

USER MANUAL

EMEIC1-005

ALERTWERKS 4-20mAMP CONVERTER

24/7 TECHNICAL SUPPORT AT 1.877.877.2269 OR VISIT BLACKBOX.COM



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CHAPTER 1: INTRODUCTION AND SPECIFICATIONS

1.1 INTRODUCTION

The AlertWerks 4-20 mA signal converter is used to integrate the gateway with a 4-20 mA transmitter. 4-20 mA technology is used to communicate analog signals over long distances where electrical interference is a problem. This solution is often used in the process control industry to collect the analog values from a wide array of remote sensors. Current signals are much less susceptible to noise than voltage signals. A voltage signal can be converted to current and then broadcast over a long distance before it is converted back to voltage and read by the unit.

4-20 mA transmitters are common in the industry for use with high quality sensors. With the AlertWerks 4-20 mA converter, these sensors can now be integrated into the gateway, enhancing their value with the addition of graphing, web interface, email interface, thresholds, and limits.

The accuracy of our 4-20mA converters is 2%.

The resolution of our 4-20mA converters is 0.1mA.

You can use these figures in conjunction with your sensor's accuracy to find the overall precision of your readings. You can also calibrate the AlertWerks 4-20mA converter.

One popular OID for the 4-20 mA Converters is the current reading. For a 4-20 mA Converter plugged into RJ-45#1 that OID is: .1.3.6.1.4.1.3854.1.2.2.1.17.1.3.0

1.2 SPECIFICATION AND FEATURES

- ♦ LED INDICATORS ON CONVERTER SHOW CONNECTION TO UNIT
- ♦ THE CONVERTER CONNECTS TO THE GATEWAY USING STANDARD CATx CABLE.
- ♦ POWER SOURCE: POWERED BY THE UNIT. NO ADDITIONAL POWER NEEDED.
- ♦ THE GATEWAY AUTO DETECTS THE PRESENCE OF THE 4-20MA CONVERTER.
- ♦ FULL AUTOSENSE INCLUDING DISCONNECT ALARM

If you need any further information or help with using your unit, contact us at techsupport@blackbox.com.



CHAPTER 2: CONFIGURATION

2.1 CONFIGURING THE 4-20MA CONVERTER

1. Plug the sensor into one of the RJ-45 ports on the gateway.
2. Point your browser to the IP address of the unit (default, 192.168.0.100) and then log in as the administrator using your administrator password (default is "public"). You will then be taken to the summary page.
3. Select the sensor's tab from the summary page. The layout of the next page will vary depending on your unit, so refer to your unit's manual for more information.
4. Set up the sensor thresholds. The low critical, low warnings, normal, high warnings, and high critical values can be set from this page.

Next, we will cover the settings that are specific to your sensor.

Current Reading:

The percentage or absolute value of the 4-20mAmp Converter is displayed in this field. This is a read-only field. This value can be polled via SNMP, and the data can be used for graphing. The value range is set by the base and max scale fields in the Custom 4-20mAmp Converter Settings.

Status:

The current reading is compared to the thresholds of Critical High, Warning High, Critical Low, and Warning Low that the user has set. From this, the status is then formed, and emails or traps are sent if necessary.

Critical High, Warning High, Warning Low, and Critical Low:

These thresholds should be re-entered every time there is a change in the type of scale (whether an absolute value or a percentage value is used).

Display Units:

This field should be entered with an appropriate unit of the measured entity. For example, this field might be entered with Pounds or Lbs when the input of the 4-20mA Converter is a measured pressure, or mA for an absolute value of measured current.

Type of scale:

This field is used to select whether to display the current reading as an absolute or a percentage value.

Max Scale of Sensor in mA:

This field should be entered with the maximum value of the mA that is input to the 4-20mA Converter. For most cases, the value of this field should be 20.

Base Scale of Sensor in mA:

This field should be entered with the minimum value of the mA that is input to the 4-20mA Converter. For most cases, the value of this field should be 4.

CHAPTER 3: CONFIGURATION

How Many Percent or How Many Unit (Max Scale):

The field name is changed accordingly to the selected type of scale (absolute value or percentage). When the type of scale is set to Absolute, this field should be set to the maximum absolute value of a measured entity which is input to the 4-20mA Converter. When the type of scale is set to Percent, this field should be set to 100 percent.

How Many Percent or How Many Unit (Base Scale):

The field name is changed accordingly to the selected type of scale (absolute value or percentage). When the type of scale is set to Absolute, this field should be set to the minimum absolute value of a measured entity which is input to the 4-20mA Converter. When the type of scale is set to Percent, this field should be set to 0 percent.

Example (assuming the 4-20 mA Converter is input from a pressure sensor which output 4-20 mA for pressure in range of 50-300 pounds): Enter "Display Unit" as "Lbs" for pound. Select "Type of Scale" as "Absolute." Other fields should be configured as indicated in Table 2-1:

TABLE 2-1 SETTINGS AND VALUES

SETTING FIELDS	VALUE
Max Scale of Sensor in mA	20.0
Base Scale of Sensor in mA	4.0
How Many Lbs at 20.0 mA	300.0
How Many Lbs at 4.0 mA	50.0

An illustration of a typical 4-20mA setting appears below:

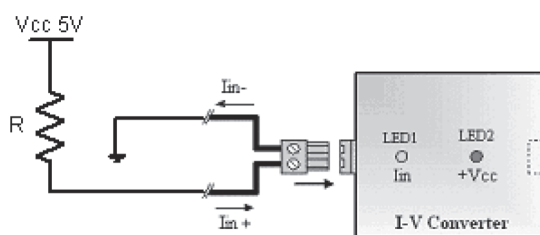


FIGURE 2-1: TYPICAL SETTING

TABLE 2-2 INPUT A AND PERCENT

INPUT A	PERCENT
4.06 mA	1
9.9 mA	36
15.1 mA	69
19.8 mA	99

APPENDIX A: REGULATORY INFORMATION

A.1 FCC STATEMENT

This equipment has been tested and found to comply with the regulations for a Class B 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 this Quick Installation Guide, 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/her own expense.

A.2 CE STATEMENT

This is a Class B product in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

A.3 ROHS

This product is RoHS compliant.

APPENDIX A: REGULATORY INFORMATION

A.4 NOM STATEMENT

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.



APPENDIX B: DISCLAIMER/TRADEMARKS

B.1 DISCLAIMER

Black Box Corporation shall not be liable for damages of any kind, including, but not limited to, punitive, consequential or cost of cover damages, resulting from any errors in the product information or specifications set forth in this document and Black Box Corporation may revise this document at any time without notice.

B.2 TRADEMARKS USED IN THIS MANUAL

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