

# Emerson Wireless 775 THUM™ Adapter



WirelessHART IEC CE

- Compatible with 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 multivariable 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**

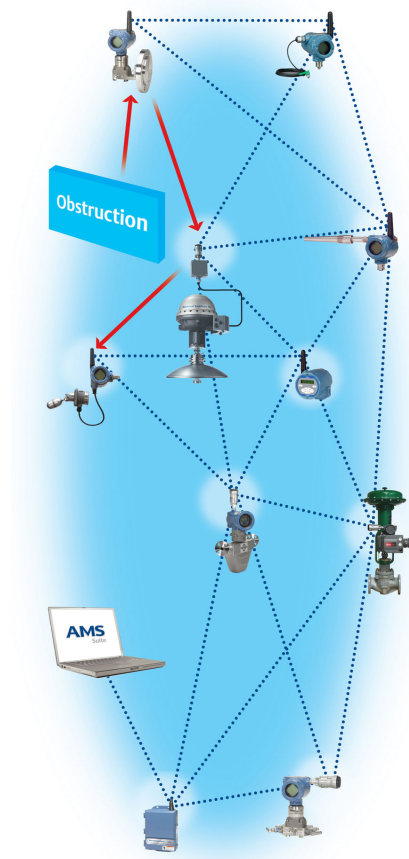
- Standard Institute for Electrical and Electronics Engineers (IEEE) 802.15.4 radios
- 2.4 GHz ISM band sliced into 16 radio channels
- Continually “hop” across channels to avoid interference and increase reliability
- WirelessHART® technology delivers high reliability in challenging radio environment

**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



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# Wireless THUM Adapter

## Device specifications

- Approvals: FM, 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

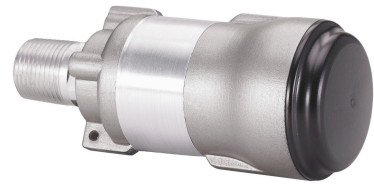
- Rosemount 3051S MultiVariable™ Transmitter and Rosemount 3095 Mass Flow Transmitters
- Rosemount 3300 and 5300 Radar Level Transmitters
- Micro Motion Coriolis Meters
- Rosemount TankRadar™ Rex and TankRadar Pro
- Rosemount Magnetic Flow Meter
- Rosemount MultiVariable Vortex Flow Meter

## Make any HART device wireless access new measurement information

- Level
- Flow
- Valves
- Liquid and gas analysis
- Pressure
- Temperature

## Securely manage devices and monitor health over WirelessHART 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 [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.

### Related information

[Material selection](#)

## 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

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	★
I4	Japan (CML) Intrinsically Safe	★
I5	USA Intrinsically Safe, Non-incendive	★
I6	Canada Intrinsically Safe	★
I7	IECEX Intrinsically Safe	★
N1	ATEX Type n	★
N2	Brazil (INMETRO) Type n	★
N7	IECEX Type n	★
IP	Korea (KOSHA) Intrinsic Safety	★
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety	★
NM	Technical Regulations Customs Union (EAC) Type n	
KM	Technical Regulations Customs Union (EAC) Intrinsic Safety Type n	

## Wireless update rate, operating frequency, and protocol

Code	Description	
WA3	User-configurable update rate, 2.4 GHz, 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  
Compatible with HART® 5 or newer

### Output

IEC 62591 (*WirelessHART*®)

### Radio frequency power output from antenna

**External (WK option) antenna** Maximum of 10 mW (10 dBm) EIRP

### 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 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 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  $\Omega$  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. (0.38 kg)
- SST THUM Adapter with M20 conduit adapter: 1.3 lb. (0.59 kg)

### Enclosure ratings

Housing option code **D** and **E**. Remote mount kits are enclosure Type 4X and IP66.

### Mounting

The THUM™ Adapter may be directly attached to the conduit of any 2-wire, 3-wire, or 4-wire HART® device or mounted remotely with a 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  $\leq 1$  percent span during EMC disturbance.<sup>(1)</sup>

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(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

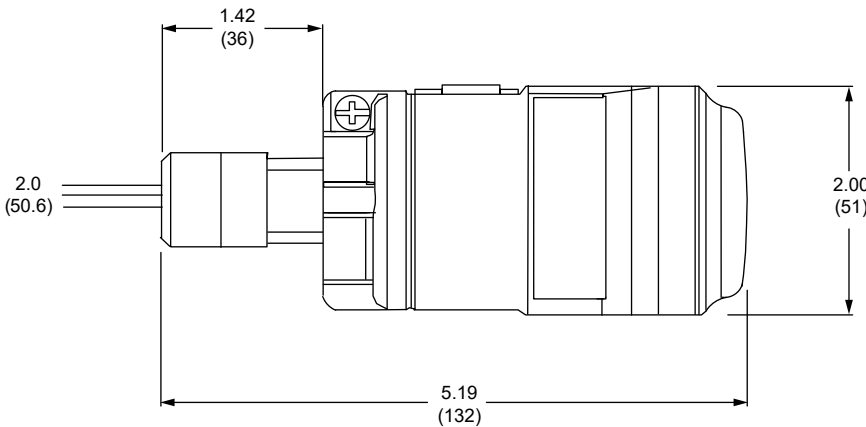
-40 to +185 °F (-40 to +85 °C)

## Product certifications

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

# Dimensional drawings

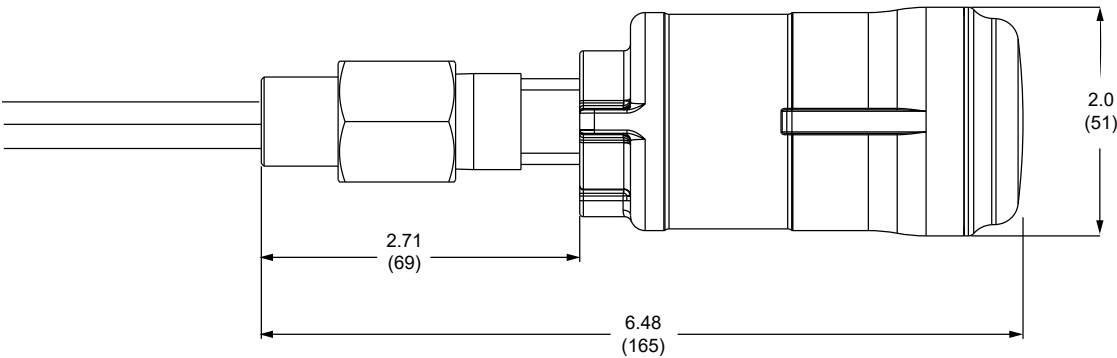
Figure 2: THUM Adapter ½ NPT



**Note**

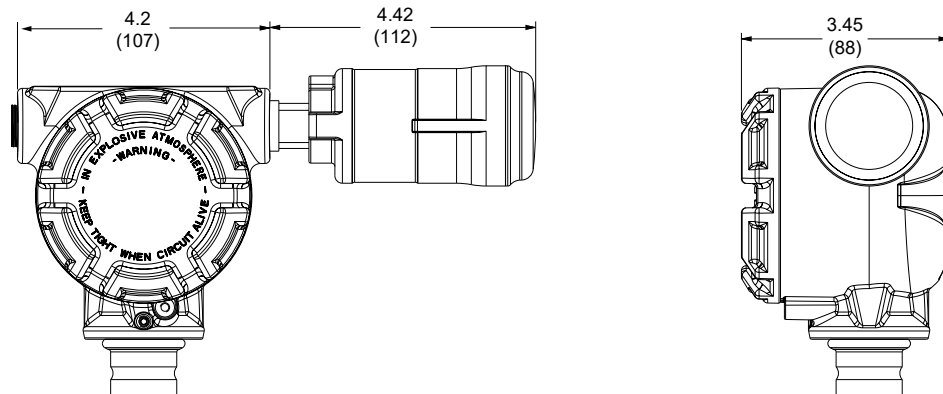
Dimensions are in inches (millimeters).

Figure 3: THUM Adapter with M20 conduit adapter



**Note**

Dimensions are in inches (millimeters).

**Figure 4: THUM Adapter with remote mount kit****Note**

Dimensions are in inches (millimeters).

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

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