

Litronic-FMS

Planar sensor P80-CAN



LIEBHERR

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Planar sensor P80-CAN

High-tech sensors „Made in Germany“

- Sensor for determining the electrical permittivity depending on material moisture content and density
- Signal transmission via CAN 2.0B
- Mean value and median filter
- Streaming technology

Development

Since 1985 Liebherr develops, produces and distributes efficient moisture measurement systems for the industrial automation around the world. At the Liebherr factory in Bad Schussenried the sensors are produced and calibrated in an ESD-protected production line. Each sensor will be tested separately in a several hour process across the entire working temperature range before leaving the factory.



The P80-CAN sensors are characterized by their flexibility and robustness. They are ideally suited for on/off-road applications such as large machines, construction and agricultural machinery as well as marine applications.

Sensor basic data

| | | |
|---------------------|----|------------------------|
| Diameter | mm | 78,0 |
| Housing height | mm | 43,1 |
| Height with socket | mm | 56 |
| Weight | kg | 0,625 |
| Housing material | | Stainless steel 1.4305 |
| Cover material | | Stainless steel 1.4301 |
| Material wear plate | | Ceramic Al203 |
| Process connection | | Clamping flange |
| Protection class | | IP 68 |

Sensor for moisture content

| | | |
|--|-----|---|
| Measured value | | Electrical permittivity with high resolution, depending on material moisture content and material density |
| Frequency | MHz | 21-25 |
| Capacity resolution | aF | 200 |
| Update cycle | ms | 50 |
| Operating temperature | °C | 5-70 |
| Temperature drift | | ≤ 10 measuring parts/K |
| Material penetration depth (depending on material) | cm | 3-5 (influence of measuring parts decreases exponentially with depth) |

Sensor for temperature

| | | |
|---|----|--|
| Measured value | | 1. Oscillator temperature 2. Shield temperature |
| Temperature resolution oscillator temperature | K | 0,002 |
| Temperature resolution output | K | 0,01 |
| Absolute measuring error oscillator temperature | K | 2 |
| Absolute measuring error shield temperature | K | 0,1 |
| Update cycle | ms | 50 |
| Measuring range | °C | -10 to 80 |

Measured value transmission

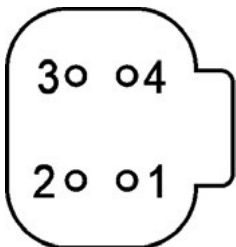
| | | |
|-----------------|-------|---|
| Bus type | | CAN 2.0B ISO 16845 certified |
| Baud rate | bit/s | 250.000 |
| Transceiver | | 3.3-V cross-connection protection, overvoltage protection up to +/- 36 V, loss of ground protection, over temperature (thermal shutdown) protection and common mode transient protection of +/- 100 V |
| Bus termination | | External, internal possible |

Electrical connection

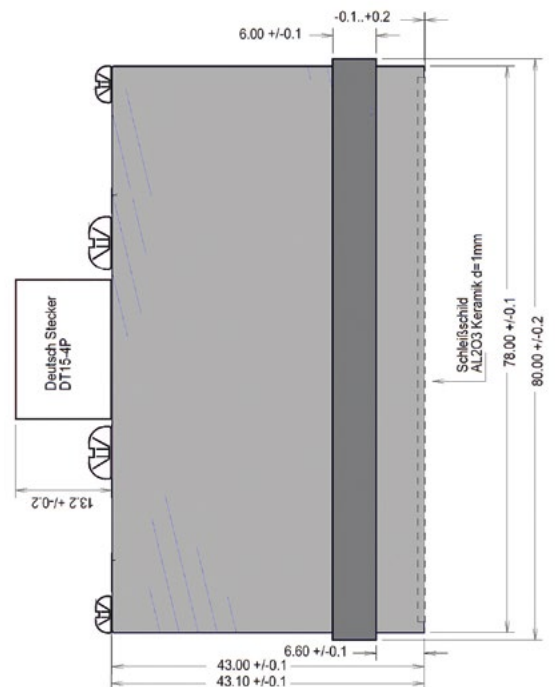
| | | |
|-----------------------------|---|----------------------------------|
| Supply voltage | V | 12 (min/max 6-36) |
| Power consumption | | 0,3 A _{max} / 17 mA@12V |
| Reverse polarity protection | | Yes |

Connection

| | |
|------------|-----------------|
| Connection | DEUTSCH DT15-4P |
| OV / GnD | Pin 1 |
| CAN-Low | Pin 2 |
| CAN-High | Pin 3 |
| +12 V | Pin 4 |



Connector pin numbering



High-tech from Bad Schussenried



Experience worldwide.

Liebherr-Mischtechnik GmbH is one of over 130 companies in the Liebherr Group. The experience gained in the development and manufacture of concrete mixing plants led to the development of the measuring systems division. For the sand moisture measurement in these plants alone, thousands of moisture sensors are successfully in use worldwide.

Further measurement technology products:

For use in explosive atmospheres Liebherr offers a moisture sensor for bulk materials with ATEX explosion protection of the equipment category 2D and 3D. For liquids and dusts of categories 1G and 1D the water content sensor type Litronic-WMS.

Further measurement technology products, such as coating thickness measurement and weight per unit area determination, can be found on our homepage at www.liebherr.com in the Components / Measurement Technology section.



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Subject to technical modification

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