



# STORK SOLUTIONS

## feel.the.difference.

### multi sensor transmitter feel FM



The transmitter platform **feel FM** is perfectly suited for the simultaneous measurement of a wide variety of variables such as temperature, humidity, differential pressure, CO2 or VOC in room or duct. Thanks to the modular design of the device, up to five measured values can be recorded and output simultaneously. The use of the most accurate sensor element for each value guarantees reliable precision across all measured parameters. All common analogue signals and optionally an RS485 modbus interface are available as output signals. For convenient mounting, a snap-in frame or a channel flange is supplied, depending on the version. Parameters such as measuring range, unit or output signal can be adapted to the on-site conditions by the user via DIP switch or software. A high-resolution 2.8" TFT display can be selected as an option.

Applications:

- Building automation
- Fan control
- Incubators
- Cleanroom monitoring
- Room pressure control

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## Datasheet

| Measurement data      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--|---------|----------------|----------------|-------|--------|---------|--------|---------|---------|---------|---------|----------|----------|----------|----------|
| Differential pressure |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |
| Measurement range     | <div>differential pressure</div> <div><b>Variant P5</b><br/><b>0 hPa... 1000 hPa (Standard)</b><br/>selectable between:<br/>0...250 hPa   0... 500 hPa   0... 750 hPa   0... 1000 hPa   -250 hPa... 250 hPa   -500... 500 hPa   -750... 750 hPa   -1000... 1000 hPa</div> <div><b>Variant P4</b><br/><b>0 hPa... 100 hPa (Standard)</b><br/>selectable between:<br/>0...25 hPa   0... 50 hPa   0... 75 hPa   0... 100 hPa   -25 hPa... 25 hPa   -50... 50 hPa   -75... 75 hPa   -100... 100 hPa</div> <div><b>Variant P3</b><br/><b>0... 10 hPa (Standard)</b><br/>selectable between:<br/>0...2,5 hPa   0... 5 hPa   0... 7,5 hPa   0... 10 hPa   -2,5 hPa... 2,5 hPa   -5... 5 hPa   -7,5... 7,5 hPa   -10... 10 hPa</div> <div><b>Variant P2</b><br/><b>0... 1 hPa (Standard)</b><br/>selectable between:<br/>0...25 Pa   0... 50 Pa   0... 75 Pa   0... 100 Pa   -25 Pa... 25 Pa   -50... 50 Pa   -75... 75 Pa   -100... 100 Pa</div> <div>Measuring range within -100... 100% of the basic measuring range freely configurable via software</div> |                |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |
| Units                 | Selectable via software: Pa, hPa, kPa, mbar, bar, psi und mmH2O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |
| Overall accuracy      | 1,0 % FS<br>0,5 % FS optional<br>0,2 % FS optional                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |
| Long-term stability:  | ≤ 0,1% FS/Year<br><br>0% FS/Year with optional auto-zero function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |
| Temperature drift     | ≤ 0,03% (FS/K)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |
| Overload limits       | <table><tr><th>Variant</th><th>Proof pressure</th><th>Burst pressure</th></tr><tr><td>1 hPa</td><td>70 hPa</td><td>200 hPa</td></tr><tr><td>10 hPa</td><td>100 hPa</td><td>200 hPa</td></tr><tr><td>100 hPa</td><td>800 hPa</td><td>1000 hPa</td></tr><tr><td>1000 hPa</td><td>3000 hPa</td><td>5000 hPa</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |  | Variant | Proof pressure | Burst pressure | 1 hPa | 70 hPa | 200 hPa | 10 hPa | 100 hPa | 200 hPa | 100 hPa | 800 hPa | 1000 hPa | 1000 hPa | 3000 hPa | 5000 hPa |
| Variant               | Proof pressure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Burst pressure |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |
| 1 hPa                 | 70 hPa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 200 hPa        |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |
| 10 hPa                | 100 hPa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 200 hPa        |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |
| 100 hPa               | 800 hPa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1000 hPa       |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |
| 1000 hPa              | 3000 hPa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5000 hPa       |  |         |                |                |       |        |         |        |         |         |         |         |          |          |          |          |

|                                 |                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| time constant                   | Selectable via DIP-switch or software<br>50 ms (Standard)<br>500 ms<br>2000 ms<br>5000 ms                                                                                                                                                                                                                                                                                      |
| <b>Humidity and temperature</b> |                                                                                                                                                                                                                                                                                                                                                                                |
| Measurement range               | <b>humidity</b><br>selectable between:<br>Relative humidity: 0 ... 100 % rH<br>Enthalpy: -50 ... 400 kJ/kg<br>Absolute humidity: 0 ... 150 g/m <sup>3</sup><br><br><b>temperature</b><br>selectable between:<br>-40... 80 °C<br>-20... 60 °C<br>0... 50 °C<br><br><i>Measuring range within -100... 100% of the basic measuring range<br/>freely configurable via software</i> |
| Units                           | Selectable via software:<br>°C (Standard)<br>°F<br>K                                                                                                                                                                                                                                                                                                                           |
| Overall accuracy                | <b>humidity</b> ± 2 % rH @ 10 ... 90 % rH &<br>± 3 % @ range ≠ 10 ... 90 % rH<br><br><b>temperature</b><br>± 0,3 K @ 0 ... 50 °C & ± 0,5 K @ Range ≠ 0 ... 50 °C                                                                                                                                                                                                               |
| Long-term stability:            | <b>humidity</b> ± 0,5 % rH/Year<br><br><b>temperature</b> ± 0,05 K/Year<br><br>Adjustment can be done<br>via push buttons on PCB or software                                                                                                                                                                                                                                   |
| <b>CO2</b>                      |                                                                                                                                                                                                                                                                                                                                                                                |
| Measurement method              | Dual wavelength NDIR (non-dispersive infrared technology)                                                                                                                                                                                                                                                                                                                      |
| Measurement range               | <b>Variant C2</b> 0 hPa... 2000 ppm (Standard)<br><br><b>Variant C5</b><br><b>0 hPa... 5000 ppm (Standard)</b><br>selectable between: 0...2000 ppm   0... 5000 ppm                                                                                                                                                                                                             |

|                        |                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <i>Measuring range within -100... 100% of the basic measuring range freely configurable via software</i>                                                                                                                                                                                                                                                                            |
| Overall accuracy       | <b>Variant C2</b><br><b>0 hPa... 2000 ppm</b><br>$\pm 50 \text{ ppm} + 2\% \text{ of mv}$<br><br><b>Variant C5</b><br><b>0 hPa... 5000 ppm</b><br>$\pm 50 \text{ ppm} + 3\% \text{ of mv}$                                                                                                                                                                                          |
| time constant          | Selectable via software 30000 ms (Standard)                                                                                                                                                                                                                                                                                                                                         |
| <b>VOC</b>             |                                                                                                                                                                                                                                                                                                                                                                                     |
| Measurement method     | Metal oxide sensor                                                                                                                                                                                                                                                                                                                                                                  |
| Measurement range      | <b>VOC-Index</b> 0... 500 VOC<br><br><b>Indoor Air Quality</b><br>0... 100% IAQ<br><br><i>Measuring range within -100... 100% of the basic measuring range freely configurable via software</i>                                                                                                                                                                                     |
| Overall accuracy       | $\pm 15 \% \text{ FS}$                                                                                                                                                                                                                                                                                                                                                              |
| Repeatability          | $\pm 5 \% \text{ FS}$                                                                                                                                                                                                                                                                                                                                                               |
| Long-term stability:   | < 50 ppm                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Electrical data</b> |                                                                                                                                                                                                                                                                                                                                                                                     |
| Power supply           | 22...27 VAC (50 Hz) / 19...31 VDC                                                                                                                                                                                                                                                                                                                                                   |
| Output signal          | Selectable via DIP-switch or software*<br><br>0-10 V (Standard)<br>2-10 V<br>4-20 mA<br>0-20 mA<br><br>Optional:<br>RS485-Interface with Modbus<br><br>Optional:<br>2 open-collector outputs with a maximum switching voltage of 24VDC and 1A (not short circuit proof)<br><br><i>*Switching between current and voltage can only be by a switch on the PCB and not by software</i> |

|                        |                                                                                                                                                                      |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |                                                                                                                                                                      |
| Electrical connections | Spring loaded terminals max. 2.5 mm <sup>2</sup>                                                                                                                     |
| Communication          | Mini-USB type B, USB 2.0                                                                                                                                             |
| Ambient conditions     |                                                                                                                                                                      |
| Operating conditions   | Humidity 0... 95% rF (non-condensing)<br>Temperature -20 °C – 80 °C*                                                                                                 |
| Storing conditions     | Humidity 0... 95% rF (non-condensing)<br>Temperature -20 °C - 80 °C*                                                                                                 |
| Ambient pressure       | 600 ... 1200 hPa                                                                                                                                                     |
| Housing                |                                                                                                                                                                      |
| Dimensions             | Basic housing: 109,8 x 89,0 x 44,1 mm (W x H x D)<br><br>Variant room sensor<br>Sensor tube: 50 mm x 12 mm<br><br>Variant duct sensor<br>Sensor tube: 200 mm x 12 mm |
| Filter material        | 30 µm pore size<br><br>Optional:<br>Sinter filter, 10 µm pore size                                                                                                   |
| Cable glands           | Skintop M16 x 1,5 mm (4,5 - 10 mm)                                                                                                                                   |
| Protection type        | IP65                                                                                                                                                                 |
| Display                | 2,8" TFT-Display 320 x 240 px (optional)                                                                                                                             |

## Model Code

|                       | Example          | FM | HT | P2 | S | X | XX | X | R | D | A | W | X | X |
|-----------------------|------------------|----|----|----|---|---|----|---|---|---|---|---|---|---|
| Model name            | Feel Multisensor | FM |    |    |   |   |    |   |   |   |   |   |   |   |
| Humidity&Temperature  | None             | XX |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | Yes              | HT |    |    |   |   |    |   |   |   |   |   |   |   |
| Differential pressure | None             | XX |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | 1 hPa            | P2 |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | 10 hPa           | P3 |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | 100 hPa          | P4 |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | 1000 hPa         | P5 |    |    |   |   |    |   |   |   |   |   |   |   |
| Accuracy pressure     | None             | X  |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | 1% FS            | C  |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | 0,5% FS          | S  |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | 0,2% FS          | P  |    |    |   |   |    |   |   |   |   |   |   |   |
| Auto-Zero pressure    | None             | X  |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | Yes              | Z  |    |    |   |   |    |   |   |   |   |   |   |   |
| CO2                   | None             | XX |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | 0... 2000 ppm    | C2 |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | 0... 5000 ppm    | C5 |    |    |   |   |    |   |   |   |   |   |   |   |
| VOC                   | None             | X  |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | Yes              | V  |    |    |   |   |    |   |   |   |   |   |   |   |
| Sensor variant        | room sensor      | R  |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | duct sensor      | D  |    |    |   |   |    |   |   |   |   |   |   |   |
| TFT-Display           | None             | X  |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | Yes              | D  |    |    |   |   |    |   |   |   |   |   |   |   |
| Output                | Analog output    | A  |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | RS485 Modbus     | M  |    |    |   |   |    |   |   |   |   |   |   |   |
| Filter material       | Wire mesh filter | W  |    |    |   |   |    |   |   |   |   |   |   |   |
|                       | Sinter filter    | S  |    |    |   |   |    |   |   |   |   |   |   |   |