

# Get the best out of your Sensor!

## Key features

- Linearization and temperature compensation for MEMS, thick- and thin film sensors
- Selectable output:
  - analog (0..3.3V / 0..5V / 0..10V | 4..20mA)
  - digital (SENT | I<sup>2</sup>C / SPI w. / wo. CRC | PWM/FM)

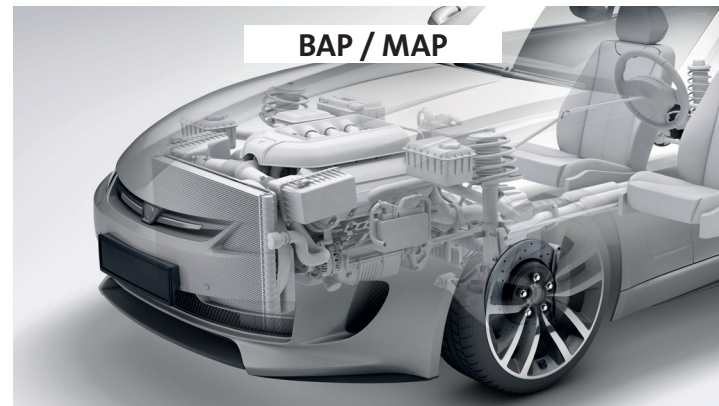
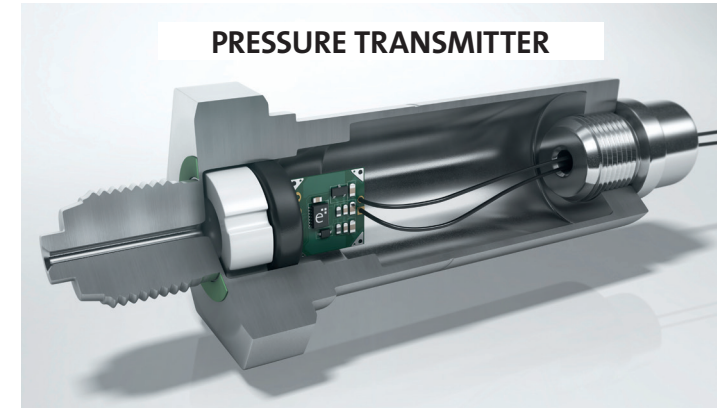
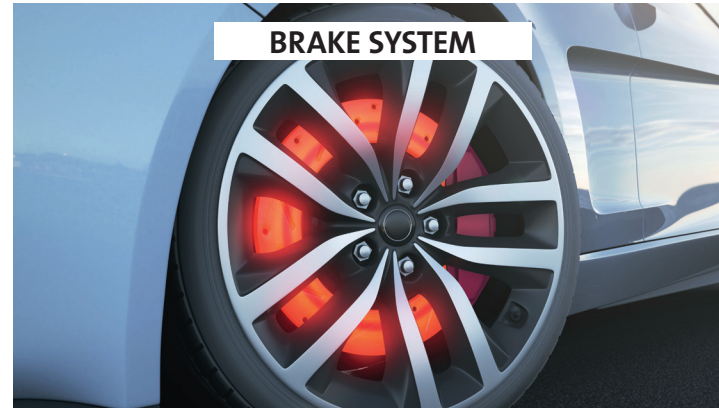
## Always up to date

- Always state-of-the-art: >20 years SSP experience
- Always getting better: 4<sup>th</sup> generation of SSPs
- Always highest reliability: AECQ-100 / IATF16949 / ISO26262

## Need help?

- Ecosystem supporting evaluation and design in
- Evaluation Kits
- GUI for graphical configuration and calibration
- APIs for configuration, calibration and communication with examples in C and Labview
- Mass calibration systems

# Sensor Signal Processors and Integrated Absolute Pressure Systems Customized for Your Application



*Best of both worlds:  
Bandwidth and response time  
of analog path  
+  
precision of polynomial  
correction.*

**The right pressure sensor solution**

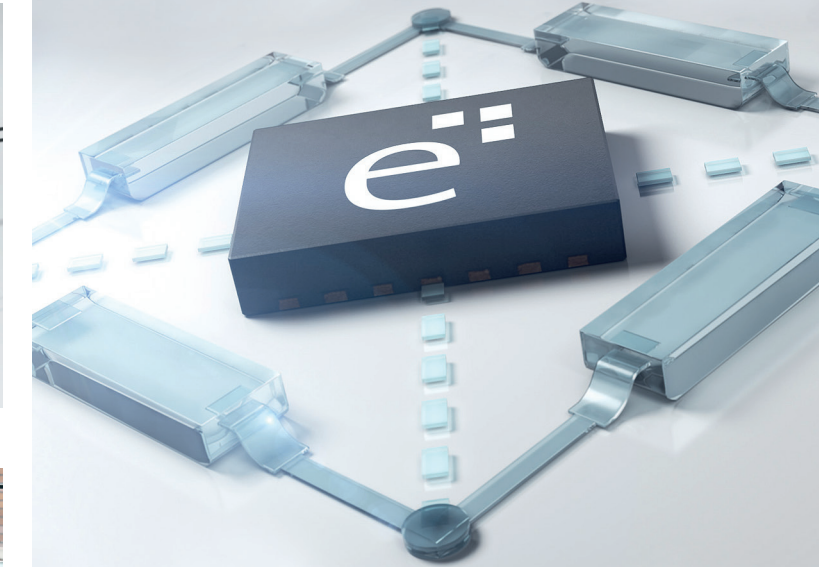
high bandwidth  
Highest precision  
AECQ-100  
true background diagnostics  
output rescaling without recalibration  
simultaneous analog and digital output  
Smallest packages  
Smallest BOM across all applications

**Make your sensor precise!**  
With up to 2 \* 3<sup>rd</sup> order multi dimensional polynomial correction.

**Get your pressure fast!**  
Supporting the highest sample rates and lowest latencies in the industry.

**Rescale your sensor!**  
Perform offset and gain adjustment without recalibration.

**Keep your evaluation and design in simple!**  
A comprehensive ecosystem supporting single and mass evaluation will help you to get started without even reading the data sheet!



**The Intelligence  
for Your Sensor.**

**GET YOUR ELMOS PRESSURE SENSOR IC**

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# Sensor Signal Processors and Integrated Pressure Sensors Portfolio

	Sensor Signal Processors					Integrated Absolute Pressure System (IAPS)
	E520.42	E520.45	E520.47	E703.11	E703.21	E524.71/72/73
<b>Application</b>	automotive	automotive	automotive	industrial / consumer	industrial / consumer	BAP / MAP Sensor
<b>Key features</b>	<ul style="list-style-type: none"> <li>Analog voltage &amp; SENT</li> <li>10nV/√Hz noise density</li> <li>AECQ-100</li> </ul>	<ul style="list-style-type: none"> <li>SENT + NTC</li> <li>NTC linearisation</li> <li>AECQ-100</li> </ul>	<ul style="list-style-type: none"> <li>Dual bridge input</li> <li>Configurable SENT</li> <li>ASIL C support</li> <li>AECQ-100</li> </ul>	<ul style="list-style-type: none"> <li>Widely configurable input, gain, bandwidth, accuracy</li> <li>I<sub>SUP</sub> &lt; 20 μA in sleep mode</li> <li>16 bit ADC</li> </ul>	<ul style="list-style-type: none"> <li>4..20mA / 0..10V output</li> <li>Calibration via current loop terminals (current modulated interface)</li> <li>Precise current sense shunt</li> <li>Integrated voltage regulator</li> </ul>	<ul style="list-style-type: none"> <li>SPI / I<sup>2</sup>C / analog</li> <li>SOIC8 package</li> <li>AECQ-100</li> </ul>
<b>Supply [V]</b>	4.5 .. 5.5V	4.5..5.5V	4.75..5.25V	2.7..5.5V	8..32V	3.0..5.5V
<b>Protection [V]</b>	-28..40V	-18..18V	-18..35V	-	-40..40V	-
<b>Temp. range [°C]</b>	-40..150°C	-40..150°C	-40..150°C	-40..125°C	-40..125°C	-40..125°C
<b>Sensor span [mV/V]</b>	±0.8..± 50 mV/V	±5..±56 mV/V	±3..±56 mV/V	±2 ..±88mV/V	±2..±88mV/V	-
<b>Offset trim [span]</b>	±2.5 *..> ±50 * span (depending on gain)	-0.67..+1.67 * span	-4..+3.75 * span	±2.7 * span	±2.7 * span	-
<b>Sensor ADC</b>	14 bit, 6.7kS/s	14 bit, 3.9kS/s	15 bit, 3.9kS/s	16 Bit, 2..50kS/s	16 Bit, 2..50kS/s	16 Bit, 20kS/s
<b>Temp. channel</b>	DIO / int.	NTC / bridge / DIO / int.	NTC / bridge / DIO / int.	bridge / DIO / int.	bridge / DIO / int.	int.
<b>Output digital</b>	<ul style="list-style-type: none"> <li>SENT</li> <li>1-wire</li> </ul>	<ul style="list-style-type: none"> <li>SENT / I<sup>2</sup>C</li> <li>1-wire</li> </ul>	<ul style="list-style-type: none"> <li>SENT / I<sup>2</sup>C</li> <li>1-wire</li> </ul>	<ul style="list-style-type: none"> <li>I<sup>2</sup>C / SPI</li> <li>1-wire</li> </ul>	<ul style="list-style-type: none"> <li>I<sup>2</sup>C / SPI</li> <li>1-wire</li> </ul>	<ul style="list-style-type: none"> <li>I<sup>2</sup>C / SPI</li> </ul>
<b>Output analog</b>	<ul style="list-style-type: none"> <li>0.5..4.5V ratiometric</li> </ul>	-	-	<ul style="list-style-type: none"> <li>0..3.3V</li> <li>0..5V</li> <li>0.5..4.5V ratiometric</li> <li>PWM, FM</li> </ul>	<ul style="list-style-type: none"> <li>4..20mA</li> <li>0..5V</li> <li>0..10V</li> <li>PWM, FM</li> </ul>	<ul style="list-style-type: none"> <li>ratiometric, different options</li> </ul>
<b>DAC</b>	12 Bit, 6.7kS/s	-	-	16 Bit, 400kS/s	16 Bit, 400kS/s	16 Bit, 400kS/s
<b>Response time (τ)</b>	Configurable: 0.16 ms..2.5 ms	Configurable: <1 ms..27 ms	Configurable: <1..27 ms	Configurable: 0.139..50 ms	Configurable: 0.139..50 ms	1ms
<b>Package</b>	<ul style="list-style-type: none"> <li>QFN20L4 (4x4mm)</li> <li>QFN20L5 (5x5mm)</li> <li>Bare-Die</li> </ul>	<ul style="list-style-type: none"> <li>QFN20L4 (4x4 mm)</li> <li>Bare-Die</li> </ul>	<ul style="list-style-type: none"> <li>QFN20L4 (4x4 mm)</li> <li>Bare-Die</li> </ul>	<ul style="list-style-type: none"> <li>DFN14 (3x4 mm)</li> <li>Bare-Die</li> </ul>	<ul style="list-style-type: none"> <li>DFN14 (3x4mm)</li> </ul>	<ul style="list-style-type: none"> <li>SOIC8 (6x5 mm)</li> </ul>