

## Stainless steel bimetal thermometer

### Series Ax and Ex

according to EN 13190 or ASME B40.200

#### FEATURES

- Rugged all welded stainless steel construction
- Available with hermetically sealed case or bayonet ring
- Protection IP66
- Optional ATEX approved
- Brilliant readability as a result of reducing the parallax error with our Maxivision® dial for the 5" size
- External adjustment permits zero reset from outside the case
- Dry or liquid filled
- Silicone coil dampening provides vibration dampening and improves response time

#### APPLICATIONS

- Chemical and petrochemical industry
- Machine and apparatus construction
- Food and beverage industry
- Pulp and paper industry


 Bimetal  
 ASME and EN Design


#### TECHNICAL SPECIFICATIONS

 Dial Size:                    ∅ in  
                                       mm   100 and 160  
                                       inch   5"

 Accuracy:                    Class 1 acc. to EN 13190 or  
                                       Grade A (1 %) acc. to ASME B40.200

Connection Location:    Everyangle™, lower or back

Stem Diameter:            6 mm, 8 mm, 1/4" (6,4 mm) or 3/8" (9.6 mm)

Stem Length:             63 ... 1500 mm

#### MECHANICAL SPECIFICATIONS

 Process Connection:     G 1/2 A Male or Female  
                                       1/2 NPT Male or Female  
                                       others please see in the coding table

Weather Protection:     IP66/NEMA 4X

 Max. Overtemperature:  Range:  
 (Intermitted service)   < 120 °C (250 °F)   100 % of span  
                                       120 ... 289 °C  
                                       (251 ... 550 °F)    50 % span  
                                       ≥ 290 °C (1000 °F)   max. 425 °C continuously<sup>(1)</sup>
<sup>(1)</sup> Can be used for intermittent service from 425 to 500 °C (800 to 1000 °F). Use Ashcroft S5500 or Duratemp® thermometers for ranges above and below those listed values.

#### MATERIAL

Process Connection:     Stainless steel 316L (1.4404) or 316Ti (1.4571)

Stem:                        Stainless steel 316L (1.4404) or 316Ti (1.4571)

Case/Ring:                Stainless steel 304 (1.4301) or 316L (1.4404)

Window:                  Instrument glass, Safety glass, Acrylic glass

Dial:                        Aluminum, black markings on white background

Pointer:                    Aluminum, black

Gaskets/Sealing:        BUNA-N (NBR)

#### KEY BENEFITS

- High reliability and durability
- All stainless steel
- Perfectly designed for our thermowells

#### ENVIRONMENTAL SPECIFICATIONS

 Temperature Limits:    Ambient:            -40 °C to 93 °C (-40 °F to 200 °F)  
                                   ATEX (Ambient):   -20 °C to 60 °C (-4 °F to 140 °F)

#### WEIGHTS


Weights in kg

Dial Size	Dry			Liquid Filled		
	Everyangle™	Lower	Back	Everyangle™	Lower	Back
5"	0,6	0,6	0,4	0,9	0,9	0,7
100 mm	0,6	0,6	0,4	0,8	0,8	0,6
160 mm	0,9	0,9	0,7	1,2	1,0	1,0

#### APPROVALS

ATEX

Declaration of Conformity


 II 2G Ex h IIC T6...T1 Gb X  
 II 2D Ex h IIIC T85°C...T450°C Db X  
 Ta = -20 °C to +60 °C

EU File No. 35088073 at notified body 0044, TÜV NORD CERT

UK File No. 0891-0005 at approved body 0891, Element

Materials Technology

Directive: 2014/34/EU

Used harmonized standards:

DIN EN ISO 80079-36:2016

DIN EN ISO 80079-37:2016

DIN EN 1127-1:2019

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**TABLE 1: AVAILABLE RANGES AND CODES**

RANGE °C	NOTES	RANGE °F	NOTES
-50 ... 50 °C		-100 ... 100 °F	
-50 ... 100 °C	Min. stem length 100 mm	-80 ... 120 °F	
-50 ... 250 °C	Min. stem length 100 mm	-40 ... 120 °F	
-40 ... 40 °C	Min. stem length 100 mm	-40 ... 160 °F	
-40 ... 60 °C		-20 ... 120 °F	Min. stem length 100 mm
-40 ... 100 °C	Min. stem length 100 mm	0 ... 100 °F	Min. stem length 100 mm
-40 ... 160 °C		0 ... 150 °F	Min. stem length 100 mm
-30 ... 50 °C	Min. stem length 100 mm	0 ... 200 °F	
-30 ... 70 °C		0 ... 250 °F	
-30 ... 170 °C		0 ... 300 °F	Min. stem length 100 mm
-25 ... 25 °C	Min. stem length 100 mm	0 ... 350 °F	
-20 ... 40 °C	Min. stem length 100 mm	0 ... 500 °F	Min. stem length 100 mm
-20 ... 60 °C	Min. stem length 100 mm	20 ... 120 °F	Min. stem length 100 mm
-20 ... 80 °C		30 ... 130 °F	Min. stem length 100 mm
-20 ... 100 °C		30 ... 240 °F	Min. stem length 100 mm
-20 ... 120 °C		30 ... 400 °F	
-20 ... 180 °C		50 ... 300 °F	
-10 ... 50 °C	Min. stem length 100 mm	50 ... 400 °F	
-10 ... 110 °C		50 ... 550 °F	Min. stem length 100 mm
0 ... 50 °C	Min. stem length 100 mm	100 ... 800 °F	
0 ... 60 °C	Min. stem length 100 mm	160 ... 360 °F	
0 ... 80 °C	Min. stem length 100 mm	200 ... 400 °F	
0 ... 100 °C		200 ... 700 °F	Min. stem length 100 mm
0 ... 120 °C		200 ... 1000 °F	Min. stem length 100 mm
0 ... 150 °C			
0 ... 160 °C			
0 ... 200 °C			
0 ... 250 °C	Min. stem length 100 mm		
0 ... 300 °C	Min. stem length 100 mm		
0 ... 350 °C			
0 ... 400 °C	Min. stem length 100 mm		
0 ... 500 °C	Min. stem length 100 mm		
10 ... 150 °C			
50 ... 300 °C	Min. stem length 100 mm		
50 ... 450 °C	Min. stem length 100 mm		
100 ... 500 °C	Min. stem length 100 mm		



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ORDERING CODE		EXAMPLE:	100	AM	=	074	E	325	0/100°C	XNH
<b>Dial Size</b>										
100	100 mm									
160	160 mm									
50	5"									
<b>Case Style</b>										
AE	EN 13190 Case with boynett ring, Stem Ø 8 mm									
AI	EN 13190 Case with boynett ring, Stem Ø 6,4 mm (1/4")									
AM	EN 13190 Case with boynett ring, Stem Ø 6 mm									
A3B	EN 13190 Case with boynett ring, Stem Ø 9,5 mm									
EE	ASME B40.200 hermetically sealed case, Stem Ø 8 mm									
EI	ASME B40.200 hermetically sealed case, Stem Ø 6,4 mm (1/4")									
EM	ASME B40.200 hermetically sealed case, Stem Ø 6 mm									
E3B	ASME B40.200 hermetically sealed case, Stem Ø 9,5 mm									
<b>Case fill</b>										
	Dry, no filling									
L	Silicone filling max. 300 °C (process) and max. 65 °C (ambient)									
<b>Process Connection</b>										
040	Plain (no thread)									
042	1/2 NPT Male - Union outlet									
060	1/2 NPT Male - Fixed									
061	G 1/2 A Male - Fixed									
070	1/2 NPT Male - Adjustable union									
071	G 1/2 A Male - Adjustable union									
072	3/4 NPT Male - Adjustable union									
074	1/2 NPT Female - Adjustable union									
080	G 1/2 A Male - Swivel nut									
081	G 1/2 Female - Swivel nut									
<b>Connection Style</b>										
E	Everyangle™ (360°)									
L	Lower									
R	Rear									
<b>Stem Length</b>										
63 ... 1500 mm in 1 mm steps										
e.g. "325" - 325 mm stem length										
<b>Range</b>										
see page 2										
<b>Options (If choosing an option(s) must include a "X")</b>										
<b>Approval</b>										
ATEX	ATEX approval (only admissible in combination with SG)									
<b>Case Option</b>										
EA	External adjustment mechanism									
YW	Stainless steel 316L (1.4404)									
<b>Window/Pointer</b>										
SH	Stationary red set hand pointer									
SG	Safety glass									
<b>Marking/Tagging</b>										
DM	Dial marking (Text only)									
#XXX	Special design scale (Customer logo or other colored markings)									
NH	Stainless steel tagging, wired									
NN	Paper tag									
<b>Material Certificate</b>										
CD2	Certificate according to EN 10204/2.2									
MQ	Positive Material Identification (PMI)									
<b>Calibration Certificate</b>										
C4	Standard calibration certificate									

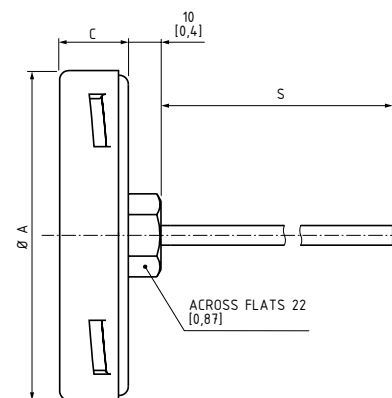
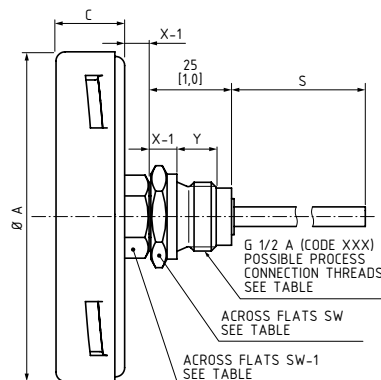
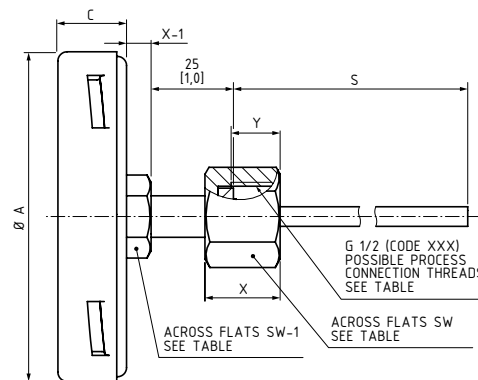
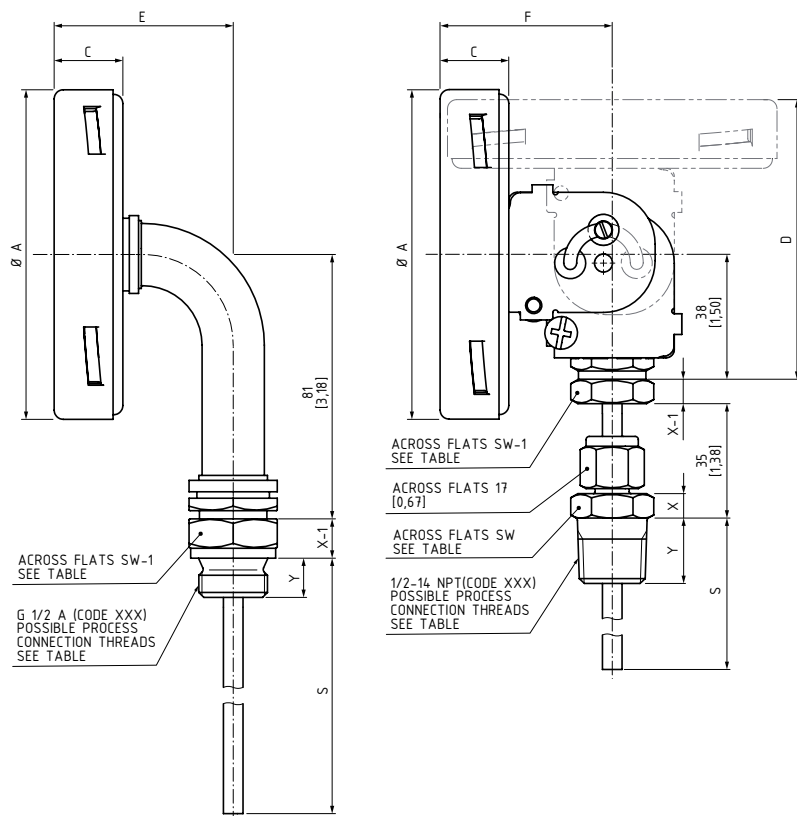


**Stainless steel bimetal thermometer**
**Series Ax**

according to EN 13190

**DIMENSIONS IN MM [INCH]**

For reference only, consult Ashcroft for specific dimensional drawings

**BIMETALL SERIES AX**


NG	A	B	C	D	E	F
100 mm	101 [3,98]	51 [2,01]	21 [0,83]	86 [3,37]	55 [2,16]	53 [2,09]
160 mm	162 [6,38]	50 [1,97]	28 [1,1]	93 [3,66]	61 [2,41]	60 [2,36]

**LOWER / EVERY ANGLE CONNECTION**

CODE	SW	X	Y	SW-1	X-1
040	-	-	-	22 [0,87]	7,5 [0,3]
042	22 [0,87]	9,8 [0,39]	20 [0,79]	-	-
060	27 [1,06]	12 [0,47]	12 [0,47]	-	-
061	22 [0,87]	7,5 [0,3]	20 [0,79]	22 [0,87]	7,5 [0,3]
070	27 [1,06]	12 [0,47]	12 [0,47]	22 [0,87]	7,5 [0,3]
071	27 [1,06]	9 [0,35]	20 [0,79]	22 [0,87]	7,5 [0,3]
072	27 [1,06]	31 [1,22]	15,4 [0,61]	22 [0,87]	7,5 [0,3]
074	-	-	-	22 [0,87]	9,8 [0,39]
080	27 [1,06]	8 [0,31]	12 [0,47]	22 [0,87]	7,5 [0,3]
081	27 [1,06]	23 [0,91]	15 [0,59]	22 [0,87]	7,5 [0,3]

**BACK CONNECTION**

CODE	SW	X	Y	SW-1	X-1
040	-	-	-	22 [0,87]	7,5 [0,3]
042	22 [0,87]	9,8 [0,39]	20 [0,79]	-	-
060	27 [1,06]	12 [0,47]	12 [0,47]	-	-
061	22 [0,87]	7,5 [0,3]	20 [0,79]	22 [0,87]	7,5 [0,3]
070	27 [1,06]	12 [0,47]	12 [0,47]	22 [0,87]	7,5 [0,3]
071	27 [1,06]	9 [0,35]	20 [0,79]	22 [0,87]	7,5 [0,3]
072	27 [1,06]	31 [1,22]	15,4 [0,61]	22 [0,87]	7,5 [0,3]
074	-	-	-	22 [0,87]	9,8 [0,39]
080	27 [1,06]	8 [0,31]	12 [0,47]	22 [0,87]	7,5 [0,3]
081	27 [1,06]	23 [0,91]	15 [0,59]	22 [0,87]	7,5 [0,3]

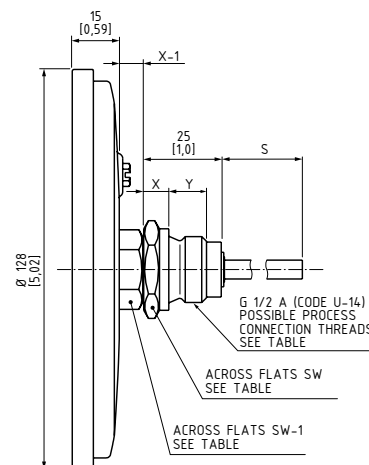
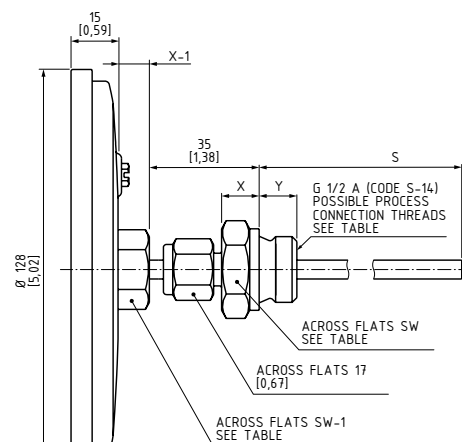
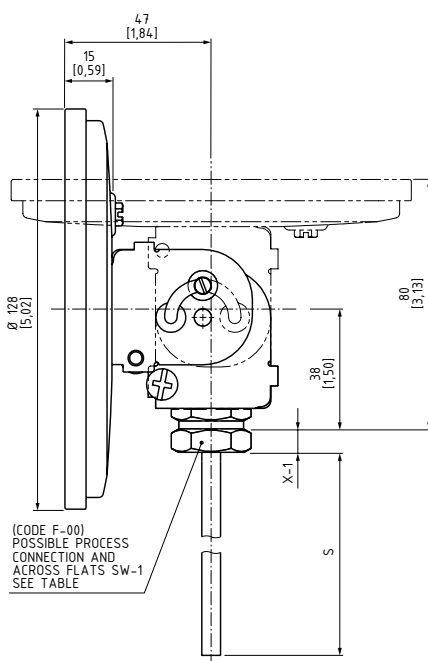
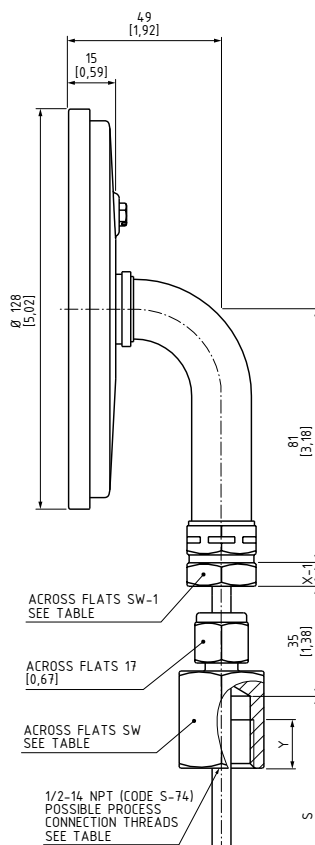


**Stainless steel bimetal thermometer**
**Series Ex**

according to ASME B40.200

**DIMENSIONS IN MM [INCH]**

For reference only, consult Ashcroft for specific dimensional drawings

**BIMETALL SERIES EX**

**LOWER / EVERY ANGLE CONNECTION**

CODE	SW	X	Y	SW-1	X-1
040	-	-	-	22 [0,87]	7,5 [0,3]
042	22 [0,87]	9,8 [0,39]	20 [0,79]	-	-
060	27 [1,06]	12 [0,47]	12 [0,47]	-	-
061	22 [0,87]	7,5 [0,3]	20 [0,79]	22 [0,87]	7,5 [0,3]
070	27 [1,06]	12 [0,47]	12 [0,47]	22 [0,87]	7,5 [0,3]
071	27 [1,06]	9 [0,35]	20 [0,79]	22 [0,87]	7,5 [0,3]
072	27 [1,06]	31 [1,22]	15,4 [0,61]	22 [0,87]	7,5 [0,3]
074	-	-	-	22 [0,87]	9,8 [0,39]
080	27 [1,06]	8 [0,31]	12 [0,47]	22 [0,87]	7,5 [0,3]
081	27 [1,06]	23 [0,91]	15 [0,59]	22 [0,87]	7,5 [0,3]

**BACK CONNECTION**

CODE	SW	X	Y	SW-1	X-1
040	-	-	-	22 [0,87]	10 [0,39]
042	22 [0,87]	7,5 [0,30]	20 [0,79]	-	-
060	27 [1,06]	12 [0,47]	12 [0,47]	-	-
061	22 [0,87]	7,5 [0,3]	20 [0,79]	22 [0,87]	10 [0,39]
070	27 [1,06]	12 [0,47]	12 [0,47]	22 [0,87]	10 [0,39]
071	27 [1,06]	9 [0,35]	20 [0,79]	22 [0,87]	10 [0,39]
072	27 [1,06]	31 [1,22]	15,4 [0,61]	22 [0,87]	10 [0,39]
074	-	-	-	22 [0,87]	7,5 [0,3]
080	27 [1,06]	8 [0,31]	12 [0,47]	22 [0,87]	7,5 [0,3]
081	27 [1,06]	23 [0,91]	15 [0,59]	22 [0,87]	7,5 [0,3]



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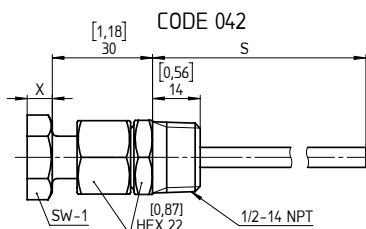
**DIMENSIONS IN MM [INCH]**

For reference only, consult Ashcroft for specific dimensional drawings

**Union outlet code 042**

Length S is fixed, but orientation can be adjusted with union connection.

Code 042 ½ NPT male



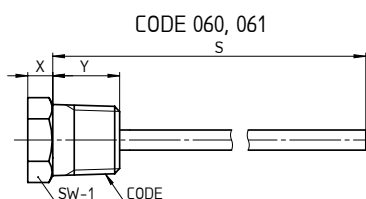
CODE 042	SW-1	X
L	22 [0,87]	9,8 [0,39]
E		9,8 [0,39]
R		7,5 [0,30]

**Fixed connection code 060 and 061**

Length S is fixed.

Code 060 ½ NPT male

Code 061 G ½ A male



CODE 060 1/2-14 NPT	SW-1	X	Y
L	22 [0,87]	9,8 [0,39]	20 [0,79]
E		9,8 [0,39]	20 [0,79]
R		7,5 [0,30]	20 [0,79]
CODE 061 G 1/2 A L/R	27 [1,06]	12 [0,47]	12 [0,47]

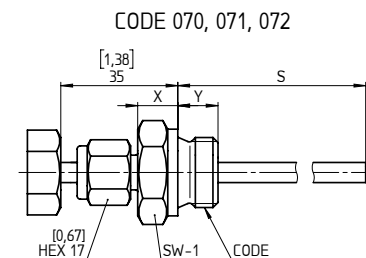
**Adjustable union connection code 070, 071 and 072**

Length S and orientation can be adjusted with union connection.

Code 070 ½ NPT male

Code 071 G ½ A male

Code 072 ¾ NPT male

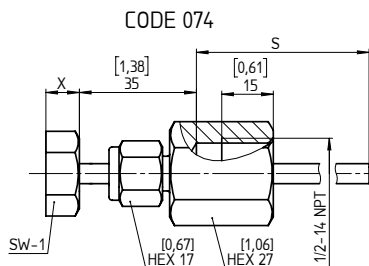


L/R	SW-1	X	Y
CODE 070 1/2-14 NPT	22 [0,87]	7,5 [0,30]	20 [0,79]
CODE 071 G 1/2 A	27 [1,06]	12 [0,47]	12 [0,47]
CODE 072 3/4-14 NPT	27 [1,06]	9 [0,35]	20 [0,79]

**Adjustable union connection code 074**

Length S and orientation can be adjusted with swivel nut.

Code 074 ½ NPT female

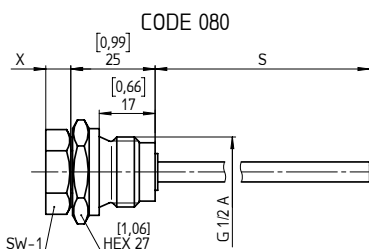


CODE 074	SW-1	X
L	22 [0,87]	7,5 [0,30]
E		7,5 [0,30]
R		10 [0,39]

**Swivel nut connection code 080**

Length S is fixed, but orientation can be adjusted with swivel nut.

Code 080 G ½ A male

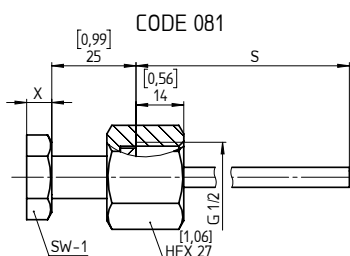


CODE 080	SW-1	X
L/R	22 [0,87]	7,5 [0,30]

**Swivel nut connection code 081**

Length S is fixed, but orientation can be adjusted with union connection.

Code 081 G ½ female



CODE 081	SW-1	X
L/R	22 [0,87]	7,5 [0,30]

