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AD-4328
*Basic Weighing Indicator*

The AD-4328 is a simple weighing indicator that converts and displays load cell outputs as weights. The AD-4328 satisfies all basic requirements for platform, hopper and packer scales.

**Display**
- Large (character height 14.2mm) LED display for weights and tare values.
- Optional stand available
- Waterproof front panel (IP-65 compliant)

**Weighing Functions**
- Checkweighing mode (3 levels) for comparing weight with upper and lower limits.
- Setpoint comparison for batching applications
- Manual and automatic comparator and accumulated data storage to memory

**External I/O**
- Control Inputs (3 standard)
- Current Loop Output (for connection to A&D peripheral devices)
- Optional Items: RS-232C, RS-422/485, Relay output, Parallel BCD output

**Digital Calibration Function**

**Power Supply**
- DC9V (AC adapter or direct input to the terminal) AC adapter is optional

---

AD-4329A
*Basic Weighing Indicator*

The AD-4329A is equipped with a triple-range function and is ideal for scales with multiple weighing intervals. The AD-4329A is perfect for a diverse array of applications such as hoppers, packers and check-weighing scales.

**Dual Range/Triple Range**
- Can switch between three ranges by setting combinations of capacity and minimum display.

**Display**
- Vacuum Fluorescent Display (VFD) with 13mm characters

**Weighing Functions**
- Checkweighing mode (3 levels) for comparing weight with upper and lower limits.
- Setpoint comparison for batching applications
- Manual and automatic comparator and accumulated data storage to memory

**External I/O**
- 7 Control Input nodes
- Standard interface RS-232C, 20mA Current Loop (for use with A&D peripheral devices)
- Optional Items: RS-422/485, Relay Output, Parallel BCD Output, Analog Output (4-20mA)

**Digital Calibration Function**

**Power Supply**
- AC100/120/200/220/240V (Please request preferred voltage rating at time of order)
AD-4401A

Basic Weighing Indicator

The AD-4401A has a compact body, high-end A/D converter and versatile functions, including batch-weighing control and check weighing. The AD-4401A is suitable for a wide range of applications, from hopper and packer scales to check-weighing scales.

As a new feature the AD-4401A now is equipped with a High Performance Digital Filter (HPDF). In situations where vibration must be removed, it provides high accuracy as well as high-speed response.

The AD-4401A is highly compatibility with the old AD-4401 model allowing for easy replacement of any old AD-4401 devices. Easily replaceable

- The size, color and methods of operation and control panel installation of the AD-4401A remains the same as the AD-4401.
- Interface connectors retain compatibility so even when updating from AD-4401 to AD-4401A previously connected devices can continue to be used without changing any connectors.
- Functions have been added but the default settings remain identical to the AD-4401.

Display

- 13mm high characters for the main display and 7mm high characters for the sub display.
- The front panel is structured to be waterproof (IP-65 compliant).

Weighing Functions

- Pre-programmed with normal-batching and loss-in-weight sequences
- Batch-time/Discharge-time monitoring, Supplementary flow function
- Check-weighing mode (5 levels)

External I/O

- Standard, Configurable Control I/O: Input 6, Output 8
- Standard 20mA Current Loop (for use with A&D peripheral devices)
- Optional Items RS-232C, RS-422/485, Parallel BCD Output, Analog Output (4-20mA)

Digital Calibration Function

Power Supply

- AC100 to 240V

New Function

- HPDF (High Performance Digital Filter)
- Modbus-RTU (required option RS-422/485)

Capable of Modbus-RTU Communications
AD-4402

Multifunction Weighing Indicator with Field Bus Support

The AD-4402 combines a small body with a large display and excellent weighing sequence functions. The AD-4402 can be used with various factory devices with its support for field bus (CC-Link, DeviceNet, PROFIBUS), Modbus, serial, parallel, analog output and relay output.

Display
- Large Vacuum Fluorescent Display (VFD) with 18mm characters on main display
- Sub display shows weight, raw material, setpoint, cumulative value, code name, and error message, etc. on the same screen.
- Waterproof front panel (IP-65 compliant)

Weighing Functions
- Preprogrammed with normal-batching and loss-in-weight sequences
- Batch-time/discharge-time monitoring and supplementary flow function
- Mixing function - one unit can mix multiple materials
- Sequence functions for filling and mixing
- High-speed sampling at 100 times/sec enables swift response to weight changes
- Memory function
- Stores 100 data values of both raw materials and recipe codes

External I/O
- Configurable Control I/O: 11 input nodes, 11 Output nodes
- Standard RS-485, Current Loop Output (for connection to A&D peripheral devices)
- Modbus-RTU
- Optional Items: RS-232C, RS-422/485, Relay Output, Parallel BCD Output, Analog Output (4-20mA)
- Field bus
  - Can connect to CC-Link, DeviceNet, PROFIBUS (optional)

Digital Calibration Function

- Supports all power sources
  - AC100 to 240V (switching-mode power supply)
  - DC 24V model also available (AD-4402D)

Capable of Modbus-RTU Communications

- Field Bus Network
  - Expects your network
  - Simple wiring between modules in the system
  - Easy signal upload and download
  - Lighter load on PLC

Mixing System Control by AD-4402

- Filling Gate
- Mixing Fan
- Exhaust Gate
- Maximum 10 Material Code Controlled
- Up to 100 Recipe Combinations

Nozzle Control Application

- Control output signal for metal
- Control output signal for mixing
- Control output signal for motor
- Control output signal for flow

Bin-Gate Timer

- At the judgment, if the supply is short, the re-supply will work until the target amount is supplied.

High Communication Capability

- RS-485 Interface
  - Network up to 32 Units
  - PLC, PC Direct Connection
  - Lower Control System Costs

Field Bus

- Easy maintenance
- Weighing Instruments
- Robot & NC Machines
- Measuring Instruments
- Signals & Switches
AD-4403-FP
Flameproof Weighing Indicator

The AD-4403FP is a flameproof weighing indicator (ExdIIIBT5X) and has passed explosion testing by the Technology Institution of Industrial Safety in Japan. It is ideal for use in dangerous environments with materials such as LPG, paints and petroleum based materials.

Display
- Equipped with main and sub displays
- The main display shows weights and the sub display show settings and accumulated weight.

Weighing Functions
- Preprogrammed with normal-batching and loss-in-weight sequences
- Automatic accumulation of net weight on batch finish
- High-speed sampling at 100 times/sec enables swift response to weight changes

External I/O
- Control I/O 6 Input nodes, 6 Output nodes
- Current Loop Output (for connection to A&D peripheral devices)

Digital Calibration Function

Power Supply
- AC100/120/200/220/230/240V
(Please request preferred voltage rating at time of order)

The AD-4403FP is a flameproof weighing indicator (ExdIIIBT5X) and has passed explosion testing by the Technology Institution of Industrial Safety in Japan. It is ideal for use in dangerous environments with materials such as LPG, paints and petroleum based materials.

Display
- Equipped with main and sub displays
- The main display shows weights and the sub display show settings and accumulated weight.

Weighing Functions
- Preprogrammed with normal-batching and loss-in-weight sequences
- Automatic accumulation of net weight on batch finish
- High-speed sampling at 100 times/sec enables swift response to weight changes

External I/O
- Control I/O 6 Input nodes, 6 Output nodes
- Current Loop Output (for connection to A&D peripheral devices)

Digital Calibration Function

Power Supply
- AC100/120/200/220/230/240V
(Please request preferred voltage rating at time of order)
AD-4404
Check Weighing Indicator

The AD-4404 is ideal for check weighing on conveyers, rollers, and platform scales. Simply connect a load cell or a platform scale to the AD-4404 and you can easily make an excellent check scale.

Large Display
- Large Vacuum Fluorescent Display (VFD) with 18mm characters on main display
- Sub display shows the product name, setpoint, graph, etc.
- Waterproof front panel (IP-65 compliant)

Weighing Functions
- Checks weight of an object moving on a conveyer and outputs the comparator judgment
- Checks weight while packing on the conveyer and outputs the comparator judgment
- Bar graph indicates where the weight falls within the OK range
- Stores and recalls up to 100 sets of preset items by individual code number
- High-speed sampling at 100 times/sec enables swift response to weight changes

External I/O
- Control I/O: 11 Input nodes, 11 Output nodes
- Standard RS-485 I/O, Current Loop Output (for connection to A&D peripheral devices)
- Optional Items
  - RS-232C, RS-422/485, Relay Output, Parallel BCD Output, Analog Output (4-20mA)

Digital Calibration Function

Power Supply
- AC100 to 240V

Check Mode

Simply connect the AD-4404 to a weighing device (conveyer) to make an excellent check scale. The AD-4404 is equipped with convenient check modes and functions to improve productivity and precision.

- Semi-Automatic (1):
  - Conveyor stops when item is out of acceptable range.
  - Fully Automatic (2):
    - Conveyor stops during weighing for higher accuracy.
    - Automatic restart.
    - Automatic reject.

- Packing Mode
  - Fill container on in-motion scale while stationary.
  - Press start button when complete.
  - If container is within acceptable range, conveyors start.

- Simple Check Weigher
  - In-motion only.
  - Records total packages and total acceptable packages.

- High-speed sampling at 100 times/sec enables swift response to weight changes.
AD-4405A

Weighing Indicator with Optional Built-in Printer

The AD-4405A features a built-in optional printer. Functions include check-weighing, normal batch-weighing, and counting. The AD-4405A can be installed on a console panel using the optional panel mount kit.

Large Display
- Large Vacuum Fluorescent Display (VFD) with 20mm characters

Weighing Functions
- Multiple weighing intervals (dual range)
- Check-weighing function (5 levels)
- Set-point comparison for batching applications (normal-batching/loss-in-weight)
- Displays or outputs cumulative weight values, the number of accumulations, etc.
- Simple counting function
- Memory function
  Stores four sets of setpoints, preset tare and unit weight

External I/O
- Standard RS-232C
- Optional Items
  RS-232C, RS-422/485, Analog Output (4-20mA), Current Loop Output, Relay Output, Control input

Optional Printer
- 16 characters per line with the dot matrix compact printer
- Weight, tare, cumulative values, code numbers, data and time can be printed out
- Selectable printing formats with UFC

Digital Calibration Function

Power Supply
- AC100/120/200/230V
AD-4406A
Static Weighing Indicator

The AD-4406 is small, light (650g) and easy to use. The AD-4406 is equipped with a 25mm LCD and battery operation is possible.

Display
- Large Liquid Crystal Display (LCD) with 25mm high characters

Weighing Functions
- Multiple weighing intervals (dual range)
- Check-weighing function (5 levels)
- Displays or outputs cumulative weight values, the number of accumulations, etc.
- Memory function
  Stores four sets of setpoints to memory.

External I/O
- Optional Items
  RS-232C, RS-422/485, Relay Output, Control Input, Analog Output (4-20mA), Current Loop Output, Stand

Digital Calibration Function

Power Supply
- AC adapter or alkaline C type battery 6PCS
- Battery life 180 hours (Load Cell 3500 × 1)
- Battery life 70 hours (Load Cell 3500 × 4)

Static Weighing Indicator
AD-4406A
Weighing Indicator
With optional stand
AD-4407A
Waterproof Weighing Indicator
IP 65 compliant, dust and waterproof weighing indicator. The stainless steel (SUS304) body and stand are easy to clean in water.

Large Display
- Large Vacuum Fluorescent Display (VFD) with 20mm characters

Weighing Functions
- Multiple weighing intervals (dual range)
- Checkweighing function (5 levels)
- Setpoint comparison for batching applications (normal-batching/loss in weight)
- Displays or outputs cumulative weight values, the number of accumulations, etc.
- Simple counting function
- Memory function
  Stores four sets of setpoints, preset tare and unit weight

External I/O
- Standard RS-232C, Stand
- Optional Items
  RS-232C, RS-422/485, Relay Output, Control Input, Analog Output (4-20mA), Current Loop Output
  Current Loop Output (for connection to A&D peripheral devices)

Digital Calibration Function

Power Supply
- AC100/120/200/230V

With Standard Stand

Unit: mm/inches
AD-4408A
Weighing Indicator with Field Network Support

AD-4408A accomplishes the difficult goal of measuring with high precision and quick response times in environments with frequent vibrations thanks to its newly developed high performance digital filter. Various field network modules can be installed.

**Display**
- Weighing Display Green LED 14.6mm characters
- Status Display Red LED
- Polarity Display Green LED
- Dust and water-proof display (when mounted to a panel)

**Weighing Functions**
- High speed sampling 100 times/second

**External I/O**
- Current Loop Output (for connection to A&D peripheral devices)

**Digital Calibration Function**

**Power Supply**
- AC100 to 240V

**Optional Items (Field Network Modules)**
*For module installation a TORX Screwdriver is required. Use TORX size T9.

- AX-ABCC-PROFI Profibus Module
- AX-ABCC-MODBUS Modbus Module
- AX-ABCC-DEVICE DeviceNet Module

**Unit: mm/inches**

**Front View**
- 144 / 5.67”
- 72 / 2.83”

**Side View**
- (134.7 / 5.3”)
- 99.5 / 3.92”
- 16 / 0.63”

**Back View**
- 137 / 5.4”
- 67 / 2.64”

**Panel cutout size**
- 138 1/4 / 5.43”
- 68 1/2 / 2.69”

Eliminates the effect of vibrations

High Performance Digital Filter (HPDF)

AD-4408A Weighing Indicator

Eliminates the effect of vibrations

High Performance Digital Filter (HPDF)
AD-4408C
Weighing Indicator Designed for CC-Link

Precise weighing is often required in weighing environments with heavy vibrations. This means that electricity, software and mechanical vibration countermeasures such as analog filters, moving averages, oil dampers etc. are required. However these countermeasures are linked to slowing the response time of the weighing instrument so it is difficult to make a weighing instrument that combines high precision with quick response time.

AD-4408C accomplishes this difficult goal of measuring with high precision and quick response time in environments with frequent vibrations thanks to its newly developed high performance digital filter.

This addition makes it possible to affordably improve the efficiency of weighing instruments including sources of structural vibration such as automatic weight separator, CFW etc. Cost performance and maintainability increase because no specific mechanical vibration-proof structure is needed. Generally calibration in places with vibrations requires vibration sources to be completely stopped or is done on holidays when no machines are operating. However the AD-4408C can be calibrated even in these environments.

The AD-4408C comes equipped with a CC-Link interface and one master device can connect to up to 42 devices (only AD-4408C).

Display
- Weighing Display Green LED 14.6mm characters
- Status Display Red LED
- Polarity Display Green LED
- Dust and water-proof display (when mounted to a panel)

Weighing Functions
- High speed sampling 100 times/second
- Internal Resolution approx. 16,000,000
- Zero correction, tare, gross/net weight switching

External I/O
- CC-Link
- Current Loop Output (for connecting external display devices, printers, etc. from A&D)

Digital Calibration Function

Power Supply
- AC100 to 240V

Eliminates the effect of vibrations

High Performance Digital Filter

Weighing while inducing vibration

Weighing while raising and lowering
AD-4410
Vibration-Resistant Weighing Indicator

The high performance digital filter protects against vibration and allows for high precision and quick response time. The AD-4410 can greatly cut down the need for mechanical vibration countermeasures which can greatly reduce costs and maintenance. With the AD-4410 it is no longer difficult to weigh while inducing vibration. There is only one setting for the high performance digital filter. This allows the AD-4410 to find the optimal value to cancel out vibration with minimal setting changes. In addition to the high performance digital filter the AD-4410 has the following features: averaging hold, comparator, high-order linearity compensation, near-zero detection, zero tracking and gravitational acceleration compensation. The AD-4410 also comes standard with a RS-232C interface for data transfer and 3 Control input and output nodes.

Display
- Weighing Display Green LED 14.6mm characters
- Status Display Red LED
- Polarity Display Green LED
- Dust and water-proof display (when mounted into a panel)

Weighing Functions
- High speed sampling 100 times/second
- Internal Resolution approx. 16,000,000
- Zero correction, tare, gross/net weight switching

Capable of Modbus-RTU Communications

External I/O
- Standard RS-232C (D-Sub9P Male)
- Standard Current Loop Output (for connecting external display devices, printers, etc. from A&D)
- Standard Control I/O: 3 Input nodes (No-voltage contact or open collector), 3 Output nodes (open collector)
- Optional Items: RS-485, RS-232C(CH2), Analog Output(4-20mA), Stand

Digital Calibration Function

Power Supply
- AC100 to 240V

- With the averaging hold you can find the weight when measuring is difficult such as when liquids are moving and while mixing.

- You can make a simple checkweigher by combining the high performance digital filter and peak hold functions.
AD-4430B

Ultra Compact Weighing Module

DIN rail mount ideal for insertion into control box
High sampling frequency (1000 times per second)
High speed BCD output (1000 times per second)

The AD-4430B is an ultra-compact weighing module equipped with our newly developed high performance digital filter for use in environments with heavy vibrations. The AD-4430B has a sampling rate of 1000 times per second and can be inserted into a control panel via DIN rail. BCD I/O is a standard feature and can output at 1000 times per second.

When connected to a load cell the AD-4430B can check for disconnections or incorrect wiring making it convenient for installation and start-up or periodic inspections.

In addition to the high performance digital filter the AD-4430B has the following features: averaging hold, comparator, high-order linearity compensation, near-zero detection, zero tracking and gravity acceleration correction.

**Display**
- Measurement Display: 5.3mm characters Red LED
- Status Display: Red LED
- Polarity Display: Red LED

**Weighing Functions**
- High sampling rate 1000 times/sec
- Internal resolution approx. 16,000,000
- Zero correction, tare, gross/net weight switching

**External I/O**
- BCD I/O (open collector)

**Digital Calibration Function**

**Power Supply**
- DC24V

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**Can be inserted into a control box**

**Weighing moving liquids**

**Weighing while mixing**
AD-4430C
Ultra Compact Weighing Module

The AD-4430C is an ultra-compact weighing module equipped with high performance digital filter for use in environments with heavy vibrations.

The AD-4430C has a sampling rate of 1000 times per second and can be inserted into a control panel via DIN rail.

**Display**
- Measurement Display 5.3mm characters Red LED
- Status Display Red LED
- Polarity Display Red LED

**Weighing Functions**
- High sampling rate 1000 times/sec
- Internal resolution approx. 16,000,000
- Zero correction, tare, gross/net weight switching

**External I/O**
- CC-Link (1 Master with total of 42 devices possible)
- Control I/O: 6 input points, 8 output points
- Selectable functionality for input and output ports
- Current loop output 20mA current loop signal (passive)
- USB: USB2.0 compatible Micro USB connector
  Not subject to CE compliance standards during USB interface use

**Digital Calibration Function**

**Power Supply**
- DC24V

**Features**
- Dual Digital Filter
- Sequential Weighing (Filling/dispensing measurements)
- Input/output control can be allocated to any user input/output
- Setpoint
- Active free fall compensation
- Gravity acceleration correction
- Comparator functionality
- Hold functions
- Load cell connection diagnosis
- Near zero detection
- Zero tracking
- Power-on zero
- Flow rate (per second) display/output

![Diagram of AD-4430C connections](image)

- **Control I/O (6 Inputs, 8 Outputs) Can Be Used As Remote I/O**
  - Photosensor
  - Proximity switch
  - Relay
  - Output from I/O Control
  - Input to I/O Control
  - CC-Link

- **USB (Micro-B) Interface**
  - USB cords
  - A terminal
  - micro B terminal
AD-4541-V/I
Ultra-Slim Analog Signal Conditioner
 Converts signals received from a bridge type sensor such as a load cell, pressure sensor, strain gauge, etc. to a voltage output (AD-4541-V/–2V to +2V) or a current output (AD-4541-I/4-20mA). The AD-4541-V/I can be easily mounted on a DIN rail or a wall.

**Input**
- Strain gauge excitation: DC 5V
- Frequency response: DC to 2Hz (–3dB)

**Output**
- Voltage Output (AD-4541-V): –2V to +2V
- Voltage Current (AD-4541-I): 4-20mA

**Housing to be fixed on a DIN rail or a wall**

**Power Supply**
- DC24V

AD-4530
Digital Indicator for Strain Gauge Sensors
The AD-4530 converts voltage signals from a strain gauge to a digital display. It is ideal for measuring weight, pressure, torque etc. Can back up zero compensation values.

**A/D Conversion Speed 10times/second**

**Compact (96 × 48mm)**

**Display**
- 4 digit 14mm characters Red LED, 5 status display marks

**Functions**
- Various hold functions, comparator, latch function, chattering prevention function, power-on zero

**External I/O**
- Control Input Latch, Hold, Zero
- Relay Output (optional)
- RS-232C (optional)
- RS-485 (optional)
- D/A Analog Output (optional)

**Digital Calibration Function**

**Power Supply**
- AC100 to 240V
**AD-4531B**

*Digital Indicator for Strain Gauge Sensors*

The AD-4531B converts voltage signals from a strain gauge to a digital display. It is ideal for measurements such as weight, pressure, torque and tension. Zero correction back up possible.

**A/D Conversion Speed 100 times/second**

**Compact (96 × 48mm)**

**Display**

- 6 digit red LED with 9.2mm characters, minus display and five status display marks.

**Various Functions**

- Comparator function
  - HI, OK or LO is displayed according to upper/lower limit settings
  - One of AD4530-200 / 237 / 247 (optional) is required for output
- Hold function
  - Choose from sample hold, peak hold, bottom hold, bipolar peak hold
- Latch function
  - Holds display value, comparator (optional), analog output (optional), serial output (optional) corresponding to external latch input
- Chattering prevention function
  - Hysteresis width and time can be set to reduce the load on the relay circuit
- Power on zero function
  - Zero adjustment is possible when turning power on
- Unit characters
  - Possible to choose the unit characters to be added to serial output (optional)

**External I/O**

- Control I/O

**Options**

- AD4530-200 Relay output
  - HI, OK, LO contact output, AC250V or DC30V, 3A, mechanical contact,
  - Contact arrangement: 1a, 4-pin connector attached
- AD4530-030 RS-485
  - Up to 31 units can be connected, 5-pin connector attached
- AD4530-040 RS-232C input/output
  - 5-pin connector attached
- AD4530-007 D/A analog output
  - Temperature coefficient: 100 ppm/ºC (typ.), 3-pin connector attached,
  - Voltage output: 0 to 10V, Current output: 4 to 20mA, scaling is possible,
  - Output resolution: 1/8000 approx. (13 bit equivalent)
- AD4530-237
  - Relay output, RS-485, D/A analog output, 3, 4, 5-pin connectors attached
- AD4530-247
  - Relay output, RS-232C, D/A analog output, 3, 4, 5-pin connector attached

*The options above can only be used one at a time.*

**Digital Calibration Function**

**Power Supply**

- AC100 to 240V
**AD-4532B**

*Digital Indicator for Strain Gauge Sensors*

The AD-4532B converts voltage signals from a strain gauge at high speeds to a digital display. High-speed A/D conversion (2000 times/second) is ideal for measuring the dynamic phenomena of loads, pressure, displacement, torque, etc.

**A/D Conversion Speed 2000 times/second**

**Compact (96 × 96mm)**

**Display**
- Measurement Display: 6 digit 14mm characters
- Tricolor (orange, green, red) LED
- Upper/Lower Limit Display: 5 digit 9 mm characters Green LED
- Judgment Display: Tricolor (orange, green, red) LED
- HI, OK, LO display

**Functions**
- 2D (5-level) comparator function
  
  This function determines the acceptability of the total result by performing sequential movement and comparison of five different upper/lower limits through timing on the axis or an external input (trigger).
  It is ideal for use in measurements such as a press-in operation which requires changes in the setpoint as time elapses. The five comparators can also be used individually.
- Digital hold and peak hold functions
- Upper/lower limits are stored in the internal memory
- Simultaneously displays and outputs the HI/OK/LO judgment to the contact signal

**External I/O**
- ±10V Analog Output, 3-point Comparator Output, Modbus-RTU
  (Analog maximum output resolution 1/10000)
- Optional Items
  RS-232C, Parallel BCD Output, Analog Voltage/Current Output (±10V and 4-20mA), Ethernet

**Digital Calibration Function**

**Power Supply**
- AC100 to 240V

**Capable of Modbus-RTU Communications**
AD-8118C
Universal Printer
The AD-8118C is a universal printer designed for connection with indicators, scales and electronic balances.

Features
- Date and time printing function (built-in calendar/clock)
- Cumulative memory function
  (Memory stored even if the power supply is switched off.)
- Internal battery provides calendar/clock and cumulative memory function back-up for approx. 10 years.
- Cumulative/statistical calculation functions by code/input channel
- Print modes: Random, Dump, Interval, and Batch
- Print format modification function using the operation keys
  (in the random print mode)
- Connectable to external displays (up to 3 devices) with a current loop output (channel 1 only)
- Up to 4 data output devices including indicators (AD-8118C-02 required) can be connected to a single AD-8118C printer.
- Receives input signal via a current loop (maximum length of approx. 100m) or RS-232C (maximum length of approx. 15m)
- Automatic paper winder (AD-8118C-10) is available as option.

Physical dimensions: 192(W)×120(H)×193.5(D)mm (including protruding part)

AD-8121B
Compact Printer
The AD-8212B prints charts and offers a full range of statistical functions.

Features
- Chart selectable to show change in weight, interval time, start time and stop time
- A full range of statistical functions: weight, total weight, counting, total counting, number of operations, standard deviation, coefficient of variant, chart, year, month, date, hour, minute and second
- AC power supply and battery operation permits use anywhere.
- Accepts RS-232C and current loop input from A&D’s electronic balances, scales and indicators.

AD-1688
Weighing Data Logger
Stores approximately 5000 weights with timestamps
Can transfer saved data to PC via USB port (Transfer software unnecessary)

AD-8527
Quick USB Adapter
Transfer weighing data in real time to a PC
Simple data transfer to Excel and Word
(Transfer software unnecessary)
### Weighing Indicator

<table>
<thead>
<tr>
<th>Model</th>
<th>AD-4328</th>
<th>AD-4329A</th>
<th>AD-4401A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input sensitivity</strong></td>
<td>0.2mV/0.001mV</td>
<td>0.5mV/0.001mV</td>
<td>0.2 mV/0.001mV</td>
</tr>
<tr>
<td><strong>Zero adjustment range</strong></td>
<td>0–200mV</td>
<td>±250mV</td>
<td>±20mV</td>
</tr>
<tr>
<td><strong>Load cell excitation</strong></td>
<td>DC50V/5%, 30mA</td>
<td>DC50V/5%, 30mA</td>
<td>DC50V/5%, 230mA</td>
</tr>
<tr>
<td><strong>Remote sensing function included</strong></td>
<td>Up to 6 load cells (350Ω) can be connected</td>
<td>Up to 6 load cells (350Ω) can be connected</td>
<td>Up to 8 load cells (155Ω) can be connected</td>
</tr>
<tr>
<td><strong>Temperature coefficient</strong></td>
<td>0±0.05%/ºC Typ.</td>
<td>0±0.05%/ºC Typ.</td>
<td>0±0.0005%/ºC Typ.</td>
</tr>
<tr>
<td><strong>Non-linearity</strong></td>
<td>0.01% of F.S.</td>
<td>0.01% of F.S.</td>
<td>0.01% of F.S.</td>
</tr>
<tr>
<td><strong>Maximum resolution</strong></td>
<td>100,000d</td>
<td>10000d</td>
<td>20mA Current Loop (for use with A&amp;D peripheral devices)</td>
</tr>
<tr>
<td><strong>Sampling rate</strong></td>
<td>50 times/sec</td>
<td>50 times/sec</td>
<td>100 times/sec</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>Main display: Red LED 7 digit 7 segment display, Character height 13mm Cross weight, net, tare preset, cumulative value Status display: Red LED Triangle display marks (5) Unit display: Red LED Display units kg, g, t</td>
<td>Main display: Cobalt blue VFD 7 digit 7 segment display, Character height 13mm Cross weight, net, tare preset Status display: Cobalt blue VFD Triangle display marks (5) Unit display: Green LED Display units kg, g, t</td>
<td>Main display: Cobalt blue VFD 7 digit 7 segment display, Character height 13mm Cross weight, net, tare preset Sub display: Black LED 8 digit 7 segment display with 7 characters Status display: Cobalt blue VFD Upper 7 marks Under 7 marks Unit display: Display units kg, g, t</td>
</tr>
<tr>
<td><strong>Standard external I/O</strong></td>
<td>Standard Interface RS-232C</td>
<td>20mA Standard Loop (for use with A&amp;D peripheral devices)</td>
<td>Control I/O: Input 8, Output 6 20mA Standard Loop (for use with A&amp;D peripheral devices)</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>OP-01 Parallel BCD Output (Open collector) OP-02 Comparator Output (Open collector) OP-03 RS-422/485 - Relay output (AC adapter included) OP-04 RS-232C - Current Loop - Relay Output OP-07 Analog Output (4-20mA)</td>
<td>OP-01 Parallel BCD Output (Open collector) OP-02 Comparator Output (Relay output) OP-03 RS-422/485 OP-07 Analog Output (4-20mA)</td>
<td>OP-01 Parallel BCD Output (Open collector) OP-02 Comparator Output (Relay output) OP-03 RS-422/485 OP-04 RS-232C OP-07 Analog Output (4-20mA)</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>DC9V Approx. 3.5A (AC adapter or DC input to the terminal) AC 100-240V without switching AC 100-240V for Diodel Switch and AD-4410-06 (sensor unit) connection</td>
<td>AC 100-240V without switching Approx. 30mA</td>
<td>AC 100-240V without switching Approx. 30mA</td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td>-15ºC to 40ºC</td>
<td>-15ºC to 40ºC</td>
<td>-15ºC to 40ºC</td>
</tr>
<tr>
<td><strong>Physical dimensions</strong></td>
<td>192(W) × 96(H) × 165(D) mm</td>
<td>192(W) × 96(H) × 165(D) mm</td>
<td>144(W) × 72(H) × 197(D) mm</td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td>AD-4402</td>
<td>AD-4403-FP</td>
<td>AD-4404</td>
</tr>
<tr>
<td><strong>Input sensitivity</strong></td>
<td>0.2mV/0.001mV</td>
<td>0.2mV/0.001mV</td>
<td>0.2 mV/0.001mV</td>
</tr>
<tr>
<td><strong>Zero adjustment range</strong></td>
<td>0–200mV</td>
<td>±250mV</td>
<td>±20mA</td>
</tr>
<tr>
<td><strong>Load cell excitation</strong></td>
<td>DC50V/5%, 30mA</td>
<td>DC50V/5%, 30mA</td>
<td>DC50V/5%, 230mA</td>
</tr>
<tr>
<td><strong>Remote sensing function included</strong></td>
<td>Up to 6 load cells (350Ω) can be connected</td>
<td>Up to 6 load cells (350Ω) can be connected</td>
<td>Up to 8 load cells (155Ω) can be connected</td>
</tr>
<tr>
<td><strong>Temperature coefficient</strong></td>
<td>0±0.05%/ºC Typ.</td>
<td>0±0.05%/ºC Typ.</td>
<td>0±0.0005%/ºC Typ.</td>
</tr>
<tr>
<td><strong>Non-linearity</strong></td>
<td>0.01% of F.S.</td>
<td>0.01% of F.S.</td>
<td>0.01% of F.S.</td>
</tr>
<tr>
<td><strong>Maximum resolution</strong></td>
<td>100,000d</td>
<td>10000d</td>
<td>20mA Current Loop (for use with A&amp;D peripheral devices)</td>
</tr>
<tr>
<td><strong>Sampling rate</strong></td>
<td>50 times/sec</td>
<td>50 times/sec</td>
<td>100 times/sec</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>Main display: Green VFD 7 digit 7 segment display, character height 18mm Net gross weight switching Display units kg, g, t</td>
<td>Main display: Green VFD 7 digit 7 segment display, character height 13mm Sub display: Black LED 8 digit 7 segment display, character height 7mm Status display: 2 LEDs Rectangle display marks (14) Judgment display: 3 LEDs</td>
<td>Main display: Cobalt blue VFD 7 digit 7 segment display, character height 13mm Sub display: Black LED 8 digit 7 segment display, character height 7mm Status display: 2 LEDs Triangle display marks (8), 5 + 7 dot symbols (3)</td>
</tr>
<tr>
<td><strong>Standard external I/O</strong></td>
<td>Control I/O: 11 selectable function inputs (no-voltage contact or open collector) 11 selectable function outputs (open collector output) Standard RS-485 (Modbus-RTU compliant) Current Loop Output (for connection to A&amp;D peripheral devices) Code input 2 constant frequenies For scale diameter: 10 to 12mm (G1/2) Code number, setpoint and error display, etc. Status display: Triangle display marks (8), 5 + 7 dot symbols (3)</td>
<td>Control I/O: 11 selectable function inputs (no-voltage contact or open collector) 11 selectable function outputs (open collector output) Standard RS-485 Current Loop Output (for connection to A&amp;D peripheral devices) Code input 2 constant frequenies For scale diameter: 10 to 12mm (G1/2) Code number, setpoint and error display, etc. Status display: Triangle display marks (8), 5 + 7 dot symbols (3)</td>
<td>Control I/O: 11 selectable function inputs (no-voltage contact or open collector) 11 selectable function outputs (open collector output) Standard RS-485 Current Loop Output (for connection to A&amp;D peripheral devices) Code input 2 constant frequenies For scale diameter: 10 to 12mm (G1/2) Code number, setpoint and error display, etc. Status display: Triangle display marks (8), 5 + 7 dot symbols (3)</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>OP-01 Parallel BCD Output (Open collector) OP-02 Comparator Output (Open collector) OP-03 RS-422/485 - Relay output (AC adapter included) OP-04 RS-232C - Current Loop - Relay Output OP-07 Analog Output (4-20mA)</td>
<td>OP-01 Parallel BCD Output (Open collector) OP-02 Comparator Output (Relay output) OP-03 RS-422/485 OP-07 Analog Output (4-20mA)</td>
<td>OP-01 Parallel BCD Output (Open collector) OP-02 Comparator Output (Relay output) OP-03 RS-422/485 OP-04 RS-232C OP-06 Setpoint unit OP-07 Analog Output (4-20mA) OP-10 Stainless steel side panel Only one option can be selected from OP-01,03,04,07</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>DC9V Approx. 3.5A</td>
<td>DC9V Approx. 3.5A</td>
<td>DC10V±5%, 230mA</td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td>-15ºC to 40ºC</td>
<td>-15ºC to 40ºC</td>
<td>-10ºC to 40ºC</td>
</tr>
<tr>
<td><strong>Physical dimensions</strong></td>
<td>192(W) × 96(H) × 165(D) mm</td>
<td>192(W) × 96(H) × 165(D) mm</td>
<td>144(W) × 72(H) × 197(D) mm</td>
</tr>
<tr>
<td>Model</td>
<td>AD-4405A</td>
<td>AD-4406A</td>
<td>AD-4407A</td>
</tr>
<tr>
<td>---------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Power</td>
<td>AC100/200 V</td>
<td>200V AC</td>
<td>100–240 V</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>–10°C to 40°C</td>
<td>–10°C to 40°C</td>
<td>–10°C to 40°C</td>
</tr>
<tr>
<td>Physical dimensions</td>
<td>275 (W) × 111 (H) × 158 (D) mm</td>
<td>246.2 (W) × 223 (H) × 96.8 (D) mm</td>
<td>246.2 (W) × 223 (H) × 96.8 (D) mm</td>
</tr>
<tr>
<td>Options</td>
<td>OP-01 RS-422/485 + Relay Output</td>
<td>OP-04 RS-232C</td>
<td>OP-08 RS-232C + Relay + Control Input</td>
</tr>
<tr>
<td>Non-linearity</td>
<td>±0.005% of F.S.</td>
<td>±0.005% of F.S.</td>
<td>±0.005% of F.S.</td>
</tr>
<tr>
<td>Load cell excitation</td>
<td>Remote sensing function included</td>
<td>Remote sensing function included</td>
<td>Remote sensing function included</td>
</tr>
<tr>
<td>Zero adjustment range</td>
<td>–35mV to 35mV</td>
<td>–35mV to 35mV</td>
<td>–35mV to 35mV</td>
</tr>
<tr>
<td>Temperature coefficient</td>
<td>±0.03%/°C Typ., ±0.1%/°C Max.</td>
<td>±0.03%/°C Typ., ±0.1%/°C Max.</td>
<td>±0.03%/°C Typ., ±0.1%/°C Max.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>AD-4408A</th>
<th>AD-4408C</th>
<th>AD-4410</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>AC100/200 V</td>
<td>200V AC</td>
<td>100–240 V</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>–10°C to 40°C</td>
<td>–10°C to 40°C</td>
<td>–10°C to 40°C</td>
</tr>
<tr>
<td>Physical dimensions</td>
<td>275 (W) × 111 (H) × 158 (D) mm</td>
<td>246.2 (W) × 223 (H) × 96.8 (D) mm</td>
<td>246.2 (W) × 223 (H) × 96.8 (D) mm</td>
</tr>
<tr>
<td>Options</td>
<td>OP-01 RS-422/485 + Relay Output</td>
<td>OP-04 RS-232C</td>
<td>OP-08 RS-232C + Relay + Control Input</td>
</tr>
<tr>
<td>Non-linearity</td>
<td>±0.005% of F.S.</td>
<td>±0.005% of F.S.</td>
<td>±0.005% of F.S.</td>
</tr>
<tr>
<td>Load cell excitation</td>
<td>Remote sensing function included</td>
<td>Remote sensing function included</td>
<td>Remote sensing function included</td>
</tr>
<tr>
<td>Zero adjustment range</td>
<td>–35mV to 35mV</td>
<td>–35mV to 35mV</td>
<td>–35mV to 35mV</td>
</tr>
<tr>
<td>Temperature coefficient</td>
<td>±0.03%/°C Typ., ±0.1%/°C Max.</td>
<td>±0.03%/°C Typ., ±0.1%/°C Max.</td>
<td>±0.03%/°C Typ., ±0.1%/°C Max.</td>
</tr>
</tbody>
</table>

- **Display:**
  - Status display: LED
  - Resolution: 6 digit 7-segment, character height 14.6 mm
  - Update rate: 100 times/sec

- **Input sensitivity:**
  - ±0.15µV/D (min)

- **Zero adjustment range:**
  - ±0.02µV/°C Typ., ±0.1µV/°C Max.

- **Maximum measurement voltage:**
  - ±35mV

- **Remote sensing function:**
  - Included

- **Input resolution:**
  - Delta Sigma Method

- **Sampling rate:**
  - 10 times/sec

- **Units:**
  - g, kg, t, %

- **Maximum load cells:**
  - Up to 8

- **Span:**
  - ±3ppm/°C Typ., ±15ppm/°C Max.
### Weighing Indicator

<table>
<thead>
<tr>
<th>Model</th>
<th>AD-4430B</th>
<th>AD-4430C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input sensitivity</td>
<td>0.15µV/0.0mV</td>
<td>0.15µV/0.0mV</td>
</tr>
<tr>
<td>Zero adjustment range</td>
<td>–35mV to 35mV</td>
<td>–35mV to 35mV</td>
</tr>
<tr>
<td>Load cell excitation</td>
<td>DC5V±5%, 60mA</td>
<td>DC5V±5%, 60mA</td>
</tr>
<tr>
<td>Remote sensing function included</td>
<td>Up to 4 load cells (350Ω) can be connected</td>
<td>Up to 4 load cells (350Ω) can be connected</td>
</tr>
<tr>
<td>Non-linearity</td>
<td>±0.005% of FS</td>
<td>±0.005% of FS</td>
</tr>
<tr>
<td>Maximum measurement voltage</td>
<td>35mV</td>
<td>35mV</td>
</tr>
<tr>
<td>A/D conversion method</td>
<td>Delta Sigma Method</td>
<td>Delta Sigma Method</td>
</tr>
<tr>
<td>Internal resolution</td>
<td>68,939,999</td>
<td>68,939,999</td>
</tr>
<tr>
<td>Maximum display resolution</td>
<td>1000 times/sec</td>
<td>1000 times/sec</td>
</tr>
<tr>
<td>Sampling rate</td>
<td>Main display: Red LED</td>
<td>Main display: Red LED</td>
</tr>
<tr>
<td></td>
<td>5 digit 7-segment, Character height 5.3mm</td>
<td>5 digit 7-segment, Character height 5.3mm</td>
</tr>
<tr>
<td>Status Display:</td>
<td>Status Display:</td>
<td>Status Display:</td>
</tr>
<tr>
<td></td>
<td>6 Red LEDs</td>
<td>6 Red LEDs</td>
</tr>
<tr>
<td></td>
<td>Gross weight, net, hold, stable, zero, selectable function in operation</td>
<td>Gross weight, net, hold, stable, zero, selectable function in operation</td>
</tr>
<tr>
<td>Standard external I/O</td>
<td>BCD I/O (open collector)</td>
<td>CC-Link (1 Master with total of 42 devices possible)</td>
</tr>
<tr>
<td>Device Connector: IEEE1284 Half pitch (MDR) 34P female</td>
<td>Control I/O: 8 input points, 8 output points</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Current loop output 20mA current loop signal (passive)</td>
<td>Current loop output 20mA current loop signal (passive)</td>
</tr>
<tr>
<td></td>
<td>USB2.0 compatible Micro USB connector</td>
<td>USB2.0 compatible Micro USB connector</td>
</tr>
<tr>
<td></td>
<td>Not subject to CE compliance standards during USB interface use</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>DC24V</td>
<td>DC24V</td>
</tr>
<tr>
<td></td>
<td>Approx. 6W</td>
<td>Approx. 6W</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>–10ºC to 50ºC</td>
<td>–10ºC to 50ºC</td>
</tr>
<tr>
<td>Operating humidity</td>
<td>Below 85%RH (no condensation)</td>
<td>Below 85%RH (no condensation)</td>
</tr>
<tr>
<td>Physical dimensions</td>
<td>35(W) × 110(H) × 101(D) mm</td>
<td>35(W) × 110(H) × 101(D) mm</td>
</tr>
<tr>
<td>Options</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Analog Signal Conditioner

<table>
<thead>
<tr>
<th>Model</th>
<th>AD-4541-V/I</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal</strong></td>
<td></td>
</tr>
<tr>
<td>Input range</td>
<td>±3.2mV/V</td>
</tr>
<tr>
<td>Zero adjustment range</td>
<td>±2.5mV/V</td>
</tr>
<tr>
<td>Non-linearity</td>
<td>±0.005% of FS typ.</td>
</tr>
<tr>
<td>Load cell excitation</td>
<td>250±0.1mV max. (One 1200 load cell or up to 4 350Ω load cells can be used)</td>
</tr>
<tr>
<td>Zero temperature coefficient</td>
<td>±20µV/ºC typ.</td>
</tr>
<tr>
<td>Span temperature coefficient</td>
<td>±20µV/ºC typ.</td>
</tr>
<tr>
<td>Frequency response</td>
<td>DC ~ Approx. 20kHz (50kHz)</td>
</tr>
<tr>
<td>Input noise</td>
<td>±20µVp-p typ (0.1 to 1kHz)</td>
</tr>
<tr>
<td><strong>Calibration standard</strong></td>
<td>1mV/V ±2% typ.</td>
</tr>
<tr>
<td><strong>External</strong></td>
<td></td>
</tr>
<tr>
<td>Voltage output (AD-4541-V)</td>
<td>±2.5V (load 2kΩ or higher)</td>
</tr>
<tr>
<td>Current output (AD-4541-I)</td>
<td>±20mA (load 250Ω or lower)</td>
</tr>
<tr>
<td>Power</td>
<td>DC24V</td>
</tr>
<tr>
<td>Current</td>
<td>100mA max (Approx. 2.4W)</td>
</tr>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>–5ºC to 50ºC</td>
</tr>
<tr>
<td>Operating humidity</td>
<td>Below 85%RH (no condensation)</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>–20ºC to 70ºC</td>
</tr>
<tr>
<td>External dimensions</td>
<td>45(W) × 122(H) × 24(D) mm</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
</tr>
<tr>
<td>Terminal</td>
<td>Spring clamp type: Wire 0.08 to 1.5mm² (AWG 28-14)</td>
</tr>
<tr>
<td>Maximum Outside Diameter: ø3.4mm</td>
<td></td>
</tr>
<tr>
<td>Installation</td>
<td>DIN rail or screw</td>
</tr>
<tr>
<td>Material (body)</td>
<td>PBT (V0 fireproof, glass fiber filled black)</td>
</tr>
<tr>
<td>Insulation</td>
<td>2kV (250Ω or lower)</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>5000V for 1 min</td>
</tr>
<tr>
<td>Accessories</td>
<td>Flathead screwdriver × 1, Instruction manual × 1</td>
</tr>
<tr>
<td>Feature</td>
<td>AD-4530</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Input sensitivity</td>
<td>0.4µV/D (min)</td>
</tr>
<tr>
<td>Zero adjustment range</td>
<td>±50mV to ±150mV</td>
</tr>
<tr>
<td>Load cell excitation</td>
<td>DC5V</td>
</tr>
<tr>
<td>Temperature coefficient</td>
<td>±10.3ppm/ºC Typ</td>
</tr>
<tr>
<td>Non-linearity</td>
<td>±0.1% of F.S. ±3ppm</td>
</tr>
<tr>
<td>Maximum measurement voltage</td>
<td>35mV</td>
</tr>
<tr>
<td>A/D conversion method</td>
<td>Delta Sigma Method</td>
</tr>
<tr>
<td>Internal resolution</td>
<td>Approx. 1,000,000</td>
</tr>
<tr>
<td>Display</td>
<td>10 times/sec</td>
</tr>
<tr>
<td>Standard external I/O</td>
<td>Control input</td>
</tr>
<tr>
<td></td>
<td>Latch, hold, zero</td>
</tr>
<tr>
<td>Power</td>
<td>AC100 to 240V (50/60Hz)</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>–30ºC to 40ºC</td>
</tr>
<tr>
<td>Physical dimensions</td>
<td>96(W) × 48(H) × 146.6(D) mm</td>
</tr>
<tr>
<td>Options</td>
<td>OP-200 Relay Output</td>
</tr>
<tr>
<td></td>
<td>OP-050 RS-485</td>
</tr>
<tr>
<td></td>
<td>OP-040 RS-233</td>
</tr>
<tr>
<td></td>
<td>OP-007 Analog Output</td>
</tr>
<tr>
<td></td>
<td>OP-237 Relay Output, RS-485 Analog Output</td>
</tr>
<tr>
<td></td>
<td>OP-247 Relay Output, RS-232C Analog Output</td>
</tr>
</tbody>
</table>

- DC5V: Remote sensing function included. Remote sensing function up to 4 3500 sensors or 1 1200 sensors can be connected at DC5V up to 3 3500 sensors or 2 1200 sensors can be connected at DC5V.
- AC100 to 240V (50/60Hz): Approx. 20VA
- –10ºC to 40ºC: Below 85%RH (no condensation)
- ±100µV/ºC:
- ±0.2µV/ºC Typ.
- ±0.1µV/ºC Typ.
- ±0.5µV/ºC Typ.
Appearance and/or specifications subject to change for improvement without notice.