## Elmos Sensor Signal Processors





### EXPERTS FOR AUTOMOTIVE ICs

We have a broad expertise in analog mixedsignal integrated circuit design.

We deeply understand our customers application needs to create real system innovation.

We are a global player for automotive ASSPs and ASICs. We offer worldwide sales and application support.

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### CORPORATE KEY FACTS



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### 7 Elmos ICs

on average in every new car

### 6 product segments

Motor Control, Lighting, Safety/Power/Custom ICs, Ranging, Optical, Sensor ICs

### **16** locations worldwide

incl. 7 R&D centers, HQ located in Dortmund, Germany

## **35+** years of experience

in analog mixed signal IC solutions

## ~1,150 employees

thereof 350+ product developers & engineers

### WE ARE LOCATED ALL OVER THE WORLD



### **PRODUCT SEGMENTS**

- RANGING
- OPTICAL
- SENSOR ICs
- MOTOR CONTROL
- LIGHTING
- SAFETY, POWER & CUSTOM ICs



### PRODUCT SEGMENT » SENSOR ICs

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#### BRIDGING THE PHYSICAL WORLD PRECISELY TO STANDARD ANALOG AND DIGITAL INTERFACES

- More than 25 years of experience in automotive and industrial sensing
- Benchmark IC solutions for sensing pressure, temperature, inductance, capacitance and magnetic field
- Portfolio of sensor signal processors
  - Supporting all standard sensor interfaces
  - Enabling functional safety applications
  - Lowest BOM cost at best performance

## **PRODUCT SEGMENT » SENSOR ICS**

Consumer Barometric Pressure

Water Level Measurement

HVAC Pressure

ledical Respiratory Pressure

Medical Blood Pressure

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Elmos Sensor Signal Processor ICs support all Automotive and Industrial Applications and Interfaces:

- Analog Voltage (0.5...4.5V)
- SENT, LIN, PSI5,...
- − I<sup>2</sup>C, SPI,
- Current loop 4....20mA



### AUTOMOTIVE PRESSURE SENSOR SIGNAL CONDITIONER

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#### E520.42 – Analog Voltage Output

- 5V Analog Output (ratiometric)
- Fixed SENT Interface



#### E520.47 – Digital SENT Interface

- Flexible SENT Configuration
- ASIL C support available
- Multiple Input Channels (P+T)

### ELMOS SENSOR ICS IC Solutions for Pressure, Strain, Force

#### E520.42 – 5V Ratiometric and Fixed SENT

- Very low noise front-end for low sensitivities
- Ratiometric analog Output (0 to 5V)
- Fixed SENT output
- External or internal temperature sensing with on-chip linearization
- One Wire Interface for calibration
- Temperature range -40°C...150°C
- QFN20L4 package





### ELMOS SENSOR ICS IC Solutions for Pressure, Strain, Force

#### E520.47 – Dual Bridge with SENTE

- Signal processing for two sensor bridges
- Configurable SENT output
- ISO26262 TSR acc. ASIL C
- 15bit Delta Sigma ADC
- NTC channel with on-chip linearization
- One Wire Interface for calibration
- I<sup>2</sup>C Interface for customer access to sensor, diagnosis, calibration and configuration
- Temperature range -40°C...150°C
- QFN20L4 package
- Applications: ESC, FTPS, OPS, DPF, EGR, TPS,...







### INDUSTRIAL PRESSURE SENSOR SIGNAL CONDITIONER

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#### E703.11 – High Precession Low Voltage

- Digital SPI and I<sup>2</sup>C Interface
- 3V and 5V Analog Output



#### E703.21 – Industrial Output SSP

- 4...20mA and 0-10V Absolute Output
- 5V ratiometric Output
- Digital SPI and I<sup>2</sup>C Interface

11

## ELMOS SENSOR ICS

Industrial Pressure Sensor Signal Conditioner

#### E703.11 – High Precession Low Voltage

- Configurable front-end input 2.6 mV/V to 63 mV/V
- Digital SPI, I<sup>2</sup>C, PWM, FM or 1-wire interface
- 3V and 5V Analog Output (ratiometric)
- Internal or external temperature sensors, including bridge current sensing
- Supply voltage 2.7V to 5.5V
- Sleep mode available Iq < 50μA</li>
- Calibration via SPI, I<sup>2</sup>C or 1-wire interface
- Temperature range -40°C to 125°C
- DFN14 package



## ELMOS SENSOR ICS

Industrial Pressure Sensor Signal Conditioner

#### E703.21 – Industrial Output SSP

- Configurable front-end input 2.6mV/V to 63 mV/V
- Digital SPI, I<sup>2</sup>C, PWM, FM or 1-wire interface
- 4...20mA and 0-10V Absolute Output
- 5V Analog Output (ratiometric)
- Internal or external temperature sensors, including bridge current sensing
- Supply voltage 4.5V to 32V
- Calibration via SPI, I<sup>2</sup>C or 1-wire interface
- Temperature range -40°C to 125°C
- DFN14 package



## ELMOS SENSOR ICS

Integrated Absolute Pressure Sensors

#### E524.71, 72, 73 - Low Voltage Series

 Digital SPI and l<sup>2</sup>C Interface

3V and 5V Analog

**Output** (ratiometric)



#### E524.75 – Extended Electrical Immunity

- High voltage protection and increased EMC Immunity
- 5V ratiometric Output



**SOIC-20** (10x13 mm<sup>2</sup>)



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# Innovation Matters

## DISCLAIMER

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