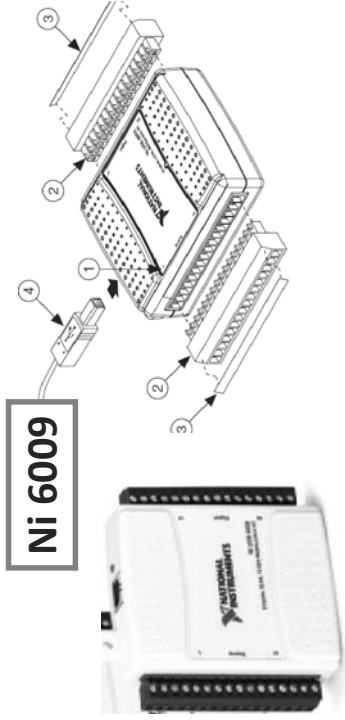
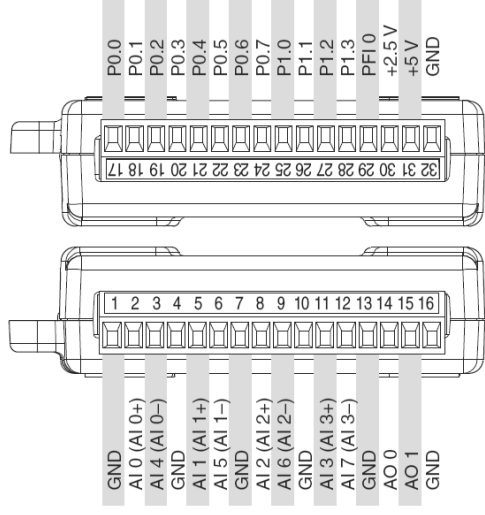
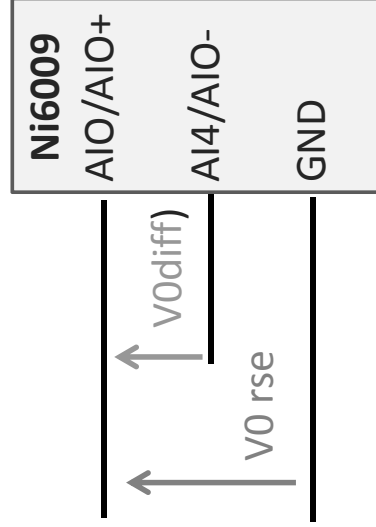




Ni 6009

Numériques
(Entrée / Sorties,
Entrée de comptage,
Clk, de synchronisation)

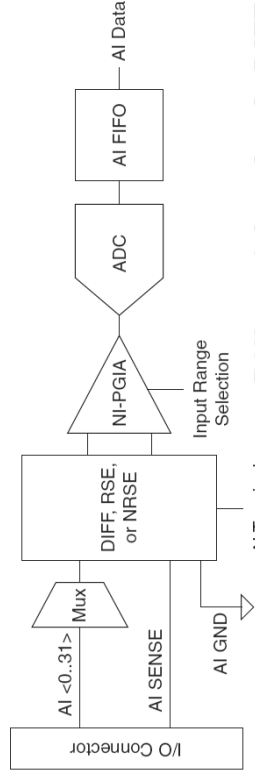
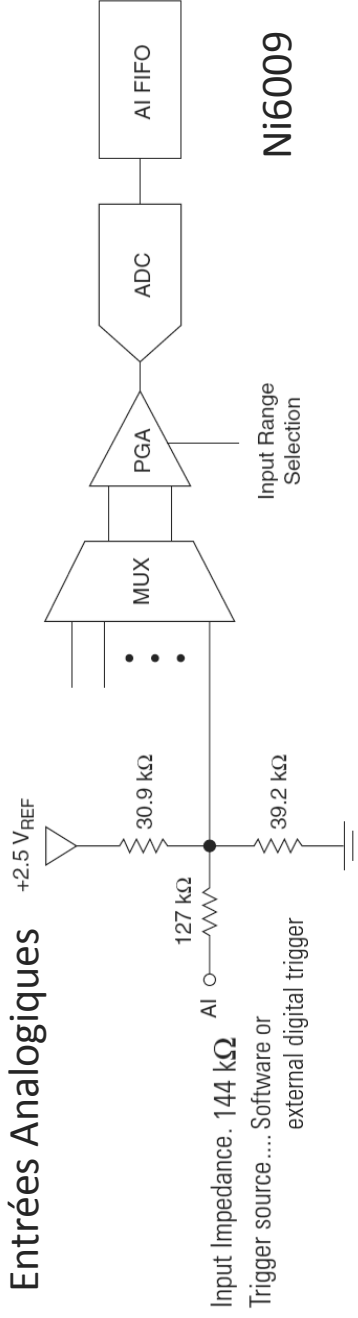
Analogiques
(Entrées, RSE ou diff)



Alimentations

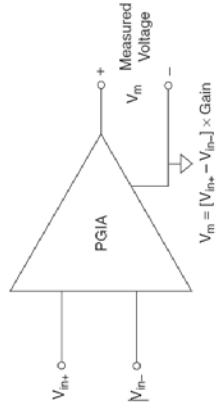
Analogique
(sorties)

Entrées Analogiques



- **Differential mode**—In DIFF mode, the MIO X Series device measures the difference in voltage between two AI signals.
- **Referenced single-ended mode**—In RSE mode, the MIO X Series device measures the voltage of an AI signal relative to AI GND.
- **Non-referenced single-ended mode**—In NRSE mode, the MIO X Series device measures the voltage of an AI signal relative to one of the AI SENSE or AI SENSE 2 inputs.

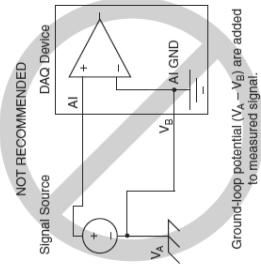
Ni6361



AI Ground-Reference Settings	Signals Routed to the Positive Input of the NI-PGIA (V_{in+})	Signals Routed to the Negative Input of the NI-PGIA (V_{in-})
RSE	AI <0..31>	AI GND
NRSE	AI <0..15>	AI SENSE
	AI <16..31>	AI SENSE 2
DIFF	AI <0..7>	AI <8..15>
	AI <16..23>	AI <24..31>

Voir FS
et GS
Sur doc !

AI Ground-Reference Setting [*]	Floating Signal Sources (Not Connected to Building Ground)	Ground-Referenced Signal Sources [†]
	Examples: • Ungrounded thermocouples • Signal conditioning with isolated outputs • Battery devices	Example: • Plug-in instruments with non-isolated outputs
Differential		
Non-Referenced Single-Ended (NRSE)		
Referenced Single-Ended (RSE)		



Entrées Analogiques

Product	Bus	Input Resolution		Max Sampling Rate (kS/s)	Input Range (V)
		Analog Inputs ¹	(bits)		
USB-6009	USB	8 SE/4 DI	14	48	±1 to ±20
USB-6008	USB	8 SE/4 DI	12	10	±1 to ±20

¹ SE = single ended, DI = differential

Analog Input

Absolute accuracy, single-ended

Range	Typical at 25 °C (mV)	Maximum (0 to 55 °C) (mV)
±10	14.7	138

Absolute accuracy at full scale, differential¹

Range	Typical at 25 °C (mV)	Maximum (0 to 55 °C) (mV)
±20	14.7	138
±10	7.73	84.8
±5	4.28	58.4
±4	3.59	53.1
±2.5	2.56	45.1
±2	2.21	42.5
±1.25	1.70	38.9
±1	1.53	37.5

¹ Input voltages may not exceed the working voltage range

Number of channels..... 8 single-ended / 4 differential
Type of ADC..... Successive approximation

ADC resolution (bits)

Device	Differential	Single-Ended
USB-6008	12	11
USB-6009	14	13

Paramètres importants :
Fech max
Gamme
Résolution
Précision

Sorties Analogique

Product	Analog Outputs	Output Resolution (bits)	Output Rate (Hz)	Output Range (V)
USB-6009	2	12	150	0 to 5
USB-6008	2	12	150	0 to 5

Output impedance..... 50 Ω
Output current drive 5 mA

Alimentations

Power Available at I/O Connector

+5 V output (200 mA maximum) +5 V typical
+4.85 V minimum
+2.5 V output (1 mA maximum) +2.5 V typical
+2.5 V output accuracy..... 0.25 % max
Voltage reference temperature drift 50 ppm/°C max

Numériques
(Entrée / Sorties,
Entrée de comptage,
Clk, de synchronisation)

Digital I/O			
Product	Lines	32-bit Counter	Trigger
USB-6009	12	1	Digital
USB-6008	12	1	Digital

Digital I/O

- Number of channels.....
 - 12 total
 - 8 (P0.<0..7>)
 - 4 (P1.<0..3>)
- Direction control.....
 - Each channel individually programmable as input or output
- Output driver type
 - USB-6008.....
 - Open-drain
 - Each channel individually programmable as push-pull or open-drain.
 - USB-6009.....
 - CMOS, TTL, LVTTL
 - 4.7 kΩ to +5 V
 - Input (high impedance)
 - 0.5 to +5.8 V
- Compatibility
- Internal pull-up resistor.....
- Power-on state
- Absolute maximum voltage range

Digital logic levels

Level	Min	Max	Units
Input low voltage	-0.3	0.8	V
Input high voltage	2.0	5.8	V