

Din-rail weighing module

AD-4430 Series

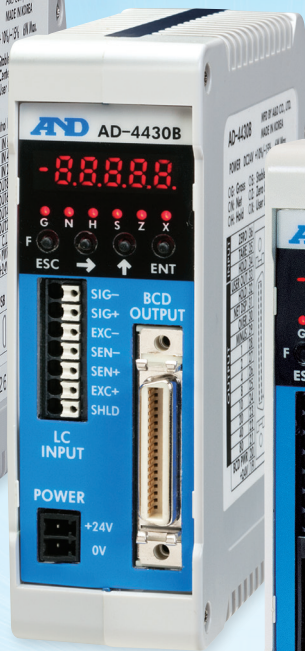
*Powerful vibration-cancelling filter HPDF
(High Performance Digital Filter)*

High speed sampling 1000 times per second



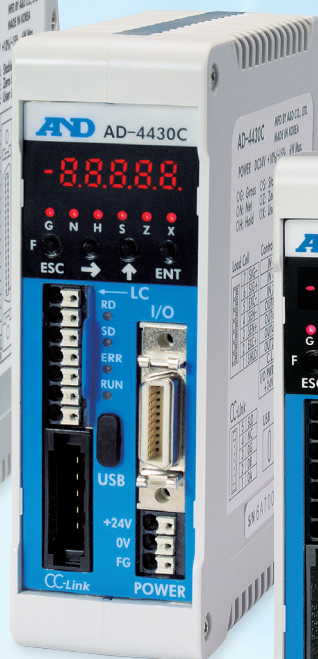
AD-4430A

Analog output
4 to 20mA



AD-4430B

BCD output



AD-4430C

CC-Link



AD-4430R

Modbus RTU
(RS-485)

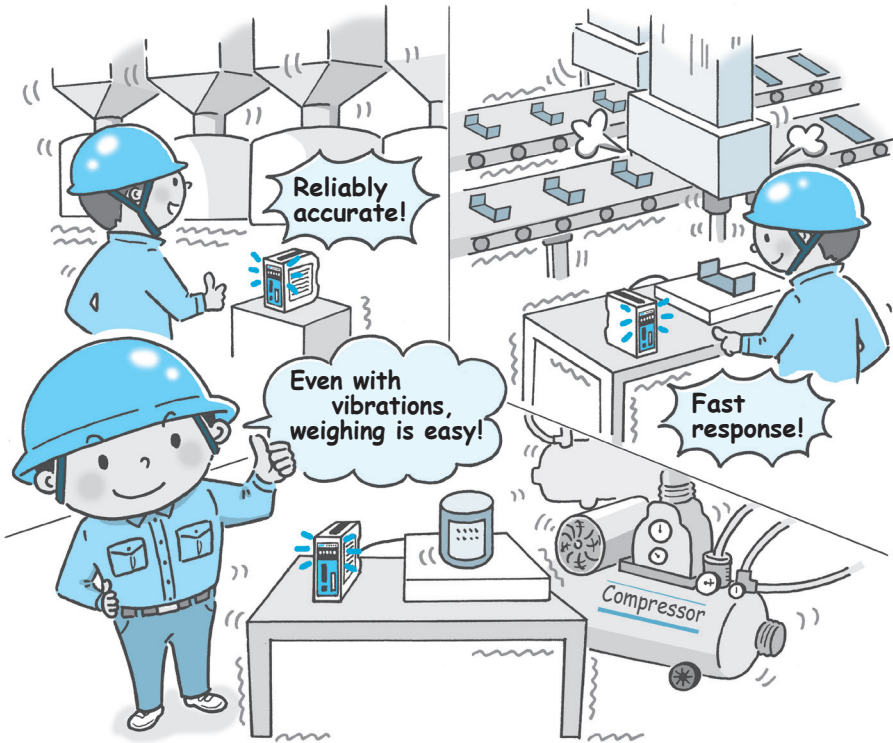
AND

A&D Company Limited
<http://www.aandd.jp>

...Clearly a Better Value

High-Performance Digital Filter (HPDF)

This filter greatly reduces the costs and maintenance required for anti-vibration equipment since it copes with vibrations without requiring many mechanical measures. What's more, conducting weighing while applying vibrations, once an extremely difficult task, is now possible.

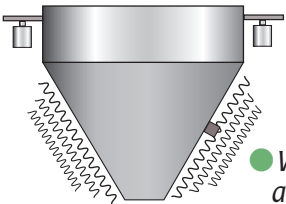


Equipped with HPDF
 Single HPDF filter model
 AD-4430B
 Dual HPDF filter model
 AD-4430A/C/R

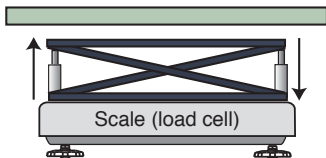
Vibration-cancelling High Performance Digital Filter (HPDF) Applications

HPDF

- Weighing while using vibrating feeders



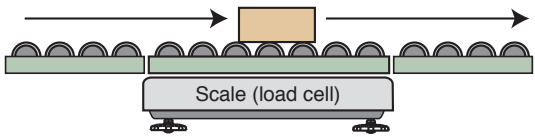
- Weighing while raising and lowering materials



HPDF with peak hold

- Simple checkweigher

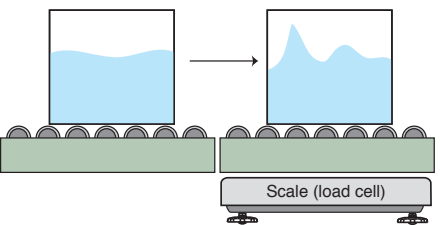
A checkweigher (which measures an object while it continues to move) can be created. When weight exceeds near zero, peak hold begins and is terminated by a timer.



HPDF with averaging hold

- Weighing unsteady objects

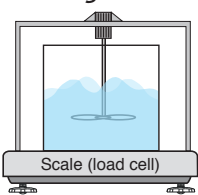
When weighing cans and other objects with liquid contents that tend to shift when stopped, measurement cannot be done quickly as it takes a long time for liquids to settle. However if HPDF with averaging hold is used objects can be quickly weighed. Additionally if a comparator output is used it is possible to determine whether the output is acceptable or not.



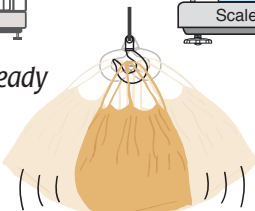
- Weighing animals moving about vigorously



- Weighing while mixing



- Weighing unsteady objects

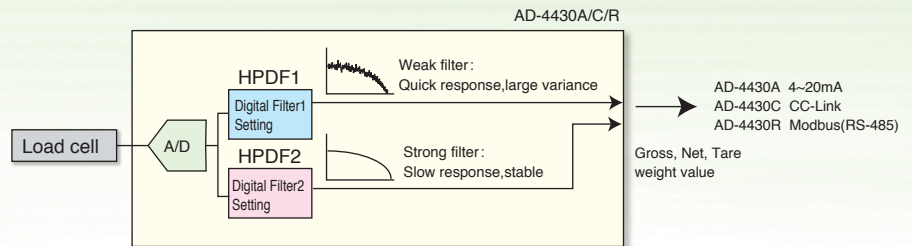


NEW

Dual HPDF Digital Filter AD-4430A/C/R

When weighing in an environment with large amounts of vibration with only a single filter setting, only weighing speed or accuracy can be prioritized.

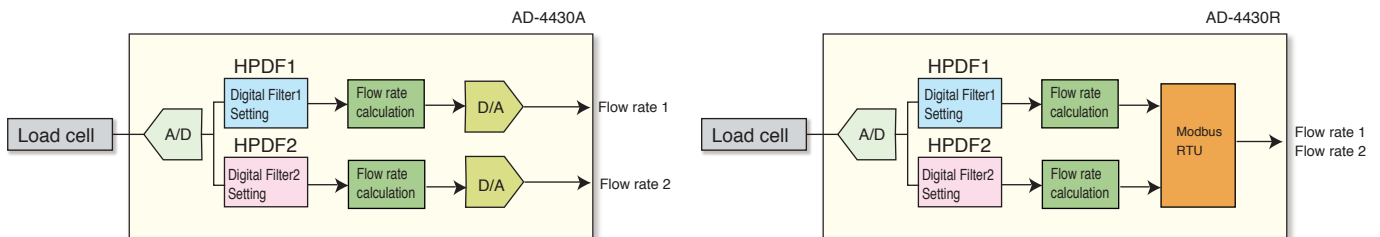
However, if a model with dual HPDF filter is used a weaker filter can be used during large and medium flow and a stronger filter can be used during small flow to balance the measurement speed and accuracy.



NEW

Dual Flow Rate Output AD-4430A/R

The flow rate calculation is performed internally by the indicator then output. This enables smooth control without delay of the flow rate value. In addition, there are 2 flow rate value output systems which allows measurement speed to be both balanced and with accurate.



Sequential Weighing Normal batch and Loss-in-weight Functions AD-4430C/R

These models are equipped with sequential filling and dispensing functions for convenient automatic weighing.

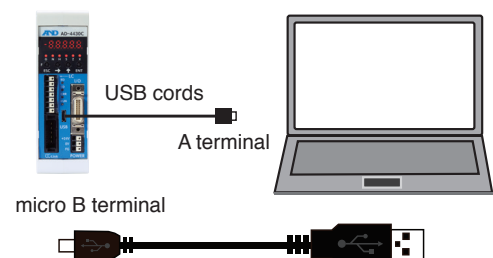
When a start signal is received from the device's F keys or the PLC, signals such as large flow, medium flow, small flow and weighing end are sent to the PLC by the I/O control and CC-Link (AD-4430C) or Modbus (AD-4430R) according to the weight.

USB AD-4430A/C/R

AD-4430A/C/R function settings can be imported and exported to and from a PC through USB connection.

In the event of device failure, AD-4430A/C/R function settings can be retrieved from a PC back-up (provided data has been properly backed-up) and transferred to a replacement AD-4430A/C/R without delay.

Import/export software (Win-CT or WinCT-UFC) is available for download in the support section of the A&D homepage.



AD-4430 Series

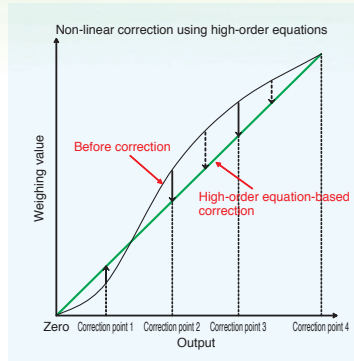
Load Cell Connection

The AD-4430 series is able to check for disconnected or faulty wires through connection with a load cell cable. This is convenient for installation or for start-up inspections and periodic checks.

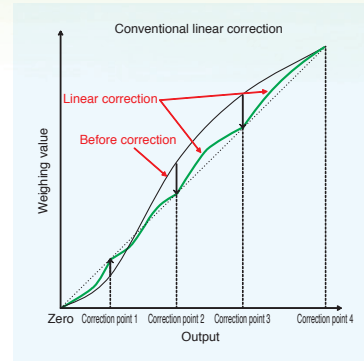
Non-Linear Correction Using High-Order Equations

Up until now, linear correction has been commonly used, but the AD-4430 series corrects linearity deviations that linear correction can't compensate for by using high-order curves, enabling more accurate weighing.

AD-4430 series linear Correction



Traditional Linear Correction



Gravitational Acceleration Compensation

The function compensates for weighing error due to the difference of gravitational acceleration between the location of calibration and the location of measurement.

Comparator Function

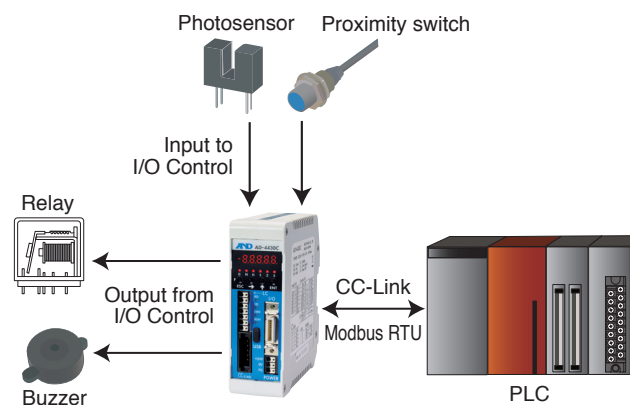
Compares the measurement with HI/OK/LO limits

Hold Function

Select from normal hold, peak hold and average hold.

Remote I/O Function AD-4430C/R

CC-Link or Modbus RTU can be used for remote I/O with control I/O output settings. You can check inputs of sensors connected to the AD-4430C/R through control I/O and turn relays and other switches on or off.



Real Time Free Fall Compensation AD-4430C/R

One Shot Small Flow AD-4430C/R

Product Comparison

	AD-4430A	AD-4430B	AD-4430C	AD-4430R
Powerful vibration-cancelling filter HPDF (High Performance Digital Filter)	✓	✓	✓	✓
Dual HPDF	✓	-	✓	✓
1000 times sampling per second	✓	✓	✓	✓
DIN rail mounting type to install into control box	✓	✓	✓	✓
Load cell connection diagnosis	✓	✓	✓	✓
Accurate linear correction using high-order equations	✓	✓	✓	✓
Gravitational acceleration compensation	✓	✓	✓	✓
Comparator function	✓	✓	✓	✓
Comparator display	Choose one from HI, OK, LO	Choose one from HI, OK, LO	Choose one from HI, OK, LO	Choose one from HI, OK, LO
Comparator output	✓	Choose one from HI, OK, LO	✓	✓
Hold function (normal, peak, average hold)	✓	✓	✓	✓
Analog output 4 to 20mA (2 channel)	✓	-	-	-
BCD output (1000 times/sec.)	-	✓	-	-
CC-Link	-	-	✓	-
Modbus RTU (RS-485)	-	-	-	✓
Current loop	✓	-	✓	✓
USB interface	✓	-	✓	✓
Sequential weighing normal batch / loss-in-weight functions	-	-	✓	✓
Set point	-	-	✓	✓
Real time free fall compensation	-	-	✓	✓
One shot small flow	-	-	✓	✓
Full value detection	-	-	✓	✓
Control I/O	Input 6, output 8 selectable function	Input 6 (fixed 5, selectable 1), output 1 selectable	Input 6, output 8 selectable function	Input 6, output 8 selectable function
Control I/O AD-4430 connector	20 pin MDR connector female	-	20 pin MDR connector female	20 pin MDR connector female
Remote I/O function (use Control I/O)	-	-	Input 6, output 8 (cc-Link)	Input 6, output 8 (Modbus)
Flow rate output	✓ (Analog output)	-	-	✓ (Modbus)
Zero setting when power is turned on	✓	✓	✓	✓
Zero-point adjustment	✓	✓	✓	✓
Zero tracking	✓	✓	✓	✓
Tare function	✓	✓	✓	✓
Stability detection	✓	✓	✓	✓
Detection for the Near-Zero	✓	✓	✓	✓

Modbus RTU (1 Master with total of 32 devices possible)

CC-Link (1 Master with total of 42 devices possible)

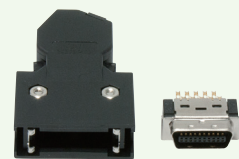
USB USB2.0 compatible Micro USB connector Not subject to CE compliance standards during USB interface use

Accessories

AX-PCX-10S20
MDR20 Terminal Block



AX-MDR-20-R
MDR20 Right Angle Connector



AX-KO4889-1M-W
MDR20 Cable
Double-sided connector 1m



AX-KO4889-1M-S
MDR20 Cable
Connector to wire 1m



AD-4430 Series *Din-rail weighing module*

Specifications

■ Analog unit

Input sensitivity	Over 0.15 μ V/d (d=minimum division)
Zero adjustment range	-35mV to +35mV (-7mV/V to +7mV/V)
Load cell excitation	DC5V \pm 5%, 60mA Remote sensing function included Up to 4 \times 350 Ω load cells can be connected
Temperature coefficients	Zero \pm 0.02 μ V/ $^{\circ}$ C (Typ.) \pm 0.1 μ V/ $^{\circ}$ C (Max.) Span \pm 3ppm/ $^{\circ}$ C (Typ.) \pm 15ppm/ $^{\circ}$ C (Max.)
Nonlinearity	0.005% of F.S.
Input noise	Less than 0.15 μ Vp-p (Typ.)
Maximum measurement range	-35mV to +35mV (-7mV/V to +7mV/V)
Input impedance	10M Ω and above
A/D conversion method	Delta-sigma modulation
Internal resolution	Approx. 16,000,000
Display resolution	Max. 99,999d (within 20,000d recommended)
Sampling rate	1000 times per second
Calibration	Actual load calibration or digital span calibration not using actual load.

■ Digital unit

Display elements	Measurement display: 5-digit red LED 7-segment display Character height 5.3mm Polarity display: 1 red LED Status display: 6 red LED
Measurement display	Adjustable net/gross weight display Display range: -99,999 to 99,999 (Minimum division (d) options 1, 2, 5, 10, 20, 50)
Status display	GROSS, NET, HOLD, STABLE, ZERO, and custom user-defined function

■ External input/output

- Analog output AD-4430A
- BCD output AD-4430B
- CC-Link AD-4430C
- Modbus RTU AD-4430R
- Control I/O
- Comparator output
- Current loop output AD-4430A/C/R
- USB 2.0 AD-4430A/C/R

■ Features

- HPDF Digital filter
- 1000 times sampling per second
- Gravitational acceleration compensation
- Comparator function
- Hold functions
- Load cell connection diagnosis
- Near zero detection
- Zero tracking
- Power-on zero

■ General specifications

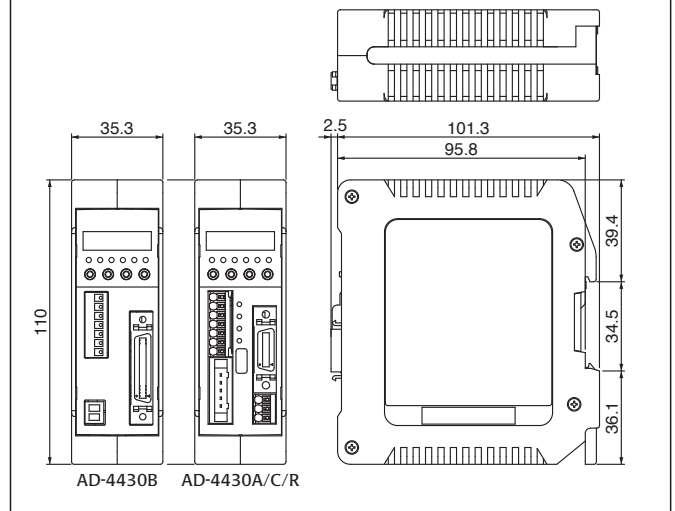
Power supply voltage	DC24V
Power consumption	6W (Max.)
Operating temperature and humidity range	-10 $^{\circ}$ C to 50 $^{\circ}$ C/ Below 85%RH (Condensation must be avoided)
External dimensions	35(W) \times 110(H) \times 101(D) mm
Attachment method	DIN rail mount
Weight	AD-4430B: Approx. 180g AD-4430A/C/R: Approx. 200g

■ Standard accessories

- Basic instruction manual
- Power source connector..... AD-4430B
- Analog output connector..... AD-4430A
- CC-Link connector..... AD-4430C
- RS-485 connector..... AD-4430R

External dimensions

Unit: mm



Appearance and/or specifications subject to change for improvement without notice.

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