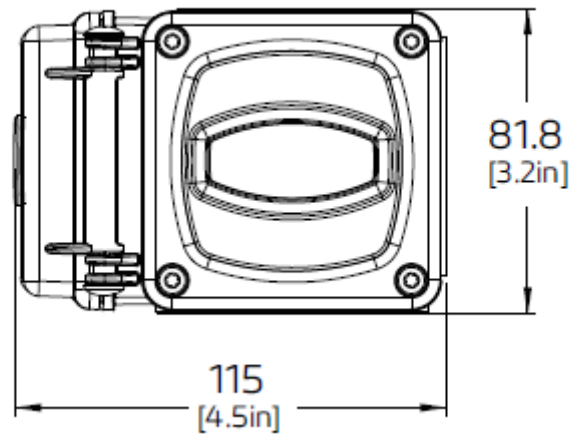
8. Product Dimensions

8.1. Generic Load Cell



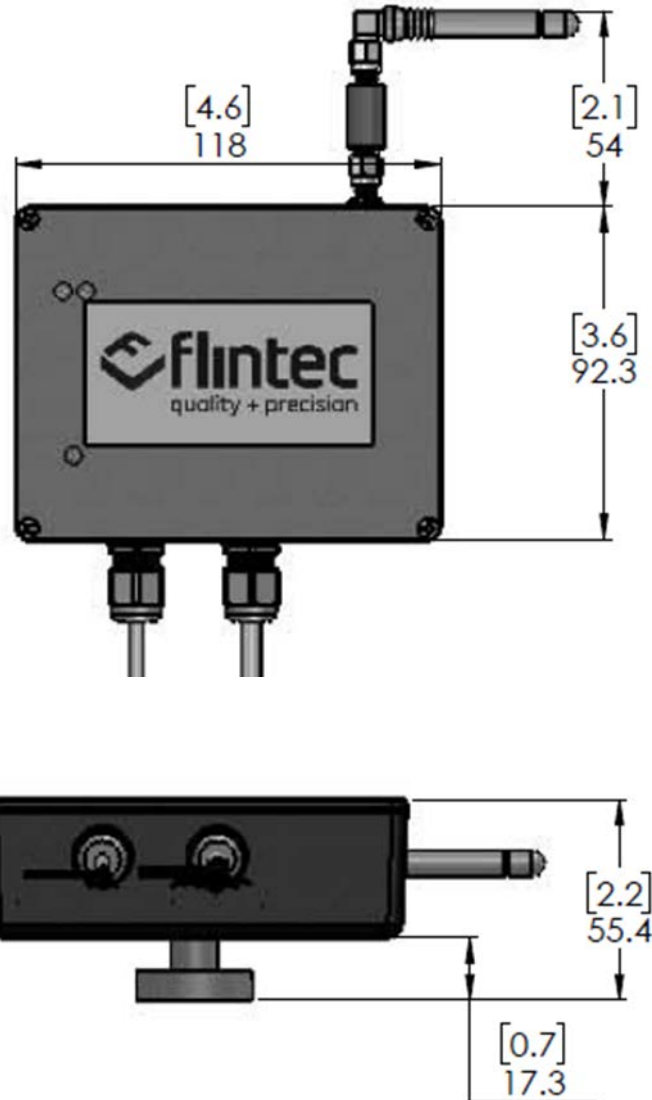
All dimensions are in millimeters [in inches] and are subject to change.

8.2. Remote Unit



All dimensions are in millimeters [in inches] and are subject to change.

8.3. Base Unit



All dimensions are in millimeters [in inches] and are subject to change.

9. Safety Information



9.1. Intended Usage

A maximum operating temperature must not reach temperatures higher than +80°C or lower than -55°C. This condition must be guaranteed permanently in order to be compliant with the intrinsic safety certification. The CCWR radio device must not be placed near heating or cooling sources.

As a radio node forming part of a wireless network, its positioning can greatly affect the propagation of the RF signals. It is always recommended to position the transceiver set free of obstructions with good line-of-sight to the rest of the network. Whenever possible away of electrical noise sources that may cause interferences.

The CCWR may be connected to passive Ex 'nA' load cells for use in Zone 2/Division 2 locations provided the rated voltage of the load cell is 3.9V or greater, and provided the wiring is suitable for the location. If in doubt, consult Flintec or other intrinsic safety experts.



9.2. Lithium Batteries

The CCWR remote unit is powered by a single Lithium battery. Special care must be taken in order to prevent damage. The battery used is a primary Lithium-Thionyl Chloride (Li-SOCl₂) cell connected with an extension cable.

- Do not apply pressure that may deform the battery.
- Do not use the battery if there are signs of swelling - remove immediately.
- Do not directly heat or solder.
- Work areas should be free of sharp objects that could puncture the insulating material.

WARNING – Do not replace battery when an explosive atmosphere is present
Advertisement: Ne remplacez pas la batterie en présence d'une atmosphère explosive



9.3. Maintenance Safety

Product maintenance must be performed by a suitably trained, competent person. Standard safety protocols must be adhered to when working with the CCWR system.

9.4. X-Mark Conditions



The capacitance of exposed isolated metal parts was found to be 53.9 pF.

Static Discharge – It is recommended, fitment and maintenance be carried out in electrostatic clothing, whilst wearing gloves and using insulating objects/tools.

Cleaning should be carried out with a damp cloth. Contamination of non-metallic parts can cause electrostatic charges, especially at low humidity or dry conditions. Special care must be taken to avoid places or areas where airflows occur.

10.FCC Certification Statement



Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device has been designed to operate with the antenna(s) listed below, having a maximum gain of +3.2dBi. Antennas not included in this list or having a gain greater than +3.2dBi are strictly prohibited for use with this device. The required antenna impedance is 50Ω.

Base Unit ID

FCC ID: 2AUSA-CC1WRB

Permitted Antennas

- Linx ANT-2.4-CW-HW, maximum gain of +3.2dBi
- Linx ANT-2.4-CW-HW-T, maximum gain of +3.2dBi
- Linx ANT-2.4-CW-HWR-RPS, maximum gain of +3.2dBi
- Linx ANT-2.4-CW-RCS, maximum gain of -0.2dBi

Remote Unit ID

FCC ID: 2AUSA-CC1WRR

Permitted Antennas

- Yageo ANT-X150P112B24553, maximum gain of +2.2dBi
- Molex 1461870150, maximum gain of +3.0dBi



11. ISED RSS-Gen Notice

"This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device."

"Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage;
2. l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

ISED RSS-Gen Notice

CAN ICES-3/NMB-1



11.1. IC Certification Statement

This radio transmitter (identify the device by certification number, or model number if (Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Base Unit ID

IC: 25535-CC1WRB

Permitted Antennas

- Linx ANT-2.4-CW-HW, maximum gain of +3.2dBi
- Linx ANT-2.4-CW-HW-T, maximum gain of +3.2dBi
- Linx ANT-2.4-CW-HWR-RPS, maximum gain of +3.2dBi
- Linx ANT-2.4-CW-RCS, maximum gain of -0.2dBi

Remote Unit ID

IC: 25535-CC1BRR

Permitted Antennas

- Yageo ANT-X150P112B24553, maximum gain of +2.2dBi
- Molex 1461870150, maximum gain of +3.0dBi

12. RF Exposure Notice

12.1. FCC & ISED Canada RF Exposure Notice



This device is intended to be mounted at a fixed location.

This device is not intended to be operational while carried on a person.

When Used in an Outdoor Location:

To comply with FCC/IC RF exposure limits for general population/uncontrolled exposure, the antenna(s) used for this transmitter must be installed on outdoor permanent structures to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

When Used in an Indoor Location:

To comply with FCC/IC RF exposure limits for general population/uncontrolled exposure, the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

12.2. Avis d'exposition FCC et ISDE Canada RF



Cet appareil est destiné à être monté à un emplacement fixe.

Cet appareil n'est pas destiné à être opérationnel lorsqu'il est transporté par une personne.

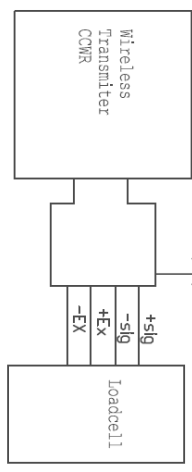
Lorsqu'il est utilisé à l'extérieur:

Pour se conformer aux limites d'exposition RF FCC/IC pour la population générale/exposition non contrôlée, les antennes utilisées pour cet émetteur doivent être installées sur des structures permanentes extérieures pour fournir une distance de séparation d'au moins 20 cm de toutes les personnes et ne doivent pas être co-situé ou fonctionnant en conjonction avec toute autre antenne ou émetteur.

Lorsqu'il est utilisé à l'intérieur:

Pour se conformer aux limites d'exposition RF FCC / IC pour la population générale/exposition non contrôlée, les antennes utilisées pour cet émetteur doivent être installées pour fournir une distance de séparation d'au moins 20 cm de toutes les personnes et ne doivent pas être colocalisées ni fonctionner en conjonction avec toute autre antenne ou émetteur.

13. CCWR Control Drawing 0090977

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APPROVED FOR CLASS I, DIVISION 1, GROUPS A, B, C AND D- HAZARDOUS LOCATIONS.								HAZARDOUS AREA							
NOTE 1. INSTALLATION SHOULD BE IN ACCORDANCE WITH ANSI/ISA RP12.06.01 "INSTALLATION OF INTRINSICALLY SAFE SYSTEM FOR HAZARDOUS (CLASSIFIED) LOCATIONS" AND THE NATIONAL ELECTRICAL CODE (ANSI/NFPA 70) AND THE CANADIAN ELECTRICAL CODE 2. THE CCWR MAY BE CONNECTED TO PASSIVE EX "na" LOAD CELLS FOR USE IN ZONE 2 / DIVISION 2 LOCATIONS PROVIDED THAT THE RATED VOLTAGE OF THE LOAD CELL IS 3.9V OR GREATER, AND PROVIDED THAT THE WIRING IS SUITABLE FOR THE LOCATION. IF IN DOUBT, CONSULT FLINTEC OR OTHER INTRINSIC SAFETY EXPERT 3. Repair is not permitted / la réparation n'est pas autorisée. 4. THE ASSOCIATED APPARATUS MUST BE COMPLIANCE AGENCY APPROVED 5. NO REVISION TO DRAWING WITHOUT PRIOR AGENCY APPROVAL 6. For Cable and Lcable, if the capacitance per foot or the inductance per foot is not known, then the following values shall be used: Cable = 60 pF/ft Lcable = 0.2 µH/ft 7. The model CCWR provides dielectric isolation according to EN 60079-11 clause 6.3.13 between intrinsically safe circuits and earth/enclosure. 8. See User Manual for Markings								The Entity Concept allows Interconnection of intrinsically safe apparatus with associated apparatus when the following is true: $U_0 \leq U_i$ $I_0 \leq I_i$ $C_0 \geq C_i + C_{cable}$ $L_0 \geq L_i + L_{cable}$ $P_0 \leq P_i$							
U ₀ = 3.9 V I ₀ = 0.662 A P ₀ = 0.55 W C ₀ = 461.8 pF L ₀ = 81 µH															
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