

MCS-08 multi-channel weighing system



product description

The MCS-08 is a powerful and economic state-of-the-art multi-channel system for static and dynamic weighing applications plus force and torque measurements.

The basic measurement module is the 1-channel type MCS-08AD A/D converter which converts the analogue low-level signal from a load cell or a strain gauge sensor to a digital high-resolution and high-accuracy signal. All standard weighing functions are available on this A/D converter. For bus connections, gateways such as Profibus DP, ProfiNet, Modbus RTU and Ethernet TCP/IP are available. The gateway can communicate via the internal system bus with up to 8 type MCS-08AD A/D converters. For local display purposes the bus system can be extended with one optional type MCS-08DP Display module. The system can be extended with optional control signals located on the type MCS-08IO Digital I/O module. The gateway can communicate via the internal system bus with up to 8 type MCS-08IO modules.

applications

Universal process weighing systems and process automation & control.

accessories

MCS-08DP Local display module; MCS-08IO Digital I/O module

Setup software running under MS Windows

key features

Up to 8 channels in one system

Profibus gateway; ProfiNet gateway; Modbus RTU gateway; Ethernet TCP/IP gateway

Load cell excitation 5 VDC for up to 6 load cells at 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 8mill counts

External resolution up to 2mill counts

Digital filter, switchable

Power supply 12...28 VDC

DIN-rail mounting



specifications

MCS-08AD A/D converter

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 vs1	0.1 µV/d
Conversion rate	Up to 800 measurement values per second
Internal resolution	Up to 8 million counts
External resolution	Up to 100000 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...1200Ω, max. 100mA
Number of load cells	Up to 6 load cells at 350Ω or 18 load cells at 1100Ω in parallel
Connection	4 or 6 wire technique, cable length 250m/mm ² for 6 wire connection

Communication & setup

Setup & calibration	By PC software via gateway module, backup data stored on PC
Response time	< 4ms (delay after each read or write command)

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
Dimensions & weight	99 x 22.5 x 114.5mm (L x W x H), weighs appr. 100g



Gateway modules

General

Internal bus system	Communication with up to 8x type MCS-08AD and up to 8x type MCS-08IO and 1x type MCS-08DP
Serial interface RS232C	9,600 baud (8, N, 1), used as service interface, communication to each connected type MCS-08AD respective type MCS-08IO respective type MCS-08DP
Response time	< 4ms (delay after each read or write command)

Power supply

DC power supply	11...28 VDC, < 100mA, 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
Dimensions & weight	99 x 45 x 114.5mm (L x W x H), weighs appr. 150g

MCS-08PB Profibus DP Gateway Module

Profibus DP-V0 and DP-V1	9,6 kbit/s to 12 Mbit/s (automatic), galvanically isolated interface
Address range	1...126

MCS-08PN ProfiNet Gateway Module

ProfiNet	100 Mbit/s (full duplex), galvanically isolated interface
IP settings	DHCP or manual setup by PC software

MCS-08MB Modbus RTU Gateway Module

Modbus RTU	Serial interface RS485A, 1,200 to 57,600 baud (8N1, 7E1, 7O1), bus capability up to 31 units
Address range	1...31

MCS-08EN Ethernet TCP/IP Gateway Module

Ethernet TCP/IP	10 Mbit/s (full duplex), galvanically isolated interface
IP settings	Manual setup by PC software
Other	Web client interface



MCS-08IO digital I/O module

Digital I/O

Inputs	4 opto-isolated inputs (12...30 VDC)
Outputs	4 potential-free NO relays, 1A @ 250 VAC, 30 VDC
Input function	Control input to communication interface
Output function	Control output from communication interface

Communication & setup

Setup	By PC software via gateway module, backup data stored on PC
Response time	< 4ms (delay after each read or write command)

Power supply

DC power supply	11...28 VDC, < 100mA, 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
Dimensions & weight	99 x 22.5 x 114.5mm (L x W x H), weighs appr. 100g

MCS-08DP display module

Local display

Display	LED red, 10.2mm high, 5 digits, with overflow indication
Status LEDs	Selected channel; net, no motion, zero and power-on state of the selected channel
Keyboard	2-key membrane with tactile feedback
Refresh time	250ms

Power supply

DC power supply	11...28 VDC, < 100mA, 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
Dimensions & weight	99 x 45 x 114.5mm (L x W x H), weighs appr. 140g

components of MCS-08

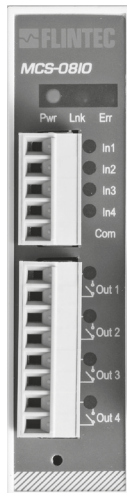
MCS-08AD



MCS-08DP



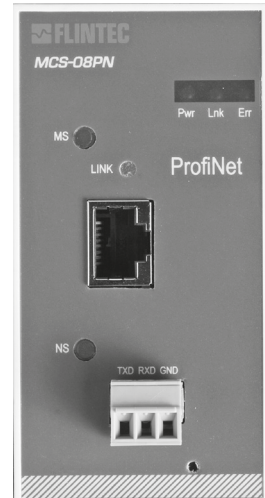
MCS-08IO



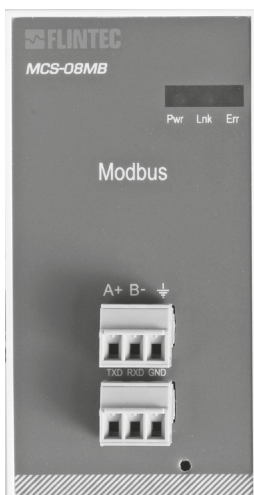
MCS-08PB



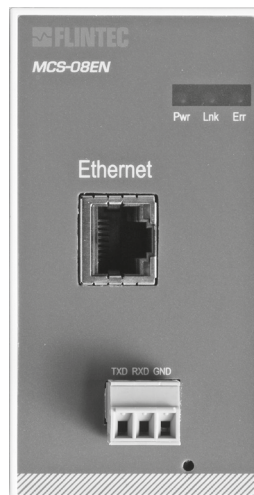
MCS-08PN



MCS-08MB



MCS-08EN



1. MCS-08AD A/D Converter (max. 8 per system)

2. Gateway modules (max. 1 per system):

- a. MCS-08PB Profibus-DP
- b. MCS-08PN ProfiNet
- c. MCS-08MB Modbus RTU
- d. MCS-08EN Ethernet TCP/IP

3. MCS-08DP Display module (max. 1 per system)

4. MCS-08IO Digital I/O module (max. 8 per system)

Dimensions and specifications are subject to change without notice.