

## EMGZ 309 Tension Measuring Amplifier

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**Digital microprocessor controlled**  
**High performance at fastest speeds**

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**3 key operation and two-line LCD**  
**Easy to setup and operate**

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**3 housing/mounting types**  
**DIN Rail, wall mount (IP 65),**  
**and panel mount**

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**Plug & Play or utilize Web Browser**  
**connection**  
**Easy to operate and provides flexible set-up**

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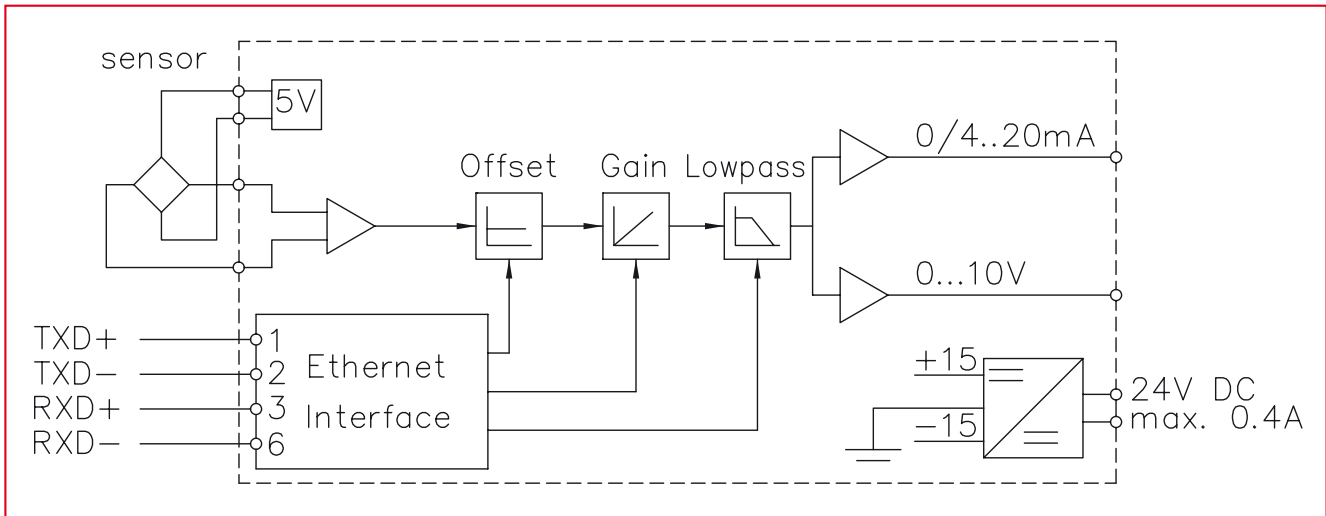
### ● EMGZ 309

The digital tension measuring amplifiers of the EMGZ 309 Series are suitable for tension measurement with all FMS force sensors. This versatile product comes as a plug & play replacement for analogue pot twisting units and is very easy to setup. More advanced users can access all the internal parameters via the 3 keys or through a Web Browser.

### ● Functional Description

The mV signal generated by the sensors is amplified and fed directly to a high resolution A/D-converter. Both Volt and Current outputs are provided standard. Functions like signal filtering, automatic offset compensation, and gain calculation are all part of the versatility of EMGZ 309 digital amplifier series. The Web Browser provides an efficient and fast way for parameter setting.

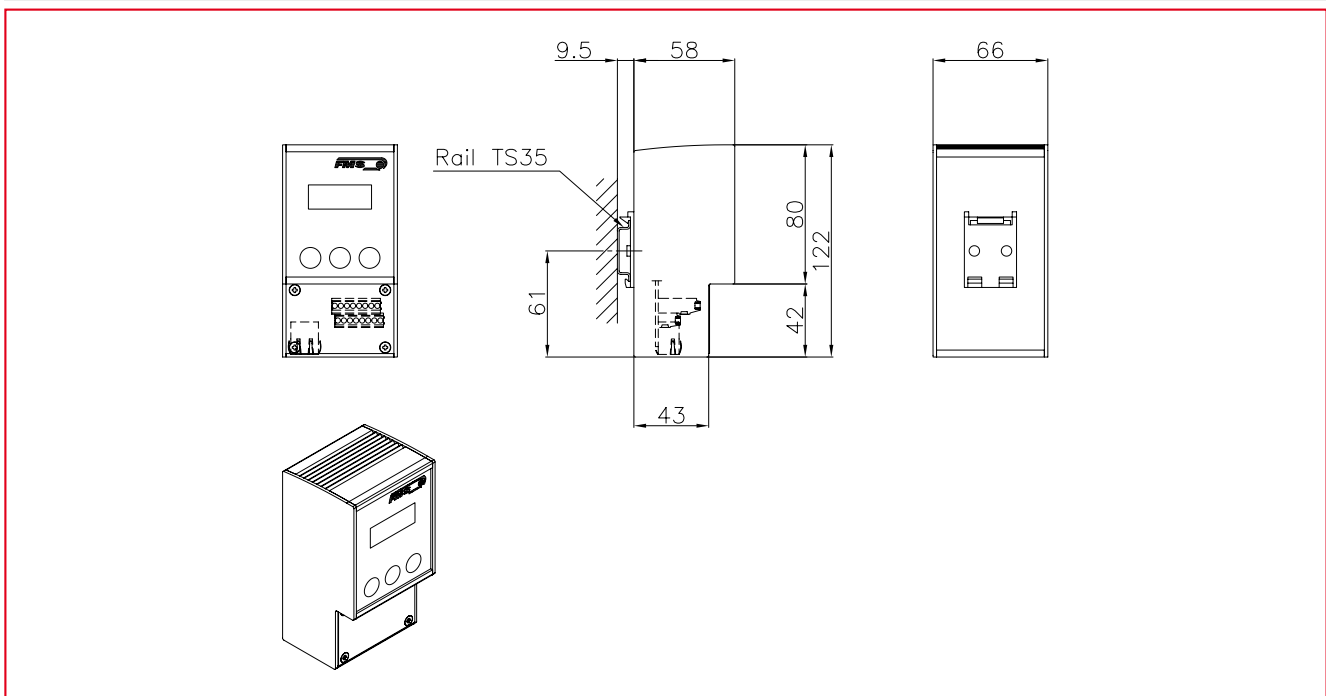
**EMGZ 309 • Block Diagram**



**EMGZ 309 • Technical Data**

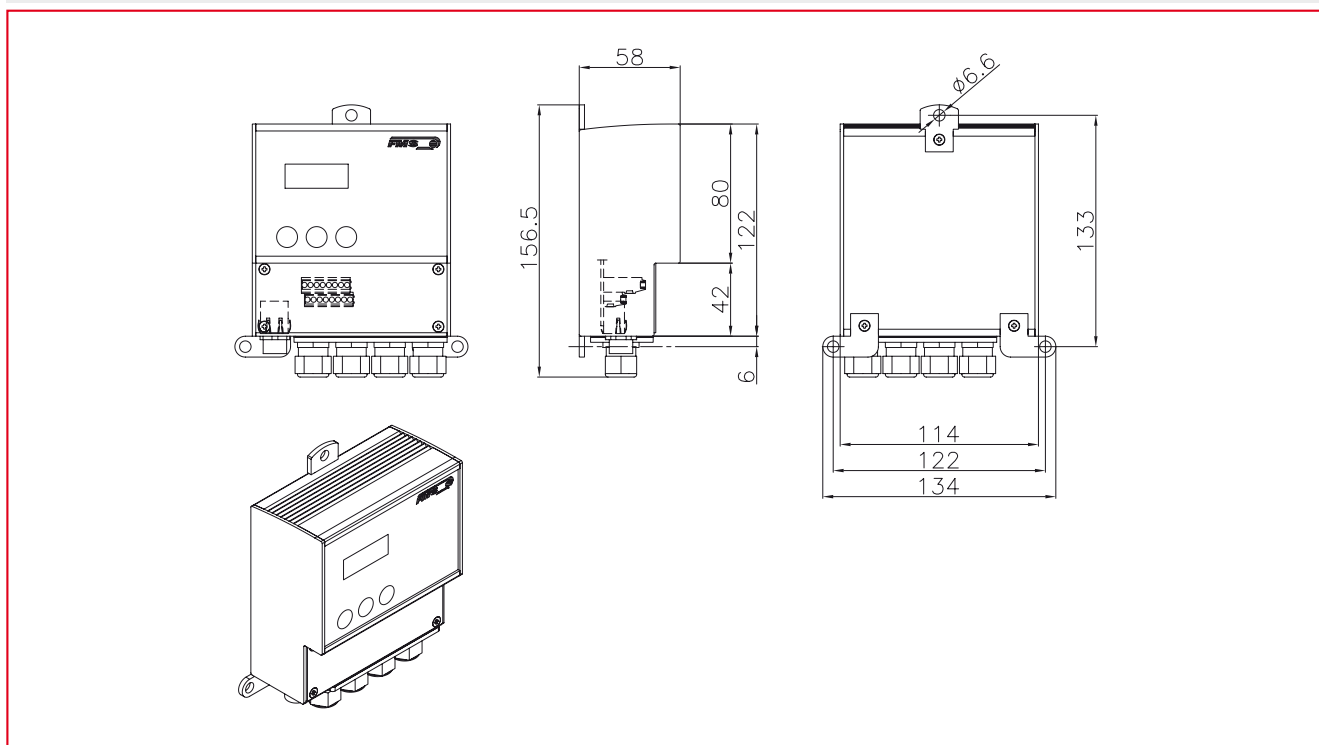
<b>Number of channels</b>	1 channel for 1 or 2 force sensors @ 350 Ω
<b>Sensor excitation</b>	5 VDC; max. 60 mA; high precision
<b>Temperature drift offset</b>	< 0.01% / K [0.006% / °F]
<b>Linearity error</b>	< 0.1%
<b>Tension output</b>	0...10 VDC; min. 1.2 k Ω
<b>Current output</b>	0/4...20 mA; max. 500 Ω
<b>Power supply</b>	24 VDC (18...36 VDC) max. 0.3 A
<b>Power consumption</b>	max. 6.0 W
<b>Temperature range</b>	-10...+60 °C [14...140 °F]

**EMGZ 309.R Rail Mount Housing • Dimensions in mm**



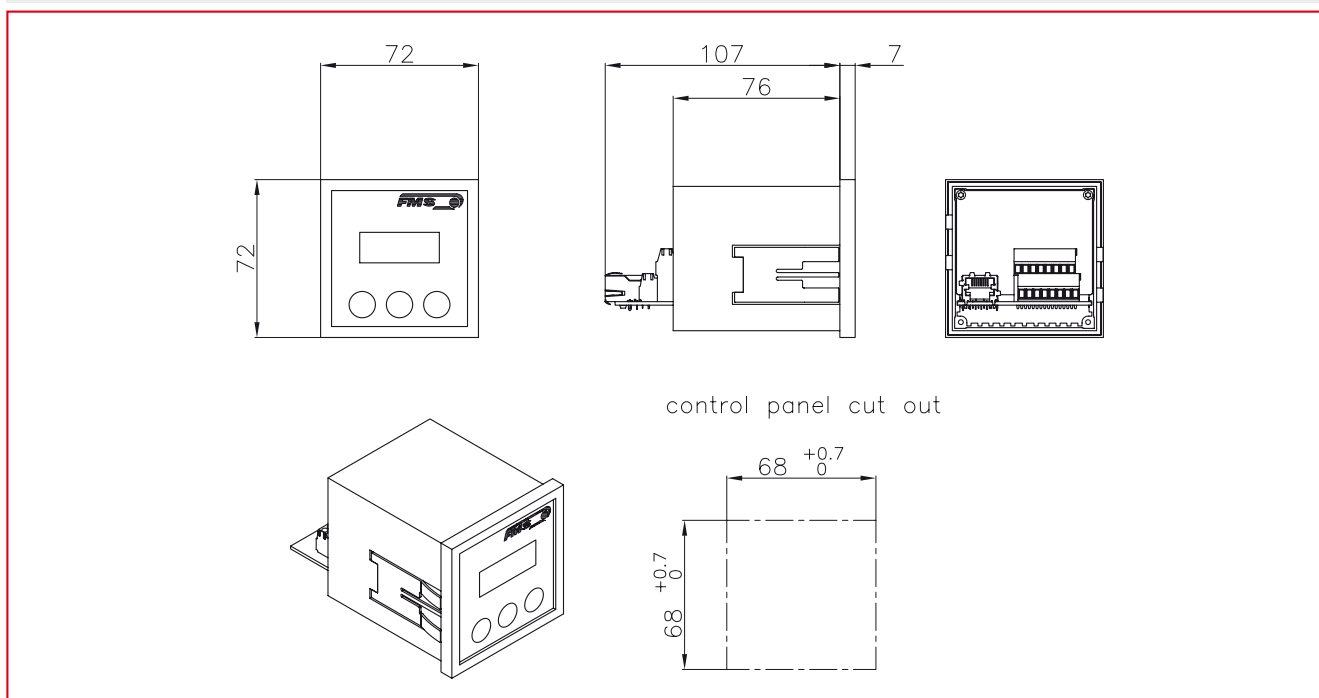
Wiring is realised via cable terminals.

**EMGZ 309.W Wall Mount Housing • Dimensions in mm**



With PG-Gland cable connector. Protection class IP 65.

**EMGZ 309.S Panel Mount Housing • Dimensions in mm**



Wiring is realised via cable terminals.

## FMS' Product Portfolio and System Solutions



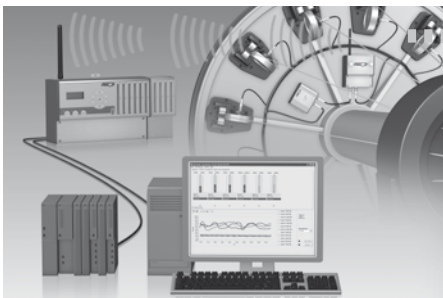
The product line **Force Sensors** provides products, solutions and related services that increase industrial productivity, energy efficiency and high quality output. Its force sensors, tension measuring rollers and pillow block based designs are of premium quality and ultra durable.



The product line **Electronics** facilitates tension monitoring, close loop tension control and web guiding systems. Key technologies include high-performance tension amplifiers and PID-controllers, as well as products to accurately and consistently control material position in continuously manufactured products.



The main focus of the **FMS Web Guiding business** is to provide customers with products and solutions for web detection and web positioning. Its steering frames, drives, controllers and material sensors provide an excellent coverage of the most important applications. The industries served include converting, printing, label processing and packaging.



**RTM** (Radio Transmitted Tension Monitoring) delivers system solutions across the cable production value chain. These innovative systems utilise force measuring rollers to capture the tension of individual wires or strands, and then securely transmit this data from the rotating to the static part of the machine. The systems are designed with fully compatible components. Production rates and product quality on rotating strand-handling machinery are significantly improved.



**Special Application Fields** facilitates solutions in **vacuum** applications or in potentially explosive atmospheres. A sophisticated range of interface options including systems such as **PROFINET, Ethernet/IP, Profibus** and **CAN-bus** provide quick and efficient integration of FMS products into the existing communication and control infrastructure of your company.

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