

# I/A Series® Model RTT20 Temperature Transmitters



I/A Series Temperature Transmitters accept inputs from platinum RTDs (DIN, IEC or SAMA), various thermocouples, ohms, or dc millivolts. The linearized and isolated output is configurable for 4 to 20 mA dc, 4 to 20 mA dc with Hart.

For complete specifications, refer to Product Specification Sheet PSS 2A-1 F4 A.

- Single Unit
  - ✓ accepts RTD, thermocouple, ohms, or mV dc
- Sensor Fail Check
- I/A Series System Digital Integration (FoxCom or HART)
- Setup and Operation via I/A Series System, PC Configurator, or Optional LCD Indicator with Pushbuttons
- Choice of Communications and Outputs
  - ✓ Hart with 4 to 20 mA output
  - ✓ 4 to 20 mA output only
- Optional LCD Indicator with Pushbutton Configuration

### Functional Specifications

Range and Maximum Span Limits:

Input Type (Model Letter)	Sensor Input	Range Limits		Maximum Span	
		°C	°F	°C	°F
<b>RTDs</b>					
Q	Pt 100 DIN/IEC	-200 to 850	-328 to 1562	1050	1890
A	Pt 100 DIN/IEC	-200 to 850	-328 to 1562	1050	1890
P	Pt 100 SAMA	-200 to 650	-328 to 1202	850	1530
D	Ni 200	-130 to 315	-202 to 599	445	801
G	Ni 120 (Minco)	-80 to 320	-112 to 608	400	720
I	Ni 100	-60 to 250	-76 to 482	310	558
F	Cu 10	-70 to 150	-94 to 302	220	396
<b>Thermocouples</b>					
B	Type B	0 to 1820	32 to 3308	1820	3276
C	Type C	0 to 2320	32 to 4208	2320	4176
E	Type E	-270 to 1000	-454 to 1832	1270	2286
J	Type J	-210 to 1200	-346 to 2129	1410	2538
K	Type K	-270 to 1372	-454 to 2502	1642	2956
L	Type L	-200 to 900	-328 to 1652	1100	1980
N	Type N	-270 to 1300	-454 to 2372	1570	2826
R	Type R	-50 to 1768	-58 to 3214	1818	3272
S	Type S	-50 to 1768	-58 to 3214	1818	3272
T	Type T	-270 to 400	-454 to 752	670	1206
U	Type U	-200 to 600	-328 to 1112	800	1440
<b>Dew Point</b>					
W		-45 to 60	-50 to 140	105	195
<b>Other</b>					
M	Millivolt	-15 to 115 mV dc		120 mV dc	
O	Ohms	0 to 500 ohms		500 ohms	
Z	Custom	2 to 22 User Defined Points			

How to Order—Specify model number RTT20 followed by order code for each selection

Output

4-20 mA (CAUTION—See Note <sup>1</sup> )	. I
4-20 mA with HART communications <sup>(3)</sup>	. T

Package Configuration

Basic Unit	. 1B
Thermowell mount (Aluminum Housing)	. 1L
Thermowell mount (316ss Housing)	. 1M
Bare Element mount (Aluminum Housing)	. 1W
Bare Element Mount (316ss Housing)	. 1Y
Aluminum Housing, no sensor	. 1S
316ss Housing, no sensor	. 1T

Sensor Length (“A” length for Code 1W or “U+T” length for Code 1L)

None <sup>(4)</sup>	. N
2 inch (50 mm) <sup>(5)</sup>	. A
2.5 inch (64 mm) <sup>(5)</sup>	. B
3 inch (76 mm) <sup>(5)</sup>	. C
3.5 inch (89 mm) <sup>(5)</sup>	. D
4 inch (102 mm) <sup>(5)</sup>	. E
4.5 inch (114 mm) <sup>(5)</sup>	. F
5 inch (127 mm) <sup>(5)</sup>	. G
5.5 inch (140 mm) <sup>(5)</sup>	. H
6 inch (152 mm) <sup>(5)</sup>	. J
7 inch (178 mm) <sup>(5)</sup>	. K
8 inch (203 mm) <sup>(5)</sup>	. L
9 inch (229 mm) <sup>(5)</sup>	. M
10 inch (254 mm) <sup>(5)</sup>	. P
11 inch (279 mm) <sup>(5)</sup>	. Q
12 inch (305 mm) <sup>(5)</sup>	. R
18 inch (457 mm) <sup>(5)</sup>	. S
24 inch (601 mm) <sup>(5)</sup>	. T
30 inch (762 mm) <sup>(5)</sup>	. U
36 inch (914 mm) <sup>(5)</sup>	. V
Length per Sales Order (120 inch max.) <sup>(5)</sup>	. X

Measurement Input Type

Thermocouple

None	. X
Type B	. B
Type C	. C
Type E	. E
Type J	. J
Type K	. K
Type L	. L
Type N	. N
Type R	. R
Type S	. S
Type T	. T
Type U	. U

RTDs

100 ohm platinum DIN 751 (ASTM-B Standard Accuracy)	. Q
100 ohm platinum DIN 751 (ASTM-A High Accuracy)	. A
100 ohm platinum SAMA	. P
200 ohm nickel	. D
120 ohm nickel Minco	. G
100 ohm nickel DIN 43760	. I
10 ohm copper	. F

Measurement Input Type (continued)

Other (Sensor Length N Only)

Millivolt . . . . .	.M
Ohms . . . . .	.O
Dew point (Foxboro Model 2781 Dewcell) . . . . .	.W
None . . . . .	.X
Custom (22 point configurable) . . . . .	.Z

Electrical Agency Approval (see PSS for description and restrictions)

CSA Intrinsically Safe . . . . .	CA
CSA Explosion proof <sup>(6,7)</sup> . . . . .	CD
CSA Division 2 . . . . .	CN
CENELEC Intrinsically Safe . . . . .	EA
ATEX Flameproof <sup>(13)</sup> . . . . .	ED
FM Intrinsically Safe . . . . .	FA
FM Explosion proof <sup>(6,7)</sup> . . . . .	FD
FM Non-incendive . . . . .	FN
European Non sparking . . . . .	KN

Optional Selections

Custody Transfer Lock and Seal . . . . .	A1
PG 13.5 Conduit Thread <sup>(8)</sup> . . . . .	A2
Metric adapter (1/2" NPT to PG 13.5) . . . . .	A3
Custom Database Configuration . . . . .	C2
DIN Rail Mounting Hardware <sup>(10)</sup> . . . . .	D1
Ship with thermowell attached <sup>(11)</sup> . . . . .	D2
Adapter plate . . . . .	D3
Delete Paper Instruction Book . . . . .	.K1
CD-ROM Instruction Book . . . . .	.K2
Three line LCD/Configurator . . . . .	.L3
Mounting Set <sup>(12)</sup> . . . . .	M1
Stainless Steel Mounting Set <sup>(12)</sup> . . . . .	M2
Inconel Sheath <sup>(12)</sup> . . . . .	.S1
Dual Sensor (2 two wire RTDs in one sheath) <sup>(5)</sup> . . . . .	.S2
4 wire RTD <sup>(5)</sup> . . . . .	.S4

Specify calibrated range \_\_\_\_\_ to \_\_\_\_\_ (°C or °F)

Specify tag number

Specify Thermowell for package configuration code 1L or 1m

Notes

- 1 Version I cannot be user-configured unless equipped with optional LCD/Configurator Code L3.
- 2 Remote configuration with PC20, PC50, or the I/A Series System.
- 3 Remote configuration with a HART Communicator, PC20, PC50, or I/A Series System.
- 4 Always selected for Package Configuration Code 1B, 1S, and 1T.
- 5 Available with Package Configuration Code 1Y, 1W, 1L, and 1M only.
- 6 Must have integrally mounted thermowell option -D2 on all explosion proof agency certifications when Package Configuration Code 1L or 1M is specified.
- 7 Available with Package Configuration Codes 1L, 1M, 1S, and 1T only.
- 8 Available with Package Configuration Code 1S or 1T with electrical code EA, ED or KN only.
- 9 Available with Output Code D when configured for FoxCom digital output and tied to FBM 18, 39, 43 or 44.
- 10 Available with basic Package Configuration Code 1B only.
- 11 Must have integrally mounted thermowell option -D2 on all explosion proof agency certifications.
- 12 Mounting Set for 50 mm (2 inch) pipe or surface mount only available with Package Configuration Code 1S or 1T.
- 13 Package Configuration Codes 1S and 1T only.