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Quick Start Guide
00825-0100-4075, Rev GM
March 2026

Emerson Wireless 775 THUM™ Adapter



WirelessHART IEC CE

WARNING

Explosions could result in death or serious injury.

Installation of this transmitter in an explosive environment must be in accordance with the appropriate local, national, and international standards, codes, and practices. Review the approvals section of the Manual for any restrictions associated with a safe installation. Before connecting a field communicator in an explosive atmosphere, ensure that the instruments are installed in accordance with intrinsically safe or non-incendive field wiring practices.

Electrical shock could cause death or serious injury.

Avoid contact with the leads and terminals. High voltage that may be present on leads can cause electrical shock. Device must be installed to ensure a minimum antenna separation distance of 8 in. (20 cm) from all persons.

Physical access

Unauthorized personnel may potentially cause significant damage to and/or misconfiguration of end users' equipment. This could be intentional or unintentional and needs to be protected against.

Physical security is an important part of any security program and fundamental in protecting your system. Restrict physical access by unauthorized personnel to protect end users' assets. This is true for all systems used within the facility.

NOTICE

This guide provides basic guidelines for the Emerson Wireless THUM™ Adapter. It does not provide instructions for detailed configuration, diagnostics, maintenance, service, troubleshooting, or installations. Refer to the [Emerson Wireless 775 THUM Adapter Reference Manual](#) for more instruction. The manual and this guide are also available electronically on Emerson.com/global.

Equipment damage

During normal operation, or in fault condition, the THUM Adapter will cause a 2.5 V drop in the connected loop. It is important to ensure that the power supply can provide at least 2.5 V more than the minimum operating voltage of the wired device to make sure it works properly with the THUM Adapter installed. To determine the minimum operating voltage for the wired device, review the wired device operation and installation manual.

This device complies with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following conditions:

This device may not cause harmful interference. This device must accept any interference received, including interference that may cause undesired operation.

1 Product certifications

Rev 2.12

1.1 European Directive information

A copy of the EU Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EU Declaration of Conformity can be found at www.rosemount.com.

1.2 Ordinary location certification from FM Approvals

As standard, the transmitter has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by FM Approvals, a Nationally

Recognized Test Laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

1.3 Telecommunications Compliance

1.3.1 USA - Federal Communications Commission (FCC)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

- This device may not cause harmful interference; this device must accept any interference received, including interference that may cause undesired operation.
- This device must be installed to ensure a minimum antenna separation distance of 7.9 in. (20 cm) from all persons.

Changes or modification to the equipment not expressly approved by Emerson could void the user's authority to operate the equipment.

1.3.2 Canada - Innovation, Science and Economic Development Canada (ISED)

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science, and Economic Development Canada's license exempt RSS(s). Operation is subject to the following two conditions:

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

Changes or modification to the equipment not expressly approved by Emerson could void the user's authority to operate the equipment.

L'émetteur/récepteur 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:

- L'appareil ne doit pas produire de brouillage
- L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Les changements ou les modifications apportés à l'équipement qui n'est pas expressément approuvé par [Emerson] pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement.

1.3.3 Taiwan – NCC

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用 者均不得 擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射 頻器材之 使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應 立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理 法規 定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫 療用電波輻射性電機設備之干擾。

1.3.4 Thailand - Office of NBTC

เครื่องโทรคมนาคมและอุปกรณ์นี้มีความสอดคล้องตามมาตรฐานหรือข้อกำหนดทางเทคนิค ของ กสทช

1.3.5 Japan – MIC

当該機器には電波法に基づく、技術基準適合証明等を受けた特定無線設備を装着している。

1.3.6 Brazil - Anatel

Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

1.3.7 Mexico - ATDT

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

1.4 Installing equipment in North America

The US National Electrical Code® (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

1.5 USA

1.5.1 I5 USA Intrinsically Safe (IS) and Non-incendive

Certificates	FM23US0071
Markings	IS CL I, DIV 1, GP A, B, C, D; CL II, DIV 1, GP E, F, G; Class III; Class 1, Zone 0, AEx ia IIC T4; NI CL I, DIV 2, GP A, B, C, D T4; T4(-50 °C ≤ Ta ≤ +70 °C) when connected per Rosemount drawing 00775-0010; Type 4X/IP66

1.6 Canada

1.6.1 I6 Canada Intrinsically Safe

Certificates	FM23CA0053
Markings	IS CL I, DIV 1, GP A, B, C, D; CL II, DIV 1, GP E, F, G; Class III; Class 1, Zone 0, AEx ia IIC T4; NI CL I, DIV 2, GP A, B, C, D T4; T4 (-50 °C ≤ Ta ≤ +70 °C) when connected per Rosemount drawing 00775-0010; Type 4X/IP66

1.7 Europe

1.7.1 I1 ATEX Intrinsic Safety

Certificates	Baseefa09ATEX0125X
Markings	Ⓔ II 1G Ex ia IIC T4 Ga, T4 (-50 °C ≤ Ta ≤ +70 °C)

Specific Conditions of Use (X):

1. The surface resistivity of the antenna is greater than 1 GΩ. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or dry cloth.
2. The Emerson Model 775 enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in zone 0.

1.7.2 N1 ATEX Type n

Certificates	Baseefa09ATEX0131
Markings	Ⓔ II 3G Ex nA IIC Gc T4 or Ex ec IIC Gc T4 (-50 °C ≤ Ta ≤ +70 °C)

1.8 International

1.8.1 I7 IECEx Intrinsic Safety

Certificates	IECEx BAS 09.0050X
Markings	Ex ia IIC T4 Ga, T4 (-50 °C ≤ Ta ≤ +70 °C)

Specific Conditions of Use (X):

1. The surface resistivity of the antenna is greater than 1 GΩ. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or dry cloth.
2. The Emerson Model 775 enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care should be taken to protect it from impact or abrasion if located in zone 0.

1.8.2 N7 IECEx Type n

Certificates	IECEx BAS 09.0058
Markings	Ex nA IIC Gc T4 or Ex ec IIC Gc T4 (-50 °C ≤ Ta ≤ +70 °C)

1.9 Japan

1.9.1 I4 CML Intrinsically Safe

Certificates	CML19JPN2107X
Markings	Ex ia IIC T4 Ga, -50 °C ≤ T _a ≤ +70 °C

Specific Conditions of Use (X):
See certificate for special conditions.

1.10 Republic of Korea

1.10.1 IP Korea (KOSHA) Intrinsic Safety

Certificates	10-KB4BO-0010X
Markings	Ex ia IIC T4 Ga, -50 °C ≤ T _a ≤ +70 °C

Specific Conditions of Use (X):
See certificate for special conditions.

1.11 Brazil

1.11.1 I2 INMETRO Intrinsic Safety

Certificates	UL-BR 15.0089X (Shakopee, MN) UL-BR 23.0148X (Singapore)
Markings	Ex ia IIC T4 Ga (-50 °C ≤ T _a ≤ +70 °C), IP66

Specific Conditions of Use (X):

1. The surface resistivity of the antenna is greater than 1 GΩ. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or a dry cloth.
2. The enclosure may be made of aluminum alloy and given a protective polyurethane paint finish; however, care must be taken to minimize the risk of impact or friction of the housing which can cause the generation of sparks.

1.11.2 N2 INMETRO Type n or Type ec

Certificates	UL-BR 15.0027 (Shakopee, MN) UL-BR 23.0147 (Singapore)
Markings	Ex nA IIC T4 Gc or Ex ec IIC T4 Gc (-50 °C ≤ T _a ≤ +70 °C), IP66

1.12 EAC - Belarus, Kazakhstan, Russia, Armenia, Kyrgyzstan

1.12.1 IM Technical Regulation Customs Union (EAC) Intrinsic Safety

Certificates	TOO T-Стандарт ЕАЭС KZ 7500525.01.01.01863
Markings	0Ex ia IIC T4 Ga X T4 (-50 °C ≤ T _a ≤ +70 °C) IP66

Specific Conditions of Use (X):
See certificate for special conditions.

1.12.2 NM Technical Regulation Customs Union (EAC) Type n and e

Certificates	TOO T-Стандарт ЕАЭС KZ 7500525.01.01.01863
Markings	2Ex nA IIC T4 Gc X 2Ex ec IIC T4 Gc X T4 (-50 °C ≤ T _a ≤ +70 °C) IP66

Specific Conditions of Use (X):
See certificate for special conditions.

1.13 Combinations

KM Combination of IM and NM

2 Declaration of Conformity



EU DECLARATION OF CONFORMITY



This declaration of conformity is issued under the sole responsibility of

Rosemount Inc.
6021 Innovation Blvd
Shakopee, MN 55379
USA

that the following products,

Emerson Wireless 775 THUM™ Adapter

comply with the provisions of the European Union Directives, including the latest amendments, valid at the time this declaration was signed.

July 30, 2025

(signature & date of issue)

Mark Lee
(name)

Vice President, Quality
(function)

Shakopee, MN, USA
(place of issue)

Authorized Representative in Europe:
Emerson S.R.L., company No. J12/88/2006
Emerson 4 street, Parcul Industrial
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Regulatory Compliance Shared Services Department
Email: europaeproductcompliance@emerson.com Phone: +40 374 132 035

ATEX Notified Bodies for EU Type Examination Certificates:
SGS Fimko Oy [Notified Body Number: 0598]
Takomotie 8
FI-00380 Helsinki
Finland

ATEX Notified Body for Quality Assurance:
SGS Fimko Oy [Notified Body Number: 0598]
Takomotie 8
FI-00380 Helsinki
Finland

EMC Directive (2014/30/EU)

Other Standards:
EN 61326-1: 2021
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4

RED Directive (2014/53/EU)

Harmonized Standards:
EN 300 328 V2.2.2
EN 18031-1:2024

Low Voltage (2014/35/EU)

Harmonized Standards:
EN 61010-1: 2010
Other Standards:
EN 62311: 2020

ATEX Directive (2014/34/EU)

Baseefa09ATEX0125X – Intrinsic Safety Certificate
Equipment Group II, Category 1 G
Ex ia IIC T4 Ga
Harmonized Standards:
EN IEC 60079-0:2018
EN 60079-11:2012

Baseefa09ATEX0131 – Type n and Increased Safety Certificate
Equipment Group II, Category 3 G
Ex nA IIC T4 Gc or Ex ec IIC T4 Gc
Harmonized Standards:
EN IEC 60079-0:2018
EN IEC 60079-7:2015+A1:2018
EN 60079-15:2010

3 China RoHS

含有China RoHS管控物质超过最大浓度限值的部件型号列表 Rosemount 775
List of Rosemount 775 Parts with China RoHS Concentration above MCVs

部件名称 Part Name	有害物质 / Hazardous Substances					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr +6)	多溴联苯 Polybrominated biphenyls (PBB)	多溴联苯醚 Polybrominated diphenyl ethers (PBDE)
电子组件 Electronics Assembly	X	O	O	O	O	O

本表格系依据SJ/T11364的规定而制作。
This table is proposed in accordance with the provision of SJ/T11364.

O: 意为该部件的所有均质材料中该有害物质的含量均低于GB/T 26572所规定的限量要求。
O: Indicate that said hazardous substance in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

X: 意为在该部件所使用的所有均质材料里，至少有一类均质材料中该有害物质的含量高于GB/T 26572所规定的限量要求。
X: Indicate that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.

4 Wireless considerations

4.1 Power-up sequence

NOTICE

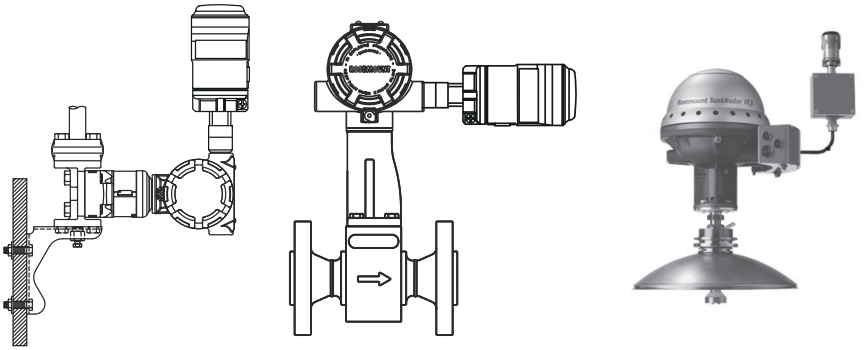
Power up wireless devices in order of proximity from the gateway, beginning with the closest.

This will result in a simpler and faster network installation. Enable **Active Advertising** on the gateway to ensure that new devices join the network faster. For more information, see the [Emerson Wireless 1410S Gateway and 781S Smart Antenna](#).

4.2 THUM™ Adapter position

Position Thum Adapter vertically straight up, and should be approximately 3 ft. (1 m) from any large structure, building or conductive surface to allow for clear communication to other devices. If the THUM Adapter is mounted horizontally, wireless communication range may be decreased. Do not mount the THUM Adapter vertically straight down.

Figure 4-1: THUM Adapter Position



Related information

[Emerson Wireless 775 THUM Adapter Reference Manual](#)

4.3 Conduit entry

When installing the THUM™ Adapter into the conduit entry of a wired device, use an approved thread sealant. Thread sealant provides a water tight seal. The thread sealant also provides lubrication to ensure easy removal of the THUM Adapter.

4.4 M20 conduit adapter

When using the M20 conduit adapter on the THUM™ Adapter, use an approved thread sealant and tighten wrench tight to the THUM Adapter. When installing the M20 conduit adapter into a conduit, tighten to 32.5 N-m/25 ft-lb to ensure watertight seal.

4.5 Field Communicator connections

For the Field Communicator to interface with the THUM™ Adapter, the wired device must be powered.

The Field Communicator must be put into poll mode and should use the THUM Adapter address of 63.

4.6 Power supply

- Minimum loop load of 250 Ohms.
- The THUM™ Adapter communicates via and derives power from a standard 4–20 mA/HART® loop. The THUM Adapter causes a small voltage drop on the loop which is linear from 2.25 V at 3.5 mA to 1.2 V at 25 mA. Under fault conditions, the maximum voltage drop is 2.5 V. The THUM Adapter will not affect the 4–20 mA signal under normal or fault conditions as long as the loop has at least a 2.5 V margin at the maximum loop current (25 mA for a typical 4–20 mA/HART device).
- Limit the power supply to 0.5 Amps maximum and voltage to 30 Vdc.

Loop current	THUM Adapter voltage drop
3.5 mA	2.25 V
25 mA	1.2 V

4.7 Load resistor

If required, add a load resistor as shown in [Figure 6-10](#), [Figure 6-13](#) and [Figure 6-14](#). The resistor should be adequately rated for the application (1 W minimum) and be compatible with the supplied splice connector which accepts wire sizes from 14 to 22 AWG.

4.8 Loop

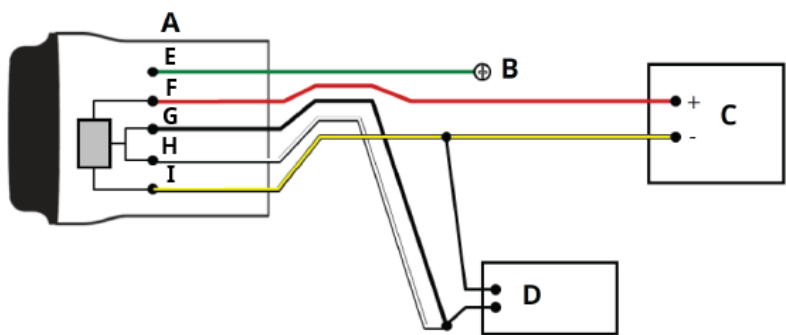
To ensure proper operation, do not install the THUM™ Adapter on a HART® loop with other active HART masters. HART masters that are active periodically, such as a Field Communicator, can be used on a loop with a THUM Adapter.

5 Bench top configuration

When performing bench top configuration, Emerson recommends connecting the THUM™ Adapter to a wired device. If this is not possible, then use the following wiring diagrams.

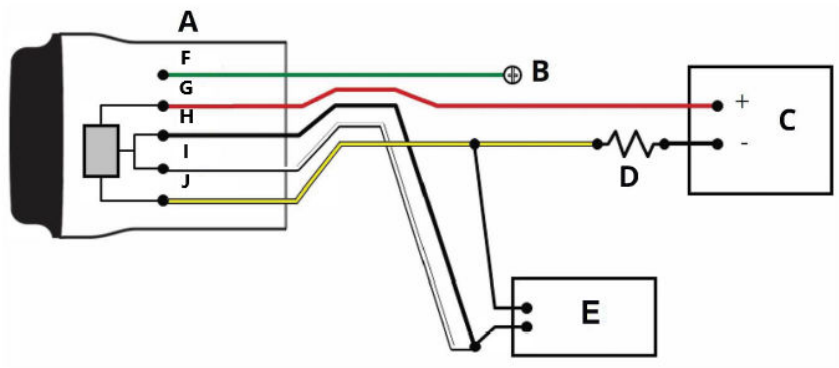
For bench top configuration, ensure the power supply used is limited to 0.5 A maximum.

Figure 5-1: THUM Adapter Only, Powered by a Current Source



- A. THUM Adapter
- B. Ground
- C. 20 mA current source
- D. HART® Modem
- E. Green
- F. Red
- G. Black
- H. White
- I. Yellow

Figure 5-2: THUM Adapter only, powered by a 24 V power supply with 1200 ohm resistor to limit current to 20 mA



- A. THUM Adapter
- B. Ground
- C. 24 V power supply
- D. 1200 Ohm resistor
- E. HART modem
- F. Green
- G. Red
- H. Black
- I. White
- J. Yellow

6 Physical installation

The THUM™ Adapter can be installed in one of two configurations:

1. **Direct mount:** The THUM Adapter is connected directly to the conduit entry of the wired device.
2. **Remote mount:** The THUM Adapter is mounted separate from the wired device housing and then connected to the wired device using conduit or other suitable means.

6.1 Direct mount

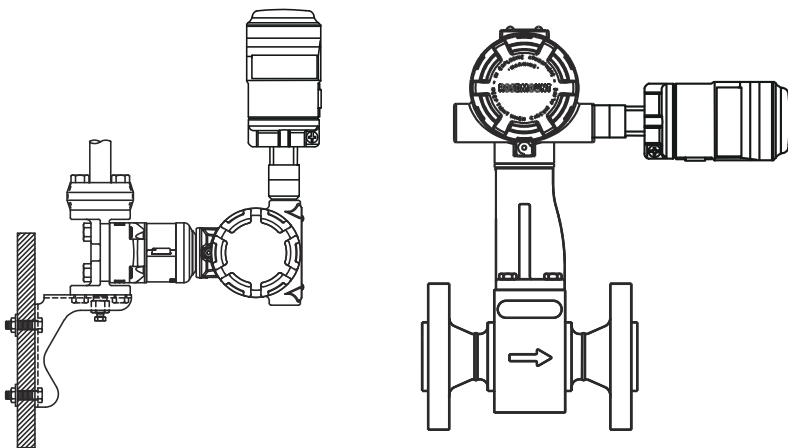
Prerequisites

Install the HART® device according to standard installation practices and the manufacturer's instructions. Use an approved thread sealant on all connections.

Procedure

1. Attach the THUM™ Adapter to the wired device as shown in [Figure 6-1](#).

Figure 6-1: Direct Mount



2. Connect the THUM Adapter to the HART wired device using the [Wiring diagrams](#).
3. Close the housing cover on the HART wired device, so that metal touches metal, but do not overtighten to prevent damaging the unit.

Note

Two splice connectors are included with the THUM Adapter. The first is a two connection splice. The second is a three connection splice for use with a resistor if there is not enough resistance in the loop. Both of these splice connectors can accept 14 to 22 gauge wire. See wired device manual for information on the required loop resistance.

6.2 Remote mount

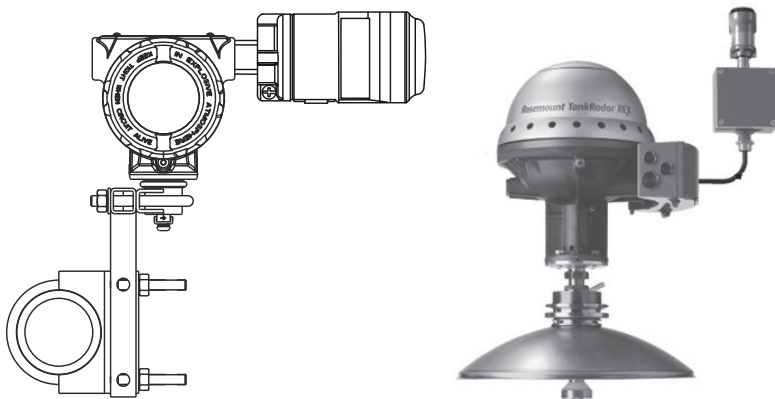
Prerequisites

Install the HART® device according to standard installation practices and the manufacturer's instructions. Use an approved thread sealant on all connections.

Procedure

1. Mount the THUM™ Adapter as shown in [Figure 6-2](#).

Figure 6-2: Remote Mount



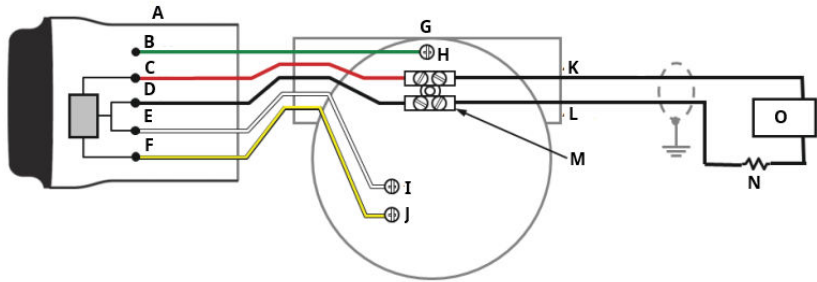
2. Ground the remote mount kit per local practices.
3. Connect the THUM Adapter to the wired device using standard practices.
Wire running from the THUM Adapter to the wired device should be shielded or in conduit when installed in electrically noisy environments.
4. Connect the THUM Adapter to the HART wired device using the [Wiring diagrams](#).
5. Close the housing cover on the HART wired device, so that metal touches metal, but do not overtighten to prevent damaging the unit.

Note

Two splice connectors are included with the THUM Adapter. The first is a two connection splice. The second is a three connection splice for use with a resistor if there is not enough resistance in the loop. Both of these splice connectors can accept 14 to 22 gauge wire. See wired device reference manual for information on the required loop resistance.

6.3 Wiring diagrams

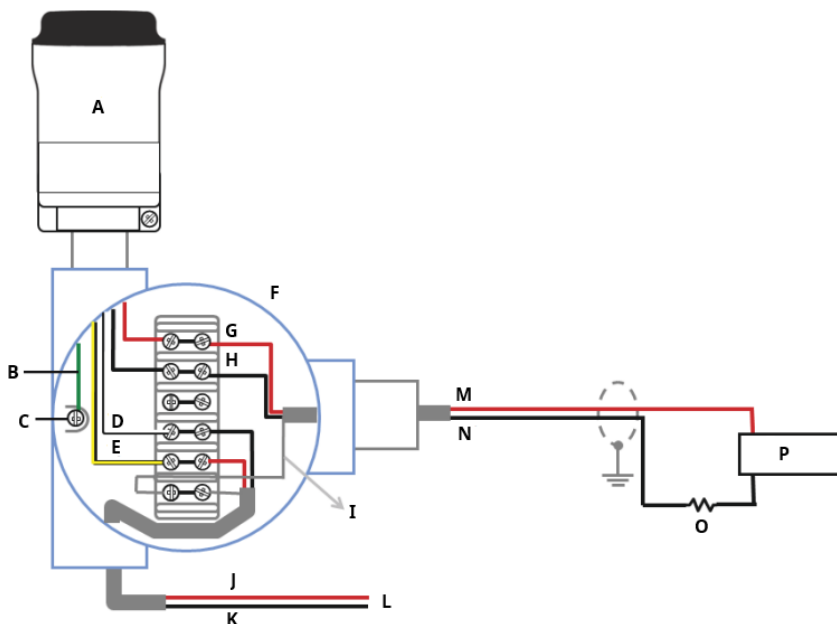
Figure 6-3: Direct mount wiring diagram for 2-wire device



- A. THUM™ Adapter
- B. Green
- C. Red
- D. Black
- E. White
- F. Yellow
- G. Wired device
- H. Ground
- I. -PWR/COMM
- J. +PWR/COMM
- K. 4-20 mA Loop+
- L. 4-20 mA Loop-
- M. Load resistor $\geq 250 \Omega$
- N. Power supply

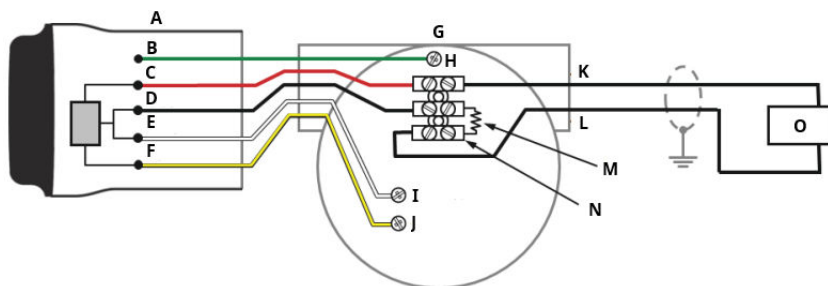
Note
For the THUM Adapter to function properly, there must be at least 250 Ohms resistance in the loop. If the 4–20 mA loop does not have the required resistance, wire a resistor as shown in [Figure 6-5](#), [Figure 6-9](#), or [Figure 6-13](#) as applicable.

Figure 6-4: Remote mount wiring diagram for 2-wire device



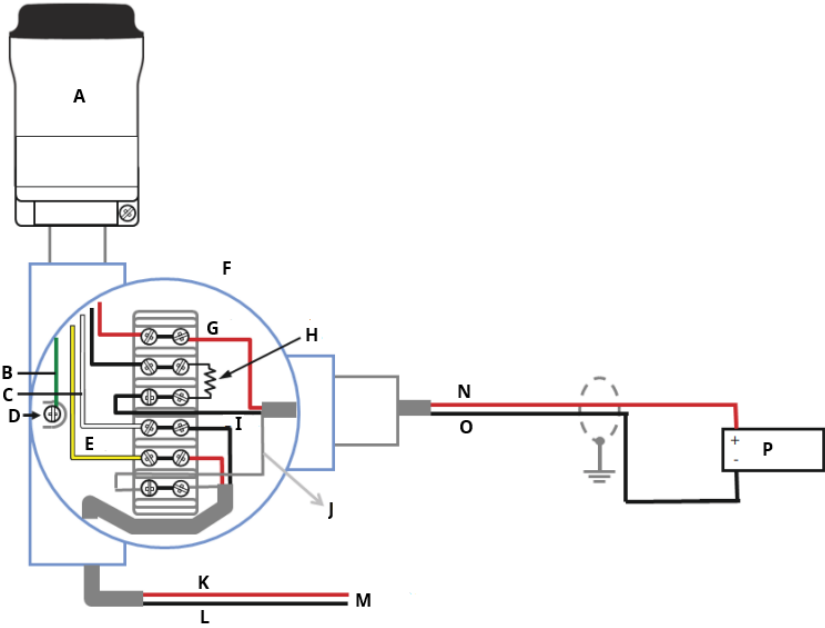
- A. THUM adapter
- B. Green
- C. Ground
- D. White
- E. Yellow
- F. Remote mount housing
- G. Red
- H. Black
- I. Shield wire
- J. +COMM
- K. -COMM
- L. To wired device
- M. 4-20 mA Loop+
- N. 4-20 mA Loop-
- O. Load resistor $\geq 250 \Omega$
- P. Power supply

Figure 6-5: Direct mount diagram for 2-wire device with resistor



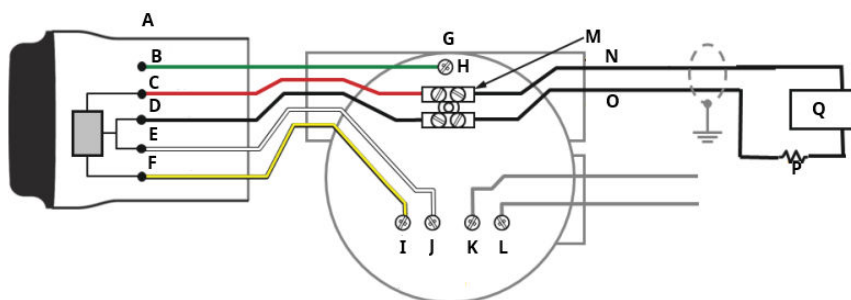
- A. THUM Adapter
- B. Green
- C. Red
- D. Black
- E. White
- F. Yellow
- G. Wired device
- H. Ground
- I. -PWR/COMM
- J. +PWR/COMM
- K. 4-20 mA Loop+
- L. 4-20 mA Loop-
- M. Load resistor $\geq 250 \Omega$
- N. Splice connector
- O. Power supply

Figure 6-6: Direct mount wiring diagram for 2-wire device with resistor



- A. THUM Adapter
- B. Green
- C. White
- D. Ground
- E. Yellow
- F. Remote mount housing
- G. Red
- H. Load resistor $\geq 250 \Omega$
- I. Black
- J. Shield wire
- K. + COMM
- L. - COMM
- M. To wired device
- N. 4-20 mA loop +
- O. 4-20 mA loop -
- P. Power supply

Figure 6-7: Direct mount wiring diagram for 4-wire passive device

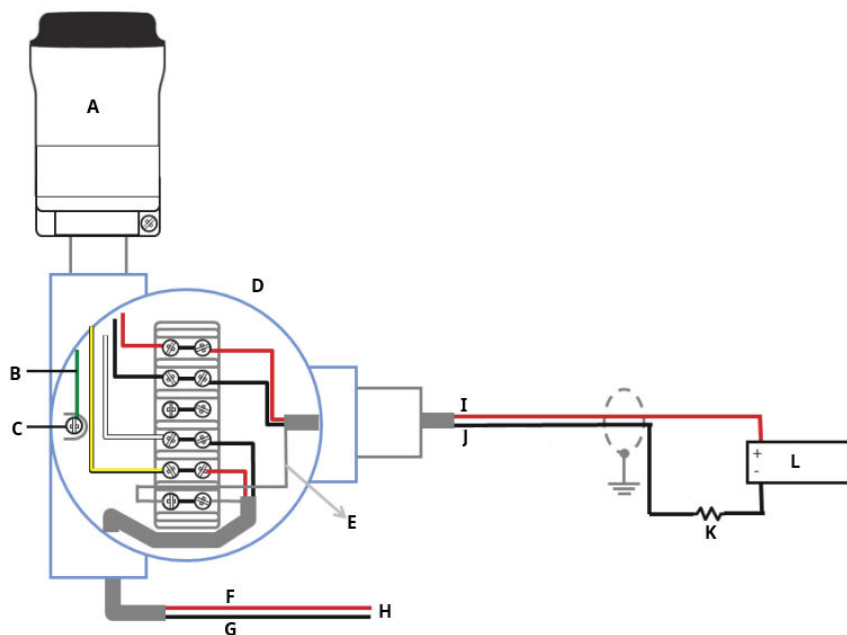


- A. THUM Adapter
- B. Green
- C. Red
- D. Black
- E. White
- F. Yellow
- G. Wired device
- H. Ground
- I. COMM+
- J. COMM-
- K. Power+
- L. Power-
- M. Splice connector
- N. 4-20 mA Loop+
- O. 4-20 mA Loop-
- P. Load resistor $\geq 250 \Omega$
- Q. Power supply

Note

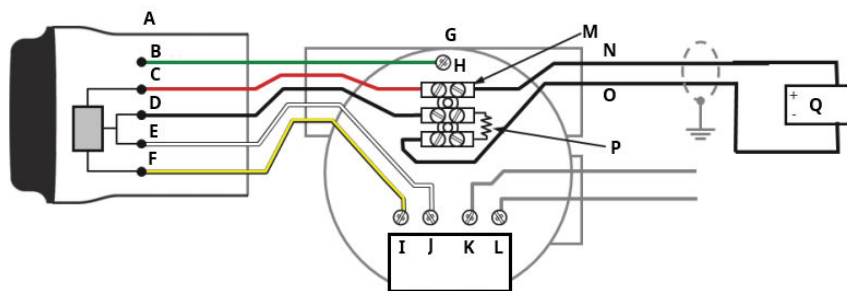
A passive loop exists when the wired device is not supplying power to the 4–20 mA loop. It is important to verify if the wired device is operating in **Active** or **Passive** mode.

Figure 6-8: Remote mount wiring diagram for 4-wire passive device



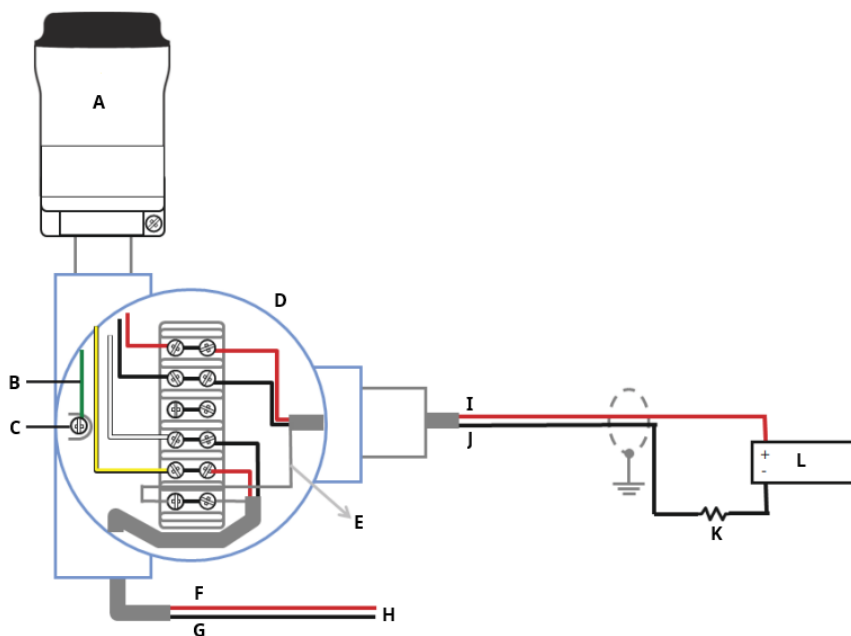
- A. THUM Adapter
- B. Green
- C. Ground
- D. Remote mount housing
- E. Shield wire
- F. +COMM
- G. -COMM
- H. To wired device
- I. 4-20 mA loop +
- J. 4-20 mA loop -
- K. Load resistor $\geq 250 \Omega$
- L. Power supply

Figure 6-9: Direct mount wiring diagram for 4-wire passive device with resistor



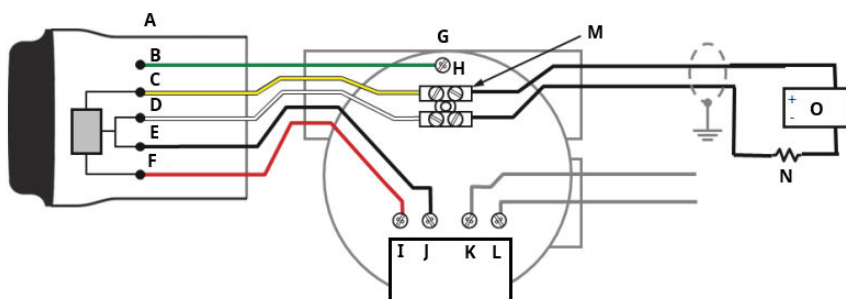
- A. THUM Adapter
- B. Green
- C. Red
- D. Black
- E. White
- F. Yellow
- G. Wired device
- H. Ground
- I. COMM+
- J. COMM-
- K. Power+
- L. Power-
- M. Splice connector
- N. 4-20 mA Loop+
- O. 4-20 mA Loop-
- P. Load resistor $\geq 250 \Omega$
- Q. Power supply

Figure 6-10: Remote mount wiring diagram for 4-wire passive device with resistor



- A. THUM Adapter
- B. Green
- C. Ground
- D. Remote mount housing
- E. Shield wire
- F. +COMM
- G. -COMM
- H. To wired device
- I. 4-20 mA Loop+
- J. 4-20 mA Loop-
- K. Load resistor $\geq 250 \Omega$
- L. Power supply

Figure 6-11: Direct mount wiring diagram for 4-wire active device

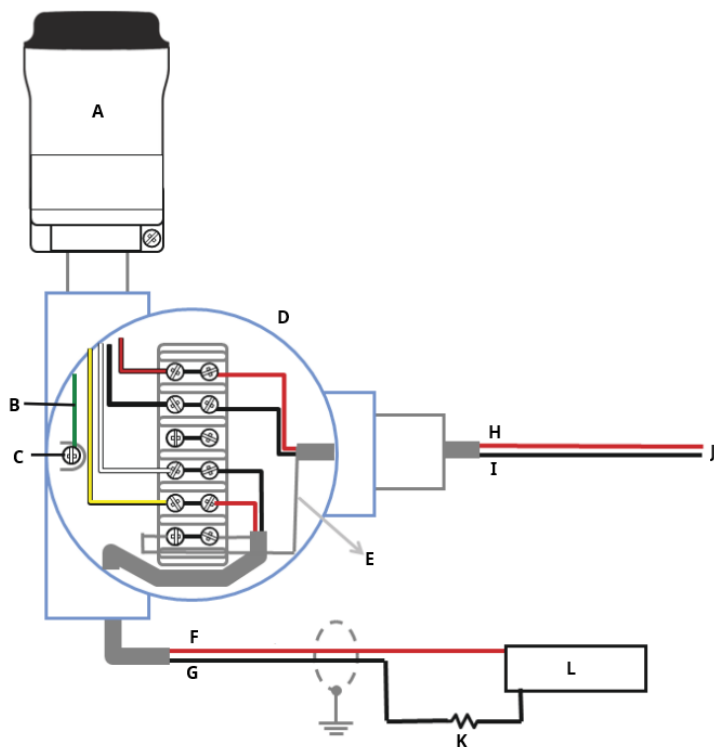


- A. THUM Adapter
- B. Green
- C. Yellow
- D. White
- E. Black
- F. Red
- G. Wired device
- H. Ground
- I. COMM+
- J. COMM-
- K. Power+
- L. Power-
- M. Splice connector
- N. Load resistor $\geq 250 \Omega$
- O. Input card

Note

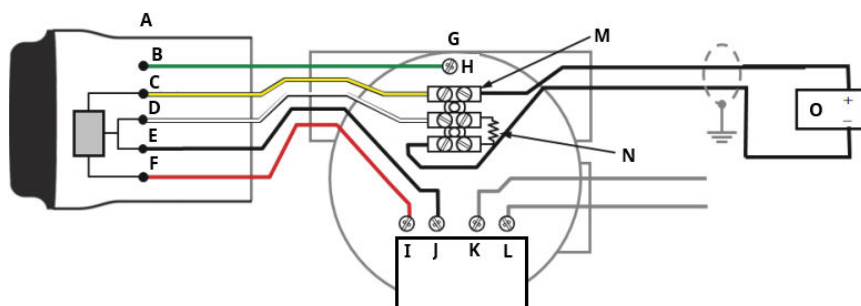
An active loop exists when the wired device is supplying the power to the 4–20 mA loop. It is important to verify if the wired device is operating in **Active** or **Passive** mode.

Figure 6-12: Remote mount wiring diagram for 4-wire active device



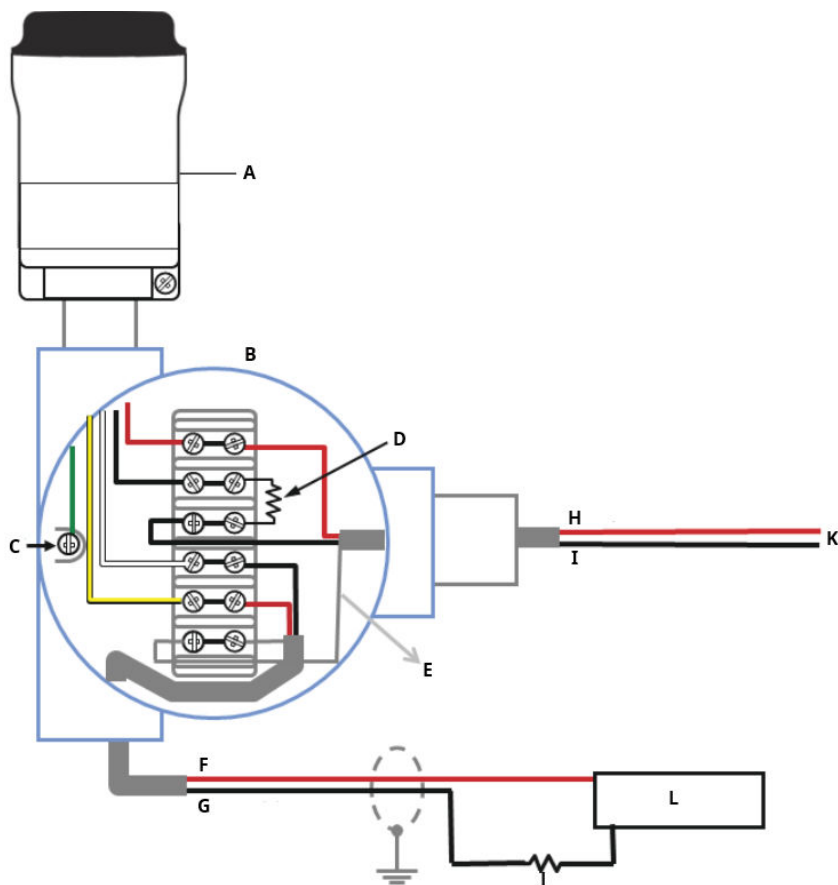
- A. THUM Adapter
- B. Green
- C. Ground
- D. Remote mount housing
- E. Shield wire
- F. 4-20 mA Loop+
- G. 4-20 mA Loop-
- H. +COMM
- I. -COMM
- J. To wired device
- K. Load resistor $\geq 250 \Omega$
- L. Input card

Figure 6-13: Direct mount wiring diagram for 4-wire active device with resistor



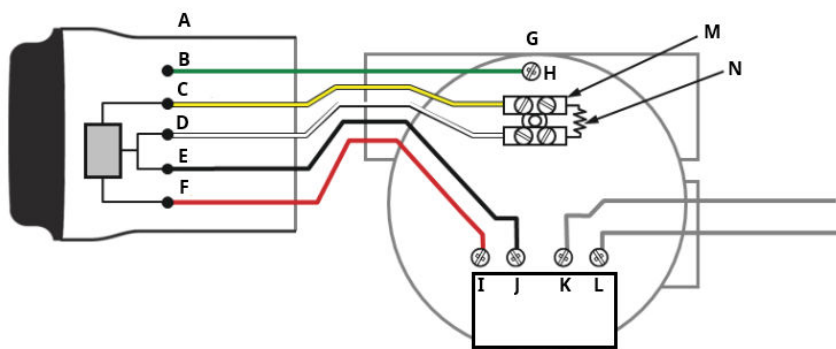
- A. THUM Adapter
- B. Green
- C. Yellow
- D. White
- E. Black
- F. Red
- G. Wired device
- H. Ground
- I. COMM+
- J. COMM-
- K. Power+
- L. Power-
- M. Splice connector
- N. Load resistor $\geq 250 \Omega$
- O. Input card

Figure 6-14: Remote mount wiring diagram for 4-wire active device with resistor



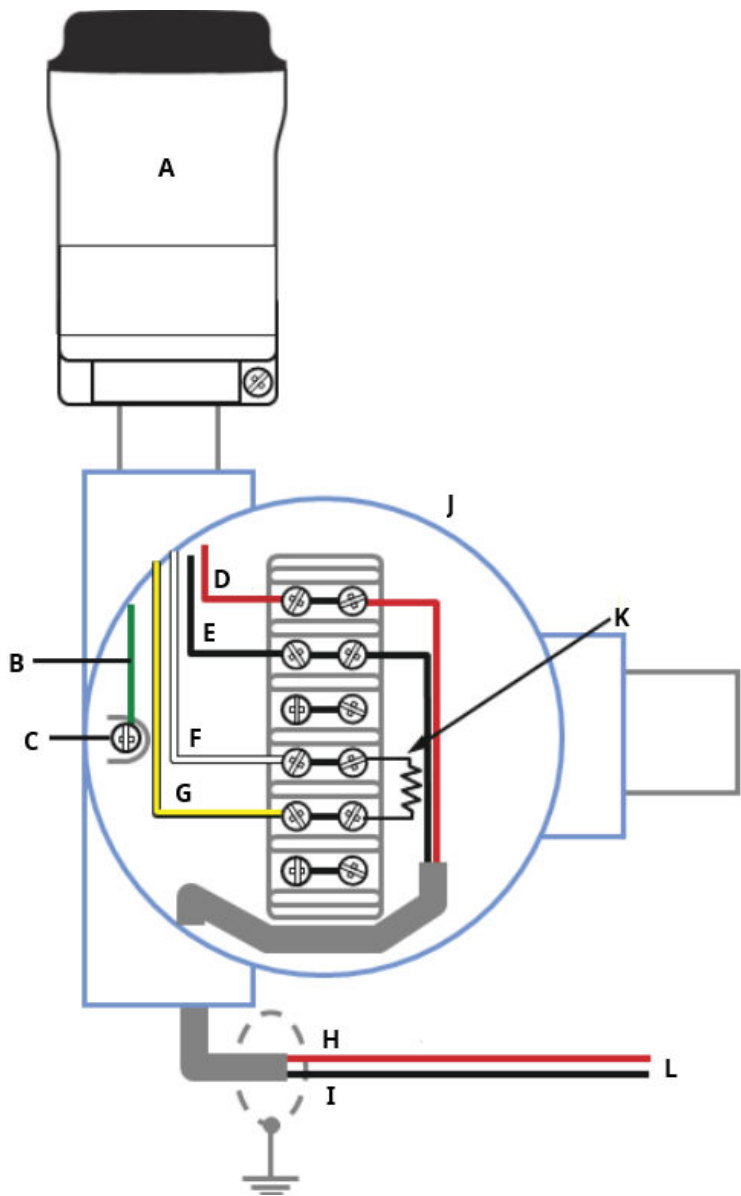
- A. THUM Adapter
- B. Remote mount housing
- C. Ground
- D. Load resistor $\geq 250 \Omega$
- E. Shield wire
- F. 4-20 mA Loop+
- G. 4-20 mA Loop-
- H. COMM+
- I. COMM-
- J. Load resistor $\geq 250 \Omega$
- K. To wired device
- L. Input card

Figure 6-15: Direct mount wiring diagram for 4-wire active device with No 4-20 mA loop



- A. THUM Adapter
- B. Green
- C. Yellow
- D. White
- E. Black
- F. Red
- G. Wired device
- H. Ground
- I. COMM +
- J. COMM -
- K. Power +
- L. Power -
- M. Splice connector
- N. Load resistor $\geq 250 \Omega$

Figure 6-16: Remote mount wiring diagram for 4-wire active device with No 4–20 mA loop

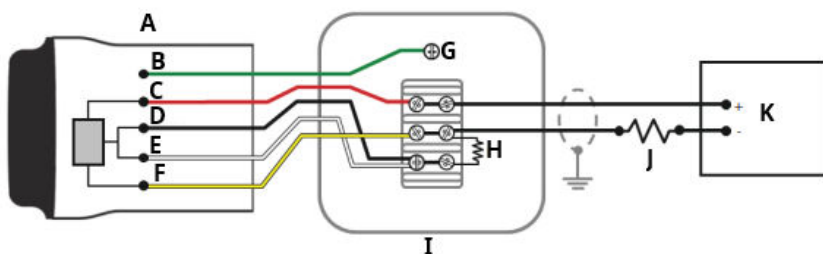


- A. THUM Adapter
- B. Green
- C. Ground
- D. Red
- E. Black
- F. White
- G. Yellow
- H. +COMM
- I. -COMM
- J. Remote mount housing

K. Load resistor $\geq 250\ \Omega$

L. To wired device

Figure 6-17: THUM Adapter only, powered by a 24 V power supply with 1200 ohm resistor to limit current to 20 mA



A. THUM Adapter

B. Green

C. Red

D. Black

E. White

F. Yellow

G. Ground

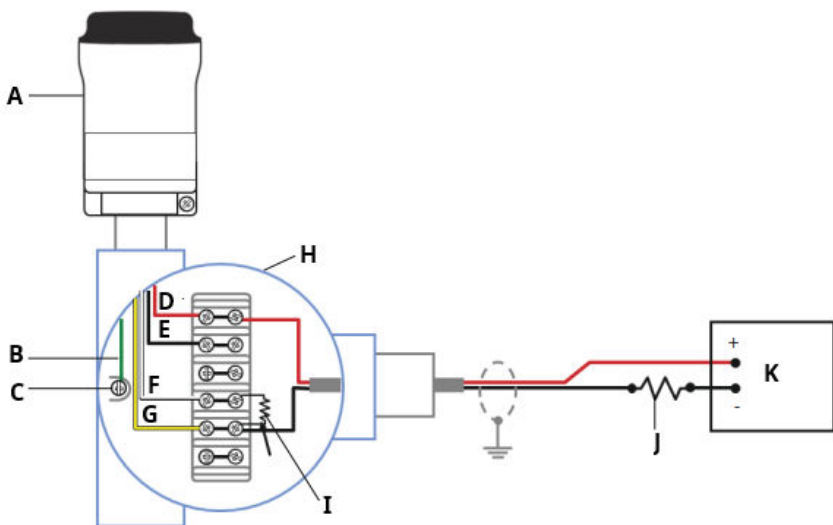
H. 250 Ω resistor

I. Junction box

J. 1200 Ohm resistor required

K. 24 V power supply

Figure 6-18: THUM Adapter Only, powered by a 24 V power supply with 1200 ohm resistor to limit current to 20 mA



- A. THUM Adapter
- B. Green
- C. Ground
- D. Red
- E. Black
- F. White
- G. Yellow
- H. Remote mount housing
- I. 250 Ω resistor
- J. 1200 ohm resistor required
- K. 24 V power supply

7 Device network configuration

To communicate with the Emerson Wireless Gateway, and ultimately the information system, the transmitter must be configured to communicate with the wireless network.

This step is the wireless equivalent of connecting wires from a transmitter to the information system. Using a Field Communicator or AMS Device Manager, enter the **Network ID** and **Join Key** so that they match the **Network ID** and **Join Key** of the gateway and other devices in the network. If the **Network ID** and **Join Key** are not identical, the THUM Adapter will not communicate with the network. The **Network ID** and **Join Key** may be obtained from the Gateway on the **System Settings** → **Network** → **Network Settings** page on the web server, shown in [Figure 7-1](#).

Figure 7-1: Gateway Network Settings

ngdemo09
ngdemo09

HomeDevicesSystem Settings

+ Network Information

System Settings >> Network 1 >> Network Settings

Gateway

Network 1

Channels

Network Settings

Access Control List

Network Statistics

Radio Silence

Network 2

Protocols

Users

Network Settings

WiHART Network name

ngdemo09_1

WiHART Network ID

7191

WiHART Join Key

☐ Show join key

Rotate network key?

☐ Yes

☒ No

WiHART Change network key now?

☐ Yes

☒ No

WiHART Security mode

☒ Common join key

☐ Access control list

WiHART Active Advertising

☐ Yes

☒ No

WiHART Stale Data Detection

Missed updates

8

Minimum timeout

90

Save Changes

Cancel

7.1 AMS Device Manager

Right-click on the THUM Adapter and select **Configure**. When the menu opens, select **Join Device** to **Network** and follow the method to enter the **Network ID** and **Join Key**.

7.2 Field Communicator

The **Network ID** and **Join Key** may be changed in the wireless device by using the following Fast Key sequence. Set both **Network ID** and **Join Key**.

Function	Fast Key sequence	Menu Items
Wireless Setup	1, 4	Smart Power, Network ID, Set Join Key, Radio State

8 Perform loop current test

To verify the THUM Adapter will work under all conditions, Emerson recommends performing a loop current test. This test will exercise the loop under the highest possible voltage drop conditions.

Procedure

- Place loop in **manual** control.
- Drive loop to **high alarm** level. For details, see wired device instruction manual.
 - When the THUM Adapter is connected to a valve, this will need to be done at the current source and not from the valve.
 - When the THUM Adapter is connected to a transmitter, this will need to be performed at the transmitter.

3. Place the THUM Adapter into **fixed voltage drop** mode.

Configuring fixed voltage drop mode using AMS Device Manager

- a) Right click on the THUM Adapter and select **Configure**.
- b) When the menu opens, select **Manual Setup** from the window on the left and select the **Wired Device** tab on the top.
- c) Make sure the **Time** drop down menu at the bottom of the page has **Current** selected.
- d) Under the **Voltage Drop** drop down menu in the **Smart Power Options** box, select **Fixed Voltage Drop**.
- e) Select the **Apply** button to make any changes. See [Figure 8-1](#).

Configuring fixed voltage drop mode using Field Communicator

- a) When communicating to the THUM Adapter, select: **Configure** → **Manual setup** → **Wired Device** → **Voltage Drop Mode**.
- b) In the method, select **Fixed Voltage Drop**.

Function	Fast Key sequence	Menu items
Voltage Drop	2, 2, 2, 2	Voltage Drop

4. Verify the current on the loop reaches the **high alarm** levels.

5. Place the THUM Adapter into **variable voltage drop** mode.

Configuring variable voltage drop mode using AMS Device Manager

- a) Right click on the THUM Adapter and select **Configure**.
- b) When the menu opens, select **Manual Setup** from the window on the left and select the **Wired Device** tab on the top.
- c) Make sure the **Time** drop down menu at the bottom of the page has **Current** selected.
- d) Under the **Voltage Drop** drop down menu in the **Smart Power Options** box, select **Variable Voltage Drop**.
- e) Select the **Apply** button to make any changes. See [Figure 8-1](#).

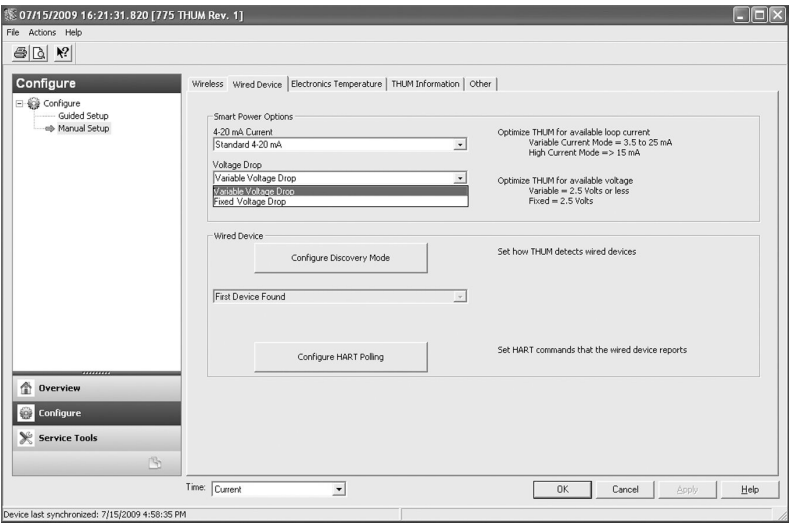
Configuring fixed voltage drop mode using Field Communicator

- a) When communicating to the THUM Adapter, select: **Configure** → **Manual setup** → **Wired Device** → **Voltage Drop Mode**.
- b) In the method, select **Variable Voltage Drop**.

Function	Fast Key sequence	Menu items
Voltage Drop	2, 2, 2, 2	Voltage Drop

6. Remove loop from **high alarm value**.

Figure 8-1: AMS Device Manager Configure Screen



9 Verify operation

Operation can be verified using one of three methods:

- Field Communicator
- Wireless Gateway's integrated web interface
- AMS Device Manager

9.1 Verify operation using Field Communicator

For HART® Wireless transmitter communication, a THUM Adapter DD is required. The Field Communicator must be put into poll mode using the THUM Adapter address of 63. Use the wired device documentation to connect the Field Communicator to the THUM Adapter.

Table 9-1: Field Communicator Connections

Function	Fast Key sequence	Menu items
Communications	3, 3	Join Status, Wireless Mode, Join Mode, Number of Available Neighbors, Number of Advertisements Heard, Number of Join Attempts

9.2 Verify operation using Emerson Wireless Gateway

If the THUM Adapter was configured with the Network ID and Join Key, and sufficient time has passed for network polling, the transmitter will be connected to the network. To verify device operation and connection to the network with the Gateway's integrated web server, open the Gateway's integral web interface and navigate to the *Explorer* page.

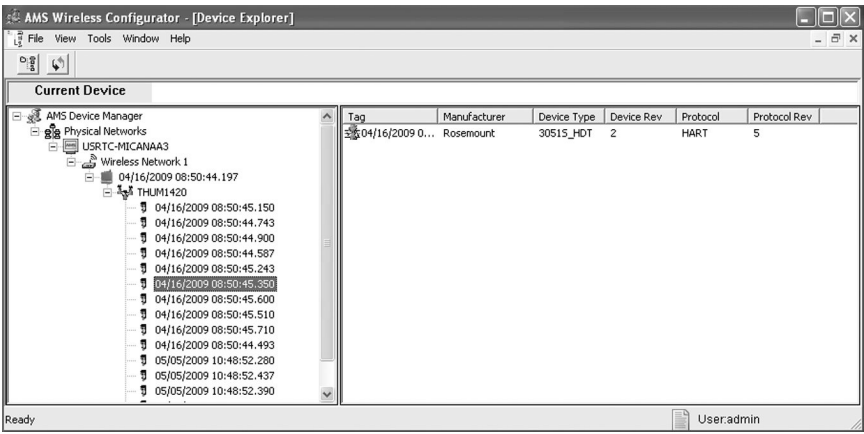
Note

It may take several minutes for the device to join the network.

9.3 Verify operation using AMS Device Manager

When the device has joined the network, it will appear in the AMS Device Manager as illustrated in [Figure 9-1](#).

Figure 9-1: AMS Device Manger



10 Reference information

Note

To communicate with a Field Communicator, the wired device must be powered.

Table 10-1: THUM Adapter Fast Key Sequence

Function	Fast Key sequence	Menu items
Device Info	2, 2, 4, 3	Manufacturer, Model, Final Assembly Number, Universal, Field Device, Software, Hardware, Descriptor, Message, Date, Model Number I, II, III, SI Unit Restriction, Country
Guided Setup	2, 1	Configure, Guided Setup, Join Device to Network, Configure Update Rate, Zero Trim, Configure Device Display, Configure Process Alarms
Manual Setup	2, 2	Configure, Manual Setup, Wireless, Pressure, Device Temperatures, Device Information, Display, Other
Wireless	2, 2, 1	Network ID, Join Device to Network, Configure Update Rate, Configure Broadcast Power Level, Power Mode, Power Source



Quick Start Guide
00825-0100-4075, Rev. GM
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