

*General purpose*

**MIEPL** make bimetallic thermometers for process industries. Bimetal thermometers use two strips of different metals to convert temperature into mechanical displacement. Models MTB01 are manufactured in accordance with EN 13190 and offer a stainless steel case and accuracy class 1. These are available in large number of stem lengths and nominal sizes. This also have external zero adjustment feature.



**FEATURES**

- Bimetal helix system
- Hermetically sealed
- Stem length max 1.5 Mtr
- Optional External Zero Adjustment

**APPLICATION**

- Liquid & gaseous mediums
- Corrosive environments
- Oil & Gas applications
- Chemical & Petrochemical
- Food & Beverages
- OEM Requirement

**REFERENCE**

- EN 13190

\* Depending on range & stem diameter

**STANDARD SPECIFICATIONS**

|                         |   |
|-------------------------|---|
| Dial size               | : DN50 / DN 63 / DN80 / DN100 / DN125 / DN150 |
| Range                   | : -80...0...600°C / -110...0...1100°F         |
| Mounting pattern        | : Direct Bottom connection                    |
| Stem size               | : 6.0 mm                                      |
| Ingress protection      | : IP 65                                       |
| Stem length             | : 25 mm to 1500 mm*                           |
| Process connection type | : Adjustable connection                       |
| Process connection      | : ½" NPT (M) / ½" BSP (M)                     |

**STANDARD PARAMETERS**

|                      |                               |
|----------------------|-------------------------------|
| Accuracy             | : CL 1.0 (Class 1)            |
| Ambient Temperature  | : -20...+60°C                 |
| Over range limits    | : 110% full scale             |
| Stem pressure rating | : 25 bar (Without thermowell) |
| Weld joints          | : TIG argon arc welding       |

**MATERIAL OF CONSTRUCTION**

|                                    |   |
|------------------------------------|---|
| Sensing Element                    | : Coiled bimetal strip  |
| Case & Ring Material               | : AISI 304 SS   |
| Stem & Process connection material | : AISI 316 SS   |
| Dial                               | : Aluminum, black graduation on white background                                |
| Pointer                            | : Slotted zero adjustable, aluminum, black powder coated (Fix pointer for DN50) |
| Gaskets                            | : Neoprene  |
| Window                             | : Sheet glass   |

**STAND. SPECIFICATIONS : DAMPENING LIQUID FILLED, GLYCERIN**

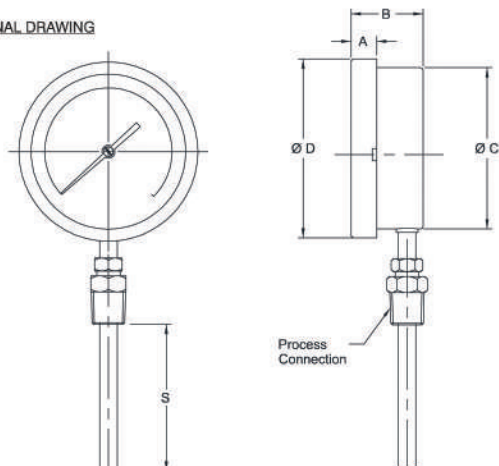
|                         |  |
|-------------------------|--|
| Gaskets & Filling plugs | : NBR  |
| Dampening liquids       | : Glycerin 99.7% (-20°C to 65°C) [Up to range 100°C] |
| Window                  | : Shatterproof safety glass                          |

**STAND. SPECIFICATIONS : DAMPENING LIQUID FILLED, SILICON**

|                         |                                   |
|-------------------------|-----------------------------------|
| Gaskets & Filling plugs | : NBR                             |
| Dampening liquids       | : Silicon oil [Up to range 200°C] |
| Window                  | : Shatterproof safety glass       |

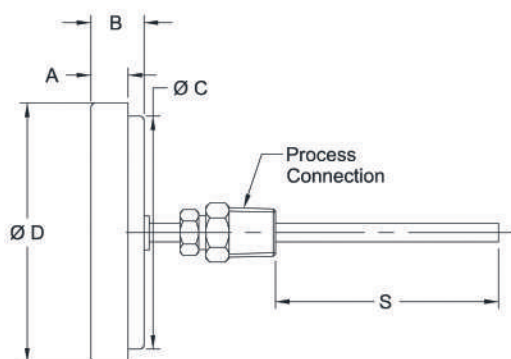
**DRAWING**

**DIMENSIONAL DRAWING**



| Mounting Pattern: 1A |      |      |     |       |     |
|----------------------|------|------|-----|-------|-----|
| NS                   | 63   | 80   | 100 | 125   | 150 |
| A                    | 12   | 9.5  | 12  | 15    | 15  |
| B                    | 48   | 48   | 48  | 48    | 48  |
| ØC                   | 62.5 | 80   | 100 | 118.5 | 149 |
| ØD                   | 70   | 89.5 | 111 | 129   | 161 |
| S                    | *    | *    | *   | *     | *   |

\* As per customer requirement.



| Mounting Pattern: 2A |      |      |      |     |       |     |
|----------------------|------|------|------|-----|-------|-----|
| NS                   | 50   | 63   | 80   | 100 | 125   | 150 |
| A                    | 6.5  | 10   | 9.5  | 12  | 15    | 15  |
| B                    | 23   | 23   | 23   | 23  | 23    | 23  |
| ØC                   | 51.5 | 62.5 | 80   | 100 | 118.5 | 149 |
| ØD                   | 57.5 | 70   | 89.5 | 111 | 129   | 161 |
| S                    | *    | *    | *    | *   | *     | *   |
| Weight (g)           | 108  | 156  | 244  | 518 | 585   | 625 |

\* As per customer requirement.

All dimensions are in mm.

**RANGE TABLE**

| STANDARD RANGE | -20...+40 | -20...+60 | -30...+70 | -30...+120 | -50...+100 | -80...+120 |
|----------------|-----------|-----------|-----------|------------|------------|------------|
| CODE           | XXX       | XXX       | XXX       | XXX        | XXX        | XXX        |
| STANDARD RANGE | 0...50    | 0...60    | 0...80    | 0...100    | 0...120    | 0...150    |
| CODE           | XXX       | XXX       | XXX       | XXX        | XXX        | XXX        |
| STANDARD RANGE | 0...200   | 0...250   | 0...300   | 0...400    | 0...500    | 0...600    |
| CODE           | XXX       | XXX       | XXX       | XXX        | XXX        | XXX        |

**NOTES**

1. For Other Connection, please contact factory.
2. DN50 is available in Centre back connection (2A) only.
3. Equivalent scales available in °F, °C/°F, °F/°C. Please contact factory for details.

**ORDERING CODE**

MTB01 D - XXX - 1A - MF - IP2 - XXXX - AC - 4NM

|                            |  |     |   |     |                                   |      |    |     |
|----------------------------|--|-----|---|-----|-----------------------------------|------|----|-----|
| 1. DIAL SIZE               | 50 mm / 2"   | B   |   |     |                                   |      |    |     |
|                            | 63 mm / 2½"  | C   |   |     |                                   |      |    |     |
|                            | 80 mm / 3"   | I   |   |     |                                   |      |    |     |
|                            | 100 mm / 4"  | D   |   |     |                                   |      |    |     |
|                            | 150 mm / 6"  | F   |   |     |                                   |      |    |     |
| 2. RANGE                   | Refer "Range Table"                                    | XXX |   |     |                                   |      |    |     |
| 3. MOUNTING PATTERN        | Direct, Bottom connection                              |     | 1A  |     |                                   |      |    |     |
|                            | Centre, Back connection                                |     | 2A  |     |                                   |      |    |     |
| 4. STEM DIAMETER           | 6.0 mm   |     |   | MF  |                                   |      |    |     |
|                            | ¼" (6.35 mm)   |     |   | IR  |                                   |      |    |     |
|                            | 8.0 mm   |     |   | MH  |                                   |      |    |     |
|                            | 9.5 mm   |     |   | MI  |                                   |      |    |     |
|                            | 10 mm  |     |   | MJ  |                                   |      |    |     |
| 5. INGRESS PROTECTION      | 12 mm  |     |   | ML  |                                   |      |    |     |
|                            | IP 65  |     |   |     | IP2                               |      |    |     |
|                            | IP 66  |     |   |     | IP3                               |      |    |     |
|                            | IP 67  |     |   |     | IP4                               |      |    |     |
|                            | Hermetically sealed                                    |     |   |     | IP5                               |      |    |     |
| 6. STEM LENGTH             | Up to 1,500 mm   |     |   |     |                                   | XXXX |    |     |
| 7. PROCESS CONNECTION TYPE | Fixed connection                                       |     |   |     |                                   |      | FC |     |
|                            | Adjustable connection                                  |     |   |     |                                   |      | AC |     |
|                            | Swivel / Revolving connection                          |     |   |     |                                   |      | SC |     |
| 8. PROCESS CONNECTION      | ½" NPT (M)   | 4NM | M20 X 1.5 mm (M)                          | 4MM | ¾" BSP (M)                        |      |    | 5BM |
|                            | ½" BSP (M)   | 4BM | 3/8" BSP (M)⁴                             | 3BM | ½" NPT (F)                        |      |    | 4NF |
|                            | ¼" NPT (M)³  | 2NM | 1.5" Triclover                            | T15 | ¾" NPT (F)                        |      |    | 5NF |
|                            | ¼" BSP (M)³  | 2BM | ¾" NPT (M)                                | 5NM | M27 X 2.0 mm (M)                  |      |    | 6MM |
|                            | Other thread size and standards available on request.¹ |     |   |     |                                   |      |    |     |
| 9. OTHER OPTION            | Case & Ring in AISI 316 SS (1A)                        | AA  | Rubber parts, Viton                       | QA  | Dial tag marking                  |      |    | WT  |
|                            | Case & Ring in AISI 316 SS (2A)                        | AG  | 5 - point factory calibration certificate | SA  | Custom designed dial              |      |    | WR  |
|                            | Shatterproof safety glass                              | FC  | Material test certificate 2.2             | SM  | Dampening liquid, glycerin (65°C) |      |    | DG  |
|                            | External zero adjustment                               | FZ  | SS tag plate, AISI 304 SS                 | WF  |                                   |      |    |     |
|                            | Dampening liquid, silicon oil (200°C)                  | NA  | SS tag plate, AISI 316 SS                 | WG  |                                   |      |    |     |

Ordering Example: **MTB01 - D - XXX - 1A - MF - IP2 - XXXX - AC - 4NM**

**NOTES :**

1. For other connections, please contact factory.
2. DN50 is available in Centre back connection (2A) only.
3. ¼" connections are available up to 1/4" (6.35 mm) stem diameter only.
4. 3/8" connections are available up to 10 mm stem diameter only.