Type FAD-30 A/D Converter Series

Figure: FAD-30PB with Profibus-DP
Alternatively with ProfiNet (FAD-30PN),
CANopen (FAD-30CO) or Ethernet (FAD-30EN)

Figure: FAD-30 with RS485
Alternatively FAD-30MB with Modbus RTU

CE IP20

Product Description

The type FAD-30 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 type FAD-30 A/D Converter Series comprises various instuments for different industrial bus systems:

- Type FAD-30 A/D Converter with RS485 interface
- Type FAD-30MB A/D Converter with Modbus RTU interface
- Type FAD-30PB A/D Converter with Profibus DP interface
- Type FAD-30PN A/D Converter with ProfiNet interface
- Type FAD-30CO A/D Converter with CANopen interface
- Type FAD-30EN A/D Converter with Ethernet TCP/IP interface

Key Features

- Easy converting analogue load cells and strain gauge sensors to digital
- Various instrument versions for different industrial bus systems
- Load cell excitation 5 V DC for up to 6 load cells à 350 Ω
- 6 wire load cell connection
- Linearity better than 0.0015 %
- Calibration with weight or in mV/V
- Max. conversion rate 800 values / s
- Internal resolution up to 8 million counts
- External resolution up to 2 million counts
- Digitale filter, switchable
- Power supply 12...28 V DC
- DIN-rail mounting

Available Accessory

- Setup software running under MS Windows

Specifications

A/D CONVERTER	
Type	24-bit Delta-Sigma ratiometric with integral analogue and digital filter
Analogue input range	0 mV to 18 mV (unipolar) or -18 mV to +18 mV (bipolar), switchable
Linearity	< 0.0015 % FS
Temperature coefficient	< 2 ppm/°C
Min. input per vsi	0.1 µV/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...1 200 Ω, max. 100 mA, for up to 6 load cells à 350 Ω or 18 load cells à 1100 Ω
Connection	4 or 6 wire technique, cable length 250 m/mm² for 6 wire connection
COMMUNICATION & SETUP	
Serial interface RS232C	9 600 baud (8, N, 1)
Other interfaces	Depends on intrument version
Response time	< 4 ms (delay after each read or write command)
Setup & calibration	By PC software via RS232C, backup data stored on PC
POWER SUPPLY	
DC power supply	11...28 V DC, < 200 mA, not galvanically isolated
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: Type FAD-30	
Serial interface RS485A	1 200 to 57 600 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: Type FAD-30MB	
Serial interface RS485A	1 200 bis 57 600 baud (8N1, 7E1, 7O1), busfähig bis zu 31 Einheiten
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: Type FAD-30PB	
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: Type FAD-30PN	
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: Type FAD-30CO	
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: Type FAD-30EN	
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