SAR ADCs for PLC Applications
Increased speed, integration and precision

PLC trends
With machinery in factories becoming faster and more complex it is necessary for the intelligence behind each system to similarly adapt. To support and control next generation machinery, the programmable logic controller (PLC) must be capable of quickly and accurately receiving signals from a large number of inputs connected to a wide variety of sensors or subsystems.

Why TI?
To meet the need for highly-integrated and precise yet fast factory control systems, Texas Instruments has developed a wide portfolio of successive approximation register analog-to-digital converters (SAR ADCs). With robust devices offering resolution up to 18 bits, 16 channels, wide input ranges and high temperature operation, TI has a SAR ADC to digitize today’s world.

Visit www.ti.com/precisionadc for more information
# Precision SAR ADC Selection Table

<table>
<thead>
<tr>
<th>Device</th>
<th>Resolution (Bits)</th>
<th>Sample Rate (kSPS)</th>
<th>No. of Input Channels</th>
<th>Input Voltage (V)</th>
<th>Interface</th>
<th>Companion Drivers</th>
<th>Companion References + Buffers</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADS8688</td>
<td>16</td>
<td>500</td>
<td>8</td>
<td>–10.24 to 10.24</td>
<td>Serial SPI</td>
<td>OPA2209</td>
<td>REF5040 + OPA376</td>
<td>TSSOP (38): 9.7 mm x 4.4 mm</td>
</tr>
<tr>
<td>ADS8353</td>
<td>16</td>
<td>500</td>
<td>2</td>
<td>0 to 5.5</td>
<td>Serial SPI</td>
<td>OPA636, THS4032</td>
<td>REF5025 + OPA2350</td>
<td>WQFN (16): 3 mm x 3 mm</td>
</tr>
<tr>
<td>ADS8881</td>
<td>18</td>
<td>1000</td>
<td>1</td>
<td>0 to 5</td>
<td>Serial SPI</td>
<td>OPA350, THS4521, OPA333</td>
<td>REF5045 + OPA333</td>
<td>VSSOP (10): 3 mm x 3 mm, VSON (10): 3 mm x 3 mm</td>
</tr>
<tr>
<td>ADS8331</td>
<td>16</td>
<td>2</td>
<td>4</td>
<td>0 to 5.5</td>
<td>Serial SPI</td>
<td>OPA211</td>
<td>REF5045 + THS4281</td>
<td>QFN (24): 4 mm x 4 mm, TSSOP (24): 9.7 mm x 4.4 mm</td>
</tr>
<tr>
<td>ADS8319</td>
<td>16</td>
<td>2</td>
<td>1</td>
<td>0 to 5.5</td>
<td>Serial SPI</td>
<td>OPA211, THS4031</td>
<td>REF3030 + OPA313</td>
<td>MSOP (10): 3 mm x 3 mm, SON (10): 3 mm x 3 mm</td>
</tr>
<tr>
<td>ADS7042</td>
<td>12</td>
<td>1000</td>
<td>1</td>
<td>0 to 3.6</td>
<td>Serial SPI</td>
<td>OPA314</td>
<td>REF3333</td>
<td>8X2QFN: 1.5 mm x 1.5 mm, 8VSSOP: 2.3 mm x 2 mm</td>
</tr>
</tbody>
</table>

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