

Emerson 775 Wireless THUM™ Adapter



WirelessHART IEC CE

- 2-wire, 3-wire, or 4-wire HART® devices
- Flexibility to meet your most demanding applications
- Wireless output with >99 percent data reliability delivers rich HART data, protected by industry leading security
- Gain access to additional HART information, such as diagnostics or multi-variable data
- Add wireless to almost any measurement point
- Wireless brings measurement capabilities to previously inaccessible locations

IEC 62591 (*WirelessHART*[®])...the industry standard

Self-organizing, adaptive mesh routing

- No wireless expertise required. Devices automatically find the best communication paths.
- Network continuously monitors paths for degradation and repairs itself.
- Adaptive behavior provides reliable, hands-off operation and simplifies network deployments, expansion, and reconfiguration.
- Supports both star and mesh topologies.

Industry standard radio with channel hopping

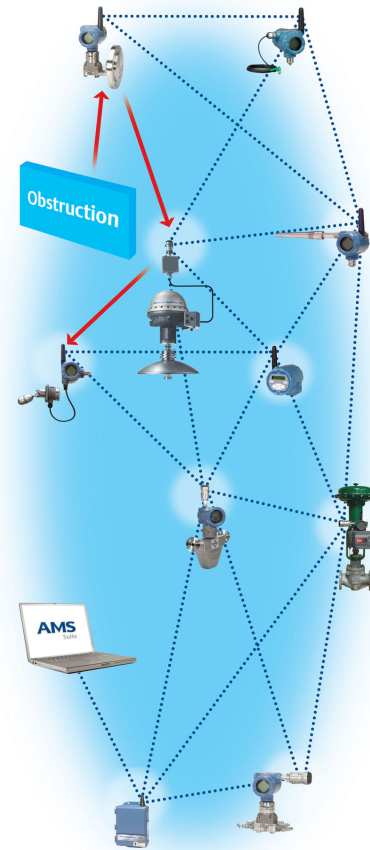
- Standard IEEE 802.15.4 radios
- 2.4 GHz ISM band sliced into 16 radio channels
- Continually “hop” across channels to avoid interference and increase reliability
- Direct sequence spread spectrum (DSSS) technology delivers high reliability in challenging radio environment

Self-healing network

- The self-organizing, self-healing network manages multiple communication paths for any given device. If an obstruction is introduced into the network, data will continue to flow because the device already has other established paths. The network will then lay in more communication paths as needed for that device.

Seamless integration to existing hosts

- Transparent and seamless integration
- Same control system applications
- Gateways connect using industry protocols



Contents

IEC 62591 (<i>WirelessHART</i> [®])...the industry standard.....	2
Wireless THUM Adapter.....	3
Ordering information.....	4
Specifications.....	7
Product certifications.....	9
Dimensional drawings.....	10

Wireless THUM Adapter

Device specifications

- Approvals: FM, CSA, ATEX, IECEx
- Input: Either 2-wire, 3-wire, or 4-wire device HART® 5.0 or newer
- SmartPower™: Power scavenging technology (no battery required)
- Minimum load on loop 250 Ohms

Enable enhanced valve capabilities

- Online, in-service valve testing through AMS ValveLink SNAP-ON™ Application.
- Monitor alerts such as travel deviation with AMS Device Manager, supply pressure, and electronics health.
- Trend actual valve position.

Gain access to advanced instrument diagnostics

- Rosemount™ 3051S with Advanced Process Diagnostics
- Micro Motion™ Coriolis Meter Verification with optional AMS Meter Verification SNAP-ON
- Rosemount Radar Echo Curve
- Rosemount Magnetic Flow Meter Verification with AMS Device Manager

Efficiently gather data from multivariable devices

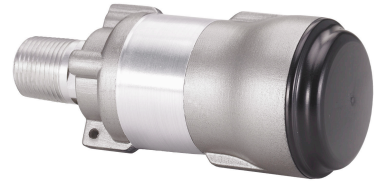
- Rosemount 3051S MultiVariable™ Transmitter and Rosemount 3095 Mass Flow Transmitters
- Rosemount 3300 and 5300 Radar Level Transmitters
- Micro Motion Coriolis Meters
- Rosemount TankRadar™ Rex and TankRadar Pro
- Rosemount Magnetic Flow Meter
- Rosemount MultiVariable Vortex Flow Meter

Make any HART device wireless access new measurement information

- Level
- Flow
- Valves
- Liquid and Gas Analytical
- Pressure
- Temperature

Remotely manage devices and monitor health with AMS Device Manager

- Reduce troubleshooting time
- As found, as left data
- Calibration tracking



Ordering information

[CONFIGURE >](#)
[VIEW PRODUCT >](#)

Online product configurator

Many products are configurable online using our Product Configurator. Select **Configure** or visit our [Emerson.com/global](#) to start. With this tool's built-in logic and continuous validation, you can configure your products more quickly and accurately.

Specifications and options

The purchaser of the equipment must specify and select product materials, options, or components. See the *Material selection* section for more information.

Model codes

Model codes contain the details related to each product.

Exact model codes will vary; an example of a typical model code is shown in [Figure 1](#).

Figure 1: Model code example

775XD11I5 WA3WK9
 1 2

1. Required model components (choices available on most)
2. Additional options (variety of features and functions that may be added to products)

Optimizing lead time

The starred offerings (★) represent the most common options and should be selected for the fastest delivery times. The nonstarred offerings are subject to additional delivery lead time.

Required model components

Model

Requires THUM Connection Box.

Code	Description
775	Wireless 775 THUM Adapter

Output

Code	Description	
X	Wireless	

Housing

Code	Description	
D	Aluminum	★
E	Stainless steel (SST)	

Mounting connection

Code	Description	
1	½–14 NPT	★
2	M20 conduit adapter	★

PlantWeb functionality

Code	Description	
1	HART® data	★

Certification

Code	Description	
NA	No approval	★
I1	ATEX Intrinsic Safety	★
I2	Brazil (INMETRO) Intrinsic Safety	★
I3	China (NEPSI) Intrinsic Safety	★
I4	Japan (CML) Intrinsically Safe	★
I5	USA (FM) Intrinsically Safe, Non-incendive	★
I6	Canada (CSA) Intrinsically Safe	★
I7	IECEX Intrinsically Safe	★
N1	ATEX Type n	★
N2	Brazil (INMETRO) Type n	★
N7	IECEX Type n	★
IP	Korea (KOSHA) Intrinsic Safety	★
IW	India (CCOE) Intrinsic Safety	★
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety	★
NM	Technical Regulation Customs Union (EAC) Type n	
KM	Technical Regulation Customs Union (EAC) Intrinsic Safety and Type n	
E5	USA Explosion proof	
E6	Canada Explosion proof	

Wireless update rate, operating frequency, and protocol

Code	Description	
WA3	User-configurable update rate, 2.4 GHz direct sequence spread spectrum, IEC 62591 (<i>WirelessHART</i> ®)	★

Omni-directional antenna and SmartPower™ solutions

Code	Description	
WK9	Long range, integral antenna, power scavenging	★

Accessories

Item description	Part number
Remote mount kit - aluminum	00775-9000-0001
Remote mount kit - stainless steel	00775-9000-0011
M20 conduit adapter	00775-9001-0001

Specifications

Functional specifications

Input

Any 2-wire, 3-wire, or 4-wire device
Capable with HART® 5 or newer

Output

IEC 62591 (*WirelessHART*®)

Humidity limits

0 - 100 percent relative humidity

Update rate

User selectable, eight seconds to 60 minutes

Physical specifications

Material selection

Emerson provides a variety of Rosemount products with various product options and configurations, including materials of construction that can be expected to perform well in a wide range of applications. The Rosemount product information presented is intended as a guide for the purchaser to make an appropriate selection for the application. It is the purchaser's sole responsibility to make a careful analysis of all process parameters (such as all chemical components, temperature, pressure, flow rate, abrasives, contaminants, etc.), when specifying product, materials, options, and components for the particular application. Emerson is not in a position to evaluate or guarantee the compatibility of the process fluid or other process parameters with the product, options, configuration, or materials of construction selected.

Electrical connections

The THUM Adapter is connected into a powered 4–20 mA loop, powering itself by scavenging power. The THUM Adapter causes a voltage drop across the loop. The drop is linear from 2.25 V at 3.5 mA to 1.2 V at 25 mA, but does not effect the 4–20 mA signal on the loop. Under fault conditions, the maximum voltage drop is 2.5 V.

Power supply

The minimum load on the loop is 250 Ohms.

To maintain normal operating functions of the sub-device, the power in the loop must have at least a 2.5 V margin at a 250 Ω load.

Limit the power supply to 0.5 A maximum.

Limit the power supply to 30 Vdc maximum.

Field Communicator connections

Use wired device HART® connections

Materials of construction

Enclosure

- Housing option D: Low-copper aluminum
- Housing option E: 316 stainless steel (SST)
- Paint: Polyurethane
- M20 conduit adapter: SST
- M20 conduit adapter O-ring: Buna-N

Antenna

Polybutadine terephthalate (PBT)/Polycarbonate (PC) integrated omni-directional antenna

Weight

- THUM Adapter only aluminum (AL): 0.65 lb. (0.29 kg)
- THUM Adapter only stainless steel (SST): 1.1 lb. (0.5 kg)
- AL THUM Adapter with AL remote kit: 3.2 lb. (1.45 kg)
- SST THUM Adapter with SST remote kit: 5.8 lb. (2.65 kg)
- AL THUM Adapter with M20 conduit adapter: 0.85 lb. (0.038 kg)
- SST THUM Adapter with M20 conduit adapter: 1.3 lb. (0.59 kg)

Enclosure ratings

Housing option code D and remote mount kits are enclosure Type 4X and IP66.

Mounting

The THUM Adapter may be attached directly to the conduit of any 2-wire or 4-wire HART® device or mounted remotely by using remote mount kit.

Performance specifications

Electromagnetic Compatibility (EMC)

Meets all industrial environments of EN61326 and NAMUR NE-21 when installed with shielded wiring. The sub-device must also use shielded wiring for installation.

Maximum deviation $\leq 1\%$ span during EMC disturbance.⁽¹⁾

(1) During the surge event, device may exceed maximum EMC deviation limit or reset; however, device will self-recover and return to normal operation within specified start-up time.

Vibration effect

Output unaffected when tested per the requirements of IEC60770-1 field with general application or pipeline with low vibration level (10–60 Hz 0.15 mm displacement peak amplitude/60–500 Hz 2 g).

When the THUM Adapter is used on wired devices that are subject to vibration levels greater than 2 g, Emerson recommends that the THUM Adapter be remotely mounted using the remote mount kit.

Temperature limits

Ambient temperature

-40 to +185 °F (-40 to +85 °C)

Storage temperature

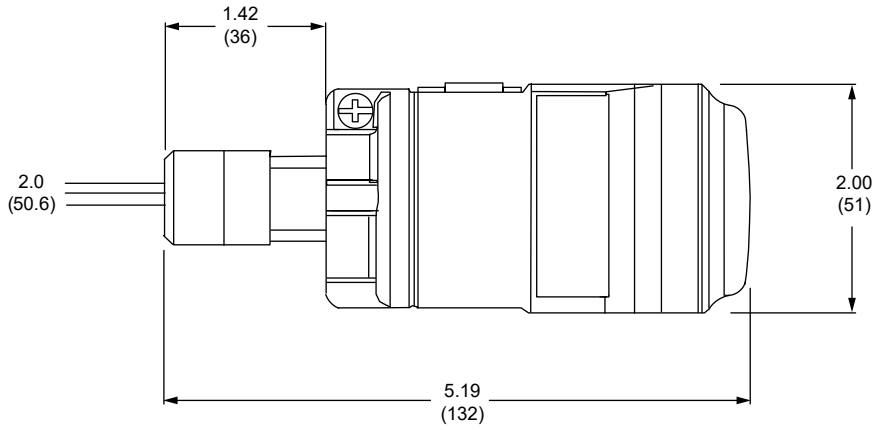
-40 to +185 °F (-40 to +85 °C)

Product certifications

For product certifications, see the [Emerson Wireless THUM Adapter Quick Start Guide](#).

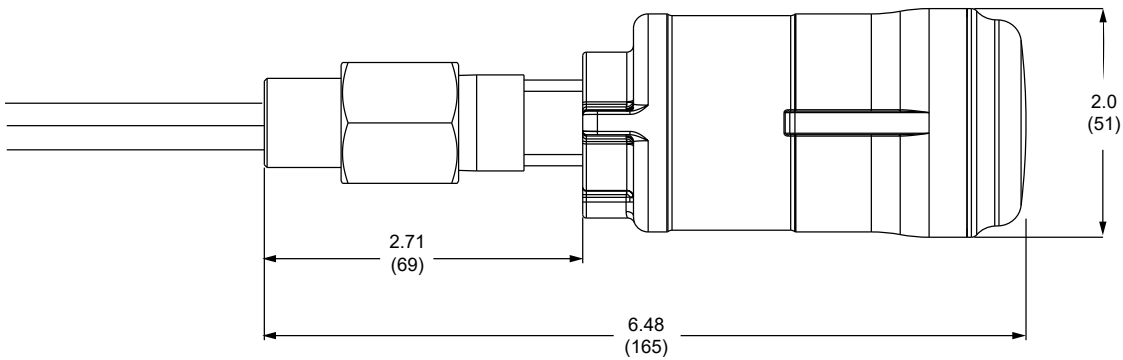
Dimensional drawings

Figure 2: THUM Adapter ½ NPT



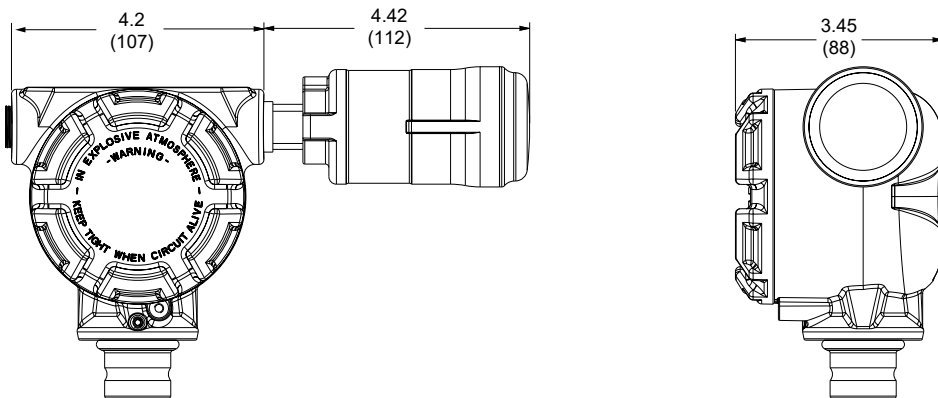
Dimensions are in inches (millimeters).

Figure 3: THUM Adapter with M20 conduit adapter



Dimensions are in inches (millimeters).

Figure 4: THUM Adapter with remote mount kit



Dimensions are in inches (millimeters).

For more information: [Emerson.com/global](https://emerson.com/global)

©2023 Emerson. All rights reserved.

Emerson Terms and Conditions of Sale are available upon request. The Emerson logo is a trademark and service mark of Emerson Electric Co. Rosemount is a mark of one of the Emerson family of companies. All other marks are the property of their respective owners.

ROSEMOUNT™

