

NOSHOK®



BIMETAL THERMOMETERS

**NOSHOK QUALITY
IN A PRESSURE GAUGE
IS A WELL
DOCUMENTED FACT.
NOW, THAT SAME QUALITY
IS AVAILABLE IN BIMETAL
THERMOMETERS.
WHEN MEASURING
EXTREMES OR IN BETWEEN
SPECIFY NOSHOK
BIMETAL THERMOMETERS...
WE GUARANTEE THEIR
PERFORMANCE.**

GENERAL INFORMATION

The NOSHOK 100 Series industrial type bimetal thermometers are a high quality, low cost thermometer designed for limited space applications or where a weather resistant, tamper proof case is required. These thermometers feature either a 300 Series or 304 stainless steel case. The crystals are glass and are gasketed or sealed to the case to insure weather tight integrity. The bimetal element is an extremely responsive temperature sensing helix which has been carefully sized and tested, heat treated and aged to relieve inherent stresses and insure continued accuracy. This accuracy is guaranteed to within either one per cent of full scale or one percent at mid scale. Our standard dials are heavy gauge aluminum with a white matte finish to reduce glare. The dished form with celsius on the lower plane and fahrenheit on the upper plane offers accurate indication of both scales and eliminates reading errors.

NOSHOK 100 Series Thermometers are used in almost every area of manufacturing and are especially suited for applications in process, petrochemical, food, industrial and commercial applications. Options available are crystals in acrylic, special ranges, custom dial layouts, special stems and different size connections (1/4, 3/8 & 1/2" NPT male pipe).

ORDERING INFORMATION

1. Select size & model no. _____ 20.110 . 040 . 0/200°F/C . 1/2" NPT
2. Select stem length. _____
3. Select temperature range. _____
4. Select any required accessory or option. _____

PLEASE NOTE: For accurate readings, the minimum recommended stem immersion is 2½ inches in liquids and 4 inches in gases.

**One Year Warranty**

NOSHOK will warrant for one year our 100 series bimetal thermometers:

- To be free from defects in materials and workmanship.
- To remain within catalogued accuracy specifications.
- To maintain the integrity of the hermetically sealed case preventing moisture from collecting on the interior.
- To operate within the catalogued performance specifications.

Limitations which apply are:

- Exposure of the thermometer to corrosive chemicals either environmentally or through manufacturing processes.
- Subjected to temperatures in excess of the rated over temperature limit.
- Put on application which subjects the thermometer to excessive vibration or causes violation of the stem or case enclosure.

Determination of thermometer failures will be made by NOSHOK, INC. which will use its equipment and personnel or a certified test facility specializing in this type of evaluation and determination.

Thermometer failures determined to be caused by stated limitations or abuse will not be considered under this warranty. NOSHOK, INC. will at its options, repair or replace the damaged thermometer without cost to customer.

This written warranty applies only to the NOSHOK thermometers, referenced in the first paragraph of this warranty, sold by NOSHOK, INC. and its authorized distributors.

100 SERIES Industrial Type Bimetal Thermometers



20.110
2 INCH
1/2" NPT
BACK CONNECTION



30.110
3 INCH
1/2" NPT
BACK CONNECTION

SPECIFICATIONS

Case	20.110—304 Series Stainless Steel 30.110—304 Stainless Steel
Bezel	20.110—304 Series Stainless Steel Electroless polished 30.110—304 Stainless Steel
Crystal	20.110—Convex Glass 30.110—Instrument Glass
Pointer	Black Finished Aluminum
Stem	20.110—304 Series Stainless Steel 30.110—304 Stainless Steel
Accuracy	20.110— $\pm 1\%$ Full Scale 30.110— $\pm 2\%$ - 1% - 2% Full Scale
Dial	Aluminum, White Background, Dual Scale, Black Celsius Scale and Black Fahrenheit Scale

Thermowells are recommended for pressure, corrosive fluids and high velocity applications

STANDARD RANGES—DUAL SCALE

RANGE—Fahrenheit	FIG. INT.	DIV.	RANGE—Celsius	FIG. INT.	DIV.
-100 to 150°	20°	2°	-70 to 70°	10°	1°
-40 to 120°	20°	2°	-40 to 50°	10°	1°
25 to 125°	10°	1°	-5 to 50°	5°	1/2°
0 to 140°	10°	1°	-20 to 60°	5°	1/2°
0 to 200°	20°	2°	-15 to 90°	10°	1°
0 to 250°	20°	2°	-20 to 120°	10°	1°
20 to 240°	20°	2°	-5 to 115°	10°	1°
50 to 300°	20°	2°	10 to 150°	10°	1°
50 to 500°	50°	5°	10 to 260°	20°	2°
150 to 750°	100°	10°	65 to 400°	50°	5°
200 to 1000°	100°	10°	100 to 540°	50°	5°

STANDARD STEM LENGTHS

LENGTH	MM	63.5	101.6	152.4	228.6	304.8	381.0	451.2	690.6
	INCHES	2 1/2	4	6	9	12	15	18	24
ORDERING CODE		025	040	060	090	120	150	180	240

OPTIONS & ACCESSORIES

Connections

In addition to our standard 1/4" or 1/2" NPT connections, 3/8" NPT is available. If a special connection is required, please consult factory.

Special Dials

Special ranges and dials with company names, company logos, part numbers, telephone numbers or almost any custom layout is available. Single scale F° or C° available upon request. Check factory for availability.

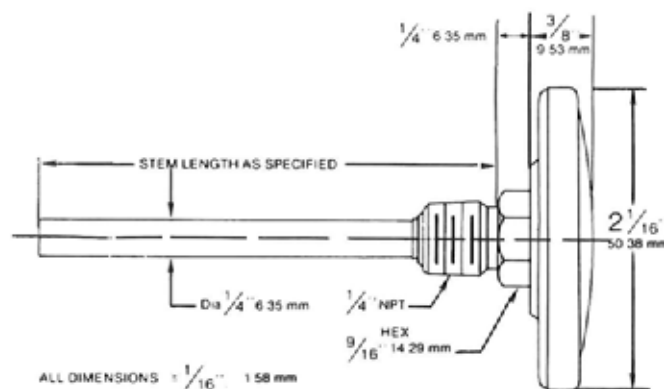
Crystals

Laminated safety glass crystals are available on all 3" & 5" NOSHOK Bimetal Thermometers.

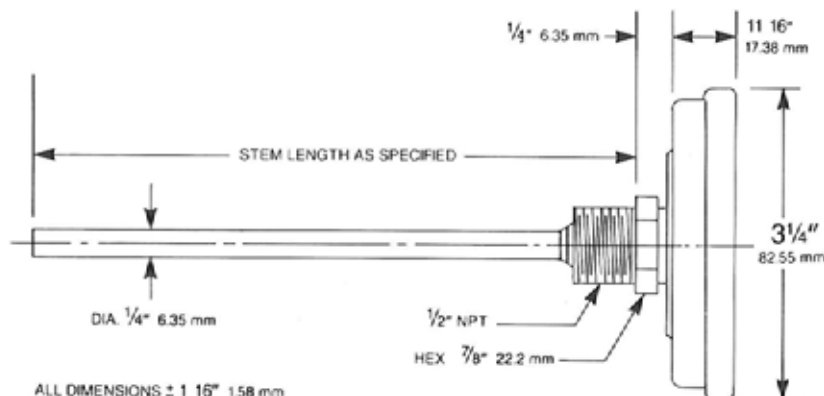
Plexiglass crystals are available on all NOSHOK Bimetal Thermometers, however, they should not be used where case temperature exceeds 300°F/150°C.

DIMENSIONS (All dimensions are $\pm 1/16$ inch (1.58 mm))

2 INCH MODEL 20.110



3 INCH MODEL 30.110



GENERAL INFORMATION

The NOSHOK 300 SERIES instrument type bimetal thermometers are the highest quality thermometers available in today's market. These thermometers feature a sturdy, corrosion resistant series 304 stainless steel case with electroless polished 304 stainless steel bezel. This design provides a hermetic seal which prevents crystal fogging and damage caused by moisture to the working parts. A slotted-hex adjustment head offers field calibration through use of a screw driver or wrench. This allows maximum accuracy at a selected area of temperature range. These NOSHOK thermometers are guaranteed to be accurate to within one percent of full scale. Calibration standards are traceable to the National Institute of Standards and Technology (formerly National Bureau of Standards).

In 1973, NOSHOK was the first company to offer an extended 3 year warranty on specific pressure gauges and now we offer a five year warranty on our 300 Series Bimetal Thermometers.

Additional features include a balanced lightweight aluminum pointer with black finish, an optically clear glass crystal, and 300 series stainless steel stems welded at tip and case to prevent leakage. The bimetal element, an extremely responsive temperature sensing helix is also coated with a viscous silicone to minimize pointer oscillation and to improve temperature transmission. This sensing helix has been carefully sized and tested, heat-treated and aged to relieve any inherent stresses and insure specified accuracy. The heavy gauge aluminum dial has a hard surface white matte finish to reduce glare. The dished form with Celsius on the lower plane and Fahrenheit on the upper plane offers accurate indication of both scales, and eliminates reading errors.

Temporary overrange or underrange of 50% of scale up to 500°F or 260°C will not affect the instrument accuracy.

ORDERING INFORMATION

30.300 . 060 . 0/140°F/C . LIQUID FILLED

1. Select size & model no. _____
2. Select stem length. _____
3. Select temperature range. _____
4. Select any required accessory or option. _____

PLEASE NOTE: For accurate readings, the minimum recommended stem immersion is 2½ inches in liquids and 4 inches in gases.



Five Year Warranty

NOSHOK will warrant for five years our 300 series bimetal thermometers:

- To be free from defects in materials and workmanship.
- To remain within catalogued accuracy specifications.
- To maintain the integrity of the hermetically sealed case preventing moisture from collecting on the interior.
- To operate within the catalogued performance specifications.

Limitations which apply are:

- Exposure of the thermometer to corrosive chemicals either environmentally or through manufacturing processes.
- Subjected to temperatures in excess of the rated over temperature limit.
- Put on application which subjects the thermometer to excessive vibration or causes violation of the stem or case enclosure.

Determination of thermometer failures will be made by NOSHOK, INC. which will use its equipment and personnel or a certified test facility specializing in this type of evaluation and determination.

Thermometer failures determined to be caused by stated limitations or abuse will not be considered under this warranty.

NOSHOK, INC. will at its options, repair or replace the damaged thermometer without cost to customer.

This written warranty applies only to the NOSHOK thermometers, referenced in the first paragraph of this warranty, sold by NOSHOK, INC. and its authorized distributors.



30.300
3 INCH
1/2" NPT
BOTTOM CONNECTION



50.300
5 INCH
1/2" NPT
BOTTOM CONNECTION

SPECIFICATIONS

Case	304 Stainless Steel
Bezel	304 Stainless Steel Electroless polished
Crystal	Instrument Glass
Pointer	Black Finished Aluminum
Stem	304 Series Stainless Steel
Accuracy	± 1% Full Scale
Dial	Aluminum, White Background, Dual Scale, Black Celsius Scale and Black Fahrenheit Scale
Recalibrator	External Reset

Thermowells are recommended for pressure, corrosive fluids and high velocity applications

STANDARD RANGES—DUAL SCALE

RANGE Fahrenheit (Outer Scale)	FIG. INT.	DIV.	RANGE Celsius (Inner Scale)	FIG. INT.	DIV.
- 100 to 150°	20°	2°	- 70 to 70°	10°	1°
- 40 to 120°	20°	2°	- 40 to 50°	10°	1°
25 to 125	10°	1°	- 5 to 50°	5°	1/2°
0 to 140°	10°	1°	- 20 to 60°	5°	1/2°
0 to 200°	20°	2°	- 15 to 90°	10°	1°
0 to 250	20°	2°	- 20 to 120°	10°	1°
20 to 240°	20°	2°	- 5 to 115°	10°	1°
50 to 300°	20°	2°	10 to 150°	10°	1°
50 to 500°	50°	5°	10 to 260°	20°	2°
150 to 750°	100°	10°	65 to 400°	50°	5°
200 to 1000°	100°	10°	100 to 540°	50°	5°

STANDARD STEM LENGTHS

LENGTH	MM	63.5	101.6	152.4	228.6	304.8	381.0	451.2	690.6
	INCHES	2 1/2	4	6	9	12	15	18	24
ORDERING CODE		025	040	060	090	120	150	180	240

Longer stems are available on special order up to 120"

300 SERIES

Instrument Type Bimetal Thermometers



30.310
3 INCH
1/2" NPT
BACK CONNECTION



50.310
5 INCH
1/2" NPT
BACK CONNECTION

SPECIFICATIONS

Case	304 Stainless Steel
Bezel	304 Stainless Steel Electroless polished
Crystal	Instrument Glass
Pointer	Black Finished Aluminum
Stem	304 Series Stainless Steel
Accuracy	± 1% Full Scale
Dial	Aluminum, White Background, Dual Scale, Black Celsius Scale and Black Fahrenheit Scale.
Recalibrator	External Reset

Thermowells are recommended for pressure, corrosive fluids and high velocity applications

STANDARD RANGES DUAL SCALE

RANGE Fahrenheit	FIG. INT.	DIV	RANGE Celsius	FIG. INT.	DIV.
- 100 to 150°	20°	2°	- 70 to 70°	10°	1°
- 40 to 120°	20°	2°	- 40 to 50°	10°	1°
25 to 125	10°	1°	- 5 to 50°	5°	1/2°
0 to 140°	10°	1°	- 20 to 60°	5°	1/2°
0 to 200°	20°	2°	- 15 to 90°	10°	1°
0 to 250	20°	2°	- 20 to 120°	10°	1°
20 to 240°	20°	2°	- 5 to 115°	10°	1°
50 to 300°	20°	2°	10 to 150°	10°	1°
50 to 500°	50°	5°	10 to 260°	20°	2°
150 to 750°	100°	10°	65 to 400°	50°	5°
200 to 1000°	100°	10°	100 to 540°	50°	5°

STANDARD STEM LENGTHS

LENGTH	MM	63.5	101.6	152.4	228.6	304.8	381.0	451.2	690.6
	INCHES	2 1/2	4	6	9	12	15	18	24
ORDERING CODE	025	040	060	090	120	150	180	240	

Longer stems are available on special order up to 120"



30.320
3 INCH
1/2" NPT
ADJUSTABLE ANGLE
CONNECTION



50.320
5 INCH
1/2" NPT
ADJUSTABLE ANGLE
CONNECTION

SPECIFICATIONS

Case	304 Stainless Steel
Bezel	304 Stainless Steel Electroless polished
Crystal	Instrument Glass
Pointer	Black Finished Aluminum
Stem	304 Series Stainless Steel
Accuracy	± 1% Full Scale
Dial	Aluminum, White Background, Dual Scale, Black Celsius Scale and Black Fahrenheit Scale
Recalibrator	External Reset
Adjustable Angle Form	Adjustment of the stainless steel harness allows case rotation of 360° and stem variation of more than 180°.

Thermowells are recommended for pressure, corrosive fluids and high velocity applications

STANDARD RANGES DUAL SCALE

RANGE Fahrenheit	FIG. INT.	DIV	RANGE Celsius	FIG. INT.	DIV.
- 100 to 150°	20°	2°	- 70 to 70°	10°	1°
- 40 to 120°	20°	2°	- 40 to 50°	10°	1°
25 to 125°	10°	1°	- 5 to 50°	5°	1/2°
0 to 140°	10°	1°	- 20 to 60°	5°	1/2°
0 to 200°	20°	2°	- 15 to 90°	10°	1°
0 to 250°	20°	2°	- 20 to 120°	10°	1°
20 to 240°	20°	2°	- 5 to 115°	10°	1°
50 to 300°	20°	2°	10 to 150°	10°	1°
50 to 500°	50°	5°	10 to 260°	20°	2°
150 to 750°	100°	10°	65 to 400°	50°	5°
200 to 1000°	100°	10°	100 to 540°	50°	5°

STANDARD STEM LENGTHS

LENGTH	MM	63.5	101.6	152.4	228.6	304.8	381.0	451.2	690.6
	INCHES	2 1/2	4	6	9	12	15	18	24
ORDERING CODE		025	040	060	090	120	150	180	240

Longer stems are available on special order up to 120"

OPTIONS & ACCESSORIES

Connections

In addition to our standard 1/2" NPT connections, 1/4" or 3/8" NPT is also available. If a special connection is required, please consult factory.

Special Dials

Special ranges and dials with company names, company logos, part numbers, telephone numbers or almost any custom layout is available. Dependent on requirements single scale F° or C° is available upon request.

Silicone Filled

All 300 Series NOSHOK Bimetal Thermometers are offered in a filled version. This option is for those applications where severe vibration may be a factor. Our standard fill is SF-96-500 silicone which dampens and lubricates the internal mechanism thus reducing pointer oscillation and premature wear. A plastic crystal is standard when silicone filled thermometer is requested.

Crystals

Laminated safety glass crystals are available on all 3" & 5" NOSHOK Bimetal Thermometers.

Plexiglass crystals are available on all NOSHOK Bimetal Thermometers, however, they should not be used where case temperature exceeds 300°F/150°C.

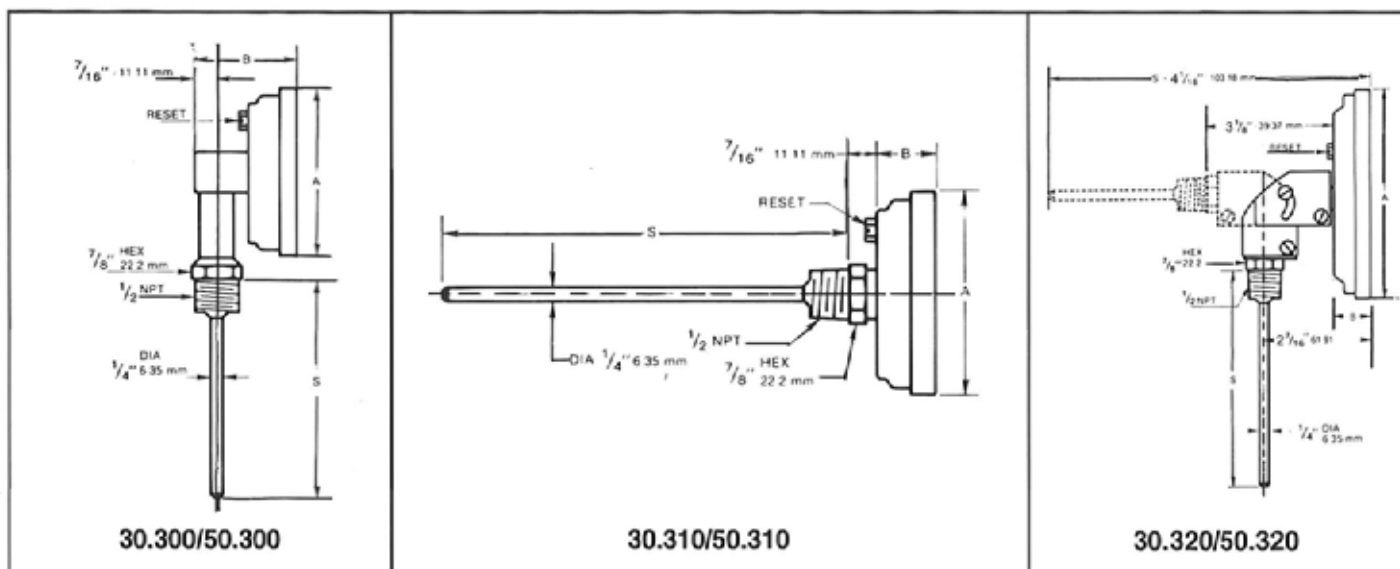
Stem Lengths

The 304 Series stainless steel stem is welded at the tip and case connector to prevent leakage. 1/4" (6.35 mm) diameter is standard for lengths to 24 inches. (609mm). 72" inch stem maximum.

MIN. or MAX. Indicating Pointer

Available in 3" dial sizes and includes plastic crystal.

DIMENSIONS



MODEL		A	B	S (STEM LENGTH)
30.300	MM INCH	82.55 3 1/4	23.81 15/16	AS REQUIRED
50.300	MM INCH	133.35 5 1/4	23.81 15/16	AS SPECIFIED
30.310	MM INCH	82.55 3 1/4	47.62 1 7/8	AS SPECIFIED
50.310	MM INCH	133.35 5 1/4	47.62 1 7/8	AS SPECIFIED
30.320	MM INCH	82.55 3 1/4	23.81 15/16	AS SPECIFIED
50.320	MM INCH	133.35 5 1/4	23.81 15/16	AS SPECIFIED

GENERAL INFORMATION

NOSHOK THERMOWELLS are recommended whenever the process being measured may be under pressure. They are also recommended as protection to the operator and/or observer. The correct thermowell will reduce the possibility of damage to the temperature instrument which may be caused by pressure, corrosion, or the flow of abrasive or viscous media. In addition, an instrument may be removed and replaced without shutting down and possibly draining the process.

NOSHOK STANDARD THERMOWELLS are supplied with 1/2" NPSM instrument connection. The female thread will match the standard 1/2" NPT male thread without seizing or galling. Lagging, welded, flange type etc. wells are available upon request.

For an instrument to indicate within its specified accuracy, the sensitive portion must be immersed into the media. This immersion length varies and is specified by the instrument manufacturer. These factors must be considered when specifying the "U" dimension on any thermowell.

ORDERING INFORMATION

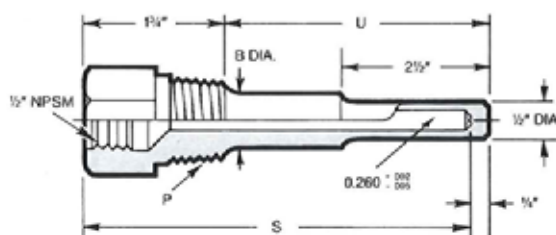
1. Select model no. _____
2. Select bore depth _____
3. Select material _____

75 • 040 • 304SS



75
STEPPED SHANK
1/4" NOMINAL BORE

DIMENSIONS



LEGEND

- U - Shank Length Under Threads
- P - Process Connection NPT
- S - Bore Depth = Instrument Element Length Including Threads.
- B - Shank Base Diameter

MATERIAL—PLEASE SPECIFY

BRASS

304 SS

316 SS

OTHER—PLEASE SPECIFY

Other materials are available upon request

BORE SIZE	"P" PROCESS CONNECTION	"B" MAXIMUM INSERTION DIAM.
.260 inch (6.35mm)	3/4" NPT	3/4 inch (19.05mm)

STANDARD LENGTHS

INSERTION "U"	mm	41.3	63.5	114.3	190.5	266.7	342.9	419.1	571.5
	inch	1 5/8"	2 1/2"	4 1/2"	7 1/2"	10 1/2"	13 1/2"	16 1/2"	22 1/2"
BORE DEPTH "S"	mm	63.5	101.6	152.4	228.6	304.8	381.0	457.2	558.8
	inch	2 1/2	4	6	9	12	15	18	24
ORDERING CODE		025	040	060	090	120	150	180	240

Remote thermometers are available upon request

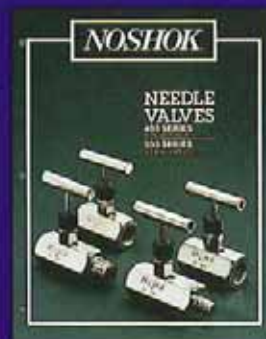
ALL PRODUCT LITERATURE, BROCHURES AND CATALOGS ARE AVAILABLE UPON REQUEST.



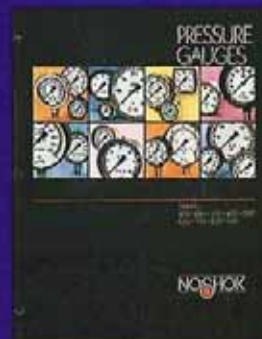
**PRODUCT GUIDE
FORM NPG98**
Also available in French &
Spanish



**TRANSMITTERS &
TRANSDUCERS
FORM NK98TD**



**NEEDLE VALVES
FORM NK93V**



**PRESSURE GAUGES
FORM NK95G**



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