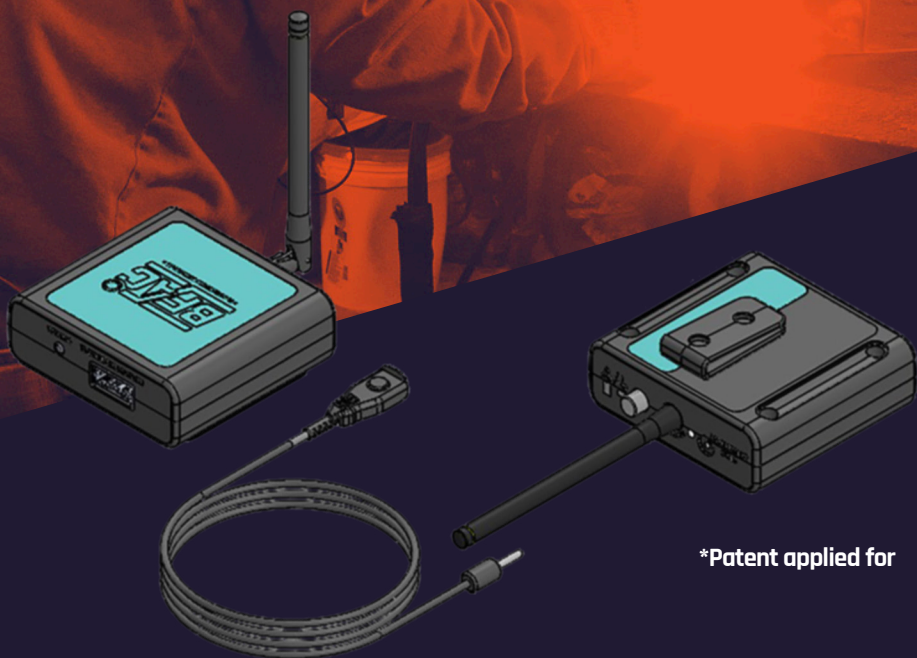




* BITE FORCE AMP CONTROLLER *



*Patent applied for

OWNER'S MANUAL

<https://bfacontroller.com>


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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.**

FCC 15.21 statement: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

 **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.

1-1. 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. Do not use 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.**
- Do not connect (short circuit) battery terminals to each other. Do not allow tools, conductive materials, or other objects to touch both battery terminals at the same time.
- Do not weld on battery or fasten any objects to battery.
- Do not heat battery in a microwave oven or any other heating device.
- Keep battery away from sources of high voltage.
- Do not expose battery to static electricity.
- Do not use or mix battery with damaged or worn out batteries, or other types of batteries.



Bio-Hazard

- REMOTE MOUTH CONTROLLER is designed and intended for SINGLE PERSON USE ONLY. Sharing mouth controllers 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 controller where surfaces are not clean and sanitary.
- **DO NOT** place mouth controllers 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. 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 BFAC system or its components.
- To be used **ONLY** by Skilled personnel to avoid choking hazard and other hazards.
- Use only genuine replacement parts from the manufacturer.



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 accessory is installed according to this manual and that all welder's it is used on are properly grounded per the Welder's Manufacturing Recommendations.
- 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.

1-2. 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.*

1-3. 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).

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).

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).

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

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 5N5 (phone: 800-463-6727, website: 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, website: 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).

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).

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).

1-4. EMF Information

Electric current flowing through any conductor causes localized electric and magnetic fields (EMF). The current from TIG 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 - INSTALLATION AND OPERATION

2-1. 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 RSS9s0. 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 present 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, mme si le brouillage est susceptible d'en compromettre le fonctionnement.

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	1.2dB	50 Ohms
Linx Technology External Dipole ANT-916-CW-RH-SMA	1.2dB	50 Ohms

2-2. Specifications

Specification	Transmitter	Receiver
Power Supply Intended	9 Volt Battery	90 - 264 Vac, 47- 63 Hz, 0.2A
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
Canada IC	27702-20030	27702-20031

Manufactured for FAN Innovations, LLC - Hixson, TN USA

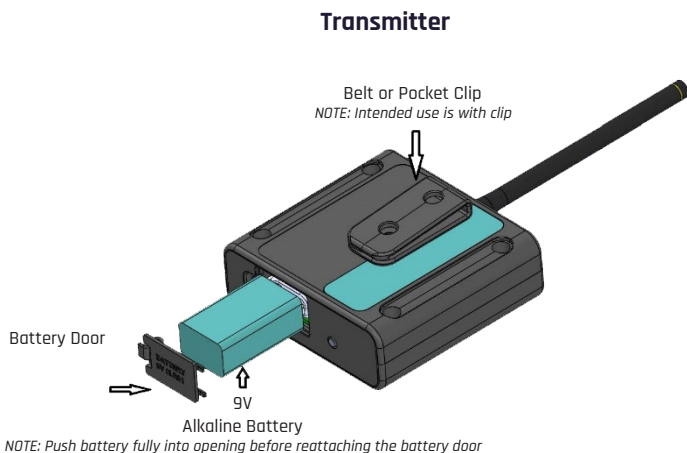
2-3. Introduction

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

- The Receiver and Transmitter operate as a pair such that a Receiver will only receive information from a single Transmitter.
- The Receiver and Transmitter can communicate on one of eight different RF frequencies.
- The Receiver and Transmitter are programmed at the factory to be paired with each other and to communicate on RF channel 1.
- If a Receiver needs to be paired with a different Transmitter, then refer to section 2-7 in this manual for Pairing instructions.
- If RF communication is intermittent, the RF channel of a Receiver/Transmitter pair can be changed (see section 2-7 in this manual for Pairing instructions).

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

2-4. Battery Installation



2-5. 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 transmitter before servicing equipment.

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

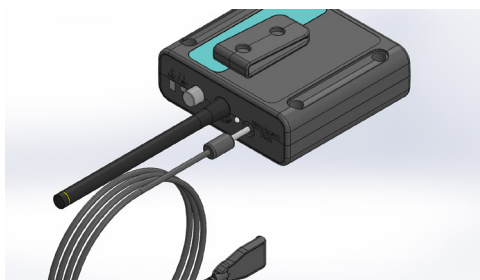


ONLY use approved cable to connect your TIG welder to the receiver. Cable must be designed and manufactured by FAN Innovations, LLC.

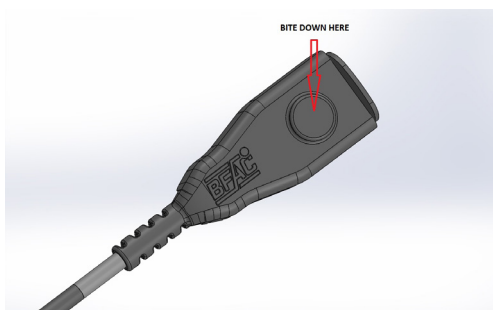
Part Number	Type of TIG Welder Connection
20048	Miller 14 pin plug
20049	Lincoln 6 pin plug
20065	CK Worldwide 5 pin plug

2-6. Remote Mouth Control Operation

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



- Plug mouth controller into the Transmitter where indicated. This fit is intended to be tight so that there is no inadvertent disconnection during use. The connection should fit flush with the unit (no gap).
- Turn on the Transmitter
- Place protective sleeve over the mouth piece. Insert mouth piece and sleeve into and on one side of your mouth. (Please see pictures below) It should be placed where you can comfortably bite onto it for controlling the output power.
- Make sure that the welder, transmitter, and receiver are 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. (The harder you bite, the more the output will be)



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 yellow 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.

2-7. 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 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 either unit does not operate as indicated in the steps above, then refer to the Troubleshooting section of this manual

SECTION 3 - TROUBLESHOOTING

Issue	Description	Possible Solution
No LEDs are illuminated on the receiver	Receiver is not receiving power	<ul style="list-style-type: none"> • Ensure receiver power adapter is firmly plugged into a working 120V AC outlet • Ensure cable from power adapter is firmly plugged into the power connector on the receiver
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"> • Ensure welder output cable for the receiver is firmly connected to both the welder and the receiver • Ensure the receiver LED is blinking green, otherwise refer to "Red LED is illuminated on the receiver" below • Ensure the transmitter is turned On (green LED on transmitter should be blinking) • Ensure the mouthpiece is firmly plugged into the transmitter (plug should be flush with unit) • Ensure the welder is properly configured and turned On • Mouthpiece is worn and needs to be replaced.
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"> • 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)
Welder intermittently turns Off and On while the mouthpiece is firmly pressed		<ul style="list-style-type: none"> • Move the transmitter closer to the receiver
LED on the receiver intermittently changes from green to yellow		<ul style="list-style-type: none"> • Pair the receiver/transmitter pair on a different RF channel (refer to PAIRING section) • Mouthpiece is worn and needs to be replaced.
LED on the transmitter is blinking red	Battery on the transmitter is low and needs to be changed	<ul style="list-style-type: none"> • Replace the battery in the transmitter with a new battery
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"> • Replace the battery in the transmitter with a new battery

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.

SECTION 4 - 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 on the system and 90 days for the mouthpiece 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 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.



* BITE FORCE AMP CONTROLLER *

Hixson, TN USA

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

<https://bfacontroller.com>