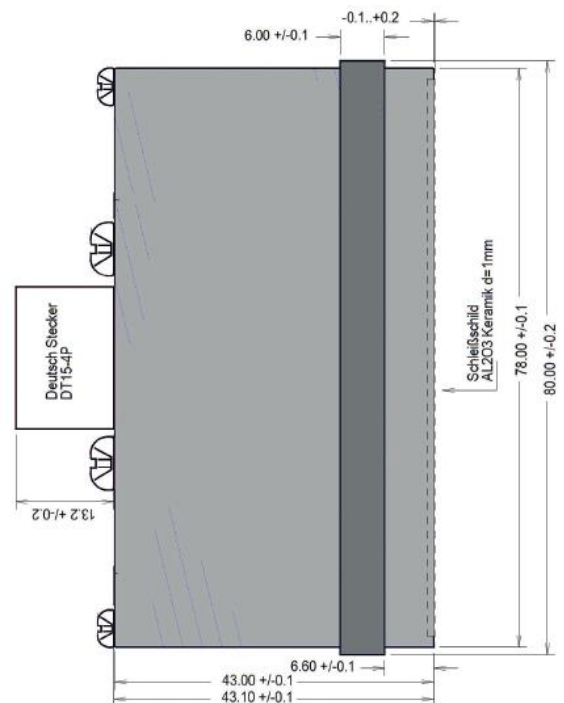


Technical data

Litronic FMS planar sensor P80-CAN

Rev. 2_20220712



Reliable material moisture measurement

- 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

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Sensor basic data

Diameter	78.00 mm
Housing height	43.1 mm
Height with socket	56 mm
Weight	0.625 kg
Housing material	stainless steel 1.4305
Cover material	stainless steel 1.4301
Material wear plate	ceramic Al2O3
Process connection	clamping flange
Protection class	IP68
Sensor replacement without re-calibration	yes
Determination of measured values	digital
Technology	streaming

Sensor for moisture content

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

Sensor for temperature

Measured value	1. oscillator temperature 2. shield temperature
Temperature resolution oscillator temperature	0.002 K
Temperature resolution output	0.01 K

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Absolute measuring error oscillator temperature	2 K
Absolute measuring error shield temperature	0.1 K
Update cycle	50 ms
Measuring range	-10 – 80 °C

Measurement value transfer

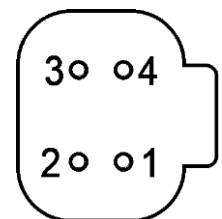
Bus type	CAN 2.0 B ISO 16845 certified
Baud rate	250 000 bit/s
Transceiver	3.3-V, cross-circuit protection, overvoltage protection up to +/- 36 V, loss of ground protection, overheating protection (thermal shutdown) and common-mode transient protection of +/- 100V
Bus termination	external, internal possible

Electrical connection

Supply voltage	12 V (min/max 6-36)
Power consumption	0.3 A _{max} / 17 mA@12V
Reverse polarity protection	yes

Connection

Connection	DEUTSCH DT 15-4P
OV/GnD	Pin 1
CAN-Low	Pin 2
CAN-High	Pin 3
+12V	Pin 4



Connector numbering pins

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CAN messages

Identifier format	29-bit-identifier, extended frame format
Data length code (DLC)	8
Identified measured values	0x01505043
NTC1	electronics temperature: integer with 2 decimal places display: °C + 40 °C
NTC2	temperature behind ceramic shield: integer with 2 decimal places display: °C + 40 °C
C_Wert	capacity value moisture sensor: integer with 2 decimal places
Identifier request serial number	0x01505044, answer occurs with serial number as CAN ID (request only possible within the first 10 seconds)
CAN message for serial number request	0x00 00 31 01 00 00 00 00

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
NTC1		NTC2		C_Wert			
MSB	LSB	MSB	LSB	MSB			LSB