Product Data Sheet
00813-0100-4697, Rev FA
June 2006

Rosemount 848T Eight Input Temperature Transmitter with FOUNDATION™ Fieldbus

- *Provides significant installation and operation savings for temperature monitoring applications*
- *Accepts eight independently configurable RTD, thermocouple, ohm, and millivolt inputs*
- *Mounts anywhere – field hardened, intrinsically safe, and low power*
- *Provides diagnostic and calculation capabilities*
- *Interface the Rosemount 848T to existing systems using the Rosemount 3420 Fieldbus Interface Module*

Contents

The First Choice in Temperature Monitoring

The Rosemount 848T Eight Input Temperature Transmitter will simplify and reduce the cost of a plant's process control architecture. Traditional temperature monitoring methods (wire direct, low cost single input transmitters, and multiplexers) will be eliminated with the introduction of this intrinsically safe, eight input transmitter that mounts beside the process. The use of FOUNDATION™ fieldbus enables this quantum leap in temperature monitoring. Combined with the Rosemount 3420 Fieldbus Interface Module, Rosemount 848T measurements can be interfaced to existing systems.

LOWEST COST SOLUTION

The Rosemount 848T offers the lowest cost solution for temperature monitoring measurements. (e.g. distillation columns, tanks, reactors, boilers, etc.). This transmitter can reduce installed costs by as much as 70% per point when compared to traditional sensor wire direct applications.

REDUCES I.S. BARRIER COSTS

For intrinsically safe 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 new FISCO (Fieldbus Intrinsically Safe Concept) 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, and ohm).

MOUNTS VIRTUALLY ANYWHERE

The Rosemount 848T's ambient temperature limits, RFI immunity compliance, intrinsic safety approvals, and ability to mount in industrial environments provides optimum mounting flexibility.

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. Also, the Rosemount 848T offers the Multiple Analog Input (MAI) function block. The MAI block allows all eight sensor inputs to be communicated with one function block, resulting in greater network efficiency.

CONVERTS ANALOG TO FIELDBUS

The Rosemount 848T can accept 4–20 mA inputs and output the value onto FOUNDATION fieldbus. The optional analog connector allows quick connection of the Field Communicator for local configuration.

The Rosemount 848T Transmitters power PlantWeb providing multi-input 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 848T Eight Input Temperature Transmitter
Eight input transmitter available with *FOUNDATION* fieldbus protocol.

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

Rosemount sensors, thermowells, and extensions
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
Two-compartment housing, dual sensor design available with HART or Foundation fieldbus protocol.

Rosemount 144 Temperature Transmitter
Head mount style (DIN B) PC-configurable transmitter.

Specifications

FUNCTIONAL

Inputs

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

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

All sensor terminals are rated to 42.4 VDC.

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)

Isolation

Input/output isolation is tested to 500 VAC rms (707 VDC). Input/input isolation between each sensor input connector is tested to 500 VAC rms (707 VDC). Input/input isolation between sensors on the same input connector is 3 VAC at 50 – 60 Hz, 1.5 VDC.

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 lightening, 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.

ASME B 16.5 (ANSI)/IEEE C62.41-1991

(IEEE 587), Location Categories A2, B3.

6 kV / 3 kA peak (1.2 x 50 μS Wave 8 x 20 μS Combination Wave)

6 kV / 0.5 kA peak (100 kHz Ring Wave)

4 kV peak EFT (5 x 50 nS Electrical Fast Transient)

Update Time

Approximately 1.5 seconds to read all eight inputs.

Humidity Limits

0–100% non-condensing relative humidity

Turn-on Time

Performance within specifications is achieved in less than 50 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	25
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

Weight

Assembly	Weight		
	oz	lb	kg
Rosemount 848T only	9.60	0.60	0.27
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

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

Environmental Ratings

NEMA 4X, CSA Enclosure Type 4X, and IP66 with optional junction box.

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.

PERFORMANCE

The transmitter maintains a specification conformance of at least ±3σ.

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 Amendment 1, 2000:

Emissions
• 30–230 MHz, 30 dB (uV/m) at 10 m
• 230–1000 MHz, 37 dB (uV/m) at 10 m

Susceptibility	
• ESD	• 4 kV contact discharge • 8 kV air discharge
• Radiated	• 80 – 1000 MHz at 10 V/m AM
• Burst	• 1 kV
• Surge	• 1 kV line–to-ground
• Conducted	• 150 kHz to 80 MHz at 3V
• Magnetic	• 50 Hz at 30 A/m

ACCURACY

TABLE 1. Input Options/Accuracy

Sensor Option	Sensor Reference	Input Ranges		Accuracy Over Range(s)	
		°C	°F	°C	°F
2- and 3-Wire RTDs					
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	IEC 751; α = 0.00385, 1995	–200 to 850	–328 to 1562	± 0.54	± 0.98
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	–50 to 1000	–58 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	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
Millivolt Input(1)—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	
Multipoint Sensors(2)					

(1) 4–20 mA inputs are scaled to 20 – 100 mV.

(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

Accuracy Notes

Differential capability exists between any two sensor types:

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

X = Sensor 1 minimum - Sensor 2 max.
Y = Sensor 1 maximum - Sensor 2 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.

AMBIENT TEMPERATURE EFFECT

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

TABLE 2. Ambient Temperature Effects

NIST Type	Accuracy per 1.0 °C (1.8 °F) Change in Ambient Temperature[1]	Temperature Range (°C)
RTD		
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 500, Pt 1000, Ni 120	• 0.003 °C (0.0054 °F)	NA
Pt 200	• 0.004 °C (0.0072 °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
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 > 0 °C • 0.007 ± 0.003% < 0 °C	•
Millivolt	0.0005 mV	NA
2- and 3-wire Ohm	0.0084 ohms	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 (a = 0.00385) sensor input and the transmitter is at 40 °C ambient temperature, temperature effects would be:
0.003 °C x (40 - 20) = 0.06 °C.

Worst case error would be:
Sensor Accuracy + Temperature Effects = 0.30 °C + 0.06 = 0.36°C.

Total Probable Error =

$$\sqrt{0.30^2 + 0.06^2} = 0.31°C$$

Analog to Fieldbus Performance

4– 20 mA inputs are scaled to 20 – 100 mV.
Accuracy[1]:0.0625% of span
Temperature Effect: [0.002% of reading + 0.000625% of span] per 1.0 °C change in Ambient Temperature.

(1) To obtain accuracy, the mV input must be calibrated while

Product Certifications

HAZARDOUS LOCATIONS CERTIFICATION

North American Certificates

Factory Mutual (FM) Certifications

I5 Intrinsically Safety
Intrinsically Safe for use in Class I, Division 1, Groups A, B,C, D; when installed per Rosemount drawing 00848-4402.

Temperature Code:
T_{amb} = – 40 to 60 °C

IE FISCO (Fieldbus Intrinsically Safe Concept) Intrinsic Safety
Intrinsically safe for use in Class I, Division 1, Groups A, B,C, D; when installed in accordance with Rosemount Drawing 00848-4402.

Temperature Code:
T_{amb} = – 40 to 60 °C

Non-incendive for use in Class I, Division 2, Groups A, B, C, D (suitable for use with non-incendive field wiring); when installed in accordance with Rosemount Drawing 00848-4402.

Temperature Code:
T4a (T_{amb} = –40 to 85 °C)
T5 (T_{amb} = –40 to 70 °C)

TABLE 3. 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 = 0.04W
C_i = 2.1 nF	C_a = 1.36 µF
L_i = 0	L_a = 160 mH

N5 Non-incendive for use in Class I, Division 2, Groups A, B, C, D (suitable for use with non-incendive field wiring) when installed in accordance with Rosemount Drawing 00848-4402.

Temperature Code:
T4a (T_{amb} = –40 to 85 °C)
T5 (T_{amb} = –40 to 70 °C)

Indoor Hazardous (Classified) Locations

TABLE 4. FM Approved Entity Parameters(1)

Power/Bus	Sensor
U_i = 30 V	U_o = 12.02 V
I_i = 300 mA	I_o = 13.6 mA
P_i = 1.3 W	P_o = 0.04 W
C_i = 2.1 nF	C_a = 1.36 µF
L_i = 0	L_a = 160 mH

(1) Intrinsically safe and non-incendive parameters

Canadian Standards Association (CSA) Certifications

E6(1) Explosion-Proof
For use in Class I, Division 1, 2, Groups B, C, D;
Class II, Division 1, Groups E, F, and G;
Class II, Division 2, Groups E and F.

Dust-Ignition Proof
For use in Class II, Division 1, Groups E, F, and G;
Suitable for Class I, Division 2, Groups A, B, C, and D, when installed per Rosemount drawing 00848-1041, CSA Enclosure Type 4X (T_{amb} = -50 to 85 °C);
Conduit seal not required.

I6 Intrinsic Safety
For use in Class I, Division 1, Groups A, B, C, D; when installed per Rosemount drawing 00848-4403.

Temperature Code:
T3C (T_{amb} = –50 to 60 °C)

Suitable for Class I, Division 2, Groups A, B, C, D. Rated 42.4 VDC max.

TABLE 5. 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 (Fieldbus Intrinsically Safe Concept) Intrinsic Safety
For use in Class I, Division 1, Groups A, B, C, D; when installed per Rosemount drawing 00848-4403.

Temperature Code:
T3C (T_{amb} = –50 to 60 °C)

Suitable for Class I, Division 2, Groups A, B, C, D. Rated 42.4 VDC max.

TABLE 6. 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 (T_{amb} = –50 to 60 °C)

Must be installed in a suitable enclosure as determined acceptable by the local inspection authority.

(1) Consult factory for the latest approval information.

European Certifications

CENELEC 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 7. CENELEC 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 when the optional transient protection (FISCO) board is fitted and 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 8. CENELEC 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

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 when the optional transient protection (FISCO) board is fitted and this must be taken into account when installing the apparatus.

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

TABLE 9. 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 (42.4 V 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 CENELEC 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 CENELEC 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.

NE BASEEFA/CENELEC ATEX TYPE 'n' APPROVAL
Certification Number: BAS01ATEX3199X
ATEX Marking ⟨Ex⟩ II 3 G
EEx nA nL IIC T5 (T_{amb} = -40 to 65 °C)
NOTE: NE is valid with S001 Input Type ONLY.

TABLE 10. Baseefa Approved Entity Parameters

Power/Bus	Sensor
U_i = 42.4 V	U_o = 5 V 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 11. Baseefa Approved Entity Parameters

Power/Bus	Sensor
U_i = 42.4 V	U_o = 5 V 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

Australian Certifications

Standard Australia Quality Assurance Service (SAA)

NOTE
Consult factory for SAA availability.

I7 Intrinsic Safety
Ex ia IIC T4 (T_{amb} = – 40 to 60 °C)

IG IECEx FISCO
Ex ia IIC T4 (T_{amb} = – 40 to 60 °C)

N7 Type n
Ex n IIC T4 (T_{amb} = – 50 to 85 °C)
Ex n IIC T5 (T_{amb} = – 50 to 70 °C)

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.

Brazilian Certifications

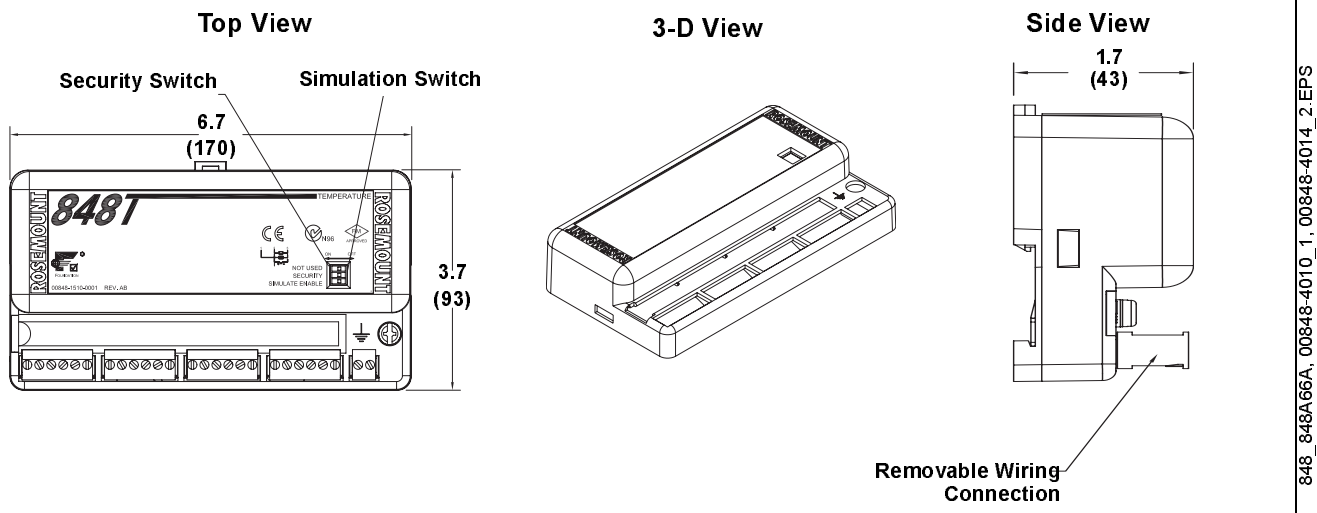
Centro de Pesquisas de Energia Eletrica (CEPEL) Approval

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.

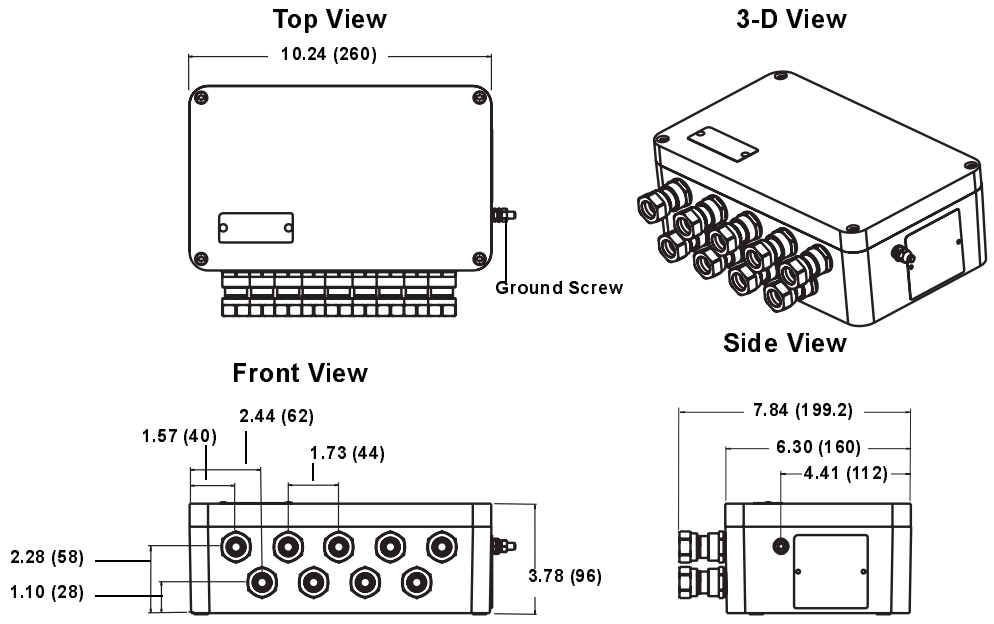
Rosemount 848T



848_848A66A, 00848-4010_1, 00848-4014_2.EPS

Dimensions are in inches (millimeters)

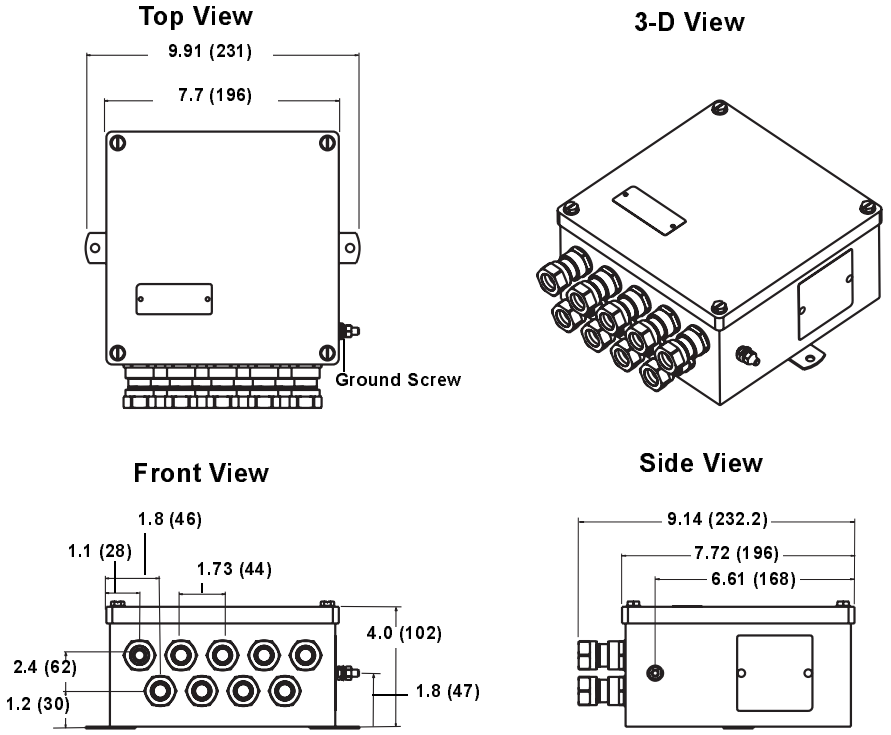
Aluminum/Plastic Junction Box—Cable Gland (option codes JA2 and JP2)



848_848A48A

Dimensions are in inches (millimeters)

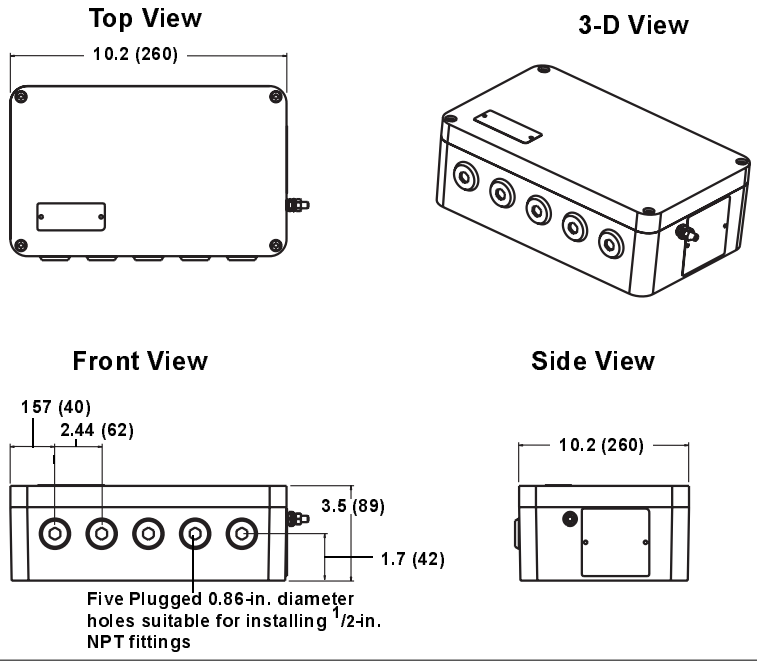
Stainless Steel Junction Box—Cable Gland (option code JS2)



848_848A49A

Dimensions are in inches (millimeters)

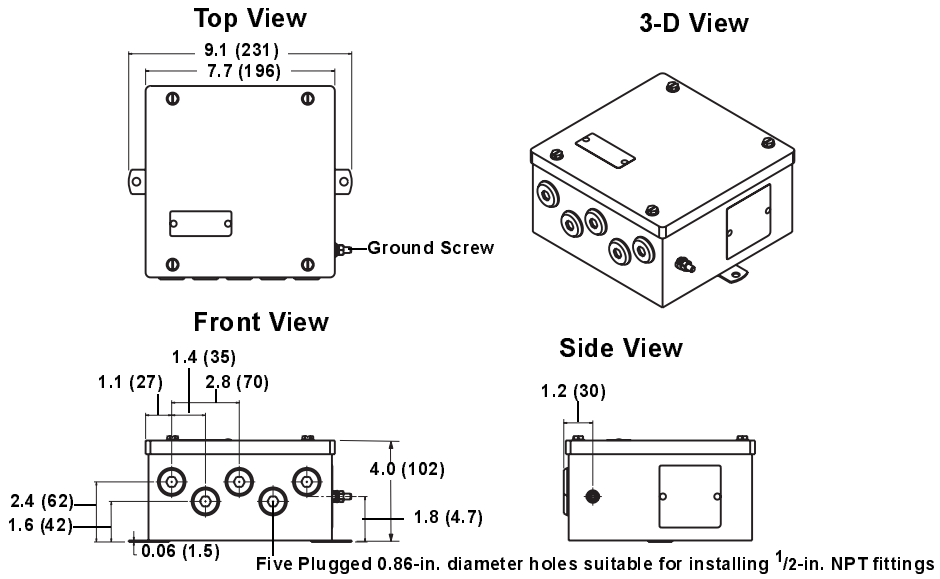
Aluminum/Plastic Junction Box—Conduit Entry (option codes JA3 and JP3)



848_848A50A

Dimensions are in inches (millimeters)

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

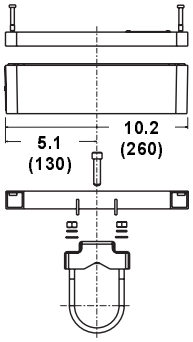


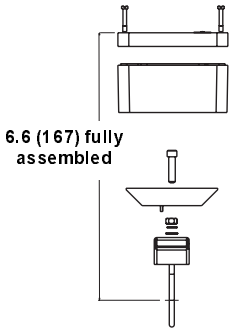
Dimensions are in inches (millimeters)

848_848A51A

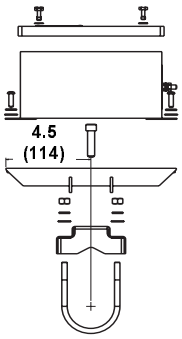
MOUNTING OPTIONS

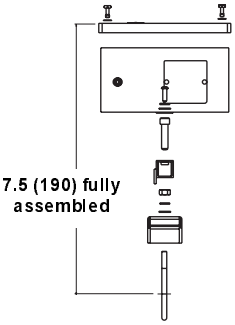
Aluminum/Plastic Junction Box (styles JA and JP)





Stainless Steel Junction Box (style JS)

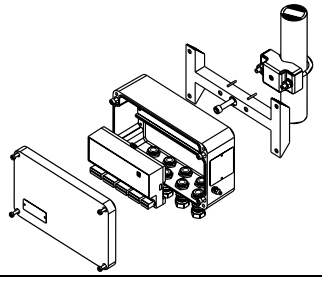




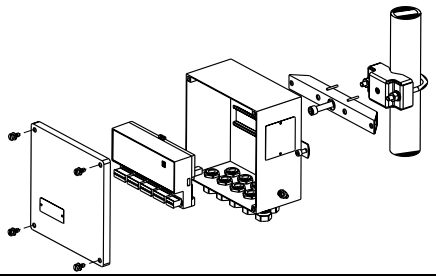
Dimensions are in inches (millimeters)

848_848A52A, B, 53A, B

Aluminum/Plastic Junction Box Mounted on a Vertical Pipe



Stainless Steel Junction Box Mounted on a Vertical Pipe



848_848A54A, 55A

Ordering Information

Model	Product Description	
848T	Multisensor Transmitter Temperature Inputs	
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	FM Intrinsic Safety	No
IE	FM FISCO (Fieldbus Intrinsically Safe Concept)	No
N5	FM Class I, Division 2, and Dust Ignition Proof	Yes
E6	CSA Explosion-Proof Approval	Yes[2]
I6	CSA Intrinsic Safety	No
IF	CSA FISCO (Fieldbus Intrinsically Safe Concept)	No
N6	CSA Class I, Division 2, & Dust Ignition Proof	No[3]
I1	ATEX Intrinsic Safety	No
IA	ATEX FISCO (Fieldbus Intrinsically Safe Concept)	No
N1	ATEX Type n (EEx nL)	Yes
NC	ATEX Type n Component (EEx nL)	No[4]
ND	ATEX Dust Ignition Proof	Yes
NE[5]	ATEX Type n (EEx nA nL)	No[6]
NF[5]	ATEX Type n Component (EEx nA nL)	No[4]
I7	IECEx Intrinsic Safety	No
IG	IECEx FISCO (Fieldbus Intrinsically Safe Concept)	No[4]
N7	IECEx Type n Approval (Ex nC)	No[4]
NA	No Approval	No
Code	**Input Types**	
S001	Resistance Temperature Detectors and Thermocouples	
S002[7]	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	
	Non Explosion-Proof Junction Box	
	Plastic Junction Box	
JP1	No Entries	
JP2	Cable Glands (9 x M20 nickel-plated brass glands for 7.5–11.9 mm unarmored cable)	
JP3	Conduit Entries (5 plugged holes, suitable for installing 1/2-in. NPT fittings)	
	Aluminum Junction Box	
JA1	No Entries	
JA2	Cable Glands (9 x M20 nickel-plated brass glands for 7.5–11.9 mm unarmored cable)	
JA3	Conduit Entries (5 plugged holes, suitable for installing 1/2-in. NPT fittings)	
	Stainless Steel Junction Box	
JS1	No Entries	
JS2	Cable Glands (9 x M20 nickel-plated brass glands for 7.5–11.9 mm unarmored cable)	
JS3	Conduit Entries (5 plugged holes, suitable for installing 1/2-in. NPT fittings)	
	Explosion-Proof Junction Box	
JX3	Conduit Entries (4 plugged holes, suitable for installing 1/2-in. NPT fittings)	

Options continued on next page

Model	Product Description
	Custom Software Configuration Request
C1	Factory configuration of date, descriptor, and message fields (CDS required)
	Configuration Options(8)
F5	50 Hz Line Voltage Filter
	Calibration Certification
Q4	3 Point Calibration Certificate Provided
	Conduit Electrical Connector
GE(9)	M12, 4-pin, Male Connector (eurofast®)
GM(9)	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.
(3) Must be installed in a suitable enclosure as determined by the local inspection authority.
(4) The Rosemount 848T ordered with option code NC is not approved as a stand-alone unit. Additional system certification is required.
(5) Available only with S001 option
(6) The Rosemount 848T must be installed so it is protected to at least the requirements of IP54; All listed Junction Boxes fulfill this requirement.
(7) S002 is only available with Product Certification N5, N6, N1, NC.
(8) Configuration is the same for all eight inputs.
(9) Available with Intrinsically Safe approvals only. For FM Intrinsically Safe (option code I5), install in accordance with Rosemount drawing 00848-4402.

Transmitter Tag

Hardware

- tagged in accordance with customer requirements
- permanently attached to the transmitter

Software

- the transmitter can store up to 30 characters
- if no characters are specified, the first 30 characters of the hardware tag will be used

Sensor Tag

Hardware

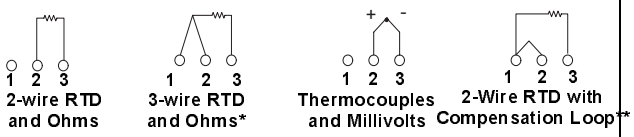
- a provided plastic tag to record identification of eight sensors
- this information can be printed at the factory upon request
- in the field, the tag can be removed, printed onto, and reattached to the transmitter

Software

- if sensor tagging is requested, the Sensor Transducer Block sensor_sn parameters will be set at the factory
- the sensor_sn parameters can be updated in the field

Wiring

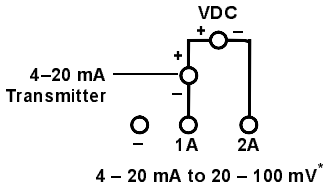
Rosemount 848T Sensor Wiring Diagram



** 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.*

*** The transmitter must be configured for a 3-wire RTD in order to recognize an RTD with a compensation loop.*

Rosemount 848T Analog Input Wiring Diagram



** Optional Analog Connector required.*

Transmitter Configuration

The transmitter is available with the standard configuration setting. The configuration settings and block configuration may be changed in the field with the Fisher-Rosemount Systems DeltaV®, with AMS*inside*, or other FOUNDATION fieldbus host or configuration tool.

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	• Measurement Transducer Block (1) • Sensor Transducer Block (8) • Differential Transducer Block (4)
FOUNDATION™ fieldbus Function Blocks	• Analog Input (8) • Multiple Analog Input (1) • Input Selector (4)

(1) For all eight sensors

Rosemount 848T Configuration Data Sheet

Customer Information

Customer _____ Model No. _____
P.O. Number _____ Line Item _____

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

☐ **All eight sensors to be configured the same as Sensor 1 (fill out Sensor 1 only). Otherwise, fill out each sensor individually.**

Sensor 1

Tag _____

Type

☐ mV
☐ Ohms
☐ Pt 100, α = 385 (IEC 751)
☐ Pt 100, α = 392 (IEC 1604)
☐ Pt 200, α = 385 (IEC 751)
☐ Pt 500, α = 385 (IEC 751)
☐ Cu 10, Edison No. 7
☐ Cu 100, α = 428 (GOST 6651-94)
☐ Cu 50, α = 428 (GOST 6651-94)
☐ Cu 100, α = 426 (GOST 6651-94)
☐ Cu 50, α = 426 (GOST 6651-94)
☐ Ni 120, Edison No. 15
☐ Type B Thermocouple (IEC 584-1, NIST 175)
☐ Type C Thermocouple (NIST 175)
☐ Type E Thermocouple (IEC 584-1, NIST 175)
☐ Type J Thermocouple (IEC 584-1, NIST 175)
☐ Type K Thermocouple (IEC 584-1, NIST 175)
☐ Type R Thermocouple (IEC 584-1, NIST 175)
☐ Type N Thermocouple (IEC 584-1, NIST 175)
☐ Type S Thermocouple (IEC 584-1, NIST 175)
☐ Type T Thermocouple (IEC 584-1, NIST 175)
☐ Pt 1000, α = 385 (IEC 751)
☐ Type L Thermocouple (GOST R 8.585-2001)
☐ None

Number of Leads

☐ 2-wire ☐ 3-wire

Measurement Point

LO _____
HI _____

Units

☐ mV ☐ °C
☐ Ohms ☐ °F
☐ K ☐ °R

Alarms[1]

HI HI Alarm _____
HI Alarm _____
LO Alarm _____
LO LO Alarm _____

Sensor 2

Tag _____

Type

☐ mV
☐ Ohms
☐ Pt 100, α = 385 (IEC 751)
☐ Pt 100, α = 392 (IEC 1604)
☐ Pt 200, α = 385 (IEC 751)
☐ Pt 500, α = 385 (IEC 751)
☐ Cu 10, Edison No. 7
☐ Cu 100, α = 428 (GOST 6651-94)
☐ Cu 50, α = 428 (GOST 6651-94)
☐ Cu 100, α = 426 (GOST 6651-94)
☐ Cu 50, α = 426 (GOST 6651-94)
☐ Ni 120, Edison No. 15
☐ Type B Thermocouple (IEC 584-1, NIST 175)
☐ Type C Thermocouple (NIST 175)
☐ Type E Thermocouple (IEC 584-1, NIST 175)
☐ Type J Thermocouple (IEC 584-1, NIST 175)
☐ Type K Thermocouple (IEC 584-1, NIST 175)
☐ Type R Thermocouple (IEC 584-1, NIST 175)
☐ Type N Thermocouple (IEC 584-1, NIST 175)
☐ Type S Thermocouple (IEC 584-1, NIST 175)
☐ Type T Thermocouple (IEC 584-1, NIST 175)
☐ Pt 1000, α = 385 (IEC 751)
☐ Type L Thermocouple (GOST R 8.585-2001)
☐ None

Number of Leads

☐ 2-wire ☐ 3-wire

Measurement Point

LO _____
HI _____

Units

☐ mV ☐ °C
☐ Ohms ☐ °F
☐ K ☐ °R

Alarms[1]

HI HI Alarm _____
HI Alarm _____
LO Alarm _____
LO LO Alarm _____

Sensor 3

Tag _____

Type

☐ mV
☐ Ohms
☐ Pt 100, α = 385 (IEC 751)
☐ Pt 100, α = 392 (IEC 1604)
☐ Pt 200, α = 385 (IEC 751)
☐ Pt 500, α = 385 (IEC 751)
☐ Cu 10, Edison No. 7
☐ Cu 100, α = 428 (GOST 6651-94)
☐ Cu 50, α = 428 (GOST 6651-94)
☐ Cu 100, α = 426 (GOST 6651-94)
☐ Cu 50, α = 426 (GOST 6651-94)
☐ Ni 120, Edison No. 15
☐ Type B Thermocouple (IEC 584-1, NIST 175)
☐ Type C Thermocouple (NIST 175)
☐ Type E Thermocouple (IEC 584-1, NIST 175)
☐ Type J Thermocouple (IEC 584-1, NIST 175)
☐ Type K Thermocouple (IEC 584-1, NIST 175)
☐ Type R Thermocouple (IEC 584-1, NIST 175)
☐ Type N Thermocouple (IEC 584-1, NIST 175)
☐ Type S Thermocouple (IEC 584-1, NIST 175)
☐ Type T Thermocouple (IEC 584-1, NIST 175)
☐ Pt 1000, α = 385 (IEC 751)
☐ Type L Thermocouple (GOST R 8.585-2001)
☐ None

Number of Leads

☐ 2-wire ☐ 3-wire

Measurement Point

LO _____
HI _____

Units

☐ mV ☐ °C
☐ Ohms ☐ °F
☐ K ☐ °R

Alarms[1]

HI HI Alarm _____
HI Alarm _____
LO Alarm _____
LO LO Alarm _____

Sensor 4

Tag _____

Type

☐ mV
☐ Ohms
☐ Pt 100, α = 385 (IEC 751)
☐ Pt 100, α = 392 (IEC 1604)
☐ Pt 200, α = 385 (IEC 751)
☐ Pt 500, α = 385 (IEC 751)
☐ Cu 10, Edison No. 7
☐ Cu 100, α = 428 (GOST 6651-94)
☐ Cu 50, α = 428 (GOST 6651-94)
☐ Cu 100, α = 426 (GOST 6651-94)
☐ Cu 50, α = 426 (GOST 6651-94)
☐ Ni 120, Edison No. 15
☐ Type B Thermocouple (IEC 584-1, NIST 175)
☐ Type C Thermocouple (NIST 175)
☐ Type E Thermocouple (IEC 584-1, NIST 175)
☐ Type J Thermocouple (IEC 584-1, NIST 175)
☐ Type K Thermocouple (IEC 584-1, NIST 175)
☐ Type R Thermocouple (IEC 584-1, NIST 175)
☐ Type N Thermocouple (IEC 584-1, NIST 175)
☐ Type S Thermocouple (IEC 584-1, NIST 175)
☐ Type T Thermocouple (IEC 584-1, NIST 175)
☐ Pt 1000, α = 385 (IEC 751)
☐ Type L Thermocouple (GOST R 8.585-2001)
☐ None

Number of Leads

☐ 2-wire ☐ 3-wire

Measurement Point

LO _____
HI _____

Units

☐ mV ☐ °C
☐ Ohms ☐ °F
☐ K ☐ °R

Alarms[1]

HI HI Alarm _____
HI Alarm _____
LO Alarm _____
LO LO Alarm _____

Sensor 5

Tag _____

Type

- ☐ mV
- ☐ Ohms
- ☐ Pt 100, α = 385 (IEC 751)
- ☐ Pt 100, α = 392 (IEC 1604)
- ☐ Pt 200, α = 385 (IEC 751)
- ☐ Pt 500, α = 385 (IEC 751)
- ☐ Cu 10, Edison No. 7
- ☐ Cu 100, α = 428 (GOST 6651-94)
- ☐ Cu 50, α = 428 (GOST 6651-94)
- ☐ Cu 100, α = 426 (GOST 6651-94)
- ☐ Cu 50, α = 426 (GOST 6651-94)
- ☐ Ni 120, Edison No. 15
- ☐ Type B Thermocouple (IEC 584-1, NIST 175)
- ☐ Type C Thermocouple (NIST 175)
- ☐ Type E Thermocouple (IEC 584-1, NIST 175)
- ☐ Type J Thermocouple (IEC 584-1, NIST 175)
- ☐ Type K Thermocouple (IEC 584-1, NIST 175)
- ☐ Type R Thermocouple (IEC 584-1, NIST 175)
- ☐ Type N Thermocouple (IEC 584-1, NIST 175)
- ☐ Type S Thermocouple (IEC 584-1, NIST 175)
- ☐ Type T Thermocouple (IEC 584-1, NIST 175)
- ☐ Pt 1000, α = 385 (IEC 751)
- ☐ Type L Thermocouple (GOST R 8.585-2001)
- ☐ None

Number of Leads

☐ 2-wire ☐ 3-wire

Measurement Point

LO _____

HI _____

Units

☐ mV	☐ °C
☐ Ohms	☐ °F
☐ K	☐ °R

Alarms(1)

HI HI Alarm _____

HI Alarm _____

LO Alarm _____

LO LO Alarm _____

Sensor 6

Tag _____

Type

- ☐ mV
- ☐ Ohms
- ☐ Pt 100, α = 385 (IEC 751)
- ☐ Pt 100, α = 392 (IEC 1604)
- ☐ Pt 200, α = 385 (IEC 751)
- ☐ Pt 500, α = 385 (IEC 751)
- ☐ Cu 10, Edison No. 7
- ☐ Cu 100, α = 428 (GOST 6651-94)
- ☐ Cu 50, α = 428 (GOST 6651-94)
- ☐ Cu 100, α = 426 (GOST 6651-94)
- ☐ Cu 50, α = 426 (GOST 6651-94)
- ☐ Ni 120, Edison No. 15
- ☐ Type B Thermocouple (IEC 584-1, NIST 175)
- ☐ Type C Thermocouple (NIST 175)
- ☐ Type E Thermocouple (IEC 584-1, NIST 175)
- ☐ Type J Thermocouple (IEC 584-1, NIST 175)
- ☐ Type K Thermocouple (IEC 584-1, NIST 175)
- ☐ Type R Thermocouple (IEC 584-1, NIST 175)
- ☐ Type N Thermocouple (IEC 584-1, NIST 175)
- ☐ Type S Thermocouple (IEC 584-1, NIST 175)
- ☐ Type T Thermocouple (IEC 584-1, NIST 175)
- ☐ Pt 1000, α = 385 (IEC 751)
- ☐ Type L Thermocouple (GOST R 8.585-2001)
- ☐ None

Number of Leads

☐ 2-wire ☐ 3-wire

Measurement Point

LO _____

HI _____

Units

☐ mV	☐ °C
☐ Ohms	☐ °F
☐ K	☐ °R

Alarms(1)

HI HI Alarm _____

HI Alarm _____

LO Alarm _____

LO LO Alarm _____

Sensor 7

Tag _____

Type

- ☐ mV
- ☐ Ohms
- ☐ Pt 100, α = 385 (IEC 751)
- ☐ Pt 100, α = 392 (IEC 1604)
- ☐ Pt 200, α = 385 (IEC 751)
- ☐ Pt 500, α = 385 (IEC 751)
- ☐ Cu 10, Edison No. 7
- ☐ Cu 100, α = 428 (GOST 6651-94)
- ☐ Cu 50, α = 428 (GOST 6651-94)
- ☐ Cu 100, α = 426 (GOST 6651-94)
- ☐ Cu 50, α = 426 (GOST 6651-94)
- ☐ Ni 120, Edison No. 15
- ☐ Type B Thermocouple (IEC 584-1, NIST 175)
- ☐ Type C Thermocouple (NIST 175)
- ☐ Type E Thermocouple (IEC 584-1, NIST 175)
- ☐ Type J Thermocouple (IEC 584-1, NIST 175)
- ☐ Type K Thermocouple (IEC 584-1, NIST 175)
- ☐ Type R Thermocouple (IEC 584-1, NIST 175)
- ☐ Type N Thermocouple (IEC 584-1, NIST 175)
- ☐ Type S Thermocouple (IEC 584-1, NIST 175)
- ☐ Type T Thermocouple (IEC 584-1, NIST 175)
- ☐ Pt 1000, α = 385 (IEC 751)
- ☐ Type L Thermocouple (GOST R 8.585-2001)
- ☐ None

Number of Leads

☐ 2-wire ☐ 3-wire

Measurement Point

LO _____

HI _____

Units

☐ mV	☐ °C
☐ Ohms	☐ °F
☐ K	☐ °R

Alarms(1)

HI HI Alarm _____

HI Alarm _____

LO Alarm _____

LO LO Alarm _____

Sensor 8

Tag _____

Type

- ☐ mV
- ☐ Ohms
- ☐ Pt 100, α = 385 (IEC 751)
- ☐ Pt 100, α = 392 (IEC 1604)
- ☐ Pt 200, α = 385 (IEC 751)
- ☐ Pt 500, α = 385 (IEC 751)
- ☐ Cu 10, Edison No. 7
- ☐ Cu 100, α = 428 (GOST 6651-94)
- ☐ Cu 50, α = 428 (GOST 6651-94)
- ☐ Cu 100, α = 426 (GOST 6651-94)
- ☐ Cu 50, α = 426 (GOST 6651-94)
- ☐ Ni 120, Edison No. 15
- ☐ Type B Thermocouple (IEC 584-1, NIST 175)
- ☐ Type C Thermocouple (NIST 175)
- ☐ Type E Thermocouple (IEC 584-1, NIST 175)
- ☐ Type J Thermocouple (IEC 584-1, NIST 175)
- ☐ Type K Thermocouple (IEC 584-1, NIST 175)
- ☐ Type R Thermocouple (IEC 584-1, NIST 175)
- ☐ Type N Thermocouple (IEC 584-1, NIST 175)
- ☐ Type S Thermocouple (IEC 584-1, NIST 175)
- ☐ Type T Thermocouple (IEC 584-1, NIST 175)
- ☐ Pt 1000, α = 385 (IEC 751)
- ☐ Type L Thermocouple (GOST R 8.585-2001)
- ☐ None

Number of Leads

☐ 2-wire ☐ 3-wire

Measurement Point

LO _____

HI _____

Units

☐ mV	☐ °C
☐ Ohms	☐ °F
☐ K	☐ °R

Alarms(1)

HI HI Alarm _____

HI Alarm _____

LO Alarm _____

LO LO Alarm _____

(1) Not applicable for MAI blocks

NOTES

Rosemount 848T

Emerson Process Management
Rosemount Inc.
8200 Market Boulevard
Chanhassen, MN 55317 USA
T (U.S.) 1-800-999-9307
T (International) (952) 906-8888
F (952) 949-7001

www.rosemount.com

Emerson Process Management
Heath Place
Bognor Regis
West Sussex PO22 9SH
England
Tel 44 (1243) 863 121
Fax 44 (1243) 867 554

Emerson Process Management Asia Pacific Private Limited
1 Pandan Crescent
Singapore 128461
T (65) 6777 8211
F (65) 6777 0947
Enquiries@AP.EmersonProcess.com

EMERSON™
Process Management