Ethernet data logger
16 differential analog inputs, 16-bit

MSX-ilog-AI-16

16 analog inputs, differential, 16-bit

Voltage or current inputs

Acquisition, visualisation and analysis in one device

No software installation needed

Automatic storing of measured values (4 GB build-in Flash memory)

*Operating temperature

RoHS 2002/95/EC

More information at www.addi-data.com

The intelligent Ethernet data logger MSX-ilog-AI-16 has 16 differential analog inputs, 16-bit, with a transfer rate of 1 kHz/channel. The parametering and visualisation of the measured values are carried out via an integrated web site. Thus no additional software installation is needed. The acquisition, visualisation and data storage take place automatically.

Features

- Onboard ARM®9 32-bit processor
- 4 GB memory, data remains stored at power loss
- The buffered real-time clock keeps the system time even without supply voltage
- Robust metal housing
- Power Save Mode: Reduced power consumption when no acquisition runs
- 24 V digital trigger input

Analog inputs

- 16 diff. inputs, 16-bit, 5-pin M12 female connectors
- Sampling frequency max. 1 kHz, up to 4 simultaneous channels
- Input ranges: ± 5 V, ± 10 V (16-bit)
  0-5 V, 0-10 V (15-bit)
- Current inputs optional

Acquisition

- Automatic acquisition and recording of measured data
- Conversion of measured data into real values e. g. mm, bar, temperature, etc.
- Acquisition of virtual channels

Trigger

- Acquisition triggered via hardware or software
- 24 V hardware trigger
- Threshold trigger (when the defined level of the analog inputs is exceeded)
- Optional pre-trigger (records events which have occurred before the trigger event)
- Triggers from external hardware, e. g. MSX-E systems, are possible

Alarm functions

- Upper and lower limits of channels
- Data storage depending on alarms
- Can be combined with the pre-trigger

Analysis

- Online graphical analysis of measured data
- Data export (xml, csv)

Safety features

- LED status display for fast error diagnostics
- Optical isolation • Input filters
- Overvoltage protection ± 40 V
- Internal temperature monitoring

Applications

- Data logger • Long-term data recording
- Monitoring of infrastructure

Interfaces

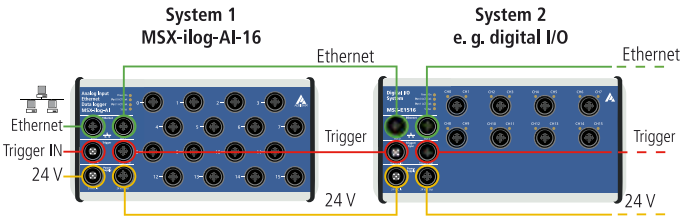
- Fast 24 V trigger input
- Ethernet switch with 2 ports
- Trigger In/Out
- 24 V supply and cascading

Communication interfaces

- Web server (configuration and monitoring)
- Data server (TCP/IP or UDP socket) for sending acquisition data

Combination with external hardware

Ethernet and supply signals can be looped e.g. from the MSX-ilog-AI-16 to MSX-E systems. These can then react to the values measured by the MSX-ilog-AI-16 (e.g. via alarm or trigger) and acquire and switch distributed I/O signals. Monitoring or regulation tasks can be realised.



* Preliminary product information

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Specifications*

Analog inputs

Number/type:	16 differential inputs
Architecture:	4 groups with 4 channels each 4-port simultaneous converter with one 4-channel multiplexer per converter
Resolution:	16-bit, SAR ADC
Accuracy:	± 1.221 mV typ. (± 4 LSB) ± 2.442 mV max.
Relative precision (INL):	± 3 LSB max. (ADC)
Optical isolation:	1000 V
Input ranges:	± 5 V, ± 10 V software-programmable
Input frequency:	1 kHz per channel
Gain:	x1, x2, software-programmable
Common mode rejection:	80 dB min. DC up to 60 Hz (diff. amplifier)
Input impedance (PGA):	10^9 Ω // 10nF against GND
Bandwidth (-3 dB):	160 kHz limited through TP filters 16 Hz version with differential filter
Trigger:	Digital input, software-programmable
Offset error:	± 1 LSB (± 305 µV)
Gain error:	± 2.5 LSB
Temperature drift : V_{in}: input voltage in Volts (-10 V ≤ V_{in} ≤ +10 V) In the temperature range: from -40 °C to +85 °C	2.3 x V_{in} + 22.5 (µV / °C) typ. 4.5 ppm/°C FSR
Connectors for sensors	8 x 5-pin female M12 connector

Data storage

RAM:	64 MB
FLASH:	4 MB for system data
Extended FLASH memory:	4 GB (2 GB for measured data)
Buffered real-time clock:	approx. 4 weeks at 20 °C

Voltage supply

Nominal voltage :	24 V ⎓
Supply voltage:	18-30 V
Optical isolation:	1000 V
Reverse voltage protection:	1 A max.
Connectors	
24 VDC input	1 x 5-pin male M12 connector
24 VDC output	1 x 5-pin female M12 connector

Ethernet

Interface:	Ethernet acc. to IEEE802.3 specification	
Number of ports:	2	
Cable length:	150 m	max. at CAT5E UTP
Bandwidth:	10 Mbps	auto-negotiation
	100 Mbps	auto-negotiation
Protocol:	10Base-T	IEEE802.3 compliant
	100Base-TX	IEEE802.3 compliant
Optical isolation:	1000 V	
MAC address:	00:0F:6C:##:##:##, unique for each device	
Connectors	2 x 4-pin flange-type socket, D-coded M12 for Port 0 and Port1	

Trigger

Number of inputs:	1 trigger input
Number of outputs:	1 trigger output
Filters/protective circuit:	Low-pass/transorb diode
Optical isolation:	1000 V
Nominal voltage:	24 V external
Input voltage:	0 to 30 V
Input current:	11 mA at 24 VDC, typical
Input frequency (max.):	2 MHz at 24 V
Connectors	
Trigger input :	1 x 5-pin flange connector M12
Trigger output:	1 x 5-pin flange-type socket M12

EMC – Electromagnetic compatibility

The product complies with the European EMC directive. The tests were carried out by a certified EMC laboratory in accordance with the norm from the EN 61326 series (IEC 61326). The limit values as set out by the European EMC directive for an industrial environment are complied with. The respective EMC test report is available on request.

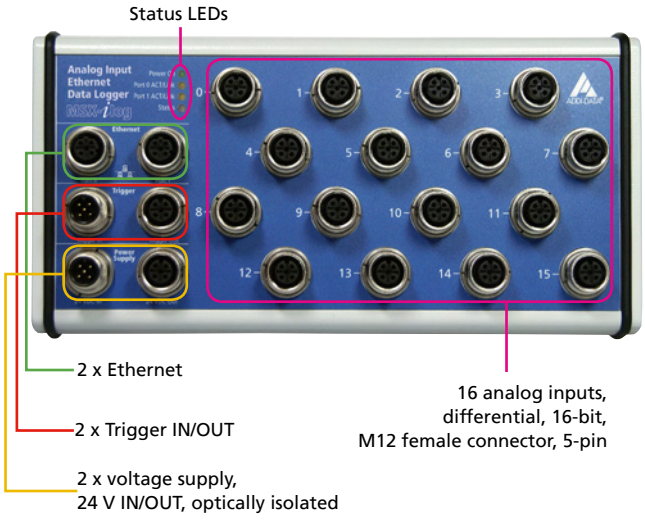
System features

Interface:	Ethernet acc. to specification IEEE802.3
Dimensions:	215 x 110 mm x 50 mm
Weight:	850 g
Degree of protection:	IP 65
Current consumption at 24 V:	160 mA
Operating temperature:	-25 °C to +85 °C (-40 °C to +85 °C on request)

System requirements

Standard browser (Internet Explorer, Firefox) with Java from version 1.6.x

Features



Ordering information

MSX-ilog-AI-16

Ethernet data logger, 16 analog inputs, differential, 16-bit. Incl. technical description.

Connection cables

Voltage supply

CMX-2x: Shielded cable, M12 5-pin female connector/open end, IP 65
CMX-3x: For cascading, shielded cable, M12 5-pin female connector/male connector IP 65

Trigger

CMX-4x: Shielded cable, M12 5-pin female connector/open end, IP 65
CMX-5x: For cascading, shielded cable, M12 5-pin female connector/male connector IP 65

Ethernet

CMX-6x: CAT5E cable, M12 D-coded male connector/RJ45 connector
CMX-7x: For cascading: CAT5E cable, 2 x M12 D-coded male connector

Connection to peripherals

CMX-8x: Shielded cable, M12 5-pin male connector/open end, IP 65

Options

PC-Diff: Current input 0(4)-20 mA for 1 input, diff. (please indicate the number of channels)
MSX-E 5V-Trigger: Level change of the trigger inputs and outputs to 5 V
MX-Clip, **MX-Rail** (Please specify when ordering!), **MX-Screw, PCMX-1x**

* Preliminary product information