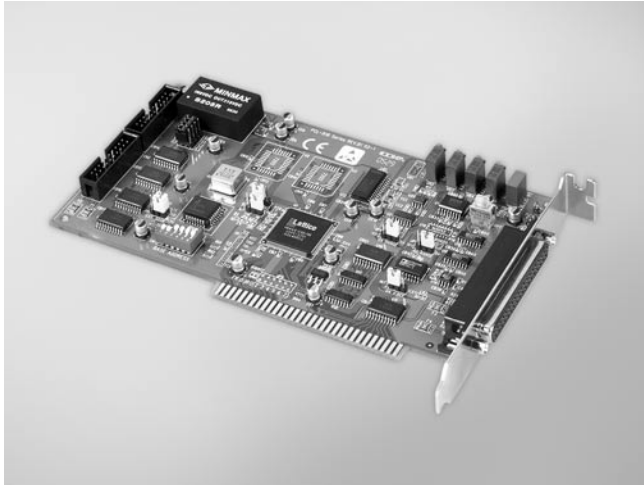


PCL-818HD/HG

PCL-818L

**100 kS/s, 12-bit, 16-ch ISA
Multifunction Card**

**40 kS/s, 12-bit, 16-ch ISA
Multifunction Card**



Features

- 16-ch single-ended or 8-ch differential analog input
- 12-bit A/D converter, with up to 100 kHz sampling rate
- Programmable gain
- Automatic channel/gain scanning
- Onboard FIFO memory (1,024 samples, PCL-818HD/HG only)
- One 12-bit analog output channel
- 16-ch digital input and 16-ch digital output
- Onboard programmable counter

Introduction

The PCL-818L series was designed for entry-level models to the PCL-818 series. The cards have been designed with the cost-sensitive customer in mind, but still offers the same functions as the rest of the series, except that they have a 40 kHz sampling rate and only accepts bipolar inputs. They are fully software and connector compatible with the PCL-818HD and PCL-818HG. This lets you upgrade your applications to these higher performance cards without hardware or software changes.

The PCL-818LS bundle consists of the PCL-818L card, the PCLD-8115 wiring terminal board and a DB37 cable assembly. The PCLD-8115 accommodates onboard passive signal conditioning components (resistors and capacitors), allowing you to easily implement a low-pass filter, a voltage attenuator or a 4 – 20 mA voltage converter.

Specifications

Analog Input

- **Channels** 16 single-ended / 8 differential
- **Resolution** 12 bits
- **Max. Sampling Rate** 100 kS/s for all input ranges (PCL-818HD/HG only)
40 kS/s for all input ranges (PCL-818L only)
- **FIFO Size** 1,024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 10 MΩ
- **Sampling Modes** Software, pacer or external
- **Input Range** (V, software programmable)

| PCL-818L/818HD | | | | | |
|--------------------------------------|-----|--------|-------|---------|----------|
| Bipolar | ±10 | ±5 | ±2.5 | ±1.25 | ±0.625 |
| Unipolar* | N/A | 0 ~ 10 | 0 ~ 5 | 0 ~ 2.5 | 0 ~ 1.25 |
| Accuracy (% of FSR ±1LSB) | 0.1 | 0.1 | 0.2 | 0.2 | 0.4 |

* Note: PCL-818L doesn't support unipolar input range.

| PCL-818HG | | | | | | | | |
|--------------------------------------|-----|--------|-----|-------|------|---------|-------|----------|
| Bipolar | ±10 | ±5 | ±1 | ±0.5 | ±0.1 | ±0.05 | ±0.01 | ±0.005 |
| Unipolar | N/A | 0 ~ 10 | N/A | 0 ~ 1 | N/A | 0 ~ 0.1 | N/A | 0 ~ 0.01 |
| Accuracy (% of FSR ±1LSB) | 0.1 | 0.1 | 0.2 | 0.2 | 0.4 | 0.4 | 0.8 | 0.8 |

Analog Output

- **Channels** 1
- **Resolution** 12 bits
- **Output Rate** Static update
- **Output Range** (V, software programmable)

| Internal Reference | Unipolar | 0 ~ 5, 0 ~ 10 |
|--------------------|----------|-----------------|
| External Reference | | 0 ~ 10, 0 ~ -10 |

Digital Input

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.

Digital Output

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Output Voltage** Logic 0: 0.4 V max.
Logic 1: 2.4 V min.
- **Output Capability** Sink: 8 mA
Source: -0.4 mA

Timer/Counter

- **Channels** 1
- **A/D Pacer** 32-bit with 10 MHz or 1 MHz time base
- **Max. and Min. Rates** 2.5 MHz and 0.00023 Hz
- **Counter** One 16-bit counter with 100 kHz time base

General

- **Power Consumption** +5 V @ 210 mA typical, 500 mA max.
+12 V @ 20 mA typical, 100 mA max.
-12 V @ 20 mA typical, 40 mA max.
- **I/O Connector** 1 x DB37 female
2 x 20-pin box header
- **Dimensions (L x H)** 155 x 100 mm (6.1" x 3.9")
- **Operating Temperature** 0 ~ 50° C (32 ~ 122° F)
- **Storage Temperature** -20 ~ 65° C (-4 ~ 149° F)
- **Operating Humidity** 5 ~ 95% RH, non-condensing (refer to IEC 68-2-3)

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Ordering Information

- **PCL-818HD** High-performance Half-size Multifunction Card
- **PCL-818HG** High-performance and High-gain Multi. Card
- **PCL-818L** Low-cost High-perform. Half-size Multi. Card
- **PCL-818LS** PCL-818L w/ PCLD-8115 and DB37 Cable
- **PCL-10137-1** DB37 Cable, 1 m
- **PCL-10137-2** DB37 Cable, 2 m
- **PCL-10137-3** DB37 Cable, 3 m
- **PCLD-8115** Wiring Board w/ CJC Circuit & One DB37 Cable
- **PCLD-880** Wiring Board w/ Two 20-pin Flat Cables & Adapter

Pin Assignments

| CN1 | | | CN2 | | | | |
|--------|----|----|--------|--------|----|----|--------|
| D/O 0 | 1 | 2 | D/O 1 | D/I 0 | 1 | 2 | D/I 1 |
| D/O 2 | 3 | 4 | D/O 3 | D/I 2 | 3 | 4 | D/I 3 |
| D/O 4 | 5 | 6 | D/O 5 | D/I 4 | 5 | 6 | D/I 5 |
| D/O 6 | 7 | 8 | D/O 7 | D/I 6 | 7 | 8 | D/I 7 |
| D/O 8 | 9 | 10 | D/O 9 | D/I 8 | 9 | 10 | D/I 9 |
| D/O 10 | 11 | 12 | D/O 11 | D/I 10 | 11 | 12 | D/I 11 |
| D/O 12 | 13 | 14 | D/O 13 | D/I 12 | 13 | 14 | D/I 13 |
| D/O 14 | 15 | 16 | D/O 15 | D/I 14 | 15 | 16 | D/I 15 |
| D.GND | 17 | 18 | D.GND | D.GND | 17 | 18 | D.GND |
| +5 V | 19 | 20 | +12 V | +5 V | 19 | 20 | +12 V |

CN3 (Single ended)

| | | | |
|---------|----|----|-----------|
| A/D S0 | 1 | 20 | A/D S8 |
| A/D S1 | 2 | 21 | A/D S9 |
| A/D S2 | 3 | 22 | A/D S10 |
| A/D S3 | 4 | 23 | A/D S11 |
| A/D S4 | 5 | 24 | A/D S12 |
| A/D S5 | 6 | 25 | A/D S13 |
| A/D S6 | 7 | 26 | A/D S14 |
| A/D S7 | 8 | 27 | A/D S15 |
| A.GND | 9 | 28 | A.GND |
| A.GND | 10 | 29 | A.GND |
| VREF | 11 | 30 | DA0.OUT |
| S0* | 12 | 31 | DA0.VREF |
| +12 V | 13 | 32 | S1* |
| S2* | 14 | 33 | S3* |
| D.GND | 15 | 34 | D.GND |
| NC | 16 | 35 | EXT.TRIG |
| Counter | 17 | 36 | Counter 0 |
| Counter | 18 | 37 | PACER |
| +5 V | 19 | | |

CN3 (Differential)

| | | | |
|---------|----|----|-----------|
| A/D H0 | 1 | 20 | A/D L0 |
| A/D H1 | 2 | 21 | A/D L1 |
| A/D H2 | 3 | 22 | A/D L2 |
| A/D H3 | 4 | 23 | A/D L3 |
| A/D H4 | 5 | 24 | A/D L4 |
| A/D H5 | 6 | 25 | A/D L5 |
| A/D H6 | 7 | 26 | A/D L6 |
| A/D H7 | 8 | 27 | A/D L7 |
| A.GND | 9 | 28 | A.GND |
| A.GND | 10 | 29 | A.GND |
| VREF | 11 | 30 | DA0.OUT |
| S0* | 12 | 31 | DA0.VREF |
| +12 V | 13 | 32 | S1* |
| S2* | 14 | 33 | S3* |
| D.GND | 15 | 34 | D.GND |
| NC | 16 | 35 | EXT.TRIG |
| Counter | 17 | 36 | Counter 0 |
| Counter | 18 | 37 | PACER |
| +5 V | 19 | | |