

# Manómetro de muelle tubular

**Serie 300**  
**Modelo 321 & 322**

**Elemento:** Acero Inoxidable  
**Conexión:** Acero Inoxidable  
**Caja:** Acero Inoxidable

## Descripción

- Manómetro tipo bourdon con conexión fabricada en acero inoxidable.
- Utilizado en medios gaseosos y líquidos así como entornos agresivos y de baja viscosidad.
- Aplicaciones en la industria química y petroquímica, tratamientos de agua, maquinaria e instalaciones industriales.
- Poseen una alta resistencia a cargas dinámicas y choques.

- Cumplen con la norma EN 837-1 para manómetros tipo bourdon y ASME B40.100.
- Doble escala kg/cm<sup>2</sup> & psi como estándar.
- Conexiones fabricadas en referencia a la norma ASME B1.20.1 como estándar.
- Configuración con o sin aguja de arrastre.
- Grado de protección IP65.



## Especificaciones

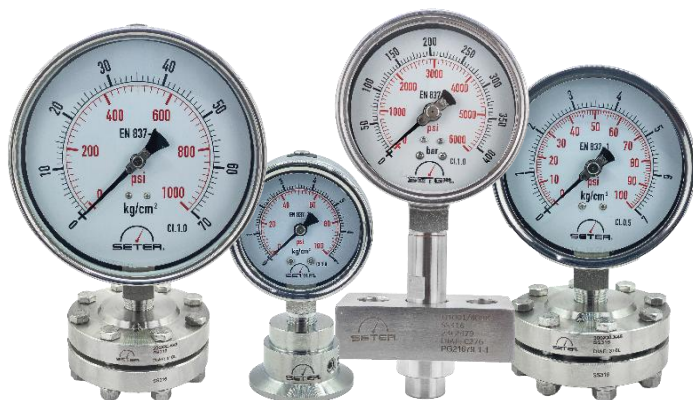
### Información

|                              |                                                                                                                                                                                                                                                                                                                                             |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Normativa</b>             | EN 837-1<br>ASME B40.100                                                                                                                                                                                                                                                                                                                    |
| <b>Diámetro nominal (DN)</b> | Ø 63 mm (2 1/2")<br>Ø 100 mm (4")<br>Ø 115 mm (4.5")<br>Ø 160 mm (6")<br>Ø 200 mm (8")<br>Ø 250 mm (10")<br>Ø 300 mm (12")                                                                                                                                                                                                                  |
| <b>Mirilla</b>               | Cristal de seguridad laminado                                                                                                                                                                                                                                                                                                               |
| <b>Caja</b>                  | Acero Inoxidable (SS 304)                                                                                                                                                                                                                                                                                                                   |
| <b>Carátula</b>              | Aluminio fondo blanco                                                                                                                                                                                                                                                                                                                       |
| <b>Puntero</b>               | Aluminio esmaltado negro con ajuste micrométrico para modelo de 4" (100 mm) y superiores.                                                                                                                                                                                                                                                   |
| <b>Conexión</b>              | DN 63 mm 1/4" NPT Acero Inoxidable (SS316L)<br>DN 100 mm 1/2" NPT Acero Inoxidable (SS316L)<br>DN 115 mm 1/2" NPT Acero Inoxidable (SS316L)<br>DN 160 mm 1/2" NPT Acero Inoxidable (SS316L)<br>DN 200 mm 1/2" NPT Acero Inoxidable (SS316L)<br>DN 250 mm 1/2" NPT Acero Inoxidable (SS316L)<br>DN 300 mm 1/2" NPT Acero inoxidable (SS316L) |

### Elemento sensible

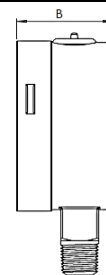
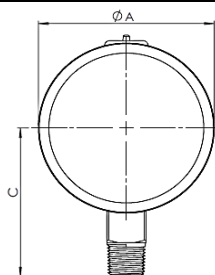
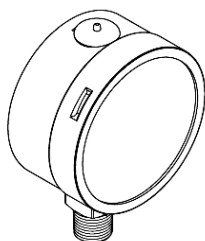
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tipo de elemento          | Muelle tubular: Tipo C o Helicoidal                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Material                  | Acero Inoxidable (SS316L)                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Clase de exactitud</b> | DN 63 (2.5") EN 837-1 ±1.6% de la escala total<br>DN 100 (4") EN 837-1 ±1.0% de la escala total / ASME B40.100 Grado 1A<br>DN 115 (4.5") EN 837-1 ±0.5% de la escala total / ASME B40.100 Grado 2A<br>DN 160 (6") EN 837-1 ±1.0% de la escala total / ASME B40.100 Grado 1A<br>DN 200 (8") EN 837-1 ±1.0% de la escala total / ASME B40.100 Grado 1A<br>DN250 (10") EN 837-1 ±1.0% de la escala total / ASME B40.100 Grado 1A<br>DN 300 (12") EN 837-1 ±1.0% de la escala total / ASME B40.100 Grado 1A |

|                                  |                              |
|----------------------------------|------------------------------|
| Temperatura ambiente             | + 20°C (+68°F)               |
| Manómetro lleno de glicerina     | +2...+80°C (+35.6 ...+176°F) |
| Manómetro lleno de silicón DC200 | -40...+150°C (-40...+302°F)  |



## Detalles técnicos

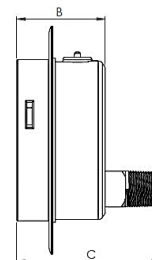
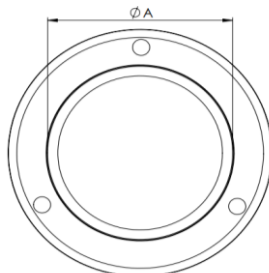
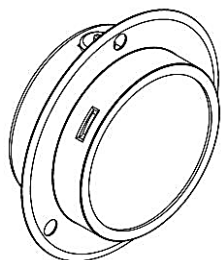
### Inferior



Conexión a proceso de acuerdo a ASME B1.20.1

| Mod.   | DN  | Conexión a proceso | A    | B  | C   | Clase de exactitud                                      |
|--------|-----|--------------------|------|----|-----|---------------------------------------------------------|
| 32163  | 63  | Inferior 1/4" NPT  | 63.7 | 31 | 56  | EN 837-1 ±1.6% de la escala total                       |
| 321100 | 100 | Inferior 1/2" NPT  | 101  | 49 | 82  | EN 837-1 ±1.0% de la escala total ASME B40.100 Grade 1A |
| 321115 | 115 | Inferior 1/2" NPT  | 115  | 49 | 97  | EN 837-1 ±0.5% de la escala total ASME B40.100 Grade 1A |
| 321160 | 160 | Inferior 1/2" NPT  | 160  | 49 | 120 | EN 837-1 ±1.0% de la escala total ASME B40.100 Grade 1A |
| 321200 | 200 | Inferior 1/2" NPT  | 200  | 50 | 140 | EN 837-1 ±1.0% de la escala total ASME B40.100 Grade 1A |
| 321250 | 250 | Inferior 1/2" NPT  | 250  | 50 | 165 | EN 837-1 ±1.0% de la escala total ASME B40.100 Grade 1A |
| 321300 | 300 | Inferior 1/2" NPT  | 300  | 50 | 190 | EN 837-1 ±1.0% de la escala total ASME B40.100 Grade 1A |

### Posterior



Unidades: mm

Conexión a proceso de acuerdo a ASME B1.20.1

| Mod.   | DN  | Conexión a proceso | A    | B    | C  | Clase de exactitud                                        |
|--------|-----|--------------------|------|------|----|-----------------------------------------------------------|
| 32263  | 63  | Posterior 1/4" NPT | 63.7 | 31   | 56 | EN 837-1 ±1.6% de la escala total                         |
| 322100 | 100 | Posterior 1/2" NPT | 101  | 49.5 | 89 | EN 837-1 ±1.0% de la escala total / ASME B40.100 Grade 1A |
| 322115 | 115 | Posterior 1/2" NPT | 115  | 50   | 89 | EN 837-1 ±0.5% de la escala total / ASME B40.100 Grade 1A |
| 322160 | 160 | Posterior 1/2" NPT | 160  | 50   | 89 | EN 837-1 ±1.0% de la escala total / ASME B40.100 Grade 1A |
| 322200 | 200 | Posterior 1/2" NPT | 200  | 50   | 89 | EN 837-1 ±1.0% de la escala total / ASME B40.100 Grade 1A |
| 322250 | 250 | Posterior 1/2" NPT | 250  | 50   | 89 | EN 837-1 ±1.0% de la escala total / ASME B40.100 Grade 1A |
| 322300 | 300 | Posterior 1/2" NPT | 300  | 50   | 89 | EN 837-1 ±1.0% de la escala total / ASME B40.100 Grade 1A |

## Tabla de rangos.

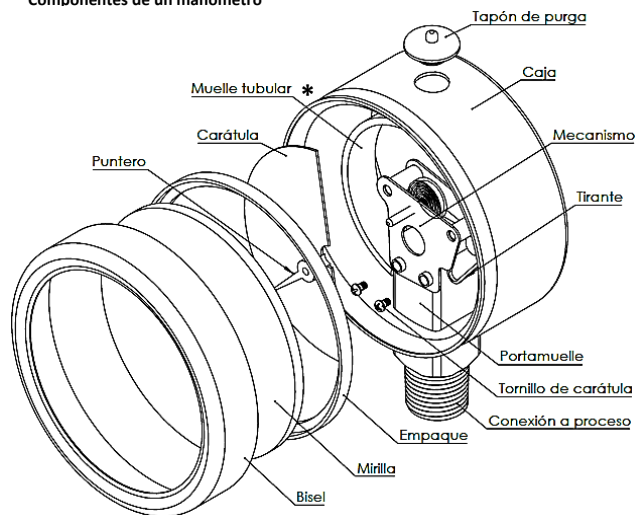
Unidades: mm

| VACUOMETRO     | cmHg     | inHg      | Código | bar     | inHg      | Código | kPa         | inHg      | Código  | MPa        | inHg      | Código |
|----------------|----------|-----------|--------|---------|-----------|--------|-------------|-----------|---------|------------|-----------|--------|
|                | -76 a 0  | -30 a 0   | -76    | -1 a 0  | -30 a 0   | -1B    | -100 a 0    | -30 a 0   | -100K   | -0.1 a 0   | -30 a 0   | -0.1M  |
| MANOVACUOMETRO | -76 a 1  | -30 a 15  | 01     | -1 a 1  | -30 a 15  | 01B    | -100 a 100  | -30 a 15  | 0100K   | -0.1 a 0.1 | -30 a 15  | 00.1M  |
|                | -76 a 2  | -30 a 30  | 02     | -1 a 2  | -30 a 30  | 02B    | -100 a 200  | -30 a 30  | 0200K   | -0.1 a 0.2 | -30 a 30  | 00.2M  |
|                | -76 a 4  | -30 a 60  | 04     | -1 a 4  | -30 a 60  | 04B    | -100 a 400  | -30 a 60  | 0400K   | -0.1 a 0.4 | -30 a 60  | 00.4M  |
|                | -76 a 7  | -30 a 100 | 07     | -1 a 7  | -30 a 100 | 07B    | -100 a 700  | -30 a 100 | 0700K   | -0.1 a 0.7 | -30 a 100 | 00.7M  |
|                | -76 a 11 | -30 a 160 | 011    | -1 a 11 | -30 a 160 | 011B   | -100 a 1100 | -30 a 160 | 01100K  | -0.1 a 1.1 | -30 a 160 | 01.1M  |
|                | -76 a 14 | -30 a 200 | 014    | -1 a 14 | -30 a 200 | 014B   | -100 a 1400 | -30 a 200 | 01400K  | -0.1 a 1.4 | -30 a 200 | 01.4M  |
|                | -76 a 21 | -30 a 300 | 021    | -1 a 20 | -30 a 300 | 021B   | -100 a 2000 | -30 a 300 | 02100K  | -0.1 a 2   | -30 a 300 | 02.1M  |
|                | -76 a 28 | -30 a 400 | 028    | -1 a 28 | -30 a 400 | 028B   | -100 a 2800 | -30 a 400 | 02800K  | -0.1 a 2.8 | -30 a 400 | 02.8M  |
|                | 0-1      | 0-15      | 1      | 0-1     | 0-15      | 1B     | 0-100       | 0-15      | 100K    | 0-0.1      | 0-15      | 0.1M   |
|                | 0-2      | 0-30      | 2      | 0-2     | 0-30      | 2B     | 0-200       | 0-30      | 200K    | 0-0.2      | 0-30      | 0.2M   |
|                | 0-4      | 0-60      | 4      | 0-4     | 0-60      | 4B     | 0-400       | 0-60      | 400K    | 0-0.4      | 0-60      | 0.4M   |
|                | 0-7      | 0-100     | 7      | 0-7     | 0-100     | 7B     | 0-700       | 0-100     | 700K    | 0-0.7      | 0-100     | 0.7M   |
| MANÓMETRO      | 0-11     | 0-160     | 11     | 0-11    | 0-160     | 11B    | 0-1100      | 0-160     | 1100K   | 0-1.1      | 0-160     | 1.1M   |
|                | 0-14     | 0-200     | 14     | 0-14    | 0-200     | 14B    | 0-1400      | 0-200     | 1400K   | 0-1.4      | 0-200     | 1.4M   |
|                | 0-21     | 0-300     | 21     | 0-20    | 0-300     | 20B    | 0-2000      | 0-300     | 2000K   | 0-2        | 0-300     | 2M     |
|                | 0-28     | 0-400     | 28     | 0-28    | 0-400     | 28B    | 0-2800      | 0-400     | 2800K   | 0-2.8      | 0-400     | 2.8M   |
|                | 0-35     | 0-500     | 35     | 0-35    | 0-500     | 35B    | 0-3500      | 0-500     | 3500K   | 0-3.5      | 0-500     | 3.5M   |
|                | 0-42     | 0-600     | 42     | 0-40    | 0-600     | 40B    | 0-4000      | 0-600     | 4000K   | 0-4        | 0-600     | 4M     |
|                | 0-56     | 0-800     | 56     | 0-55    | 0-800     | 55B    | 0-5500      | 0-800     | 5500K   | 0-5.5      | 0-800     | 5.5M   |
|                | 0-70     | 0-1000    | 70     | 0-70    | 0-1000    | 70B    | 0-7000      | 0-1000    | 7000K   | 0-7        | 0-1000    | 7M     |
|                | 0-105    | 0-1500    | 105    | 0-100   | 0-1500    | 100B   | 0-10000     | 0-1500    | 10000K  | 0-10       | 0-1500    | 10M    |
|                | 0-140    | 0-2000    | 140    | 0-140   | 0-2000    | 140B   | 0-14000     | 0-2000    | 14000K  | 0-14       | 0-2000    | 14M    |
|                | 0-210    | 0-3000    | 210    | 0-210   | 0-3000    | 210B   | 0-21000     | 0-3000    | 21000K  | 0-21       | 0-3000    | 21M    |
|                | 0-280    | 0-4000    | 280    | 0-280   | 0-4000    | 280B   | 0-28000     | 0-4000    | 28000K  | 0-28       | 0-4000    | 28M    |
|                | 0-350    | 0-5000    | 350    | 0-350   | 0-5000    | 350B   | 0-35000     | 0-5000    | 35000K  | 0-35       | 0-5000    | 35M    |
|                | 0-420    | 0-6000    | 420    | 0-400   | 0-6000    | 400B   | 0-40000     | 0-6000    | 40000K  | 0-40       | 0-6000    | 40M    |
|                | 0-560    | 0-8000    | 560    | 0-550   | 0-8000    | 550B   | 0-55000     | 0-8000    | 55000K  | 0-55       | 0-8000    | 55M    |
|                | 0-700    | 0-10000   | 700    | 0-700   | 0-10000   | 700B   | 0-70000     | 0-10000   | 70000K  | 0-70       | 0-10000   | 70M    |
|                | 0-1000   | 0-15000   | 1000   | 0-1000  | 0-15000   | 1000B  | 0-100000    | 0-15000   | 100000K | 0-100      | 0-15000   | 100M   |

## ¿Cómo Ordenar?

|                                                  |               |          |          |           |          |           |
|--------------------------------------------------|---------------|----------|----------|-----------|----------|-----------|
| <b>Mod:</b>                                      | <b>32</b>     | <b>1</b> | <b>V</b> | <b>63</b> | <b>/</b> | <b>7B</b> |
| <b>Manómetro Conexión</b>                        |               |          |          |           |          |           |
| 1                                                | Inferior      |          |          |           |          |           |
| 2                                                | Posterior     |          |          |           |          |           |
| <b>Configuración (Lleno /Seco)**</b>             |               |          |          |           |          |           |
|                                                  | Seco          |          |          |           |          |           |
| V                                                | Glicerina     |          |          |           |          |           |
| D                                                | Silicón DC200 |          |          |           |          |           |
| S                                                | Silicón VR100 |          |          |           |          |           |
| <b>Diámetro Nominal de Carátula en mm</b>        |               |          |          |           |          |           |
| 63                                               | 2.5" (63 mm)  |          |          |           |          |           |
| 100                                              | 4" (100 mm)   |          |          |           |          |           |
| 115                                              | 4.5" (115mm)  |          |          |           |          |           |
| 160                                              | 6" (160mm)    |          |          |           |          |           |
| 200                                              | 8" (200mm)    |          |          |           |          |           |
| 250                                              | 10" (250mm)   |          |          |           |          |           |
| 300                                              | 12" (300mm)   |          |          |           |          |           |
| <b>Rango de Operación ( Ver tabla de rangos)</b> |               |          |          |           |          |           |

Componentes de un manómetro

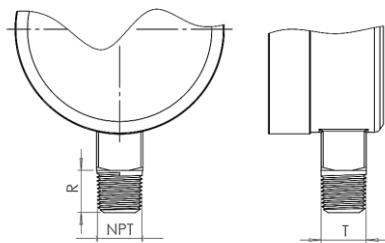
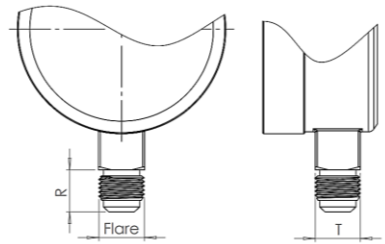


\*Muelle tubular helicoidal para presiones que superen los 1000 psi.

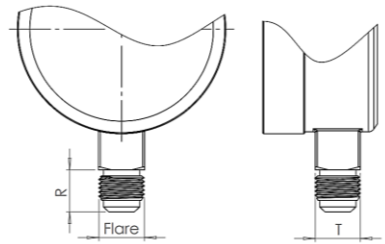
\*\* Consulta con tu asesor técnico por nuestras opciones de llenado.

## Conexiones

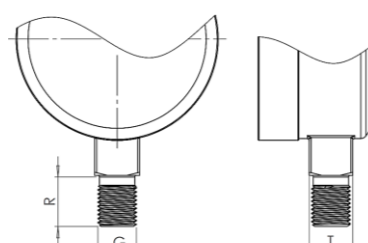
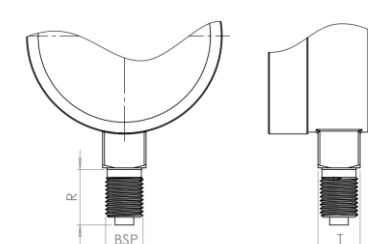
### Conexión tipo NPT.

| Diámetro                    | Conexión  |                                                                                     |
|-----------------------------|-----------|-------------------------------------------------------------------------------------|
| 2.5"                        | 1/4" NPTM |  |
|                             | 1/8" NPTH |                                                                                     |
|                             | 1/8" NPTM |                                                                                     |
| 4", 4.5", 6", 8", 10" y 12" | 1/2" NPTM |  |
|                             | 3/8" NPTM |                                                                                     |
|                             | 1/4" NPTM |                                                                                     |
|                             | 1/4" NPTH |                                                                                     |
|                             | 1/8" NPTM |                                                                                     |
|                             | 1/8" NPTH |                                                                                     |

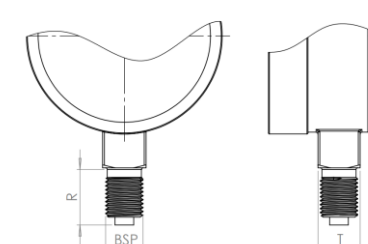
### Conexión tipo Flare.

| Diámetro                    | Conexión |                                                                                     |
|-----------------------------|----------|-------------------------------------------------------------------------------------|
| 2.5"                        | 1/4" FM  |  |
| 4", 4.5", 6", 8", 10" y 12" | 1/4" FM  |                                                                                     |
|                             |          |                                                                                     |

### Conexión tipo G.

| Diámetro                    | Conexión |                                                                                       |
|-----------------------------|----------|---------------------------------------------------------------------------------------|
| 2.5"                        | 1/4" GM  |  |
|                             | 1/8" GH  |                                                                                       |
|                             | 1/8" GM  |                                                                                       |
| 4", 4.5", 6", 8", 10" y 12" | 1/2" GM  |  |
|                             | 3/8" GM  |                                                                                       |
|                             | 1/4" GM  |                                                                                       |
|                             | 1/4" GH  |                                                                                       |
|                             | 1/8" GM  |                                                                                       |
|                             | 1/8" GH  |                                                                                       |

### Conexión tipo BSP.

| Diámetro                    | Conexión  |                                                                                       |
|-----------------------------|-----------|---------------------------------------------------------------------------------------|
| 2.5"                        | 1/8" BSPM |  |
| 4", 4.5", 6", 8", 10" y 12" | 1/4" BSPM |                                                                                       |
|                             | 1/8" BSPM |                                                                                       |

|                                     | NPT             |               | G               |               | FLARE           |               | BSP             |               |
|-------------------------------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|
| Conexión mm (pulg)                  | R               | T             | R               | T             | R               | T             | R               | T             |
| 321 (63)                            | 14.5<br>(0.57") | 14<br>(0.55") | 14.5<br>(0.57") | 14<br>(0.55") | 14.5<br>(0.57") | 14<br>(0.55") | 14.5<br>(0.57") | 14<br>(0.55") |
| 321 (100, 115, 160, 200, 250 y 300) | 20<br>(0.78")   | 22<br>(0.86") | 20<br>(0.78")   | 22<br>(0.86") | 20<br>(0.78")   | 22<br>(0.86") | 20<br>(0.78")   | 22<br>(0.86") |
| 322 (63)                            | 14.5<br>(0.57") | 14<br>(0.55") | 14.5<br>(0.57") | 14<br>(0.55") | 14.5<br>(0.57") | 14<br>(0.55") | 14.5<br>(0.57") | 14<br>(0.55") |
| 322 (100, 115, 160, 200, 250 y 300) | 20<br>(0.78")   | 22<br>(0.86") | 20<br>(0.78")   | 22<br>(0.86") | 20<br>(0.78")   | 22<br>(0.86") | 20<br>(0.78")   | 22<br>(0.86") |