Product Data Sheet
00813-0100-4697, Rev HA
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Rosemount 848T High Density Temperature Measurement Family

- *Innovative temperature measurement for high density applications that provide installation and operational savings*
- *Independently configurable inputs that support RTD, thermocouple, ohm, mV, and 4–20 mA signals*
- *Enclosure options and intrinsically safe design allows for installation close to any process, including hazardous areas*
- *Interfaces with any host using a 3420 Fieldbus Interface Module or Smart Wireless Gateway*
- *WirelessHART™ capabilities extends the full benefits of PlantWeb® to previously inaccessible locations*

WirelessHART Expanding the Possibilities

FOUNDATION

CE

Contents

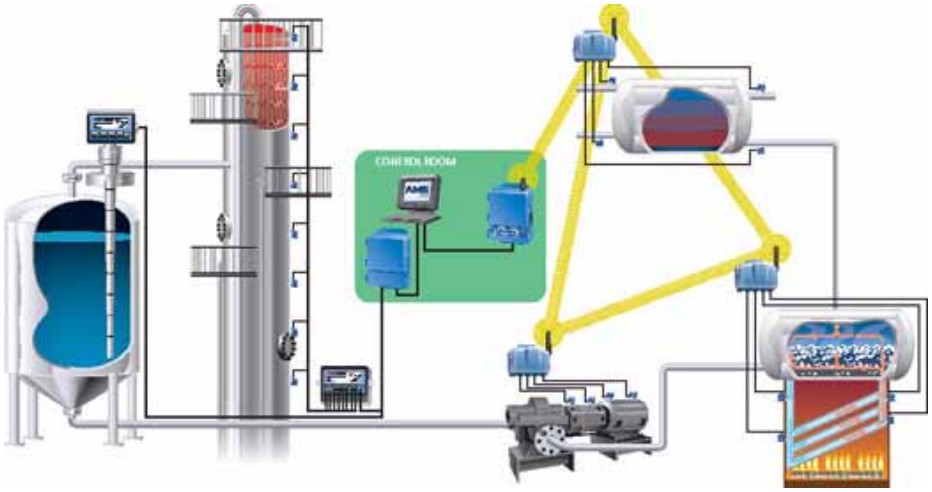
High Density Temperature Measurement

High Density Measurement Applications
Ideal for situations with multiple temperature measurements within close proximity to each other. Examples include bearing temperature on motors, heat exchanger efficiency, boiler tube monitoring, distillation columns, tanks, finished goods storage, furnaces, reactors, compressor stations, and kilns.

Economical Solution
Reduces installation and operational costs by as much as 70 percent compared to traditional methods such as wired direct sensors, low cost single input transmitters, and multiplexers. Traditional methods add significant infrastructure requirements making installations costly and time consuming.

Mounts Practically Anywhere
Provides optimum mounting flexibility with robust housings and junction box options, ambient temperature limits, RFI immunity compliance, and Intrinsic Safety approvals for installation in hazardous areas. To reduce installation costs, it should be mounted right next to the process.

PlantWeb® Benefits
The information PlantWeb delivers - whether wired or wireless - will empower your staff to work predictively, instead of reactively. Maintenance can focus on the repairs that are needed, instead of fixing things that aren't broken. Operations can run production with greater confidence in automation, tuning the process for optimal throughput, quality and availability while reducing overall cost of operations.



Rosemount High Density Temperature Measurement Solutions

Rosemount 848T FOUNDATION™ fieldbus Temperature Transmitter: Simplifies and reduces the cost of temperature measurements by eliminating traditional and costly measurement methods (wiring direct, low cost single input transmitters, and multiplexers). This eight input transmitter can be mounted next to the process and provides a robust solution for the process industry, eliminating installation and maintenance costs associated with traditional methods. The 3420 Fieldbus Interface Module can integrate the Rosemount 848T into any existing control system.

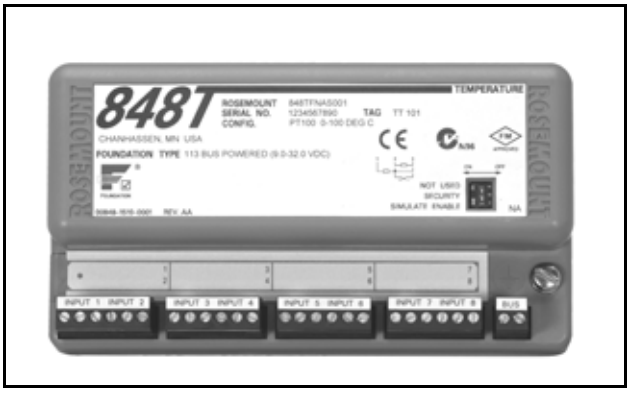
Rosemount 848T Wireless Temperature Transmitter: Achieve all of the benefits of a high density measurement transmitter with no signal wire leading back to the control system. Installation and maintenance costs of signal wire can make some applications and projects economically unfeasible. Break down the economic barriers and receive key insight to valuable assets and processes to improve availability, throughput, and product quality. The Rosemount 848T Wireless can be integrated into any host system with the Smart Wireless Gateway.

The Rosemount 848T FOUNDATION™ fieldbus Temperature Transmitter

Economical Solution
The Rosemount 848T offers a low cost solution for high density measurements (e.g. distillation columns, tanks, reactors, boilers, etc.). It can reduce installation costs by as much as 70 percent per point when compared to traditional sensor wire direct applications.

Reduces I.S. Barrier Costs
For I.S. installations, only one barrier is needed to safely power several Rosemount 848T transmitters. As a result, one barrier can support at least 24 temperature measurement points, resulting in significant savings. The Fieldbus Intrinsically Safe Concept (FISCO) certification on the Rosemount 848T allows even more measurements per I.S. segment.

Eight Independent Sensor Inputs
The Rosemount 848T accepts eight independently configurable sensor inputs (2- and 3-wire RTDs, thermocouples, mV, ohm, and 4–20 mA signals).



ROSEMOUNT 848T FOUNDATION fieldbus TEMPERATURE TRANSMITTER

Diagnostics and MAI Function Blocks
FOUNDATION fieldbus offers inherent diagnostics that provide continuous measurement status (good, bad, or uncertain) as well as sensor failure indication. The Rosemount 848T also offers the Multiple Analog Input (MAI) function block, which allows all eight of the sensor inputs to communicate with one function block, resulting in greater network efficiency.

Converts Analog to Fieldbus
The Rosemount 848T can accept 4–20 mA inputs using an optional analog connector that allows for quick connection of the Field Communicator for local configuration.

The Rosemount 848T Transmitters power *PlantWeb*® providing high density measurement devices with calculating capability using Input Selector function blocks.

Rosemount Temperature Solutions

Rosemount 644 Temperature Transmitter
Head mount styles available with *HART* or *FOUNDATION* fieldbus protocol. Rail mount style available for *HART* protocol.

Rosemount 3420 Fieldbus Interface Module
Provides an interface between *FOUNDATION* fieldbus instruments and systems without fieldbus capability using standard interface protocols.

Rosemount General Use Sensors and Thermowells
Rosemount has a broad offering of RTD and thermocouples that are designed to meet plant requirements.

Rosemount 248 Temperature Transmitter
Head mount (DIN B) and Rail mount style with *HART* protocol and complete temperature assembly.

Rosemount 3144P Temperature Transmitter
Dual-compartment housing, dual sensor design available with HART or FOUNDATION fieldbus fieldbus protocol.

Rosemount 148 Temperature Transmitter
Head mount style (DIN B) PC-programmable transmitter.

FOUNDATION fieldbus

Specifications

FUNCTIONAL

Inputs

Eight independently configurable channels including combinations of 2- and 3-wire RTDs, thermocouples, mV, and ohm inputs.

4–20 mA inputs using optional connector(s).

Outputs

Manchester-encoded digital signal that conforms to IEC 1158-2 and ISA 50.02.

Status

If self-diagnostics detect a sensor burnout or a transmitter failure, the status of the measurement will be updated accordingly.

Ambient Temperature Limits

–40 to 185 °F (–40 to 85 °C)

Accuracy (Pt 100 @ reference condition: 20 °C)

±0.30 °C (±0.54 °F) For the complete list see “Accuracy” on page 24.

Isolation

Isolation between all sensor channels is rated to 10Vdc over all operating conditions. No damage will occur to the device with up to 600 Vdc between any sensor channel.

Power Supply

Powered over FOUNDATION fieldbus with standard fieldbus power supplies. The transmitter operates between 9.0 and 32.0 V dc, 22 mA maximum. (Transmitter power terminals are rated to 42.4 V dc.)

Transient Protection

The transient protector (option code T1) helps to prevent damage to the transmitter from transients induced on the loop wiring by lightning, welding, heavy electrical equipment, or switch gears. This option is installed at the factory for the Rosemount 848T and is not intended for field installation.

Update Time

Approximately less than 1.5 seconds to read all 8 inputs.

Humidity Limits

0–99% non-condensing relative humidity

Turn-on Time

Performance within specifications is achieved in less than 30 seconds after power is applied to the transmitter.

Alarms

The AI and ISEL function blocks allow the user to configure the alarms to HI-HI, HI, LO, or LO-LO with a variety of priority levels and hysteresis settings.

Backup Link Active Scheduler (LAS)

The transmitter is classified as a device link master, which means it can function as a Link Active Scheduler (LAS) if the current link master device fails or is removed from the segment.

The host or other configuration tool is used to download the schedule for the application to the link master device. In the absence of a primary link master, the transmitter will claim the LAS and provide permanent control for the H1 segment.

FOUNDATION fieldbus Parameters

Schedule Entries	20
Links	30
Virtual Communications Relationships (VCR)	20

PHYSICAL

Mounting

The Rosemount 848T can be mounted directly onto a DIN rail or it can be ordered with an optional junction box. When using the optional junction box, the transmitter can be mounted onto a panel or to a 2-in. pipe stand (with option code B6).

Entries for Optional Junction Box

No Entry

- Used for custom fittings

Cable Gland

- 9 x M20 nickel-plated brass glands for 7.5–11.9 mm unarmored cable

Conduit

- 5 plugged 0.86-in. diameter holes suitable for installing $^1/_2$-in. NPT fittings

Materials of Construction for Optional Junction Box

Junction Box Type	Paint
Aluminum	Epoxy Resin
Plastic	NA
Stainless Steel	NA
Aluminum Explosion-proof	NA

Weight

Assembly	Weight		
	oz	lb	kg
Rosemount 848T only	7.5	.47	.208
Aluminum(1)	78.2	4.89	2.22
Plastic (1)	58.1	3.68	1.65
Stainless Steel (1)	77.0	4.81	2.18
Aluminum Explosion-proof	557	34.8	15.5

(1) Add 35.2 oz (2.2 lb, 0.998 kg) for nickel-plated brass glands

Environmental Ratings

Type 4X, and CSA Enclosure Type 4X, and IP66 with optional junction box. JX3 Explosion-proof enclosure rated to -4 °F (-20 °C).

FUNCTION BLOCKS

Analog Input (AI)

- Processes the measurement and makes it available on the fieldbus segment.
- Allows filtering, alarming, and engineering unit changes.

Input Selector (ISEL)

- Used to select between inputs and generate an output using specific selection strategies such as minimum, maximum, midpoint, or average temperature.
- Since the temperature value always contains the measurement status, this block allows the selection to be restricted to the first “good” measurement.

Multiple Analog Input Block (MAI)

- The MAI block allows the eight AI blocks to be multiplexed together so they serve as one function block on the H1 segment, resulting in greater network efficiency.

Stability

- ±0.1% of reading or 0.1 °C (0.18 °F), whichever is greater, for 2 years for RTDs.
- ±0.1% of reading or 0.1 °C (0.18 °F), whichever is greater, for 1 year for thermocouples.

Self Calibration

The transmitter’s analog-to-digital circuitry automatically self-calibrates for each temperature update by comparing the dynamic measurement to extremely stable and accurate internal reference elements.

Vibration Effect

Transmitters are tested to the following vibration conditions with no effect on performance:

Frequency	Acceleration
10 - 60 Hz	0.21 mm peak displacement
60 - 2000 Hz	3 g

CE Electromagnetic Compatibility Compliance Testing

Meets the criteria under IEC 61326: 2006

Rosemount 848T Family

ACCURACY

TABLE 1. Input Options/Accuracy

Sensor Option	Sensor Reference	Input Ranges °C	Input Ranges °F	Accuracy Over Range(s) °C	Accuracy Over Range(s) °F
2- and 3-Wire RTDs					
Pt 50 (α = 0.00391)	GOST 6651-94	–200 to 550	–328 to 1022	± 0.57	± 1.03
Pt 100 (α = 0.00391)	GOST 6651-94	–200 to 550	–328 to 1022	± 0.28	± 0.50
Pt 100 (α = 0.00385)	IEC 751; α = 0.00385, 1995	–200 to 850	–328 to 1562	± 0.30	± 0.54
Pt 100 (α = 0.003916)	JIS 1604, 1981	–200 to 645	–328 to 1193	± 0.30	± 0.54
Pt 200 (α = 0.00385)	IEC 751; α = 0.00385, 1995	–200 to 850	–328 to 1562	± 0.50	± 0.90
Pt 200 (α = 0.003916)	JIS 1604; α = 0.003916, 1981	–60 to 100	–140 to 212	± 0.30	± 0.54
Pt 500	IEC 751; α = 0.00385, 1995	–200 to 850	–328 to 1562	± 0.38	± 0.68
Pt 1000	IEC 751; α = 0.00385, 1995	–200 to 300	–328 to 572	± 0.40	± 0.72
Ni 120	Edison Curve No. 7	–70 to 300	–94 to 572	± 0.30	± 0.54
Cu 10	Edison Copper Winding No. 15	–50 to 250	–58 to 482	± 3.20	± 5.76
Cu 100 (a=428)	GOST 6651-94	-185 to 200	-365 to 392	± 0.48	±0.86
Cu 50 (a=428)	GOST 6651-94	-185 to 200	-365 to 392	± 0.96	±1.73
Cu 100 (a=426)	GOST 6651-94	-50 to 200	-122 to 392	± 0.48	±0.86
Cu 50 (a=426)	GOST 6651-94	-50 to 200	-122 to 392	± 0.96	±1.73
Thermocouples—Cold Junction Adds + 0.5 °C to Listed Accuracy					
NIST Type B (Accuracy varies according to input range)	NIST Monograph 175	100 to 300 301 to 1820	212 to 572 573 to 3308	± 6.00 ± 1.54	± 10.80 ± 2.78
NIST Type E	NIST Monograph 175	–200 to 1000	–328 to 1832	± 0.40	± 0.72
NIST Type J	NIST Monograph 175	–180 to 760	–292 to 1400	± 0.70	± 1.26
NIST Type K	NIST Monograph 175	–180 to 1372	–292 to 2502	± 1.00	± 1.80
NIST Type N	NIST Monograph 175	–200 to 1300	–328 to 2372	± 1.00	± 1.80
NIST Type R	NIST Monograph 175	0 to 1768	32 to 3214	± 1.50	± 2.70
NIST Type S	NIST Monograph 175	0 to 1768	32 to 3214	± 1.40	± 2.52
NIST Type T	NIST Monograph 175	–200 to 400	–328 to 752	± 0.70	± 1.26
DIN L	DIN 43710	–200 to 900	–328 to 1652	± 0.70	± 1.26
DIN U	DIN 43710	–200 to 600	–328 to 1112	± 0.70	± 1.26
w5Re26/W26Re	ASTME 988-96	0 to 2000	32 to 3632	± 1.60	± 2.88
GOST Type L	GOST R 8.585-2001	-200 to 800	-392 to 1472	± 0.71	±1.28
Body Temperature of Transmitter		-50 to 85	-58 to 185	±0.50	±0.90
Millivolt Input—Not approved for use with CSA Option Code I6		–10 to 100 mV		± 0.05 mV	
2- and 3-Wire Ohm Input		0 to 2000 ohms		± 0.90 ohm	
4–20 mA (Rosemount)(1)		4–20 mA		± 0.01 mA	
4–20 mA (NAMUR)(1)		4–20 mA		± 0.01 mA	
Multipoint Sensors(2)					

(1) Requires the S002 option code.

(2) Multipoint (up to 8 points) thermocouples and RTDs are available for purchase with the Rosemount 848T. Input ranges and accuracy for these sensors will depend on the specific multipoint sensor chosen. For more information, contact your local Emerson representative.

Accuracy Notes

Differential capability exists between any two sensor types:

For all differential configurations, the input range is X to +Y where

X = Sensor A minimum - Sensor B max.
Y = Sensor A maximum - Sensor B min.

Accuracy for differential configurations:

If sensor types are similar (for example, both RTDs or both thermocouples), the accuracy = 1.5 times worst case accuracy of either sensor type. If sensor types are dissimilar (for example, one RTD and one thermocouple), the accuracy = Sensor 1 Accuracy + Sensor 2 Accuracy.

Analog Sensors 4–20mA

Two types of 4–20 mA sensors are compatible with the Rosemount 848T. These types must be ordered with the S002 option code complete with an analog connector kit. The alarm levels, accuracy for each type are listed in Table 2.

TABLE 2. Analog Sensors

Sensor Option	Alarm Levels	Accuracy
4–20mA (Rosemount Standard)	3.9 to 20.8 mA	± 0.01mA
4–20mA (NAMUR)	3.8 to 20.5 mA	± 0.01mA

AMBIENT TEMPERATURE EFFECT

Transmitters may be installed in locations where the ambient temperature is between –40 and 85 °C (–40 and 185 °F).

TABLE 3. Ambient Temperature Effects

NIST Type	Accuracy per 1.0 °C (1.8 °F) Change in Ambient Temperature(1)	Temperature Range (°C)
RTD		
Pt 50 (α = 0.00391)	• 0.004 °C (0.0072 °F)	NA
Pt 100 (α = 0.00391)	• 0.002 °C (0.0036 °F)	NA
Pt 100 (α = 0.00385)	• 0.003 °C (0.0054 °F)	NA
Pt 100 (α = 0.003916)	• 0.003 °C (0.0054 °F)	NA
Pt 200 (α = 0.003916)	• 0.004 °C (0.0072 °F)	NA
Pt 200 (α = 0.00385)	• 0.004 °C (0.0072 °F)	NA
Pt 500	• 0.003 °C (0.0054 °F)	NA
Pt 1000	• 0.003 °C (0.0054 °F)	NA
Cu 10	• 0.03 °C (0.054 °F)	NA
Cu 100 (a=428)	• 0.002 °C (0.0036 °F)	NA
Cu 50 (a=428)	• 0.004 °C (.0072 °F)	NA
Cu 100 (a=426)	• 0.002 °C (0.0036 °F)	NA
Cu 50 (a=426)	• 0.004 °C (.0072 °F)	NA
Ni 120	• 0.003 °C (0.0054 °F)	NA
Thermocouple (R = the value of the reading)		
Type B	• 0.014 °C • 0.032 °C - (0.0025% of (R - 300)) • 0.054 °C - (0.011% of (R - 100))	• R ≥ 1000 • 300 ≤ R < 1000 • 100 ≤ R < 300
Type E	• 0.005 °C + (0.00043% of R)	• All
Type J, DIN Type L	• 0.0054 °C + (0.00029% of R) • 0.0054 °C + (0.0025% of |R|)	• R ≥ 0 • R < 0
Type K	• 0.0061 °C + (0.00054% of R) • 0.0061 °C + (0.0025% of |R|)	• R ≥ 0 • R < 0
Type N	• 0.0068 °C + (0.00036% of R)	• All
Type R, Type S	• 0.016 °C • 0.023 °C - (0.0036% of R)	• R ≥ 200 • R < 200
Type T, DIN Type U	• 0.0064 °C • 0.0064 °C + (0.0043% of |R|)	• R ≥ 0 • R < 0
GOST Type L	• 0.007 °C • 0.007 °C + (0.003% of IRI)	• R ≥ 0 • R < 0
Millivolt	• 0.0005 mV	NA
2- and 3-wire Ohm	• 0.0084 ohms	NA
4–20 mA (Rosemount)	• 0.0001 mA	NA
4-20 mA (NAMUR)	• 0.0001 mA	NA

(1) Change in ambient is in reference to the calibration temperature of the transmitter (20 °C (68 °F) typical from the factory).

Ambient Temperature Notes

Examples:

When using a Pt 100 (α = 0.00385) sensor input at 30 °C ambient temperature:

- Digital Temperature Effects: 0.0045 °C x (30 - 20) = 0.045 °C
- Worst Case Error: Digital + Digital Temperature Effects = 0.225 °C + 0.045 °C = 0.27 °C
- Total Probable Error $\sqrt{0.30^2 + 0.06^2} = 0.31°C$

Analog to Fieldbus Performance

Accuracy: 0.0625% of span. **Note:** To obtain accuracy, the mV input must be calibrated while using the optional analog connector
Temperature Effect: [0.002% of reading + 0.000625% of span] per 1.0 °C change in Ambient Temperature.

FOUNDATION fieldbus

Product Certifications

HAZARDOUS LOCATIONS CERTIFICATION

North American Certificates

Factory Mutual (FM) Certifications

I5 Intrinsically Safety and Non-Incendive
Intrinsically Safe Class I, Division 1 Groups A, B, C, D.
Temperature Code:
T4 ($T_{a\ =}$ –40 to 60 °C
Non-incendive for Class I, Division 2, Groups A, B, C, D.
Temperature Code:
T4A (T_a = –40 to 85 °C)
T5 (T_a = –40 to 70 °C)
When installed to Rosemount Control Drawing 00848-4402.
S002 Option is not valid with intrinsic safety (I5 and IE) approval.

IE FISCO (Fieldbus Intrinsically Safe Concept) Intrinsic Safety
FISCO for Class I, Division 1, Groups A, B, C, D.
Temperature Code:
T4 = (T_a = – 40 to 60 °C)
Non-incendive for Class I, Division 2, Groups A, B, C, D.
Temperature Code:
T4A (T_a = –40 to 85 °C)
T5 (T_a = –40 to 70 °C)
Suitable in FISCO System when installed to Rosemount Control Drawing 00848-4402.
S002 Option is not valid with intrinsic safety (I5 and IE) approval.

TABLE 4. Entity Parameters

Power/Bus	Sensor
U_i = 17.5 V	U_o = 12.02 V
I_i = 380 mA	I_o = 13.5 mA
P_i = 5.32 W	P_o = 0.04 W
C_i = 2.1 nF	C_a = 1.36 µF
L_i = 0	L_a = 160 mH

N5 Dust Ignition-Proof for Use in Class II/III, Division 1, Groups E, F, G.
Nonincendive for Class I, Division 2, Groups A, B, C, D.
When installed to Rosemount Control Drawing 00848-4402.
Temperature Code:
T4A (T_a = –40 to 85 °C)
T5 (T_a = –40 to 70 °C)
Rosemount Enclosure Required.
Indoor Hazardous (Classified) Locations.

NK NonIncendive for Class I, Division 2, Groups A, B, C, D.
When installed to Rosemount Control Drawing 00848-4402.
Temperature Code:
T4a (T_{amb} = -40 to 85 °C)
T5 (T_{amb} = -40 to 70 °C)
Rosemount Enclosure Required.
Indoor Hazardous (Classified) Locations.

TABLE 5. FM Approved Entity Parameters(1)

Power/Bus	Sensor
U_o = 3.01V	U_o = 12.02 V
I_o = 3.38mA	I_o = 13.5 mA
P_o = 0.01W	P_o = 0.04 W
C_a = 0.34 µF	C_a = 1.36 µF
L_a = 40 mH	L_a = 160 mH

(1) Intrinsically safe and non-incendive parameters

Canadian Standards Association (CSA) Certifications

E6 Explosion-Proof and Dust Ignition-Proof
Class I, Division 1, Groups B, C, and D.
Class II, Division 1, Groups E, F, and G.
Class III
Must be installed in enclosure option JX3.
Install per drawing 00848-1041.
Conduit seal not required.

I6 Intrinsic Safety and Class I, Division 2
Class I, Division 1, Groups A, B, C, and D.
Temperature Code:
T3 = (– 50 ≤ T_a ≤ 60 °C)
Suitable for Class I, Division 2, Groups A, B, C, and D.
Temperature Code:
T3 = (– 50 ≤ T_a ≤ 60 °C)
Rated at 42.4V dc Max.
Install per drawing 00848-4403.
S002 Option is not valid with intrinsic safety (I6 and IF) approval.

TABLE 6. CSA Approved Entity Parameters

Power/Bus	Sensor
U_i = 30 V	U_o = 12.02 V
I_i = 300 mA	I_o = 11.8 mA
C_i = 2.1 nF	C_a = 1.36 µF
L_i = 0	L_a = 225 mH

IF FISCO and Class I, Division 2
Class I, Division I, Groups A, B, C, and D.
Temperature Code:
T3C = (– 50 ≤ T_a ≤ 60 °C)
Class I, Division 2, Groups A, b, C, and D.
Temperature Code:
T3C = (– 50 ≤ T_a ≤ 60 °C)
FISCO Output when installed per Installation Drawing 00848-4403.
S002 Option is not valid with intrinsic safety (I6 and IF) approval.

TABLE 7. CSA Approved Entity Parameters

Power/Bus	Sensor
U_i = 17.5 V	U_o = 12.02 V
I_i = 380 mA	I_o = 11.8 mA
C_i = 2.1 nF	C_a = 1.36 µF
L_i = 0	L_a = 225 mH

N6 Class I, Division 2
Suitable for use in Class I, Division 2, Groups A, B, C, D. when installed per Rosemount drawing 00848-4403.
Temperature Code:
T3C = (– 50 ≤ T_a ≤ 60 °C)
Must be installed in a suitable enclosure as determined acceptable by the local inspection authority.

European Certifications

ATEX Certifications

I1 Intrinsic Safety
Certification Number: Baseefa02ATEX0010X
ATEX Marking ⟨Ex⟩ II 1 G
EEx ia IIC T4 (T_{amb} = –50 to 60 °C)
CE 1180

TABLE 8. ATEX Approved Entity Parameters

Power/Bus	Sensor
U_i = 30 V	U_o = 12.5 V
I_i = 300 mA	I_o = 66 mA
P_i = 1.3 W	P_o = 40 mW
C_i = 0	C_i = 0
L_i = 0	L_i = 0

Special Conditions for Safe Use (x):

This apparatus must be installed in an enclosure which affords it a degree of protection of at least IP20. Non-metallic enclosures must have a surface resistance of less than 1G ohm, light alloy or zirconium enclosures must be protected from impact and friction when installed.

The apparatus will not meet the 500V rms isolation test required by Clause 6.4.12 on EN50 020:1994. this must be taken into account when installing the apparatus.

IA FISCO (Fieldbus Intrinsically Safe Concept) Intrinsic Safety
Certification Number: Baseefa02ATEX0010X
ATEX Marking ⟨Ex⟩ II 1 G
EEx ia IIC T4 (T_{amb} = –50 to 60 °C)
CE 1180

TABLE 9. ATEX Approved Entity Parameters

Power/Bus	Sensor
U_i = 17.5 V	U_o = 12.5 V
I_i = 380 mA	I_o = 66 mA
P_i = 5.32 W	P_o = 40 mW
C_i = 0	C_i = 0
L_i = 0	L_i = 0

NE BASEEFA/ ATEX TYPE 'n' APPROVAL
Certification Number: BAS01ATEX3199X
ATEX Marking ⟨Ex⟩ II 3 G
EEx nA nL IIC T5 (T_{amb} = -40 to 65 °C)

Special Conditions for Safe Use (x):

This apparatus must be installed in an enclosure which affords it a degree of protection of at least IP20. Non-metallic enclosures must have a surface resistance of less than 1G ohm, light alloy or zirconium enclosures must be protected from impact and friction when installed.

The apparatus will not meet the 500V rms isolation test required by Clause 6.4.12 on EN50 020:1994. This must be taken into account when installing the apparatus.

N1 ATEX Type n
Certification Number: BAS01ATEX3199X
ATEX Marking ⟨Ex⟩ II 3 G
EEx nL IIC T5 (T_{amb} = –40 to 65 °C)

TABLE 10. Entity Parameters

Power/Bus	Sensor
U_i = 42.4 V	U_o = 5 V
C_i = 0	I_o = 2.5 mA
L_i = 0	C_o = 1000 µF
	L_o = 1000 mH

Special Conditions for Safe Use (x):

1. Provisions shall be made, external to the apparatus, to prevent the rated voltage (42.4V dc) being exceeded by transient disturbances of more than 40%.
2. The ambient temperature range of use shall be the most restrictive of the apparatus, cable gland, or blanking plug.

NC ATEX Type n Component
Certification Number: BAS01ATEX3198U
ATEX Marking ⟨Ex⟩ II 3 G
EEx nL IIC T4 (T_{amb} = –50 to 85 °C)
EEx nL IIC T5 (T_{amb} = –50 to 70 °C)

Special Conditions for Safe Use (x):

1. The component must be housed in a suitably certified enclosure.
2. Provision shall be made, external to the component, to prevent the rated voltage (42.4V d.c.) being exceeded by transient disturbances of more than 40%.

ND ATEX Dust Ignition Proof
Certification Number: BAS01ATEX1315X
ATEX Marking ⟨Ex⟩ II 1 D
T90C (T_{amb} = – 40 to 65 °C) IP66

Special Conditions for Safe Use (x):

1. The user must ensure that the maximum rated voltage and current (42.2 volts, 22 mA, DC) are not exceeded. All connections to other apparatus or associated apparatus shall have control over this voltage and current equivalent to a category “ib” circuit according to EN50020.
2. Component approved EEx e cable entries must be used which maintain the ingress protection of the enclosure to at least IP66.
3. Any unused cable entry holes must be filled with component approved EEx e blanking plugs.
4. The ambient temperature range of use shall be the most restrictive of the apparatus, cable gland, or blanking plug.

NOTE: NE is valid with S001 Input Type ONLY.

TABLE 11. Baseefa Approved Entity Parameters

Power/Bus	Sensor
U_i = 42.4 V	U_o = 5V dc
C_i = 0	I_o = 2.5 mA
L_i = 0	C_o = 1000 µF
	L_o = 1000 mH

Special Conditions of Safe Use (x):

1. Provisions shall be made, external to the apparatus, to prevent the rated voltage (42.2V dc) being exceeded by transient disturbances of more than 40%.
2. The ambient temperature range of use shall be the most restrictive of the apparatus, cable gland or blanking plug.

NF COMPONENT Approval
Certification Number: BAS01ATEX3198U
ATEX Marking Ex II 3 G
EEx nA nL IIC T4 (T_{amb} = -50 to 85 °C)
EEx nA nL IIC T5 (T_{amb} = -50 to 70 °C)
NOTE: NF is valid with S001 Input Type ONLY

TABLE 12. Baseefa Approved Entity Parameters

Power/Bus	Sensor
U_i = 42.4 V	U_o = 5V dc
C_i = 0	I_o = 2.5 mA
L_i = 0	C_o = 1000 µF
	L_o = 1000 mH

Special Conditions of Safe Use (x):

1. The component must be housed in a suitable certified enclosure.
2. Same as condition 1 for Cert: BAS01ATEX3198U

IECEx Certifications

I7 IECEx Intrinsic Safety
Certificate No.: IECExBAS06.0093X
Ex ia IIC T4 (T_{amb} = –50 to 60 °C)

TABLE 13. IECEx Approved Entity Parameters

Power/Bus	Sensor
U_i = 30 V	U_o = 12.5 V
I_i = 300 mA	I_o = 66 mA
P_i = 1.3 W	P_o = 40 mW
C_i = 0	C_i = 0
L_i = 0	L_i = 0

IG IECEx FISCO
Certificate No.: IECExBAS06.0093X
Ex ia IIC T4 (T_{amb} = – 50 to 60 °C)

TABLE 14. IECEx Approved Entity Parameters

Power/Bus	Sensor
U_i =17.5 V	U_o = 12.5 V
I_i = 380 mA	I_o = 66 mA
P_i = 5.32 W	P_o = 40 mW
C_i = 0	C_i = 0
L_i = 0	L_i = 0

Conditions of Safe Use (x):

1. The 848T shall be used according to its input and output parameters.
2. For Ex ia applications, the equipment is to be DIN-rail mounted in an IP20 area, mounted in a Rosemount Junction Box Option Code JPx, JAx, or JSx, or mounted in any suitable enclosure rated to a minimum of IP20.
3. For Ex n applications, the equipment is to be mounted in a Rosemount Junction Box Option Code JPx, JAx, or JSx, or mounted in any suitable enclosure rated to a minimum of IP54.
4. When installed in an enclosure, cable glands are to selected and used to ensure a minimum rating of IP20 for Ex ia equipment or a minimum rating of IP54 for Ex n equipment. Unused cable glands or conduit entries are to be closed to ensure the required IP rating is maintained.
5. When the equipment is to be installed and used in accordance with the FISCO concept, the transient protection option is to be fitted.
6. The sensor terminals are for use with passive temperature sensors only (resistance or thermocouple) that are classed as simple devices.

N7 IECEx Type n Approval
Certificate No.” IECExBAS06.0095X
Ex Na nL IIC T5 (T_{amb} = – 40 to 65 °C)
NOTE: N7 is valid with S001 and S002 Input Types

TABLE 15. IECEx Approved Entity Parameters

Power/Bus	Sensor
U_i = 42.4 V	U_o = 5V dc
C_i = 0	I_o = 2.5 mA
L_i = 0	C_o = 1000 µF
	L_o = 1000 mH

Conditions for Safe Use:

1. Provisions shall be made, external to the apparatus, to prevent the rated voltage (42.2V dc) being exceeded by transient disturbances of more than 40%.
2. The ambient temperature range of use shall be the most restrictive of the apparatus, cable gland, or blanking plug.

NJ IECEx Type n COMPONENT Approval
Certification Number: IECExBAS06.0094U
EEx nA nL IIC T4 (T_{amb} = -50 to 85 °C)
EEx nA nL IIC T5 (T_{amb} = -50 to 70 °C)
NOTE: NJ is valid with S001 and S002 Input Types

TABLE 16. IECEx Approved Entity Parameters

Power/Bus	Sensor
U_i = 42.4 V	U_o = 5V dc
C_i = 0	I_o = 2.5 mA
L_i = 0	C_o = 1000 µF
	L_o = 1000 mH

Special Conditions of Safe Use:

1. The component must be housed in a suitable certified enclosure.
2. Provisions shall be made, external to the apparatus, to prevent the rated voltage (42.2V dc) being exceeded by transient disturbances of more than 40%.

Brazilian Certifications

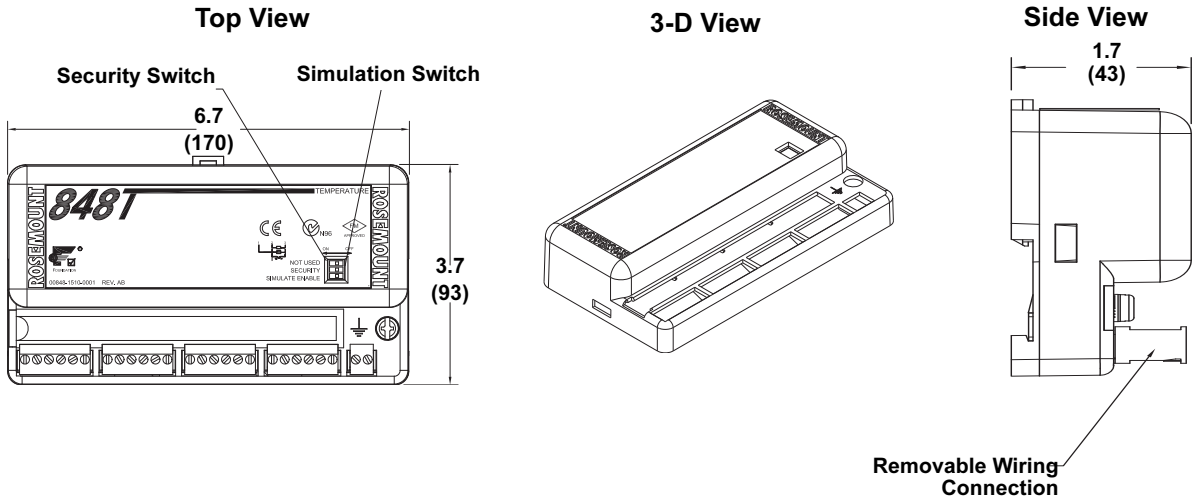
Centro de Pesquisas de Energia Eletrica (CEPEL) Approval

NOTE
Consult factory for CEPEL availability.

Dimensional Drawings

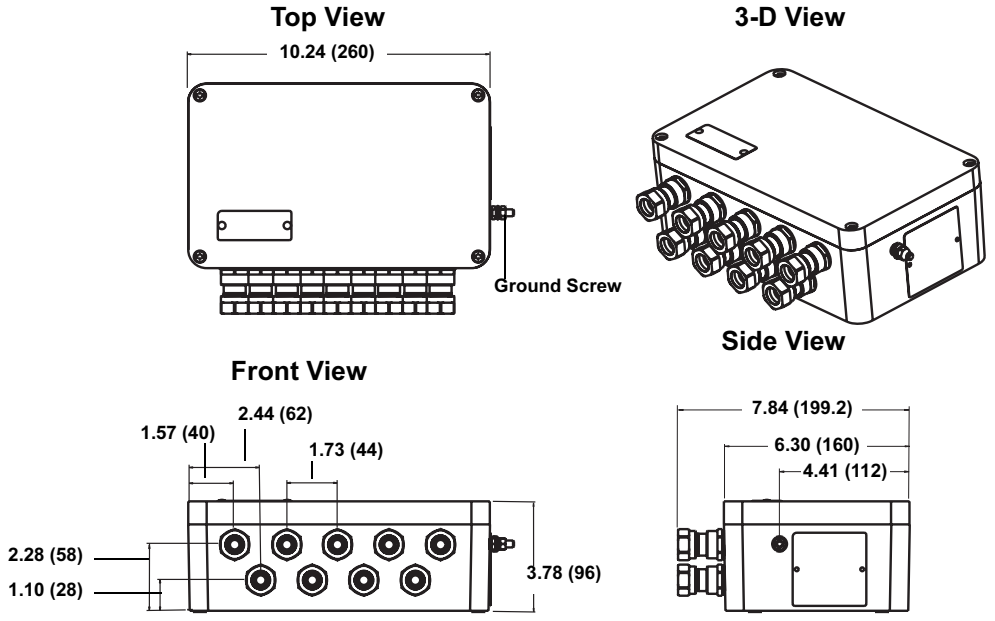
Junction Boxes with no entries (option codes JP1, JA1, and JS1)– external dimensions are the same as those outlined for the other junction box materials in this section.

Rosemount 848T



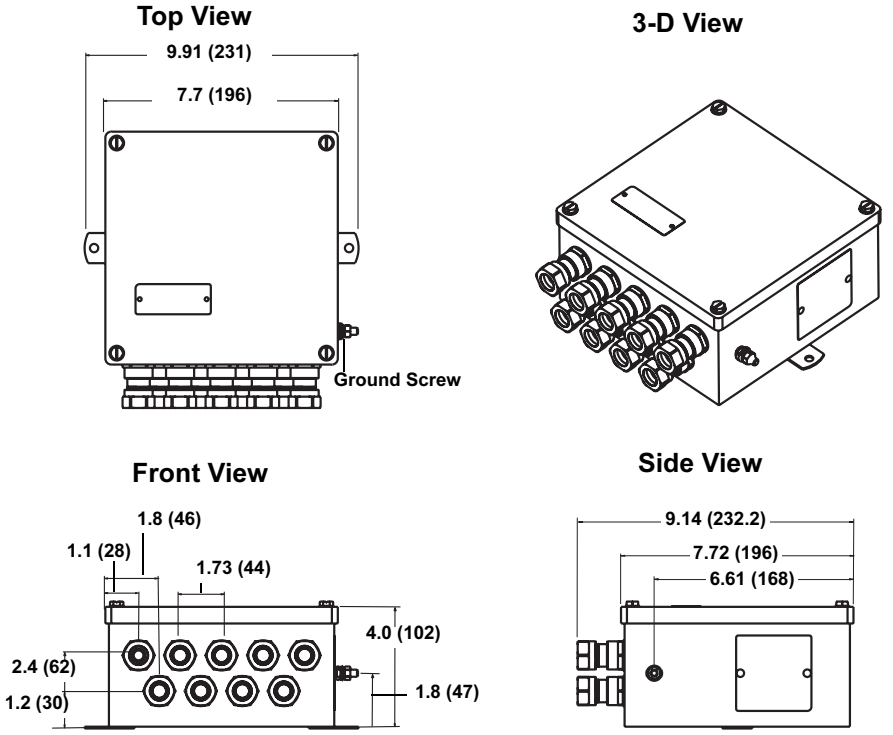
Dimensions are in inches (millimeters)

Aluminum/Plastic Junction Box—Cable Gland (option codes JA2 and JP2)



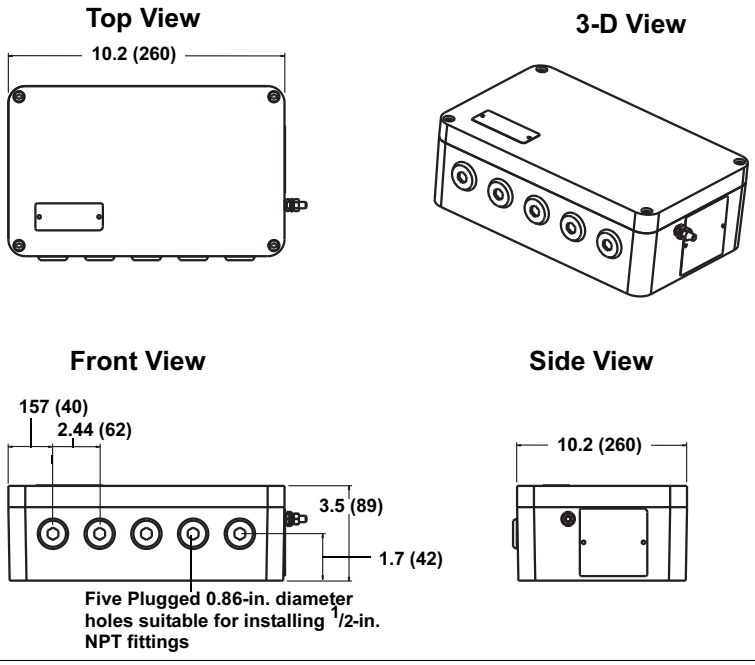
Dimensions are in inches (millimeters)

Stainless Steel Junction Box—Cable Gland (option code JS2)



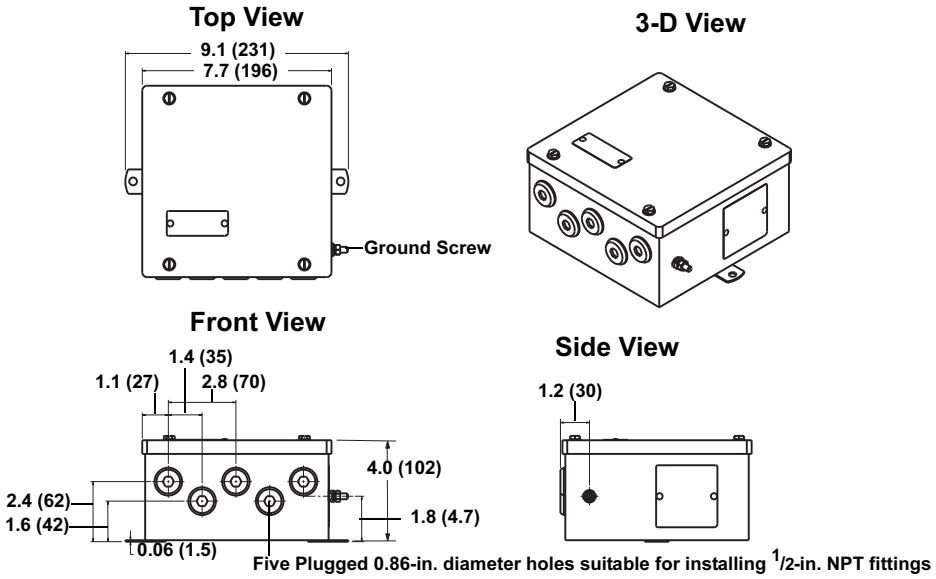
Dimensions are in inches (millimeters)

Aluminum/Plastic Junction Box—Conduit Entry (option codes JA3 and JP3)



Dimensions are in inches (millimeters)

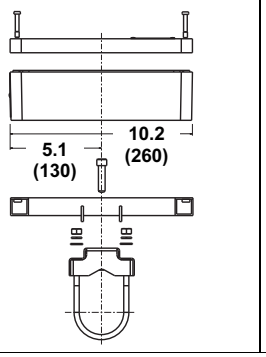
Stainless Steel Junction Box—Conduit Entry (option code JS3)



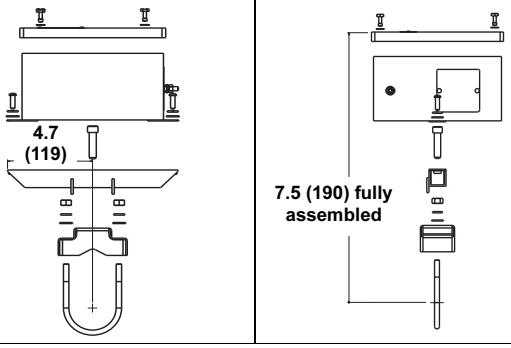
Dimensions are in inches (millimeters)

MOUNTING OPTIONS

Aluminum/Plastic Junction Box (styles JA and JP)

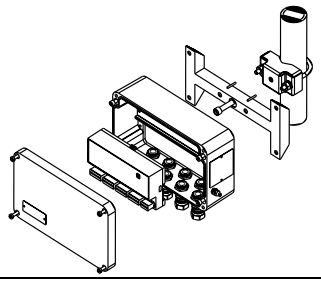


Stainless Steel Junction Box (style JS)

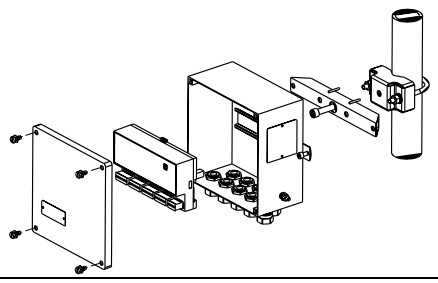


Dimensions are in inches (millimeters)

Aluminum/Plastic Junction Box Mounted on a Vertical Pipe



Stainless Steel Junction Box Mounted on a Vertical Pipe



Ordering Information

Model	Product Description	
848T	High Density Temperature Family	
Code	**Communications Protocol**	
F	FOUNDATION™ fieldbus digital signal (includes AI, MAI, and ISEL function blocks, and Backup Link Active Scheduler)	
Code	**Product Certifications(1)**	**Rosemount Junction Box required?**
I5(4)	FM Intrinsically Safe, Division 2	No
IE	FM FISCO Intrinsically Safe	No
N5	FM Class I, Division 2, and Dust Ignition Proof (enclosure required)	Yes
E6	CSA Explosion-Proof, Dust Ignition proof, Division 2 (JX3 enclosure required)	Yes(2)
NK	FM Class 1, Division 2	No
I6(4)	CSA Intrinsically Safe, Division 2	No
IF(4)	CSA FISCO Intrinsically Safe, Division 2	No
N6	CSA Class I, Division 2	No
I1	ATEX Intrinsic Safety	No
IA	ATEX FISCO Intrinsic Safety	No
N1	ATEX Type n (enclosure required)	Yes
NC	ATEX Type n Component (EEx nL)	No(3)
ND	ATEX Dust (enclosure required)	Yes
NE(4)	ATEX Type n (EEx nA nL) (enclosure required)	Yes
NF(4)	ATEX Type n Component (EEx nA nL)	No(3)
I7	IECEx Intrinsic Safety	No
IG	IECEx FISCO (Intrinsically Safe)	No
N7	IECEx Type n (enclosure required)	Yes
NJ	IECEx Type n Component (Ex nA nL)	No(3)
NA	No Approval	No
Code	**Input Types**	
S001	Resistance Temperature Detectors and Thermocouples	
S002(5)	RTDs, Thermocouples, and 4–20 mA	
Code	**Options**	
	Transient Protection	
T1	Transient Protection	
	Mounting Kit Options	
B6	Mounting Bracket for 2-in. pipe mounting and for panel mounting – SST bracket and bolts	
	Enclosure Options	
JP1	Plastic Junction Box; No Entries	
JP2	Plastic Box, Cable Glands (9 x M20 nickel-plated brass glands for 7.5–11.9 mm unarmored cable)	
JP3	Plastic Box, Conduit Entries (5 plugged holes, suitable for installing 1/2-in. NPT fittings)	
JA1	Aluminum Junction Box; No Entries	
JA2	Aluminum Cable Glands (9 x M20 nickel-plated brass glands for 7.5–11.9 mm unarmored cable)	
JA3	Aluminum Conduit Entries (5 plugged holes, suitable for installing 1/2-in. NPT fittings)	
JS1	Stainless Steel Junction Box; No Entries	
JS2	Stainless Steel Box, Cable Glands (9 x M20 nickel-plated brass glands for 7.5–11.9 mm unarmored cable)	
JS3	Stainless Steel Box, Conduit Entries (5 plugged holes, suitable for installing 1/2-in. NPT fittings)	
JX3	Explosion-Proof Box, Conduit Entries (4 plugged holes, suitable for installing 1/2-in. NPT fittings)	
	Custom Software Configuration Request	
C1	Factory configuration of date, descriptor, and message fields (CDS required)	
	Configuration Options(6)	
F5	50 Hz Line Voltage Filter	

Continued on next page

Model	Product Description
	Calibration Certification
	5-Point Calibration
C4	5-Point Calibration (requires Q4 option code to generate a calibration certificate)
Q4	3 Point Calibration Certificate Provided
	Conduit Electrical Connector
GE(7)	M12, 4-pin, Male Connector (eurofast®)
GM(7)	A size Mini, 4-pin, Male Connector (minifast®)
Typical Model Number: 848T F I5 S001 T1 B6 JA2	

(1) Consult factory for availability.

(2) Enclosure Option JX3 must be ordered with Product Certification Code E6. (O-ring for the JX3 enclosure rated to -20 °C.)

(3) The Rosemount 848T ordered with component approval is not approved as a stand-alone unit. Additional system certification is required.

(4) Available only with S001 option

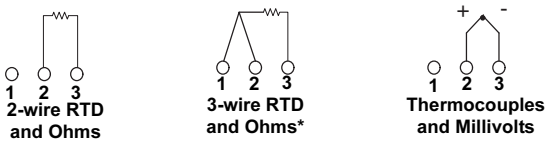
(5) S002 is only available with Product Certification N5, N6, N1, NC, NK, and NA.

(6) Configuration is the same for all eight inputs. Analog connectors included.

(7) Available with no approval or Intrinsically Safe approvals only. For FM Intrinsically Safe (option code I5), install in accordance with Rosemount drawing 00848-4402.

Wiring

Rosemount 848T Sensor Wiring Diagram



** Rosemount provides 4-wire sensors for all single-element RTDs. Use these RTDs in 3-wire configurations by clipping the fourth lead or leaving it disconnected and insulated with electrical tape.*

Standard Configuration

Unless otherwise specified, the transmitter will be shipped as follows for all eight sensors:

Standard Configuration Settings	
Sensor Type(1)	Thermocouple Type J
Damping(1)	5 seconds
Measurement Units(1)	°C
Output(1)	Linear with Temperature
Line Voltage Filter(1)	60 Hz
Temperature Specific Blocks	• Sensor Transducer Block (1)
FOUNDATION™ fieldbus Function Blocks	• Analog Input (8) • Multiple Analog Input (1) • Input Selector (4)
Input Transient Filter(1)	• Enabled

(1) For all eight sensors

Configuration Data Sheet

BOLD = Required Value
★= Default

◯ Select only one of the items provided
☐ One or more of the listed items can be selected

Customer Information	
Customer: _____	Name: _____
Phone No: _____	Fax No./Email: _____
P.O./Reference No.: _____	P.O. Line Item: _____
Quote No. _____	Model No.:_____
Customer Signoff: _____	

Tagging		
Hardware Tag: _____		
Software Tag: _____		
	Function Block Type (select one only)	Damping _____
☐ Enable Write Protect	☐ One Multiple Analog Input Block (alarms not supported) ☐ Separate Analog Input Blocks	

NOTE
The C1 option is required to factory configure each sensor differently. The C1 option is also required for factory configuration of process alerts and sensor tag.

◯ *All eight sensors configured identical to Sensor 1 (Fill out Sensor 1 only). Otherwise, each sensor must be individually configured.*

Sensor 1	Sensor 2	Sensor 3
Tag _____	**Tag** _____	**Tag** _____
Type	**Type**	**Type**
◯ mV	◯ mV	◯ mV
◯ Ohms	◯ Ohms	◯ Ohms
◯ Pt 50, α = 391 (GOST 6651-94)	◯ Pt 50, α = 391 (GOST 6651-94)	◯ Pt 50, α = 391 (GOST 6651-94)
◯ Pt 100, α = 385 (IEC 751)	◯ Pt 100, α = 385 (IEC 751)	◯ Pt 100, α = 385 (IEC 751)
◯ Pt 100, α = 392 (JIS 1604)	◯ Pt 100, α = 392 (JIS 1604)	◯ Pt 100, α = 392 (JIS 1604)
◯ Pt 100, α = 391 (GOST 6651-94)	◯ Pt 100, α = 391 (GOST 6651-94)	◯ Pt 100, α = 391 (GOST 6651-94)
◯ Pt 200, α = 385 (IEC 751)	◯ Pt 200, α = 385 (IEC 751)	◯ Pt 200, α = 385 (IEC 751)
◯ Pt 200, α = 3916 (JIS 1604)	◯ Pt 200, α = 3916 (JIS 1604)	◯ Pt 200, α = 3916 (JIS 1604)
◯ Pt 500, α = 385 (IEC 751)	◯ Pt 500, α = 385 (IEC 751)	◯ Pt 500, α = 385 (IEC 751)
◯ Cu 10, Edison No. 7	◯ Cu 10, Edison No. 7	◯ Cu 10, Edison No. 7
◯ Cu 100, α = 428 (GOST 6651-94)	◯ Cu 100, α = 428 (GOST 6651-94)	◯ Cu 100, α = 428 (GOST 6651-94)
◯ Cu 50, α = 428 (GOST 6651-94)	◯ Cu 50, α = 428 (GOST 6651-94)	◯ Cu 50, α = 428 (GOST 6651-94)
◯ Cu 100, α = 426 (GOST 6651-94)	◯ Cu 100, α = 426 (GOST 6651-94)	◯ Cu 100, α = 426 (GOST 6651-94)
◯ Cu 50, α = 426 (GOST 6651-94)	◯ Cu 50, α = 426 (GOST 6651-94)	◯ Cu 50, α = 426 (GOST 6651-94)
◯ Ni 120, Edison No. 15	◯ Ni 120, Edison No. 15	◯ Ni 120, Edison No. 15
◯ Type B Thermocouple (IEC 584-1, NIST 175)	◯ Type B Thermocouple (IEC 584-1, NIST 175)	◯ Type B Thermocouple (IEC 584-1, NIST 175)
◯ Type C Thermocouple (NIST 175)	◯ Type C Thermocouple (NIST 175)	◯ Type C Thermocouple (NIST 175)
◯ Type E Thermocouple (IEC 584-1, NIST 175)	◯ Type E Thermocouple (IEC 584-1, NIST 175)	◯ Type E Thermocouple (IEC 584-1, NIST 175)
◯ Type J★ Thermocouple (IEC 584-1, NIST 175)	◯ Type J★ Thermocouple (IEC 584-1, NIST 175)	◯ Type J★ Thermocouple (IEC 584-1, NIST 175)
◯ Type K Thermocouple (IEC 584-1, NIST 175)	◯ Type K Thermocouple (IEC 584-1, NIST 175)	◯ Type K Thermocouple (IEC 584-1, NIST 175)
◯ Type R Thermocouple (IEC 584-1, NIST 175)	◯ Type R Thermocouple (IEC 584-1, NIST 175)	◯ Type R Thermocouple (IEC 584-1, NIST 175)
◯ Type N Thermocouple (IEC 584-1, NIST 175)	◯ Type N Thermocouple (IEC 584-1, NIST 175)	◯ Type N Thermocouple (IEC 584-1, NIST 175)
◯ Type S Thermocouple (IEC 584-1, NIST 175)	◯ Type S Thermocouple (IEC 584-1, NIST 175)	◯ Type S Thermocouple (IEC 584-1, NIST 175)
◯ Type T Thermocouple (IEC 584-1, NIST 175)	◯ Type T Thermocouple (IEC 584-1, NIST 175)	◯ Type T Thermocouple (IEC 584-1, NIST 175)
◯ Pt 1000, α = 385 (IEC 751)	◯ Pt 1000, α = 385 (IEC 751)	◯ Pt 1000, α = 385 (IEC 751)
◯ Type L Thermocouple (GOST R 8.585-2001))	◯ Type L Thermocouple (GOST R 8.585-2001))	◯ Type L Thermocouple (GOST R 8.585-2001))

Sensor 1	Sensor 2	Sensor 3
○ ASTM WSRe/W26Re (c)	○ ASTM WSRe/W26Re (c)	○ ASTM WSRe/W26Re (c)
○ None	○ None	○ None
Number of Leads ★ ○ 2-wire ○ 3-wire	**Number of Leads** ★ ○ 2-wire ○ 3-wire	**Number of Leads** ★ ○ 2-wire ○ 3-wire
Measurement Point (5% to 95% Sensor Range) LO _____ HI _____	**Measurement Point (5% to 95% Sensor Range)** LO _____ HI _____	**Measurement Point (5% to 95% Sensor Range)** LO _____ HI _____
Units ○ mV ○ °C ★ ○ mA ○ °F ○ Ohms ○ °R ○ K ○ mA	**Units** ○ mV ○ °C ★ ○ mA ○ °F ○ Ohms ○ °R ○ K ○ mA	**Units** ○ mV ○ °C ★ ○ mA ○ °F ○ Ohms ○ °R ○ K ○ mA
Alarms(1)(2) HI HI Alarm _____*(+ infinity) HI Alarm_____*(+ infinity) LO Alarm _____*(- infinity) LO LO Alarm _____*(- infinity)	**Alarms(1)(2)** HI HI Alarm _____*(+ infinity) HI Alarm_____*(+ infinity) LO Alarm _____*(- infinity) LO LO Alarm _____*(- infinity)	**Alarms(1)(2)** HI HI Alarm _____*(+ infinity) HI Alarm_____*(+ infinity) LO Alarm _____*(- infinity) LO LO Alarm _____*(- infinity)

(1) Not applicable for MAI blocks.

(2) Alarms are not enabled. Alarms must be enabled when the device is commissioned by the user.

Sensor 4	Sensor 5	Sensor 6
Tag _____	**Tag** _____	**Tag** _____
Type	**Type**	**Type**
○ mV	○ mV	○ mV
○ Ohms	○ Ohms	○ Ohms
○ Pt 50, α = 391 (GOST 6651-94)	○ Pt 50, α = 391 (GOST 6651-94)	○ Pt 50, α = 391 (GOST 6651-94)
○ Pt 100, α = 385 (IEC 751)	○ Pt 100, α = 385 (IEC 751)	○ Pt 100, α = 385 (IEC 751)
○ Pt 100, α = 392 (JIS 1604)	○ Pt 100, α = 392 (JIS 1604)	○ Pt 100, α = 392 (JIS 1604)
○ Pt 100, α = 391 (GOST 6651-94)	○ Pt 100, α = 391 (GOST 6651-94)	○ Pt 100, α = 391 (GOST 6651-94)
○ Pt 200, α = 385 (IEC 751)	○ Pt 200, α = 385 (IEC 751)	○ Pt 200, α = 385 (IEC 751)
○ Pt 200, α = 3916 (JIS 1604)	○ Pt 200, α = 3916 (JIS 1604)	○ Pt 200, α = 3916 (JIS 1604)
○ Pt 500, α = 385 (IEC 751)	○ Pt 500, α = 385 (IEC 751)	○ Pt 500, α = 385 (IEC 751)
○ Cu 10, Edison No. 7	○ Cu 10, Edison No. 7	○ Cu 10, Edison No. 7
○ Cu 100, α = 428 (GOST 6651-94)	○ Cu 100, α = 428 (GOST 6651-94)	○ Cu 100, α = 428 (GOST 6651-94)
○ Cu 50, α = 428 (GOST 6651-94)	○ Cu 50, α = 428 (GOST 6651-94)	○ Cu 50, α = 428 (GOST 6651-94)
○ Cu 100, α = 426 (GOST 6651-94)	○ Cu 100, α = 426 (GOST 6651-94)	○ Cu 100, α = 426 (GOST 6651-94)
○ Cu 50, α = 426 (GOST 6651-94)	○ Cu 50, α = 426 (GOST 6651-94)	○ Cu 50, α = 426 (GOST 6651-94)
○ Ni 120, Edison No. 15	○ Ni 120, Edison No. 15	○ Ni 120, Edison No. 15
○ Type B Thermocouple (IEC 584-1, NIST 175)	○ Type B Thermocouple (IEC 584-1, NIST 175)	○ Type B Thermocouple (IEC 584-1, NIST 175)
○ Type C Thermocouple (NIST 175)	○ Type C Thermocouple (NIST 175)	○ Type C Thermocouple (NIST 175)
○ Type E Thermocouple (IEC 584-1, NIST 175)	○ Type E Thermocouple (IEC 584-1, NIST 175)	○ Type E Thermocouple (IEC 584-1, NIST 175)
○ Type J ★ Thermocouple (IEC 584-1, NIST 175)	○ Type J ★ Thermocouple (IEC 584-1, NIST 175)	○ Type J ★ Thermocouple (IEC 584-1, NIST 175)
○ Type K Thermocouple (IEC 584-1, NIST 175)	○ Type K Thermocouple (IEC 584-1, NIST 175)	○ Type K Thermocouple (IEC 584-1, NIST 175)
○ Type R Thermocouple (IEC 584-1, NIST 175)	○ Type R Thermocouple (IEC 584-1, NIST 175)	○ Type R Thermocouple (IEC 584-1, NIST 175)
○ Type N Thermocouple (IEC 584-1, NIST 175)	○ Type N Thermocouple (IEC 584-1, NIST 175)	○ Type N Thermocouple (IEC 584-1, NIST 175)
○ Type S Thermocouple (IEC 584-1, NIST 175)	○ Type S Thermocouple (IEC 584-1, NIST 175)	○ Type S Thermocouple (IEC 584-1, NIST 175)
○ Type T Thermocouple (IEC 584-1, NIST 175)	○ Type T Thermocouple (IEC 584-1, NIST 175)	○ Type T Thermocouple (IEC 584-1, NIST 175)
○ Pt 1000, α = 385 (IEC 751)	○ Pt 1000, α = 385 (IEC 751)	○ Pt 1000, α = 385 (IEC 751)
○ Type L Thermocouple (GOST R 8.585-2001))	○ Type L Thermocouple (GOST R 8.585-2001))	○ Type L Thermocouple (GOST R 8.585-2001))
○ ASTM WSRe/W26Re (c)	○ ASTM WSRe/W26Re (c)	○ ASTM WSRe/W26Re (c)
○ None	○ None	○ None
Number of Leads ★ ○ 2-wire ○ 3-wire	**Number of Leads** ★ ○ 2-wire ○ 3-wire	**Number of Leads** ★ ○ 2-wire ○ 3-wire
Measurement Point (5% to 95% Sensor Range) LO _____ HI _____	**Measurement Point (5% to 95% Sensor Range)** LO _____ HI _____	**Measurement Point (5% to 95% Sensor Range)** LO _____ HI _____
Units ○ mV ○ °C ★ ○ mA ○ °F ○ Ohms ○ °R ○ K ○ mA	**Units** ○ mV ○ °C ★ ○ mA ○ °F ○ Ohms ○ °R ○ K ○ mA	**Units** ○ mV ○ °C ★ ○ mA ○ °F ○ Ohms ○ °R ○ K ○ mA
Alarms(1)(2) HI HI Alarm _____*(+ infinity) HI Alarm_____*(+ infinity) LO Alarm _____*(- infinity) LO LO Alarm _____*(- infinity)	**Alarms (1)(2)** HI HI Alarm _____*(+ infinity) HI Alarm_____*(+ infinity) LO Alarm _____*(- infinity) LO LO Alarm _____*(- infinity)	**Alarms(1)(2)** HI HI Alarm _____*(+ infinity) HI Alarm_____*(+ infinity) LO Alarm _____*(- infinity) LO LO Alarm _____*(- infinity)

(1) Not applicable for MAI blocks.

(2) Alarms are not enabled. Alarms must be enabled when the device is commissioned by the user.

Sensor 7	Sensor 8
Tag _____	**Tag** _____
Type	**Type**
○ mV	○ mV
○ Ohms	○ Ohms
○ Pt 50, α = 391 (GOST 6651-94)	○ Pt 50, α = 391 (GOST 6651-94)
○ Pt 100, α = 385 (IEC 751)	○ Pt 100, α = 385 (IEC 751)
○ Pt 100, α = 392 (JIS 1604)	○ Pt 100, α = 392 (JIS 1604)
○ Pt 100, α = 391 (GOST 6651-94)	○ Pt 100, α = 391 (GOST 6651-94)
○ Pt 200, α = 385 (IEC 751)	○ Pt 200, α = 385 (IEC 751)
○ Pt 200, α = 3916 (JIS 1604)	○ Pt 200, α = 3916 (JIS 1604)
○ Pt 500, α = 385 (IEC 751)	○ Pt 500, α = 385 (IEC 751)
○ Cu 10, Edison No. 7	○ Cu 10, Edison No. 7
○ Cu 100, α = 428 (GOST 6651-94)	○ Cu 100, α = 428 (GOST 6651-94)
○ Cu 50, α = 428 (GOST 6651-94)	○ Cu 50, α = 428 (GOST 6651-94)
○ Cu 100, α = 426 (GOST 6651-94)	○ Cu 100, α = 426 (GOST 6651-94)
○ Cu 50, α = 426 (GOST 6651-94)	○ Cu 50, α = 426 (GOST 6651-94)
○ Ni 120, Edison No. 15	○ Ni 120, Edison No. 15
○ Type B Thermocouple (IEC 584-1, NIST 175)	○ Type B Thermocouple (IEC 584-1, NIST 175)
○ Type C Thermocouple (NIST 175)	○ Type C Thermocouple (NIST 175)
○ Type E Thermocouple (IEC 584-1, NIST 175)	○ Type E Thermocouple (IEC 584-1, NIST 175)
○ Type J★ Thermocouple (IEC 584-1, NIST 175)	○ Type J★ Thermocouple (IEC 584-1, NIST 175)
○ Type K Thermocouple (IEC 584-1, NIST 175)	○ Type K Thermocouple (IEC 584-1, NIST 175)
○ Type R Thermocouple (IEC 584-1, NIST 175)	○ Type R Thermocouple (IEC 584-1, NIST 175)
○ Type N Thermocouple (IEC 584-1, NIST 175)	○ Type N Thermocouple (IEC 584-1, NIST 175)
○ Type S Thermocouple (IEC 584-1, NIST 175)	○ Type S Thermocouple (IEC 584-1, NIST 175)
○ Type T Thermocouple (IEC 584-1, NIST 175)	○ Type T Thermocouple (IEC 584-1, NIST 175)
○ Pt 1000, α = 385 (IEC 751)	○ Pt 1000, α = 385 (IEC 751)
○ Type L Thermocouple (GOST R 8.585-2001))	○ Type L Thermocouple (GOST R 8.585-2001))
○ ASTM WSRe/W26Re (c)	○ ASTM WSRe/W26Re (c)
○ None	○ None
Number of Leads	**Number of Leads**
○ 2-wire★ ○ 3-wire	○ 2-wire★ ○ 3-wire
Measurement Point (5% to 95% Sensor Range)	**Measurement Point (5% to 95% Sensor Range)**
LO _____	LO _____
HI _____	HI _____
Units	**Units**
○ mV ○ °C★	○ mV ○ °C★
○ mA ○ °F	○ mA ○ °F
○ Ohms ○ °R	○ Ohms ○ °R
○ K ○ mA	○ K ○ mA
Alarms(1)(2)	**Alarms(1)(2)**
HI HI Alarm _____*(+ infinity)	HI HI Alarm _____*(+ infinity)
HI Alarm_____*(+ infinity)	HI Alarm_____*(+ infinity)
LO Alarm _____*(- infinity)	LO Alarm _____*(- infinity)
LO LO Alarm _____*(- infinity)	LO LO Alarm _____*(- infinity)

(1) Not applicable for MAI blocks.

(2) Alarms are not enabled. Alarms must be enabled when the device is commissioned by the user.

The Rosemount 848T Wireless Temperature Transmitter

Self-Organizing Networks

The Rosemount 848T Wireless works the same as wired devices, allowing you to leverage existing practices, training and maintenance procedures, but without the added wiring costs. The self-forming, intelligent devices provide exceptional data reliability and network stability.

SmartPower™

Emerson is the only provider of a power optimized solution for both user and process safety. An intrinsically safe power module allows field replacements without removing the transmitter from the process to keep personnel safe and reduce maintenance costs. Power module installation requires no special training. Keyed connections eliminate the risk of incorrect installation. This reliable solution provides long lasting power module life that delivers rich WirelessHART data.

Layered Security Keeps Your Network Safe

Emerson Process Management's layered approach to wireless network security ensures that your network stays protected. The network devices implement Encryption, Authentication, Verification, Anti-Jamming and Key Management methods to ensure that data transmissions are secure.

Configurable High and Low Alerts

Experience enhanced performance with each sensor being user-configurable for high and low temperature points. When the temperature measurements rise above or falls below these points, an alert message is sent.

ROSEMOUNT 848T WIRELESS TEMPERATURE TRANSMITTER

Reliable Transmitter Performance

The 848T Wireless can be configured for a variety of sensor inputs: RTD, thermocouple, millivolt, or ohm, and it ensures top transmitter performance in harsh and/or noisy EMI/RFI environments.

Digital Field Devices that Power PlantWeb

The Rosemount 848T Wireless powers *PlantWeb*® by communicating temperature diagnostics and *PlantWeb* alerts that ensure process and asset health.

Smart Wireless Solutions

Rosemount 648 Wireless Temperature Transmitter

The Rosemount 648 integrates temperature measurement into a self-organizing network to optimize plant performance while minimizing maintenance.

Smart Wireless Gateway

The Emerson Smart Wireless Gateway integrates the self-organizing network into the host system, providing industry leading security and data reliability.

Rosemount 3051S Series of Instrumentation

The scalable 3051S enables fully integrated pressure, flow and level self-organizing network solutions to optimize plant performance and reduce risk.

Rosemount 702 Discrete Input Transmitter

The Rosemount 702 integrates discrete input state into a self-organizing network to optimize plant performance and extend asset life.

Smart Wireless THUM™ Adapter

The SmartWireless THUM Adapter integrates HART data from any wired HART device into the self-organizing network to optimize plant performance and extend asset life.

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

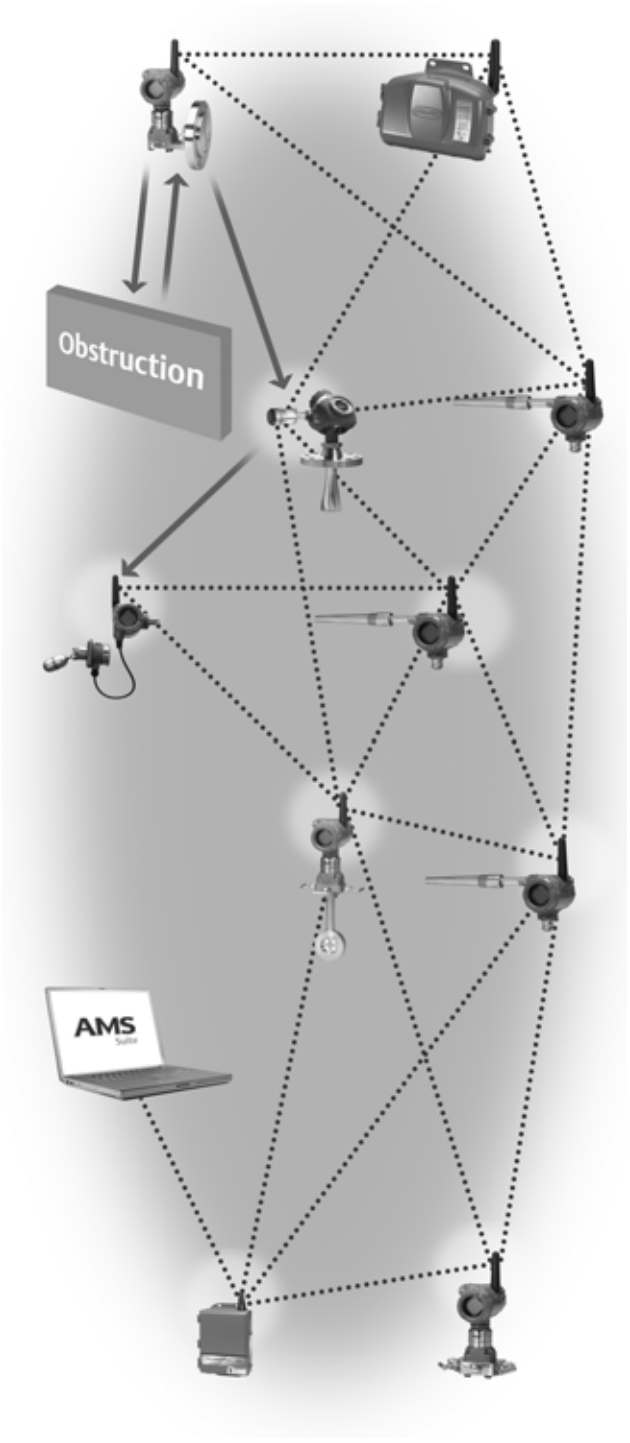
- Standard IEEE 802.15.4 radios
- 2.4 GHz ISM band sliced into 16 radio-channels
- Continually “hop” across channels to avoid interference and increase reliability
- Frequency hopping spread spectrum (FHSS) technology delivers high reliability in challenging radio environment

Self-Healing Network

- If an obstruction is introduced into the mesh network, devices will automatically find the best alternate communication path. This alternate path will be created and the information will continue to flow.

Seamless Integration to Existing Hosts

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



Specifications

Functional Specifications

Input

Four independently configurable input channels that supports Thermocouple, RTD, millivolt, ohm, and 4–20 mA input types. See “Accuracy” on page 24 for sensor options.

Output

WirelessHART™ 2.4 GHz DSSS.

Ambient Temperature Limits

–40 to 85 °C (–40 to 185 °F)

Humidity Limits

0–99% non-condensing relative humidity

Update Rate

User selectable, 8 sec to 60 min.

Accuracy (Pt 100 @ reference condition: 20 °C)

±0.30 °C (±0.54 °F) For the complete list see “Accuracy” on page 24.

Isolation

Isolation between all sensor channels is rated to 10Vdc over all operating conditions. No damage will occur to the device with up to 250 Vdc between any sensor channel.

Alerts

Message sent when open or short sensor is detected.

Physical Specifications

Electrical Connections

Power Module

Field replaceable, keyed connection eliminates the risk of incorrect installation. Intrinsically Safe Lithium-thionyl chloride Power Module with polybutadine terephthalate (PBT) enclosure. Six-year life at one minute update rate.(1)

Sensor Terminals

Sensor terminals permanently fixed to terminal block

HART Communicator Connections

Communication Terminals

Clips permanently fixed to terminal block

Materials of Construction

Enclosure

Housing - Low-copper aluminum
Paint - Polyurethane
Cover O-ring - Silicone

Terminal Block and Power Module

PBT

(1) Reference conditions are 70° F (21° C), and routing data for three additional network devices. NOTE: Continuous exposure to ambient temperature limits (-40 °F or 185 °F) (-40 °C or 85 °C) may reduce specified life to less than 20 percent.

Antenna

PBT/Polycarbonate (PC) integrated omnidirectional antenna

Mounting

Transmitter can be mounted onto a 2-inch pipe stand. Sensors must be remotely mounted (See “Ex ia IIC T6 (Tamb = -60 °C to 50 °C) Ex ia IIC T5 (Tamb = -60 °C to 75 °C) IP66 For use with Rosemount power module P/N 753-9220-0001 only. Dimensional Drawings” on page 27).

Weight

848T Wireless - 4.75 lbs. (2.15 kg)

Enclosure Ratings (848T Wireless)

Housing option codes HA1 or HA2 are Type 4x and IP66.

Performance Specifications

ElectroMagnetic Compatibility (EMC)

All Models:

Meets all relevant requirements of EN 61326.

Transmitter Stability

- ±0.15% of reading or 0.15 °C (0.27 °F), whichever is greater, for 2 years for RTDs.
- ±0.15% of reading or 0.15 °C (0.27 °F), whichever is greater, for 1 year for thermocouples.

Self Calibration

The analog-to-digital measurement circuitry automatically self-calibrates for each temperature update by comparing the dynamic measurement to extremely stable and accurate internal reference elements.

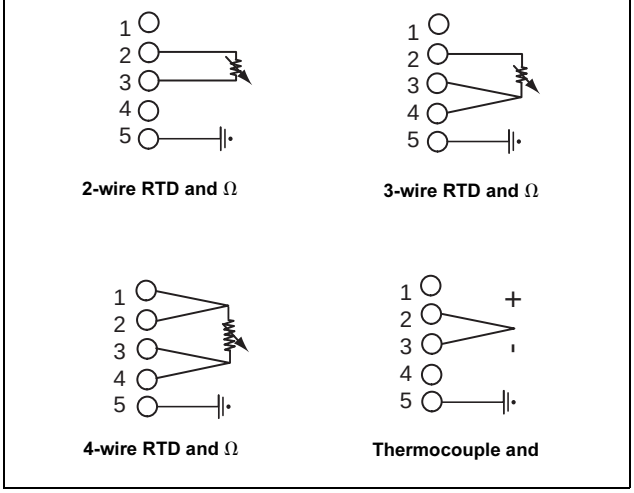
Vibration Effect

Minimal effect when tested per the requirements of IEC60770-1:

High Vibration Level - field or pipeline (10-60 Hz 0.21mm displacement peak amplitude / 60-2000 Hz 3g).

Sensor Connections

848T Wireless Sensor Connections Diagram



ACCURACY

TABLE 17. Input Options/Accuracy

Sensor Option	Sensor Reference	Input Ranges °C	Input Ranges °F	Accuracy Over Range(s) °C	Accuracy Over Range(s) °F
2-, 3-, and 4-Wire RTDs					
Pt50 (α = 0.003910)	GOST 6651-94	–200 to 550	–328 to 990	± 0.57	± 1.03
Pt 100 (α = 0.00391)	GOST 6651-94	–200 to 550	–328 to 990	± 0.28	± 0.50
Pt 100 (α = 0.00385)	IEC 751; α = 0.00385, 1995	–200 to 850	–328 to 1562	± 0.30	± 0.54
Pt 100 (α = 0.003916)	JIS 1604, 1981	–200 to 645	–328 to 1193	± 0.30	± 0.54
Pt 200 (α = 0.00385)	IEC 751; α = 0.00385, 1995	–200 to 850	–328 to 1562	± 0.54	± 0.98
PT 200 (α = 0.003916)	JIS 1604, 1981 (α = 0.003916)	–200 to 645	–328 to 1193	± 0.54	± 1.03
Pt 500 (α = 0.00385)	IEC 751; α = 0.00385, 1995	–200 to 850	–328 to 1562	± 0.38	± 0.68
Pt 1000 (α = 0.00385)	IEC 751; α = 0.00385, 1995	–200 to 300	–328 to 572	± 0.40	± 0.72
Ni 120	Edison Curve No. 7	–70 to 300	–94 to 572	± 0.30	± 0.54
Cu 10	Edison Copper Winding No. 15	–50 to 250	–58 to 482	± 3.20	± 5.76
Cu 100 (a=428)	GOST 6651-94	-185 to 200	-365 to 392	± 0.48	±0.86
Cu 50 (a=428)	GOST 6651-94	-185 to 200	-365 to 392	± 0.96	±1.73
Cu 100 (a=426)	GOST 6651-94	-50 to 200	-122 to 392	± 0.48	±0.86
Cu 50 (a=426)	GOST 6651-94	-50 to 200	-122 to 392	± 0.96	±1.73
Thermocouples—Cold Junction Adds + 0.5 °C to Listed Accuracy					
NIST Type B (Accuracy varies according to input range)	NIST Monograph 175	100 to 300 301 to 1820	212 to 572 573 to 3308	± 6.00 ± 1.54	± 10.80 ± 2.78
NIST Type E	NIST Monograph 175	–200 to 1000	–328 to 1832	± 0.40	± 0.72
NIST Type J	NIST Monograph 175	–180 to 760	–292 to 1400	± 0.70	± 1.26
NIST Type K	NIST Monograph 175	–180 to 1372	–292 to 2502	± 1.00	± 1.80
NIST Type N	NIST Monograph 175	–200 to 1300	–328 to 2372	± 1.00	± 1.80
NIST Type R	NIST Monograph 175	0 to 1768	32 to 3214	± 1.50	± 2.70
NIST Type S	NIST Monograph 175	0 to 1768	32 to 3214	± 1.40	± 2.52
NIST Type T	NIST Monograph 175	–200 to 400	–328 to 752	± 0.70	± 1.26
DIN L	DIN 43710	–200 to 900	–328 to 1652	± 0.70	± 1.26
DIN U	DIN 43710	–200 to 600	–328 to 1112	± 0.70	± 1.26
w5Re/W26Re	ASTME 988-96	0 to 2000	32 to 3632	± 1.60	± 2.88
Type L	GOST R.8.585-2001	–200 to 800	–328 to 1472	±0.71	±1.28
Body Temperature of Transmitter		-50 to 85	-58 to 185	±3.50	±6.30
Input Units					
Ohm Input		0 to 2000 ohms		±0.90 ohms	
Millivolt Input		-10 to 100 mV		±0.05 mV	
4–20 mA (Rosemount)(1)		4–20 mA		±0.01 mA	
4–20 mA (NAMUR)(1)		4–20 mA		±0.01 mA	

(1) Requires the S002 option code.

AMBIENT TEMPERATURE EFFECT

Transmitters may be installed in locations where the ambient temperature is between –40 and 85 °C (–40 and 185 °F).

TABLE 18. Ambient Temperature Effects

NIST Type	Accuracy per 1.0 °C (1.8 °F) Change in Ambient Temperature(1)	Temperature Range (°C)
RTD		
Pt 50 (α = 0.003910)	• 0.004 °C (0.0072 °F)	NA
Pt 100 (α = 0.00391)	• 0.004 °C (0.0072 °F)	NA
Pt 100 (α = 0.00385)	• 0.003 °C (0.0054 °F)	NA
Pt 100 (α = 0.003916)	• 0.003 °C (0.0054 °F)	NA
Pt 200 (α = 0.00385)	• 0.004 °C (0.0072 °F)	NA
PT 200 (α = 0.003916)	• 0.004 °C (0.0072 °F)	NA
Cu 10	• 0.03 °C (0.054 °F)	NA
Pt 500	• 0.003 °C (0.0054 °F)	NA
Pt 1000	• 0.003 °C (0.0054 °F)	NA
Cu 100 (a=428)	• 0.002 °C (0.0036 °F)	NA
Cu 50 (a=428)	• 0.004 °C (.0072 °F)	NA
Cu 100 (a=426)	• 0.002 °C (0.0036 °F)	NA
Cu 50 (a=426)	• 0.004 °C (.0072 °F)	NA
Ni 120	• 0.003 °C (0.0054 °F)	NA
Thermocouple (R = the value of the reading)		NA
Type B	• 0.014 °C • 0.032 °C - (0.0025% of (R - 300)) • 0.054 °C - (0.011% of (R - 100))	• R ≥ 1000 • 300 ≤ R < 1000 • 100 ≤ R < 300
Type E	• 0.005 °C + (0.00043% of R)	• All
Type J, Din Type L	• 0.0054 °C + (0.00029% of R) • 0.0054 °C + (0.0025% of |R|)	• R ≥ 0 • R < 0
Type K	• 0.0061 °C + (0.00054% of R) • 0.0061 °C + (0.0025% of |R|)	• R ≥ 0 • R < 0
Type N	• 0.0068 °C + (0.00036% of R)	• All
Type R, Type S	• 0.016 °C • 0.023 °C - (0.0036% of R)	• R ≥ 200 • R < 200
Type T, DIN Type U	• 0.0064 °C • 0.0064 °C - (0.0043% of |R|)	• R ≥ 0 • R < 0
GOST Type L	• 0.007 °C • 0.007 °C + (0.003% of IRI)	• R ≥ 0 • R < 0
input Units		
Ohm input	• 0.0084 ohms	NA
Millivolt Input	• 0.0005 mV	NA
4–20 mA (Rosemount)	• 0.0001 mA	NA
4–20 mA (NAMUR)	• 0.0001 mA	NA

(1) Change in ambient is in reference to the calibration temperature of the transmitter (20 °C (68 °F) typical from the factory).

Ambient Temperature Notes

Examples:

When using a Pt 100 (α = 0.00385) sensor input at 40 °C ambient temperature, temperature effects would be:

- Ambient Temperature Effects: 0.003 °C x (40 - 20) = 0.06 °C
- Worst Case Error: Sensor Accuracy + Ambient Temperature Effects = 0.30 °C + 0.06 °C = 0.36 °C
- Total Probable Error $\sqrt{0.30^2 + 0.06^2} = 0.305°C$

Product Certifications

Approved Manufacturing Locations

Rosemount Inc. – Chanhassen, Minnesota, USA
Emerson Process Management GmbH & Co. - Karlstein, Germany
Emerson Process Management Asia Pacific Private Limited - Singapore

European Union Directive Information

The EC declaration of conformity for all applicable European directives for this product can be found at www.rosemount.com. A hard copy may be obtained by contacting an Emerson Process Management representative.

ATEX Directive (94/9/EC)

Emerson Process Management complies with the ATEX Directive.

Electro Magnetic Compatibility (EMC) (2004/108/EC)

EN 61326-1:2006
EN 61326-2-3:2006

Radio and Telecommunications Terminal Equipment Directive (R&TTE) (1999/5/EC)

Emerson Process Management complies with the R&TTE Directive.

Telecommunication Compliance

All wireless devices require certification to ensure that they adhere to regulations regarding the use of the RF spectrum. Nearly every country requires this type of product certification. Emerson is working with governmental agencies around the world to supply fully compliant products and remove the risk of violating country directives or laws governing wireless device usage.

FCC and IC

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 20 cm from all persons.

Ordinary Location Certification for FM

As standard, the transmitter has been examined and tested to determine that the design meets basic electrical, mechanical, and fire protection requirements by FM, a nationally recognized testing laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

Hazardous Locations Certificates

North American Certifications

Factory Mutual (FM) Approvals

I5 FM Intrinsic Safety and Non-incendive
Intrinsically Safe for Class I, Division 1, Groups A, B, and C.
Zone Marking: Class I, Zone 0, AEx ia IIC
Temperature Codes T4 (T_{amb} = -50 to 70° C)
Non-incendive for Class I, Division 2, Groups A, B, C, and D.
Intrinsically Safe and non-incendive when installed in accordance with Rosemount drawing 00849-1000.
For use with Rosemount power module P/N 753-9220-0001 only.
Enclosure Type 4X / IP66

N5 FM Class 1, Division 2, and Dust
Non-Incendive for Class I, Division 2, Groups A, B, C, and D.
Dust Ignition-proof for Class II/III, Division 1, Groups E, F, and G.
Ambient Temperature Limits -50 to 85° C
Non-incendive when installed in accordance with Rosemount drawing 00849-1000.
For use with Rosemount power module P/N 753-9220-0001 only.
Enclosure Type 4X / IP66

CSA - Canadian Standards Association

I6 CSA Intrinsic Safety
Intrinsically Safe for Class I, Division 2, Groups A, B, C, and D.
Temp Code T3C
Non-incendive for Class I, Division 2, Groups A, B, C, and D.
Enclosure Type 4X / IP66
For use with Rosemount power module P/N 753-9220-0001 only.
Intrinsically Safe and non-incendive when installed in accordance with Rosemount drawing 00849-1016.

N6 CSA Class 1, Division 2
Non-Incendive for Class I, Division 2, Groups A, B, C, and D.
Enclosure Type 4X / IP66.
For use with Rosemount power module P/N 753-9220-0001 only.
Non-incendive when installed per Rosemount drawing 00849-1016.

European Certifications

I1 ATEX Intrinsic Safety
Certificate No.: Baseefa09ATEX0022 Ⓔx II 1G
Ex ia IIC T5 (T_a = -60 °C to 40 °C)
Ex ia IIC T4 (T_a = -60 °C to 70 °C)
IP66
For use with Rosemount power module P/N 753-9220-0001 only.
CE 1180

TABLE 19. Sensor Parameters

Sensor
U_o = 6.6 V
I_o = 3.2 mA
P_o = 5.3 mW
C_o = 22 uF
L_o = 1 H

IECEx Certifications

I7 IECEx Intrinsic Safety
Certificate No.: IECEx BAS 09.0004
Ex ia IIC T6 (T_{amb} = -60 °C to 50 °C)
Ex ia IIC T5 (T_{amb} = -60 °C to 75 °C)
IP66
For use with Rosemount power module P/N 753-9220-0001 only.
Dimensional Drawings

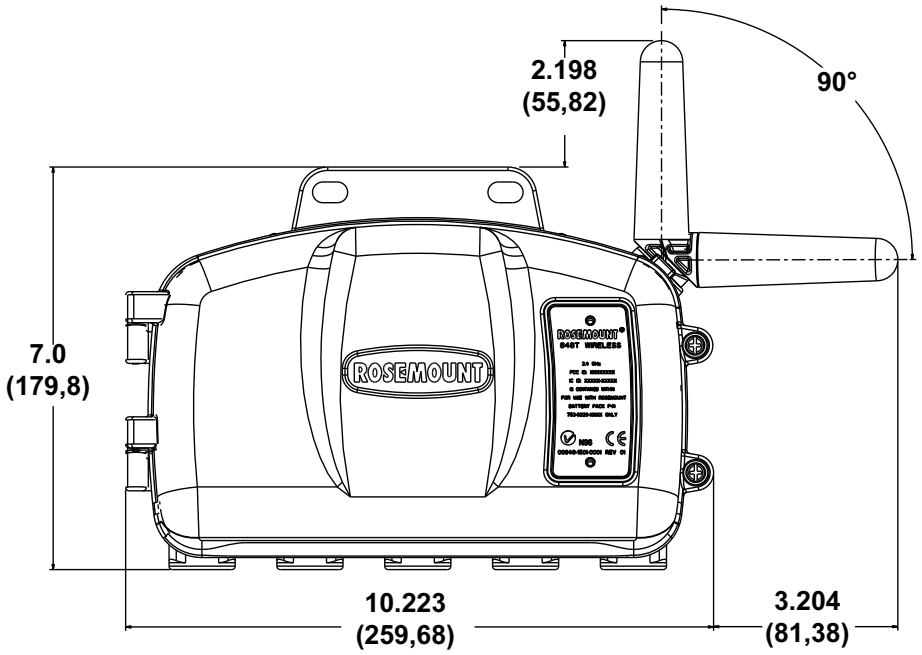
TABLE 20. Sensor Parameters

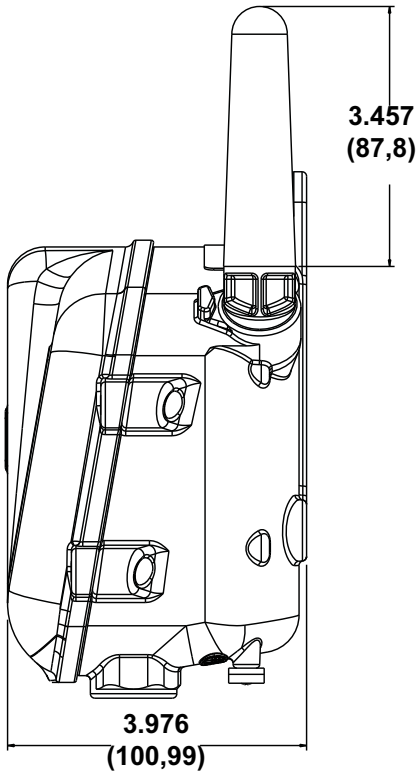
Sensor
U_o = 6.6 V
I_o = 3.2 mA
P_o = 5.3 mW
C_o = 22 uF
L_o = 1 H

Dimensional Drawings

848T Wireless Dimensional Drawings

Dimensions are in inches (millimeters)





Ordering Information

Model	Product Description
848T	High Density Temperature Measurement Family
Code	**Communications Protocol**
X	Wireless
Code	**Certifications**
I5	FM Intrinsically Safe, Division 2
N5	FM Class I, Division 2, and Dust Ignition-Proof (enclosure required)
I6	CSA Intrinsically Safe, Division 2
N6	CSA Class I, Division 2
I1	ATEX Intrinsic Safety
I7	IECEx Intrinsic Safety
NA	No Approval
Code	**Input Types**
S001	Resistance Temperature Detectors and Thermocouples
S002(1)	RTDs, Thermocouples, and 4–20 mA
Code	**Options**
Wireless Burst Rate	
WA3(2)	User Configurable Burst Rate, 2.4 GHz DSSS WirelessHART™
Omnidirectional Wireless Antenna	
WK(2)	Long Range, Integral Antenna
SmartPower™	
1(2)	Long Life Power Module Adapter, Intrinsically Safe
	Note: Long-Life Power Module must be shipped separately, order Part #00753-9220-0001
Mounting Kit Options	
B6	Mounting Bracket for 2-in. pipe mount - SST brackets and bolts
Housing Options	
HA1(3)	Aluminum with Cable Glands (5 x 1/2 inch NPT for 7.5 - 11.9 mm)
HA2(3)	Aluminum with Conduit Entries (5 plugged holes, suitable for installing 1/2-inch NPT fittings)
Custom Software Configuration Request	
C1	Factory configuration of date, descriptor, and message fields (CDS required)
Configuration Options	
F5	50 Hz Line Voltage Filter
5-Point Calibration	
C4	5-Point Calibration (requires Q4 option code to generate a calibration certificate)
Calibration Certificate	
Q4	Calibration Certificate (3-Point Calibration with Certificate)
Typical Model Number: 848T X I5 S001 WA3 WK1 B5 HA1	

(1) Only available with product certification NA. Stable resistors included.

(2) Required for wireless

(3) HA1 or HA2 required for wireless

Configuration Data Sheet

BOLD = Required Value
★ = Default

◯ Select only one of the items provided
☐ One or more of the listed items can be selected

Customer Information

Customer: _____ Contact Name: _____

Phone No: _____ Fax No./Email: _____

P.O./Reference No.: _____ P.O. Line Item: _____

Quote No. _____ Model No.: _____

Customer Signoff: _____

Tagging

Hardware Tag: _____

Software Tag: _____

NOTE
The C1 option is required to factory configure each sensor differently. It is not needed to configure the self-organizing network parameters or to identically set all sensor inputs. The C1 option is also required for factory configuration of process alerts, update rate, and channel tag.

Self Organizing Network Parameters

Rosemount Smart Wireless Self Organizing devices employ configurable network parameters that allow users to manage network security. The best security practice is to order Smart Wireless Self Organizing devices with Generated Network Parameters and enter Customer Network Parameters during the onsite commissioning process upon receipt. This allows customers to best control network access and security.

◯ Factory-Generated Network Parameters ★

◯ Customer Network Parameters

Network ID |__|__|__|__|__| (00000-32,000)

Join Key(1) |__|__|__|__|__|__|__|__| -|__|__|__|__|__|__|__|__| - |__|__|__|__|__|__|__|__| - |__|__|__|__|__|__|__|__|

(1) Exactly 32 hexidecimal digits, 0-9 and A-F

Sensor Inputs (All Inputs Configured Identically)

Type

◯ Pt 50 GOST (α = 0.003910)	◯ Cu 50 (α = 426)	◯ NIST Type S T/C
◯ Pt 100 GOST (α = 0.00391)	◯ Cu 50 (α = 428)	◯ NIST Type T T/C
◯ Pt 100 IEC (α = 0.00385)	◯ Cu 100 (α = 426)	◯ GOST Type L
◯ Pt 100 JIS (α = 0.003916)	◯ Cu 100 (α = 428)	◯ DIN Type L T/C
◯ Pt 200 JIS (α = 0.003916)	◯ NIST Type B T/C	◯ DIN Type U T/C
◯ Pt 200 IEC (α = 0.00385)	◯ NIST Type E T/C	◯ Type ASTM W5Re/W26Re T/C
◯ Pt 500 IEC (α = 0.00385)	◯ NIST Type J★ T/C	◯ mV
◯ Pt 1000 IEC (α = 0.00385)	◯ NIST Type K T/C	◯ Ohms
◯ Ni 120 Edison Curve No. 7	◯ NIST Type N T/C	◯ 4–20 mA (NAMUR)
◯ Cu 10 Edison Copper Winding #15	◯ NIST Type R T/C	◯ 4–20 mA (Rosemount)

Number of Leads

◯ 2-wire★ ◯ 3-wire ◯ 4-wire

Calibration Range **(Default Range 0 - 100 °C)**(1)

Lower Limit _____ Upper Limit _____

Units

◯ mV	◯ K	◯ °C★	◯ mA
◯ Ohms	◯ °R	◯ °F	

(1) Required only for options Q4 and C4.

NOTE
Custom configuration information below this line requires C1 option code.

Transmitter Information
Descriptor (16 characters) _____
Message (32 characters) _____
Date (DD/MM/YY) _____

Update Rate
Update Rate:_____ ◯ Seconds ◯ Minutes
2.4 GHz DSSS *Wireless*HART Update Rate allows for 8 seconds, 16 seconds, 32 seconds, or 1 to 60 minutes. (1 Minute★)

Sensor 1 Configuration

Tag _____

Type

◯ Pt 50 GOST (α = 0.003910)	◯ Cu 50 (α = 426)	◯ NIST Type S T/C
◯ Pt 100 GOST (α = 0.00391)	◯ Cu 50 (α = 428)	◯ NIST Type T T/C
◯ Pt 100 IEC (α = 0.00385)	◯ Cu 100 (α = 426)	◯ GOST Type L
◯ Pt 100 JIS (α = 0.003916)	◯ Cu 100 (α = 428)	◯ DIN Type L T/C
◯ Pt 200 JIS (α = 0.003916)	◯ NIST Type B T/C	◯ DIN Type U T/C
◯ Pt 200 IEC (α = 0.00385)	◯ NIST Type E T/C	◯ Type ASTM W5Re/W26Re T/C
◯ Pt 500 IEC (α = 0.00385)	◯ NIST Type J★ T/C	◯ mV
◯ Pt 1000 IEC (α = 0.00385)	◯ NIST Type K T/C	◯ Ohms
◯ Ni 120 Edison Curve No. 7	◯ NIST Type N T/C	◯ 4–20 mA (NAMUR)
◯ Cu 10 Edison Copper Winding #15	◯ NIST Type R T/C	◯ 4–20 mA (Rosemount)

Number of Leads
◯ 2-wire★ ◯ 3-wire ◯ 4-wire

Calibration Range **(Default Range 0 - 100 °C)**(1)
Lower Limit _____ Upper Limit _____

Units

◯ mV	◯ K	◯ °C★	◯ mA
◯ Ohms	◯ °R	◯ °F	

(1) Required only for options Q4 and C4.

Sensor 1 Alerts

Low Alert		**High Alert**	
Mode:	◯ Enable ◯ Disable★	Mode:	◯ Enable ◯ Disable★
Trigger Point(1)	_____	Trigger Point(1)	_____
Dead Band(1)	_____	Dead Band(1)	_____

(1) Trigger point and dead band values use the same units of measurement as the sensor reading.

Sensor 2 Configuration		
Tag _____		
Type		
◯ Pt 50 GOST (α = 0.003910)	◯ Cu 50 (α = 426)	◯ NIST Type S T/C
◯ Pt 100 GOST (α = 0.00391)	◯ Cu 50 (α = 428)	◯ NIST Type T T/C
◯ Pt 100 IEC (α = 0.00385)	◯ Cu 100 (α = 426)	◯ GOST Type L
◯ Pt 100 JIS (α = 0.003916)	◯ Cu 100 (α = 428)	◯ DIN Type L T/C
◯ Pt 200 JIS (α = 0.003916)	◯ NIST Type B T/C	◯ DIN Type U T/C
◯ Pt 200 IEC (α = 0.00385)	◯ NIST Type E T/C	◯ Type ASTM W5Re/W26Re T/C
◯ Pt 500 IEC (α = 0.00385)	◯ NIST Type J★ T/C	◯ mV
◯ Pt 1000 IEC (α = 0.00385)	◯ NIST Type K T/C	◯ Ohms
◯ Ni 120 Edison Curve No. 7	◯ NIST Type N T/C	◯ 4–20 mA (NAMUR)
◯ Cu 10 Edison Copper Winding #15	◯ NIST Type R T/C	◯ 4–20 mA (Rosemount)
Number of Leads		
◯ 2-wire★ ◯ 3-wire ◯ 4-wire		
Calibration Range **(Default Range 0 - 100 °C)**		
Lower Limit _____	Upper Limit _____	
Units		
◯ mV ◯ K ◯ °C★	◯ mA	
◯ Ohms ◯ °R ◯ °F		

Sensor 2 Alerts			
Low Alert		**High Alert**	
Mode:	◯ Enable ◯ Disable★	Mode:	◯ Enable ◯ Disable★
Trigger Point(1)	_____	Trigger Point(1)	_____
Dead Band(1)	_____	Dead Band(1)	_____

(1) Trigger point and dead band values use the same units of measurement as the sensor reading.

Sensor 3 Configuration		
Tag _____		
Type		
◯ Pt 50 GOST (α = 0.003910)	◯ Cu 50 (α = 426)	◯ NIST Type S T/C
◯ Pt 100 GOST (α = 0.00391)	◯ Cu 50 (α = 428)	◯ NIST Type T T/C
◯ Pt 100 IEC (α = 0.00385)	◯ Cu 100 (α = 426)	◯ GOST Type L
◯ Pt 100 JIS (α = 0.003916)	◯ Cu 100 (α = 428)	◯ DIN Type L T/C
◯ Pt 200 JIS (α = 0.003916)	◯ NIST Type B T/C	◯ DIN Type U T/C
◯ Pt 200 IEC (α = 0.00385)	◯ NIST Type E T/C	◯ Type ASTM W5Re/W26Re T/C
◯ Pt 500 IEC (α = 0.00385)	◯ NIST Type J★ T/C	◯ mV
◯ Pt 1000 IEC (α = 0.00385)	◯ NIST Type K T/C	◯ Ohms
◯ Ni 120 Edison Curve No. 7	◯ NIST Type N T/C	◯ 4–20 mA (NAMUR)
◯ Cu 10 Edison Copper Winding #15	◯ NIST Type R T/C	◯ 4–20 mA (Rosemount)
Number of Leads		
◯ 2-wire★ ◯ 3-wire ◯ 4-wire		
Calibration Range **(Default Range 0 - 100 °C)**		
Lower Limit _____	Upper Limit _____	
Units		
◯ mV ◯ K ◯ °C★ ◯ mA		
◯ Ohms ◯ °R ◯ °F		

Sensor 3 Alerts			
Low Alert		**High Alert**	
Mode:	◯ Enable ◯ Disable★	Mode:	◯ Enable ◯ Disable★
Trigger Point(1)	_____	Trigger Point(1)	_____
Dead Band(1)	_____	Dead Band(1)	_____

(1) Trigger point and dead band values use the same units of measurement as the sensor reading.

Sensor 4 Configuration		
Tag _____		
Type		
◯ Pt 50 GOST (α = 0.003910)	◯ Cu 50 (α = 426)	◯ NIST Type S T/C
◯ Pt 100 GOST (α = 0.00391)	◯ Cu 50 (α = 428)	◯ NIST Type T T/C
◯ Pt 100 IEC (α = 0.00385)	◯ Cu 100 (α = 426)	◯ GOST Type L
◯ Pt 100 JIS (α = 0.003916)	◯ Cu 100 (α = 428)	◯ DIN Type L T/C
◯ Pt 200 JIS (α = 0.003916)	◯ NIST Type B T/C	◯ DIN Type U T/C
◯ Pt 200 IEC (α = 0.00385)	◯ NIST Type E T/C	◯ Type ASTM W5Re/W26Re T/C
◯ Pt 500 IEC (α = 0.00385)	◯ NIST Type J★ T/C	◯ mV
◯ Pt 1000 IEC (α = 0.00385)	◯ NIST Type K T/C	◯ Ohms
◯ Ni 120 Edison Curve No. 7	◯ NIST Type N T/C	◯ 4–20 mA (NAMUR)
◯ Cu 10 Edison Copper Winding #15	◯ NIST Type R T/C	◯ 4–20 mA (Rosemount)
Number of Leads		
◯ 2-wire★ ◯ 3-wire ◯ 4-wire		
Calibration Range **(Default Range 0 - 100 °C)**		
Lower Limit _____	Upper Limit _____	
Units		
◯ mV ◯ K ◯ °C★ ◯ mA		
◯ Ohms ◯ °R ◯ °F		

Sensor 4 Alerts			
Low Alert		**High Alert**	
Mode:	◯ Enable ◯ Disable★	Mode:	◯ Enable ◯ Disable★
Trigger Point(1)	_____	Trigger Point(1)	_____
Dead Band(1)	_____	Dead Band(1)	_____

(1) Trigger point and dead band values use the same units of measurement as the sensor reading.

Rosemount 848T Family

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