

## Pressure instrumentation

Selection guide for pressure, differential pressure, level and flow measurement





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## Non-hygienic applications – Ceraphant

| Ceraphant 3x                |  |  |
|-----------------------------|--|--|
|                             | PTP31B   | PTC31B   |
|                             |   |   |
| <b>Areas of application</b> | <b>Standard measurement</b> <ul style="list-style-type: none"> <li>■ Process pressure</li> <li>■ Pressure switch</li> </ul>  | <b>Standard measurement</b> <ul style="list-style-type: none"> <li>■ Process pressure</li> <li>■ Pressure switch</li> </ul>  |
| <b>Measuring principle</b>  | <ul style="list-style-type: none"> <li>■ Gauge pressure ✓</li> <li>■ Absolute pressure ✓</li> </ul>  | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> </ul>   |
| <b>Measuring range</b>      | 400 mbar to 400 bar<br>(6 to 6,000 psi)  | 100 mbar to 40 bar<br>(1.5 to 600 psi)   |
| <b>Turn down</b>            | Up to 5:1  | Up to 5:1  |
| <b>Measuring cell</b>       | Metallic measuring cell  | Ceramic measuring cell   |
| <b>Output</b>               | <ul style="list-style-type: none"> <li>■ 1 x switch output (PNP)</li> <li>■ 2 x switch outputs (PNP)</li> <li>■ 1 x switch output (PNP) + 4 to 20mA analog</li> </ul>  | <ul style="list-style-type: none"> <li>■ 1 x switch output (PNP)</li> <li>■ 2 x switch outputs (PNP)</li> <li>■ 1 x switch output (PNP) + 4 to 20mA analog</li> </ul>  |
| <b>Process temperature</b>  | -40 to +100 °C<br>(-40 to +212 °F)   | -25 to +100 °C<br>(-13 to +212 °F)   |
| <b>Accuracy</b>             | Up to ±0.3 %   | Up to ±0.3 %   |
| <b>Long-term stability</b>  | ≤0.2 %/year  | ≤0.2 %/year  |
| <b>Process connections</b>  | Threads: <ul style="list-style-type: none"> <li>■ ISO228: G1/4, G1/2</li> <li>■ ASME: MNPT1/4, MNPT1/2</li> <li>■ DIN13: Metric M12x1.5</li> <li>■ JIS R1/2</li> </ul> | Threads: <ul style="list-style-type: none"> <li>■ ISO228: G1/4, G1/2</li> <li>■ ASME: MNPT1/4, MNPT1/2</li> <li>■ DIN13: Metric M12x1.5</li> <li>■ JIS R1/2</li> </ul> |
| <b>Features</b>             | Very compact, fully welded, display  | Very compact, fully welded, display  |





## Non-hygienic applications – Cerabar

|                      | Cerabar 1x   |  | Cerabar 2x   |
|----------------------|--|--|--|
|                      | PMP11  | PMC11  | PMP21  |
|                      |   |   |   |
| Areas of application | Standard measurement <ul style="list-style-type: none"> <li>Process pressure</li> </ul>  | Standard measurement <ul style="list-style-type: none"> <li>Process pressure</li> </ul>  | Standard measurement <ul style="list-style-type: none"> <li>Process pressure</li> </ul>  |
| Measuring principle  | <ul style="list-style-type: none"> <li>Gauge pressure ✓</li> <li>Absolute pressure</li> </ul>  | <ul style="list-style-type: none"> <li>Gauge pressure ✓</li> <li>Absolute pressure</li> </ul>  | <ul style="list-style-type: none"> <li>Gauge pressure ✓</li> <li>Absolute pressure ✓</li> </ul>  |
| Measuring range      | 400 mbar to 40 bar<br>(6 to 600 psi)   | 400 mbar to 40 bar<br>(6 to 600 psi)   | 400 mbar to 400 bar<br>(6 to 6,000 psi)  |
| Turn down            | Up to 5:1  | Up to 5:1  | Up to 5:1  |
| Measuring cell       | Metallic measuring cell  | Ceramic measuring cell   | Metallic measuring cell  |
| Output               | <ul style="list-style-type: none"> <li>4 to 20 mA</li> <li>0 to 10 V</li> </ul>  | <ul style="list-style-type: none"> <li>4 to 20 mA</li> <li>0 to 10 V</li> </ul>  | <ul style="list-style-type: none"> <li>4 to 20 mA</li> </ul>   |
| Process temperature  | -25 to +85 °C<br>(-13 to +185 °F)  | -25 to +85 °C<br>(-13 to +185 °F)  | -40 to +100 °C<br>(-40 to +212 °F)   |
| Accuracy             | Up to ±0.5 %   | Up to ±0.5 %   | Up to ±0.3 %   |
| Long-term stability  | ±0.2 %/year<br>±0.4 %/5 years<br>±0.45 %/8 years   | ±0.2 %/year<br>±0.4 %/5 years<br>±0.45 %/8 years   | ±0.2 %/year<br>±0.4 %/5 years<br>±0.45 %/8 years   |
| Process connections  | Threads: <ul style="list-style-type: none"> <li>ISO228: G1/4, G1/2</li> <li>ASME: MNPT1/4, MNPT1/2</li> <li>DIN13: Metric M12x1.5</li> </ul> | Threads: <ul style="list-style-type: none"> <li>ISO228: G1/4, G1/2</li> <li>ASME: MNPT1/4, MNPT1/2</li> <li>DIN13: Metric M12x1.5</li> </ul> | Threads: <ul style="list-style-type: none"> <li>ISO228: G1/4, G1/2</li> <li>ASME: MNPT1/4, MNPT1/2</li> <li>DIN13: Metric M12x1.5</li> <li>JIS R1/2</li> </ul> |
| Features             | Very compact, fully welded   | Very compact, fully welded   | Very compact, fully welded   |

PMC21



Standard measurement

- Process pressure

✓

✓

100 mbar to 40 bar  
(1.5 to 600 psi)

Up to 5:1

Ceramic measuring cell

- 4 to 20 mA

-25 to +100 °C  
(-13 to +212 °F)

Up to ±0.3 %

±0.2 %/year  
±0.4 %/5 years  
±0.45 %/8 years

Threads:

- ISO228: G1/4, G1/2
- ASME: MNPT1/4, MNPT1/2
- DIN13: Metric M12x1.5
- JIS R1/2

Very compact,  
fully welded



## Non-hygienic applications – Cerabar

|                             | Cerabar 5x  |   |
|-----------------------------|---|---|
|                             | PMP51   | PMC51   |
|                             |    |    |
| <b>Areas of application</b> | <b>Digital pressure transmitter</b> <ul style="list-style-type: none"> <li>■ Process pressure</li> <li>■ Level</li> </ul>                                 | <b>Digital pressure transmitter</b> <ul style="list-style-type: none"> <li>■ Process pressure</li> <li>■ Level</li> </ul>                                 |
| <b>Measuring principle</b>  | <ul style="list-style-type: none"> <li>■ Gauge pressure ✓</li> <li>■ Absolute pressure ✓</li> </ul>   | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> </ul>  |
| <b>Measuring range</b>      | 400 mbar to 400 bar<br>(6 to 6,000 psi)   | 100 mbar to 40 bar<br>(1.5 to 600 psi)  |
| <b>Turn down</b>            | Up to 20:1  | Up to 20:1  |
| <b>Measuring cell</b>       | Metallic measuring cell   | Ceramic measuring cell  |
| <b>Output</b>               | <ul style="list-style-type: none"> <li>■ 4 to 20 mA analog</li> <li>■ 4 to 20 mA HART®</li> <li>■ PROFIBUS® PA</li> <li>■ FOUNDATION™ fieldbus</li> </ul> | <ul style="list-style-type: none"> <li>■ 4 to 20 mA analog</li> <li>■ 4 to 20 mA HART®</li> <li>■ PROFIBUS® PA</li> <li>■ FOUNDATION™ fieldbus</li> </ul> |
| <b>Process temperature</b>  | -40 to +130 °C (-40 to +266 °F),<br>+150 °C (+302 °F) for 1h  | -40 to +130 °C (-40 to +266 °F)<br>+150 °C (+302 °F) for 1 h  |
| <b>Accuracy</b>             | Up to ±0.075 %  | Up to ±0.075 %  |
| <b>Long-term stability</b>  | ≤0.1 %/year<br>≤0.2 %/5 years<br>≤0.25 %/10 years   | ≤0.2 %/year<br>≤0.4 %/5 years<br>≤0.5 %/10 years  |
| <b>Process connections</b>  | <ul style="list-style-type: none"> <li>■ Thread: ASME, M/NPT; ISO228, G; DIN13, metric</li> <li>■ Flange: ASME, RF; EN1092-1</li> </ul>                   | <ul style="list-style-type: none"> <li>■ Thread: ASME, M/NPT; ISO228, G; JIS; DIN13, metric</li> <li>■ Flange: ASME, RF; EN1092-1; JIS, RF</li> </ul>     |
| <b>Features</b>             | Modular, 1 chamber housing, dot-matrix display  | Modular, 1 chamber housing, dot-matrix display  |



PMP55



**Digital pressure transmitter**

- Process pressure
- Level

✓

✓

400 mbar to 400 bar  
(6 to 6,000 psi)

Up to 20:1

Metallic measuring cell,  
diaphragm seal

- 4 to 20 mA analog
- 4 to 20 mA HART®
- PROFIBUS® PA
- FOUNDATION™ fieldbus

-70 to +400 °C (-94 to +752 °F)

Up to ±0.075 %

≤0.1 %/year

≤0.2 %/5 years


≤0.25 %/10 years

- Thread:  
ASME, M/NPT; ISO228, G;  
DIN13, metric
- Flange:  
ASME, RF; EN1092-1; JIS, RF

Modular, 1 chamber housing,  
dot-matrix display





## Non-hygienic applications – Cerabar

| Cerabar 5xB – new generation  |   |   |
|---|---|---|
|   | PMP51B  | PMC51B  |
|   |    |    |
| <b>Areas of application</b>   | <b>Compact robust pressure transmitter</b> <ul style="list-style-type: none"> <li>Process pressure</li> <li>Level</li> </ul>        | <b>Compact robust pressure transmitter</b> <ul style="list-style-type: none"> <li>Process pressure</li> <li>Level</li> </ul>                      |
| <b>Measuring principle</b>  |   |   |
| <ul style="list-style-type: none"> <li>Gauge pressure</li> <li>Absolute pressure</li> </ul> | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> </ul>  | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> </ul>  |
| <b>Measuring range</b>  | 400 mbar to 400 bar (6 to 6,000 psi)  | 100 mbar to 40 bar (1.5 to 600 psi)   |
| <b>Turn down</b>  | Up to 100:1   | Up to 100:1   |
| <b>Measuring cell</b>   | Metallic measuring cell   | Ceramic measuring cell  |
| <b>Output</b>   | <ul style="list-style-type: none"> <li>4 to 20 mA analog</li> <li>4 to 20 mA HART®</li> <li>Bluetooth</li> </ul>                    | <ul style="list-style-type: none"> <li>4 to 20 mA analog</li> <li>4 to 20 mA HART®</li> <li>Bluetooth</li> </ul>                                  |
| <b>Process temperature</b>  | -70 to +400 °C (-94 to +752 °F)   | -40 to +100 °C (-40 to +212 °F)   |
| <b>Accuracy</b>   | Up to ±0.055 %  | Up to ±0.055 %  |
| <b>Long-term stability</b>  | ≤0.1 %/year<br>≤0.2 %/5 years<br>≤0.25 %/10 years   | ≤0.1 %/year<br>≤0.25 %/5 years<br>≤0.4 %/10 years   |
| <b>Process connections</b>  | <ul style="list-style-type: none"> <li>Thread: ASME, M/NPT; ISO228, G; DIN13, metric</li> <li>Flange: ASME, RF; EN1092-1</li> </ul> | <ul style="list-style-type: none"> <li>Thread: ASME, M/NPT; ISO228, G; JIS; DIN13, metric</li> <li>Flange: ASME, RF; EN1092-1; JIS, RF</li> </ul> |
| <b>Features</b>   | Modular, 1 chamber housing, segment display   | Modular, 1 chamber housing, segment display   |



## Non-hygienic applications – Cerabar 7x

|                      |  | Cerabar 7x   |   |
|----------------------|--|--|---|
|                      |  | PMP71  | PMC71   |
|                      |  |   |  |
| Areas of application | <b>High-performance pressure transmitter</b> <ul style="list-style-type: none"> <li>Process pressure</li> <li>Level</li> </ul>               | <b>High-performance pressure transmitter</b> <ul style="list-style-type: none"> <li>Process pressure</li> <li>Level</li> </ul>               |   |
| Measuring principle  | <ul style="list-style-type: none"> <li>Gauge pressure ✓</li> <li>Absolute pressure ✓</li> </ul>  | <ul style="list-style-type: none"> <li>Gauge pressure ✓</li> <li>Absolute pressure ✓</li> </ul>  |   |
| Measuring range      | 100 mbar to 700 bar (1.5 to 10,500 psi)  | 100 mbar to 40 bar (1.5 to 600 psi)  |   |
| Turn down            | Up to 100:1  | Up to 100:1  |   |
| Measuring cell       | Metallic measuring cell  | Ceramic measuring cell   |   |
| Output               | <ul style="list-style-type: none"> <li>4 to 20 mA HART®</li> <li>PROFIBUS® PA</li> <li>FOUNDATION™ fieldbus</li> </ul>                       | <ul style="list-style-type: none"> <li>4 to 20 mA HART®</li> <li>PROFIBUS® PA</li> <li>FOUNDATION™ fieldbus</li> </ul>                       |   |
| Process temperature  | -40 to +125 °C (-40 to +257 °F)  | -20 to +150 °C (-4 to +257 °F)   |   |
| Accuracy             | Up to ±0.05 %  | Up to ±0.05 %  |   |
| Long-term stability  | ≤0.05 %/year<br>≤0.07 %/5 years<br>≤0.1 %/10 years   | ≤0.05 %/year<br>≤0.08 %/5 years<br>≤0.1 %/10 years   |   |
| Process connections  | <ul style="list-style-type: none"> <li>Thread: ASME, M/NPT; ISO228, G; DIN13, metric</li> <li>Flange: ASME, RF; EN1092-1; JIS, RF</li> </ul> | <ul style="list-style-type: none"> <li>Thread: ASME, M/NPT; ISO228, G; DIN13, metric</li> <li>Flange: ASME, RF; EN1092-1; JIS, RF</li> </ul> |   |
| Features             | Modular, 2 chamber housing, dot-matrix display   | Modular, 2 chamber housing, dot-matrix display   |   |

PMP75



**High-performance pressure transmitter**

- Process pressure
- Level

✓

✓

400 mbar to 400 bar  
(6 to 6,000 psi)

Up to 100:1

Metallic measuring cell,  
diaphragm seal

- 4 to 20 mA HART®
- PROFIBUS® PA
- FOUNDATION™ fieldbus

-70 to +400 °C (-94 to +752 °F)

Up to ±0.075 %

≤0.05 %/year  
≤0.07 %/5 years  
≤0.1 %/10 years

- Thread:  
ASME, M/NPT; ISO228, G;  
DIN13, metric
- Flange:  
ASME, RF; EN1092-1; JIS, RF

Modular, 2 chamber housing,  
dot-matrix display





## Non-hygienic applications – Cerabar

### Cerabar 7xB – new generation

PMP71B





PMC71B



|   | PMP71B  | PMC71B  |
|---|---|---|
| <b>Areas of application</b>   | <b>High performance process pressure measurement</b> <ul style="list-style-type: none"> <li>▪ Process pressure</li> <li>▪ Level</li> </ul>  | <b>High performance process pressure measurement</b> <ul style="list-style-type: none"> <li>▪ Process pressure</li> <li>▪ Level</li> </ul>            |
| <b>Measuring principle</b>  |   |   |
| <ul style="list-style-type: none"> <li>▪ Gauge pressure</li> <li>▪ Absolute pressure</li> </ul> | ✓<br>✓  | ✓<br>✓  |
| <b>Measuring range</b>  | 400 mbar to 700 bar (6 to 10,150 psi)   | 100 mbar to 40 bar (1.5 to 600 psi)   |
| <b>Turn down</b>  | Up to 100:1   | Up to 100:1   |
| <b>Measuring cell</b>   | Metallic measuring cell   | Ceramic measuring cell  |
| <b>Output</b>   | <ul style="list-style-type: none"> <li>▪ 4 to 20 mA HART</li> <li>▪ Bluetooth</li> </ul>  | <ul style="list-style-type: none"> <li>▪ 4 to 20 mA HART</li> <li>▪ Bluetooth</li> </ul>  |
| <b>Process temperature</b>  | -70 to +400 °C (-94 to +752 °F)   | -25 to +150 °C (-13 to +302 °F)   |
| <b>Accuracy</b>   | Up to ±0.025 %  | Up to ±0.025 %  |
| <b>Long-term stability</b>  | ≤0.05 %/year<br>≤0.07 %/5 years<br>≤0.1 %/10 years  | ≤0.05 %/year<br>≤0.08 %/5 years<br>≤0.1 %/10 years  |
| <b>Process connections</b>  | <ul style="list-style-type: none"> <li>▪ Thread: ASME, M/NPT; ISO228, G; JIS; DIN13, metric</li> <li>▪ Flange: ASME, RF; EN1092-1; JIS, RF</li> <li>▪ Separator (thread), barrel (flange), pancake</li> </ul> | <ul style="list-style-type: none"> <li>▪ Thread: ASME, M/NPT; ISO228, G; JIS; DIN13, metric</li> <li>▪ Flange: ASME, RF; EN1092-1; JIS, RF</li> </ul> |
| <b>Features</b>   | Modular, 1 or 2 chamber housing, graphic or segment display, Heartbeat Technology, HistoROM   | Modular, 1 or 2 chamber housing, graphic or segment display, Heartbeat Technology, HistoROM   |






## Non-hygienic applications – Deltabar

|                             | Deltabar 5x   | Deltabar 5xB – new generation   |
|-----------------------------|---|---|
|                             | <b>PMD55</b><br>   | <b>PMD55B</b><br>                                |
| <b>Areas of application</b> | <b>Compact differential pressure transmitter</b> <ul style="list-style-type: none"> <li>■ Differential pressure</li> <li>■ Level</li> <li>■ Flow</li> </ul> | <b>Compact robust differential pressure transmitter</b> <ul style="list-style-type: none"> <li>■ Level</li> <li>■ Flow</li> </ul> |
| <b>Measuring principle</b>  | Differential pressure   | Differential pressure   |
| <b>Measuring range</b>      | 10 mbar to 40 bar (0.15 to 600 psi)   | 30 mbar to 40 bar (0.45 to 600 psi)   |
| <b>Turn down</b>            | Up to 20:1  | Up to 100:1   |
| <b>Measuring cell</b>       | Metallic measuring cell   | Metallic measuring cell   |
| <b>Output</b>               | <ul style="list-style-type: none"> <li>■ 4 to 20 mA HART®</li> <li>■ PROFIBUS® PA</li> <li>■ FOUNDATION™ fieldbus</li> </ul>                                | <ul style="list-style-type: none"> <li>■ 4 to 20 mA HART</li> <li>■ Bluetooth</li> </ul>  |
| <b>Process temperature</b>  | -40 to +85 °C (-40 to +185 °F)  | -40 to +110 °C (-40 to +230 °F)   |
| <b>Accuracy</b>             | Up to ±0.075 %  | Up to ±0.055 %  |
| <b>Long-term stability</b>  | ≤0.05 %/year<br>≤0.13 %/5 years<br>≤0.23 %/10 years   | ≤0.05 %/year<br>≤0.13 %/5 years<br>≤0.23 %/10 years   |
| <b>Process connections</b>  | NPT1/4-18 IEC61518  | <ul style="list-style-type: none"> <li>■ IEC61518, DIN19213, coplanar compatible, NPT1/4-18</li> <li>■ RC1/4"</li> </ul>          |
| <b>Features</b>             | Modular, 1 chamber housing, dot-matrix display  | Modular, 1 chamber housing, segment display   |



## Non-hygienic applications – Deltabar

| Deltabar 7x          |  |   |  |  |
|----------------------|--|---|--|--|
|                      | PMD75  | FMD77   | FMD78  |  |
|                      |   |    |    |  |
| Areas of application | <b>High-performance differential pressure transmitter</b> <ul style="list-style-type: none"> <li>■ Differential pressure</li> <li>■ Level</li> <li>■ Flow</li> </ul> | <b>High-performance differential pressure transmitter</b> <ul style="list-style-type: none"> <li>■ Differential pressure</li> <li>■ Level</li> </ul>                          | <b>High-performance differential pressure transmitter</b> <ul style="list-style-type: none"> <li>■ Differential pressure</li> <li>■ Level</li> </ul> |  |
| Measuring principle  | Differential pressure  | Differential pressure   | Differential pressure  |  |
| Measuring range      | 10 mbar to 40 bar (0.15 to 600 psi)  | 100 mbar to 16 bar (1.5 to 240 psi)   | 100 mbar to 40 bar (1.5 to 600 psi)  |  |
| Turn down            | Up to 100:1  | Up to 100:1   | Up to 100:1  |  |
| Measuring cell       | Metallic measuring cell  | Metallic measuring cell, diaphragm seal   | Metallic measuring cell, diaphragm seal  |  |
| Output               | <ul style="list-style-type: none"> <li>■ 4 to 20 mA HART®</li> <li>■ PROFIBUS® PA</li> <li>■ FOUNDATION™ fieldbus</li> </ul>   | <ul style="list-style-type: none"> <li>■ 4 to 20 mA HART®</li> <li>■ PROFIBUS® PA</li> <li>■ FOUNDATION™ fieldbus</li> </ul>  | <ul style="list-style-type: none"> <li>■ 4 to 20 mA HART®</li> <li>■ PROFIBUS® PA</li> <li>■ FOUNDATION™ fieldbus</li> </ul>                         |  |
| Process temperature  | -50 to +85 °C (-58 to +185 °F)   | -70 to +400 °C (-94 to +752 °F)   | -70 to +400 °C (-94 to +752 °F)  |  |
| Accuracy             | Up to ±0.035 %   | Up to ±0.075 %  | Up to ±0.075 %   |  |
| Long-term stability  | ≤0.1 %/year<br>≤0.2 %/5 years  | ≤0.08 %/year<br>≤0.14 %/5 years<br>≤0.27 %/10 years   | ≤0.08 %/year<br>≤0.14 %/5 years<br>≤0.27 %/10 years  |  |
| Process connections  | <ul style="list-style-type: none"> <li>■ IEC61518 1/4-18NPT</li> <li>■ RC1/4"</li> </ul>   | Low pressure side: <ul style="list-style-type: none"> <li>■ RC1/4"</li> </ul> High pressure side: <ul style="list-style-type: none"> <li>■ Flanges: DIN, ASME, JIS</li> </ul> | <ul style="list-style-type: none"> <li>■ Flange: ASME, RF; EN1092-1; JIS, RF</li> <li>■ Separator (thread), pancake</li> </ul>                       |  |
| Features             | Modular, 2 chamber housing, dot-matrix display   | Modular, 2 chamber housing, dot-matrix display  | Modular, 2 chamber housing, dot-matrix display   |  |



**Deltabar 7xB - new generation**
**PMD75B**

**PMD78B**

**High performance differential pressure measurement**

- Differential pressure
- Level
- Flow

**High performance differential pressure measurement**

- Differential pressure
- Level

Differential pressure

Differential pressure

10 mbar to 40 bar (0.15 to 600 psi) on both sides

100 mbar to 40 bar (1.5 to 600 psi) on both sides

Up to 100:1

Up to 100:1

Metallic measuring cell

Metallic measuring cell, diaphragm seal

- 4 to 20 mA HART®
- Bluetooth

- 4 to 20 mA HART®
- Bluetooth

-40 to +110 °C (-40 to +230 °F)

-70 to +400 °C (-94 to +752 °F)

Up to ±0.035 %

Up to ±0.075 %

≤0.025 %/year  
 ≤0.05 %/5 years  
 ≤0.1 %/10 years

≤0.025 %/year  
 ≤0.05 %/5 years  
 ≤0.1 %/10 years



- IEC61518, DIN19213, coplanar compatible, NPT1/4-18
- RC1/4"

- Flange: ASME, RF; EN1092-1; JIS, RF
- Separator (thread), barrel (flange), pancake

Modular, 1 or 2 chamber housing, graphic or segment display, Heartbeat Technology, HistoROM




Modular, 1 or 2 chamber housing, graphic or segment display, Heartbeat Technology, HistoROM

## Non-hygienic applications – Deltabar

|                             | Deltabar 7x   |   |
|-----------------------------|---|---|
|                             | FMD71   | FMD72   |
|                             |    |    |
| <b>Areas of application</b> | <b>High-performance electronic dp level measurement</b> <ul style="list-style-type: none"> <li>▪ Electronic differential pressure</li> <li>▪ Level</li> </ul> | <b>High-performance electronic dp level measurement</b> <ul style="list-style-type: none"> <li>▪ Electronic differential pressure</li> <li>▪ Level</li> </ul> |
| <b>Measuring principle</b>  | Electronic differential pressure  | Electronic differential pressure  |
| <b>Measuring range</b>      | 100 mbar to 40 bar<br>(1.5 to 600 psi)  | 400 mbar to 10 bar<br>(6 to 150 psi)  |
| <b>Turn down</b>            | Up to 100:1   | Up to 100:1   |
| <b>Measuring cell</b>       | Ceramic measuring cell  | Metallic measuring cell   |
| <b>Output</b>               | ▪ 4 to 20 mA HART®  | ▪ 4 to 20 mA HART®  |
| <b>Process temperature</b>  | -25 to +125 °C/150 °C<br>(-13 to +257 °F/302 °F)<br>higher temperatures on request  | -40 to +125 °C/150 °C<br>(-40 to +257 °F/302 °F)<br>higher temperatures on request  |
| <b>Accuracy</b>             | single sensor up to ±0.05 %,<br>system up to ±0.075 %   | single sensor up to ±0.05 %,<br>system up to ±0.075 %   |
| <b>Long-term stability</b>  | ≤0.05 %/year<br>≤0.2 %/10 years   | ≤0.05 %/year<br>≤0.1 %/10 years   |
| <b>Process connections</b>  | Thread, flange, flush-mounted connections   | Thread, flange, flush-mounted connections   |
| <b>Features</b>             | Modular, 2 chamber housing,<br>dot-matrix display   | Modular, 2 chamber housing,<br>dot-matrix display   |



## Non-hygienic applications

|                      | Waterpilot 1x  | Waterpilot 2x   | Deltapilot 5x  |
|----------------------|--|---|--|
|                      | <p>FMX11</p>  | <p>FMX21</p>                         | <p>FMB51</p>                                  |
| Areas of application | Level probe for level measurement in fresh water   | Level probe for level measurement in fresh water, waste water and salt water  | Compact level measurement  |
| Measuring principle  | Hydrostatic pressure, gauge pressure   | Hydrostatic pressure, gauge and absolute pressure   | Hydrostatic pressure, gauge pressure   |
| Measuring range      | 200 mbar to 2 bar (3 to 30 psi)  | 100 mbar to 20 bar (1.5 to 300 psi)   | 100 mbar to 10 bar (1.5 to 150 psi)  |
| Turn down            | Up to 10:1   | Up to 10:1  | Up to 20:1   |
| Measuring cell       | Metallic measuring cell  | Ceramic measuring cell  | Contite metallic measuring cell  |
| Output               | <ul style="list-style-type: none"> <li>4 to 20 mA analog</li> </ul>                            | <ul style="list-style-type: none"> <li>4 to 20 mA analog</li> <li>4 to 20 mA HART®</li> <li>optional Pt100</li> </ul> | <ul style="list-style-type: none"> <li>4 to 20 mA HART®</li> <li>PROFIBUS® PA</li> <li>FOUNDATION™ fieldbus</li> </ul>         |
| Process temperature  | -10 to +70 °C (+14 to +158 °F)   | -10 to +70 °C (+14 to +158 °F)  | -10 to +85 °C (+14 to +185 °F)   |
| Accuracy             | Up to ±0.35 %  | Up to ±0.1 %  | Up to ±0.1 %   |
| Long-term stability  | <ul style="list-style-type: none"> <li>≤0.1 %/year</li> <li>≤0.25 %/5 years</li> </ul>         | <ul style="list-style-type: none"> <li>≤0.1 %/year</li> <li>≤0.25 %/5 years</li> </ul>                                | <ul style="list-style-type: none"> <li>≤0.1 %/year</li> <li>≤0.25 %/5 years</li> </ul>   |
| Process connections  | Suspension clamp, cable gland<br>G 1½" A or NPT 1½"  | Suspension clamp, cable gland<br>G 1½" A or NPT 1½"   | <ul style="list-style-type: none"> <li>Thread: ASME, M/NPT; ISO228, G;</li> <li>Flange: ASME, RF; EN1092-1; JIS, RF</li> </ul> |
| Features             | Very compact level probe   | Level probe   | Modular, 1 chamber housing, dot-matrix display   |

# Waterpilot/Deltapilot

FMB52



FMB53



Compact level measurement

Compact level measurement

Hydrostatic pressure, gauge pressure

Hydrostatic pressure, gauge pressure

100 mbar to 10 bar  
(1.5 to 150 psi)

100 mbar to 10 bar  
(1.5 to 150 psi)

Up to 20:1

Up to 20:1

Contite metallic measuring cell

Contite metallic measuring cell

- 4 to 20 mA HART®
- PROFIBUS® PA
- FOUNDATION™ fieldbus

- 4 to 20 mA HART®
- PROFIBUS® PA
- FOUNDATION™ fieldbus

With PE cable: -10 to +70 °C (+14 to +158 °F)  
With FEP cable: -10 to +80 °C (+14 to +176 °F)

With PE cable: -10 to +70 °C (+14 to +158 °F)  
With FEP cable: -10 to +80 °C (+14 to +176 °F)

Up to ±0.1 %

Up to ±0.1 %

≤0.05 %/year  
≤0.125 %/5 years

≤0.05 %/year  
≤0.125 %/5 years

- Thread:  
ASME, M/NPT; ISO228, G;
- Flange:  
ASME, RF; EN1092-1; JIS, RF




Suspension clamp





Modular, 1 chamber housing,  
dot-matrix display

Modular, 1 chamber housing,  
dot-matrix display





## Hygienic applications – Ceraphant/Cerabar

|   | Ceraphant 3x   | Cerabar 2x  | Cerabar 5x   |
|---|--|---|--|
|   | <b>PTP33B</b><br>   | <b>PMP23</b><br> | <b>PMP51</b><br>                                      |
| <b>Areas of application</b>   | <b>Standard measurement</b> <ul style="list-style-type: none"> <li>Process pressure</li> <li>Pressure switch</li> </ul>  | <b>Standard measurement</b> <ul style="list-style-type: none"> <li>Process pressure</li> </ul>    | <b>Compact pressure transmitter</b> <ul style="list-style-type: none"> <li>Process pressure</li> <li>Level</li> </ul>                  |
| <b>Measuring principle</b>  |  |   |  |
| <ul style="list-style-type: none"> <li>Gauge pressure</li> </ul>    | ✓  | ✓   | ✓  |
| <ul style="list-style-type: none"> <li>Absolute pressure</li> </ul> | ✓  | ✓   | ✓  |
| <b>Measuring range</b>  | 400 mbar to 40 bar<br>(6 to 600 psi)   | 400 mbar to 40 bar<br>(6 to 600 psi)  | 400 mbar to 400 bar<br>(6 to 6,000 psi)  |
| <b>Turn down</b>  | Up to 5:1  | Up to 5:1   | Up to 20:1   |
| <b>Measuring cell</b>   | Metallic measuring cell  | Metallic measuring cell   | Metallic measuring cell  |
| <b>Output</b>   | <ul style="list-style-type: none"> <li>1 x switch output (PNP)</li> <li>2 x switch outputs (PNP)</li> <li>1 x switch output (PNP) + 4 to 20 mA analog</li> </ul> | <ul style="list-style-type: none"> <li>4 to 20 mA analog</li> <li>IO- Link</li> </ul>             | <ul style="list-style-type: none"> <li>4 to 20 mA analog</li> <li>HART®</li> <li>PROFIBUS® PA</li> <li>FOUNDATION™ fieldbus</li> </ul> |
| <b>Process temperature</b>  | -10 to +100 °C<br>(14 to +212 °F) +135 °C<br>(+275 °F) for max. 1 hour   | -10 to +100 °C<br>(-40 to +212 °F) +135 °C<br>(+275 °F) for max. 1 hour                           | -40 to +130 °C<br>(-40 to +266 °F)<br>+150 °C for 1 h (+302 °F for 1h)   |
| <b>Accuracy</b>   | Up to ±0.3 %   | Up to ±0.3 %  | Up to ±0.075 %   |
| <b>Long-term stability</b>  | ≤0.2 %/year  | ≤0.2 %/year   | 0.1 %/year<br>0.2 %/5 years<br>0.25 %/10 years   |
| <b>Process connections</b>  | Thread, flush-mounted hygiene connections, EHEDG,3A  | Thread, flush-mounted hygiene connections, EHEDG,3A   | Wide range of flush-mounted hygiene connections EHEDG, 3A, NSF, CoC-ASME BPE   |
| <b>Features</b>   | Very compact, fully welded, display  | Very compact, fully welded  | Modular, 1 chamber housing, dot-matrix display   |

|  |  | Cerabar 7x   |   |   |  |
|--|--|--|---|---|--|
|  | PMC51  | PMP55  | PMC71   | PMP75   |  |
|  |   |   |    |    |  |
|  | <b>Compact pressure transmitter</b><br><ul style="list-style-type: none"> <li>■ Process pressure</li> <li>■ Level</li> </ul>                   | <b>Compact pressure transmitter</b><br><ul style="list-style-type: none"> <li>■ Process pressure</li> <li>■ Level</li> </ul>                   | <b>High-performance pressure measurement</b><br><ul style="list-style-type: none"> <li>■ Process pressure</li> <li>■ Level</li> </ul> | <b>High-performance pressure measurement</b><br><ul style="list-style-type: none"> <li>■ Process pressure</li> <li>■ Level</li> </ul> |  |
|  | ✓  | ✓  | ✓   | ✓   |  |
|  | ✓  | ✓  | ✓   | ✓   |  |
|  | 100 mbar to 40 bar<br>(1.5 to 600 psi)   | 400 mbar to 400 bar<br>(6 to 6,000 psi)  | 100 mbar to 40 bar<br>(1.5 to 600 psi)  | 400 mbar to 400 bar<br>(6 to 6,000 psi)   |  |
|  | Up to 20:1   | Up to 20:1   | Up to 100:1   | Up to 100:1   |  |
|  | Ceramic measuring cell   | Metallic measuring cell,<br>diaphragm seal   | Ceramic measuring cell  | Metallic measuring cell,<br>diaphragm seal  |  |
|  | <ul style="list-style-type: none"> <li>■ 4 to 20 mA analog</li> <li>■ HART®</li> <li>■ PROFIBUS® PA</li> <li>■ FOUNDATION™ fieldbus</li> </ul> | <ul style="list-style-type: none"> <li>■ 4 to 20 mA analog</li> <li>■ HART®</li> <li>■ PROFIBUS® PA</li> <li>■ FOUNDATION™ fieldbus</li> </ul> | <ul style="list-style-type: none"> <li>■ 4 to 20 mA HART®</li> <li>■ PROFIBUS® PA</li> <li>■ FOUNDATION™ fieldbus</li> </ul>          | <ul style="list-style-type: none"> <li>■ 4 to 20 mA HART®</li> <li>■ PROFIBUS® PA</li> <li>■ FOUNDATION™ fieldbus</li> </ul>          |  |
|  | -40 to +130 °C<br>(-40 to +266 °F)<br>+150 °C (+302 °F) for 1 h  | -70 to +400 °C<br>(-94 to +752 °F)   | -20 to +150 °C<br>(-4 to +257 °F)   | -70 to +400 °C<br>(-94 to +752 °F)  |  |
|  | Up to ±0.075 %   | Up to ±0.075 %   | Up to ±0.025 %  | Up to ±0.075 %  |  |
|  | 0.2 %/year<br>0.4 %/5 years<br>0.5 %/10 years  | 0.1 %/year<br>0.2 %/5 years<br>0.25 %/10 years   | 0.05 %/year<br>0.08 %/5 years<br>0.1 %/10 years   | 0.05 %/year<br>0.07 %/5 years<br>0.1 %/10 years   |  |
|  | Wide range of flush-mounted hygiene connections EHEDG, 3A, NSF, CoC-ASME BPE   | Wide range of flush-mounted hygiene connections EHEDG, 3A, NSF, CoC-ASME BPE   | Wide range of flush-mounted hygiene connections EHEDG, 3A   | Wide range of flush-mounted hygiene connections EHEDG, 3A   |  |
|  | Modular, 1 chamber housing, dot-matrix display   | Modular, 1 chamber housing, dot-matrix display   | Modular, 2 chamber housing, dot-matrix display  | Modular, 2 chamber housing, dot-matrix display  |  |

## Hygienic applications – Deltapilot/Deltabar

|                      | Deltapilot 5x  | Deltapilot 7x   |
|----------------------|--|---|
|                      | FMB50  | FMB70   |
|                      |                                       |    |
| Areas of application | <b>Compact level measurement</b> <ul style="list-style-type: none"> <li>Process pressure</li> <li>Level</li> </ul>     | <b>High-performance level measurement</b> <ul style="list-style-type: none"> <li>Process pressure</li> <li>Level</li> </ul> |
| Measuring principle  | Hydrostatic level<br>Gauge pressure  | Hydrostatic level<br>Gauge pressure   |
| Measuring range      | 100 mbar to 10 bar<br>(1.5 to 150 psi)   | 100 mbar to 10 bar<br>(1.5 to 150 psi)  |
| Turn down            | Up to 20:1   | Up to 100:1   |
| Measuring cell       | Contite metallic measuring cell  | Contite metallic measuring cell   |
| Output               | <ul style="list-style-type: none"> <li>4 to 20 mA HART®</li> <li>PROFIBUS® PA</li> <li>FOUNDATION™ fieldbus</li> </ul> | <ul style="list-style-type: none"> <li>4 to 20 mA HART®</li> <li>PROFIBUS® PA</li> <li>FOUNDATION™ fieldbus</li> </ul>      |
| Process temperature  | -10 to +100 °C (+14 to +212 °F)<br>+135 °C (+275 °F) for 30 min.   | -10 to +100 °C (+14 to +212 °F)<br>+135 °C (+275 °F) for 30 min.  |
| Accuracy             | Up to ±0.1 %   | Up to ±0.075 %  |
| Long-term stability  | ≤0.05 %/year<br>≤0.25 %/5 years  | ≤0.05 %/year<br>≤0.125 %/5 years  |
| Process connections  | Wide range of flush-mounted hygiene connections<br>EHEDG, 3A, NSF, KTW, WHG, CoC-ASME BPE                              | Wide range of flush-mounted hygiene connections<br>EHEDG, 3A, CoC-ASME BPE  |
| Design               | Modular, 1 chamber housing, dot-matrix display   | Fully modular, 2 chamber housing, dot-matrix display  |

**Deltabar 7x**

FMD78

**High-performance pressure measurement**

- Differential pressure
- Level

Differential pressure

100 mbar to 40 bar  
(1.5 to 600 psi)

Up to 100:1

Metallic measuring cell, diaphragm seal

- 4 to 20 mA HART®
- PROFIBUS® PA
- FOUNDATION™ fieldbus

-70 to +400 °C  
(-94 to +752 °F)

Up to ±0.075 %

≤0.08 %/year  
≤0.2 %/10 yearsWide range of flush-mounted hygiene  
connections  
EHEDG, 3AFully modular, 2 chamber housing,  
dot-matrix display

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