AD-TEC
ADVANCED TECHNOLOGIES

Force Evaluation Sensor

ADTEC-FS-0025-EVAL

Datasheet-Rev01

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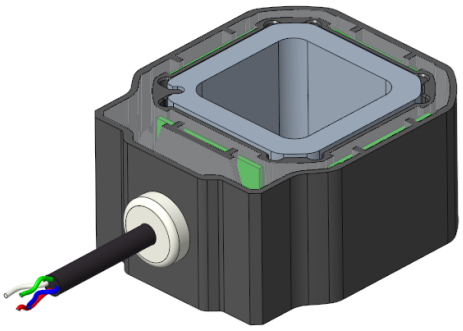


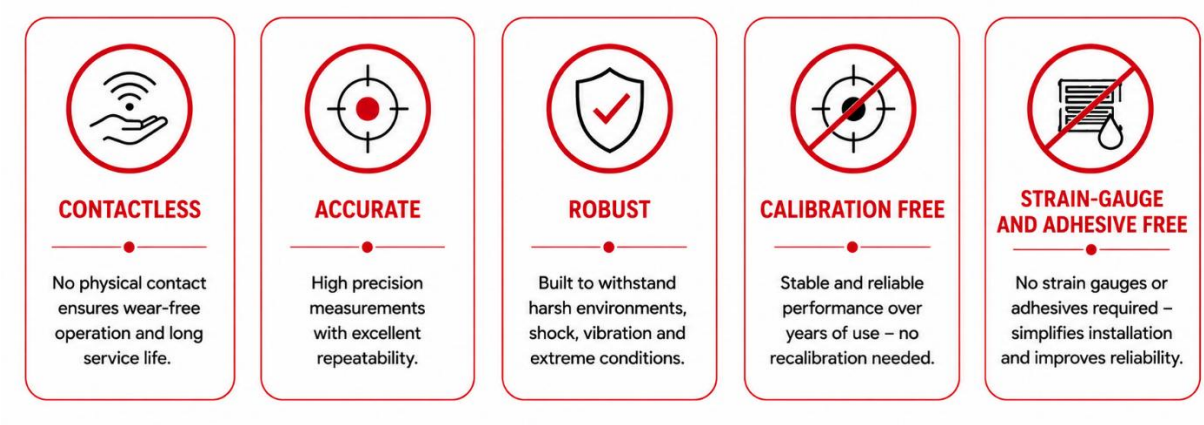
- Force ranges up to 200 kN
- Output Signal Type: Digital (1 Wire)
- Service Temperature: 0° to 70°
- Max 5Hz Analogue Bandwidth
- IP 66 Upgradable to IP67
- Perfect Choice for Technology Evaluation Sample

Product Description:

ADTEC-FS-0025-EVAL is a digital force sensor for force measurement applications. It benefits from the magnetic field measurement power of the **TI DRV425** fluxgate magnetometer connected for signal processing to get the best force evaluation sensor performance.

Featuring four independent sensing boards, the sensor provides distributed stress measurement on multiple surfaces. Each board can be individually addressed via Modbus RTU, enabling flexible data acquisition and advanced load analysis. Beyond conventional compression and tension measurements, the system can detect moments in all three sensor axes, providing enhanced insight into complex force conditions.

Force measurement is completely contactless, based on the Magneto-Mechanical Technology developed by ADTEC.
This unique technology gives the opportunity to build a robust, contactless, calibration-free sensor that measures force via measuring the resulting Magneto-Mechanical field distortion by permanently magnetized metal block.



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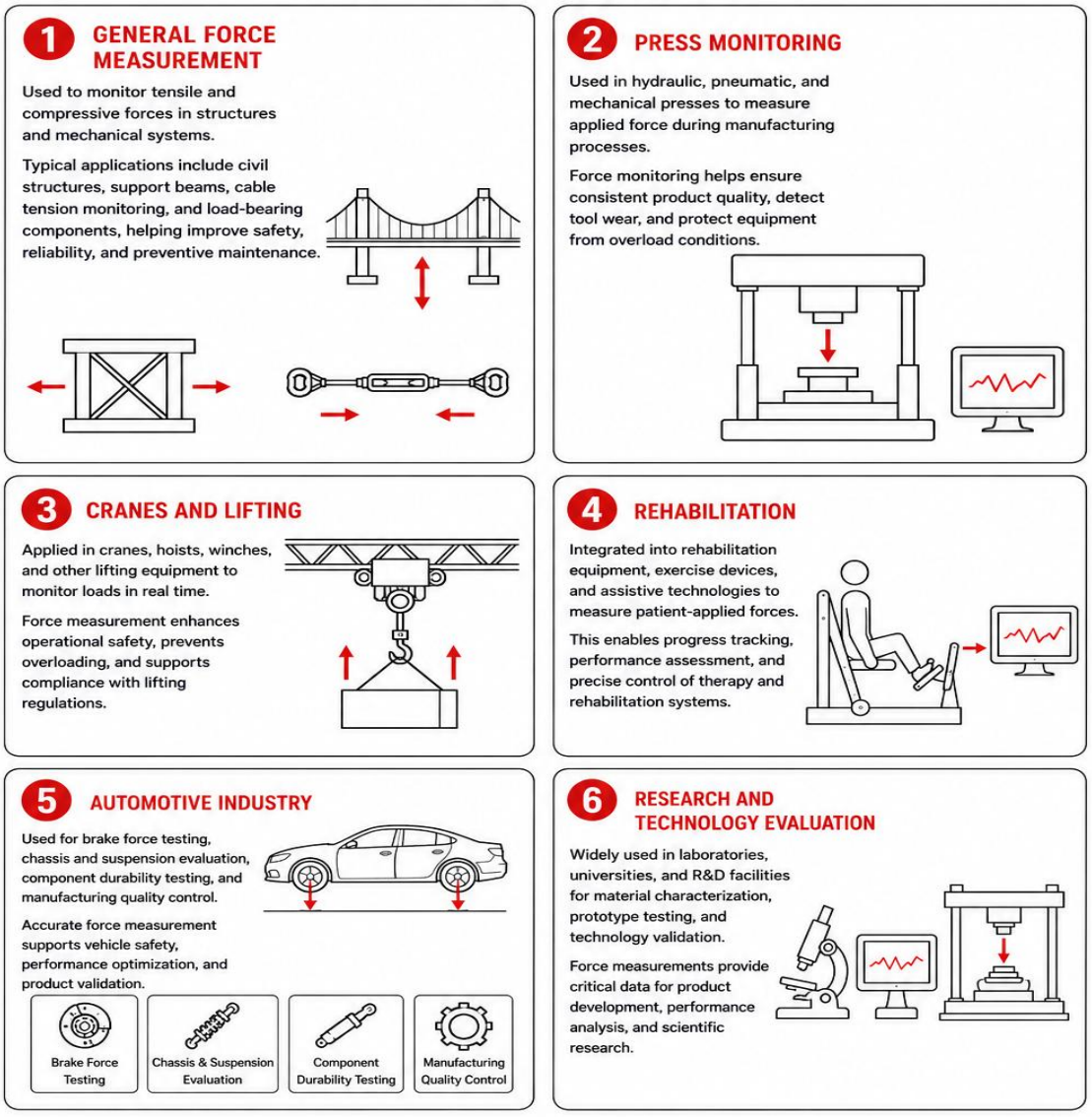
Typical Use Cases:

- General Force Measurement
- Press Monitoring
- Cranes and Lifting
- Rehabilitation
- Automotive Industry
- Research & Technology Evaluation

And Many Other Applications!!!



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Technical Specifications:

- ## Sensor Specifications:

Parameter	Value	Unit
Force Sensor		
Sensing Range	40 to 200	kN
Accuracy	<1%	%FS
Hysteresis	<1%	%FS
Repeatability	<1%	%FS
Linearity	<1%	%FS
Sensitivity	4096(FS)	LSB/kN
Signal BW (-3db)	5	Hz
Operating temperature range	0 to +70	°C
Interface Specs		
Interface Type	Single Wire Modbus RTU	
Supply Voltage	5 ± 5%	VDC
Max Supply current	350	mA

Do not Use Magnets or Magnetized Tools Close to the Sensor, as They May Alter the Metal's Magnetic Field. This Can Cause Permanent Damage to the Product and Render it Non-Functional.
Any Modification to the Product will Void the Warranty.

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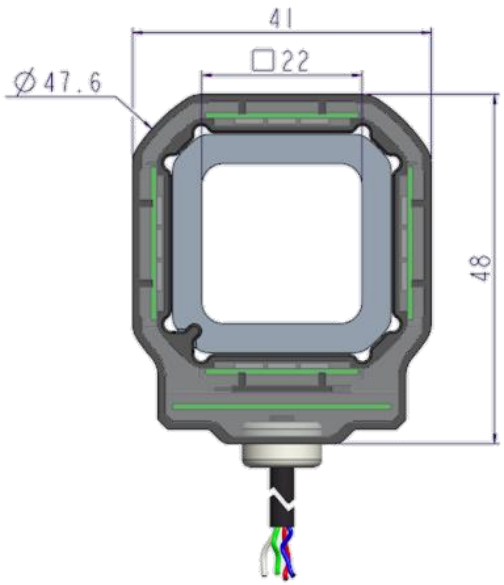
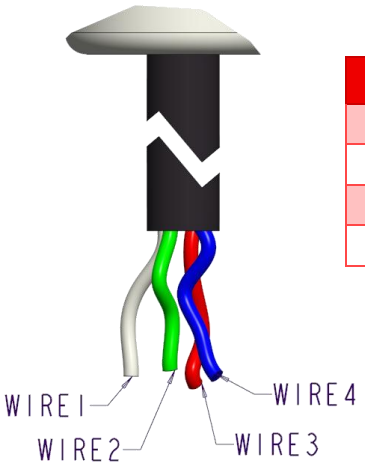
• Overall Dimensions:



• Cable Connection:



Pin Number	Description	Color
1	Channel A	White
2	Channel B	Green
3	VCC	Red
4	GND	Blue

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Handling and Transportation:

During handling and transportation, make sure the sensor is not exposed to magnetic field (like permanent magnets).
Magnetic tools when assembling the sensor can affect its performance as well.

Important Technical Safety Instructions:

Sensor is built from 3D printed material for evaluation purposes only, it is not built to withstand:

- High temperature (Higher than 70° Can affect reading).
- Mechanical loads: drops, vibration, etc...
- Aggressive chemicals or solvents for cleaning
- Reverse polarity or overvoltage on the connector can damage the sensor.

Sensor disassembly will permanently damage the product.

The evaluation kit is not designed for safety-critical or life-support applications (For Evaluation Purposes Only).

Package Contents:

Parameter	Qty
Force Sensor unit	1
USB-TTL converter (3rd party)	1
USB Cable	1

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Manufacturer:

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