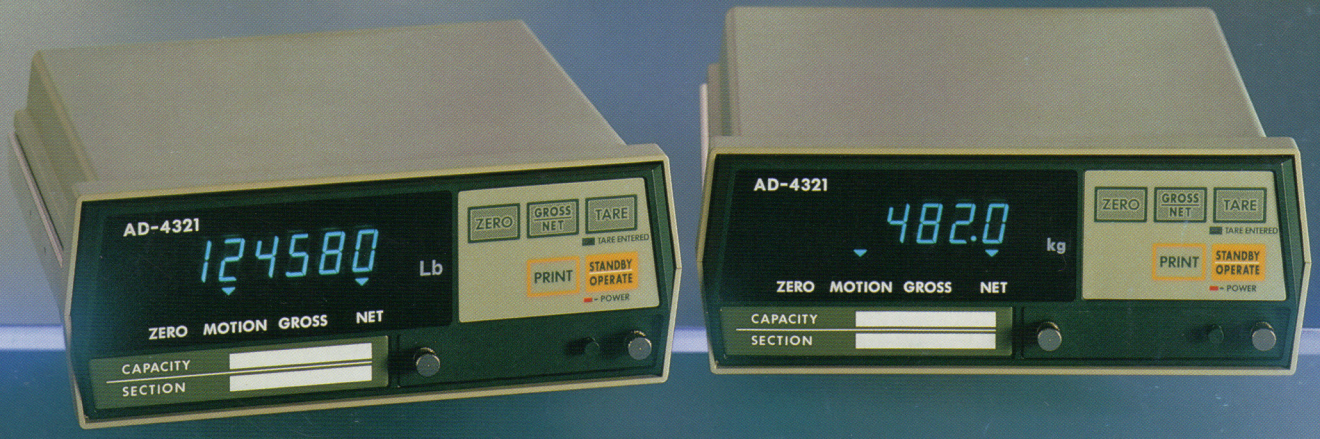
Weighing Indicators

# AD-4321A/B

*Accuracy, performance and dependability.*

QUALITY & RELIABILITY

FDC
FULL DIGITAL CALIBRATION




A&D ...Clearly a Better Value

A&D Company, Limited

# Weighing Indicators

# AD-4321A/B

## *Two new reliable electronic weighing indicators for all static weighing applications.*


A&D knows what you're looking for in a weighing indicator – Accuracy, dependability in environments unkind to precision instruments, up-to-date features for fast and trouble-free use – all at a reasonable price.

The new AD-4321 Weighing Indicators fulfill and exceed all these requirements.

Built to meet or exceed NBS HB-44, OIML Class (III) and other various regulations, these tough dependable indicators will impress you with their performance and ease of handling.

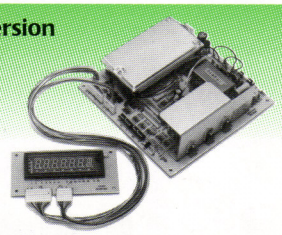
Features like Full Digital Calibration, a high immunity to external noise and "watch-dog" circuitry make the AD-4321 so dependable, you may forget it's there.

For any static weighing application, be sure to check the AD-4321A/B before you decide on a weighing indicator.

FDC
FULL DIGITAL CALIBRATION

*All analog adjustment is eliminated when you use the AD-4321A/B. The calibration procedure is greatly simplified. First, with nothing on the weighing platform you set zero. Then, load the calibration weight on the platform (calibration can be carried out at full scale or any desired load) and set the indicator to match its weight and you're finished. Because there's no interaction between zero and the span, there's no need to repeatedly load and unload the calibration weight. The whole procedure is greatly simplified because you set zero and the span only once. Furthermore, the AD-4321A/B is equipped with a non-volatile memory to retain its calibration until you recalibrate it.*

**AD-4321 AUC Uncased Version**



**Water resistant case (Option-05)**
***(Not for AD-4321 AUC)***

# *Compare the features. A&D offers you more. The AD-4321A/B gives you the most desired features in a tough, dependable indicator built to deliver years of reliable service.*

### ● Two models
The AD-4321A is built for regular AC operation and a wide variety of factory preset voltages are available. The AD-4321B is 12V DC powered for accurate weighing almost anywhere. Both models are housed in a sturdy case and are designed for either panel-mount or desk-top use.

### ● "Watch-dog" Circuitry
Special circuitry monitors the CPU and automatically resets the unit for normal operation if a software crash starts to develop.

### ● RFI Screened
The optically isolated analog front-end and AD conversion circuitry are shielded by an internal sealed metal case for high immunity against all forms of Radio Frequency Interference (RFI).

### ● Remote Control
A 7 pin DIN. socket is located on the rear panel for remote control of all keyboard functions except "Standby/Operate".

### ● AD-4321AUC Uncased Version
An uncased version of the AD-4321A is available. All options except option-05 are applicable.

### ● Optional BCD & RS-232C Interfaces
With the optional BCD (Option-01) or RS-232C (Option-04) the AD-4321A/B can be connected to virtually any computer, printer or other peripheral. A&D manufactures a number of excellent printers; such as the AD-8115 described on the back of this brochure.

### ● Conveniently located dip switches
Programming dip switches are located behind a small front panel cover. The dip-switch panel and the entire case can be sealed.

### ● 10,000 division display resolution
A high 130,000 count internal resolution and a 10,000 display resolution for enough precision for almost any application. An easy-to-read, 4 times/sec. conversion rate.

### ● Capable of driving up to 8 loadcells.
Loadcell excitation voltage of 12VDC (10VDC – AD-4321B) with the capability of driving up to 8 loadcells (350 ohms) in parallel.

### ● Water Resistant Case (Option-05)
Stainless steel case gives complete protection in wet environments.

*Specifications:*

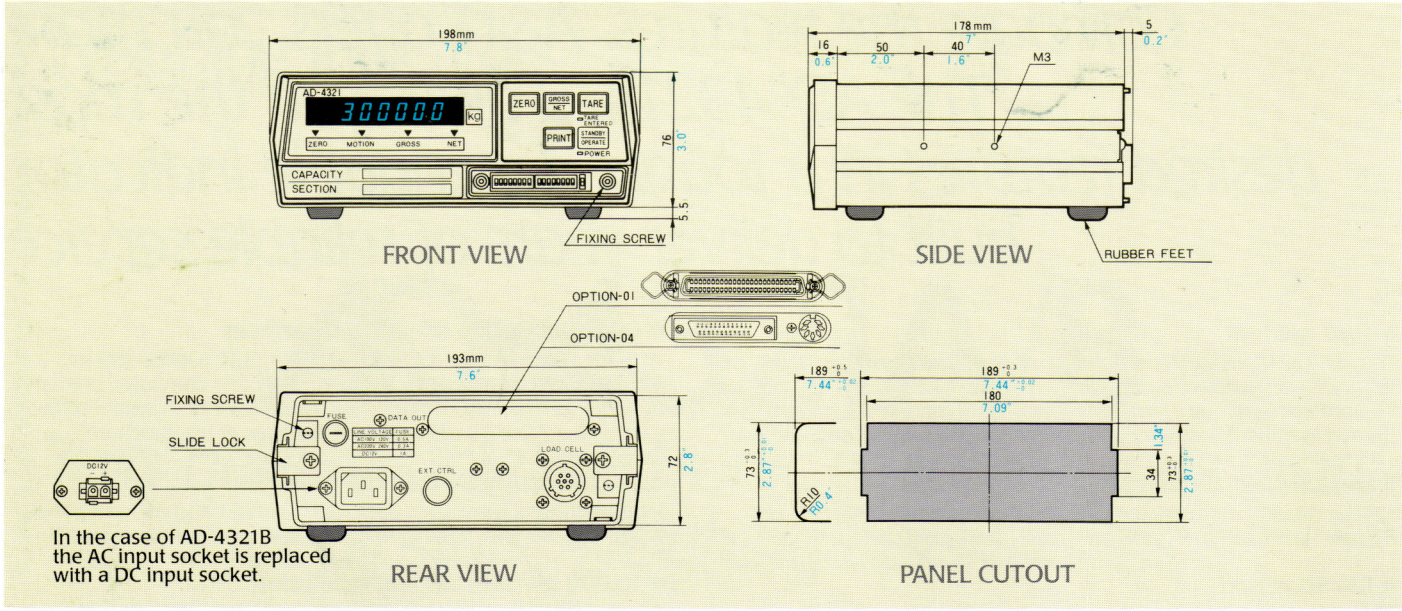
| | MODEL NO. | AD-4321A | AD-4321B |
|---|---|---|---|
| INPUT and A/D CONVERSION | Input sensitivity | 1.1μV/D to 120μV/D* | 0.9μV/D to 100μV/D* |
| | Zero adj. range | 1mV to 30mV | 0.8mV to 25mV |
| | Loadcell excitation | 12VDC, 280mA (voltage sensing) | 10VDC, 230mA (voltage sensing) |
| | Input impedance | 10MΩ (Min.) | |
| | A/D conversion method | True integrating dual slope | |
| | A/D resolution | 130,000 counts | |
| | A/D conversion rate | 4 times per second | |
| DIGITAL SECTION | Weight display | 13mm, 7 digits High intensity cobalt-blue fluorescent tube | |
| | Under zero indication | Negative "–" sign | |
| | Annunciators | Center of zero, Motion, Net, Gross, Power, Tare entered | |
| | Switches | Stand-by/Operate, Zero, Tare, Gross/Net, Print | |
| | Dip switch programming | Motion detection . . 1D or 3D/sec.<br>Zero track . . . . . 0.5D, 1D, 1.5D/1.2 sec.<br>Decimal point . . . . . None or 1, 2 or 3 decimal places<br>Scale interval . . . . . 1, 2, 5, 10, 20, 50<br>Max. Capacities. . . . 300/400/500/600/800/1,000/1,200/1,500/2,000/2,500/ 3,000/4,000/5,000/6,000/8,000/10,000/12,000/15,000/ 20,000/25,000/30,000/40,000/50,000/60,000/80,000/ 100,000/120,000/150,000/200,000/250,000/300,000/ 400,000/500,000 | |
| | Calibration | Calibration switch initiates the calibration or locks-in the calibration value. Display resolution of 1/300 to 1/10,000 can be easily obtained. | |
| | Non-linearity | ±0.01% of scale | |
| | Temp. coefficient | Zero . . . . . ± (0.3μV ±0.0005% of the initial zero offset voltage)/°C<br>Span. . . . . ±5ppm/°C of reading | |
| | Rear panel | Loadcell input. . . . . 7-pin connector<br>Ext. control . . . . . 7-pin connector (Zero, Tare, Gross/Net, Print) | |
| GENERAL | Power source (factory preset) | 100, 115, 220, 240VAC $^{+10\%}_{-15\%}$, 50/60Hz | 11VDC to 18VDC/380mA ~ 710mA |
| | Net weight | 1.7kg *(3.7 lb)* | 1kg *(2.2 lb)* |
| | Operating Temperature | –10°C to +40°C *(+14°F to +104°F)* | |
| | Operating Humidity | Max. 95% RH (Non-Condensing) | |
| | Physical Dimensions | 198(W) × 178(D) × 76(H)mm<br>*7.8(W) × 7.0(D) × 3.0(H) in.* | |
| | Options | Option-01. . . . . Parallel BCD output card for interfacing peripherals with BCD input capability. Printers AD-8113 and AD-8114B or an A&D external display unit may be used with this option. Mating connector: 57-30500 (AMPHENOL)<br>Option-04. . . . . Serial RS-232C and 20mA Passive Current Loop for interfacing most computers and AD-8115A/B and AD-8116.<br>Option-05. . . . . Water Resistant Case | |

*Note: Option-01 and Option-04 may not be installed together.*

**"D" = one scale interval (division).*

*Note: Specifications may be changed for improvement without notice.*

## Physical Dimensions

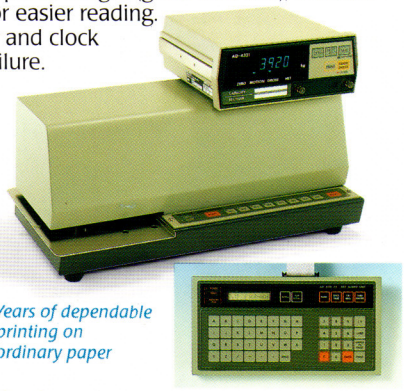



# Scale Printer
# AD-8115A/B

The AD-8115A/B are reliable and versatile impact dot-matrix printers for use with A&D weighing indicators. The basic AD-8115A prints weight (gross and tare), the date and time. Characters can be easily enlarged for easier reading. A built-in back-up battery powers the calendar and clock for at least 14 days in the event of a power failure.

The AD-8115B has all the features of the basic model, and also prints net weight, total and sequential number. 8-memory function enables it to store the weigh-in data for up to 8 vehicles and the memory number is printed for easy identification.

The capabilities of both units are easily expanded with the addition of the optional alpha-numeric keyboard-display for easy entry of known tare weights and up to 8 digits for ID and code numbers. It also enlarges the memory capacity to permit T.B.I. (Tare by I.D.) for up to 99 vehicles.



*Years of dependable printing on ordinary paper*

*AD-8115A/B with OP-02*
*Enlarged mode*

```
WEIGH-IN      794.7kg
ID            1111
09:31PM
15/06/84
GROSS
          794.7kg
  TARE
          359.8kg
    NET
          434.9kg
SEQ.#           3
ID           1111
CODE        APPLE
09:31PM
15/06/84
```

*AD-8115A/B with OP-02*
*Total print*

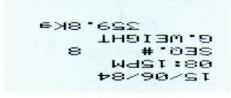
```
TOTAL
          CODE
#  1       NET     2610.4kg
          CODE     APPLE
#  2       NET      434.9kg
          CODE     ORANGE
#  1       NET     2175.6kg
          CODE     SUGAR
#  1       NET      435.0kg
#  1 WEIGHT         794.7kg
```

*AD-8115B*
*Normal printing*
*Using 8-Memory function*
*Enlarged mode*

```
WEIGH-IN      359.8kg
MEM.#               1
08:16PM 15/06/84

GROSS
          794.7kg
  TARE
          359.8kg
    NET
          434.9kg
SEQ.#               1
08:16PM
15/06/84
```

*Reverse print*
*Enlarged mode*



*Specifications:*

| | |
|---|---|
| PRINTER TYPE | Serial impact dot-matrix |
| FONT | 5 × 7 dots normal, 10 × 7 dots in enlarged mode. |
| CHARACTER SIZE | 1.7(W) × 2.9(H)mm (Normal), 3.4(W) × 2.9(H)mm (Enlarged)<br>*0.067(W) × 0.114(H) in. (Normal), 0.134(W) × 0.114(H) in. (Enlarged)* |
| SPEED | Approx. 2.4 lines per second. |
| PAPER SIZE | 70 ~ 210mm/*2.76 ~ 8.27in.(W)*, 90 ~ 297mm/*3.54 ~ 11.69in.(L)*, 0.09 ~ 0.45mm/*0.0035 ~ 0.0177in.(Thick)*<br>Ordinary paper, 4 copies max. with pressure-sensitive paper. |
| CLOCK | Minutes, Hours, Day, Months, Year. (2 digits for each, no leap year, accuracy = $\pm 5 \times 10^{-4}$) |
| OPERATING TEMPERATURE RANGE | −5 ~ +40°C/*23 ~ 104°F* (Relative Humidity 95% max., Non-condensing) |
| DIMENSIONS/WEIGHT | 400(W) × 200(D) × 150(H)mm, *15.7(W) × 7.9(D) × 5.9(H)in.*/7.2kg, *(15.8 lb)* Keyboard 1.2kg, *(2.6 lb)* |
| POWER SOURCE | 100,115,220,240VAC $^{+10\%}_{-15\%}$ as required 50/60Hz. 60W(factory preset) |
| INTERFACE MODE | RS-232C |
| OPTIONS | OP-01 . . . Interface (RS-232C & parallel BCD)<br>OP-02 . . . Keyboard-display |

*Note: Specifications may be changed for improvement without notice.*

*...Clearly a Better Value*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*CATALOG NO.AD-4321-930910-1F