

Type AR10 RTDs & AT10 Thermocouples, for Standard Processes



With DIN
lag extension



Interior View

APPLICATIONS

- *Process temperature measurements for liquefied natural gas systems, and power generation systems.*
- *Exhaust gas temperature measurements for hazardous environments.*
- *Reactor measurements in petro-chemical*

DESCRIPTION

The Ashcroft AT10 and AR10 temperature sensor assemblies provide accurate temperature measurements for applications that are located in hazardous environments. Each temperature sensor assembly consists of a spring loaded temperature sensor insert, a connection head and lag extension. The assembly may also include an optional terminal block for wiring and / or transmitters.

Thermocouple assemblies are manufactured to either to IEC 60584-2 or ANSI MC 96.1 and RTD assemblies are manufactured to IEC 60751.

SPECIFICATIONS

- Ashcroft Series:** AT10 & AR10
- Insert Stem Diameter:**
3 mm, 4.5 mm, 6 mm, 8 mm
- Stem Length:**
Minimum: 0.05 m / 2 in.
Maximum: 100 m / 3937 in.
- Sensor Type & Measuring Range:**

AR10 RTDs
PT 100 -200 to +600 °C
PT 1000 -40 to +600°C

AT10 Thermocouples
Type J -40 to +750 °C
Type E -200 to +800 °C
Type K -200 to +1100 °C
Type N -200 to +1100 °C
- Wiring Configuration**

AR10 RTDs
2 wire
3 wire
4 wire

AT10 Thermocouple
2 wire
- Optional Approvals (pending)**
IEC 60079-1
ATEX: Ex ia IIC T6
IECEX: Ex ia IIC T6 Ga
- Accuracy Class:**

AR10 RTDs (IEC 60751)
Class A: $\pm(0.15 + 0.0020 * |t|^{(1)})$
Class B: $\pm(0.30 + 0.0050 * |t|^{(1)})$
½ Class B: $\pm(0.15 + 0.0025 * |t|^{(1)})$
⅓ Class B: $\pm(0.10 + 0.0017 * |t|^{(1)})$

AT10 Thermocouples (IEC60584-2)

	Type J	Type K	Type T	Type E	Type N
Class 1	±1.5°C or ±0.0040* t ⁽¹⁾	±1.5°C or ±0.0040* t ⁽¹⁾	±0.5°C or ±0.0040* t ⁽¹⁾	±1.5°C or ±0.0040* t ⁽¹⁾	±1.5°C or ±0.0040* t ⁽¹⁾
Class 2	±2.5°C or ±0.0075* t ⁽¹⁾	±2.5°C or ±0.0075* t ⁽¹⁾	±1.0°C or ±0.0075* t ⁽¹⁾	±2.5°C or ±0.0075* t ⁽¹⁾	±2.5°C or ±0.0040* t ⁽¹⁾
Class 3	N/A	±2.5°C or ±0.0040* t ⁽¹⁾	±1.0°C or ±0.0150* t ⁽¹⁾	±2.5°C or ±0.0150* t ⁽¹⁾	±2.5°C or ±0.0150* t ⁽¹⁾

AT10 Thermocouples (ANSI MC 96.1)

	Type J	Type K	Type T	Type E	Type N
Standard	±2.2°C or ±0.0075* t ⁽¹⁾	±2.2°C or ±0.0075* t ⁽¹⁾	±1.0°C or ±0.0075* t ⁽¹⁾	±1.7°C or ±0.0050* t ⁽¹⁾	±2.2°C or ±0.0040* t ⁽¹⁾
Special	±1.1°C or ±0.0040* t ⁽¹⁾	±1.1°C or ±0.0040* t ⁽¹⁾	±0.5°C or ±0.0040* t ⁽¹⁾	±1.0°C or ±0.0040* t ⁽¹⁾	±1.1°C or ±0.0040* t ⁽¹⁾

⁽¹⁾ Absolute temperature in °C

Type AR10 RTDs Part Number Coding

1. TYPE

ITEM	DESCRIPTION
1	Standard
3	Ex ia IIC T6 Ga

2. STEM DIAMETER (e)

ITEM	DESCRIPTION
3	3 mm
4	4.5 mm
6	6 mm
8	8 mm

3. SENSOR

ITEM	DESCRIPTION
1	Pt 100
2	Pt 1000

4. ACCURACY CLASS

ITEM	DESCRIPTION
A	Class A
B	Class B
C	1/2 Class B
D	1/3 Class B

5. SENSING ELEMENT

ITEM	DESCRIPTION
A	-50 to + 400 °C
B	-200 to +600 °C
D	Vibration resistant

6. WIRING CONFIGURATION

ITEM	DESCRIPTION
A	Single, 2 wire
B	Single, 3 wire
C	Single, 4 wire
D	Double, 2 wire
E	Double, 3 wire
F	Double, 4 wire

7. STEM MATERIAL

ITEM	DESCRIPTION
A	316L SS

8. HEAD TYPE

ITEM	DESCRIPTION
B	DIN B, Aluminum Alloy, IP66
C	BBK, Plastic, IP64
D	BUZ, Aluminum Alloy, IP68
E	BUZH, Aluminum Alloy, IP68

9. HEAD MOUNTING CONNECTION

ITEM	DESCRIPTION
M	M20 x 1.5
P	PG 16
2	1/2 NPT Female

10. CABLE GLAND

ITEM	DESCRIPTION
O	None
P	Polyamide PA, for unarmored cable
L	Nickle plated brass, for unarmored cable
M	Nickel plated brass, single seal for armoured cable
N	Nickel plated brass, double seal for armoured cable
S	Stainless steel, for unarmored cable
T	Stainless steel, single seal for armoured cable
U	Stainless steel, double seal for armoured cable

11. LAG EXTENSION LENGTH (T)

ITEM	DESCRIPTION
T	(min. 0.05 – max. 1 m) M (min. 2 – max. 39 in.) E

12. LAG EXTENSION TYPE

ITEM	DESCRIPTION
F5	DIN 11/7 316 SS / 1.4401 T = 0.15 m
F6	DIN 14/11 316 SS / 1.4401 T = 0.15 m
F8	DIN 11/7 316 SS / 1.4401 T = customer specified
F9	DIN 14/11 316 SS / 1.4401 T = customer specified
51	Fixed threaded connection T = 0.018 m
52	Fixed threaded connection T = 0.027 m
00	No lag extension, no plug
40	No lag extension, with plug

13. PROCESS CONNECTION

ITEM	DESCRIPTION
Q3	G ½ A thread
Q4	G ¾ A thread
S6	M14 x 1.5 thread
S7	M18 x 1.5 thread
R3	1/2 NPT male thread
A3	G ½ A, compression fitting, 316 SS
C3	1/2 NPT male compression fitting 316 SS
00	No process connection

14. SENSOR MOUNTING BLOCK

ITEM	DESCRIPTION
0	Ceramic terminal block
1	Transmitter
2	Ceramic terminal with transmitter
3	No terminal block with flying leads

15. APPROVALS

ITEM	DESCRIPTION
0	None
A	ATEX
X	IECEX

16. CALIBRATION REPORT

ITEM	DESCRIPTION
00	None
3P	3 point report for single sensor
5P	5 point report for single sensor
3D	3 point report for double sensor
5D	5 point report for double sensor

17. NOMINAL LENGTH (S)

ITEM	DESCRIPTION
S	(min. 0.05 – max. 100 m) M (min. 2 – max. 3937 in.) E

18. OPTIONS

ITEM	DESCRIPTION
NH	Metal Tag

Bestellbeispiel:

AR10	1	3	1	A	A	A	A	B	M	0	T0.15M	F5	Q3	1	X	3P	S0.20M	XRH
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	T[11]	[12]	[13]	[14]	[15]	[16]	S[17]	[18]
Model Type	Type	Stem Diameter	Sensor	Accuracy Class	Sensing Element	Wiring Config.	Stem Material	Head Type	Head Mounting	Cable Gland	Lag Extension Length	Lag Extension Type	Process Connection	Sensor Mounting Block	Approvals	Calibration Report	Nominal Length	Options
(AR10)	(1)	(3)	(1)	(A)	(A)	(A)	(A)	(B)	(M)	(0)	(T)	(F5)	(Q3)	(0)	(0)	(00)	(S)	(NH)
	(3)	(4)	(2)	(B)	(B)	(B)	(A)	(C)	(P)	(P)		(F6)	(Q4)	(1)	(A)	(3P)		
		(6)		(C)	(D)	(C)		(D)	(2)	(L)		(F8)	(S6)	(2)	(X)	(5P)		
		(8)		(D)		(D)		(E)		(N)		(F9)	(S7)	(3)		(3D)		
										(S)		(51)	(R3)			(5D)		
										(T)		(52)	(A3)					
										(U)		(00)	(C3)					
												(40)	(00)					

Ashcroft Instruments GmbH

Germany
Max-Planck-Str. 1,
D-52499 Baesweiler
P.O. Box 11 20, D-52490 Baesweiler
Tel.: +49 (0) 2401 808-0

France
„206“ ZA du Mandinet, 1/3 Rue des Campanules,
F-77185 Lognes
Tel.: +33 (0) 1 60 37 25 30

Website: www.ashcroft.eu

Ashcroft Instruments Ltd.
Unit 17 & 18 William James House
Cowley Road,
Cambridge CB4 0WX
Tel.: +44 (0) 12 23 39 55 00

e-Mail: sales@ashcroft.com

Ashcroft ISTANBUL
Gayrettepe Mah. Yildiz Posta Cad.
Yildiz Residence No:24 K:1 D:4
34349 Besiktas –Istanbul
Tel.: +90 (0)212 3270847

Type AT10 Thermocouples Part Number Coding

1. TYPE

ITEM	DESCRIPTION
1	Standard
3	Ex ia IIC T6 Ga

2. STEM DIAMETER (e)

ITEM	DESCRIPTION
3	3 mm
4	4.5 mm
6	6 mm
8	8 mm

3. SENSOR

ITEM	DESCRIPTION
E	Type E (-200 to +800 °C)
J	Type J (-200 to +750 °C)
K	Type K (-200 to +1100 °C)
N	Type N (-200 to +1100 °C)

4. ACCURACY CLASS

ITEM	DESCRIPTION
1	Class 1, IEC 60584-2
2	Class 2, IEC 60584-2
3	Class 3, IEC 60584-2
A	Standard, ANSI MC 96.1
B	Special, ANSI MC 96.1

5. SENSING ELEMENT

ITEM	DESCRIPTION
1	Insulated
2	Grounded
3	Insulated with vibration resistance
4	Grounded with vibration resistance

6. WIRING CONFIGURATION

ITEM	DESCRIPTION
1	Single
2	Double

7. STEM MATERIAL

ITEM	DESCRIPTION
1	316L SS
3	Inconel 600

8. HEAD TYPE

ITEM	DESCRIPTION
B	DIN B, Aluminum Alloy, IP66
C	BBKK, Plastic, IP64
D	BUZ, Aluminum Alloy, IP68
E	BUZH, Aluminum Alloy, IP68

9. HEAD MOUNTING CONNECTION

ITEM	DESCRIPTION
M	M20 x 1.5
P	PG 16
2	½ NPT female

10. CABLE GLAND

ITEM	DESCRIPTION
O	None
P	Polyamide PA, for unarmored cable
L	Nickel plated brass, for unarmored cable
M	Nickel plated brass, single seal for armored cable
N	Nickel plated brass, double seal for armored cable
S	Stainless steel, for unarmored cable
T	Stainless steel, single seal for armored cable
U	Stainless steel, double seal for armored cable

11. LAG EXTENSION LENGTH (T)

ITEM	DESCRIPTION
T	(min. 0.05 – max. 1 m) M (min. 2 – max. 39 in.) E

12. LAG EXTENSION TYPE

ITEM	DESCRIPTION
F5	DIN 11/7 316 SS / 1.4401 T = 0.15 m
F6	DIN 14/11 316 SS / 1.4401 T = 0.15 m
F8	DIN 11/7 316 SS / 1.4401 T = customer specified
F9	DIN 14/11 316 SS / 1.4401 T = customer specified
51	Fixed threaded connection T = 0.018 m
52	Fixed threaded connection T = 0.027 m
00	No lag extension, no plug
40	No lag extension, with plug

13. PROCESS CONNECTION

ITEM	DESCRIPTION
Q3	G ½ A thread
Q4	G ¾ A thread
S6	M14 x 1.5 thread
S7	M18 x 1.5 thread
R3	1/2 NPT male thread
A3	G ½ A, compression fitting, 316 SS
C3	1/2 NPT male compression fitting 316 SS
00	No process connection

14. SENSOR MOUNTING BLOCK

ITEM	DESCRIPTION
0	Ceramic terminal block
1	Transmitter
2	Ceramic terminal with transmitter
3	No terminal block with flying leads

15. APPROVALS

ITEM	DESCRIPTION
0	None
A	ATEX
X	IECEx

16. CALIBRATION REPORT

ITEM	DESCRIPTION
00	None
3P	3 point report for single sensor
5P	5 point report for single sensor
3D	3 point report for double sensor
5D	5 point report for double sensor

17. NOMINAL LENGTH (S)

ITEM	DESCRIPTION
S	(min. 0.05 – max. 100 m) M (min. 2 – max. 3937 in.) E

18. OPTIONS

ITEM	DESCRIPTION
NH	Metal Tag

Bestellbeispiel:

AR10	1	3	E	1	1	1	1	B	M	0	T0.15M	F5	Q3	1	X	3P	S0.20M	XRH
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	T[11]	[12]	[13]	[14]	[15]	[16]	S[17]	[18]
Model Type	Type	Stem Diameter	Sensor	Accuracy Class	Sensing Element	Wiring Donfig.	Stem Material	Head Type	Head Mounting	Cable Gland	Lag Extension Length	Lag Extension Type	Process Connection	Sensor Mounting Block	Approvals	Calibration Report	Nominal Length	Options
(AT10)	(1)	(3)	€	(1)	(1)	(1)	(1)	(B)	(M)	(0)	(T)	(F5)	(Q3)	(0)	(0)	(00)	(S)	(NH)
	(3)	(4)	(J)	(2)	(2)	(2)	(3)	(C)	(P)	(P)		(F6)	(Q4)	(1)	(A)	(3P)		
		(6)	(K)	(3)	(3)			(D)	(2)	(L)		(F8)	(S6)	(2)	(X)	(5P)		
		(8)	(N)	(A)	(4)			(E)		(N)		(F9)	(S7)	(3)		(3D)		
				(B)						(S)		(51)	(R3)			(5D)		
										(T)		(52)	(A3)					
										(U)		(00)	(C3)					
												(40)	(00)					

Ashcroft Instruments GmbH

Germany
 Max-Planck-Str. 1,
 D-52499 Baesweiler
 P.O. Box 11 20, D-52490 Baesweiler
 Tel.: +49 (0) 2401 808-0

France
 „206“ ZA du Mandinet, 1/3 Rue des Cam-
 panules,
 F-77185 Lognes
 Tel.: +33 (0) 1 60 37 25 30

Website: www.ashcroft.eu

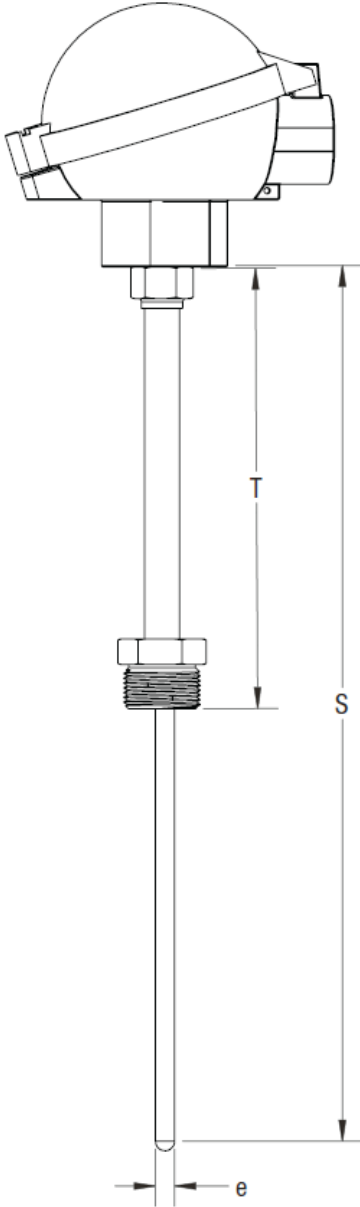
Ashcroft Instruments Ltd.
 Unit 17 & 18 William James House
 Cowley Road,
 Cambridge CB4 0WX
 Tel.: +44 (0) 12 23 39 55 00

e-Mail: sales@ashcroft.com

Ashcroft ISTANBUL
 Gayrettepe Mah. Yildiz Posta Cad.
 Yildiz Residence No:24 K:1 D:4
 34349 Besiktas –Istanbul
 Tel.: +90 (0)212 3270847

Type AT10 Thermocouples & Type AR10 RTDs

Dimension Drawing



e = Stem Diameter
T = Lag Extension Length
S = Nominal Length

World Headquarters

Ashcroft Inc.
250 E. Main Street
Stratford, CT 06614-5145 U.S.A
Tel: +1 (203) 378-8281
Fax: +1 (203) 385-0408
E-Mail: info@ashcroft.com
www.ashcroft.com

International Operations

Brazil

Willy Instrumentos de Medicao e
Controle Ltda.
Rua Joao Pessoa, 620
09520-000
Sao Caetano Do Sul-Sao Paulo Brazil
Tel: +55-11-4224-7402
Fax: +55-11-4224-7477
E-Mail: contato@ashcroft.com
www.ashcroft.com.br

China

Ashcroft instruments (Suzhou) Co., Ltd.
1508 Lin-hu Avenue
Ascendas Lin-hu Industrial Square
Wujiang Fenhui Economic Zone
Wujang China, 215211
Tel: +11-86-512-6326-9101
Fax: +11-86-512-6326-9106
www.ashcroft.com

Germany

Ashcroft Instruments GmbH
Postfach 11 20, D-52490
Baesweiler, Germany
Max-Planck-Straße 1, D-52499
Baesweiler, Germany
Tel: +49-2401-8080
Fax: +49-2401-808125
E-Mail: sales@ashcroft.com
www.ashcroft.eu

Mexico

Ashcroft Instruments Mexico, S.A. de C.V
General Mariano Arista No. 54 Nave 8
Col. Argentina Poniente
Deleg. Miguel Hidalgo
11230 Mexico City, Mexico
Tel: +52-5550-82-3030
Fax: +52-5550-82-3027
E-Mail: jmendieta@ashcroft.com.mx

Saudi Arabia

AARICO
P.O. Box 12031
Jubail Industrial City 31961
Kingdom of Saudi Arabia
Tel: +966-3-341-0278
Fax: +966-3-341-7624
E-Mail: anil@aarico.net
www.ashcroft-alrushaid.com

Singapore

Ashcroft instruments Singapore Pte. Ltd
Block 1004 Toa Payoh North
#07-15/17
Singapore 318995
Tel: +65-6252-6602
Fax: +65-6252-6603
E-Mail: John.Wong@ashcroft.com.sg

United Kingdom

Ashcroft Instruments Limited
Cambridge Office
Unit 17 & 18 William James House
Cowley Road
Cambridge CB4 0WX
Tel: +44-0-1223-395500
Fax: +44-0-1223-395501

Venezuela

Manufacturas Petroleras Venezolanas S.A.
KM7 Carretera A
El Mojan Calle 18
#15B355 Zona
Ind. Norte Sector Canchancha
Maracaibo Edo Zulia Venezuela
Tel: +58-261-757-9070
Tel: +58-261-742-4372
Fax: +58-261-742-4372
E-Mail: contactenos@mapvensa.com
www.mapvensa.com



Ashcroft Instruments GmbH

Germany
Max-Planck-Str. 1,
D-52499 Baesweiler
P.O. Box 11 20, D-52490 Baesweiler
Tel.: +49 (0) 2401 808-0

France
„206“ ZA du Mandinet, 1/3 Rue des Cam-
panules,
F-77185 Lognes
Tel.: +33 (0) 1 60 37 25 30

Website: www.ashcroft.eu

Ashcroft Instruments Ltd.
Unit 17 & 18 William James House
Cowley Road,
Cambridge CB4 0WX
Tel.: +44 (0) 12 23 39 55 00

e-Mail: sales@ashcroft.com

Ashcroft ISTANBUL
Gayrettepe Mah. Yildiz Posta Cad.
Yildiz Residence No:24 K:1 D:4
34349 Besiktas -Istanbul
Tel.: +90 (0)212 3270847