Electronics
Analog Sensors

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## Transistors and diodes

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<th>Transistors and diodes</th>
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<td>Single-chip devices</td>
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<td>Assigning transducers</td>
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Transistors and diodes

- diodes like zener diode; reverse current changes
Transistors and diodes

- diodes like zener diode; reverse current changes
- transistors: base comes from environment; pull-up on output (or pull-down)
Single-chip devices
Single-chip devices

- Hall effect
Single-chip devices

- Hall effect
- Temperature, etc.
Single-chip devices

- Hall effect
- Temperature, etc.
- Linear, usually 5V in
Available transducers

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<tr>
<td>UGN3503 Hall sensor</td>
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<td>SFH229 photodiode</td>
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<td>MRD-310 phototransistor</td>
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<td>GP2Y0A21YK-1 infrared distance sensor</td>
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Available transducers

UGN3503  Hall sensor
Available transducers

UGN3503  Hall sensor
SFH229    photodiode
Available transducers

- **UGN3503**  Hall sensor
- **SFH229**  photodiode
- **MRD-310**  phototransistor
Available transducers

- **UGN3503** Hall sensor
- **SFH229** photodiode
- **MRD-310** phototransistor
- **GP2Y0A21YK-1** infrared distance sensor
Interfacing Analog Sensors
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resistive voltage divider or Wheatstone bridge
Interfacing Analog Sensors

- resistive voltage divider or Wheatstone bridge
- diode/transistor voltage divider
Interfacing Analog Sensors

resistive voltage divider or Wheatstone bridge
diode/transistor voltage divider
voltage output amplifier (possible)