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E Series Multifunction DAQ – 500 kS/s, 12-Bit, 16 or 64 Analog Inputs

NI 606xE

- 500 kS/s, 12-bit resolution, up to 64 single-ended analog inputs
- Two 12-bit analog outputs
- 8 digital I/0 lines (5 V/TTL); two 24-bit counter/timers
- Analog and digital triggering
- Available for PCMCIA and ISA
- NI-DAQ driver software simplifies configuration and measurements

Models

NI 6060E (MIO-16E-2)
- AT-MIO-16E-2

NI 6061E (MIO-64E-3)
- AT-MIO-64E-3

NI 6062E
- DAQCard-6062E

NI Application Software

- LabVIEW
- Measurement Studio
- VI Logger

Operating System Compatibility

- Windows 2000/NT/Me/9x*

Accessories

See page 256

Calibration Certificate Included

See page 24

*Visit *ni.com/info* and enter winxp for the latest operating system information.



Overview

The NI 6060E, NI 6061E, and NI 6062E DAQ devices use E Series technology to deliver high performance and reliable data acquisition capabilities for a wide range of applications. You get up to 500 kS/s, 12-bit performance and either 16 or 64 single-ended analog inputs. Depending on your hard drive, these devices can stream data to disk at rates up to 500 kS/s.

These E Series DAQ devices feature analog and digital triggering capability, as well as two 12-bit analog outputs, two 24-bit 20 MHz counter/timers, and eight digital Input/Output (I/O) lines.

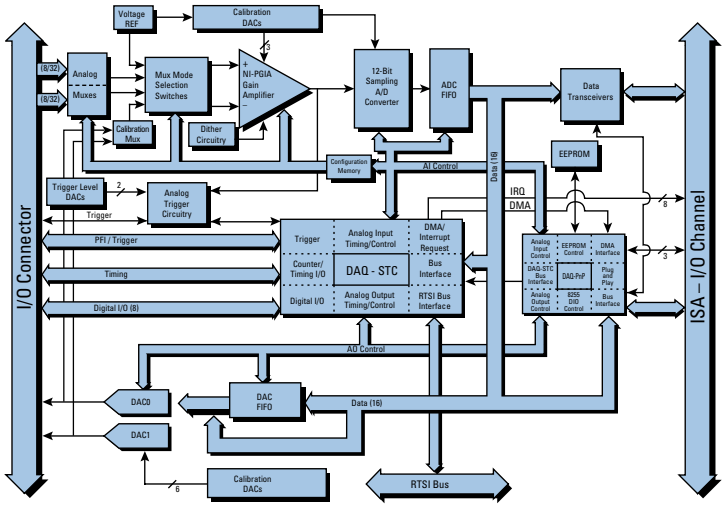


Figure 1. NI 6060E and NI 6061E Hardware Block Diagram

INFO CODES

For more information or to order products online, visit *ni.com/info* and enter:

atmio16e2
atmio64e3
daqcard6062e

BUY ONLINE!

See the E Series Multifunction DAQ Overview on page 230 for a more detailed hardware overview.

Also consider the NI 6070E devices. See page 236.

Family	Bus	Analog Inputs	Resolution	Sampling Rate S/s	Input Range	Analog Outputs	Resolution	Output Rate	Output Range	Digital I/O	Counter/ Timers	Triggers
NI 6060E	ISA	16 SE/8 DI	12 bits	500 k	±0.05 to ± 10 V	2	12 bits	1 MS/s	up to ± 10 V	8	2, 24-bit	Analog and Digital
NI 6061E	ISA	64 SE/32 DI	12 bits	500 k*/333 k	±0.05 to ± 10 V	2	12 bits	1 MS/s	up to ± 10 V	8	2, 24-bit	Analog and Digital
NI 6062E	PCMCIA	16 SE/8 DI	12 bits	500 k	±0.05 to ± 10 V	2	12 bits	850 kS/s*	up to ± 10 V	8	2, 24-bit	Analog and Digital

*Single-channel rates

Table 1. NI 606xE Family Channel, Speed, and Resolution Specifications (refer to page 266 for detailed specifications)

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E Series Multifunction DAQ – 500 kS/s, 12-Bit, 16 or 64 Analog Inputs

Nominal Range (V) FS	Absolute Accuracy % of Reading 24 Hrs	Absolute Accuracy % of Reading 1 Year	Absolute Accuracy Offset (mV) NI 6060E/ NI 6061E	Absolute Accuracy Offset (mV) DAQCard-6062E	Absolute Accuracy Noise + Quantization (mV) Single Pt. NI 6060E/ NI 6061E	Absolute Accuracy Noise + Quantization (mV) Single Pt. DAQCard-6062E	Absolute Accuracy Noise + Quantization (mV) Averaged NI 6060E/ NI 6061E	Absolute Accuracy Noise + Quantization (mV) Averaged DAQCard-6062E	Temp Drift (%/°C)	Absolute Accuracy at Full Scale (mV) NI 6060E/ NI 6061E	Absolute Accuracy at Full Scale (mV) DAQCard-6062E	Relative Accuracy Resolution (mV) Single Pt. NI 6060E/ NI 6061E	Relative Accuracy Resolution (mV) Single Pt. DAQCard-6062E	Relative Accuracy Resolution (mV) Averaged NI 6060E/ NI 6061E	Relative Accuracy Resolution (mV) Averaged DAQCard-6062E
±10.0	0.0672	0.0714	6.38	9.83	4.640	6.100	0.846	0.975	0.0010	14.369	17.945	6.270	7.370	1.110	1.280
±5.0	0.0272	0.0314	3.20	4.92	2.320	3.050	0.423	0.488	0.0005	5.193	6.983	3.140	3.680	0.557	0.642
±2.5	0.0672	0.0714	1.61	2.47	1.160	1.530	0.211	0.244	0.0010	3.605	4.502	1.570	1.840	0.278	0.321
±1.0	0.0672	0.0714	0.653	1.001	0.464	0.610	0.085	0.098	0.0010	1.452	1.813	0.627	0.737	0.111	0.128
±0.5	0.0672	0.0714	0.335	0.511	0.232	0.305	0.042	0.049	0.0010	0.735	0.917	0.314	0.368	0.056	0.064
±0.25	0.0672	0.0714	0.176	0.266	0.116	0.208	0.021	0.029	0.0010	0.376	0.474	0.157	0.238	0.028	0.039
±0.1	0.0672	0.0714	0.081	0.119	0.068	0.098	0.010	0.012	0.0010	0.162	0.203	0.080	0.111	0.013	0.016
±0.05	0.0672	0.0714	0.049	0.070	0.049	0.071	0.006	0.008	0.0010	0.090	0.113	0.056	0.082	0.007	0.010
10 to 0	0.0272	0.0314	3.200	4.920	2.320	3.050	0.423	0.488	0.0005	6.765	8.555	3.140	3.68	0.557	0.642
5 to 0	0.0672	0.0714	1.610	2.470	1.160	1.530	0.211	0.244	0.0010	5.391	6.288	1.570	1.84	0.278	0.321
2 to 0	0.0672	0.0714	0.653	1.001	0.464	0.610	0.085	0.098	0.0010	2.167	2.528	0.627	0.737	0.111	0.128
1 to 0	0.0672	0.0714	0.335	0.511	0.232	0.305	0.042	0.049	0.0010	1.092	1.274	0.314	0.368	0.056	0.064
0.5 to 0	0.0672	0.0714	0.176	0.266	0.116	0.208	0.021	0.029	0.0010	0.554	0.653	0.157	0.238	0.028	0.039
0.2 to 0	0.0672	0.0714	0.081	0.119	0.068	0.098	0.010	0.012	0.0010	0.233	0.274	0.080	0.111	0.013	0.016
0.1 to 0	0.0672	0.0714	0.049	0.070	0.049	0.071	0.006	0.008	0.0010	0.126	0.149	0.056	0.082	0.007	0.010

Note: Accuracies are valid for measurements following an internal E Series Calibration. Averaged numbers assume dithering and averaging of 100 single-channel readings. Measurement accuracies are listed for operational temperatures within ±1 °C of internal calibration temperature and ±10 °C of external or factory-calibration temperature. One-year calibration interval recommended. The Absolute Accuracy at Full Scale calculations were performed for a maximum range input voltage (for example, 10 V for the ±10 V range) after one year, assuming 100 pt averaging of data. See overview on page 234 for example calculations.

Table 2. NI 606xE Analog Input Accuracy Specifications

Nominal Range (V) Positive FS	Nominal Range (V) Negative FS	Absolute Accuracy % of Reading 24 Hrs	Absolute Accuracy % of Reading 90 Days	Absolute Accuracy % of Reading 1 Year	Absolute Accuracy Offset (mV) NI 6060E/ NI 6061E	Absolute Accuracy Offset (mV) DAQCard-6062E	Temp Drift (%/°C)	Absolute Accuracy at Full Scale (mV) NI 6060E/ NI 6061E	Absolute Accuracy at Full Scale (mV) DAQCard-6062E
10	-10	0.0177	0.0197	0.0219	5.93	8.37	0.0005	8.127	10.568
10	0	0.0177	0.0197	0.0219	3.49	–	0.0005	5.685	–

Note: Temp Drift applies only if ambient is greater than ±10 °C of previous external calibration. See page 234 for example calculations.

Table 3. NI 606xE Analog Output Accuracy Specifications.

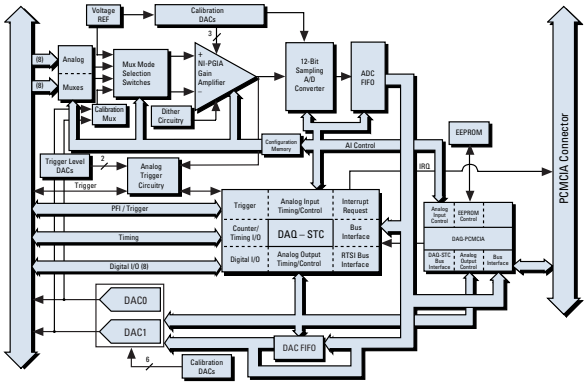


Figure 2. NI 6062E Hardware Block Diagram

See page 233 in the E Series Multifunction DAQ Overview for I/O connector diagrams.

See page 266 for more detailed specifications.

Ordering Information

NI 6060E

AT-MIO-16E-2 776791-01

NI 6061E

AT-MIO-64E-3 776911-01

NI 6062E

DAQCard-6062E 777976-01

Includes NI-DAQ driver software.

For information on extended warranty and value-added services, see page 22.

Recommended Configurations

Family	DAQ Device	Accessory	Cable
NI 6060E	AT-MIO-16E-2	SCB-68 (776844-01)	SH6868-EP (184749-01)
NI 6061E	AT-MIO-64E-3	SCB-100 (776990-01)	SH100100 (182853-01)
NI 6062E	DAQCard-6062E	SCB-68 (776844-01)	SHC6868-EP (186838-01)

See page 256 for E Series accessory and cable information.

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