Piezoresistive OEM Pressure Transmitters
-40…150 °C, with Embedded Signal Conditioning

The Series 4 LC…9 LC family of miniature OEM pressure transmitters combines a piezoresistive pressure sensor with -40…150 °C-capable signal conditioning in one compact, easy-to-integrate package.

Technology
The “LC” line of miniature pressure transmitters leverages Keller’s extensive background in high-stability piezoresistive pressure sensors and innovative digital signal processing. Now, both pressure sensor and signal processor are integrated into a miniature, hermetically-sealed housing no larger than was once required for the sensor only!

The name given to this new technology is Chip-In-Oil (CIO). CIO means not only that the entire pressure transmitter is embedded within a hermetically-sealed, oil-filled housing, but that this transmitter can then be seamlessly integrated into the OEM product, achieving cost savings and system performance not possible with other, conventional technologies.

Interfaces
The ratiometric analog output simplifies the integrators task by providing a signal output wherein the output is ratiometric to the supply, thereby eliminating the need to incorporate an expensive, absolute reference. Providing an 0.5…4.5 VDC output from a 5 VDC supply, the LC-transmitter is inherently protected against overvoltage and reverse polarity up to ±33 VDC and provides noise immunity by a factor of 10X relative to the latest standards regarding emitted and conducted EMI.

Performance features
• Hermetically protected sensor electronics - extremely resistant to environmental influences
• Operating temperature up to 150 °C
• Ultra-compact, robust housing made from stainless steel (optionally Hastelloy C-276)
• No external electronics for compensation or signal processing
• Extremely accurate, outstanding long-term stability, no hysteresis
• Pressure ranges of 1 bar to 1000 bar
• Extremely easy to integrate in overall systems
• Two-chip solution with pressure sensor and signal processing separation provides a high degree of flexibility.

Connection
Generally applies:
No force must be applied to the pins!
Specifications

Accuracy* max. +/- 0,25 %FS  
* Linearity best straight line @ RF, hysteresis, repeatability

Overpressure 2,5 x pressure range, max. 300 bar resp. 1200 bar (6 LC HP, 7 LC HP)

Long Term Stability max. +/- 0,3 %FS

| Type/Version | Dimensions [mm] | Pressure Range | Operating Temperature | Comp. Temp. Range | TEB [%FS]
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<tbody>
<tr>
<td>4 LC</td>
<td>ø 11 x 4,2</td>
<td>3...200 bar abs. (1)</td>
<td>-10...+80 °C</td>
<td>0...50 °C</td>
<td>± 1,0 %FS</td>
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<tr>
<td>7 LC</td>
<td>ø 15 x 5</td>
<td>2...200 bar abs. 2...30 bar rel. (1)</td>
<td>-40...+125 °C</td>
<td>-10...+80 °C</td>
<td>± 1,0 %FS</td>
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<tr>
<td>8 LC</td>
<td>ø 17 x 7</td>
<td>1...200 bar abs. 1...30 bar rel.</td>
<td>-40...+150 °C</td>
<td>-10...+80 °C</td>
<td>± 0,8 %FS</td>
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<tr>
<td>9 LC</td>
<td>ø 19 x 5</td>
<td>-40...+150 °C</td>
<td>-40...+150 °C</td>
<td>± 2,0 %FS</td>
<td></td>
</tr>
<tr>
<td>9 FLC</td>
<td>ø 17 x 5,5</td>
<td>1...50 bar abs. 1...30 bar rel.</td>
<td>-40...+150 °C</td>
<td>± 2,5 %FS</td>
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</table>

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<tr>
<td>6 LC HP</td>
<td>ø 13 x 8</td>
<td>200...1000 bar</td>
<td>-40...+150 °C</td>
<td>-10...+80 °C</td>
<td>± 0,8 %FS</td>
</tr>
<tr>
<td>7 LC HP</td>
<td>ø 15 x 8</td>
<td>-40...+150 °C</td>
<td>± 2,0 %FS</td>
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Applications requiring a mechanical package with certain pressure and electrical connections can be accommodated. Almost any combination of connections is possible with our Series 21C product line. CIO is optionally available with the 2-wire I2C digital interface, enabling bus-capability in the system design.