

# Basic Multifunction DAQ

## 16-bit, 200 kS/s, 16 Analog Inputs

### NI PCI-6013, NI PCI-6014

- 16 analog inputs at up to 200 kS/s, 16-bit resolution
- Up to 2 analog outputs at up to 10 kS/s, 16-bit resolution
- 8 digital I/O lines (TTL/CMOS); two 24-bit counter/timers
- Digital triggering
- 4 analog input signal ranges
- NI-DAQ driver simplifies configuration and measurements

#### Operating Systems

- Windows 2000/NT/XP
- Others such as Linux and Mac OS X (page 187)

#### Recommended Software

- LabVIEW
- LabWindows/CVI
- Measurement Studio
- VI Logger

#### Other Compatible Software

- Visual Basic, C/C++, and C#

#### Driver Software (included)

- NI-DAQ 7

#### Calibration Certificate Included

See page 21.



Family	Bus	Analog Inputs	Input Resolution	Max Sampling Rate	Input Range	Analog Outputs	Output Resolution	Output Rate	Output Range	Digital I/O	Counter/Timers	Triggers
NI 6013	PCI	16 SE/8 DI	16 bits	200 kS/s	±0.05 to ±10 V	0	—	—	—	8	2, 24-bit	Digital
NI 6014	PCI	16 SE/8 DI	16 bits	200 kS/s	±0.05 to ±10 V	2	16 bits	10 kS/s	±10 V	8	2, 24-bit	Digital

\* 10 kS/s maximum when using the single DMA channel for analog out put. 1 kS/s maximum when using the single DMA channel for either analog input or counter/timer operations.

Table 1. NI Basic Multifunction DAQ Model Guide (See page 228 for detailed specifications.)

## Overview and Applications

National Instruments basic data acquisition devices deliver economical, reliable data acquisition capabilities. These boards can be used in a broad variety of applications including:

- OEM, high-volume applications (alternative operating systems available through the NI Measurement Hardware DDK, see page 187)
- High-voltage and sensor measurements when used with NI SCC
- Continuous high-speed data logging at rates up to 200 kS/s
- Externally timed and/or triggered data acquisition

## Highly Accurate Hardware Design

NI low-cost E Series DAQ devices include the following features and technologies:

**Temperature Drift Protection Circuitry** – Designed with components that minimize the effect of temperature changes on measurements to less than 0.0010% of reading per °C.

**Resolution-Improvement Technologies** – Carefully designed noise maximizes the resolution.

**Onboard Self-Calibration** – Precise voltage reference included for calibration and measurement accuracy. Self-calibration is completely software controlled, with no potentiometers to adjust.

**NI DAQ-STC** – Timing and control ASIC designed to provide more flexibility, lower power consumption, and a higher immunity to noise and jitter than off-the-shelf counter/timer chips.

**NI MITE** – ASIC designed to optimize data transfer for multiple simultaneous operations using bus mastering with one DMA channel, interrupts, or programmed I/O.

**NI PGIA** – Measurement and instrument class amplifier that guarantees settling times at all gains. Typical commercial off-the-shelf amplifier components do not meet the settling time requirements for high-gain measurement applications.

**PFI Lines** – Eight programmable function input (PFI) lines that can be used for software-controlled routing of intraboard digital and timing signals.

## High-Performance, Easy-to-Use Driver Software

NI-DAQ is the robust driver software that makes it easy to access the functionality of your data acquisition hardware, whether you are a beginning or advanced user. Helpful features include:

**Automatic Code Generation** – The DAQ Assistant is an interactive guide that steps you through configuring, testing, and programming measurement tasks and generates the necessary code automatically for LabVIEW, LabWindows/CVI, or Measurement Studio.

# Basic Multifunction DAQ

## 16-bit, 200 kS/s, 16 Analog Inputs

Models	Full-Feature E Series				Low-Cost E Series		Basic	
	NI 6030E, NI 6031E, NI 6032E, NI 6033E	NI 6052E	NI 6070E, NI 6071E	NI 6040E	NI 6034E, NI 6036E	NI 6023E, NI 6024E, NI 6025E	PCI-6013, PCI-6014	
Measurement Sensitivity* (mV)	0.0023	0.0025	0.009	0.008	0.0036	0.008	0.004	
Nominal Range (V)		Absolute Accuracy (mV)						
Positive FS	Negative FS							
10	-10	1.147	4.747	14.369	15.373	7.56	16.504	8.984
5	-5	2.077	0.876	5.193	5.697	1.79	5.263	2.003
2.5	-2.5	–	1.190	3.605	3.859	–	–	–
2	-2	0.836	–	–	–	–	–	–
1	-1	0.422	0.479	1.452	1.556	–	–	–
0.5	-0.5	0.215	0.243	0.735	0.789	0.399	0.846	0.471
0.25	-0.25	–	0.137	0.379	0.405	–	–	–
0.2	-0.2	0.102	–	–	–	–	–	–
0.1	-0.1	0.061	0.064	0.163	0.176	–	–	–
0.05	-0.05	–	0.035	0.091	0.100	0.0611	0.106	0.069
10	0	0.976	1.232	6.765	7.269	–	–	–
5	0	1.992	2.119	5.391	5.645	–	–	–
2	0	0.802	0.850	2.167	2.271	–	–	–
1	0	0.405	0.428	1.092	1.146	–	–	–
0.5	0	0.207	0.242	0.558	0.583	–	–	–
0.2	0	0.098	0.111	0.235	0.247	–	–	–
0.1	0	0.059	0.059	0.127	0.135	–	–	–

Note: Accuracies are valid for measurements following an internal calibration. Measurement accuracies are listed for operational temperatures within  $\pm 1^\circ\text{C}$  of internal calibration temperature and  $\pm 10^\circ\text{C}$  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  $\pm 10$  V range) after one year, assuming 100 pt averaging of data.\*Smallest detectable voltage change in the input signal at the smallest input range.

Table 2. NI Basic Multifunction DAQ Analog Input Absolute Accuracy Specifications

Models	Full-Featured E Series				Low-Cost E Series		Basic	
	NI 6030E, NI 6031E, NI 6032E, NI 6033E	NI 6052E	NI 6070E, NI 6071E	NI 6040E	NI 6036E	NI 6024E, NI 6025E,	PCI-6013, PCI-6014	
Nominal Range (V)		Absolute Accuracy (mV)						
Positive FS	Negative FS							
10	-10	1.43	1.405	8.127	8.127	2.417	8.127	3.835
10	0	1.201	1.176	5.685	5.685	–	–	–

Table 3. NI Basic Multifunction DAQ Analog Output Absolute Accuracy Specifications

**Cleaner Code Development** – Basic and advanced software functions have been combined into one easy-to-use yet powerful set to help you build cleaner code and move from basic to advanced applications without replacing functions.

**High-Performance Driver Engine** – Software-timed single-point input (typically used in control loops) with NI-DAQ achieves rates of up to 50 kHz. NI-DAQ also delivers maximum I/O system throughput with a multithreaded driver.

**Test Panels** – With NI-DAQ, you can test all of your device functionality before you begin development.

**Scaled Channels** – Easily scale your voltage data into the proper engineering units using the NI-DAQ measurement-ready virtual channels by choosing from a list of common sensors and signals or creating your own custom scale.

**LabVIEW Integration** – All NI-DAQ functions use the waveform data type, which carries acquired data and timing information directly into more than 400 LabVIEW built-in analysis routines for display of results in engineering units on a graph.

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## Recommended Accessories

Signal conditioning is required for sensor measurements or voltage inputs greater than 10 V. NI offers several signal conditioning options. See Table 4 below for more information:

Sensor/Signals (>10 V)				
System	Description	DAQ Device	Signal Conditioning	Page
Low-Cost, Portable		PCI-6013/14	SCC	251

Signals (<10 V) <sup>1</sup>					
System	Description	DAQ Device	Terminal Block	Cable	Page
Shielded		PCI-6013/14	SCB-68	SH6868-EP	214
Low-Cost		PCI-6013/14	CB-68LP	R6868	214

<sup>1</sup>Terminal Blocks do not provide signal conditioning (ie. filtering, amplification, isolation, etc.), which may be necessary to increase the accuracy of your measurements.

Table 4. Recommended Accessories

## Ordering Information

NI PCI-6013 .....778629-01  
 NI PCI-6014 .....778627-01  
 Includes NI-DAQ driver software and calibration certificate.

For more information on warranty and value-added services, see page 20.

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# Multifunction DAQ Cable and Accessory Selection Guides

## NI Cable Design Advantages

The SH68-68-EP cable is the most commonly used E Series and S Series cable. The cable is designed to work specifically with the NI Multifunction DAQ devices to preserve signal integrity through these technologies:

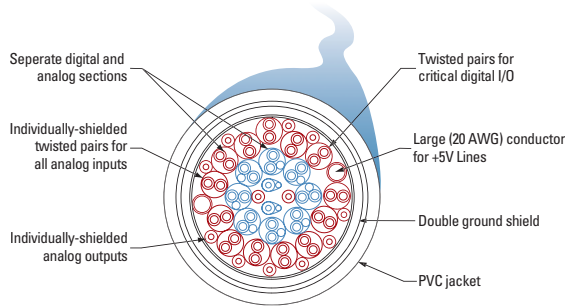


Figure 2. NI offers a wide variety of cable and accessory options, such as the SH68-68-EP cable and the BNC-2110 terminal block.

A variety of cabling and accessory options are available for your needs. Use the following tables to choose the most appropriate cables and accessories. To determine which Multifunction DAQ device best fits your needs, please see page 189.

Platform	Shielding	Connect to ...	Cable	Adapter	Accessory
<b>PCI/PXI/USB/FireWire</b>					
	Shielded	SCC portable signal conditioning per channel	SH68-68-EP	–	SC-2345 and modules, page 251
	Shielded	SCXI high-performance signal conditioning	SCXI-1349	–	SCXI Chassis and Modules, page 270
	Shielded	Screw terminals <sup>1</sup>	SH68-68-EP or SH68-68R1-EP	–	SCB-68
	Shielded	BNC terminal block	SH68-68-EP	–	BNC-2110, BNC-2120, BNC-2090
	Shielded	50-pin connector	SH6850	–	CB50, custom or 3rd party
	Shielded	Configurable connectivity box	SH68-68-EP	–	CA-1000, page 351
	Unshielded	Screw terminals <sup>1</sup>	R6868	–	TBX-68, CB-68LP, CB-68LPR, DAQ signal accessory
	Unshielded	50-pin connector	R6850	–	CB50, custom or 3rd party
<b>PXI only</b>					
	Shielded	Front-mounted screw terminals	N/A	–	TB-2705
<b>PCMCIA</b>					
	Shielded	Screw terminals <sup>1</sup>	SHC68-68-EP or SHC68U-68-EP <sup>2</sup>	–	SCB-68, CA-1000
	Shielded	50-pin connector	SHC68-68-EP or SHC68U-68-EP <sup>2</sup>	68M-50F MIO	CB50, custom or 3rd party
	Unshielded	Screw terminals <sup>1</sup>	RC68-68	–	TBX-68, CB-68LP, CB-68LPR, DAQ signal accessory
	Unshielded	50-pin connector	RC68-68	68M-50F MIO	CB50, custom or 3rd party

<sup>1</sup>Unshielded cables can connect to shielded accessories and vice-versa. <sup>2</sup>In adjacent PCMCIA slots, both cables types are required because the same cable would cause mechanical hindrance.

Table 1. Cable Connection Specifications for 16-Channel E Series Devices and Basic Multifunction DAQ (except NI 6025E, which is on the next page)

# Multifunction DAQ Cable and Accessory Selection Guides

AI 0-	34	68	AI 0+
AI 1+	33	67	AI 0 GND
AI 1 GND	32	66	AI 1-
AI 2-	31	65	AI 2+
AI 3+	30	64	AI 2 GND
AI 3 GND	29	63	AI 3-
NC	28	62	NC
NC	27	61	NC
NC	26	60	NC
NC	25	59	NC
NC	24	58	NC
NC	23	57	NC
AO 0	22	56	NC
AO 0	21	55	AO GND
EXT REF	20	54	AO GND
P0.4	19	53	D GND
D GND	18	52	P0.0
P0.1	17	51	P0.5
P0.6	16	50	D GND
D GND	15	49	P0.2
+5 V	14	48	P0.7
D GND	13	47	P0.3
D GND	12	46	AI HOLD
PFI 0/AI START	11	45	EXT STROBE
PFI 1/REF TRIG	10	44	D GND
D GND	9	43	PFI 2/AI CONV
+5 V	8	42	PFI 3/CTR 1 SRC
D GND	7	41	PFI 4/CTR 1 GATE
PFI 5/AO SAMP	6	40	CTR 1 OUT
PFI 6/AO START	5	39	D GND
D GND	4	38	PFI 7/AI SAMP
PFI 9/CTR 0 GATE	3	37	PFI 8/CTR 0 SRC
CTR 0 OUT	2	36	D GND
F OUT	1	35	D GND

Figure 2. S Series Devices Connector

<sup>1</sup>No connects for boards that do not support AO or use an external reference with the SH1006868 cable.

AI 8	34	68	AI 0
AI 1	33	67	AI GND
AI GND	32	66	AI 9
AI 10	31	65	AI 2
AI 3	30	64	AI GND
AI GND	29	63	AI 11
AI 4	28	62	AI SENSE
AI GND	27	61	AI 12
ACH13	26	60	AI 5
ACH6	25	59	AI GND
AIGND	24	58	AI 14
ACH15	23	57	AI 7
AO 0 <sup>1</sup>	22	56	AI GND
AO 1 <sup>1</sup>	21	55	AO GND
EXT REF <sup>1</sup>	20	54	AO GND
P0.4	19	53	D GND
D GND	18	52	P0.0
P0.1	17	51	P0.5
P0.6	16	50	D GND
D GND	15	49	P0.2
+5 V	14	48	P0.7
D GND	13	47	P0.3
D GND	12	46	AI HOLD
PFI 0/AI START	11	45	EXT STROBE
PFI 1/REF TRIG	10	44	D GND
D GND	9	43	PFI 2/AI CONV
+5 V	8	42	PFI 3/AI CTR 1 SRC
D GND	7	41	PFI 4/AI CTR 1 GATE
PFI 5/AO SAMP	6	40	CTR 1 OUT
PFI 6/AO START	5	39	D GND
D GND	4	38	PFI 7/AI SAMP
PFI 9/CTR 0 GATE	3	37	PFI 8/CTR 0 SRC
CTR 0 OUT	2	36	D GND
F OUT	1	35	D GND

Figure 3. I/O Connector for 16-Channel E Series and Basic Multifunction DAQ Devices, except NI 6025E

AI GND	1	51	AI 16
AI GND	2	52	AI 24
AI 0	3	53	AI 17
AI 8	4	54	AI 25
AI 1	5	55	AI 18
AI 9	6	56	AI 26
AI 2	7	57	AI 19
AI 10	8	58	AI 27
AI 3	9	59	AI 20
AI 11	10	60	AI 28
AI 4	11	61	AI 21
AI 12	12	62	AI 29
AI 5	13	63	AI 22
AI 13	14	64	AI 30
AI 6	15	65	AI 23
AI 14	16	66	AI 31
AI 7	17	67	AI 32
AI 15	18	68	AI 40
AI SENSE	19	69	AI 33
AO 0	20	70	AI 41
AO 1	21	71	AI 34
EXT REF	22	72	AI 42
AO GND	23	73	AI 35
D GND	24	74	AI 43
P0.0	25	75	AI SENSE 2
P0.4	26	76	AI GND
P0.1	27	77	AI 36
P0.5	28	78	AI 44
P0.2	29	79	AI 37
P0.6	30	80	AI 45
P0.3	31	81	AI 38
P0.7	32	82	AI 46
D GND	33	83	AI 39
+5 V	34	84	AI 47
+5 V	35	85	AI 48
AI HOLD	36	86	AI 56
EXT STROBE	37	87	AI 49
PFI 0/AI START	38	88	AI 57
PFI 1/REF TRIG	39	89	AI 50
PFI 2/AI CONV	40	90	AI 58
PFI 3/CTR 1 SRC	41	91	AI 51
PFI 4/CTR 1 GATE	42	92	AI 59
CTR 1 OUT	43	93	AI 52
PFI 5/AO SAMP	44	94	AI 60
PFI 6/AO START	45	95	AI 53
PFI 7/AI SAMP	46	96	AI 61
PFI 8/CTR 0 SRC	47	97	AI 54
PFI 9/CTR 0 GATE	48	98	AI 62
CTR 0 OUT	49	99	AI 55
F OUT	50	100	AI 63

Figure 4. I/O Connector for 64-Channel E Series Devices

AI GND	1	51	P2.7
AI GND	2	52	GND
AI 0	3	53	P2.6
AI 8	4	54	GND
AI 1	5	55	P2.5
AI 9	6	56	GND
AI 2	7	57	P2.4
AI 10	8	58	GND
AI 3	9	59	P2.3
AI 11	10	60	GND
AI 4	11	61	P2.2
AI 12	12	62	GND
AI 5	13	63	P2.1
AI 13	14	64	GND
AI 6	15	65	P2.0
AI 14	16	66	GND
AI 7	17	67	P1.7
AI 15	18	68	GND
AI SENSE	19	69	P1.6
AO 0	20	70	GND
AO 1	21	71	P1.5
NC	22	72	GND
AO GND	23	73	P1.4
D GND	24	74	GND
P0.0	25	75	P1.3
P0.4	26	76	GND
P0.1	27	77	P1.2
P0.5	28	78	GND
P0.2	29	79	P1.1
P0.6	30	80	GND
P0.3	31	81	P1.0
P0.7	32	82	GND
D GND	33	83	P0.7
+5 V	34	84	GND
+5 V	35	85	P0.6
AI HOLD	36	86	GND
EXT STROBE	37	87	P0.5
PFI 0/AI START	38	88	GND
PFI 1/REF TRIG	39	89	P0.4
PFI 2/AI CONV	40	90	GND
PFI 3/CTR 1 SRC	41	91	P0.3
PFI 4/CTR 1 GATE	42	92	GND
CTR 1 OUT	43	93	P0.2
PFI 5/AO SAMP	44	94	GND
PFI 6/AO START	45	95	P0.1
PFI 7/AI SAMP	46	96	GND
PFI 8/CTR 0 SRC	47	97	P0.0
PFI 9/CTR 0 GATE	48	98	GND
CTR 0 OUT	49	99	+5 V
F OUT	50	100	GND

Figure 5. I/O Connector for the NI 6025E Device

## E Series Devices (NI 6031E, NI 6033E, NI 6071E, NI 6025E)

Platform	Shielding	Connect to ...	Cable	Cable Leg	Adapter	Accessory
PCI, PXI	Shielded	Screw terminals	SH100100	—	—	SCB-100
	Shielded	Screw terminals	SH1006868	MIO:	—	SCB-68
	Shielded	—	SH1006868	Extended:	—	SCB-68
	Shielded	Screw terminals <sup>1</sup>	SH1006868	MIO:	—	TBX-68, CB-68LP, CB-68LPR, DAQ signal accessory
	Shielded	Screw terminals <sup>1</sup>	SH1006868	Extended:	—	TBX-68, CB-68LP, CB-68LPR
	Shielded	BNC terminal block	SH1006868	MIO:	—	BNC-2110, BNC-2120, BNC-2090
	Shielded	—	SH1006868	Extended:	—	BNC-2115
	Shielded	50-pin connectors	SH1006868	MIO:	68M-50F MIO	Custom or 3rd party
	Shielded	—	SH1006868	Extended:	68M-50F Extended	Custom or 3rd party
	Unshielded	50-pin connector	R1005050	MIO:	—	Custom or 3rd party
	Unshielded	—	R1005050	Extended:	—	Custom or 3rd party

<sup>1</sup>Shielded cable with unshielded accessories

Table 2. Cable Connection Specifications for 64-Channel E Series Devices and the NI 6025E

# Multifunction DAQ Absolute Accuracy Specifications

## Specifications (continued)

Nominal Range (V)	Absolute Accuracy					Relative Accuracy		
	% of Reading		Offset (mV)	Noise + Quantization (mV)		Temp Drift (%/°C)	Resolution (mV)	
	24 Hours	1 Year		Single Point	Averaged		Single Point	Averaged
<b>DAQPad-6020E Analog Input Accuracy Specifications – 12-bit, 100 kS/s, 16 Analog Inputs</b>								
-10.0	0.072	0.076	6.380	3.467	0.846	0.0010	5.729	1.114
-5.0	0.019	0.021	3.198	1.733	0.423	0.0005	2.865	0.557
-2.5	0.072	0.076	1.608	0.867	0.211	0.0010	1.432	0.278
-1.0	0.072	0.076	0.653	0.347	0.085	0.0010	0.573	0.111
-0.5	0.072	0.076	0.335	0.173	0.042	0.0010	0.286	0.056
-0.25	0.072	0.076	0.176	0.105	0.021	0.0010	0.151	0.028
-0.1	0.072	0.076	0.081	0.061	0.008	0.0010	0.074	0.011
-0.05	0.072	0.076	0.049	0.049	0.004	0.0010	0.056	0.006
10.0	0.019	0.021	3.198	1.733	0.423	0.0005	2.865	0.557
5.0	0.072	0.076	1.608	0.867	0.211	0.0010	1.432	0.278
2.0	0.072	0.076	0.653	0.347	0.085	0.0010	0.573	0.111
1.0	0.072	0.076	0.335	0.173	0.042	0.0010	0.286	0.056
0.5	0.072	0.076	0.176	0.105	0.021	0.0010	0.151	0.028
0.2	0.072	0.076	0.081	0.061	0.008	0.0010	0.074	0.011
0.1	0.072	0.076	0.049	0.049	0.004	0.0010	0.056	0.006
<b>PCI-6013 and PCI-6014 Analog Input Accuracy Specifications</b>								
-10	0.0658	0.0700	1.8975	0.9330	0.0824	0.0010	1.0849	0.1085
-5	0.0158	0.0200	0.9598	0.4665	0.0412	0.0005	0.5424	0.0542
-0.5	0.0658	0.0700	0.1158	0.0562	0.0050	0.0010	0.0663	0.0066
-0.05	0.0658	0.0700	0.0314	0.0314	0.0031	0.0010	0.0404	0.0040

Note: Accuracies are valid for measurements following an internal 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.

Nominal Range (V)	Absolute Accuracy				
	Percent of Reading			Offset (mV)	Temp Drift (%/°C)
	24 Hours	90 Days	1 Year		
<b>NI 6120 Analog Output DC Accuracy – 16-bit, 2.5 MS/s, 2 Analog Outputs</b>					
±10	0.0511	0.0519	0.0528	1.9	0.0006
<b>NI 6115 Analog Output DC Accuracy – 12-bit, 2.5 MS/s, 2 Analog Outputs</b>					
±10	0.0437	–	0.0454	8.9	0.0006
<b>PCI-6110 and PCI-6111 Analog Output Accuracy – 12-bit, 2.5 MS/s, 2 Analog Outputs</b>					
±10	0.018	–	0.022	5.933	0.0005
<b>NI 6052E Analog Output Accuracy – 16-bit, 333 kS/s, 2 Analog Outputs</b>					
±10	0.0044	0.0052	0.0061	0.798	0.0001
10 to 0	0.0044	0.0052	0.0061	0.569	0.0001
<b>NI 6030E, NI 6031E Analog Output Accuracy – 16-bit, 100 kS/s, 2 Analog Outputs</b>					
±10	0.0045	0.0053	0.0062	0.813	0.0001
10 to 0	0.0045	0.0053	0.0062	0.584	0.0001
<b>NI 607xE Analog Output Accuracy – 12-bit, 1 MS/s, 2 Analog Outputs</b>					
±10	0.0177	0.0197	0.0219	5.93	0.0005
10 to 0	0.0177	0.0197	0.0219	3.49	0.0005
<b>NI 6040E Analog Output Accuracy – 12-bit, 1 MS/s, 2 Analog Outputs</b>					
±10	0.0177	0.0197	0.0219	5.93	0.0005
10 to 0	0.0177	0.0197	0.0219	3.49	0.0005
<b>NI PCI-6036E Analog Output Accuracy – 16-bit, 10 kS/s, 2 Analog Outputs</b>					
±10	0.009	0.011	0.013	1.1	0.0005
<b>NI DAQCard-6036E Analog Output Accuracy – 16-bit, 10 kS/s, 2 Analog Outputs</b>					
±10	0.009	0.011	0.013	1.22	0.0005
<b>PCI-6024E, and NI 6025E Analog Output Accuracy</b>					
±10	0.0177	0.0197	0.0219	5.93	0.0005
<b>DAQCard-6024E Analog Output Accuracy – 12-bit, 10 kS/s, 2 Analog Outputs</b>					
±10	0.0177	0.0197	0.0219	8.37	0.0005
<b>DAQCard-6062E Analog Output Accuracy – 12-bit, 850 kS/s, 2 Analog Outputs</b>					
±10	0.0177	0.0197	0.0219	8.37	0.0005
<b>DAQPad-6020E Analog Output Accuracy – 12-bit, 20 S/s, 2 Analog Outputs</b>					
±10	0.018	0.020	0.022	5.93	0.0005
<b>PCI-6014 Analog Output Accuracy – 16-bit, 10 kS/s, 2 Analog Outputs</b>					
±10	0.0154	0.0174	0.0196	1.568	0.0005

Note: Temp Drift applies only if ambient is greater than ±10 °C of previous external calibration.