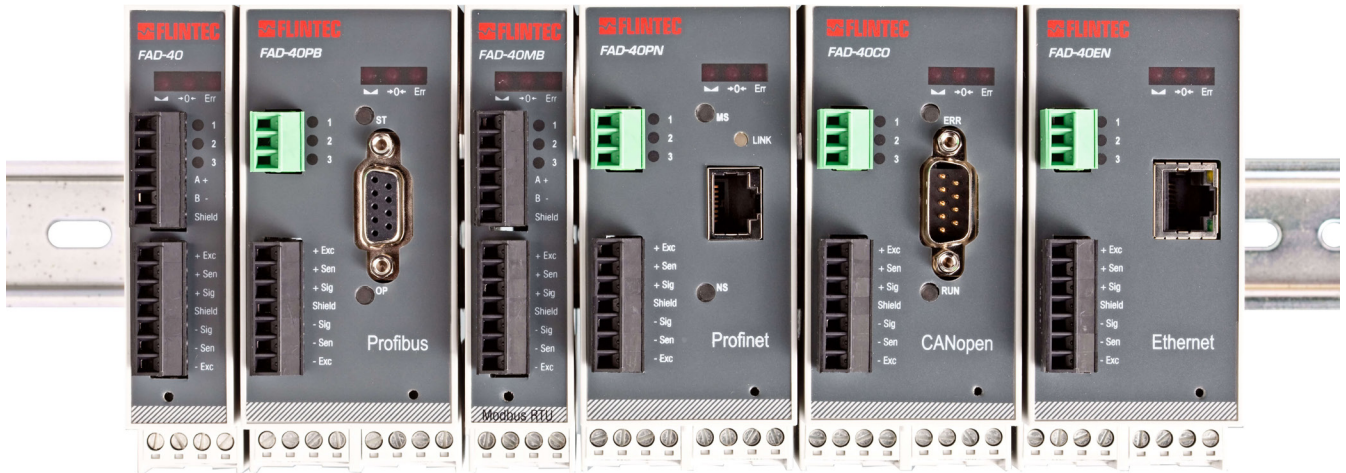


FAD-40 A/D converter series



product description

The FAD-40 A/D converter series consists of powerful and economic state-of-the-art instruments for static and dynamic weighing applications plus force and torque measurements.

Each instrument of the series converts the analogue low-level signal from a load cell or a strain gauge sensor to a digital high-resolution and high accuracy signal and transmits the digital data to an external PLC or PC system. As a special feature the instruments can switch between unipolar and bipolar input range without affecting the external resolution. The FAD-40 A/D converter series comprises various instruments for different industrial bus systems:

converter options

- FAD-40 (RS485)
- FAD-40MB (Modbus RTU)
- FAD-40PB (Profibus DP)
- FAD-40PN ProfiNet)
- FAD-40CO (CANopen)
- FAD-40EN (Ethernet TCP/IP)
- FAD-40EI (Ethernet IP)
- FAD-40EC (EtherCat)
- FAD-40CC (CC-Link)
- FAD-40PL (Powerlink)

applications

Universal process weighing systems and process automation & control applications.

accessories

Setup software running under MS Windows



key features

Various instrument versions for different industrial bus systems

Load cell excitation 5VDC for up to 6 load cells at 350Ω

6 wire load cell connection

Linearity better than 0.0015%

Calibration with weight or in mV/V

Max. conv. rate of 800 values/s

Internal resolution up to 8mil counts

External resolution up to 2mil counts

Digital filter, switchable

Power supply 12...28 VDC

DIN-rail mounting

2 digital inputs/outputs and 1 additional digital output (configurable)



specifications

A/D converter

Type	24-bit Delta-Sigma ratiometric with integral analogue and digital filter
Analogue input range	0mV to 18mV (unipolar) or -18mV to +18mV (bipolar), switchable
Linearity	< 0.0015% FS
Temperature coefficient	< 2ppm/°C
Min. input per vs1	0.1µV/d
Conversion rate	Up to 800 measurement values per second
Internal resolution	Up to 8 million counts
External resolution	Up to 100,000 counts (weight value, force, torque) respective 1 million raw counts (unipolar) respective 2 million raw counts (bipolar)

Calibration & weighing functions

Calibration	Electronic calibration without test weights (eCal) or calibration by test weights
Digital filter	10 step adjustable digital adaptive filter
Weighing functions	Tare, zero, auto zero tracking, motion detection, auto-zero at power-up, save tare at power-off, increased resolution

Load cells

Excitation	5 V DC at 58...1,200Ω, max. 100mA, for up to 6 load cells at 350Ω or 18 load cells at 1,100Ω
Connection	4 or 6 wire technique, cable length 250m/mm ² for 6 wire connection

Communication & setup

Serial interface	RS232C with 9,600 baud (8, N, 1); for FAD-40 and FAD-40MB: RS485A with up to 57,600 baud (8N1, 7E1, 7O1)
Other interfaces	Depends on instrument version
Response time	< 4ms (delay after each read or write command)
Setup & calibration	By PC software via RS232C respective RS485A, backup data stored on PC

Digital inputs & outputs

2x configurable I/O	Selectively configured as input (10...26 VDC) or open collector output (24 VDC, max. 100mA)
1x additional output	Open collector output (24 VDC, max. 100mA)
Input functions	Zero, tare, clear tare or control input to communication interface
Output functions	Setpoint output with / without hysteresis, tolerance band output or control output from communication interface

Power supply

DC power supply	11...28 VDC, < 200mA, not galvanically isolated
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Environment & enclosure

Operating temperature	Between -10°C and +40°C at maximum 85% RH, non-condensing
Enclosure & protection class	Polyamide, for DIN-rail mounting, protection class IP20

Instrument with RS485 interface: FAD-40

Serial interface RS485A	1200 to 57600 baud (8N1, 7E1, 7O1), bus capability up to 31 units
Communication mode	Continuous or requested
Dimensions & weight	99 x 22.5 x 114.5 mm (L x W x H), weighs appr. 110 g

Instrument with Modbus RTU interface: FAD-40MB

Serial interface RS485A	1200 to 57600 baud (8N1, 7E1, 7O1), bus capability up to 31 units
Communication mode	Continuous or requested or Modbus RTU
Address range	1...31
Dimensions & weight	99 x 22.5 x 114.5 mm (L x W x H), weighs appr. 110 g

Instrument with Profibus DP interface: FAD-40PB

Profibus DP-V0 and DP-V1	9,6 kbit/s to 12 Mbit/s (automatic), galvanically isolated interface
Address range	1...126
Dimensions & weight	99 x 45 x 114.5 mm (L x W x H), weighs appr. 150 g

Instrument with ProfiNet interface: FAD-40PN

ProfiNet	100 Mbit/s (full duplex), galvanically isolated interface
IP settings	DHCP or manual setup by PC software
Dimensions & weight	99 x 45 x 114.5 mm (L x W x H), weighs appr. 150 g

Instrument with CANopen interface: FAD-40CO

CANopen V.2.0	10 kbit/s...1 Mbit/s (automatic), galvanically isolated interface
Address range	1...126
Dimensions & weight	99 x 45 x 114.5 mm (L x W x H), weighs appr. 150 g

Instrument with Ethernet TCP/IP interface: FAD-40EN

Ethernet TCP/IP	10 Mbit/s (full duplex), galvanically isolated interface
IP settings	Manual setup by PC software
Dimensions & weight	99 x 45 x 114.5 mm (L x W x H), weighs appr. 150 g
Other	Web client interface

Dimensions and specifications are subject to change without notice.