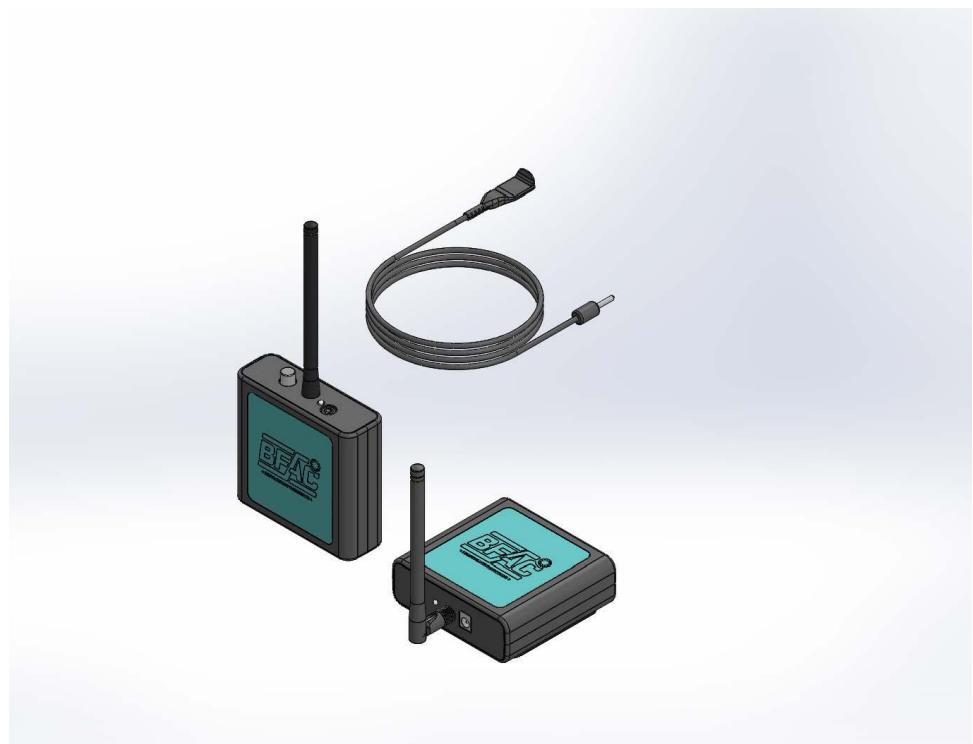


# BFAC

## Bite Force Amp Transmitter



**OWNER'S MANUAL**

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# SECTION 1 – SAFETY PRECAUTIONS - READ BEFORE USING

**⚠ Protect yourself and others from injury — read, follow, and save these important safety precautions and operating instructions.**

## 1-1. Symbol Usage



**DANGER!** – Indicates a hazardous situation which, if not avoided, will result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.

**NOTICE** – Indicates statements not related to personal injury.

**U** Indicates special instructions.



This group of symbols means **Warning!** Watch Out! ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards.

## 1-2. Arc Welding Hazards



The symbols shown below are used throughout this manual to call attention to and identify possible hazards. When you see the symbol, watch out, and follow the related instructions to avoid the hazard. The safety information given below is only a summary of the more complete safety information found in the Safety Standards listed in Section 1-5. Read and follow all Safety Standards.



Only qualified persons should install, operate, maintain, and repair this unit.



During operation, keep everybody, especially children, away.

its Owner's Manual and national, state, and local codes.



### ELECTRIC SHOCK can kill.

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In semiautomatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

- Do not touch live electrical parts.
- Wear dry, hole-free insulating gloves and body protection.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Do not use AC output in damp areas, if movement is confined, or if there is a danger of falling.
- Use AC output ONLY if required for the welding process.
- If AC output is required, use remote output control if present on unit.
- Additional safety precautions are required when any of the following electrically hazardous conditions are present: in damp locations or while wearing wet clothing; on metal structures such as floors, gratings, or scaffolds; when in cramped positions such as sitting, kneeling, or lying; or when there is a high risk of unavoidable or accidental contact with the workpiece or ground. For these conditions, use the following equipment in order presented: 1) a semiautomatic DC constant voltage (wire) welder, 2) a DC manual (stick) welder, or 3) an AC welder with reduced open-circuit voltage. In most situations, use of a DC, constant voltage wire welder is recommended. And, do not work alone!
- Disconnect input power or stop engine before installing or servicing this equipment. Lockout/tagout input power according to OSHA 29 CFR 1910.147 (see Safety Standards).
- Properly install, ground, and operate this equipment according to

- Always verify the supply ground – check and be sure that input power cord ground wire is properly connected to ground terminal in disconnect box or that cord plug is connected to a properly grounded receptacle outlet.
- When making input connections, attach proper grounding conductor first – double-check connections.
- Keep cords dry, free of oil and grease, and protected from hot metal and sparks.
- Frequently inspect input power cord and ground conductor for damage or bare wiring – replace immediately if damaged – bare wiring can kill.
- Turn off all equipment when not in use.
- Do not use worn, damaged, undersized, or repaired cables.
- Do not drape cables over your body.
- If earth grounding of the workpiece is required, ground it directly with a separate cable.
- Do not touch electrode if you are in contact with the work, ground, or another electrode from a different machine.
- Do not touch electrode holders connected to two welding machines at the same time since double open-circuit voltage will be present.
- Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual.
- Wear a safety harness if working above floor level.
- Keep all panels and covers securely in place.
- Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.
- Insulate work clamp when not connected to workpiece to prevent contact with any metal object.
- Do not connect more than one electrode or work cable to any single weld output terminal. Disconnect cable for process not in use.
- Use GFCI protection when operating auxiliary equipment in damp or wet locations.

**SIGNIFICANT DC VOLTAGE exists in  
inverter welding power sources AFTER  
removal of input power.**

- Turn Off inverter, disconnect input power, and discharge input capacitors according to instructions in Maintenance Section before touching any parts.
  - Do not touch hot parts barehanded.
  - Allow cooling period before working on equipment.
- To handle hot parts, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns.



**HOT PARTS can burn.**



## FUMES AND GASES can be hazardous.

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

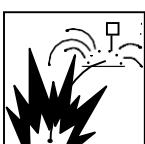
- Keep your head out of the fumes. Do not breathe the fumes.
- If inside, ventilate the area and/or use local forced ventilation at the arc to remove welding fumes and gases. The recommended way to determine adequate ventilation is to sample for the composition and quantity of fumes and gases to which personnel are exposed.
- If ventilation is poor, wear an approved air-supplied respirator.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watchperson nearby. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.



## ARC RAYS can burn eyes and skin.

Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.

- Wear an approved welding helmet fitted with a proper shade of filter lenses to protect your face and eyes from arc rays and sparks when welding or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards).
- Wear approved safety glasses with side shields under your helmet.
- Use protective screens or barriers to protect others from flash, glare and sparks; warn others not to watch the arc.
- Wear body protection made from durable, flame-resistant material (leather, heavy cotton, wool). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.

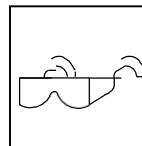


## WELDING can cause fire or explosion.

Welding on closed containers, such as tanks, drums, or pipes, can cause them to blow up. Sparks can fly off from the welding arc. The flying sparks, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode to metal objects can cause sparks, explosion, overheating, or fire. Check and be sure the area is safe before doing any welding.

- Remove all flammables within 35 ft (10.7 m) of the welding arc. If this is not possible, tightly cover them with approved covers.
- Do not weld where flying sparks can strike flammable material.
- Protect yourself and others from flying sparks and hot metal.
- Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
- Watch for fire, and keep a fire extinguisher nearby.
- Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
- Do not weld on containers that have held combustibles, or on closed containers such as tanks, drums, or pipes unless they are properly prepared according to AWS F4.1 and AWS A6.0 (see Safety Standards).
- Do not weld where the atmosphere can contain flammable dust, gas, or liquid vapors (such as gasoline).
- Connect work cable to the work as close to the welding area as practical to prevent welding current from traveling long, possibly unknown paths and causing electric shock, sparks, and fire hazards.
- Do not use welder to thaw frozen pipes.

- Remove stick electrode from holder or cut off welding wire at contact tip when not in use.
- Wear body protection made from durable, flame-resistant material (leather, heavy cotton, wool). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuff less trousers, high shoes, and a cap.
- Remove any combustibles, such as a butane lighter or matches, from your person before doing any welding.
- After completion of work, inspect area to ensure it is free of sparks, glowing embers, and flames.
- Use only correct fuses or circuit breakers. Do not oversize or bypass them.
- Follow requirements in OSHA 1910.252 (a) (2) (iv) and NFPA 51B for hot work and have a fire watcher and extinguisher nearby.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.



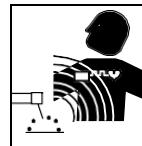
## FLYING METAL or DIRT can injure eyes.

- Welding, chipping, wire brushing, and grinding cause sparks and flying metal. As welds cool, they can throw off slag.
- Wear approved safety glasses with side shields even under your welding helmet.



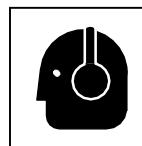
## BUILDUP OF GAS can injure or kill.

- Shut off compressed gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.



## ELECTRIC AND MAGNETIC FIELDS (EMF) can affect Implanted Medical Devices.

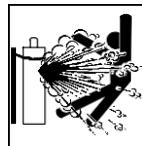
- Wearers of Pacemakers and other Implanted Medical Devices should keep away.
- Implanted Medical Device wearers should consult their doctor and the device manufacturer before going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations.



## NOISE can damage hearing.

Noise from some processes or equipment can damage hearing.

- Wear approved ear protection if noise level is high.



## CYLINDERS can explode if damaged.

Compressed gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks, and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.
- Keep cylinders away from any welding or other electrical circuits.
- Never drape a welding torch over a gas cylinder.
- Never allow a welding electrode to touch any cylinder.
- Never weld on a pressurized cylinder – explosion will result.
- Use only correct compressed gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
- Turn face away from valve outlet when opening cylinder valve. Do not stand in front of or behind the regulator when opening the valve.
- Keep protective cap in place over valve except when cylinder is in use or connected for use.
- Use the right equipment, correct procedures, and sufficient number of persons to lift and move cylinders.
- Read and follow instructions on compressed gas cylinders, associated equipment, and Compressed Gas Association (CGA) publication P-1 listed in Safety Standards.

## 1-3. Additional Symbols For Installation, Operation, And Maintenance



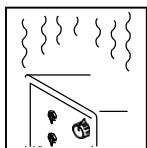
### FIRE OR EXPLOSION hazard.

- Do not install or place unit on, over, or near combustible surfaces.
- Do not install unit near flammables.
- Do not overload building wiring – be sure power supply system is properly sized, rated, and protected to handle this unit.



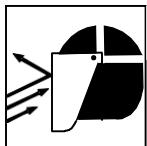
### FALLING EQUIPMENT can injure.

- Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories.
- Use equipment of adequate capacity to lift and support unit.
- If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.
- Keep equipment (cables and cords) away from moving vehicles when working from an aerial location.
- Follow the guidelines in the Applications Manual for the Revised NIOSH Lifting Equation (Publication No. 94-110) when manually lifting heavy parts or equipment.



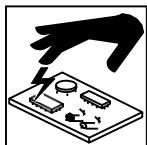
### OVERUSE can cause OVERHEATING

- Allow cooling period; follow rated duty cycle.
- Reduce current or reduce duty cycle before starting to weld again.
- Do not block or filter airflow to unit.



### FLYING SPARKS can injure.

- Wear a face shield to protect eyes and face.
- Shape tungsten electrode only on grinder with proper guards in a safe location wearing proper face, hand, and body protection.
- Sparks can cause fires — keep flammables away.



### STATIC (ESD) can damage PC boards.

- Put on grounded wrist strap BEFORE handling boards or parts.
- Use proper static-proof bags and boxes to store, move, or ship PC boards.



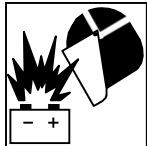
### MOVING PARTS can injure.

- Keep away from moving parts.
- Keep away from pinch points such as drive rolls.



### WELDING WIRE can injure.

- Do not press gun trigger until instructed to do so.
- Do not point gun toward any part of the body, other people, or any metal when threading welding wire.



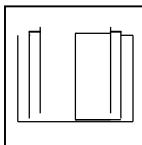
### BATTERY EXPLOSION can injure.

- Do not use welder to charge batteries or jump start vehicles unless it has a battery charging feature designed for this purpose.



### MOVING PARTS can injure.

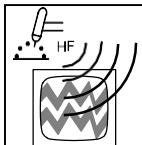
- Keep away from moving parts such as fans.
- Keep all doors, panels,
- Have only qualified persons remove doors, panels, covers, or guards for maintenance and troubleshooting as necessary.
- Reinstall doors, panels, covers, or guards when maintenance is finished and before reconnecting input power.



### READ INSTRUCTIONS.

- Read and follow all labels and the Owner's Manual carefully before installing, operating, or servicing unit. Read the safety information at the beginning of the manual and in each section.

- Use only genuine replacement parts from the manufacturer.
- Perform installation, maintenance, and service according to the Owner's Manuals, industry standards, and national, state, and local codes.



### H.F. RADIATION can cause interference.

- High-frequency (H.F.) can interfere with radio navigation, safety services, computers, and communications equipment.
- Have only qualified persons familiar with electronic equipment perform this installation.
- The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation.
- If notified by the FCC about interference, stop using the equipment at once.
- Have the installation regularly checked and maintained.
- Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference.



### ARC WELDING can cause interference.

- Electromagnetic energy can interfere with sensitive electronic equipment such as computers and computer-driven equipment such as robots.
- Be sure all equipment in the welding area is electromagnetically compatible.
- To reduce possible interference, keep weld cables as short as possible, close together, and down low, such as on the floor.
- Locate welding operation 100 meters from any sensitive electronic equipment.
- Be sure this welding machine is installed and grounded according to this manual.
- If interference still occurs, the user must take extra measures such as moving the welding machine, using shielded cables, using line filters, or shielding the work area.

## 1-4. California Proposition 65 Warnings

**⚠** Welding or cutting equipment produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

**⚠** This product contains chemicals, including lead, known to the state of California to cause cancer, birth defects, or other reproductive harm. Wash hands after use.

## 1-5. Principal Safety Standards

*Safety in Welding, Cutting, and Allied Processes*, ANSI Standard Z49.1, is available as a free download from the American Welding Society at <http://www.aws.org> or purchased from Global Engineering Documents (phone: 1-877-413-5184, website: [www.global.ihs.com](http://www.global.ihs.com)).

*Safe Practices for the Preparation of Containers and Piping for Welding and Cutting*, American Welding Society Standard AWS F4.1, from Global Engineering Documents (phone: 1-877-413-5184, website: [www.global.ihs.com](http://www.global.ihs.com)).

*Safe Practices for Welding and Cutting Containers that have Held Combustibles*, American Welding Society Standard AWS A6.0, from Global Engineering Documents (phone: 1-877-413-5184, website: [www.global.ihs.com](http://www.global.ihs.com)).

*National Electrical Code*, NFPA Standard 70, from National Fire Protection Association, Quincy, MA 02269 (phone: 1-800-344-3555, website: [www.nfpa.org](http://www.nfpa.org) and [www.sparky.org](http://www.sparky.org)).

*Safe Handling of Compressed Gases in Cylinders*, CGA Pamphlet P-1, from Compressed Gas Association, 14501 George Carter Way, Suite 103, Chantilly, VA 20151 (phone: 703-788-2700, website: [www.cga-net.com](http://www.cga-net.com)).

*Safety in Welding, Cutting, and Allied Processes*, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5NS (phone: 800-463-6727, website: [www.csagroup.org](http://www.csagroup.org)).

*Safe Practice For Occupational And Educational Eye And Face Protection*, ANSI Standard Z87.1, from American National Standards Institute, 25 West 43rd Street, New York, NY 10036 (phone: 212-642-4900, web-site: [www.ansi.org](http://www.ansi.org)).

*Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*, NFPA Standard 51B, from National Fire Protection Association, Quincy, MA 02269 (phone: 1-800-344-3555, website: [www.nfpa.org](http://www.nfpa.org)).

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910, Subpart Q, and Part 1926, Subpart J, from U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 (phone: 1-866-512-1800) (there are 10 OSHA Regional Offices—phone for Region 5, Chicago, is 312-353-2220, website: [www.osha.gov](http://www.osha.gov)).

*Applications Manual for the Revised NIOSH Lifting Equation*, The National Institute for Occupational Safety and Health (NIOSH), 1600 Clifton Rd, Atlanta, GA 30329-4027 (phone: 1-800-232-4636, website: [www.cdc.gov/NIOSH](http://www.cdc.gov/NIOSH)).

## 1-6. EMF Information

Electric current flowing through any conductor causes localized electric and magnetic fields (EMF). The current from arc welding (and allied processes including spot welding, gouging, plasma arc cutting, and induction heating operations) creates an EMF field around the welding circuit. EMF fields can interfere with some medical implants, e.g. pacemakers. Protective measures for persons wearing medical implants have to be taken. For example, restrict access for passers-by or conduct individual risk assessment for welders. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

1. Keep cables close together by twisting or taping them or using a cable cover.
2. Do not place your body between welding cables. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around your body.

4. Keep head and trunk as far away from the equipment in the welding circuit as possible.
5. Connect work clamp to workpiece as close to the weld as possible.
6. Do not work next to, sit or lean on the welding power source.
7. Do not weld whilst carrying the welding power source or wire feeder.

### About Implanted Medical Devices:

Implanted Medical Device wearers should consult their doctor and the device manufacturer before performing or going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations. If cleared by your doctor, then following the above procedures is recommended.

# SECTION 2 – BATTERY SAFETY PRECAUTIONS - READ BEFORE USING

Small Batt \_2015-09



Protect yourself and others from injury — read, follow, and save these important safety precautions and operating instructions.

## 2-1. Symbol Usage



**DANGER!** – Indicates a hazardous situation which, if not avoided, will result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.

**NOTICE** – Indicates statements not related to personal injury.

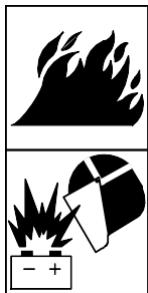


This group of symbols means **Warning!** Watch Out! ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards.

## 2-2. Hazards



Only qualified persons should install, operate, maintain, and repair this unit.



### FIRE OR BATTERY EXPLOSION hazard.

- During operation keep everyone, especially children, away.
- Keep Battery Dry
- Do not use or store the battery in extremely hot or humid conditions. See storage conditions.
- Examine the battery before first use. Return battery to the manufacturer if battery is damaged, dirty, or emits an unusual odor.
- Keep battery away from fire, out of direct sunlight, and away from other sources of heat.
- Do not open, puncture, repair, disassemble, or modify the battery.
- Only replace power supply cords with approved BFAC supply cord. The use of an inadequately rated cord can cause harm to the equipment and a safety hazard.
- USE ONLY WITH BFAC APPROVED EQUIPMENT AND/OR ACCESSORIES.



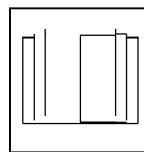
### BIO-HAZARD

- REMOTE MOUTH TRANSMITTER is designed and intended for SINGLE PERSON USE ONLY. Sharing mouth transmitters with other people can cause cross contamination.
- Protective sleeves should always be used to minimize and protect from contamination. Always replace the protective sleeve if you have placed the transmitter where surfaces are not clean and sanitary.
- DO NOT place mouth transmitters on any surfaces that are not clean.



### BATTERY ACID can BURN SKIN and EYES.

- Replace damaged battery.
- Do not touch materials from inside a damaged battery.
- Flush eyes and skin immediately with water.



### READ INSTRUCTIONS.

- Read and follow all labels and the Owner's Manual carefully before using the battery or battery charger. Read the safety information at the beginning of the manual and in each section.
- Dispose of battery according to local, state, and federal requirements. Do not dispose of battery in fire or water.
- Contact the equipment manufacturer if you have any questions about the battery.
- To be used ONLY by Skilled personnel to avoid choking hazard and other hazards.

## 2-3. Principal Safety Standards

*Safety in Welding, Cutting, and Allied Processes*, ANSI Standard Z49.1, is available as a free download from the American Welding Society at <http://www.aws.org> or purchased from Global Engineering Documents (phone: 1-877-413-5184, website: [www.global.ihs.com](http://www.global.ihs.com)).

*Safe Practice For Occupational And Educational Eye And Face Protection*, ANSI Standard Z87.1, from American National Standards Institute, 25 West 43rd Street, New York, NY 10036 (phone: 212-642-4900, website: [www.ansi.org](http://www.ansi.org)).

# SECTION 3 – INSTALLATION AND OPERATION

## 3-1. Regulatory Approval

### FCC/ISED COMPLIANCE STATEMENT:

This device complies with part 15 of the FCC rules and with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

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

L'émetteur/recepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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.

## 3-2. Specifications

Specification	Transmitter	Receiver
Power Supply	9 Volt Battery	90 - 264 Vac, 47- 63 Hz, 0.2A
Intended Environment of Use	Indoor or Outdoor – No precipitation, pollution degree 3	Indoor or Outdoor - No precipitation, pollution degree 3
Humidity	0 – 97%	0 – 97%
Temperature	32°F to +104°F 0°C to +40°C	32°F to +104°F 0°C to +40°C
Radio Frequency	911.5 – 919.5 MHz	911.5 – 919.5 MHz
RF Power	12dBm	-16dBm
Antenna	External	External
Dimensions (with antenna)	3.75" W x 4.25" L x 1.25" D	3.75" W x 4.25" L x 1.25" D
Weight	7.8 oz (with battery)	6.3 oz
FCC ID	2A2WP-20030	2A2WP-20031
ISED Certification Number	27702-20030	27702-20031

\*Not all applications are suitable for wireless communication. Rated range is approximate, and may vary depending on factors such as obstructions, frequency interference, transmission technology, and weather. The figures listed assumes ideal conditions are present.

Manufactured for Fan Innovations, LLC – Hixson, TN USA

This radio transmitter (27702-20030 & 27702-20031) has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Cet émetteur radio (27702-20030 et 27702-20031) a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antennes énumérés ci-dessous, avec le gain maximal admissible indiqué. Les types d'antenne non inclus dans cette liste qui ont un gain supérieur au gain maximum indiqué pour tout type répertorié sont strictement interdits pour une utilisation avec cet appareil.

Antenna Type	Max permissible gain	Required Impedance
Linx Technology External Dipole		
ANT-916-CW-HWR-SMA	1.2dBi	50 Ohms
Linx Technology External Dipole		
ANT-916-CW-RH-SMA	1.2dBi	50 Ohms
ANT-916-CW-RAH		

### 3-3. Introduction

The wireless system consists of a transmitter and a receiver. The bite force amp transmitter and receiver are capable of remotely turning on the output and adjusting the output level of a welding power source.

- Each transmitter has a unique address
- The receiver stores the address in permanent memory
- The receiver can only receive information from a single transmitter
- A transmitter can only communicate with a single receiver.
- The receiver can learn a new bite force transmitter address (see sections 5-12 or 5-13 in this manual for programming instructions).

*\*Programming is only required for devices purchased separately. The transmitter and receiver are programmed when purchased as a system/ pair.*

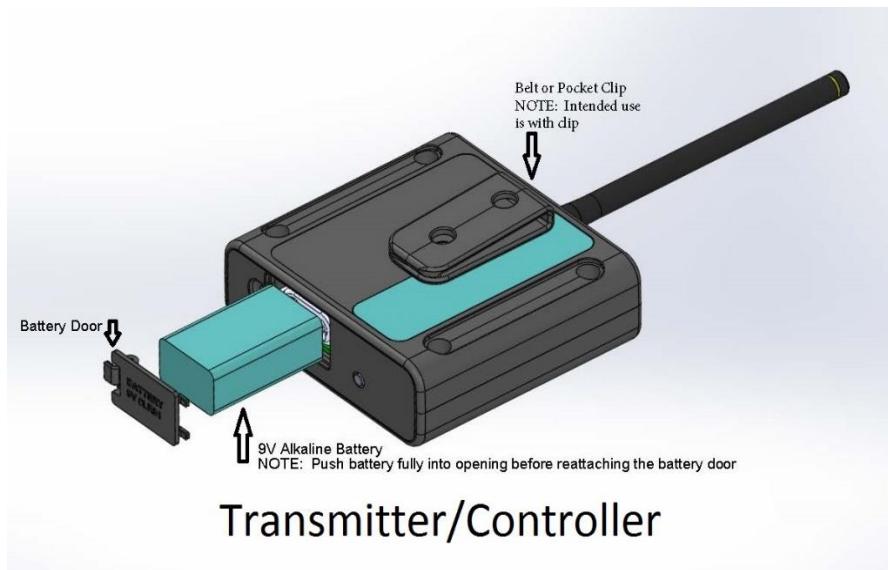
#### Receiver LED:

- LED blinks blue some number of times when first turned On. The number of blinks corresponds to the RF channel the receiver is communicating and will be from 1 blink (indicating RF channel 1) to 8 blinks (indicating RF channel 8)
- LED blinks green when it is successfully communicating with its paired transmitter
- LED is continuously red when it is not communicating with its paired transmitter
- Other LED colors are used during the pairing process. Refer to the PAIRING section in this manual.

#### Transmitter LED:

- LED blinks blue some number of times when first turned On. The number of blinks corresponds to the RF channel the transmitter is communicating and will be from 1 blink (indicating RF channel 1) to 8 blinks (indicating RF channel 8)
- LED blinks green when it is turned On and is in the normal running state
- LED blinks red when it is turned On and is in the normal running state but the battery needs to be changed
- LED is continuously red when the battery becomes very low. In this state, the transmitter is no longer operating.
- Other LED colors are used during the pairing process. Refer to the PAIRING section in this manual.

### 3-4. Battery Installation



### 3-5. Connecting Receiver To Welder



**Unexpected weld output can cause electrical shock. Wireless remote control can turn weld output on from distant locations. Disconnect receiver from remote receptacle and remove battery from remote control before servicing equipment.**

Turn Off welding power source.

Insert receiver into matching 5, 6 or 14 pin socket receptacle on welding power source.

Turn welding power source on.

Plug in approved MAINS power supply. Use of any power supply other than the approved one may result in damage to the system or safety hazard.

#### Receiver LED:

- LED blinks blue some number of times when first turned On. The number of blinks corresponds to the RF channel the receiver is communicating and will be from 1 blink (indicating RF channel 1) to 8 blinks (indicating RF channel 8)
- LED blinks green when it is successfully communicating with its paired transmitter
- LED is continuously red when it is not communicating with its paired transmitter
- Other LED colors are used during the pairing process. Refer to the PAIRING section in this manual.



**ONLY use approved cable to connect your TIG welder to the receiver. Cable must be designed and manufactured by FAN Innovations, LLC.**

Part Number	Type of TIG Welder Connection
20048	Miller 14 pin plug
20049	Lincoln 6 pin plug
20065	CK Worldwide 5 pin plug

### 3-6      Remote Mouth Control Operation

Remote mouth transmitter is intended for SINGLE PERSON use ONLY! Use with protective sleeve to ensure minimization of bio-hazard potential.

- Plug transmitter into the Transmitter where indicated.
- Place protective sleeve over the mouth piece. Insert mouth piece and sleeve into and on one side of your mouth. It should be placed where you can comfortable bite onto it for controlling the output power.
- Turn on the Transmitter
- Make sure that the welder and receiver on.
- When you are ready to weld, bite onto the mouthpiece. The intensity of the bite determines the percentage of power output from the welder.



### 3-7. Pairing

The transmitter and receiver are programmed at the factory such that the transmitter will only communicate with its paired receiver and vice-versa. Under normal circumstances, the user should never need to perform the pairing sequence described in this section. However, if either the transmitter or receiver need to be replaced with a different unit, then the transmitter/receiver pair need to be reprogrammed. Additionally, if interference has been experienced resulting in erratic or intermittent operation of the units then the units may need to be reprogrammed to communicate on a different RF channel (1 of 8 different RF channels are available).

Perform the following steps to pair a transmitter and receiver pair:

1. Place the transmitter withing 3 feet of the receiver
2. Turn the receiver Off and then back On by unplugging then plugging in the power chord from the wall outlet
3. Turn the transmitter Off and then back On using the power button
4. Press and hold the PAIR button on the receiver for about 8 seconds until the LED turns White and then release the button
5. Press and hold the PAIR button on the transmitter for about 8 seconds until the LED turns White and then release the button

At this point, the 2 units will automatically pair with each other and if successful, the LEDs on both of the units will be blinking Purple to indicate pairing is successful.

**Note:** The Purple LEDs on both units should be repeatedly blinking one blink to indicate the units are paired and communicating on RF Channel 1. However, the units are capable of communicating on 1 of 8 available RF channels. It is recommended to use the default RF Channel 1 unless there are other BFAC units are used in close proximity of each other or if communication issues have been previously observed in the operation of the units. If this is the case, it is recommended to change to an RF Channel other than RF Channel 1.

6. The units are now paired with each other on RF Channel 1. If a different RF Channel is desired, then follow the steps below. If RF Channel 1 is desired then continue to the "Testing the paired units" section below.
7. Press and release the PAIR button on the receiver to advance the selected RF Channel to the next RF Channel (RF Channel 1 to RF Channel 8)
8. The Purple LEDs on both the receiver and the transmitter will indicate which RF Channel is currently selected by the number of blinks (one blink for RF Channel 1, two blinks for RF Channel 2, etc.)
9. Continue pressing and releasing the PAIR button on the receiver until the Purple LED on both units indicate that the desired RF Channel is selected
10. Once the desired RF Channel is selected, continue with step 11 below

#### **Testing the paired units:**

1. Turn the receiver off by unplugging the power chord from the wall outlet
2. Turn the transmitter Off and then back On using the power button
3. Observe that the transmitter LED blinks Blue some number of times which indicates the RF Channel which the transmitter is communicating
4. Observe that the transmitter LED then blinks Green about once a second
5. Turn the receiver on by plugging the power chord into the wall outlet
6. Observe that the receiver LED blinks Blue some number of time which indicates the RF Channel which the receiver is communicating
7. Observe that the receiver LED then blinks Green a few times a second to indicate it is successfully communicating with the transmitter
8. Turn the transmitter Off using the power button
9. Observe that the receiver LED is now Red to indicate it is no longer communicating with the transmitter
10. Turn the transmitter On using the power button
11. Observe that the receiver LED then blinks Green a few times a second to indicate it is successfully communicating with the transmitter
12. Turn the transmitter Off using the power button
13. If the either unit does not operate as indicated in the steps above, then refer to the Troubleshooting section of this manual

## SECTION 4 – TROUBLESHOOTING

Issue	Description	Possible Solution
No LEDs are illuminated on the receiver	Receiver is not receiving power	<ul style="list-style-type: none"><li>• Ensure receiver power adapter is firmly plugged into a working 120V AC outlet</li><li>• Ensure cable from power adapter is firmly plugged into the power connector on the receiver</li></ul>
Welder never turns On when the BFAC mouthpiece is firmly pressed	Even though the mouthpiece is being firmly pressed, the welder output never turns On	<ul style="list-style-type: none"><li>• Ensure welder output cable for the receiver is firmly connected to both the welder and the receiver</li><li>• Ensure the receiver LED is blinking green, otherwise refer to "Red LED is illuminated on the receiver" below</li><li>• Ensure the transmitter is turned On (green LED on transmitter should be blinking)</li><li>• Ensure the mouthpiece is firmly plugged into the transmitter</li><li>• Ensure the welder is properly configured and turned On</li><li>• Mouthpiece is worn and needs to be replaced.</li></ul>
Red LED is illuminated on the receiver	There is a problem with the communication between the transmitter and the receiver most likely due to RF interference or RF distance	<ul style="list-style-type: none"><li>• Ensure the transmitter is turned On and there is a fresh battery in the transmitter (transmitter LED should be blinking green if the battery is good)</li><li>• Move the transmitter closer to the receiver</li><li>• Pair the receiver/transmitter pair on a different RF channel (refer to PAIRING section)</li><li>• Mouthpiece is worn and needs to be replaced.</li></ul>
Welder intermittently turns Off and On while the mouthpiece is firmly pressed	LED on the receiver intermittently changes from green to red	<ul style="list-style-type: none"><li>• Ensure the transmitter is turned On and there is a fresh battery in the transmitter (transmitter LED should be blinking green if the battery is good)</li><li>• Move the transmitter closer to the receiver</li><li>• Pair the receiver/transmitter pair on a different RF channel (refer to PAIRING section)</li><li>• Mouthpiece is worn and needs to be replaced.</li></ul>
LED on the receiver intermittently changes from green to red		
LED on the transmitter is blinking red	Battery on the transmitter is low and needs to be changed	<ul style="list-style-type: none"><li>• Replace the battery in the transmitter with a new battery</li></ul>
LED on the transmitter is continuous (not blinking) red	Battery on the transmitter is dead and needs to be changed	<ul style="list-style-type: none"><li>• Replace the battery in the transmitter with a new battery</li></ul>

**For Technical Assistance, please contact Fan Innovations, LLC –Hixson, TN USA**

**System is not intended to be repaired in the field. The replaceable items are the 9V battery, the mouthpiece/cord and the protective sleeves.**

### **IMPORTANT NOTE:**

*Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment*

## SECTION 7 – WARRANTY

FAN Innovations, Inc. warrants products manufactured by FAN Innovations, Inc. to be constructed of new materials and to be free of defects in workmanship. The warranty is effective for 1 year from time of purchase. This expressed warranty is in lieu of any and all other warranties as to the products, whether expressed or implied, and FAN Innovations hereby disclaims any and all other warranties regarding materials and/or workmanship of the products. By purchasing the products, Purchaser hereby accepts the above warranty as the exclusive warranty for the products. This warranty shall will be voided if customer either fails to use the products in conformity with the stated specifications provided by FAN Innovations or misuses or abuses the products.

In the event of breach of warranty in products sold hereunder, customer must promptly notify FAN Innovations of same and must preserve the nonconforming products for inspection by FAN Innovations. If FAN Innovations confirms that the products are nonconforming, then customer's sole and exclusive remedy will be for FAN Innovations., at its option, (1) to repair the nonconforming products; or (2) to replace the nonconforming products; or (3) to provide customer with payment of or credit for the purchase price (less reasonable depreciation based upon actual use) upon return of the goods at customer's risk and expense. FAN Innovations' option of repair or replacement will be F.O.B., Factory at Chattanooga, TN. Therefore, no compensation or reimbursement for transportation costs of any kind will be allowed.

**EXCEPT FOR THE EXPRESS WARRANTY PROVIDED HEREIN, FAN Innovations HEREBY EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, GUARANTIES AND/OR REPRESENTATIONS, EXPRESS OR IMPLIED, AND WHICH MIGHT ARISE BY IMPLICATION, OPERATION OF LAW. CUSTOM OF TRADE OR COURSE OF DEALING, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR FITNESS FOR PARTICULAR PURPOSE, WITH RESPECT OT ANY AND ALL EQUIPMENT AND/OR PRODUCTS FURNISHED BY FAN Innovations.**

**TO THE EXTENT PERMITTED BY LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES OF CUSTOMER IN RELATION TO EQUIPMENT AND/OR PRODUCTS PURCHASED HEREUNDER.**

**THE LIABILITY OF FAN Innovations HEREUNDER IS, IN ALL RESPECTS FOR ALL CLAIMS, LIMITED TO THE PRICE PAID BY CUSTOMER FOR THE PRODUCTS. IN NO EVENT SHALL FAN Innovations BE LIEABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGE (INCLUDING LOSS OF PROFIT), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY.**

Purchaser acknowledges that the exclusive warranty provided above and the limitations on remedies hereunder and the liability of FAN Innovations each are a material consideration for FAN Innovations being willing to sell the products at the pricing provided.

**FAN Innovations, Inc. PRODUCTS ARE INTENDED FOR PURCHASE AND USE BY COMMERCIAL/INDUSTRIAL USERS AND PERSONS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING EQUIPMENT.**