Wilcoxon
SENSING TECHNOLOGIES

an Amphenol Company

ILA200 Series

Piezoelectric-to-digital inline adapters

Training outline

Key features and outputs

Datasheets and key specifications

Utility application

Cabling, mounting, and stacking

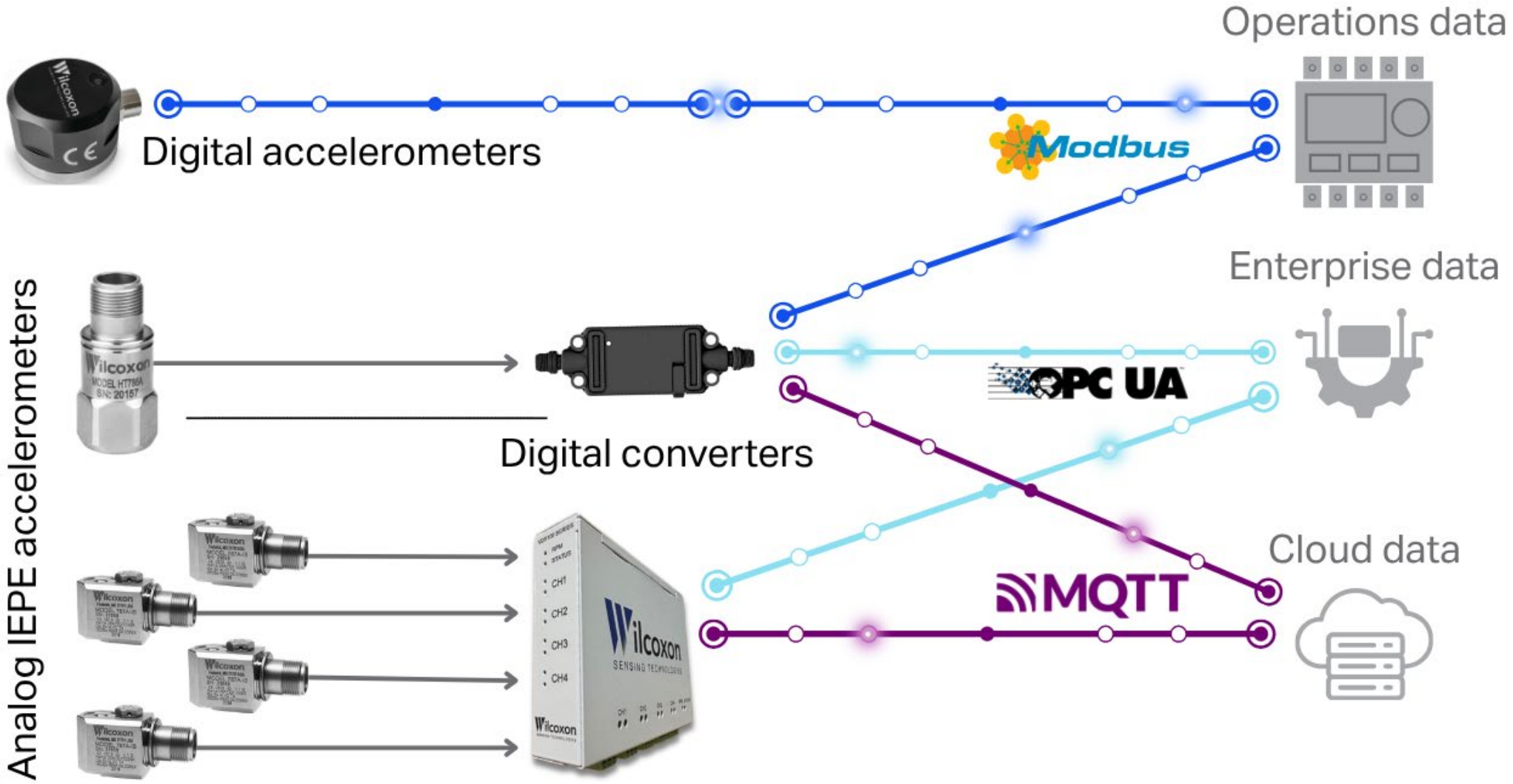
Industries and applications

ILA200 inline adapter series
IEPE analog-to-digital adapters

- Enables digitization of broad analog sensor offering for **simplified integration** into manufacturing control and analytics systems
  - Converting data from niche sensors opens digitization to measurements that are not widely available as digital sensors: 500 mV/g, low frequency, high temp, voltage isolation, hazardous locations, etc.
- Initial release of three models with **MODBUS RTU** (ILA210). **MQTT** (ILA230 *coming soon*), and **OPC UA** (ILA220 *coming soon*) digital outputs
  - M12 input connector accepts **IEPE accelerometers** and **dual output temperature sensors**
  - M12 output connector for MODBUS RTU version
- **Rugged over molded exterior**
- Output of **vibration spectrum**, **time waveform**, and **19 calculated vibration metrics** covering acceleration, velocity, displacement, crest factor, and standard deviation
  - Temperature output available when used with a dual output sensor

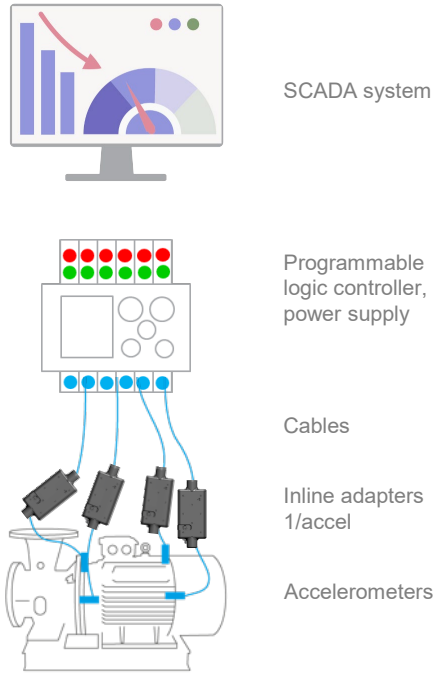
ILA210, Modbus output

Sensor and connectivity solutions for all applications
Product map



Deployment architecture

ILA210 Modbus to plant control system



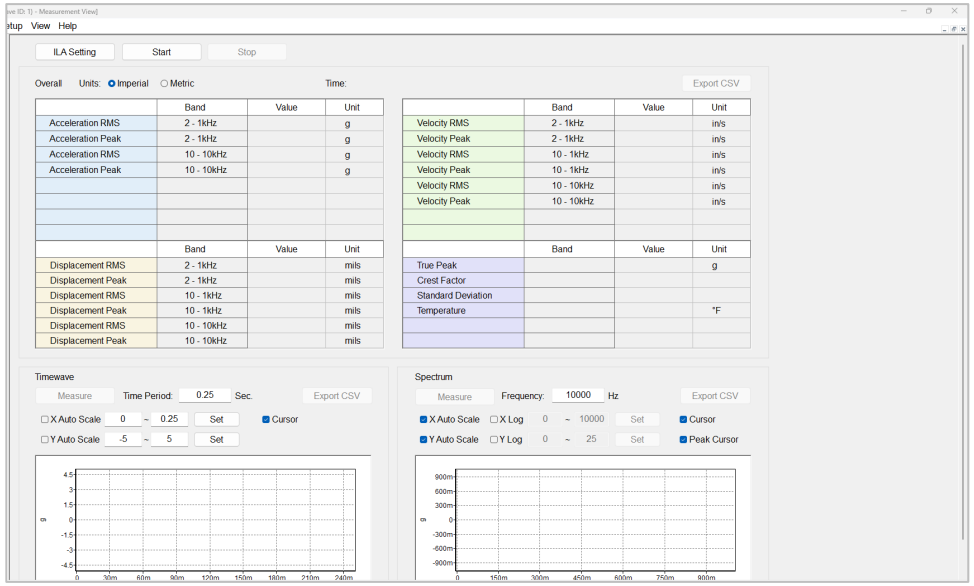
Key features
Output data

Dynamic data

- Spectrum — 0 Hz - 10 kHz, 6400 lines
- Time waveform length — 1 second
- Temperature — unit °C / °F

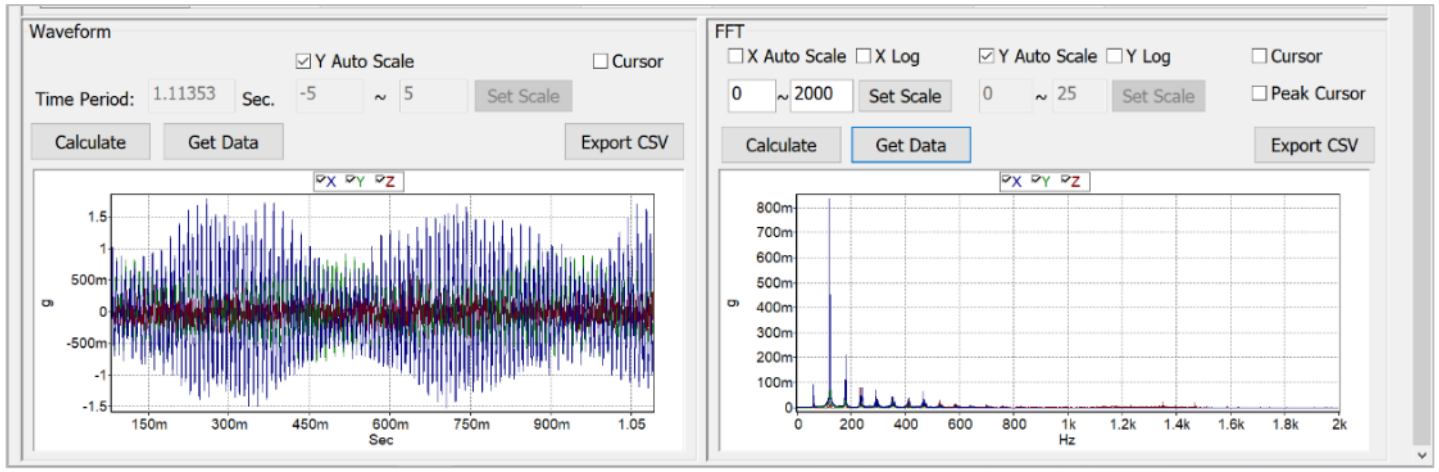
Calculated vibration metrics, 19 available

- Acceleration, RMS — 2 Hz - 1 kHz, 10 Hz - 10 kHz
- Acceleration, peak — 2 Hz - 1 kHz, 10 Hz - 10 kHz
- Velocity, RMS — 2 Hz - 1 kHz*, 10 Hz - 10 kHz
  - * Frequency band aligns with ISO 10816-3 and ISO 20816-3 guidelines
- Velocity, peak — 2 Hz - 1 kHz, 10 Hz - 1 kHz, 10 Hz - 10 kHz
- Displacement, RMS — 2 Hz - 1 kHz*, 10 Hz - 1 kHz*, 10 Hz - 10 kHz
  - * Frequency bands align with ISO 20816-3 guidelines
- Displacement, peak — 2 Hz - 1 kHz, 10 Hz - 1 kHz, 10 Hz - 10 kHz
- True peak — Fs @ 25.6 kHz
- Other features — crest factor, standard deviation



Key features

- Single channel for accelerometer or dual output vibration and temperature sensor
- Calculation of vibration metrics as acceleration, velocity, and displacement, RMS and peak
- Conversion of time-domain waveforms and FFT spectra
- True-peak detection for real-time bearing condition monitoring
- Built-in self testing and real-time LED status indicator



Specifications

Download the data sheet

Accelerometer inline adapter Modbus output

Wilcoxon SENSING TECHNOLOGIES

ILA210

SPECIFICATIONS

SENSOR INPUT	
Channels	vibration **or** vibration & temperature
Compatible accelerometers	IEPE, single or dual (vibration & temperature) output
Connector	4-pin M12
Mating cable connector	4-socket M12
Recommended sensor cable:	
Vibration only	shielded, twisted pair
Vibration & temperature	shielded, three-conductor
VIBRATION CHANNEL	
Input sensor type	vibration (1-1000 mV/g)
Frequency response	1 Hz - 10 kHz (0 to -3 dB)
Power	IEPE (23 V, 3 mA)
Input range	±10 V
Coupling	AC
Input impedance	>100 kΩ
Max sampling rate	25.6 kHz
VIBRATION OUTPUT	
Acceleration RMS frequency bands	2 Hz - 1 kHz, 10 Hz - 10 kHz
Acceleration peak frequency bands	2 Hz - 1 kHz, 10 Hz - 10 kHz
Velocity RMS frequency bands	2 Hz - 1 kHz[1], 10 Hz - 1 kHz[1], 10 Hz - 10 kHz
Velocity peak frequency bands	2 Hz - 1 kHz, 10 Hz - 1 kHz, 10 Hz - 10 kHz
Displacement RMS frequency bands	2 Hz - 1 kHz[1], 10 Hz - 1 kHz[1], 10 Hz - 10 kHz
Displacement peak frequency bands	2 Hz - 1 kHz, 10 Hz - 1 kHz, 10 Hz - 10 kHz
True peak	Fs @ 25.6 kHz
Power spectrum	0 Hz - 10 kHz, 6400 lines
Time waveform length	1 second
Other features	crest factor, standard deviation
TEMPERATURE CHANNEL	
Input sensor type	dual vibration & temperature output
Input range	0-5 V
Coupling	DC
Input impedance	>100 kΩ
AD resolution	12 bits
Output	temperature units, °C / °F
COMMUNICATION	
Protocol	Modbus RTU, server
Digital output connector	4-pin M12
Mating cable connector	4-socket M12
Recommended output cable	shielded, four-conductor
PHYSICAL & ENVIRONMENTAL	
Power requirement	12 - 24 V
Power consumption	max 1.2 W
Exterior mold	polyamide
Restore RS485 settings	push button
Self-test status	LED indicator
Operating temperature	–20° to +80° C
Ingress protection	IP67
Dimensions	see page 2

Notes: [1] Frequency bands align with ISO 10816-3 and 20816-3 guidelines to assess the vibration of industrial machines

Key features

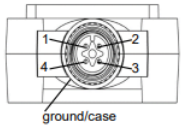
- Compatible with IEPE vibration or dual-output (vibration & temperature) sensors
- Modbus RTU output
- Frequency bands align with ISO 10816-3 and 20816-3 guidelines
- Utility software for configuration
- Stackable on a DIN rail or panel mount

Sensor input connections

Connection	*Function*
pin 1	accelerometer power/signal
pin 2	accelerometer and temp sensor common
pin 3	temp sensor signal (if applicable)
pin 4	NC
ground/case	shield

Modbus RTU output connections

Connection	*Function*
pin 1	power, 12-24V
pin 2	common
pin 3	A
pin 4	B
ground/case	shield



Note: Due to continuous process improvement, specifications are subject to change without notice. This document is cleared for public release.

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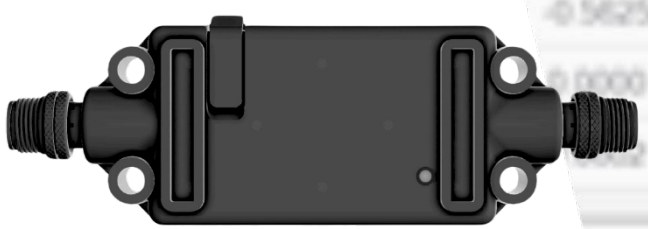
Key specifications
ILA200 series

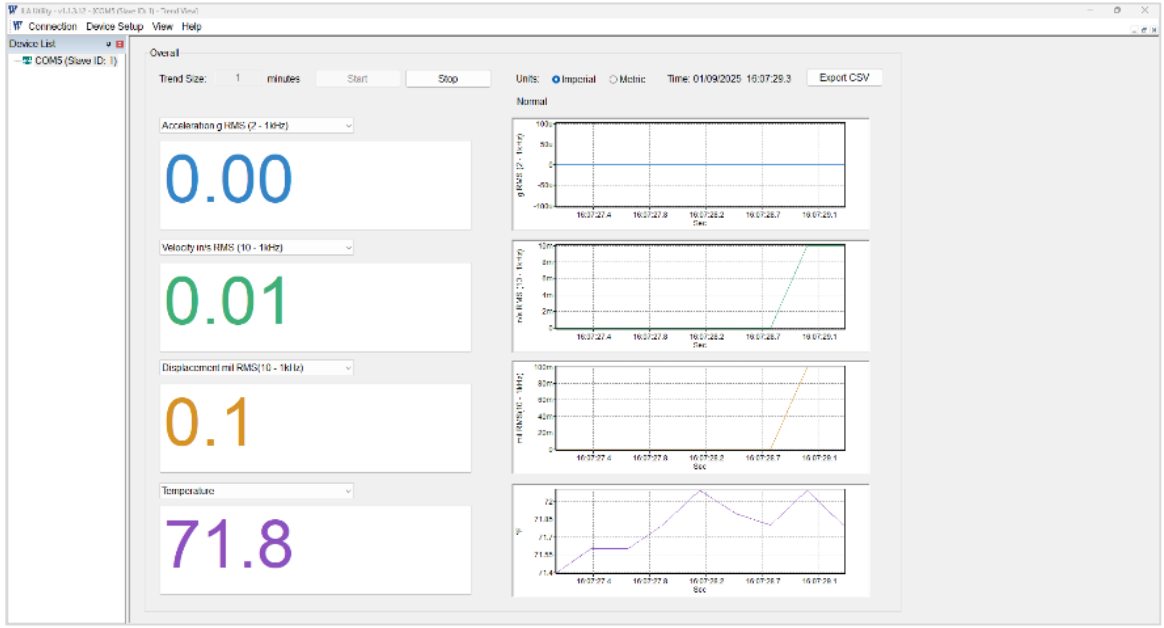
Inputs	
Sensor input	1 accelerometer or dual output vibration and temperature sensor
Input sensitivity options	1 - 1000 mV/g
Power	IEPE (22V, 3 mA)
Max sampling rate Vibration Temperature	 25.6 kHz, BW = 10 kHz 100 Hz



Outputs	
Acceleration, velocity, displacement	See slide 9
Power spectrum	0 Hz - 10 kHz 6400 lines
Time waveform length	1 second
Communication protocol ILA210 ILA230 ILA220	 Modbus RTU, responder MQTT, publish OPC UA, client / server

ILA210 Utility application
Configuration and trending

- The latest Utility and setup manual are available from the ILA210 product page
- The Utility is a tool setup the device and to edit the settings
  - Though the Utility application is available, the Modbus RTU functionality allows direct configuration by a PLC/SCADA systems via the Modbus registers
- From the Utility, you can also view, export, and trend live data
  - The Utility is not intended for ongoing asset health monitoring, trending, alarming, or diagnostic analysis



Compatible cables
Input and output

MIL-C-5015 2-socket mating connector to twisted shielded pair cable

IEPE accelerometer

M12 4-socket mating connector

MIL-C-5015 3-socket mating connector to three-conductor cable

Dual output sensor

M12 4-pin connector

M12 4-pin connector

Modbus output

M12 4-socket mating connector to 4-conductor cable

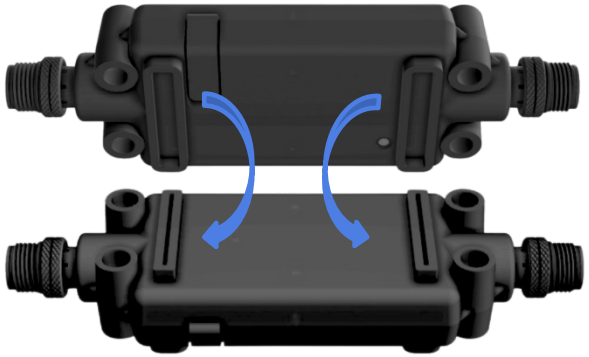
Mounting features

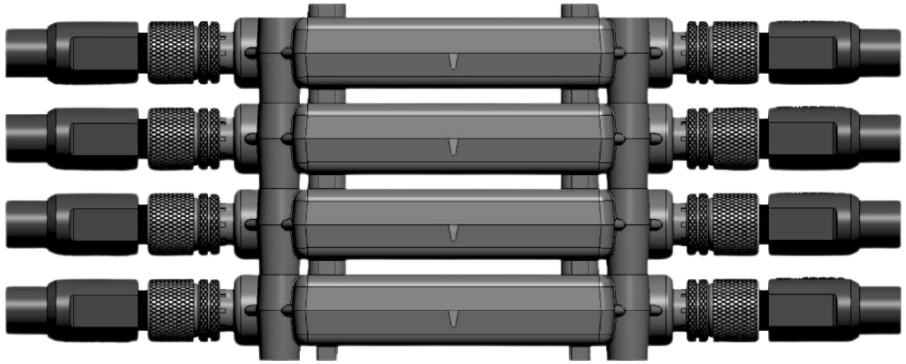
Stackable exterior

- Interlocking features on the top and bottom of the mold facilitate stacking

Bottom view

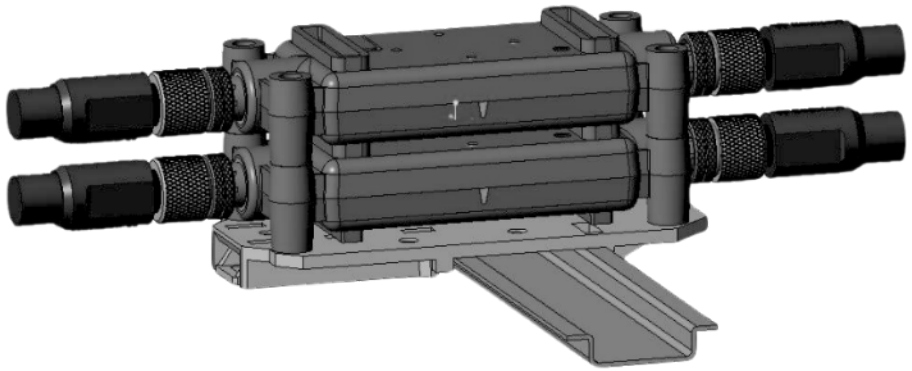
Top view





Simplified mounting

- Integral mounting feature in the exterior mold
- Accommodates 10-32 thread (~5.7mm ID)
- Panel or DIN rail mountable



Applications and industries

ILA210 applications

- Factory automation, process monitoring, machine health trending
- Rotating production assets, including motors, pumps, fans, and gearboxes
- Compatible with sensors in hazardous locations and extremely harsh environments
  - ILA devices must be placed outside hazardous locations and harsh environments

Industries

- Cement
- Food and beverage
- Machine tool
- Metals processing
- Mining
- Oil and gas
- Pharmaceutical
- Power generation (balance of plant)
- Water and wastewater
- Wind power

Thank you